



SAFETY POLICY

2022

PREPARED BY
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Safety Policy Statement

It is the policy of Gartner Refrigeration & Mfg., Inc. to strive for the highest safety standard in all phases of operation and administration. It is our intention to provide safe and healthy working conditions and to always establish and insist upon safe practices by all employees.

Regard for the safety of the public, our own employees, and the employees of our customers and subcontractors is a supreme responsibility of all levels of our organization. It is, therefore, a basic requirement that each supervisor make safety an integral part of their regular management function. It is equally the duty of each employee to accept and follow established safety regulations and procedures. Prevention of injury and illness is a goal well worth achieving.

It is our intention to fulfill the requirements of the Minnesota Occupational Safety and Health Act. It is the obligation of all employees to be knowledgeable of the Standards established by this agency and to implement the rules and regulations contained therein. Every effort will be made to provide adequate training to employees. However, if an employee is ever in doubt about how to do a job safely, it is their duty to ask a qualified person for assistance.

Any injury that occurs on the job, however slight, must be reported to management as soon as possible. Any unsafe conditions must also be reported.

A safe operation is organized, clean, and efficient. If employees view safety as a serious matter, we will be in a better position not only to control accidents, but also to improve the total performance of the company. When you have an accident, everyone loses you, your family, your coworkers, and the company. It is therefore of the utmost importance that all aspects of our Safety Program be strictly adhered to, and that the intent of this program be followed to the letter. Any recommendations to improve our Safety Program are encouraged.

A handwritten signature in black ink that reads "Robert Machetta". The signature is written in a cursive style with a long, sweeping underline.

Robert Machetta – Safety Director



A Workplace Accident and Injury Reduction Program (AWAIR)

Introduction

At Gartner Refrigeration safety and health is part of every operation and is part of every employee's responsibility --- at all levels. It is the intent of Gartner Refrigeration to comply with all laws concerning the operation of the business and the health and safety of our employees and the public. To do this, we must constantly be aware of conditions in all work areas that can produce or lead to injuries.

We need all of our employees' cooperation in detecting hazards, reporting dangerous conditions and controlling workplace hazards. The Job Supervisor or Foreman must be immediately informed of any situation beyond the employees' ability or authority to correct.

Employees will not be disciplined or suffer any retaliation for reporting a safety violation in good faith.

Safety First Priority

The personal safety and health of each employee is of primary importance. Each employee has an individual responsibility to prevent accidents. The prevention of accidents is of such importance, that employees are to notify their supervisor or Foreman of any situation or condition that may present a safety hazard, including any known or concealed dangers in the work area. The company will then take immediate action to investigate the concern.

Gartner Refrigeration will make every effort to provide mechanical and physical protection for each employee's personal safety and health. However, employees bear the primary responsibility for working safely, performing their work as trained and informing the Supervisor or Foreman of defective mechanical equipment and lack of physical and personal protection.

Individual Cooperation Necessary

Gartner Refrigeration shall maintain a safety and health program conforming to the industry practices. To be successful, our program shall instill a proper attitude toward injury and illness prevention on the part of management and employees. It requires cooperation in all safety, health and production matters, not only between the employer and employee, but also between the employee, all co-workers, and the public.

Therefore, it is the policy of Gartner Refrigeration that all employees protect the public from hazards on our property or job site that may cause injury or illness to the general public. Following job procedures, using safe work practices, and recognizing hazards identified in the Company Safety, Health and Loss Prevention Program effectively does this.

Only through such a cooperative effort can our safety, health and loss prevention program be established and preserved in the best interest of all.

Responsible Safety Person

Our company management person who is responsible for our safety, health and loss prevention program is Rob Machetta, Safety Director. This person has sufficient knowledge, training, experience and authority to implement the program.

Goals and Objectives

Gartner Refrigeration shall establish and strive to maintain a company culture committed to workplace safety and health. This will be done by:

- Reducing the risk of injury and illness.
- Minimizing property, equipment and product damage.
- Complying with Federal, State and Local Safety and Health Regulations.

Safety and Health Responsibilities

All Employees

- Shall always follow all safety rules.
- It is extremely important that each employee understand how each task is done. If an employee does not know, he/she should stop work and ask a Supervisor, Foreman or the Lead person at the job site.
- Notify Supervisor or Foreman immediately of unsafe conditions and acts.
- If an unsafe act or condition is observed, it should be reported to Supervisor, Foreman or Lead person immediately. Safety is accomplished through effective communication, employee effort, and mutual support. Be familiar with and comply with proper safety and health practices.
- Use the required safety devices and proper personal protective equipment.
- Report all accidents / Incidents to the Supervisor or Foreman immediately.
- Working safely is a condition of employment.

Safety Director Responsibilities

- Provide all levels of management the services and technical advice needed for proper administration of the Safety Program.
- Develop technical guidance and intern programs to identify and remove physical hazards from all work locations.
- Formulate, recommend and administer approved changes to the accident prevention program.
- Prepare and distribute to all department heads regular report on the status of safety.
- Maintain adequate accident report system, personally investigate serious accidents and making corrective action to eliminate accident causes.
- Cooperate with project management personnel in the safety training of employees.
- Conduct personal inspections to observe work site conditions and work practices.
- Maintain Safety Program in compliance with will all applicable authorities.
- Recommend disciplinary procedures for repeated violators of safety program.

Project Manager/Superintendent/Foreman/Supervisor Responsibilities

- Be familiar with and enforce safety regulations applicable to company operation within area of responsibility.
- Discuss any current safety issues with their employees at the beginning of all regularly schedule shifts.

- Correct and coordinate safety activities within their area of responsibility, to include motivation of employees for safe work practices.
- Require all employees under their supervision to utilize the proper personal protective equipment and job safety devices.
- See to it that safety equipment is available and storage locations are clearly designated.
- Conduct safety inspections of work areas, directs corrective action for unsafe conditions noted and inform the Safety Director of inspection results.
- Require all subcontractors to comply with applicable safety regulations.
- Provide information and recommendations to Safety Director concerning safety matters.
- Instruct all persons within area of responsibility in job safety and health requirements and insists on compliance.
- Assures that injuries are reported and treated promptly.
- Investigate all accidents, obtain all pertinent data, file a complete report with the main office and review all accidents with the Safety Director.
- Assure that no unsafe conditions exist and report to the main office if any corrective actions, which are beyond their control, are needed.
- Conduct and/or supervise Job Site Inspection.

Office Manager/Clerk Responsibilities

- Maintain all records of accidents that have taken place during company operations on forms designated by OSHA, insurance companies and other authorized agencies.
- Process all paperwork associated with accidents, onsite inspections, and in-house audits. Maintain permanent records as needed.
- Prepare all notices required by OSHA, State, Local and other appropriate agencies for posting at each job site in accordance with designated regulations.

Subcontractors Responsibilities

- The provisions of these safety responsibilities apply to company subcontractors and their employees working on projects for this company.

Hazard Identification and Control

Hazard Identification Overview

Hazard identification focuses on preventing loss from occurring. Hazard identification identifies physical hazards, work practices and other loss potentials likely to cause personal injury or property/product damage, so that corrective actions can be taken before a loss occurs. Methods used to identify hazards are:

Work Site Analysis

Work site analysis is a proactive way to review the workplace to minimize hazardous conditions and improper acts. A functional work site analysis can be achieved in the following manners.

- Keep current on newly identified hazards in your industry and apply corrective actions as needed for your workplace.
- Assign and train a group of employees to review each highly hazardous job from time-to-time. The group will be taking a fresh step-by-step approach to detecting hidden hazards.
- Request feedback from employees on items appearing harmful.
- Review existing hazards controls.

- Use accident investigations reports to analyze what caused the accident and review standard operating procedures for possible changes.

Standard Operating Procedures (SOP)

Standard operating procedures maintain consistency in how a job is done by employees. All the factors that "complete the job" must occur in a sequence of steps. These steps should be examined for hazards to make sure appropriate methods that control the hazards are in place. All hazardous jobs should have written standard operating procedures.

Workplace Hazard Analysis and Control

Safety Audits

If possible, the foreman or his appointed person should conduct a weekly audit. As part of a safety audit routine, the Foreman will be alerted to unsafe conditions and acts. When reviewing the day's work routine with the employees, the Foreman will point out conditions the employees may encounter.

Environmental Monitoring

It is the responsibility of each individual employee to notify their Foreman if they have an indication there might be possible environmental concerns. In the event of a possible environmental concern the Foreman will notify the safety director immediately.

At this point, work will stop in the concerned area until the safety director and/or Foreman call/ do a complete on-site review. An analysis will be made at that time and if deemed necessary, an environmental testing agency will be contacted to offer a professional opinion for the correction of the situation.

All necessary monitoring devices, on-site personnel inspections and professional direction will be used to provide the utmost safe working conditions. When required or necessary, environmental monitoring will be:

- Included as part of all formal on-site inspection,
- Will be done daily by the Foreman or his appointed person and
- Will coincide with the daily on-site inspection.

Communication

Gartner Refrigeration will communicate to our employees our commitment to safety, making sure, employees are familiar with the elements of the safety, health, and loss prevention programs. Communication with employees will be:

- Through the Safety Director, Supervisor, Foreman, or a designated employee
- By directions and statements,
- By written directives,
- By example and
- By this manual.

Accident Investigation

All accidents shall be investigated, in a timely manner, to determine the cause of the accident and steps to prevent future accidents of this type from happening again. Accident investigations forms and procedures are in the appropriate section of the Safety & Health Manual.

Safety Committee

A Safety Committee has been formed to help create and maintain an active interest in safety and reduce accidents. The policy of the Safety Committee is to:

Discuss and formulate safe policies and recommend their adoption by management.
Discover unsafe conditions and practices, and determine their remedies.
Work to obtain results by having its management approved recommendation put into practice. Teach safety to all employees of the Company.

The Safety Committee meets at such times as called by the Chairperson. Meetings will be conducted according to the generally accepted rules of order, and minutes will be kept of all meetings.

Enforcement of Safety Policies

Employees who willfully violate safe work practices and procedures will be subject to disciplinary actions.

Employees whose willful violations could cause or lead to a serious injury are subject to immediate dismissal from employment.



Subcontractor Management Plan

General Requirements

Each subcontractor must complete the Gartner Subcontractor Qualification Questionnaire in order to bid any project for Gartner Refrigeration. In addition, the subcontractor must qualify in order to receive a project or bid on future projects. The Subcontractor Qualification Questionnaire will contain the following information.

- Company name, address, phone number and fax number
- Website, Federal ID# and D&B#
- Company contacts with phone number and e-mail
- Type of company
- List of jurisdiction and trade categories in which the organization is legally qualified to do business and indicate registration or license numbers.
- Annual sales volume for the last 3 years
- List of the largest projects in the last 2 years
- Current back log of jobs
- Completed W9
- Legal
 - Has the company ever failed to complete a job?
 - Are there any judgments on the company?
 - Are there any lawsuits pending in regard to construction contracts?
 - Have they every filed for bankruptcy
- Safety Programs
 - Any OSHA fines in the last 3 years
 - Any jobsite fatalities within the last 5 years
 - EMR rating for last 3 years (explanation if over 1.0)
 - Company must agree to the Gartner Refrigeration Safety Policy regulations
- Submit copy of Certificate of Insurance naming Gartner Refrigeration as an additional insured with minimum requirements

Companies that complete and qualify to work as a subcontractor for Gartner Refrigeration will be required to complete the following items when on site.

- Subcontractors will follow all of Gartner Refrigeration or the customers safety policies depending on which are more stringent
- Subcontractors will participate in job safety orientations, pre-job meetings and kick –off meetings
- Subcontractors will participate in or complete their own tailgate safety meetings, job safety analysis or hazard assessments, and on the job safety inspections
- Subcontractors will participate in a post-job safety performance review of the job



Drug and Alcohol Policy

Gartner Refrigeration Inc. recognizes that drug and alcohol abuse creates serious problems for workers, their families, the workplace, and the community. Gartner Refrigeration Inc. further recognizes that a cooperative and constructive effort to overcome the impact of drug and alcohol abuse on safety, productivity, quality of work, and morale. Also, Gartner Refrigeration Inc. recognizes that the keys to this effort will be providing of education, assistance to the employees and their families, encouraging the employees to receive treatment as needed, fostering and encouraging an environment that assures all employees are fit for duty while on the job. Therefore, in fulfillment of these objectives, Gartner Refrigeration Inc. has developed the following Policy and Program:

All current Gartner Refrigeration Inc. employees and job applicants will be held to, and tested in accordance with all state statutes and per each of the different contracted union labor agreements if applicable. In the event of the conflict between this policy and any applicable collective bargaining agreement, the language of the collective bargaining agreement shall supersede this policy.

- 1. Use and Possession Prohibited** - the use, possession, distribution, manufacture or dispensing of unlawful drugs while on duty or during working hours or reporting for work or working while under the influence of, or impaired by alcohol, controlled substances or any other drug, the unauthorized possession on work premises of alcohol, or unlawful drugs, are strictly prohibited and are all violations of this Policy.
- 2. Alcohol** – Employees found drinking or possessing alcohol on the job or reporting to work or working under the influence of, or impaired by alcohol, are in violation of this Policy.
- 3. Drugs** – Employees who test positive for drugs or who manufacture, use, distribute, dispense, or possess unlawful drugs, while on or off premises while on duty, are in violation of this Policy.
- 4. Medical Review Officer** – Gartner Refrigeration Inc. will appoint a Medical Review Officer (MRO) to administer this Policy. The responsibilities of the MRO shall be to:
 - Select and utilize services of a testing laboratory that meets one of the criteria for drug testing established by Minn. Stat. 181.953 for testing of specimens collected under this Policy.
 - Provide specimen test kits and collection locations that follow chain of custody collection techniques mandated by Minn. Stat. 181.953



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- Maintain appropriate systems, records, and administrative procedures for accurate and timely information as to the drug and alcohol-free status of employees.
- Confirm that tested individuals have been notified of all test results within three (3) working days after receipt of a test result from a test laboratory and provide the individual with an opportunity to explain a positive test result.
- Review and verify a confirmed positive test result and process the donor's request for a confirmatory retest of the original sample.
- Review a participating employee's medical record if so requested by the employee.
- Refer individuals testing positive to the appropriate medical evaluation and participate in return to duty decisions as set forth in this Policy.
- Ensure the Drug and Alcohol Policy and Program complies with Minn. Stat. 181.950 et seq.

5. Testing – All employees are subject to testing for the presence of alcohol and drugs. All testing will be according to this Policy or otherwise in compliance with Minn. Stat. 181.950 et seq. and other applicable laws concerning drug and alcohol testing. Testing procedures are intended to protect individual privacy, ensure accountability and integrity of the specimens, and to provide confidentiality of test results. Testing procedures shall be according to the standards established in Minn. Stat. 181.953, Subd. 1 and 3, for the purpose of measuring the presence or absence of drugs, alcohol or their metabolites in the sample tested. All alcohol testing shall be conducted by an independent laboratory authorized to conduct alcohol testing under Minn. Stat. 181.953. the applicable alcohol threshold level for a positive test shall be a concentration of .08% or more. A confirmed positive test is a violation of the Policy. All drug testing under Minn. Stat. 181.953. the applicable drug threshold level for a positive test has been established by an independent laboratory in accordance with Minn. Stat. 181. et seq. and those levels are referenced as attachment "A".

6. Rights of Employees and Tested Employees.

- Before requesting an employee to undergo drug or alcohol testing, the employer shall provide the employee with a form on which to acknowledge that the employee has seen the drug and alcohol testing Policy.
- Within three (3) working days after receipt of a drug or alcohol test result report from a testing laboratory the tested employee shall be notified in writing of all test results. The tested employee shall be provided with a copy of the test result report.



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- If an employee tests positive for drug or alcohol use, the employee shall be given written notice of the right to explain the positive test and indicate any over the counter or prescription medication that the employee is currently taking or has recently taken and any other information relevant to the reliability of, or explanation for, a positive test.
- Within three (3) working days after notice of a positive test result on a confirmatory test, the employee may submit additional information to the information already submitted under paragraph (c), to explain that result.
- An employee who tests positive on a confirmatory test will have five (5) working days following the date which the employee is notified of the confirmatory test result to advise, in writing of the employee's desire to request a confirmatory retest of the original sample at the employee's own expense.
- Unless a positive test result is confirmed as positive, it shall be deemed negative and reported by the laboratory as such.
- The company will bear the costs of all testing procedures except for confirmatory retests requested by employees.
- Refusal to test or provide an adequate sample when required by this Policy shall constitute insubordination and is a violation of this Policy and that person will be considered ineligible until a negative test is provided.
- Any specimen altered by the employee will be considered a positive drug screen and therefore a violation of this Policy. Any specimen altered by the employer will be considered a negative drug screen.

7. Employee Testing.

- **Pre-Placement Testing:** A pre-placement drug test may be administered to all applicants for employment pursuant to Minn. Stat. 181.951, Subd. 2, provided a conditional offer of employment has been extended. If pre-placement testing is conducted, all applicants conditionally offered employment must be tested. The employee will be provided a list of approved collection stations by the MRO.

Employees who undergo pre-placement testing will not be subject to an alcohol test in accordance with Minnesota Non-Work Activity Statute Minn. Stat. 181.938 et seq.

Gartner Refrigeration Inc. may withdraw a job offer made contingent on the applicant passing a drug test where an applicant tests positive for drugs on an



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initial screen test that has been verified by a confirmatory test or where an applicant refuses to submit to a test or alters a test sample. No employee who previously, pursuant to this Policy, has been subjected to a drug test, the verified results of which were negative, shall be requested or required to undergo a pre-placement test pursuant to this Policy.

- **Reasonable Suspicion:** Employees will be tested for the presence of drugs and alcohol if there exists a “reasonable suspicion” that the employee is under the influence of drugs or alcohol. The conduct of the employee must be witnessed by at least one supervisor or another employer official. The witness or witnesses must have received training in the identification of actions, appearances, or conduct which are indicative of the use of drugs, or alcohol. All tests shall be performed in accordance with this Policy and in a non-discriminatory manner. During the process of establishing reasonable suspicion for testing, the employee has the right to request a union officer, union steward, union member, or an on-site employee to be present. Refusal to submit to an employer request for reasonable suspicion testing for the presence of alcohol or drugs shall constitute insubordination and is a violation of this Policy. An employee tested for reasonable suspicion shall be suspended with pay pending the outcome of the results. A confirmed positive test is a violation of this Policy.
- **Random:** Employees will be chosen through an unbiased selection process for random testing for the presence of drugs, or alcohol. All random testing selection will be done by the MRO.
- **Post Incident:** Employees may be tested for the presence of drugs or alcohol if the employee sustains a personal injury, as that term is defined in Minn. Stat. 176.011, Subd. 16, or has caused another employee to sustain a personal injury or has caused a work-related accident or was operating or helping to operate power tools, machinery, equipment, or vehicles involved in a work-related accident. An employee subject to accident testing may be suspended pending the outcome of the results. Refusal to submit to an employer request for post-incident testing for the presence of drugs or alcohol shall constitute insubordination and is a violation of this Policy. A confirmed positive test is a violation of this Policy. Any employee having a negative test for incident testing will receive full back pay.
- **Safety Sensitive:** Under Minn. Stat. 181.950, Subd. 13, safety-sensitive position means a job, including any supervisor or management position, in which an impairment caused by drugs or alcohol usage would threaten the health or safety of any person. By nature of Pipe Trades work, all work performed by Pipe Trades



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employees is safety sensitive within the meaning of Minn. Stat. 176.011, Subd. 16. Refusal to submit to a test for the presence of drugs or alcohol shall constitute insubordination and is a violation of this Policy.

- **Work Opportunity:** All employees are subject to testing required by a project bidder or government requirement of a contracted job, or as required by federal or state law, that subjects all similarly situated employees to testing.
- **Treatment Program:** anyone who has been referred for chemical dependency evaluation or treatment, or who is participating in a chemical dependency program is subject to drug and alcohol testing without prior notice at any time during the evaluation and treatment period, and for up to two years following completion of any prescribed chemical dependency treatment program.
- **Other Guidelines:** Under some circumstances the employees covered by this Policy may be subject to regulations for drug and alcohol testing established by a Federal or State Agency. To the extent that this Policy is more strict or specific this Policy shall control, unless expressly preempted or exempted by law. There shall be no other drug or alcohol testing required as a condition of employment.
- **Testing:** May be accomplished by "Quick Test" at the collection site. Quick tests will allow results to be obtained, typically, within 2-4 hours of the test, allowing the member to begin work quickly. Any non-negative test result on the quick test will require additional testing at Medtox labs.
- **Privacy and Accountability:** Testing procedures are intended to protect individual privacy, ensure accountability and integrity of the specimens, and to provide confidentiality of test results.
- **Payment of Wages:** (1) Any employee required by an employer to provide a specimen(s) for drug or alcohol testing during scheduled work hours will be paid compensation and fringe benefits for the actual time away from work. Any employee who is required to provide a specimen(s) for drug or alcohol testing on the employee's own time will be paid two hours of wages and fringe benefits at the employee's straight-time hourly rate. (2) Any employee required by an employer to provide a specimen(s) for drug or alcohol testing during scheduled work hours and who uses a personal vehicle at the request of the employer to transport the employee from shop or job to the collection site or from the collection site to the shop or job is entitled to mileage. Employees who are required to provide a specimen(s) on the employee's own time and are compensated two hours of wages and fringe benefits at the employee's straight-time hourly rate are not entitled to payment for mileage.



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- 8. Leaving the Work Site.** During an investigation involving the use or possession of drugs or alcohol, or once a determination of reasonable suspicion has been made, an employee shall not leave the work site without approval of the employer and shall leave in the manner determined by the employer. Leaving the work site without approval shall constitute insubordination and is a violation of this Policy.
- 9. Test Results.** The employee shall be provided copies of all test result reports within three (3) working days after receipt of a test result report from a testing laboratory. Any employees receiving unacceptable test results shall be removed from all Client/Host facilities immediately.
- 10. Confidentiality.** Test result reports and other information acquired in the drug or alcohol testing process are private and confidential information and may not be disclosed by the employer or laboratory to any other employer or to a third party, individual, governmental agency, or private organization without the written consent of the employee tested.
- 11. Treatment/Employee Assistance Program.** This Policy recognizes that drug and alcohol dependency is a treatable health problem. Employees needing assistance in dealing with such a dependency are encouraged to consult with the Employee Assistance Program to obtain information on the availability of assistance resources, treatment clinics, and programs. Costs of treatment in excess of those covered by the employee's Health and Welfare Plan shall be the responsibility of the employee.

Gartner Refrigeration Inc. encourages treatment for any drug or alcohol dependency and this Policy is implemented to encourage employees with health problems to seek treatment before their jobs are in jeopardy or the safety, health and security of the work environment is put at risk.
- 12. Re-Employment/Re-Entry into the Workforce.** An employer may not discipline or discharge an employee for whom a positive test result on a confirmatory test was the first such result for the employee on a drug or alcohol test requested by the employer unless the employee has first been given an opportunity to participate in a drug or alcohol evaluation and then a counseling or rehabilitation program if the evaluation so indicates. If the employee refuses to participate in either the evaluation or the counseling or rehabilitation program or fails to successfully complete the counseling or rehabilitation program the employee will be terminated. If the employee satisfactorily passes the



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evaluation or rehabilitation program and produces a negative drug test, the employee will be returned to work.

13. **Policy Violations.** Unless otherwise set forth herein, all violations of this Drug and Alcohol Policy and Program shall be cause for discipline, up to and including discharge.
14. **Conditions of Employment.** Compliance with this Policy is a condition of employment. With regard to this Policy any failure or refusal of an employee to cooperate fully, sign the Gartner Refrigeration Inc. Drug and Alcohol Policy and Program Acknowledgement Form and the Consent and Release of information Form, and submit to any test (under this Policy), will be a violation of this Policy.
15. **No Litigation.** Gartner Refrigeration Inc. agrees not to engage in any litigation against the signatory local unions in connection with any aspect of this Policy. Furthermore, Gartner Refrigeration Inc. agrees the union is not responsible for ascertaining or monitoring the drug-free or alcohol-free status of any employee or applicant for employment.
16. **Grievance Procedure.** All disputes involving the interpretation of this Policy and any discipline imposed for violations of this Policy shall be subject to the grievance procedure contained in the employee's Collective Bargaining Agreement.
17. **Federal Preemption.** This Policy does not apply to employees where the specific work performed requires those employees to be subject to federal drug and alcohol testing in accordance with Minn. Stat. 181.957.

Training

All Gartner Refrigeration Inc. employees shall receive training to this Drug and Alcohol Policy Prior to first shift when starting employment, and Bi-Annually thereafter.

Employees will sign and date an Acknowledgement form after completion of training.



Drug and Alcohol Policy

Appendix “A” - Drug testing threshold levels

Drug Type and Cut-Off Limits. Employees may be tested for the following drugs and/or their metabolites at the following cut-off limits:

Initial Drug Test Level	
	(ng/ml)
Marijuana metabolites*	50
Cocaine metabolites*	300
Opiate metabolites*	2,000
Phencyclidine*	25
Amphetamines*	1,000
Barbiturates	300
Methaqualone	300
Benzodiazepines	300
Methadone	300
Propoxyphene	300



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Confirmatory Drug Test Level

	(ng/ml)
Marijuana metabolism*\1\.....	50
Cocaine metabolite*\2\.....	150
Opiates*	
Morphine.....	2,000
Codeine.....	2,000
6-Acetylmorphine*\3\.....	10
Phencyclidine*.....	25
Amphetamines*	
Amphetamine.....	500
Methamphetamine \4\.....	500
Barbiturates.....	300
Methaqualone.....	300
Benzodiazepines.....	300
Methadone.....	300
Propoxyphene.....	300
Alcohol, Ethyl**.....	0.08%



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Key

- \1\ Delt-9-tetrahydrocannabinol-9-carboxylic acid
- \2\ Benzoylcegonine.
- \3\ Test for 6-AM when morphine concentration is greater than or equal to 2,000 ng/ml.
- \4\ Specimen must also contain amphetamine at a concentration greater than or equal to 200 ng/ml.

* Cut-off limits are established by the Department of Health and Human Services in their Mandatory Guidelines for Federal Workplace Drug Testing Programs. This list of drugs and cut-off limits are subject to change by the Department of Health and Human Services as advances in technology or other considerations warrant identification of these and additional substances at other concentrations. Such changes shall be deemed to have been incorporated into this Policy upon announcement by the Department of Health and Human Services of such changes.

** Any report in excess of .08% shall be considered above the impairment level.

Any adulterated specimen (as determined by the MRO) will be considered a positive drug screen and therefore a violation of this Policy. In addition, all costs incurred for laboratory examination of the adulterated sample will be the responsibility of the donor.



Cell Phone / Personal Electronic Devices

The purpose of this safety policy and procedure is to establish procedures for the protection of Gartner Refrigeration & Mfg. employees when using Cell Phone / Personal Electronic Devices while conducting field operations.

Definitions: Authorized User - Authorized users will be appointed by the Job Superintendent or lead foreman and will require approval of project management.

- >Authorized User's use of cell phones / personal electronic devices is permissible during work hours for company business only.
- >Before accepting an incoming or making an outgoing call, make sure that such activity will not compromise your safety or the safety of others.
- >When checking messages or emails while on a jobsite, Authorized User shall not be engaged in any other activity, (such as walking, operating a motor vehicle, etc.). Authorized User shall find a location out of the way of site work activities to address messages, email, or other electronic device needs.
- >Know the Client Facility rules for Cell phone use and picture taking. And ensure they are followed by all Gartner Employees on site.

Employee personal use of cell phones/electronic devices is only permitted during breaks and at lunch time, in designated areas.

Cell Phone Use While Operating Motor Vehicles

- > Gartner Refrigeration Employees shall use a hands-free device to talk on cell phones while driving any motor vehicle for company business. (Company owned, Rental, Employee owned)
- >Reading and Replying to messages or emails is strictly prohibited while operating any motor vehicle for company business.
- >Browsing the internet is strictly prohibited while operating any motor vehicle for company business.
- >If Employees must look through their phone, they must find a safe place to park their motor vehicle prior to commencing their search.
- >if using your phone in GPS mode for directions, employees shall ensure their address is input and route selected prior to putting the vehicle in motion. Any changes needed shall be made while the vehicle is stopped and in park in a safe location.
- >Talking on a Cell Phone When operating equipment, driving a vehicle on the jobsite or while performing any jobsite activity that a distraction may cause a potential safety threat is Strictly Prohibited.
- > Do not let all incoming calls and messages go unanswered. You then may return the call when you have stopped your equipment, pulled your vehicle to a safe area or put yourself and those around you in a safe environment before returning the call or responding to messages.
- > Violating this policy will result in disciplinary action up to and including removal or termination.



Fit for Duty Policy

Purpose

This policy is to describe Gartner Refrigeration Inc. Policy and procedure for assuring that employees fully understand the fit for duty requirements. Employees who are not fit for duty may present a safety risk to themselves and to others.

Scope

This policy applies to all Gartner Refrigeration Inc. employees and sub-contractors at the work place or while carrying out activities on behalf of Gartner Refrigeration Inc. Including but not limited to:

- Employees who work at Client facilities and other work sites.
- Employees who work at home office, warehouse, and Fabrication or Rebuild Shops.

Policy

Gartner Refrigeration Inc. recognizes that mental attitude and physical condition of employees has a critical role in employees being able to perform their duties safely. This policy outlines the responsible parties and necessary actions when an employee's fitness for duty is in question, and the steps necessary to assess the employee's physical or mental capabilities, necessary follow-up, and return to work.

This policy covers situations in which an employee is:

- Performing safety sensitive duties
- Having observable difficulty performing his/her duties in an effective manner that is safe for the employee and/or for their co-workers.
- Posing a serious safety threat to self or others.

This policy describes the circumstances under which an employee may be referred to an independent, licensed health care evaluator for a fitness for duty evaluation should any of the above situations be present.

All employees are required to report to work fit for duty and able to safely perform their assigned tasks.

If an employee is going to be absent from work for any reason they must contact their supervisor prior to shift start each day unless other arrangements have been made for multiple days away.



Fit for Duty Policy

If Gartner Refrigeration Inc. has a reasonable belief that an employee's present ability to perform essential job functions will be impaired by a medical condition or other impairment, Gartner Refrigeration may require the employee to submit to a fit for duty exam.

Medical examinations will be limited in scope as to what is needed to assess the employee's ability to perform related job duties.

Responsibilities

The Program Administrator: Gartner Refrigeration Inc. Safety Director

Issuing and administering this program and making sure that it satisfies all applicable federal, state, local requirements and Industry best practices.

Provides information, instruction and training about Fit for Duty policy updates and changes. Maintaining training records for all employees included in the training sessions.

Project Managers, Superintendents, Foreman:

Are to ensure all employees are aware of and understand Gartner Refrigeration's Fit for Duty Policy.

Verify that all members of his/her work group are fit for duty prior to starting their assigned tasks.

Monitor his/her employees' performance and behavior throughout the work day.

Employees:

Read & Understand the elements of this policy

Must report to work physically fit for duty and mentally ready to safely perform their assigned tasks.

Must notify their supervisor if they are fatigued to the point of not being able to perform their duties safely.

Procedures

The following procedures will be used to assist employees in maintaining fitness for duty.



Fit for Duty Policy

- Pre-employment physicals shall be included in the hiring process as needed for Safety Sensitive work, client requirements, or when changing into certain job functions or environments.
- Drug and alcohol testing for pre-employment, post-accident, or random testing will be conducted per Gartner Refrigeration Inc., Host Facility, or DOT requirements.
- Employees must report to their immediate supervisor if they are taking any prescription or over-the-counter medications that could impair their ability to perform their job tasks safely.
- Employee's activities and behaviors will be monitored to determine if employee should be removed from the work site when their ability to perform their duties safely is questioned.
- Employees must be responsible for ensuring they are physically and mentally fit to perform their job functions safely. Employees must take responsibility for their own safety as well as not reporting to work in a condition as to endanger the safety of their co-workers.

Training

All Gartner Refrigeration Inc. employees shall receive Fit for Duty training annually.

The Training will be documented including presenter, employee name, dates of training and subject matter.



Employee Training Plan

Training Module	Frequency	Construction	Service Tech's	Project Management	Operations	Office
Ammonia Awareness	Annual	X	X	X	X	
Hex Chrome Awareness	Annual	X	X	X		
Nitrogen Awareness	Annual	X	X	X	X	
Lead Awareness	Annual	X	X	X	X	X
Asbestos Awareness	Annual	X	X	X	X	X
Silica Awareness	Annual	X	X	X	X	
H2S Awareness	Annual	X	X	X		
Global Harmonization GHS	Annual	X	X	X	X	X
OSHA 10 Hour	One Time			X		
OSHA 30 Hour	One Time	X	X			
Fall Protection	Annual	X	X	X	X	
Scaffolds	Annual	X	X	X		
Aerial ManLifts	2 Year	X	X	X	X	
Forklifts	2 Year	X	X		X	
Confined Space	Per Entry	X	X	X		
Lock Out Tag Out	Annual	X	X	X	X	
Electrial_NFPA70E	2 Year	X	X	X	X	
Arc Flash	2 Year		X			
Rigging	2 Year	X	X	X	X	
Signal Person	2 Year	X	X	X	X	
NH3 Emergency Response_HAZWOPER	Annual	X	X			
Respiratory Protection/ Respirators	Annual	X	X			
Respirator Use Medical Review	Annual	X	X			
Respirator Fit Test	Annual	X	X			
Ladders	Annual	X	X	X	X	X
Fire Extinguisher Use	Annual	X	X	X	X	X
Power Tools	Annual	X	X	X	X	
Personal Protection Equipment	Annual	X	X	X	X	X
Hearing Protection / Noise Exposure	Annual	X	X	X	X	X
Ergonomics	Annual			X	X	X
First Aid / CPR / AED	2 Year	X	X	X	X	X
Blood Borne Pathogens	Annual	X	X	X	X	X
Process Safety Management	Annual	X	X	X		
AWAIR	Annual	X	X	X	X	X
Safety Orientation	Annual	X	X	X	X	X
DOT Health Cards	2 Year	X	X		X	
RETA Certification	Annual CEU's		X	X		
High Pressure Piping License	Per Municipality	X	X	X		



Company Disciplinary Policy

With any large group of people, having reasonable rules can benefit everyone. Reasonable rules help provide a safe and desirable place to work. It is the purpose of the rules to correct undesirable or unacceptable conduct for the benefit of all employees as well as the Company.

The Company Rules will be applied in a fair and impartial manner. Full consideration will be given to the nature and cause of the violation, the seriousness of the event, the likelihood that the event will be repeated, and the attitude of the violator.

It will be the responsibility of department heads, field superintendents, safety manager, controller, or owners to enforce the disciplinary program.

The Company Rules are classified in three (3) categories, depending on the degree of seriousness - Type A, Type B, and Type C. The corrective action which will be taken when the Company Rules are violated during an eighteen-month consecutive period follows:

Type A

- | | |
|---------------|-----------------------------------------------------|
| 1st Violation | - Verbal warning with notation on employee's record |
| 2nd Violation | - Written Warning |
| 3rd Violation | - Three-day suspension without pay |
| 4th Violation | - Discharge |

Type B

- | | |
|---------------|------------------------------------|
| 1st Violation | - Three-day suspension without pay |
| 2nd Violation | - Discharge |

Type C

- | | |
|---------------|-------------|
| 1st Violation | - Discharge |
|---------------|-------------|

Company Rules (Type A)

1. Leaving the Company premises or clocking out of the plant without permission.
2. Leaving work area without permission of immediate supervisor. (Applies to Shop and Field Service employees only).
3. Entering or remaining in the Company premises during hours other than regular working hours and without permission or authorization of management.
4. Failing to punch timecard in or out upon entering or leaving the job, including during the lunch hour, if applicable.
Failing to meet reasonable quality and quantity work standards.

5. Making scrap unnecessarily or careless workmanship.
6. Creating or contributing to unsanitary or unhealthy conditions.
7. Performing non-Company work on Company time or on Company premises without Company authorization.
8. Reporting to work under the influence of alcoholic beverages, narcotics, illegal drugs or controlled substances, or possessing the same on Company premises, other than prescribed drugs. (Violation of this rule will also result in the employee being suspended without pay for the remainder of the shift).
9. Soliciting membership or money in written form or otherwise on behalf of any group or organization during working hours on Company premises without Company authorization.
10. Distributing, posting, removing, or defacing notices, signs, or literature on bulletin boards or in work areas without Company authorization.
11. Engaging or participating in horseplay or practical jokes which interfere with any employee's ability to carry out assigned work duties or which endanger the safety of another employee.
12. Negligently or intentionally disregarding safety rules or common safety practices that do, or would likely, result in minor personal injury or property damage.
13. Physical inspections of employees work areas will be conducted to ensure that they comply with safety rules and company policies.

Company Rules - Type B

1. Distribution or use of alcoholic beverages, narcotics, illegal drugs or controlled substances on Company property, other than prescribed drugs.
2. Possessing illegal firearms, weapons, or explosives on Company property.
3. Willfully refusing to obey or carry out orders of supervisors or other management personnel or engaging in acts of insubordination.
4. Intentionally restricting, hindering, interfering with, or limiting production, or attempting to influence others to do so.
5. Unauthorized or improper tampering with Company equipment or property.
6. Threatening, intimidating, coercing, using derogatory and/or abusive language or harassing any employee or member of management on Company premises.
7. Negligently or intentionally disregarding safety rules or common safety practices that do, or would likely, result in major personal injury or property damage.
8. Sleeping on the job.
9. Clocking in or out on another employee's timecard or allowing your own timecard to be clocked in or out by another employee without permission of your supervisor.
10. Engaging in disorderly conduct of a gross nature on Company premises.

Company Rules - Type C

1. Provoking, instigating, or participating in a fight, other than in self-defense, during working hours or on Company property.
2. Using, removing, or disclosing employee lists or confidential information of any nature without Company authorization.
3. Falsifying any record, including timecards and production records, or deliberately giving false information for any Company record.
4. Willfully destroying, damaging, abusing, removing, or stealing any property owned, leased, rented or in the custody of the Company, or of its employees or others on Company premises.
5. Threatening any employee or member of management on Company premises with serious bodily harm.

Notification of Written Warning for Violation Company Disciplinary Policy

Employee Name: _____

You have been found in violation of a company policy. This notification will be kept on file in your employee record at our office.

VIOLATION: _____

Reported by: _____

Warning: 1st 2nd 3rd 4th (circle one)

Type: A B C (circle one) Violation Date: _____

Action Taken: _____

Comments: _____

Employee signature: _____ Date: _____

Employee did not wish to sign

Administered by: _____

ACKNOWLEDGEMENT FORM

THIS FORM WILL BE KEPT ON FILE IN YOUR EMPLOYEE RECORD

I acknowledge that I have received a copy of Gartner Refrigeration company disciplinary Policy and that I have read it and do understand said policy.

PRINT EMPLOYEE NAME: _____

EMPLOYEE SIGNATURE: _____

DATE



Risk Assessment

Purpose

To provide Gartner Refrigeration Inc. employees, risk management processes for identification, assessment, mitigation, tracking, control and management of every project's risks. Risk management plans provide templates and processes for recording and prioritizing risks, it defines how risks associated with specific projects will be identified, analyzed, managed, or mitigated. It outlines how risk management activities will be performed, recorded, and monitored throughout the life cycle of the project.

Scope / Objectives

Risk management plans consist of the processes and timing for identifying and managing risks, mitigation actions required, and organizational responsibility for monitoring and managing the risks throughout the entire lifecycle.

Specific objectives to be included in Risk Management Plans include:

- Ensuring critical risks impacting scope, safety, schedule, budget, business performance, and/or change management are proactively identified, communicated, mitigated, and escalated in a timely manner.
- Facilitate attention to key risks impacting the project and individual teams.
- Produce meaningful information that allows project management to focus efforts on high likelihood and high impact risks with an effective coordination of effort.
- Ensure appropriate personnel are informed and participate in the mitigation.
- Record an audit trail of discussions and mitigation of project risks.
- Identify Risk Manager for project assessment.
 1. Work on and communicate progress on most severe risks first.
 2. Set realistic due dates and then work to meet the dates.
 3. Mitigate risks at the appropriate level staff.
 4. Keep all project personnel informed on current risk status.
 5. Document the planned risk mitigation history and actual mitigation of a risk. This documentation serves as a key input to root cause analysis, key learning, and risk analysis.
 6. For High Impact, Impending Risks, a rapid decision turnaround may be required, as determined by Risk/Project Manager. In such cases, available applicable team members will make the decision.



Risk Assessment

Responsibilities

The Program Administrator: Gartner Refrigeration Inc. Safety Director

Actively work with Risk Manager in site assessment and development of risk mitigation plan.

Issuing and administering this program and making sure that it satisfies all applicable federal, state, local requirements and Industry best practices.

Provides information, instruction and training about Risk Assessment policy updates and changes. Maintaining training records for all employees included in the training sessions.

Project/Risk Manager:

The Risk Manager is responsible for the Risk Management Plan, its effective implementation throughout the project. Communicating to all employees involved with the project identified Risks and their mitigation schedules. The Risk Manager has overall responsibility for the risk management process. Specific responsibilities may include but are not limited to the following:

- Develop and implement the Risk Mitigation Plan.
- Maintain the Risk Management Plan throughout life of project.
- Clarify, consolidate and document risks.
- Monitor the status of risk mitigation.
- Communicate status to risk owners.
- Escalate communication if expected mitigation action deadlines are not met.

Risk Owner:

The Risk Owner is the person to whom the Risk Manager assigns primary responsibility for mitigating the risk. This assignment is based on the type of risk and should be assigned to the employee who is authorized, trained, and experienced to assure this risk is mitigated. This will typically be project Foreman. But may also include other on-site crew members. Risk Owners shall:

- Mitigate risks per the risk mitigation plan.
- Recommend risk closure to Risk Manager when risk no longer exists.



Risk Assessment

Employees:

Read & Understand the elements of this policy

Participate in Hazard/Risk identification.

Comply with Risk Mitigation Plan directives.

Must notify their supervisor if they are unable to mitigate risk per plan.

Risk Management Process

Risk Management involves four major phases: risk identification, risk analysis, risk mitigation planning, and risk monitoring and control.

Risk Identification

Safety/Project Manager is to Conduct a Site Assessment to Identify risks that may affect project outcome and document them. Employees and or Sub-Contractors assigned to jobsite shall participate in Site Assessment and Hazard Identification. Site Assessments include but are not limited to:

- Provide a unique identifier for each risk.
- Description of each potential risk event and how it could affect the project.
- Assessment of the likelihood of occurrence and the impact/seriousness if it does.
- Grading of each risk according to a Risk Scoring Matrix.
- Who is responsible for managing the risk?
- Strategies proposed for dealing with the risk (preventative and contingency).

Risk Analysis

In this phase of the Risk Assessment process you will prioritize risks for subsequent ongoing management based on their likelihood of occurrence and degree of potential impact. After being identified, the risks are analyzed to determine how they could affect the Health, Safety, and Efficiency of the project.



Risk Assessment

Use risk analysis matrix to determine hazard classification and priority of mitigation measures needed.

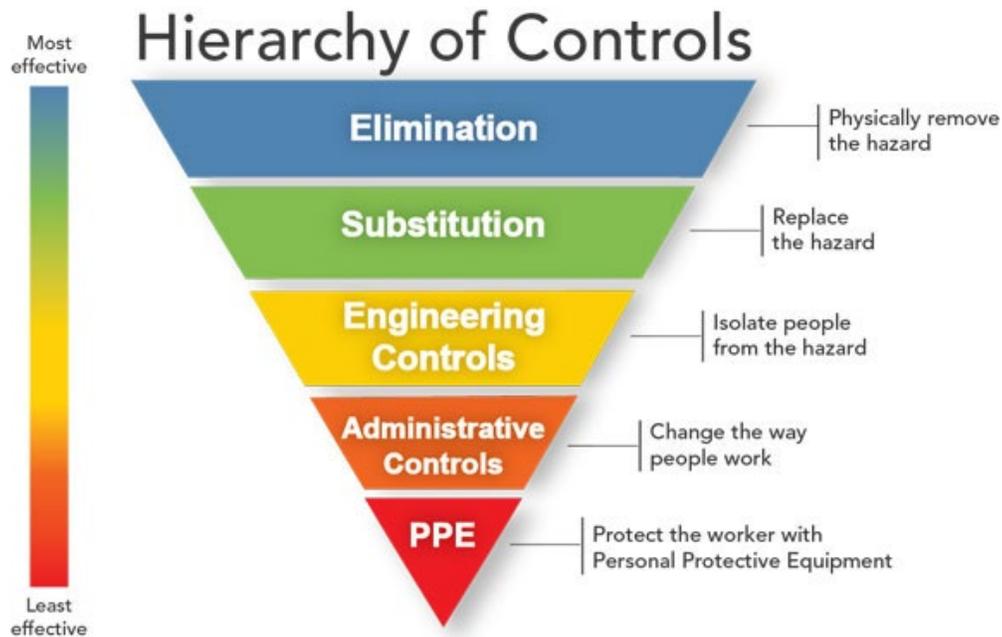
Risk Assessment Matrix

Severity	Consequence				Probability				
	People	Assets	Environment	Reputation	Not Done	Rarely	Once a Week	Several Times a Week	Multiple Times a Day
0	No health effect	No damage	No effect	No impact					
1	Slight health effect	Slight damage	Slight effect	Slight impact					
2	Minor health effect	Minor damage	Minor effect	Limited impact					
3	Major health effect	Localized damage	Localized effect	Considerable impact					
4	Single fatality	Major damage	Major effect	National impact					
5	Multiple fatalities	Extensive damage	Massive effect	Global impact					

Key	Manage for continuous improvement (Low)	Incorporate risk reduction measures (Medium)	Intolerable (High)
-----	-----------------------------------------	----------------------------------------------	--------------------



Risk Assessment



Risk Controls/Methods to Ensure Identified Hazards are Addressed and Mitigated

- Risk assessed hazards are addressed and mitigated through dedicated assignment, application of Hierarchy of Hazard Controls. No work will begin before the worksite assessment is completed. Additionally, no risk assessed as High (Intolerable) shall be performed.
- If existing or potential hazards to worker safety are identified during a hazard assessment Gartner Refrigeration Inc. must take measures to eliminate the hazard. If elimination is not an option, Gartner Refrigeration Inc. shall apply engineered controls to mitigate the hazard. If the hazard cannot be adequately controlled using engineering controls, Gartner Refrigeration Inc. must use administrative controls that will lower the hazard level as low as reasonably achievable. If the hazard cannot be adequately controlled using engineering and /or administrative controls, Gartner Refrigeration Inc. must ensure that the appropriate Personal protective equipment (PPE) is provided to and used by workers affected by the hazard. Gartner Refrigeration Inc. may use a combination of engineering controls, administrative controls, and personal protective equipment if there is a greater level of worker safety because a combination is used.



Risk Assessment

Emergency Control of Hazards

Only those employees competent and trained in responding to and correcting emergency controls of hazards may be exposed to the hazard and only the minimum number of competent employees may be exposed during hazard emergency control. An example would be responding to an ammonia leak, only employees trained in Emergency Ammonia Response shall respond, and only the minimum number of employees shall be exposed than is necessary to stop the leak.

Task Hazard Analysis (THA)

For those jobs with the highest injury or illness rates, jobs that are new to our operation, jobs that have undergone major changes in processes and procedures or jobs complex enough to require written instructions will have a Task Hazard Analysis performed prior to each shift. (this is the standard procedure for construction job sites)

Review Process

Existing worksite hazard identifications are formally reviewed annually or repeated at reasonable intervals to prevent the development of unsafe and unhealth working conditions and specifically updated when new tasks are to be performed that have not been risk assessed, when a work process or operation changes before the construction of a new site or when significant additions or alterations to a job site are made.

The respective supervisor or project manager advises the Safety Manager when additional hazards are introduced into the workplace in order to revise planning and assessment needs.

The Hazard/Risk Assessment program shall be reviewed to ensure no new hazards derived from the mitigation measures.

The review shall include the Safety Manager, Risk Manager, and Risk Owner

Training

All Gartner Refrigeration Inc. employees shall be trained in the details of Hazard/Risk Assessment program.

Employees shall be trained in the hazard identification process, including the use and care of PPE.

Employees on specific project will be informed of details of Site Assessment/Risk Analysis and mitigation plans.



Risk Assessment



TASK HAZARD ANALYSIS

Customer: _____ Job #: _____ Date: _____
 City, State: _____ Foreman: _____ Time: _____
 Description of work: _____

Temp & Conditions: _____ Start: _____ End: _____

YES	NO		YES	NO	
<input type="checkbox"/>	<input type="checkbox"/>	Hard hat, safety glasses, gloves, ear protection	<input type="checkbox"/>	<input type="checkbox"/>	Hi-viz vest
<input type="checkbox"/>	<input type="checkbox"/>	Fall protection inspected-harness & lanyard	<input type="checkbox"/>	<input type="checkbox"/>	Guards on all power tools
<input type="checkbox"/>	<input type="checkbox"/>	Face shield welding hood	<input type="checkbox"/>	<input type="checkbox"/>	GFCI outlet or big tail for electric cords
<input type="checkbox"/>	<input type="checkbox"/>	Respirator	<input type="checkbox"/>	<input type="checkbox"/>	Manlift, forklift – If yes, inspect and document
<input type="checkbox"/>	<input type="checkbox"/>	Inspect rigging	<input type="checkbox"/>	<input type="checkbox"/>	Barricades
<input type="checkbox"/>	<input type="checkbox"/>	Chain fall inspected	<input type="checkbox"/>	<input type="checkbox"/>	LOTO

Hot work / Grinding / Cutting / Welding / Open Flame (select one)
 List hot work start time: _____ End time: _____
 List special precautions: _____

YES	NO	
<input type="checkbox"/>	<input type="checkbox"/>	Fire extinguisher within 10ft. of hot work
<input type="checkbox"/>	<input type="checkbox"/>	Other trades on job site notified of hot work and duration
<input type="checkbox"/>	<input type="checkbox"/>	Fire watch List name: _____
<input type="checkbox"/>	<input type="checkbox"/>	Final check 30 minutes after completion of hot work List time: _____

JOBSITE: GET YOUR CREW TOGETHER – TAKE 5 MINUTES TO ASSESS THE JOB	
Look for and discuss obvious hazards and LIST HERE:	Mitigation (how will we handle it):

Foreman: _____ *Post Task Init.* _____ Other: _____ *Post Task Init.* _____
 Other: _____ *Post Task Init.* _____ Other: _____ *Post Task Init.* _____
 Other: _____ *Post Task Init.* _____ Other: _____ *Post Task Init.* _____
 Other: _____ *Post Task Init.* _____ Other: _____ *Post Task Init.* _____

Field Superintendent Sign: _____ *Post Task Init.* _____





Safety Incentive Program

Purpose

To recognize and encourage Safe Working Behavior, Safe Thinking, Safety Leadership, and participation in our Safety programs.

Scope

This program applies to all Gartner Refrigeration Inc. employees, and to all Gartner Refrigeration Inc. projects or work sites.

The Safety Incentive program is intended to promote safe work environments as monitored by the very people who perform the work.

Definitions

Near Miss Reporting – complete Incident Near Miss Report and submit to Safety Dept. for any incident that almost or could have resulted in an injury or serious property damage.

Stretch and Flex – participate in daily Stretch and Flex program and deliver the completed stretch and flex log to Safety Dept. weekly.

Correction Report – any email, text, or report with pictures showing and describing hazard and hazard correction delivered to Safety Dept.

Safety First Meeting – participate in weekly safety meetings, by signing into an existing meeting, or completing and returning an individual meeting to Safety Dept.

Responsibilities

The Program Administrator: Gartner Refrigeration Inc. Safety Manager

This person is responsible for: issuing and administering this program and making sure that it satisfies all applicable federal, state and local requirements. Maintaining training records for all employees included in the training sessions.

Employees:

Read & understand the elements of this program.



Safety Incentive Program

General

Gartner Refrigeration Safety Incentive Program is designed to recognize and encourage all employees to use their training to work Safely throughout each shift. Points can be earned by Reporting Near Miss Incidents, Correcting unsafe environments, or behaviors. Participating in Stretch and Flex session, participating in Weekly Safety-First Meetings, and daily THA completion. Incentive program will run from Jan 1st – Dec 31st of each calendar year.

- Employees are eligible for 1 Point per hour worked Incident.
- Stretch and Flex = 5 Points per full week participation.
- Weekly Safety-First Meeting participation = 5 Points per week.
- Daily THA Participation = 1 Point per day
- Near Miss Reports = 20 points.
- Correcting and unsafe environment or behavior = 20 Points.
- Leading a Safety Moment prior to meeting start = 5 Points.
- All employees involved in any incident will lose all points for that week.

Rewards:

- Persons collecting 190-220 points during a calendar month will receive \$25 for that month.
- Persons collecting 700 points total throughout the calendar quarter will receive \$100 for that calendar quarter.
- Persons collecting more than 700 points throughout the calendar quarter will receive \$125 for that calendar quarter.

Employees will be able to request their rewards Quarterly or Annually and will be given the choice of Gift Cards to Target, Cabela's, Mills Fleet Farm, or pre-paid Visa card.

Temporary employees who have worked 30 days or longer, can request their rewards upon lay-off.

Training

All Gartner Refrigeration Inc. employees shall receive Safety Incentive Program training prior to their initial project assignment.

The Training will be documented including employee name, dates of training and subject matter.



Stop Work Authority (SWA)

Purpose

The Stop Work Authority Process involves a Stop, Notify, Correct and Resume approach for the resolution of a perceived unsafe condition, act, error, omission, or lack of understanding that could result in an undesirable event. All Gartner Refrigeration Inc. employees have the authority and obligation to stop any task or operation where concerns or questions regarding the control of Health, Safety or Environmental risks exist.

Scope

This program applies to all Gartner Refrigeration Inc. employees, and to all Gartner Refrigeration Inc. projects or work sites.

The Stop Work Authority program is intended to promote safe work environments as monitored by the very people who perform the work, without the fear of retribution from the company or harassment from fellow workers. Any form of retribution or intimidation directed at any individual or company for exercising their right to issue a stop work authority will not be tolerated.

Once a Stop Work Condition has been issued, no work will resume until all stop work issues and concerns have been adequately addressed.

Definitions

Stop Work Condition – Includes any of the following conditions:

- Unsafe Act or Condition.
- A concern or question regarding the control of HSE risk exists.
- Any task or situation where you feel uncomfortable that HSE risk exists.

Unsafe Act - The actions of a person in a manner which vary from the accepted or legislated safe practice and create a hazard to themselves, another person, or equipment.

Unsafe Condition - A condition in which something exists that varies from a normal accepted safe condition and, if not corrected, could cause injury, death, or property damage.

Safety Suggestion – A thought, idea or procedure that may improve safety on the jobsite and is not related to any Stop Work Condition



Stop Work Authority (SWA)

Responsibilities

The Program Administrator: Gartner Refrigeration Inc. Safety Manager

This person is responsible for: Issuing and administering this program and making sure that it satisfies all applicable federal, state and local requirements. Create a culture where Stop Work Authority is exercised freely. Maintaining training records for all employees included in the training sessions.

Project Managers, Superintendents and Foremen:

These people are responsible for: Promoting a culture where Stop Work Authority is exercised and honored freely to resolve issues before operations resume and recognize proactive participation.

Employees:

Read & understand the elements of this policy

Initiate a Stop Work Intervention when warranted

General

When a Stop Work Condition is identified the Stop Work Intervention will be initiated, coordinated through the supervisor, initiated in a positive manner, notify all affected personnel and supervision of the stop work issue, correct the issue, and resume work when safe to do so.

It is the desired outcome of any Stop Work Intervention that the identified safety concern(s) have been addressed to the satisfaction of all involved persons prior to the resumption of work. Most issues can be adequately resolved in a timely manner at the job site, occasionally additional investigation and corrective actions may be required to identify and address root causes.

Methods of Compliance

Stop Work Intervention

- The employee informs the supervisor that work has been stopped and that a resolution of an immediate safety concern is necessary
- The supervisor and the employee(s) discuss the problem and develop an approach for a resolution. Involved personnel should obtain assistance if necessary, from Gartner Refrigeration Inc. Safety Department



Stop Work Authority (SWA)

The supervisor informs the employee(s) of the planned resolution, obtains agreement and the job is restarted

The employee(s) will update the Daily THA to reflect the changes

If the employee(s) and the supervisor cannot agree on the resolution of the problem, then the next level of supervision will be contacted.

If representatives from management and safety agree on a plan and the employee(s) still do not feel comfortable completing the task, then the employee(s) will be reassigned to other duties. There will be no repercussion for this action.

At the conclusion, the site supervisor will complete the Stop Work Authority Report.

Reporting & Recordkeeping

Stop Work Authority Report

All Stop Work Authority Conditions will have a Stop Work Authority Report

Stop Work Reports shall be documented by the site supervisor and recorded with the following information:

- Date of the Stop Work Intervention
- Employee(s) involved
- Description of event or perceived Stop Work Condition
- Corrective action including preventing future reoccurrence

Stop Work reports shall be reviewed by the V.P. of Construction and Service as well as the Director of Safety. This review must take place to measure participation, determine quality of interventions and follow-up, trend common issues, identify opportunities for improvement, and facilitate sharing of learnings.

Training

All Gartner Refrigeration Inc. employees shall receive Stop Work Authority training prior to their initial project assignment.

The Training will be documented including employee name, dates of training and subject matter.



Stop Work Authority (SWA)



STOP WORK AUTHORITY REPORT

|

STOP WORK INTERVENTION INFORMATION

Supervisor: _____
 Date of stop work: _____
 Customer name: _____
 Job number: _____
 Project name: _____

EMPLOYEE(S) INVOLVED INFORMATION

Supervisor: _____	Employee: _____
Employee: _____	Employee: _____
Employee: _____	Employee: _____
Employee: _____	Employee: _____
Employee: _____	Employee: _____

DESCRIPTION OF EVENT OR PERCEIVED STOP WORK CONDITON

CORRECTIVE ACTION INCLUDING PREVENTION OF REOCCURRENCE

MANAGEMENT EVALUATION

Participation: _____
 Quality of Intervention: _____
 Follow up: _____
 Lessons learned: _____

Submitted by: _____ Date: _____
 Reviewed by: _____ Date: _____



Fatigue Management

Purpose

Gartner Refrigeration Inc. recognizes that fatigue affects a person's health and wellbeing, increases the chance of illness and workplace injuries occurring, and reduces performance and productivity within the workplace.

The purpose of this policy is to highlight the effects and risks of employee fatigue, the shared responsibility to manage it appropriately, and the preventative actions that should be planned and taken to minimize associated risks.

Scope

This policy applies to all Gartner Refrigeration Inc. employees and sub-contractors at the work place or while carrying out activities on behalf of Gartner Refrigeration Inc. Including but not limited to:

- Employees who undertake significant driving and travel.
- Employees who are involved with shift work, extended hours, and on-call arrangements.
- Employees who work at Client facilities and other work sites.
- Employees who work at home office and warehouse.

Definitions

As this policy will influence decision-making and provide the basis for related strategies and actions, it is important that fatigue – as well as its symptoms, effects and remedies are clearly defined. It is normal to feel tired after prolonged mental or physical effort at work. Fatigue however is more than just feeling tired.

Fatigue: the loss of alertness and capacity to perform safely that results from insufficient sleep or poor-quality sleep, working at times when you would normally be asleep or engaging in mentally or physically demanding activities.

1. Fatigue can accumulate over time, and may be caused by:
 - Work-related factors such as; length of time worked, inadequate rest breaks and /or sleep, harsh environmental conditions.
 - Lifestyle factors such as; poor quality of sleep, family responsibilities, social life, commuting time to and from work.
 - A combination of both.



Fatigue Management

2. Signs of fatigue may include:
 - Headaches and /or dizziness
 - Difficulty keeping eyes open
 - Constant yawning
 - Muscle weakness
 - Lacking energy
3. Immediate effects of fatigue may include:
 - Lack of concentration
 - Reduced short-term memory
 - Increased errors
 - Slower reaction times
 - Impaired decision-making and judgment (including being unaware of being fatigued)
 - Reduced immune system function
4. Longer-term effects of fatigue may include:
 - High blood pressure and /or heart disease
 - Depression and/or anxiety
 - Diabetes and/or gastro-intestinal disorders

Sleep Cycles: Sleep; cycles are determined by the body's natural biological rhythms (Circadian Rhythms or the Body Clock), which are repeated every 24 hours. As well as regulating sleep cycles, biological rhythms also regulate body temperature, digestion and hormone levels.

- Studies show that 17 hours awake has a similar effect on the body as blood alcohol content of .05% and 24 hours awake is equivalent to a blood alcohol content of 1%.

Restorative Sleep: Sleep is the only effective long-term strategy to prevent and manage fatigue. Tired muscles can recover with rest, the brain can only recover with sleep. An adult generally requires seven to eight hours of sleep daily, taken in a single continuous period.

- When individuals get less sleep than they need in a day they build up a sleep deficit. Each additional day without enough sleep increases the deficit which, when it becomes large enough, causes fatigue. The only way to reduce or cancel a sleep deficit is by sleeping additional hours.

Extended Work hours: hours that are an extension of the standard working week, as a result of overtime, on-call arrangements or secondary employment.

Shift Work: work performed outside the hours between 6am and 6pm Monday - Friday



Fatigue Management

Policy

Gartner Refrigeration Inc. is committed to providing and maintaining fatigue awareness and management at all job site locations, Fab-shop, Warehouse, Office, Client Facility, and all other sites Gartner Refrigeration Inc. employees may report for assigned duties.

Many of Gartner Refrigeration Inc. operations take place outside of the ordinary working hours (6am-6pm) for on-call duty, extended work hours, and shift work. These working arrangements may contribute to fatigue if not managed appropriately by supervisors and employees.

Many activities outside of work can also cause or contribute to employees experiencing fatigue, such as medical conditions, sleep habits, and social activities.

While everyone doesn't respond to fatigue in the same way, fatigue can cause reduced concentration, impaired coordination, compromised judgement and slower reaction times, which ultimately increase the risk of incidents and injuries.

Gartner Refrigeration Inc. recognizes Fatigue as a work place hazard that affects its employee's ability to work safely. Fatigue must be identified and controlled.

- Identify possible causes of fatigue, keeping in mind that factors can be interrelated: long hours, concentrating for long periods of time without breaks, a lot of travel or driving, personal issues from outside the work place.
- Implement control measures that focus on the actual causes of fatigue and aim to eliminate or minimize that cause of fatigue at its source. Control measures must be tailored to the job site and employees experiencing fatigue. Some examples are:
 - Ensure workplaces are well-lit and ventilated
 - Using ergonomic equipment for repetitive tasks
 - Using lifts for heavy lifting or multiple, repetitive lifting
 - Ensure employees take adequate breaks
 - Provide information and training on fatigue management
 - Encourage employees to report any concerns they may have about work-related fatigue
 - Avoid work arrangements that provide incentives to work excessive hours
 - Ensure clear work processes and effective planning, eg plans to deal with workload changes due to absenteeism, staff on leave or seasonal work pressures.
 - Consider alternate options to travelling for face to face meetings



Fatigue Management

- Set up processes that enable the review of incidents, near misses, illnesses and other data such as absenteeism and staff turnover rates to see if they could be attributed to fatigue

Any controls put in place to control Fatigue must be analyzed and evaluated periodically to ensure they are in fact helping to reduce the risk related to fatigue.

Responsibilities

The Program Administrator: Gartner Refrigeration Inc. Safety Manager

Issuing and administering this program and making sure that it satisfies all applicable federal, state and local requirements.

Provides information, instruction and training about risks to health, safety or welfare of workers involved with shift work, extended hours and on-call arrangements. Maintaining training records for all employees included in the training sessions.

Project Managers, Superintendents:

Ensure systems of work that minimize the risk of fatigue – for example, reasonable roster, reasonable overtime practices and adequate recuperation between shifts.

Consult with workers when introducing shift work or new rostering systems.

Monitor workloads, work patterns and rostering arrangements to ensure workers are not placed at risk from fatigue.

Ensure the number of consecutive “on call” shifts takes into consideration “frequency” of all call outs to determine restrictions on consecutive shifts for each employee.

Establish shift changeover processes which fully acquaint incoming shift workers with current operating conditions.

Recognize that personal problems on and off the site can adversely affect safety performance.

Understand that employees have a need to balance the competing requirements of their jobs with their social and domestic responsibilities.

Foreman:

Provide information to new employees regarding the location of the workplace, type of work (for example shift work), the weather conditions and other site-specific hazards.



Fatigue Management

Provide opportunities for workers to obtain adequate breaks and rest from work.

Recognize that personal problems on and off site can adversely affect safety performance.

Be alert for signs of drowsiness on the job and insist that an in-shift break be taken when these are observed.

Be aware that the hours between midnight and 6:00 am, and the first night shift of a sequence may be particularly problematic for drowsiness.

Be alert for any unusual behavior which might indicate stress, chronic fatigue or personal problems.

Report and respond to any incidents and accidents arising from hazards associated with shift work.

Employees:

Read & Understand the elements of this policy

Participate in education and training to gain an understanding of fatigue.

Must report feeling fatigued or tired to their immediate supervisor if fatigue is impairing their ability to perform their assigned tasks safely.

Avoid behaviors that contribute to fatigue and which could place themselves and others at risk – for example, secondary employment or not using time off work to recuperate.

Must not chronically use over-the-counter or prescription drugs to increase mental alertness.

Are discouraged from taking any substance known to increase fatigue, including fatigue that sets in after the affects of the drug wear off.

Use breaks and time off from work to recuperate to be fit and able for the next shift.

Recognize signs of fatigue that could place the health, safety and well-being of themselves or others at risk and reporting this to their manager or supervisor.

Report all incidents and accidents arising from hazards associated with shift work.

Understand the implications of voluntarily seeking additional work hours, including secondary employment, that have the potential to increase risks to individual and organizational health and safety.



Fatigue Management

Reporting

All Near-Miss's, incidents, accidents, injuries related to Fatigue will be documented. Root causes of Fatigue will be tracked, and controls put in place on a case by case basis.

Training

All Gartner Refrigeration Inc. employees shall receive Fatigue Awareness training annually. The Training will be documented including employee name, dates of training and subject matter.



Driving Safety

Gartner Refrigeration & Mfg., Inc. has made a commitment of safety, service, and quality to both our employees and customers. Gartner Refrigeration & Mfg., Inc. mandates that our employees operate all vehicles owned by or used by Gartner Refrigeration & Mfg., Inc. in a safe and economical manner. Policy guidelines are summarized by the following:

1. Operate vehicles in a manner consistent with the Driving Policy of Gartner Refrigeration & Mfg., Inc.
2. Vehicles are not to be operated unless in a safe operating condition. Report vehicle defects and needed repairs to the Service Manager so necessary repairs can be made.
3. Vehicle selection shall be based on size and quantity of people and materials to be transported. Do not exceed manufacturer recommended weight limits.
4. Drivers must be physically and mentally able to drive safely.
5. Cell phone use is permitted while driving where state laws allow. It is highly recommended that a hands-free device be used while in operation of a company vehicle.
6. Ensure safe following distance from other drivers based on vehicle performance and loads.
7. Always limit distractions while driving, focus on the road and surrounding conditions.
8. Drivers must conform to all traffic laws with allowances made for adverse weather and traffic conditions.
9. All traffic violations received while operating the assigned vehicle will be paid by the employee.
10. Respect the rights of other drivers and pedestrians. **Courtesy is contagious.**
11. Drivers may not use drugs or alcohol while operating a vehicle owned by or used by Gartner Refrigeration & Mfg., Inc.

Accidents

All accidents are to be reported to the Office Manager or Safety Manager at Gartner Refrigeration & Mfg., Inc. within twenty-four (24) hours after the accident occurs. All accidents will be reviewed and determination made as either preventable or non-preventable. A preventable accident is defined as an accident in which the driver failed to do everything reasonably possible to avoid it.

Traffic Violations

All traffic violations obtained while operating company vehicles are to be reported to the Office Manager or Safety Manager at Gartner Refrigeration & Mfg., Inc. within twenty-four (24) hours after the incident has occurred. All traffic violations received while operating a company vehicle will be the responsibility of the employee who received the violation.

MVR Standards

Motor Vehicle Records (MVR) will be checked annually on all employees where driving is a part of their job description. The MVR will be reviewed to ascertain the employee holds a valid license and their driving record is within the parameters set by company management. MVR checks will reveal:

1. Three (3) or more traffic violations over a three (3) year period for drivers age 25 and older, two (2) traffic violations for drivers between ages of 18 and 25, or one (1) traffic violation for drivers 17 and under; or
2. One of the following type of traffic convictions:
 - Driving while intoxicated or while disabled by use of drugs
 - Refusal to take a breath analyzer test
 - Two or more preventable accidents in a twelve (12) month period
 - Fleeing the scene of an accident
 - Homicide or assault arising out of the operation of a motor vehicle, or criminal negligence in the operation of a motor vehicle resulting in death;
 - Driving while license is suspended or revoked
 - Reckless or dangerous driving which results in injury to a person
 - Racing
 - Passing a stopped school bus

May disqualify the employee from driving company operated vehicles, or those vehicles in the care and custody of Gartner Refrigeration & Mfg., Inc.

"Traffic violation" includes seat belt violation, but does not include such non-moving violations as weight violations or improper or inadequately maintained equipment.

The number of convictions "allowed" will be reduced by one for each at-fault accident of the particular driver.

Passengers

Specific permission must be obtained from Company management for any personal use of the vehicle.

Seat Belts

Seat belts must be worn by all occupants whenever the vehicle is in motion.

Securing Cargo

Cargo will be secured and all doors locked while enroute and while the vehicles are parked. Loads shall be secured in a neat and workman like fashion and not to exceed manufacturer recommended limits.



Stretch and Flex

Purpose

To instruct employees on the hazards associated with Musculoskeletal Injuries and how Stretching can help mitigate those hazards to better protect employees from musculoskeletal injuries. Thereby reducing injuries, increasing productivity, and enhancing employee moral and awareness of musculoskeletal injuries. This program will provide guidelines for employee training, identify situations and Risk Factors that have potential to cause a Musculoskeletal injury.

Scope

This policy applies to all Gartner Refrigeration Inc. Employees. When work is performed on a non-owned or operated site, the client facility policy shall take precedence, however this document shall be used when client facility doesn't have a program or client facility program is less stringent.

Responsibilities

The Program Administrator: Gartner Refrigeration Inc. Safety Manager

This person is responsible for: Issuing and administering this program and making sure that it satisfies all applicable federal, state and local requirements. Scheduling annual training and maintaining records for all employees included in the training sessions.

Project Managers, Supervisors, Department Heads, Superintendents and Foremen:

These people are responsible for: ensuring that all employees understand Stretch and Flex program and have time allotted each shift to participate with program requirements.

Ensure all personnel on project are aware of work that may expose them to Musculoskeletal injuries.

Ensure all employees comply with the Stretch and Flex Program requirements.



Stretch and Flex

Employees:

Attend any required Training.

Participate in Daily Stretching.

Keep ergonomic body position while performing work duties, rotating poor position jobs to limit exposure to Musculoskeletal Injuries.

Comply with Stretch and Flex requirements and direct any questions or concerns to their supervisor or Safety Manager.

General

Musculoskeletal Injuries: are soft tissue injuries to muscles, tendons, nerves, and joints commonly called Strains and Sprains (most involve the back). Experience has proven that soft tissue injuries can be reduced through proper physical conditioning and Stretching and Flexing. This program utilizes a short 10-15-minute routine of Stretching and Flexing muscles prior to each shift and or mid-way through your shift to prepare and keep your muscles ready for work and help prevent musculoskeletal injuries. Stretch and Flex program will also provide the following additional benefits to employees who participate, enhanced agility, balance, coordination, circulation, and flexibility along with reducing tension and stress.

- **Strain:** a stretching or tearing of muscle fibers. Caused by overuse, sports activities, a sudden movement, or exercise, or trying to lift an object that's too heavy. Symptoms of a Strain can include pain, tightness, swelling, tenderness, and inability to move the muscle very well.
- **Sprain:** a stretching or tearing of tendon and ligament tissue. Caused by sudden twisting, falling, or getting hit. Symptoms include pain, swelling, bruising, and inability to move or use the joint.

Sprain injuries can affect the back, neck, shoulder, elbow, wrist, legs, knees, and ankles. They are common and can develop from heavy lifting, awkward body positions, and or repetitive motions.

Muscle Strain injuries can occur suddenly from a one-time incident such as a slip, trip or fall, or they can develop over time from doing the same repetitive activity.

If symptoms are ignored and not treated promptly, they can progress into serious problems with persistent pain and inability to move limbs normally, affecting an employee's long-term quality of life, health, work, and recreational activities.



Stretch and Flex

Risk Factors for Musculoskeletal Injuries

Activities or situations that cause or contribute to musculoskeletal injuries can include but are not limited to:

- Forceful exertions during physical work, handling and lifting heavy loads.
- Awkward body positions, reaching down, reaching overhead, working in bent or folded positions.
- Repetitive movements, performing the same task over and over, or using certain types of tools.
- Personal Risk Factors, work style, age, physical conditioning, and any pre-existing injuries.

Methods of Mitigation

Stretching: spending 8-12 minutes prior to your shift start, and at regular intervals throughout your shift can effectively mitigate employee exposure to musculoskeletal injuries. Additionally, regular stretching will provide affected employees enhanced agility, balance, coordination, circulation, flexibility as well as providing a reduction in stress and tension.

- **Construction Crews / Service Technicians:** each shift gather crew together and complete all construction stretches together or individually prior to each shift and after lunch break.
- **Office Staff:** gather together in Departments or as individual's mid-morning and mid-afternoon and complete all Office stretches.
- **Traveling Employees:** stop at regular intervals during your travel (at least 2-3 times over a 10hr period) and complete all Traveler stretches.

All employees who complete stretches regularly and fill in their stretching log may submit completed log to Safety Dept. for incentive points.

Poor body position: when work is identified that requires employees to work in bad positions for long periods of time, employees shall at regular intervals stop, stand up, stretch, and move for 5 min before continuing. Or Foreman shall rotate employees at regular intervals.



Stretch and Flex

Ergonomic Assessments: office workers shall complete self-assessment to determine if any amendments or adjustments need to be made to your workstation or work positions to better prevent musculoskeletal injuries.

Training

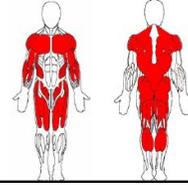
All Gartner Refrigeration Inc. employees shall be trained in musculoskeletal injury risk factors and Stretch and Flex program prior to initial work assignment.

The Training will be documented including employee name, dates of training and subject matter.

Stretch and Flex

STRETCHING

CONSTRUCTION WORKERS



⚠️ Consult a physician before starting any stretching regime. This chart is for informational purposes only.



NECK



SHOULDERS & UPPER BACK



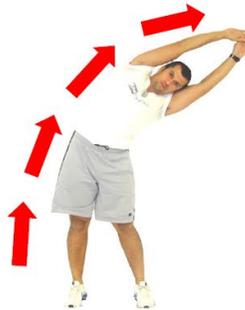
CHEST



BICEPS & FOREARMS



FULL BODY



OBLIQUES



HAMSTRINGS & LOW BACK



QUADRICEPS



CALVES



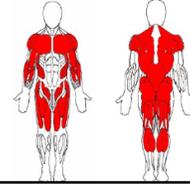
GROIN & ADDUCTORS

• Hold each stretch for 15-30 sec • Stretch slowly • Stop if you feel pain

Stretch and Flex

STRETCHING

CONSTRUCTION WORKERS



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NECK

Can be done standing or sitting. Place your left hand on top of your head and gently pull toward the left side. Pull the right hand down in the opposite direction until you feel a mild stretch on the side of the neck. Switch sides.



SHOULDERS & UPPER BACK

Interlock your fingers and extend both arms out as far as comfortably possible. Take a deep breath while stretching.



CHEST

Stand straight and place your hands on the back of your hips. Elbows pointing nearly backward. Gently push your hands forward until you feel a mild stretch across your chest.



BICEPS & FOREARMS

Extend the right arm down with the palm of the hand facing down and fingers pointing backward toward the body. Place the left hand underneath the palm of the right hand and slightly pull the fingers up to feel a slight stretch in the forearm area. Switch sides.



FULL BODY

While standing, extend both arms up as high as you can. Take a deep breath while stretching.

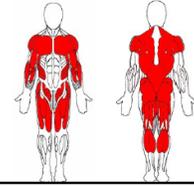
• Hold each stretch for 15-30 sec • Stretch slowly • Stop if you feel pain



Stretch and Flex

STRETCHING

CONSTRUCTION WORKERS



Consult a physician before starting any stretching regime. This chart is for informational purposes only.

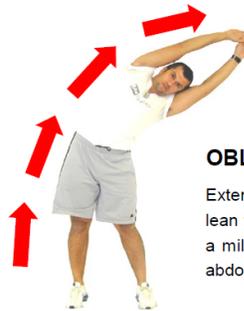
HAMSTRINGS & LOW BACK

Slowly lean forward while keeping the legs straight. Reach down as far as comfortably possible until you feel a mild stretch in the low back, butt, and hamstrings area.



OBLIQUES

Extend both arms up and slowly lean toward one side until you feel a mild stretch on the side of your abdominal area. Switch sides.



WALL

QUADRICEPS

Stand straight and place your left hand on a sturdy object (wall, door frame, etc.) Bend the right knee and bring your right foot back toward your hips. Use your right hand to help you feel a mild stretch in the front of your right thigh. Switch sides.



WALL

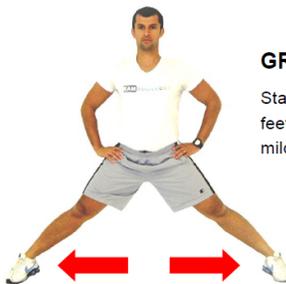
CALVES

Stand about 2-3 feet facing a sturdy object (wall, table, etc.) Take a step forward with the right foot. Keep toes pointing forward. Keep the back (left) knee straight and gently bend the front (right) knee until you feel a mild stretch in your left calf. Switch sides.



GROIN & ADDUCTORS

Stand with your legs straight and feet wide apart until you feel a mild stretch in the groin area.



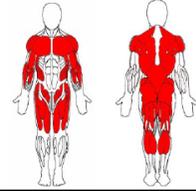
• Hold each stretch for 15-30 sec • Stretch slowly • Stop if you feel pain



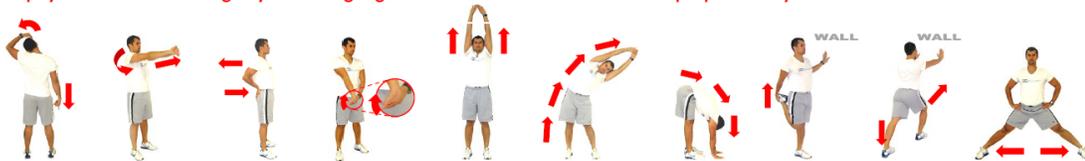
Stretch and Flex

STRETCHING LOG

CONSTRUCTION WORKERS



⚠️ Consult a physician before starting any stretching regime. This chart is for informational purposes only.



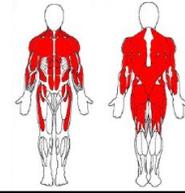
	Neck	Shoulders & Upper Back	Chest	Biceps & Forearms	Full Body	Obliques	Hamstrings & Low Back	Quadriceps	Calves	Groin & Adductors
Mon										
Tue										
Wed										
Thurs										
Fri										
Sat										
Sun										

Stretch daily • Hold each stretch for 15-30 sec • Stretch slowly • Stop if you feel pain

Stretch and Flex

STRETCHING

OFFICE



⚠️ Consult a physician before starting any stretching regime. This chart is for informational purposes only.



GLUTES & LOW BACK



GLUTES & ABDUCTORS



GLUTES & ABDUCTORS



GLUTES & ABDUCTORS



BICEPS & FOREARMS



BACK & LATS



OBLIQUES



SHOULDERS & UPPER BACK



NECK



TRICEPS



SHOULDERS & CHEST



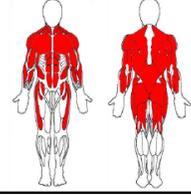
FULL BODY

• Hold each stretch for 15-30 sec • Stretch slowly • Stop if you feel pain

Stretch and Flex

STRETCHING

OFFICE



Consult a physician before starting any stretching regime. This chart is for informational purposes only.



GLUTES & LOW BACK

Sit down and separate your leg. Gently lean forward while keeping back straight until you feel a mild stretch in the buttocks and hamstrings area.



GLUTES & ABDUCTORS

Sit down and cross your right leg by placing the right ankle on top of the left knee. Gently lean forward while keeping back straight until you feel a mild stretch in the buttocks and outer thigh area. Switch sides.



GLUTES & ABDUCTORS

Sit down and cross your right leg by placing the right ankle on top of the left knee. Place your hands below your right knee and foot and gently pull up while keeping back straight until you feel a mild stretch in the buttocks and outer thigh area. Switch sides.



GLUTES & ABDUCTORS

Cross your right leg over the left leg. Place your left hand over the right leg. Turn your upper body to the right and place your right hand behind the chair to help with the stretch. Using your left hand, pull the right knee to the left while the right hand helps your upper body turn to the right. Switch sides.



BICEPS & FOREARMS

Place both hands palms down on a low and stable surface (like a chair.) Turn fingers toward the body. Gently lean forward until you feel a mild stretch in the forearms area.



BACK & LATS

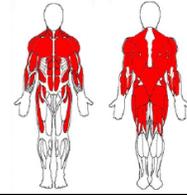
Place both hands on a sturdy object that's hip-level high (back of a chair, fence, table, etc.) Bend upper body down until almost parallel to the floor.

• Hold each stretch for 15-30 sec • Stretch slowly • Stop if you feel pain

Stretch and Flex

STRETCHING

OFFICE



Consult a physician before starting any stretching regime. This chart is for informational purposes only.



TRICEPS

Place the right hand behind your neck with the right elbow pointing up toward the ceiling. Extend left hand across and slightly push the right elbow backward until you feel a mild stretch in the triceps area. Switch sides.



OBLIQUES

Extend both arms up and slowly lean toward one side until you feel a mild stretch on the side of your abdominal area. Switch sides.



NECK

Can be done standing or sitting. Place your left hand on top of your head and gently pull toward the left side. Pull the right hand down in the opposite direction until you feel a mild stretch on the side of the neck. Switch sides.



FULL BODY

While standing, extend both arms up as high as you can. Take a deep breath while stretching.



SHOULDERS & UPPER BACK

Interlock your fingers and extend both arms out as far as comfortably possible. Take a deep breath while stretching.



SHOULDERS & CHEST

Stand straight and place your hands on the back of your hips. Elbows pointing nearly backward. Gently push your hands forward until you feel a mild stretch across your chest.

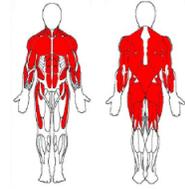
• Hold each stretch for 15-30 sec • Stretch slowly • Stop if you feel pain



Stretch and Flex

STRETCHING LOG

OFFICE



⚠️ Consult a physician before starting any stretching regime. This chart is for informational purposes only.



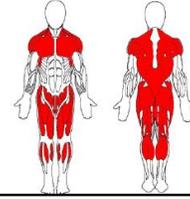
	Glutes & Low Back	Glutes & Abductors	Glutes & Abductors	Glutes & Abductors	Biceps & Forearms	Back & Lats	Obliques	Shoulders & Upper Back	Neck	Triceps	Shoulders & Chest	Full Body
Mon												
Tue												
Wed												
Thurs												
Fri												
Sat												
Sun												

Stretch daily • Hold each stretch for 15-30 sec • Stretch slowly • Stop if you feel pain

Stretch and Flex

STRETCHING

TRAVELERS



⚠️ Consult a physician before starting any stretching regime. This chart is for informational purposes only.



NECK



NECK



NECK & SHOULDERS



SHOULDERS & CHEST



SHOULDERS & UPPER BACK



CALVES



QUADRICEPS



FULL BODY



BACK & LATS



GLUTES, HAMSTRINGS & LOW BACK



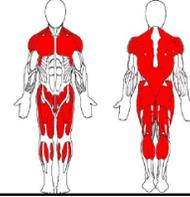
GLUTES & ABDUCTORS

• Hold each stretch for 15-30 sec • Stretch slowly • Stop if you feel pain

Stretch and Flex

STRETCHING

TRAVELERS



 Consult a physician before starting any stretching regime. This chart is for informational purposes only.



NECK

Grab your right hand behind your back and gently pull towards the left while tilting your head left as well. Switch sides.



NECK

Interlock your fingers behind your head. Gently pull your head down until your chin touches the top of your chest. Take a deep breath while stretching.



NECK & SHOULDERS

Interlock your fingers behind your head and gently pull your elbows backward until you feel a mild tension between the shoulder blades.



SHOULDERS & CHEST

Stand straight and place your hands on the back of your hips. Elbows pointing nearly backward. Gently push your hands forward until you feel a mild stretch across your chest.



SHOULDERS & UPPER BACK

Interlock your fingers and extend both arms out as far as comfortably possible. Take a deep breath while stretching.



CALVES

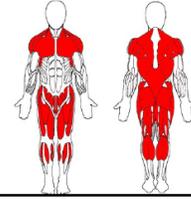
Stand about 2-3 feet facing a sturdy object (wall, table, etc.) Take a step forward with the right foot. Keep toes pointing forward. Keep the back (left) knee straight and gently bend the front (right) knee until you feel a mild stretch in your left calf. Switch sides.

• Hold each stretch for 15-30 sec • Stretch slowly • Stop if you feel pain

Stretch and Flex

STRETCHING

TRAVELERS



 Consult a physician before starting any stretching regime. This chart is for informational purposes only.

WALL



QUADRICEPS

Stand straight and place your left hand on a sturdy object (wall, door frame, etc.) Bend the right knee and bring your right foot back toward your hips. Use your right hand to help you feel a mild stretch in the front of your right thigh. Switch sides.



FULL BODY

While standing, extend both arms up as high as you can. Take a deep breath while stretching.



GLUTES, HAMSTRINGS & LOW BACK

Sit down and separate your leg. Gently lean forward while keeping back straight until you feel a mild stretch in the buttocks and hamstrings area.



BACK & LATS

Place both hands on a sturdy object that's hip-level high (back of a chair, fence, table, etc.) Bend upper body down until almost parallel to the floor.



GLUTES & ABDUCTORS

Sit down and cross your right leg by placing the right ankle on top of the left knee. Gently lean forward while keeping back straight until you feel a mild stretch in the buttocks and outer thigh area. Switch sides.

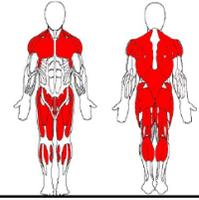
• Hold each stretch for 15-30 sec • Stretch slowly • Stop if you feel pain



Stretch and Flex

STRETCHING LOG

TRAVELERS



⚠️ Consult a physician before starting any stretching regime. This chart is for informational purposes only.



	Neck	Neck	Neck & Shoulders	Shoulders & Chest	Shoulders & Upper Back	Calves	Quadriceps	Full Body	Back & Lats	Glutes, Hamstrings & Low Back	Glutes & Abductors
Mon											
Tue											
Wed											
Thurs											
Fri											
Sat											
Sun											

• Hold each stretch for 15-30 sec • Stretch slowly • Stop if you feel pain



Return to Work/Light Duty Program

Gartner Refrigeration would like all employees that have been injured on the job to return to work as soon as possible. This will minimize lost time and income for the employee and reduce Workers Compensation Insurance premiums and overhead costs for Gartner Refrigeration. In order to reach this goal, the following steps will be taken.

First Report of Injury

- a. The "First Report of Injury" form will be completed by the employee and turned in to Rob Machetta within 24 hours so that it can be forwarded to our insurance carrier in a timely manner.
- b. The "Supervisor's Report of Occupational Injury or Illness" form will be completed by the injured employee's supervisor and turned in to Rob Machetta. Any possible follow up action will be taken to educate employees on unsafe acts and conditions and to avoid future injuries.
- c. The "Return to Work Authorization" form will be required from the employees' physician and returned to Julie Malek.

Return to Work

- a. When the "Return to Work Authorization" form is received from the employee's physician, the work restrictions will be evaluated.
- b. When the physician has authorized a return to work, duties will be assigned to the injured employee that comply with any physical restrictions or time limits.
- c. Possible light duty positions include, but are not limited to: inventory maintenance, small tool repair and shop maintenance. Office employees may be given light clerical duties or phone work.
- d. Upon the physician's approval, the employee will return to full duties at his regular position.



Accident Investigation Program

Purpose

Accident prevention and control of hazards is the result of a well-designed and executed safety and health program. One of the keys to a successful program includes unbiased, prompt, and accurate accident investigations. The basic purpose of these investigations is to determine measures that can be taken to prevent similar accidents in the future. This chapter addresses:

1. Company Policy
2. Responsibilities
3. Hazard Control
4. Role of Supervisors
5. Investigation Procedures
6. Lessons Learned

Policy

It is the policy of Gartner Refrigeration, Inc. that investigation of all work-related accidents, injuries and illnesses are to be conducted in a professional manner to identify probable causes and are used to develop specific management actions for the prevention of future accidents. All accidents are considered severe and will be reviewed thoroughly to determine the root cause and corrective actions will be implemented to reduce the risk of repeating the incident in the future. All employees will be trained specific to their responsibilities during an accident investigation as well as given an orientation on the equipment needed to complete a thorough investigation.

Responsibilities

Safety Director/Project Management

- Conduct accident prevention and investigation training for supervisors
- Ensure all accidents and injuries are properly investigated
- Ensure immediate and long-term corrective actions are taken to prevent reoccurrence
- Maintain Accident Reports permanently on file
- Ensure proper entries are made on the OSHA 300 Log and First Report of Injury
- Provide all necessary medical care for injured workers
- Notify applicable regulatory agencies within specified time limits (8 hours for regulatory agencies and 24 hours for facility/client)

Supervisors

- Conduct immediate initial accident investigations
- Report all accidents to the safety director as soon after the event as possible, maximum of 24-hours
- Collect and preserve all evidence that may be useful in an investigation
- Conduct interviews of witnesses in a polite professional manner, individual if possible
- Do not attempt to find or assign blame for accidents
- Take action to protect people and property from secondary effects of accidents

Employees

- Immediately report all accidents & injuries to their supervisor
- Assist as requested in all accident investigations
- Report all first aids, hazardous conditions, and near-misses to supervisors

Hazard Control

Engineering Controls - There are numerous engineered safeguards throughout the company used to protect employees and prevent exposure to hazards. Examples of engineering controls are machine guards, safety controls, isolation of hazardous areas, monitoring devices, etc. Specific engineering controls are addressed in other chapters of the company safety manual and in equipment and process procedures.

Administrative Controls - These controls involve the use of procedures, assessments, inspection, records to monitor and ensure safe practices and environments are maintained. Other administrative controls are in place to identify new hazards and implement corrective action. Examples of administrative controls are periodic inspections, equipment operating and maintenance procedures, hazard analysis, selection, and assignment of personal protective equipment, etc.

Training Controls - This aspect of hazard control is used to ensure employees are fully and adequately trained to safely perform all tasks to which they are assigned. No employee is to attempt any task without proper training in the equipment used, required personal protective equipment, specific hazards and their control and emergency procedures. Examples of training controls are initial new hire safety orientation, job specific safety training and periodic refresher training.

Supervisor Involvement

In most cases, the immediate area supervisor will conduct the initial phase of an accident investigation. This initial activity is primarily a recording of facts involved in the accident, list of affected employees and witnesses. Direct supervisors are familiar with employee's

work environment & assigned tasks. Supervisors must take the accident situation under control and immediately eliminate or control hazards to others.

Immediate Steps

1. Provide First Aid for any injured persons.
2. Eliminate or control hazards
3. Document accident scene information to determine the cause
4. Interview witnesses immediately, obtain a signed account of the incident from witnesses

Accident Prevention

Accidents are usually complex. An accident may have 10 or more events that can be causes. A detailed analysis of an accident will normally reveal three cause levels: basic, indirect, and direct. At the lowest level, an accident results only when a person or object receives an amount of energy or hazardous material that cannot be absorbed safely. This energy or hazardous material is the **DIRECT CAUSE** of the accident. The direct cause is usually the result of one or more unsafe acts or unsafe conditions, or both. Unsafe acts and conditions are the **INDIRECT CAUSES** or symptoms. In turn, indirect causes are usually traceable to poor management policies and decisions, or to personal or environmental factors. These are the **BASIC CAUSES**. Most accidents are preventable by eliminating one or more causes. Accident investigations determine not only what happened, but also how and why. The information gained from these investigations can prevent recurrence of similar or perhaps more disastrous accidents. Accident investigators are interested in each event as well as in the sequence of events that led to an accident. The accident type is also important to the investigator. The recurrence of accidents of a particular type or those with common causes shows areas needing special accident prevention emphasis.

Initial Investigation Procedures

The initial investigation has three purposes:

1. Prevent further possible injury and property damage
2. Collect facts about the accident
3. Collect and preserve evidence

Steps

1. Secure the area. Do not disturb the scene unless a hazard exists.
2. Prepare the necessary sketches and photographs. Label each carefully and keep accurate records.
3. Interview each victim and witness. Also interview those who were present before the accident and those who arrived at the site shortly after the accident. Keep accurate records of each interview. Use a tape recorder if desired and if approved. Obtain individual signed witness statements that describe the event in the eyes of the witness.

Determine

1. What was not normal before the accident.
2. Where the abnormality occurred.
3. When it was first noted.
4. How it occurred.

Follow-up Accident Investigation

The follow-up investigation is used to analyze data and determine the causes and corrective actions necessary to prevent reoccurrence.

Steps

1. Analyze the data obtained in the initial investigation
2. Repeat any of the prior steps, if necessary.
3. Determine
 - a. Why the accident occurred.
 - b. A likely sequence of events and probable causes (direct, indirect, basic).
4. Determine the most likely causes.
5. Conduct a post-investigation briefing.
6. Prepare a summary report, including the recommended actions to prevent a recurrence.

An investigation is not complete until all data are analyzed, and a final report is completed. In practice, the investigative work, data analysis, and report preparation proceed simultaneously throughout the investigation process.

Lessons Learned

Upon completion of the incident report, all employees will receive a copy of the root cause analysis. Corrective actions will be implemented to reduce the risk of repeating the accident in future work activities.



Safety Rules

All employees, contractors and visitors working in or upon Gartner Refrigeration and/or Customer's premises must follow these safety rules.

1. No employee shall remove or modify any protective guards on any machinery without prior approval of the employee's immediate supervisor. Violation of this rule could mean immediate dismissal.
2. No open-style shoes, such as sandals or thongs, are allowed. Shoes must cover the entire foot.
3. All aisle ways should be always kept clear
4. The style of dress should be appropriate to performance of the job.
5. No smoking is allowed in certain designated areas
6. Approved safety glasses or eye/face protection, must be worn at all times when cutting, grinding, drilling, or using hammer, everywhere beyond the office area.
7. The following are prohibited on plant property, including roads and parking lots:
 - a. Fighting
 - b. Horseplay
 - c. Consuming and/or being under the influence of intoxicants or illicit drugs.
 - d. Riding or standing on carriers, conveyors, buggies, hand trucks and motorized equipment, other than those designed for riding or stand on purposes.
 - e. Running (except in case of fire, imminent danger, and recreational activities in designated areas).
8. Hearing protection is required when working in compressor rooms or in areas designated by signs.
9. Hard hats must be worn:
 - a. On all construction jobs
 - b. In overhead crane areas
10. Ladders must be secured carefully at start of work.
11. A Personal Fall Arrest must be worn whenever working 6 or more feet from the ground or other working surface, when other Fall Protection System are not used.
12. All fork truck drivers must successfully complete training and obey basic RULES for fork truck use (no speeding, no riders, etc.).
13. No smoking in designated "No Smoking" areas, hazardous waste transport vehicles or around flammable materials or solvents.
14. Fire extinguishers must be located near all work areas.
15. No eating in process or laboratory areas.
16. Firearms, ammunition, and other explosive items are prohibited within all workareas.
17. Proper respiration protection equipment must be worn when the 8 hours' Time-Weighted-Average (TWA), for the exposed chemical, is greater than the NIOSH exposure limit for that chemical.
 - a. Ammonia parts per million (ppm) levels (35 ppm) must be checked with Personal NH₃ monitor worn anytime you may have exposure to NH₃.
 - b. The type of respirator equipment must be certified for the exposed to.
 - c. At concentrations less than the "Permissible Exposure Level" (PEL) set by NIOSH no respiratory equipment would be necessary.

- d. If ammonia smell is noted when using a respirator, check the respirator for proper fit and check for proper filter. If ammonia odor is still present, DO NOT use the respirator.
 - e. If ammonia ppm levels over 300 ppm (IDLH) a SCBA (Self Contained Breathing Apparatus) at 900ppm a Level A Hazmat suit is required as well as a response team.
18. "Confined Space" entry permits are required for personnel to work inside tanks or covered sumps. Only trained personnel may enter confined spaces.
 19. No personnel are allowed on the truck dock floor when trucks are backing in without first sealing off and marking the area.
 20. "Work in Process" areas must be cordoned off or denoted with signs or cones.
 21. Identify contents of all liquid / chemical containers, including personal drinking utensils.
 22. Barricade or clean up and/or post appropriate warnings for all spills, leaks of liquids or lubricants on floor, loose materials, and/or suspended loads.
 23. Lockout switches must be used only for maintenance, not control. Only personnel who have been trained and verified on the safe operation of high-energy breakers and switches are authorized to operate them.
 24. Procedures specified in the lock-out/tag-out policy must be followed.
 25. All accidents and/or injuries must be reported immediately to your supervisor.
 26. Never block access to safety showers, exits, electrical switches and fire and emergency equipment.
 27. Employees are responsible for the proper maintenance and storage of personal protective gear.
 28. For automobile travel on company business, seat belts must be worn; also use shoulder harness, if installed.
 29. Employees are responsible for adhering to all safety regulations specified in the Gartner and/or MCA (Mechanical Contractors Association) Employee Training Manual.
 30. The following information shall be posted at construction job site:
 - a. Job Safety and Health Protection
 - b. Emergency Telephone Numbers



BLOODBORNE PATHOGENS

In the construction, refrigeration industry, we may be exposed to bloodborne pathogens when someone gets cut or injured.

The injured person needs to be attended to by health care personnel. However, you need the following information when you are performing primary assistance.

OSHA's Bloodborne Pathogens standard 1910.1030 uses the term "universal precautions" as an approach to infection control specifically relating to blood and other body fluids that have the potential to contain hazardous pathogens. These are the kind of exposures that most commonly occur in general work-place settings.

All employees will have access to a copy of the exposure control plan.

Universal Precautions

Universal precautions apply to blood, other body fluids containing visible blood, semen, and vaginal secretions. Universal precautions involve the use of protective barriers such as gloves, aprons, masks, or protective eyewear, which can reduce the risk of exposure. All surfaces that come into contact with blood or other infectious materials will be cleaned and sterilized properly.

Bloodborne pathogens can enter your body through cuts on your hands, eyes, and mouth easily.

Hand washing facilities will be readily available at all work location or antiseptic solutions or towelettes will be available for use.

Treat blood spills with caution; wear personal protective barriers (PPB) when exposed to blood. PPB materials will be provided to employees at no charge.

Personal Protective Barriers (PPB)

1. Rubber/latex gloves
2. Face shield and glasses
3. Aprons
4. Masks

Dispose of contaminated material and equipment properly in an approved medical disposal area (Inquire at the First Aid Center at your location).

1. Wrap contaminated material in place bags before disposal.
2. Wash hand thoroughly with approved hand sanitizer or rubbing alcohol.

Medical Records and Vaccinations

1. Hepatitis B Vaccine will be made available to all employees with occupational exposure at no cost to the employee.
2. Medical records for employees will be kept for the duration of the employee plus 30 years.

Training:

1. Training is to be completed at initial hire and again within 1 year of the previous training.
2. Training shall be documented and kept for no less than 3 years



Emergency/First Aid Procedures

Site Evacuation

In the event of a worksite evacuation, a **RALLY POINT** (meeting area) shall be determined before work begins. The **RALLY POINT** shall be an area that is known by all personnel and shall be an area that is free from any foreseeable hazards.

Customers escape routes should be presented to each crew member at the start of each job.

The worksite lead person will conduct a physical accountability (head count) at the **RALLY POINT** of all workers to ensure no workers are unaccounted for. In any workers are unaccounted for, this information shall be relayed to the emergency responders as soon as possible.

Fire

- Obtain appropriate emergency equipment or services as required by the nature of the fire.
- Determine if the site must be evacuated. If an evacuation is necessary, have all workers meet at the **RALLY POINT**.
- Coordinate site access for emergency response personnel. Inform the fire department of the nature of the fire and of any known hazards, which they may encounter such as:
 - compressed fuel gas tanks,
 - unprotected floor openings, or
 - toxic materials present on site.
- Inform the fire department if any individuals are unaccounted for, give the last known location of the individuals to fire rescue personnel.
- Secure fire area. Close off job site if necessary.
- Arrange for monitoring of accident site or damaged equipment until a remedial action plan is developed.

Property Damage/ Collapse

- Determine if the site must be evacuated. If an evacuation is necessary, have all workers meet at the **RALLY POINT**.
 - Secure collapsed area or damaged equipment, and close off job site if necessary.
 - Report details of event and damage assessment to worksite lead person.
 - Arrange for monitoring of accident site or damaged equipment until remedial action plan is developed.
 - Refer all inquiries for information to Lead Person.

After remedial action plan is developed and approved by senior management, assure requirements are completed expeditiously

Severe Weather

The worksite lead person will monitor the weather and will immediately inform all workers and contractors if any danger is present, an announcement is made, or local sirens are heard. If no alarm is heard the worksite lead person will make the decision as to whether work shall proceed.

Hazardous Materials Release

- Determine the nature and source of the hazard. Obtain appropriate emergency services as required.
- Determine prevailing wind direction and evacuate all personnel upwind of the hazard if necessary.
- Conduct physical accountability (head count) at RALLY POINT of all employees to ensure no personnel are missing
- Inform fire department or other agency rescue personnel of the type of hazard before they attempt a rescue effort
- Reroute traffic to avoid the contaminated area.
- Secure accident area until the hazard is eliminated. Close off job site if necessary.
- Coordinate and conduct additional safety training regarding potential hazards present on site.

Emergency Services / First Aid

Prior to commencement of a project, emergency services (911) must be available. If emergency services are not available.

- A person who has a valid certification in First Aid Training from the U.S. Bureau of Mines, the American Red Cross, or equivalent training shall be at the worksites. The training will be verified by documentary evidence.
- The locations of First Aid Kits and emergency phone numbers (physicians, hospital and ambulances services) shall be clearly marked, and employees shall be knowledgeable of the whereabouts.
- First Aid Kits shall be readily accessible and regularly inspected and consist of the following supplies at a minimum:
 - 25 - 3/4" x 3" Adhesive plastic bandages
 - 3 - 1 3/4" x 3" Large fingertip fabric bandages
 - 2 - 1 1/2" x 3" Knuckle fabric bandages
 - 1 - 36" x 36" x 51" Triangular sling/bandage, with 2 safety pins
 - 6 - 2" x 2" Gauze dressing pads
 - 1 - 2" x 4.1 yd. Conforming gauze roll bandage
 - 1 - 5" x 9" Trauma pad
 - 1 - Sterile eye pad
 - 12 - Antiseptic Cleansing Wipes (sting-free)
 - 6 - Triple antibiotic ointment packs
 - 3 - Insect sting relief pads
 - 1 - Eye wash, 4 oz.
 - 1 - 4" x 5" Instant cold compress
 - 1 - 1/2" x 5 yd. First aid tape roll
 - 1 - 4 1/2" Scissors, nickel plated
 - 1 - 4" Tweezers, plastic
 - 2 - Exam quality gloves, 1 Pair

If any injury required more than first aid, trained medical personnel shall provide transportation.

Eye-Washing Station

A 15-minute eye-flush station shall be available when working with corrosive chemicals or materials.

Emergency Measures

Every plant, warehouse, office or other facility is susceptible to emergency situations that can result in property damage and/or bodily harm to employees, visitors or even neighbors. An entity using ammonia bears responsibility for the development and implementation of comprehensive and effective plans designed to meet these situations in a manner as will protect the safety of human life, physical assets and the environment to the greatest degree practicable within the constraints of governmental regulations and prudent business practice.

APPENDIX A

EMERGENCY NUMBERS

COMPANY NAME

ADDRESS

AMBULANCE **911**

HOSPITAL

DOCTOR

FIRE DEPARTMENT **911**

POLICE **911**

GAS COMPANY

POISON CONTROL CENTER

POLLUTION CONTROL

ELECTRIC COMPANY

WEATHER FORECAST

APPENDIX B
PERSONNEL LIST

Please type or print legibly

List in order they are to be called.

Title	Name	Home Telephone Number

APPENDIX C

FEDERAL OSHA 29 CFR PART 1904.8

□ **Standard Number: 1904.8**

□ **Standard Title: Reporting of fatality or multiple hospitalization incidents**

- (a) Within 8 hours after the death of any employee from a work-related incident or the in-patient hospitalization of three or more employees as a result of a work-related incident, the employer of any employees so affected shall orally report the fatality/multiple hospitalization by telephone or in person to the Area Office of the Occupational Safety and Health Administration (OSHA), U.S. Department of
- (b) Labor, that is nearest to the site of the incident, or by using the OSHA toll-free central telephone number.
- (c) This requirement applies to each such fatality or hospitalization of three or more employees which occurs within thirty (30) days of an incident.
- (d) Exception: If the employer does not learn of a reportable incident at the time, it occurs and the incident would otherwise be reported, under paragraphs (a) and (b) of this section, the employer shall make the report within 8 hours of the time the incident is reported to any agent or employee of the employer.
- (e) Each report required by this section shall relate the following information: Establishment name, location of incident, time of the incident, number of fatalities or hospitalized employees, contact person, phone number, and a brief description of the incident.

MNOSHA Chapter 182 5210.0680

□ **Standard Number 5210.0680**

□ **Standard Title: Reporting of fatality or multiple hospitalization incidents**

Subpart 1. **When and where to report.** Within eight hours after the death of any employee from a work-related incident or the inpatient hospitalization of three or more employees as a result of a work-related incident, the employer of any employees so affected shall orally report the fatality or multiple hospitalization by telephone or in person to any Minnesota Department of Labor and Industry, Occupational Safety and Health Division (Minnesota OSHA) office. After normal business hours and on Saturdays, Sundays, and state holidays, the report shall be made within the eight-hour time period by using the federal Occupational Safety and Health Administration (federal OSHA). United States Department of Labor, toll free central telephone number (1-800-321-OSHA (6742)).

Subpart. 2. **Application.** The reporting requirement specified in subpart 1 also applies to an employment incident which is not immediately reportable but within 30 days of the occurrence of the incident subsequently results in a death or hospitalization of three or more employees.

Subpart. 3. **Exception.** If the employer does not learn of a reportable incident at the time, it occurs and the incident would otherwise be reportable under subparts 1 and 2, the employer shall make the report within eight

hours of the time the incident is reported to any agent or employee of the employer. Subpart. 4.

Report contents. Each report required by this part shall include the following information:

- A. Establishment name.
- B. Location of the incident.
- C. Time of the incident.
- D. Number of fatalities or hospitalized employees.
- E. Name and telephone number of a contact person; and
- F. A brief description of the incident



Communicable Disease (COVID-19) Policy

Purpose

The Communicable Disease Policy provides the employees of Gartner Refrigeration Inc. knowledge about communicable diseases, including COVID-19, as well as outlines the federal and state guidelines for recommended actions that will be used to protect our employees and clients. This policy will continue to be updated as needed in response to changing recommendations from state and federal organizations.

Our first responsibility is the protection of our employees and their families, as well as keeping our work force healthy and able to work. As with the transmission of any communicable disease like a cold, influenza or norovirus, employees may be exposed to COVID-19 at any time, or in any place. Despite our careful attention to sterilization, disinfection, and social distancing, employees may still be exposed to illness, just as you might be at your local gas station, grocery store, bank, or restaurant.

Scope

Gartner Refrigeration directly supports the United States food supply chain, making all employees part of critical infrastructure, allowing us to continue to meet the needs of our clients as they work to feed our nation. This policy applies to all Gartner Refrigeration Inc. employees, facilities, jobsites, and visitors and follows industry guidance developed by federal Centers for Disease Control (CDC) and Minnesota Department of Health (MDH), and the statutes, rules and standards from the Minnesota Occupational Safety and Health Administration (MNOSHA) and federal OSHA governing bodies.

Responsibility

Gartner Refrigeration's Safety Director shall be responsible to keep this policy updated and in compliance with local, state, and federal laws. The Safety Director shall also be responsible to ensure training of all Gartner employees and will communicate changes/update that arise after the initial training. Safety Director shall review this policy on an annual basis to ensure compliance and readiness for future pandemics and will conduct annual illness prevention training covering all methods used to avoid disease transmission.

After governing authorities declare an end to a pandemic, Gartner Refrigeration Safety Committee shall review all data from during pandemic, including employee interviews, for lessons to be learned. Safety Director shall update Pandemic Policy with lessons learned and retrain all employees.



Communicable Disease (COVID-19) Policy

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Communicable Disease (COVID-19) Policy

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What is COVID-19?

COVID-19 is a viral respiratory illness caused by a novel coronavirus. Because this is a new virus, the authoritative guidance from state and federal agencies continues to evolve; therefore, this policy will be updated as information changes.

Symptoms of COVID-19

People with COVID-19 have had a wide range of symptoms reported – ranging from mild symptoms to severe illness. Most people have mild or moderate illness, not requiring a clinic visit or hospitalization.

- Symptoms of COVID-19 can include fever, cough, shortness of breath, chills, headache, muscle pain, sore throat, fatigue, congestion, or loss of taste or smell. Other less common symptoms include gastrointestinal symptoms like nausea, vomiting, or diarrhea.
- These symptoms may appear 2-14 days after you are exposed to the virus that causes COVID-19.
- Not everyone with COVID-19 has all of these symptoms, and some people may not have any symptoms.

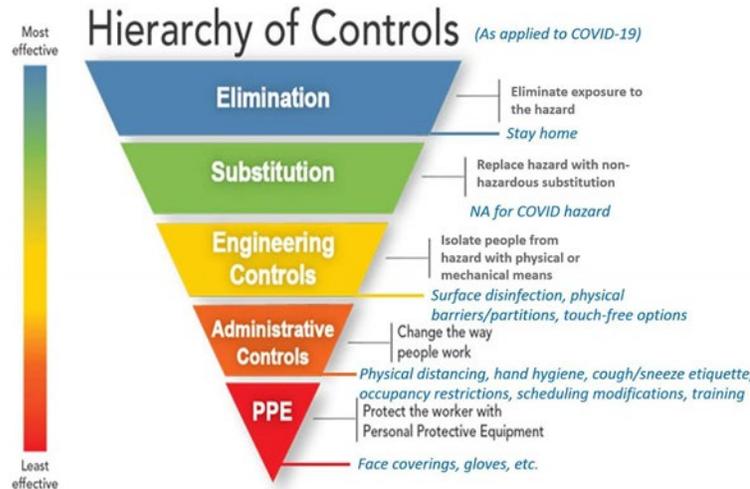
How it spreads

The virus is thought to spread mainly from person-to-person through respiratory droplets produced when an infected person coughs or sneezes. It spreads most easily between people who are in close contact with one another (within about 6 feet). Infected individuals may transmit the disease before they develop symptoms or could remain asymptomatic and never realize they were infected or contagious.



Communicable Disease (COVID-19) Policy

OSHA Risk Assessment



Communicable Disease Protocols

All Employees at all Locations

- **Stay home if you are sick.** Employees are expected to self-screen daily before reporting for work, using the Wellness Questionnaire in the Appendix. Immediately contact the Safety Manager and your immediate supervisor or HR in the event that you exhibit COVID-19 symptoms. *Do not report to work.*
- **Practice good hygiene.** Gartner expects all employees to follow these practices at all times to keep our work areas and facilities healthy places to work:
 - **Wash your hands regularly.** Clean your hands before and after eating, using the rest room, or having touched common items or areas of facility. Hand sanitizer containing at least 60% alcohol is acceptable when hand washing is not feasible.
 - **Avoid touching your face.** Viruses, including COVID-19, most commonly enter the body via the mucosal surfaces in the eyes, nose, and mouth.
 - **Cover your cough/sneeze.** Cough or sneeze into your elbow when necessary.
- **Keep it clean.** Employees should keep our employee common areas and their own work areas disinfected by using the approved cleaning products stationed throughout the building and jobsites.
 - Tool Department will stock hand sanitizer, sanitizing wipes, masks, nitrile gloves, face shields, and infrared thermometers
 - Gartner Employees needing refills or additional supplies, in the office or on the jobsite, can request them via the Tool Department or Safety Manager.



Communicable Disease (COVID-19) Policy

- Avoid sharing office items or tools when possible. Shared items in common areas can be cleaned with the supplies in common areas and gloves are available for use as well.
- **Keep your social distance.** Maintain 6 feet of space between all employees, resist the urge to shake hand, hug, or high-five. Greet each other with an elbow bump, head nod, or an air high-five. If meeting outside, wear a mask when social distancing cannot be maintained.
- **Embrace technology.** Utilize teleconferencing, Teams, or other means in place of face-to-face meetings, gathering in conference rooms or bringing vendors/customers to Gartner work areas.
- **Wear your mask.** Research shows that in combination with good hand hygiene and social distancing, wearing face coverings greatly reduces the risk of infection from communicable diseases. In compliance with current State and Federal regulations; Face coverings will continue to be strongly recommended for guests and employees who are not fully vaccinated. Any employee or guest may wear a face covering if they choose.
- **Know the rules.** Employees are expected to review, understand, and comply with all parts of this Communicable Disease Policy. All employees should take shared responsible and ownership of respectfully reminding one another to uphold the policy. Continued violations will be subject to Gartner's disciplinary policy.
- **Be well.** Maintain good self-care, including regular preventative care, immunizations, sleep, exercise, and nutrition. Seek guidance for mental health concerns through Employee Assistance Programs, healthcare providers, or public hotlines.
- **Ask Questions.** If you have questions regarding any aspect of this policy, or feel you need an accommodation due to an underlying health concern, please reach out directly to the Safety Manager or HR for assistance.

Plymouth Office Warehouse Fabrication

- All Visitors, including delivery personnel, must pass temperature and Wellness screening when signing in at front desk before being admitted
- Consider scheduling meetings with customers, suppliers, and others via conference call or Teams whenever possible.
- If Gartner Leadership or a government mandate requires remote work, all employees working remotely must develop a Remote Working Plan with their immediate supervisor. This Plan, available at S:\1. Accounting Dept\4. HR Forms\Gartner Remote Working Plan, will include all details of remote work situation including when to return to work in a Gartner facility and will be reviewed by Safety Manager or HR for compliance.
- All employees are encouraged to reduce unnecessary time spent outside their own workspace, by minimizing their movements within the building, using the nearest restroom and restricting social visits to phone calls, Teams chats.



Communicable Disease (COVID-19) Policy

- Each Dept will assign an Employee to sanitize common areas and surfaces as needed daily to conform to the latest CDC and OSHA Guidelines.
- Employees are expected to sanitize their eating space, dispose of their trash, rinse their dishes and place into dishwasher before leaving the lunchroom.
- Parts & shipping Depts. are responsible to keep sanitizer products full in every common area of the facility.
- Tool Dept will order sanitizing supplies as needed for facilities as well as job sites.
- All field staff are encouraged, but not required, to use curbside pickups for all parts, tools, materials, and supplies.

Job Sites and Field Employees

- Field crews will restrict access to their office, meeting, lunch, and work areas, allowing only Gartner employees and necessary Client personal.
- Minimize unnecessary contact with clients as much as possible, maintaining social distance when direct communication is required. All other communication with our client can be via phone, email, video etc.
- Field crews will take break only in Gartner break areas, they will not share areas where other individuals are taking rest breaks. Staggered break times may be instituted for larger crews to maintain social distancing requirements.
- Portable restrooms will be locked and reserved for Gartner crew only. Gartner employees should not use client restroom facilities.
- Field crews will have a wash station with soap and running water on site. This will be included with all purchase orders for portable toilets.
- Field crews must notify the Tool Department when needing to replenish their supply of cleaning wipes, hand sanitizer, etc.
- Field crews must disinfect their office, break areas, toilets, and any shared tools daily with a sanitizing spray.
- Field crews must know what their client pandemic policy and adhere to all tenants.

Traveling Employees

- Whenever possible, consider if the purpose of the trip can be accomplished via teleconference or other technology for remote meetings. Site visits should be minimized to protect our crews from exposure.
- Travel for essential project personal will continue with supervisor approval. Travel mode (driving vs. flying) is at the discretion of management based on current travel risks, distance, etc.



Communicable Disease (COVID-19) Policy

- Employees are expected to familiarize themselves with local requirements of the areas they will be passing through or staying overnight, including mask mandates, quarantines, testing, etc. as well as client visit protocols, *before* arranging travel.
- Multiple site visits in a day are discouraged. Please plan all visits to be spread out during a week and closely monitor your health for any virus symptoms.
- Avoid elevators, wash your hands frequently, and maintain social distancing practices while traveling.

Continued Operation and Communication

If a significant outbreak, as defined by the CDC, occurs on a construction crew, the entire crew will be sent home to quarantine and self-monitor for symptoms for 14 days. If a crew member develops symptoms, the Safety Manager and foreman must be immediately notified. Gartner management will work with our client to determine if the project can be put on hold or if another crew needs to be brought in to complete the work.

If significant outbreak, as defined by the CDC, occurs in our home office, all employees will be required to work remotely and self-monitor for symptoms for 14 days. If an employee working remotely develops symptoms, the Safety Manager and immediate supervisor or HR must be notified immediately. For jobs that cannot be performed remotely, employees may be placed on leave, temporary furlough, or offered a staggered work schedule, as determined by Gartner leadership based on the needs of the business.

Employee communication will be uninterrupted during a pandemic, as technology available to all Gartner employees will allow them to speak with their supervisor, project managers, or coworkers via phone, text, and email or Teams. Employees will continue to have access to network files, systems, and data through Gartner's secured VPN connections.

Client communication will be uninterrupted during a pandemic, as technology will allow customers to speak with their salesman, project manager, or dispatch via phone, text and email, or Teams.

Gartner management will ensure that all employees and client projects have a backup supervisor or project manager to take their calls, in the event the primary contact becomes too ill to perform their duties.



Communicable Disease (COVID-19) Policy

COVID-19 Exposure

Close Contact Exposure

If you were in close contact with someone either tested positive for or was diagnosed with COVID-19 without lab confirmation, you must contact the Safety Manager and immediately provide notification of the location and date of exposure.

Close Contact is defined as:

- You were within 6 feet of a COVID-19 positive person for a continuous period of 15 minutes or more.
- You provided care to someone in your household who was diagnosed with COVID-19.
- You had direct physical contact with a COVID-19 positive individual.

Confirmed Close Contact Exposure to COVID-19

If you are determined to be a close contact of either 1) a lab confirmed case of COVID-19 or 2) someone diagnosed with COVID-19 who was not tested or has not yet received a result.

If you've been exposed to COVID-19, and are not showing symptoms:

- No need to quarantine if you are vaccinated and boosted unless you develop symptoms. Please continue and be extra diligent in wearing a mask during the 10 days following exposure.
- No need to quarantine if you had a confirmed COVID-19 case within the last 90 days (e.g., you tested positive using a viral test). Please continue and be extra diligent in wearing a mask during the 10 days following exposure.
- Quarantine for 5 days if you are not vaccinated and have not had COVID-19 in the past 90 days. You may return on Day 6.
- Quarantine for 5 days if you received your last vaccination dose more than 6 months ago for Pfizer/Moderna vaccines, or two months ago for Johnson & Johnson vaccine, and have not had COVID-19 in the past 90 days. You may return on Day 6.

The employee should review the leave options available under Gartner's FFCRA policy and request leave when necessary. Contact HR if you have any questions regarding your time off from work while quarantining.

Contact with someone who was exposed

- Contacts of contacts are not considered to be at increased risk for COVID-19.



Communicable Disease (COVID-19) Policy

How long to stay home if you are sick if not diagnosed with COVID-19?

- If you have symptoms of a respiratory disease (these include fever, coughing, muscle aches, sore throat, and headache), you should stay home for at least 5 days, with at least 24 hours without a fever and improvement of respiratory symptoms—whichever is longer. (Your fever should be gone for 24 hours without using fever-reducing medicine.)

What to Do if you Test COVID-19 Positive

If an employee Tests positive for COVID-19 or has been diagnosed but not tested for COVID-19 virus the employee should not report to work OR should be sent home immediately if notified while working. The employee shall notify the Safety Manager and report the positive test result or diagnosis.

Confirmed cases of COVID-19:

- Quarantine for 5 days if you do not have symptoms, or
- Quarantine for 5 days plus any additional time to be fever-free for 24 hours without the use of fever reducing medicine.

If you are confirmed for COVID-19, employees must be extra diligent about wearing masks for an additional 5 days after your symptoms are gone and you return to work.

The employee will need to follow directions given by the healthcare provider, as well as the state contact tracing agent. The employee should review the leave options available under Gartner's FFCRA policy and request paid leave when appropriate. Contact HR if you have any questions regarding your time off work while isolating.

Safety Manager will work with the employee to complete the Close Contacts Report listing individuals that they came into "close contact" with during the 2 days leading up to the positive test.

This could include employees, clients, vendors, and any other business contacts. Gartner will designate a spokesperson to communicate with these individuals as well report to proper governing authorities. All communication will exclude employee names to protect privacy.

Before returning to work contact the Safety Manager and your immediate supervisor to discuss your return date.

When and How to Wear a Face Mask

There is research to support that an infected person wearing a mask may reduce spreading the disease to others. Since a person infected with COVID-19 may not exhibit symptoms for several days, he or she



Communicable Disease (COVID-19) Policy

may unknowingly spread the virus when interacting with others. Even in situations where face coverings are not required, all persons should carry a face covering to prepare for close interactions with others or to enter an indoor space.

A face covering is not a substitute for social distancing.

Mask Availability

- Cloth face masks that are washable and have a filter pocket will be made available to field employees, *or employees may use their own.*
- Cloth masks will be made available to office workers and visitors, *or they may use their own mask.*
- Employees are expected to care for and wash their face mask daily/weekly depending on use. Regular laundry detergent is sufficient for cleaning cloth masks.
- In accordance with MN EO 20-81, any mask that incorporates a valve that is designed to facilitate easy exhaling, mesh masks, or masks with openings, holes, visible gaps in the design or material, or vents are not sufficient face coverings because they allow droplets to be released from the mask.

Guidelines for Mask Usage

- Many of our clients require some varied use of face masks. *Employees are expected to bring their masks and follow all client facility requirements.*
- *Employees whose work requires them to be within 6 ft of others for longer than 10 minutes are encouraged to wear a face mask while performing those tasks.*
- Employees who travel are required to carry a mask with them and encouraged to use it as needed when they are in public areas or close contact situations during their trip.
- Employees visiting job sites are required to follow client policy regarding face coverings while completing their site walks.
- Employees are encouraged to wear a face covering in all public indoor spaces and businesses, including when waiting outside to enter the public indoor space or business.
- Employees riding on public transportation such as buses or trains, or in a taxi, ride-sharing vehicle, or vehicle that is being used for a business purpose are encouraged to wear a face covering.
- Employees working outdoors in situations where social distancing (i.e., maintaining physical distance of at least six feet from other individuals who are not in the same household) cannot be maintained are encouraged to wear a mask.
- Masks must comply with CDC guidelines and with federal, state, and local mandates.



Communicable Disease (COVID-19) Policy

Persons exempted from the face covering requirement

- Persons who have medical or other health conditions, disabilities, or mental health, developmental, or behavioral needs that make it difficult to tolerate wearing a face covering. Employees who feel they cannot wear a mask in the workplace due to one of these reasons should review their concern with Safety Director and HR to discuss alternatives.
- Any person who has trouble breathing, is unconscious, sleeping, incapacitated, or is otherwise unable to remove the face covering without assistance.
- Persons at their workplace when wearing a face covering would create a safety hazard to the person or others as determined by local, state, or federal regulators or workplace safety guidelines.

Appendix 1: Wellness Self-Check Guidelines

Pre-shift employee wellness checks may be performed to ensure that employees are healthy and not entering the workplace while contagious, endangering their coworkers' health.

Pre-shift employee wellness checks ensure employees:

- Do not have a fever of 99.5 or higher. employees may take their own temperature at home with an oral thermometer and do not need to report exact temperature.
- Are not coughing, Have no shortness of breath
- Have no headache, muscle pain, sore throat, or chills
- Have not lost sense of taste or smell
- Ensure they have not been in contact with a COVID-19 positive individual in the last 14 days.
- Wellness Self-Checks do not need to be documented. The questionnaire is for guidance on what symptoms are not allowed into our workplace.

Employees exhibiting any of the symptoms on the questionnaire or running a fever will not be allowed to work and will be required to stay home. The employee should contact the Safety Manager to determine how long they will need to stay home.

Gartner employees will comply with all client's pre-entry wellness checks required to access jobsites.

Exhibit: [Employee Wellness Questionnaire](#)



Communicable Disease (COVID-19) Policy



Wellness Questionnaire

All Gartner Employees and Gartner Visitors must answer the following questions Prior to Entering Jobsite or Building:

Employee Health Questions	Yes	No
In the last 24 hours have you had a Fever of 99.5 or higher?		
In the last 24 hours have you had a Cough or Shortness of Breath		
Sore Throat or Headache		
Chills or Muscle pain		
Loss of sense of taste or smell		
I have had person to person contact with someone who has exhibited COVID-19 symptoms in the last 14 days.		
I have visited an area or facility where there has been a significant outbreak in the last 14 days.		

Employee / Visitor Temperature Today:	
---------------------------------------	--

If Employee or Visitor has a fever at or above 99.5 degrees F, or answers YES to any of the questions, they will not be allowed entry to Job site or Building.

Employees will need to report to Safety Immediately for further instructions.

Safety Dept: 612-423-3549

I agree to abide by Gartner Refrigeration Inc. rules on temperature checks, social distancing, handwashing, and face covering.

Employee/Visitor Name (Print): _____

Contact Phone Number: _____

Signature/Date: _____

Reason for Visit: _____



Communicable Disease (COVID-19) Policy

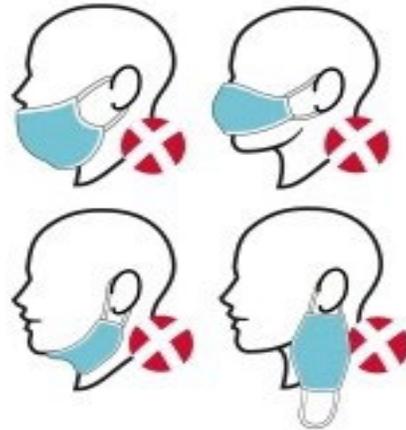
Appendix 2: Wearing and Caring for Your Mask

- Masks must fit snugly against the side of the face.
- Masks must be secured with ties or ear loops.
- Masks cannot contain additional items that could fall off, such as buttons, fasteners, safety pins, clasps, or decorative items (e.g., studs, jewels, stickers).

CORRECT



INCORRECT



Putting on a mask

1



1. Ensure you are using a clean mask.
2. Wash hands with soap and water or alcohol-based hand sanitizer before touching mask.



3. Pick up mask by touching ear loops (or ties) only.
4. Avoid touching mask itself.



5. Hold both ear loops and place a loop around each ear.
6. Fit mask around mouth, nose, and chin.

While wearing a mask

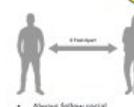
2



- Mask should be either completely on or off; do not wear or rest under chin.
- Never wear mask inside-out.
- Remove mask if soiled or damp; do not reuse a single-use mask.



- Do not touch mask, face, or adjust mask while it is on.
- If you touch mask, wash hands with soap and water or hand sanitizer right away.



- Always follow social distancing and good hygiene practices.

Removing a mask

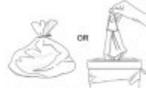
3



1. Grab ear loops only and lift the mask off ears.



2. Pull bottom of mask off and away from mouth and chin.



3. Discard in appropriate receptacle (can be closed or sealed shut).

4. Clean hands with soap and water or alcohol-based hand sanitizer.

Cleaning instructions for reusable cloth masks

4



1. To wash, launder the mask often in your washing machine in HOT water (140°F) using soap or detergent that leaves no residue.
2. Rinse well with fresh water and hang to air-dry.



1. You may choose to disinfect masks by soaking for five minutes in a solution of two tablespoons of bleach per quart (liter) of water or 1/2 cup (50 ml) of bleach per gallon (3.84 liter) of water.
2. Rinse well with fresh water and hang to air-dry.



Communicable Disease (COVID-19) Policy



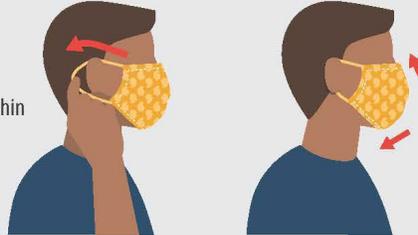
Communicable Disease (COVID-19) Policy

How to Safely Wear and Take Off a Cloth Face Covering

Accessible: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/diy-cloth-face-coverings.html>

WEAR YOUR FACE COVERING CORRECTLY

- Wash your hands before putting on your face covering
- Put it over your nose and mouth and secure it under your chin
- Try to fit it snugly against the sides of your face
- Make sure you can breathe easily
- Do not place a mask on a child younger than 2



USE THE FACE COVERING TO HELP PROTECT OTHERS

- Wear cloth face coverings in public settings and when around people who don't live in your household, especially when other social distancing measures are difficult to maintain
- Don't put the covering around your neck or up on your forehead
- Don't touch the face covering, and, if you do, clean your hands

FOLLOW EVERYDAY HEALTH HABITS

- Stay at least 6 feet away from others
- Avoid contact with people who are sick
- Wash your hands often, with soap and water, for at least 20 seconds each time
- Use hand sanitizer if soap and water are not available



TAKE OFF YOUR CLOTH FACE COVERING CAREFULLY, WHEN YOU'RE HOME

- Untie the strings behind your head or stretch the ear loops
- Handle only by the ear loops or ties
- Fold outside corners together
- Place covering in the washing machine
- Wash your hands with soap and water



CS 316488A 07/06/2020

Cloth face coverings are not surgical masks or N-95 respirators, both of which should be saved for health care workers and other medical first responders.

For instructions on making a cloth face covering, see:

[cdc.gov/coronavirus](https://www.cdc.gov/coronavirus)



Communicable Disease (COVID-19) Policy

Appendix 3: Sanitizing and Disinfecting Guidelines

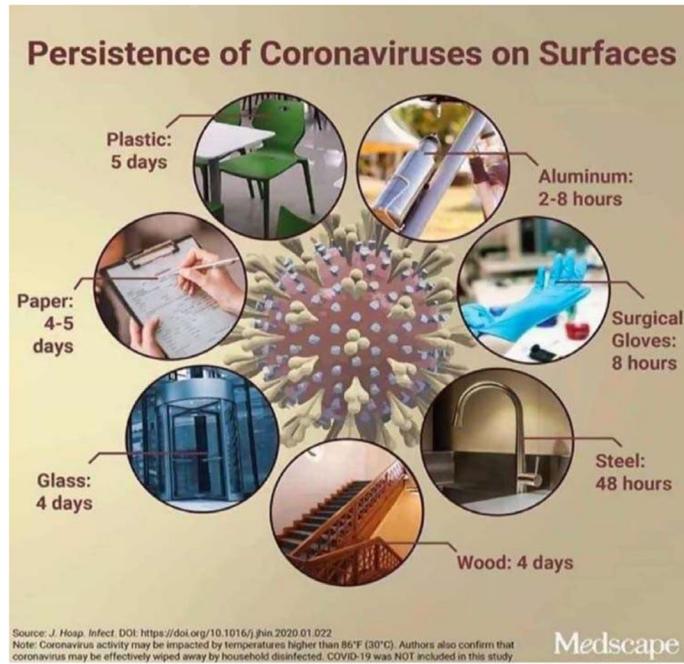
It is the responsibility of all employees to keep surfaces clean. Keeping surfaces clean and disinfected will prevent spread of COVID-19. High-touch areas such as door handles, phones, remote controls, light switches, bathroom fixtures, and horizontal surfaces such as countertops, kitchen tables, desktops, and other places where respiratory droplets could land. Don't forget your mobile phone.

First, remove any dirt from the surface. Then wipe or spray the surface with disinfectant. Leave the surface wet with disinfectant for as many minutes as the product instructions require. The contact time with the disinfectant kills the germs, therefore do not wipe away the disinfectant before the contact time has expired.

Use the right product. According to the CDC, diluted household bleach solutions, alcohol solutions with at least 70% alcohol, and most common EPA-registered household disinfectants are effective against the COVID-19 virus.

Do not reuse disinfectant wipes on multiple surfaces. This can transfer germs from the used wipe to other surfaces. Use one wipe for each surface and then throw it out.

Gloves, wipes, and hand sanitizer are provided in shared work areas and should be used to keep high-touch surfaces clean.





Communicable Disease (COVID-19) Policy



Communicable Disease (COVID-19) Policy

Cleaning And Disinfecting Your Facility

Everyday Steps, Steps When Someone is Sick, and Considerations for Employers

How to clean and disinfect

Wear disposable gloves to clean and disinfect.

Clean

- **Clean surfaces using soap and water.** Practice routine cleaning of frequently touched surfaces.



High touch surfaces include:

Tables, doorknobs, light switches, countertops, handles, desks, phones, keyboards, toilets, faucets, sinks, etc.



Disinfect

- Clean the area or item with soap and water or another detergent if it is dirty. Then, use a household disinfectant.
- **Recommend use of EPA-registered household disinfectant.** Follow the instructions on the label to ensure safe and effective use of the product.

Many products recommend:

- Keeping surface wet for a period of time (see product label).
- Precautions such as wearing gloves and making sure you have good ventilation during use of the product.

- **Diluted household bleach solutions may also be used** if appropriate for the surface. Check to ensure the product is not past its expiration date. Unexpired household bleach will be effective against coronaviruses when properly diluted.

Follow manufacturer's instructions for application and proper ventilation. Never mix household bleach with ammonia or any other cleanser.

Leave solution on the surface for **at least 1 minute**

Bleach solutions will be **effective** for disinfection **up to 24 hours**.

To make a bleach solution, mix:

- 5 tablespoons (1/3rd cup) bleach per gallon of water
- OR
- 4 teaspoons bleach per quart of water

- **Alcohol solutions with at least 70% alcohol.**



Soft surfaces

For soft surfaces such as **carpeted floor, rugs, and drapes**

- **Clean the surface using soap and water** or with cleaners appropriate for use on these surfaces.



C31162704 05/15/2020



Communicable Disease (COVID-19) Policy

Appendix 4: COVID-19 Symptoms

COVID-19 SYMPTOMS vs. Flu, Cold & Allergies

	COVID-19	FLU	COLD	ALLERGIES
 COUGH	●	●	●	●
 FEVER	●	●	●	●
 BREATHLESSNESS	●	○	○	●
 BODY ACHES	●	●	●	○
 HEADACHE	●	●	●	●
 FATIGUE	●	●	●	●
 SORE THROAT	●	●	●	○
 DIARRHEA	●	●	○	○
 RUNNY NOSE	●	●	●	●
 SNEEZING	●	○	●	●
 WATERY EYES	○	○	○	●

● Frequently
 ● Sometimes
 ● Little
 ● Rarely
 None

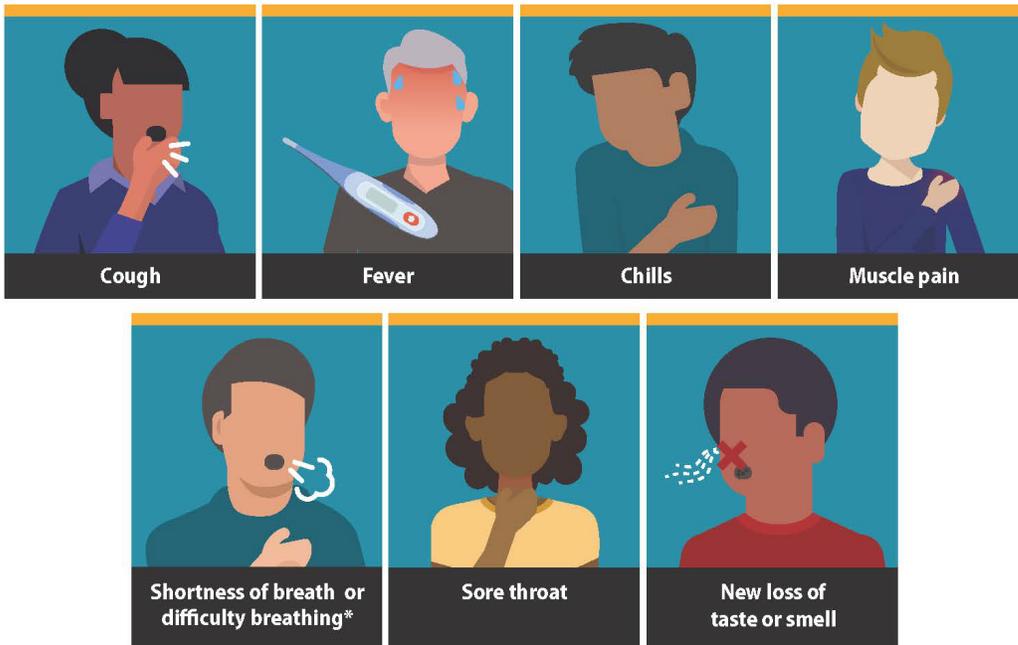
Sources: WHO, CDC
 www.co.carver.mn.us/covid-19




Communicable Disease (COVID-19) Policy

Symptoms of Coronavirus (COVID-19)

Know the symptoms of COVID-19, which can include the following:



Symptoms can range from mild to severe illness, and appear 2-14 days after you are exposed to the virus that causes COVID-19.

***Seek medical care immediately if someone has emergency warning signs of COVID-19.**

- Trouble breathing
- Persistent pain or pressure in the chest
- New confusion
- Inability to wake or stay awake
- Bluish lips or face

This list is not all possible symptoms. Please call your medical provider for any other symptoms that are severe or concerning to you.



[cdc.gov/coronavirus](https://www.cdc.gov/coronavirus)

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Communicable Disease (COVID-19) Policy

Appendix 5: Prevention

Stop the Spread of Germs

Help prevent the spread of respiratory diseases like COVID-19.



cdc.gov/coronavirus

316917-A May 13, 2020 11:00 AM



Communicable Disease (COVID-19) Policy

How to Protect Yourself and Others

Accessible version: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html>

Know how it spreads



- There is currently no vaccine to prevent coronavirus disease 2019 (COVID-19).
- **The best way to prevent illness is to avoid being exposed to this virus.**
- The virus is thought to spread mainly from person-to-person.
 - » Between people who are in close contact with one another (within about 6 feet).
 - » Through respiratory droplets produced when an infected person coughs, sneezes or talks.
 - » These droplets can land in the mouths or noses of people who are nearby or possibly be inhaled into the lungs.
 - » Some recent studies have suggested that COVID-19 may be spread by people who are not showing symptoms.

Everyone should

Clean your hands often



- **Wash your hands** often with soap and water for at least 20 seconds especially after you have been in a public place, or after blowing your nose, coughing, or sneezing.
- If soap and water are not readily available, **use a hand sanitizer that contains at least 60% alcohol**. Cover all surfaces of your hands and rub them together until they feel dry.
- **Avoid touching your eyes, nose, and mouth** with unwashed hands.

Avoid close contact



- **Limit contact with others as much as possible.**
- **Avoid close contact** with people who are sick.
- **Put distance between yourself and other people.**
 - » Remember that some people without symptoms may be able to spread virus.
 - » This is especially important for **people who are at higher risk of getting very sick**. www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-at-higher-risk.html



CS 314291A 06/30/2020



Communicable Disease (COVID-19) Policy

Cover your mouth and nose with a cloth face cover when around others



- **You could spread COVID-19 to others** even if you do not feel sick.
- **Everyone should wear a cloth face covering in public settings** and when around people not living in their household, especially when social distancing is difficult to maintain.
 - » Cloth face coverings should not be placed on young children under age 2, anyone who has trouble breathing, or is unconscious, incapacitated or otherwise unable to remove the mask without assistance.
- **The cloth face cover is meant to protect other people** in case you are infected.
- Do **NOT** use a facemask meant for a healthcare worker.
- Continue to **keep about 6 feet between yourself and others**. The cloth face cover is not a substitute for social distancing.

Cover coughs and sneezes



- **Always cover your mouth and nose** with a tissue when you cough or sneeze or use the inside of your elbow.
- **Throw used tissues** in the trash.
- Immediately **wash your hands** with soap and water for at least 20 seconds. If soap and water are not readily available, clean your hands with a hand sanitizer that contains at least 60% alcohol.

Clean and disinfect



- **Clean AND disinfect frequently touched surfaces** daily. This includes tables, doorknobs, light switches, countertops, handles, desks, phones, keyboards, toilets, faucets, and sinks. www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/disinfecting-your-home.html
- **If surfaces are dirty, clean them:** Use detergent or soap and water prior to disinfection.
- **Then, use a household disinfectant.** You can see a list of [EPA-registered household disinfectants here](#).

cdc.gov/coronavirus



Waste Management Policy

Purpose

The purpose of this waste management policy is to provide guidance and requirements necessary for efficient, effective and compliant waste management during construction and operations.

Scope

When work is performed at a Client Facility the Clients policy or program shall take precedence, unless Client's policy is less stringent, then this policy applies to all Gartner Refrigeration Inc. employees and sub-contractors at the work place or while carrying out activities on behalf of Gartner Refrigeration Inc. Including but not limited to:

- Employees who work at Client facilities and other work sites.
- Employees who work at home office, warehouse, and Fabrication or Rebuild Shops.

Policy

Surplus or waste materials arise from either the materials imported to the site or from those generated on the site. Imported materials are those which are brought to the site for inclusion in the operations. Generated materials are those that occur during the daily operations of the site i.e. used oil, and re-claimed freon.

This policy also considers other aspects to waste management such as waste reduction, segregation of waste, recycling, reusing, and disposal of waste, education and reviewing.

Gartner Refrigeration Inc. must coordinate with the project site manager or owner to ensure proper disposal of wastes or scrap materials, staging areas, and container placements. Gartner Refrigeration Inc. must ensure the owner/client is aware of whether wastes and scrap materials will be taken off site or will be disposed of on the owner client's site.

Never mix waste streams, Waste will be separated. The following categories will be used for identifying waste and proper disposal method:

- **Re Use;** if surplus materials can be used in future operations they are classified as materials which can be re-used. Materials that can be reused in their present form are surplus to requirements and need to be removed from site, be labeled, and their storage location recorded for future reference.



Waste Management Policy

- **Recycling;** Wastes should be recycled whenever practicable. Gartner Refrigeration Inc. encourages proper segregation of waste materials to ensure opportunities for recycling occurs at each work site. The collection of recycled material will reduce the total load on the environment. Clearly labeled bins of sufficient size shall be placed in waste staging areas on job sites, and in administrative areas. Cardboard will be flattened, staples and excess shipping tape removed. No cardboard shall be placed in dumpsters used for the landfill.
- **Landfill;** if waste material cannot be reused or recycled then waste material shall be sent to a local landfill via an appropriately licensed waste hauler.

Responsibilities

The Program Administrator: Gartner Refrigeration Inc. Safety Director

Issuing and administering this program and making sure that it satisfies all applicable federal, state, local requirements and Industry best practices.

Assist Project Managers and on-site Supervisors in identifying proper methods of recycling or disposal and completing/maintaining necessary documentation.

Provides information, instruction and training about Waste Management policy updates and changes. Maintaining training records for all employees included in the training sessions.

Project/Facility Managers:

Are to complete a waste management plan for each project or department. Identifying all types of waste expected to be encountered, and the proper means of recycling or disposal.

Coordinate with onsite Superintendent/Foreman to identify local recycling facilities and land fill waste haulers.

Coordinate with onsite Superintendent/Foreman and facility client/owner in on site locations for staging all waste containers for duration of project.

Coordinate with Safety Manager and Site Superintendent/Foreman to complete all necessary documentation, and to keep records on site and with project files.



Waste Management Policy

Superintendents, Foreman:

Are to ensure all employees are aware of and understand Gartner Refrigeration's Waste Management Policy, and site Waste Management Plan.

Verify that all members of his/her work group are using recycling and disposal methods identified in plan.

Coordinate with Project/facility Manager to identify local recycling facilities and land fill waste haulers.

Coordinate with Project/facility Manager and/or facility client/owner in on site locations for staging all waste containers for duration of project.

Coordinate with Safety Manager and Project/facility Manager to complete all necessary documentation, and to keep records on site and with project/facility files.

Notify Project/facility Manager whenever a new waste stream is identified on site/facility and amend waste management plan for that site/facility.

Employees:

Read & Understand the elements of this policy

Must stage and dispose of all waste according to the identified method on site/facility waste management plan.

Must notify their supervisor if they identify a new stream of waste.

Types of Waste/Storage/Disposal

Gartner Refrigeration Inc. will implement all possible waste minimization procedures and reduce the amount of waste to be removed from work sites and facilities. Management, staff, design teams, sub-contractors and suppliers will all be encouraged to look at ways to minimize the amount of waste generated at work sites and facilities. Precedence will always be to Re-use or Recycle as much waste as possible.

Gartner Refrigeration Inc. must ensure wastes are stored and maintained in an organized fashion to encourage proper disposal and minimize risks to employees and environment. Proper waste receptacles must be provided for trash and materials that may be reused or recycled. All waste storage containers will be inspected weekly to ensure that they are maintained in a condition appropriate for their use, cross contamination, and containment of the specific waste.



Waste Management Policy

Chemicals shall be stored in approved containers with proper labels, using approved methods i.e. in flammable cabinet, upright and secured etc.

Employees shall be notified immediately if hazardous materials or conditions are found onsite that are in unprotected environments including the following:

- Asbestos or material containing asbestos
- Lead or material containing lead

Areas identified as containing the hazard materials will be barricaded and all Gartner Refrigeration Inc. will be kept out of area until hazardous materials have been mitigated by licensed remediation experts.

Training

All Gartner Refrigeration Inc. employees shall receive training for this Waste Management policy, and site-specific waste management plans.

The Training will be documented including presenter, employee name, dates of training and subject matter.



Gartner Refrigeration & Mfg., Inc. Environmental Policy:

Gartner Refrigeration & Mfg., Inc. is committed to environmental leadership in all of its business activities. Gartner Refrigeration provide policies to provide a safe, healthful workplace, protecting the environment, conserving energy and natural resources. With these policies in place we believe that we can achieve a healthy and safe environment. We are committed to do and will:

- Provide a safe and healthful workplace and ensure that personnel are properly trained with the appropriate safety and emergency equipment.
- Be an environmentally responsible neighbor in the community where we operate, and correct incidents or conditions that endanger health, safety, or the environment.
- Conserve natural resources by adopting pollution prevention practices. Ex: extending the life of equipment through preventive maintenance scheduling, purchasing and reworking used equipment etc.
- Develop and improve operations and technologies to minimize waste, and other pollution, minimize health and safety risks, and dispose of waste safely and responsibly.
- Ensure the responsible use of energy throughout our business, including conserving energy improving energy efficiency, and giving preference to renewable over non-renewable energy when feasible.
- Participate in efforts to improve environmental protection and understanding. Sharing appropriate pollution prevention technology, knowledge and methods with other farms.
- Utilize university and regulatory agent to assist in the development of solutions of environmental problems. Promote cooperation and understanding with the public and government agencies in developing economically feasible and environmentally sound wastewater treatment objectives.
- Meet and exceed all applicable Federal and State requirements set and adhere to stringent requirements no matter where we do business.
- Promptly report all noncompliance issues in accordance with applicable governmental reporting requirements, evaluate causes of noncompliance, and implement corrective actions.
- Establish procedures for periodic review of environmental compliance with all laws and regulations.
- Establish procedures to ensure that all employees are knowledgeable of, understand and comply with all applicable environmental laws and regulations.
- Promptly correct any practice or condition not in compliance with this policy.



Manual Material Handling

Purpose and Background

The purpose of this safety policy and procedure is to establish guidelines and procedures for implementing the Gartner Back Protection Program. Back injuries represent the most common type of workers' compensation claim. Jobs within our company with high rates of back injuries tend to be those requiring a great amount of manual load handling. Eliminating and/or minimizing back injuries can result in lower workers' compensation costs and promote the well-being of employees. It is the policy of our company to provide a place of employment that is free from recognized hazards that cause or are likely to cause death or serious physical harm to employees or the public. Therefore, management will administer a back protection program and at risk employees will receive the required training. When lifting hazards exist that cannot be eliminated, then engineering practices, administrative practices, safe work practices, Personal Protective Equipment (PPE), and additional training regarding Back Protection will be implemented. These measures will be implemented to minimize those hazards to ensure the safety of employees and the public.

Scope

This program applies to all departments and any employee that may conduct manual handling tasks as part of their job responsibility. This program is intended to minimize the potential for a back injury caused by lifting heavy objects. Employees should not lift any object 80 pounds or greater without assistance. All employees whose work requires heavy lifting shall be properly trained, physically qualified, and receive a medical evaluation as required by the job description.

Policy

This program has the following objectives:

1. Ensuring employees are not required to manually lift materials or objects greater than 80 pounds as part of their job functions
2. Assist in identifying, assessing, and controlling risks associated with manual handling tasks
3. Reducing the incidence of manual handling injuries
4. Establishing an effective system for manual handling

Responsibilities

Project Manager - Responsible for ensuring that adequate funds are available and budgeted for the purchase of equipment and supplies to aid in minimizing lifting related back injuries. They will also be responsible for identifying the employees affected by this safety policy and procedure. The project manager will obtain and coordinate the required training for the affected employees and also ensure compliance through their auditing process.

Supervisors - Supervisors will be responsible for communicating appropriate needs to the safety manager and/or supervisors. Supervisors will ensure that employees are properly trained before using lifting belts and that they are being worn properly. Supervisors will ensure that no employee is required to lift beyond his or her capabilities. Supervisors will periodically inspect site conditions and instruct employees of any changes that must be made when handling material. Upon request, employees are to receive assistance in lifting.

Employees - Employees are to report any unsafe act associated with this policy to their supervisors. Employees are to report any injury to their immediate supervisors immediately. Employees that are assigned lifting belts are to maintain them and have them replaced when torn or frayed.

Safety Department - Safety Department will provide prompt assistance to project managers, supervisors, or others as applicable on any matter concerning this safety policy and procedure. Safety will assist in developing or securing the required training and will provide *Back Safety* training at the request of project managers and supervisors. Safety will also work with Purchasing Departments ensure that all newly purchased lifting related equipment and supplies comply with current safety regulations. Additionally, Safety will provide consultative and audit assistance to ensure effective implementation of this safety policy and procedure. Lastly, Safety will investigate the root cause of all injuries received while engaging in manual lifting and determine corrective actions that will be incorporated into future manual lifting activities.

General Lifting Techniques

Whether it is during leisure activities or as a part of paid work, everyone lifts, holds, carries, pushes and pulls on a daily basis. Manual material handling involves lifting light, heavy and awkward objects. Safe lifting is a critical aspect of daily activities and should be the focus of any manual material handling. Before you lift, remember the following:

- Perform a hazard analysis of materials and jobsite conditions
- Wear supportive shoes
- Use lift assist devices (hand dollies, carts, lift tables, forklifts)
- Carry all movements out horizontally (e.g., push and pull rather than lift and lower)
- Always use your body weight and not your feet when pushing
- Try to have most workplace deliveries placed at hip height
- Always keep objects in the comfort zone (between hip and shoulder height)
- Keep all loads close to and in front of the body
- Keep the back aligned while lifting
- Maintain the center of balance

- Let the legs do the actual lifting
- Reduce the size of the material to keep it light, compact and safe to grasp.

PLAN THE LIFT prior to engaging in lift activity

- Size up the load, its weight, shape and position
- Determine if the load is too large, too heavy or too awkward to move alone
- Get help from a coworker or use a mechanical aid device to help with the lift when necessary
- Decide on the route to take
- Check for any problems or obstacles such as slippery or cluttered floors
- Investigate the location where the load is going to be placed in order to anticipate any difficulties
- Always exercise or warm-up the back prior to lifting

SQUAT LIFTING should be done for a majority of all lifts

- Stand as close to the load as possible
- Move your feet shoulder width apart
- Tighten your stomach muscles so you can tuck your pelvis
- Bend at the knees, keeping your back straight and stomach tucked
- Get a good firm grip on the load
- Hug the load close to the center of your body
- Lift smoothly with your legs gradually straightening the knees and hips into a standing position
- Avoid twisting your body as you lift

CARRYING LOADS

- Keep the load close to the center of your body to take full advantage of the mechanical leverage of your body
- Do not change your grip on the load unless it is weight supported
- Avoid twisting your body without pivoting your feet at the same time
- If you must change direction, move your feet in that direction instead of twisting your trunk in that direction
- Make sure you can see over the load
- Move carefully toward your destination
- If a heavier load is carried for some distance, consider storing it closer

UNLOADING OBJECTS

- Slowly bend your knees to lower the load
- Keep your back straight and the weight close to the center of your body
- Allow enough room for fingers and toes when the load is set down
- Place the load on a bench or table by resting it on the edge and pushing it forward with your arms and body
- Secure the load to ensure that it will not fall, tip over, roll or block someone's way

ONE-ARM LOADS are used when carrying items such as pails, buckets or tool bags.

- Bend the knees and at the waist keeping your back straight
- Reach for the load
- Grasp the handle of the load firmly
- Lift with your legs not your shoulders and upper back
- Keep your shoulders level while switching hands regularly to reduce overexertion on one side of the body while carrying the load

TEAM LIFTS are used when objects are too heavy, too large or too awkward for one person to lift.

- Work with someone of similar build and height, if possible
- Choose one person to direct the lift (e.g., “lift on the count of three”)
- Lift with your legs and raise the load to the desired level at the same time
- Always keep the load at the same level while carrying
- Move smoothly and in unison
- Set the load down together

OVERHEAD LIFTS

- When lifting or lowering objects from above the shoulders, lighten the load whenever possible
- Stand on something sturdy such as a step stool or platform to decrease the vertical distance
- When you are lowering objects from above the shoulders, slide the load close to your body, grasp the object firmly, slide it down your body and proceed with your move.

Mechanical Aids

Alternative material-handling techniques for carrying or moving loads are to be used whenever possible to minimize lifting and bending requirements. These alternate techniques include the use of: hand trucks, carts, dollies, forklifts, hoists and wheelbarrows. Although mechanical aids are used, safe lifting procedures should still be followed by maintaining the natural curvature of the back, using the legs for any lifting that is encountered and avoid twisting the back. Before engaging in the use of mechanical aids ensure all required training has been completed prior to using equipment.

Lifting Restrictions

When employees are not able to conduct their task fully due to an injury, they could be placed on work restrictions that may contain weight or lifting restrictions. If an employee is placed on any weight restrictions, they may not handle or lift any object heavier than what they have been restricted to until they are cleared to return to normal duties. If a re-evaluation has been conducted and the weight restriction has been modified or lifted the employee must follow the new restrictions.

Work Restrictions – Return to work

One aspect of the medical management of an injury is determination of appropriate activity. When an employee is seen by their primary care physician, they may be given certain restrictions regarding physical activity. Employees are to follow those restrictions. The restrictions will be readdressed each time they are seen by their primary care provider. Please note that in most cases, continuing usual activity with some restrictions leads to a better outcome than severely limiting activity. When conditions have improved enough, the restrictions will be lifted. If

employees have experienced a non-work related injury, they will receive care from their primary care provider, or another health care professional. Employees should follow the treatment regimen of their providers. Supervisors should be promptly notified of any work restrictions given by the primary care physician.



Electrical Safety

Safe work practices as defined by the National Fire Protection Association (NFPA) 70E Standard and the National Electrical Standard (NEC) Handbook shall be used to prevent electric shock or other injuries resulting from either direct or indirect electrical contacts, when work is performed near or on equipment or circuits that are or may be energized.

Lockout/tag-out specific safe work practices shall be used and be consistent with the nature and extent of the associated electrical hazard. Lockout/tag-out should identify the person who is performing the task and should be used when:

- Working near or on de-energized parts,
- Working on or near energized parts,

This section will not discuss electrical safety for employees who are classified as a Qualified Electrical Person.

Definitions

De-energized parts -Parts or equipment on which the energy source is disconnected by means of lockout/tag-out or a live part that operates at less than 50 volts to ground if there will be no increase exposure to electrical burns or explosion due to electric arcs. Equipment or machines that have not been locked or tagged out will be considered energized.

Energized parts Parts or equipment when the energy has not been disconnected or where the energy has been disconnected and lockout/tag-out is not used.

Ground Fault Circuit Interrupter -- A device for the protection of personnel that will de-energize a circuit when the circuit is overloaded.

Qualified Person 1. A person that is trained in the operation of exposed energized and the hazards involved. 2. An employee who is undergoing on-the-job-training, who, in the course of such training, has demonstrated the ability to perform duties safely at their level of training and who is under the direction supervision of a qualified person.

Unqualified Person-- A person that is unfamiliar with the construction and operation of exposed energized equipment and the hazards involved. They have received minimum training working with or near exposed energized equipment.

Safe Working Practices

Only qualified persons may work on electric circuits, parts or equipment that have not been de-energized. Such persons shall be familiar with the use of special precautionary techniques, personal protection equipment, insulating & shielding materials and insulated tools.

When working under overhead power lines, the lines shall be de-energized and grounded or other protective measures shall be provided before work is started.

- If the lines are to be de-energized, arrangements shall be made with the person or organization that operates or controls the electric circuits involved to de-energized and ground them.
- If protective measures, such as guarding, isolating, or insulating are provided, these precautions shall prevent employees from contacting such lines directly with any part of their body or indirectly through conductive materials, tools, or equipment.
 - o an unqualified person working in the area may not approach or take any conductive object without an approved insulating handle closer than five (5) feet of the overhead line unless:
- When gloves, with sleeves, if necessary, rated for the voltage involved are considered to be insulation of the person from the energized part on which work is performed, or
- The energized part is insulated from all conductive objects at a different potential and from the person, or
 - The person is insulated from all conductive objects at a potential different from that of the energized part.
 - o Any vehicle or mechanical equipment capable of having parts of its structure elevated near an energized overhead line shall be operated so that a clearance often (10) feet is maintained. If the voltage is higher than 50kV, the clearance shall be increased by four (4) inches every additional ten (10) kV. Exception are:
If the vehicle is in transit with its structure lowered, the clearance is reduced to four (4) feet and shall be increased by four (4) inches every additional ten (10) kV if the voltage is higher than 50kV.

Minimum approach distance for qualified employees shall be followed per 29 CFR 1910.333©(3)(i) Qualified - Table S5.

- If properly rated insulating barriers are installed to prevent contact with the lines and are not part of the vehicle.
- Employees may not enter areas containing exposed energized parts unless illumination is provided enabling the employees to work safely.
- When working in confined spaces --- protective shields, barriers or insulating materials shall be provided as necessary.
- in work areas where conductive materials and equipment are in contact with any part of an employee's body--- the use of insulation, guarding and materials handling techniques will be used to minimize the hazard.
- Portable ladders must have non-conductive side rails.
- When working around exposed energized equipment--- rings, metal watchbands and jewelry will not be worn. Long hair must be worn about the head or covered with a cap or hair net.
- Cleanup and other housekeeping duties must not be performed if such duties present an electrical contact hazard.
- When work is performed near a qualified person, a safe distance or a barrier shall be established based on the NFPA 70E Standard.
 - o an unqualified person working in the area may not be closer than or bring any conductive object closer than ten (10) feet of any work area that is not de-energized. If the voltage is higher than 50kV, the distance shall be increased by four (4) inches every additional ten (10) kV.

Ground Fault Circuit Interrupters (GFCI)

Ground fault circuit interrupters will be provided on all jobsites for a 120 volt, single-phase, 15 and 20-mnpere receptacle outlets that are not part of the permanent wiring of the building or structure.

¹⁵ Receptacles on the ends of extension cords are not part of the permanent wiring and therefore must be protected by GFCI whether or not the extension cord is plugged into permanent wiring.

- All tools must be double insulated or a GFCI must be used.
- GFCI must be tested before each use.

Assured Equipment Grounding Conductor Program

On construction sites where Ground Fault Circuit Interrupters cannot be used, the following Assured Grounding Program will be implemented and the Safety Director or his/her designated person will be the program responsible person.

This program applies to 120 volt, single-phase, 15 and 20-ampere receptacle outlets that are not part of the permanent wiring of the building or structure and equipment connected by an extension cord. All defective equipment will be tagged "Out Of Service." If the equipment is repaired a qualified individual must certify that the equipment may return to service.

A daily visible inspection of all cords sets shall be made. Any rips, tears, cracks in the wiring insulation exposing the internal wires shall be deemed defective and taken out of service for repair/replacement.

Testing

Extension cords and equipment will be tested by a competent worker as follows:

- Receptacle Tester-plug in to show if terminals are correctly connected to ground and if wire is continuous with no breaks.
- Continuity Tester-check if ground is continuous from metal frame through cord to third prong. Also touch tester to ground prong to detect possible ground fault.

Testing will be done before initial use, after any repair work or when damage is suspected and every three months. A record will be made of the test and color-coded tag or tape, to identify in which month the test was conducted (see below), attached to the cord.

<i>January-White</i>	<i>February-White + Yellow</i>	<i>March- White+ Blue</i>
<i>April -Green</i>	<i>May -Green + Yellow</i>	<i>June-Green +Blue</i>
<i>July -Red</i>	<i>August Red + White</i>	<i>September-Red + Blue</i>
<i>October-Orange</i>	<i>November-Orange+ Yellow</i>	<i>December-Orange +Blue</i>

Electrical Safety Rules

- Tools and equipment should always get their power through a Ground Fault Interrupter Circuit (GFIC).
- Electrical equipment must be visually inspected for damage and defects before each day's use. Any damaged or defective equipment must not be used until repaired.
- Always use grounded plugs on equipment. Do not cut the grounding lug off of any plug.
- Make sure the electrical requirements of your equipment match the outlet power rating.
- All power cords must be of the approved type and must be properly insulated according to applicable codes.
- When running any temporary cords across aisles, cover them with an approved trip reducing device or material. Any cord in place for more than two working days is not temporary.
- A cord is deemed not serviceable if any of the interior conductors have their insulating jacket cut or torn.
- Conductive items of jewelry or clothing shall not be worn.
- Do not patch cords with electrical or duct tape.

- g Extension cords cannot be spliced together.

Training

The type of training shall be of the classroom or on-the-job type and the degree of training provided shall be determined by the risk to the employee.

Unqualified Person

Unqualified Person training should include:

- e How electricity works
- e How electricity can contact and harm the human body,
- e Training in safe related work practices that pertain to their respective job assignment,
- g How to perform lockout/tag-out procedures on equipment so it can be worked on safely,
- e Working with electric equipment and the electrical hazards involved with the work being performed.
- a How to distinguish and identify exposed electrical equipment and energized parts,
- e Clearance distances when working on or near energized equipment.
- e How to identify potential electrical hazards and
- e How to use equipment and machinery that is powered by electricity.

Retraining

Retraining shall be provided when the following are noted:

- s When there is reason to believe an affected employee, who has already been trained, does not have the understanding and skill required to work safely and
- o When workplace changes present a hazard for which employees have not been trained.

Certification

Any employee who faces the risk of an electrical shock that is not reduced to a safe level shall receive training by a competent person. Training will address the type of hazards that may be encountered and safety controls to minimize those hazards.

All documentation shall bear the names of the employees trained, the date of the training and the name, signature and title of the person who conducted the training.

All documentation is maintained in the employee personnel file, located in the main office.



NFPA 70E

Applicability

This electrical safety program is applicable to all Gartner Refrigeration & Mfg., Inc. mechanical service technicians **working on or near exposed, energized electrical conductors and/or circuit parts** on HVAC units/equipment pushing 480 volts or less. ***This program is not applicable to work on units/equipment pushing more than 480 volts.*** Work on units/equipment pushing more than 480 volts may require more stringent safe work practices, and more sophisticated personal protective equipment, than what is described in this program. If your workers are exposed to equipment pushing higher voltages, please be sure to read the applicable parts of NFPA 70E – 2015. Some of the changes made to provisions covering higher voltages are substantive. For example, the arc flash boundary for what was formerly Hazard/Risk Category 4 has changed from 8 feet (NFPA 70E – 2012) to 40 feet (NFPA 70E – 2015).

Purpose

The purpose of this program is to:

- Make mechanical service technicians aware of the potential electrical hazards associated with work on HVAC units/equipment pushing 480 volts or less;
- Provide the technicians with the knowledge they need to protect themselves from potential electrical hazards while working on HVAC units/equipment pushing 480 volts or less;
- Establish safe work practices and procedures for the technicians working on HVAC units/equipment pushing 480 volts or less; and
- Develop self-discipline in the technicians who are required to work on or near HVAC units/equipment pushing 480 volts or less so that they will consistently follow the safe work practices and procedures established for Gartner Refrigeration & Mfg., Inc.

Electrical Safety Program Principles

The electrical safety program principles that apply to this program are as follows:

- Electrical safety inspection and evaluation of each HVAC unit/equipment;
- Maintenance of each unit's/equipment's electrical insulation and the integrity of each unit's/equipment's enclosure;
- Planning of every job;

- Documentation of any first time procedures;



- De-energizing of each unit immediately after troubleshooting is completed and before repair work/maintenance begins;
- Anticipation of unexpected events;
- Identification and risk reduction of potential electrical hazards;
- The hazard/risk process that is to be used by technicians to evaluate tasks before starting work;
- Technician protection from shock, burn, blast, and other applicable hazards due to the work environment;
- Use of tools that are appropriate for the job;
- Assessment of the abilities of anyone who could be exposed to potential electrical hazards from repair or maintenance work on the HVAC units/equipment;
- Audits of the aforementioned principles and procedures of the electrical safety program every three years to verify compliance; and
- Field work audits once each year to verify compliance.
- Gartner will advise the host employer of unique hazards in the workplace presented by the contractor's work, unanticipated hazards, and any measures taken to correct hazards reported to them by the host employer.

Electrical Safety Program Controls

Gartner Refrigeration & Mfg., Inc. has established the following electrical safety program controls so that it can measure and monitor the electrical safety program.

- All affected technicians and their supervisors are responsible for ensuring that guards or protective measures are satisfactory for the conditions.
- All affected technicians are required to consider every electrical conductor or circuit part to be energized until it is shut off, tested dead, and locked out when lockout procedures are required.
- All affected technicians are required to consider the actual process of de-energizing an electrical conductor or circuit part and making it safe to work to be a potentially hazardous task.
- All affected technicians are required to avoid making bare hand contact with exposed, energized electrical conductors and/or circuit parts.
- All affected technicians are required to receive electrical safety training as described in this program. The training, in addition to their existing skills and knowledge related to the construction and operation of the electrical equipment, including installations, qualifies the technicians to work in the prescribed environment influenced by the presence of electrical energy.
- All affected technicians are to be provided with a copy of this program.



- All affected technicians are required to obtain answers to any questions they have about the program before they begin work.
- All affected technicians are required to consistently implement this program.
- All affected technicians are required to use the procedures described in this program to identify and categorize potential electrical hazards associated with their work on HVAC units/equipment, and eliminate or control them.
- Only troubleshooting procedures are permitted on exposed, energized electrical conductors and/or circuit parts unless the unit being serviced has a built-in interlocking disconnect.
- Where work is being performed on units/equipment with built-in interlocking disconnects, technicians are required to implement safe work practices, including use of the necessary personal protective equipment established by the independent, 3rd party arc flash and electrical shock risk assessments for specified tasks on energized units/equipment with exposed, energized electrical conductors and/or circuit parts.
- All affected technicians are required to stay alert when working on or near the units/equipment.
- All affected technicians are required to avoid performing work on the units/equipment while they are impaired by illness, fatigue, prescription drugs, nonprescription drugs, illegal drugs, alcohol or other impairments.
- All affected technicians are required to avoid reaching blindly into areas that could contain exposed, energized electrical conductors and/or circuit parts.
- All affected technicians are required to ensure that their work areas are properly illuminated so that their work can be performed safely.
- All affected technicians are required to avoid wearing conductive articles of jewelry and/or clothing.
- When any conductive objects are being carried by an affected technician he is required to handle it in a manner that prevents accidental contact with exposed, energized electrical conductors and/or circuit parts.
- Where a technician must work in a confined or enclosed work space, he is required to use protective barriers or insulating materials to prevent contact with exposed, energized electrical conductors and/or circuit parts.
- Housekeeping is not permitted where there is a possibility of contact with exposed, energized electrical conductors and/or circuit parts, unless barriers or insulating equipment is used to prevent contact.
- All affected technicians are required to identify and use the precautions that are appropriate for the work environment.
- All affected technicians are required to use a logical approach in determining the associated risks of each task.

Training Requirements



All Gartner Refrigeration & Mfg., Inc. mechanical service technicians and supervisors are required to receive electrical safety training that is specific to work on HVAC units/equipment pushing 480 volts or less. The training is substantive so that, coupled with their skills and knowledge related to the construction, operation and installation of the units/equipment, they will be considered “**Qualified Persons**” (Company workers who are undergoing on-the-job training to become “Qualified Persons” will be considered Qualified Persons for specific duties when they are under the direct supervision of a qualified person and have demonstrated their ability to perform the specific duties safely). Training is a combination of classroom and on-the-job training, which includes the following subjects.

- How to use a logical approach in determining the risks associated with each task.
- The contents of this electrical safety program, with emphasis on safe work practices, procedures, and personal protective equipment requirements.
- Identification and avoidance of electrical hazards associated with work on HVAC units/equipment pushing 480 volts or less.
- Techniques necessary to distinguish exposed energized electrical conductors and/or circuit parts from other parts of electrical equipment.
- Techniques necessary to determine the nominal voltage of exposed energized electrical conductors and circuit parts.
- The company’s established **Qualified Person—Approach Boundary** for protection from electrical shock and arc flash hazards (5 feet).
- The decision-making process necessary to be able to do the following:
 - Perform the job safety planning;
 - Identify electrical hazards;
 - Assess the associated risks; and
 - Select the appropriate risk control methods from the hierarchy of controls: *1st Elimination, 2nd Substitution, 3rd Engineering Controls, 4th Awareness, 5th Administrative Controls, and 6th Personal Protective Equipment.*
- Skills necessary to select an appropriate voltage meter and to demonstrate how to use it to verify the absence of voltage, including interpreting indications provided by the device, and its limitations.
- Skills necessary to select properly rated tools.
- Skills necessary to distinguish between the tasks that require the complete assortment of Category 2 PPE and the specified tasks that have been authorized, based on independent, 3rd party arc flash and electrical shock risk assessments, that may be performed with less than the complete assortment of Category 2 PPE.

- Selection, inspection, and maintenance of personal protective equipment, including pre-use leak testing, and biannual dielectric testing of protective rubber gloves required for standard/typical Category 2 applications.



- Selection, inspection and maintenance of personal protective equipment for specified tasks that meet the requirements for conditional relief of some Category 2 PPE.
- Training documents shall be maintained for the duration of the employee's employment.

Retraining will occur as follows:

- Anytime a supervisor or the results of an annual inspection indicate that the technician is not complying with the safety-related work practices.
- Whenever new technology, new types of equipment or changes in procedures necessitate the use of safety-related work practices that are different from those that the technician would normally use.
- Anytime a technician will have to employ safety-related work practices that are not normally used during his or her regular job duties.
- At least once within every three year period.

Personal Protective Equipment (PPE) Requirements

All PPE used shall conform to the standards listed in Table 130.7 (C)(14) for each individual item of PPE.

Protective Clothing – *Except when specified and documented for specific tasks, which are based on independent, 3rd party arc flash and electrical shock risk assessments,* technicians will wear **long sleeve shirts and pants or coveralls, and a balaclava made of Arc-Rated (AR) material**. The protective clothing will have a minimum Arc Thermal Protective Value (ATPV) of (8 cal/cm²). The ATPV will be displayed outside the clothing or on a tag inside.

Eye Protection – Standard **safety glasses** will be worn at all times by technicians while performing any mechanical service work. The safety glasses must be worn at all times, even while using an arc-rated face shield.

Head and Face Protection – *Except when specified and documented for specific tasks, which are based on independent, 3rd party arc flash and electrical shock risk assessments,* technicians will wear a **Class E hardhat** and an attached **arc-rated face shield** with wrap around guarding. The face shield will have a minimum Arc Thermal Protective Value (ATPV) of (8 cal/cm²).

Hearing Protection – *Except when specified and documented for specific tasks, which are based on independent, 3rd party arc flash and electrical shock risk assessments,* technicians will wear **ear canal inserts (ear plugs)**.



Hand Protection – *Except when specified and documented for specific tasks, which are based on independent, 3rd party arc flash and electrical shock risk assessments, technicians will wear **Class 00 Rubber gloves** and **leather protector gloves** over the rubber gloves.*

When Rubber gloves are required they must be dielectrically tested at a certified testing laboratory at least every six months. Technicians must field test their gloves before each use by trapping air inside each glove and looking/feeling for leaks. Gloves with leaks or any signs of damage will be destroyed and discarded immediately.

Leather protector gloves must be made entirely of leather and have a minimum thickness of 0.03 inches. If the gloves are lined, the liner must be a non-flammable and non-melting fabric.

Foot Protection – Technicians will wear leather footwear.

Electrical Safety Program Procedures

Gartner Refrigeration & Mfg., Inc. procedures for work on HVAC units/equipment pushing 480 volts or less are as follows:

Sequential Steps to Electrical Safety Program Procedures

Supervisors

1. Ensure that all of your technicians have received the proper electrical safety training as described in this program before you allow them to begin work. Ensure that they receive a copy of this program and understand the program's principles, controls, specific electrical safety training requirements, and procedures. Assess their abilities by testing them on the knowledge they need to protect themselves from electrical hazards.
2. Perform audits at least every three years to ensure that all of the electrical safety program principles established for Gartner Refrigeration & Mfg., Inc. are still appropriate. And, perform field audits at least once each year to ensure that all of the electrical safety program principles are being followed by the affected technicians.



Mechanical Service Technicians

1. Carefully plan each job well before you have to start the work. Make sure that you have all of the proper tools, equipment and permits (if required). Think through the electrical safety program procedures so that you can easily incorporate them into the troubleshooting, maintenance and/or repair processes.
2. Anticipate unexpected events by thinking through all conceivable possibilities. Remain cognizant of possible unexpected events by giving your undivided attention/concentration to the task.
3. Never approach a unit with exposed, energized electrical conductors and/or circuit parts closer than 5 feet without following the safe work practices and personal protective equipment requirements described in this program. The 5 foot boundary is the greater of the two boundaries (limited approach, and arc flash boundaries) established for ***Qualified Persons*** for shock and arc flash protection. The 5 foot boundary applies to any conductive objects that you might be carrying as well.
4. Before opening the access door or removing the panel to any energized unit/equipment, verify the voltage capacity. All HVAC units/equipment are required to be labeled. Labels applied before September 30, 2011 must show the available incident energy or the required level of personal protective equipment. Labels applied on or after September 30, 2011 must show nominal system voltage, the arc flash boundary, and at least one of the following:
 - Available incident energy and the corresponding work distance, or the arc flash PPE category in Table 130.7(C)(15)(A)(b) or Table 130.7(C)(15)(B) for the equipment, **but not both, or**
 - The minimum arc rating of clothing, **or**
 - The site specific level of PPE. If there is no label on the unit/equipment, report it in writing to the owner representative and to your supervisor. Also, ensure that all visible parts appear to be in good condition. **(If the unit/equipment is pushing more than 480 volts, this program does not apply. Before you proceed, obtain and follow an electrical safety program established for units/equipment pushing the higher voltage of the unit/equipment you will be servicing.)**
5. Before opening the access door or removing the panel to the energized unit, put on the personal protective equipment that was identified as necessary for the task by the independent, 3rd party arc flash and electrical shock risk assessments.



6. Be sure to use only properly selected/rated voltage testers (multimeters) and ammeters to test electrical circuits. Visually inspect all testing equipment including the leads, cables, power cords, probes and connectors before each use.
7. If you see any signs of damage do not use the equipment. Attach a red tag to the equipment and take it out of service immediately. Give it to the tool department as soon as possible.
8. Use all testing equipment in conformance with the manufacturers' recommendations.
9. Only use the testing equipment that is provided by the company. Never use light-up-type testing equipment.
10. Before testing voltage on electrical conductors and/or circuit parts test the meter on a known, live source. Then test the electrical conductors and/or circuit parts. Finish by testing the meter again on a known live source. If you detect any inconsistencies or discrepancies with the meter, take it out of service immediately as described above and repeat this process with a properly working/rated replacement meter.
11. Use only properly rated insulated tools to conduct troubleshooting as necessary to determine what's wrong with the unit.
12. As soon as you have identified the problem, stand to one side of the external service disconnect. Shut off the power. Lockout the disconnect supplying the unit when lockout procedures are required (see Simple Lockout Procedures on page 13). If lockout is necessary, follow the company's lockout procedures as described in this program. **(This step does not apply to units/equipment with built-in interlocking disconnects.)**
13. Test the unit to ensure that the power has been shut off.
14. Discharge any stored energy such as the current in the capacitors.
15. Once the unit is "tested dead" and any stored electrical current has been discharged, you may remove your electrical shock and arc flash PPE. **(Step 15 does not apply to units/equipment with built-in interlocking disconnects. If you're working on a unit with a built-in interlocking disconnect, wear the personal protective equipment identified as necessary for the task in the independent, 3rd party arc flash and electrical shock risk assessments throughout the troubleshooting and repair/maintenance process.**
16. Complete repairs/maintenance on the unit.



17. Remove all of your tools and materials from inside the unit.
18. Close the access door or replace the panel.
19. Put on all personal protective equipment described in Step 5.
20. Remove the lockout device if applicable.
21. Stand to one side of the external service disconnect and start the power. **(This step does not apply to units/equipment with built-in interlocking disconnects.)**
22. Ensure that the structural integrity of the unit (enclosure) is in good condition.
23. If you encounter any unusual first time procedures, write them down and report them to your supervisor. Give the supervisor a copy of your written procedures.
24. Do not allow **“Unqualified Persons”** to come within 10 feet of any unit that is not in an electrically safe work condition. The unit’s door or panel must be closed and there must be no exposed energized electrical conductors and/or circuit parts for an unqualified person to approach safely.

Alerting Techniques

Safety signs and Tags shall be used where necessary to warn employees about electrical hazards. Such signs and tags shall meet ANSI Z535 Table 130.7(F) standards.

Barricades shall be used in conjunction with safety signs (never by themselves) when and where necessary to prevent or limit access to work areas containing energized conductors. If necessary, an attendant shall be stationed to warn employees of potential hazards.

Any alerting technique shall not increase the potential for employee injury.

Simple Lockout Procedures

Simple lockout procedures (which are detailed below) will be used whenever equipment is de-energized for mechanical service work unless: (1) The technician will only be performing minor maintenance, servicing, adjusting, cleaning, and/or inspecting; (2) The disconnect is adjacent to the conductor, circuit parts and equipment being serviced; (3)



The disconnect is clearly visible to the technician; and (4) The work does not extend beyond one work period.

Complex lockout procedures, which are not typically needed for mechanical service work, are necessary when there are multiple energy sources, multiple crews, multiple crafts, multiple locations, multiple employers, differing disconnects, particular sequences, and/or the job or task will continue for more than one work period. For more information on Complex Lockout Procedures see NFPA 70E – 2015 Article 120.2(D)(2)—*Complex Lockout/Tagout Procedures*.

Simple Lockout Procedures

- Be sure to follow all applicable steps described in the Electrical Safety Program Procedures.
 - Notify all affected persons that the power to a unit(s)/equipment you will be working on will be shut off and that access to the external service disconnect will be locked out.
 - Shut off the power supply to the unit.
 - Attach the proper lockout device and lock to the external service disconnect to prevent anyone from accidentally starting the unit while work is being performed.
 - Attempt to operate the external service disconnect to ensure that the lockout device is working properly.
 - Select the properly rated voltage detecting instrument and check it over carefully for visible damage. Test the meter on a known, live source. Then test the equipment/unit for absence of voltage. Finally, test the meter again on a known live source. If you detect any inconsistencies or discrepancies with the meter, take it out of service immediately as described above and repeat this process with a properly working/rated replacement meter.
 - Discharge any stored energy such as the current in the capacitors.
 - Complete maintenance and/or repair on the unit.
 - Verify that the job is complete and remove all tools and materials from the unit.
-
- Notify all affected persons that the lockout procedure has been completed and the electrical supply is being restored. Instruct affected persons to stay away from the unit and the electrical supply.
 - Perform any necessary quality control tests or checks on the unit.
 - Remove the lock and lockout device.
 - Turn on the power supply to the unit.
 - Notify affected persons that the electrical supply is ready to be returned to normal operation.



Risk Assessment Process

Anytime work is performed on or near energized HVAC units/equipment pushing 480 volts or less, the potential for electrical shock, burns, arc-flash explosions, and other hazards exists. Therefore, in addition to carefully following the safe work practices and procedures established by this program, technicians are to inspect and evaluate each unit before starting work to identify electrical hazards, and perform a risk assessment.

- Look for obvious signs of damage to the unit/equipment, disconnects (where applicable), and conduit/wiring between service disconnects and the unit/equipment (where applicable).
- Look the unit/equipment over carefully for common causes of arc flash such as:
 - Dust and other impurities that could provide a path for electrical current;
 - Corrosion, which can create impurities on insulating surfaces;
 - High humidity, rain or condensation that could result in water vapor on insulating materials, which can cause flashover to ground;
 - The potential for spark discharge caused by accidental tool or spare parts contacting exposed, energized electrical conductors and/or circuit parts; and
 - Anything else that could cause arc flash.
- Report any unusual potential hazards to your supervisor before proceeding.

Job Briefing Requirements

The Service Manager will conduct a daily, short-term job briefing before the technicians leave the shop for the field. He will cover anticipated electrical safety hazards, safe work practices and/or personal protective equipment issues as deemed necessary. If an *Energized Electrical Work Permit* is required the information in the permit will also be covered in the briefing. Additional job briefings will be performed if changes occur that could affect the safety of the technicians.





Appendix A

Energized Electrical Work Permit

Energized Electrical Work Permits are not required when the work is done by **Qualified Persons** performing tasks such as testing, troubleshooting and voltage measuring. However, at some point you may come across an owner who requires a permit. The sample permit on the following page may be tailored to help you comply with an owner's requirement that you establish a permit system.



ENERGIZED ELECTRICAL WORK PERMIT FOR WORK ON HVAC UNITS/EQUIPMENT PUSHING 480 VOLTS OR LESS

Job/Work Order Number:

- Description of circuit/equipment/job location:

- Description of work to be done:

- Justification of why the circuit/equipment cannot be de-energized:

TO BE COMPLETED BY THE MECHANICAL SERVICE TECHNICIAN

Check When Complete

- Job description procedure to be used in performing the above detailed work:

- Description of the safe work practices to be employed:

- Necessary personal protective equipment to safely perform the assigned task:

- Means employed to restrict the access of Unqualified Persons from the work area:

- Evidence of completion of a Job Briefing including discussion of any job-related hazards:

APPROVAL TO PERFORM THE WORK WHILE ELECTICALLY ENERGIZED



Company Supervisor

Date

Client Representative

Mechanical Service Technician

Safety Representative

Once the work is complete, give this form to your immediate supervisor.



Appendix B

Personal Protective Equipment Identification



Personal Protective Equipment Identification

The personal protective equipment needed by mechanical service technicians for work on HVAC units pushing 480 volts or less is shown below.

**8 cal/cm² Arc Rated Coveralls or
Long Sleeve Shirt & Pants**



Class E Hardhat



**8 cal/cm² Arc-Rated Face Shield
with Wrap Around Guarding**



8 cal/cm² Balaclava



Class 00 Rubber Gloves



Leather Protector Gloves



Standard Safety Glasses



Ear Plugs



Leather Footwear





Fire Protection and Prevention

Fire protection standards identify the fire prevention regulations that all Gartner Refrigeration and subcontractors must adhere to on all jobsites. This section also discusses the storage of flammables and combustibles.

Fire Prevention Regulations

General Safety

1. Housekeeping: Pile materials so that safe clearances are maintained, and toppling is prevented. All flammable and combustible materials shall be stored properly. Immediately remove loose overhead material, dispose of garbage, and remove oil and water spillage. Cleanup prevents fires. All subcontractors are responsible for housekeeping in and around their work area at all times.
2. Heaters: Use only safe, U.L. or F.M. approved heaters. These should be in good condition, insulated from the floor and sturdy enough that they won't be knocked over by a careless act. Heaters must be placed well away from flammable materials, vented to the outside or placed in an adequately vented area. Follow manufacturer guidelines.
3. Open flames: including smoking within 25 feet of exposed flammable materials or flammable material storage is prohibited.
4. Flammable Liquids: Store in U.L. approved containers. Shut off all vehicle and equipment engines before fueling. No smoking is permitted in the area. Welding and cutting operations are also prohibited. Do not keep temporary heaters in the area where these liquids are stored.
5. Fire Extinguishers: Provide the required number of extinguishers. Make certain they are the correct type for the hazard and their location is properly marked. (See Extinguisher Selection and Distribution, page 6.) Check and inspect them periodically, at least monthly. Every individual on the job should know both where they are located and how to use them.
6. Welding and Cutting: Keep all fire extinguishing equipment nearby and in a state of readiness. Remove or cover all flammables in the area. Watch where the sparks are going. Check for smoldering sparks or fires both during the operation and about one-half hour later.
7. Obey No Smoking Signs: Proper signage should be posted throughout the jobsite or building.
8. Exits and Exit Signs: Provide at least two means of exit. These must be remote from each other and not able to be blocked at the same time. Erect an extra ladder or two if needed and add additional exit signs.
9. Access: Make certain that a fire lane is kept clear at all times so fire equipment can reach the building. This access must be 12 feet wide to allow for emergency vehicles.
10. What to Do in Case of Fire: Activate the fire alarm on the jobsite if applicable and call the fire department. Second, evacuate all personnel as quickly as possible. Third, direct the fire department to the fire.

Extinguisher Selection and Distribution

1. Extinguishers shall be provided for employee use and selected and distributed based on the classes of anticipated jobsite fires and on the size and degree of hazard which would affect their use.
2. Mount, locate and identify extinguishers so they are readily accessible to employees in accordance with the following requirements.
 - At least one size 2A extinguisher for every 3,000 square feet of protected building area.
 - Within 100 feet of any point.
 - On each floor of a multi-story building near each stairway.
 - One size 108 extinguisher within 50 feet of area where more than 5 gallons of flammable liquid is stored.
3. Use only approved extinguishers.
4. Maintain extinguishers in a fully charged and operable condition and keep in their designated places at all times except during use.
5. Perform annual maintenance inspection and attach a tag with date of last inspection and monthly visual inspection.

Fire Types

Class A fire. A fire involving ordinary combustible material such as paper, wood, cloth and some rubber and plastic materials.

Class B fire. A fire involving flammable or combustible liquids, flammable gases, greases and similar materials, and some rubber and plastic materials.

Class C fire. A fire involving energized electrical equipment where safety to the employee requires the use of electrically nonconductive extinguishing media.

Class D fire. A fire involving combustible metals such as magnesium, titanium, zirconium, sodium, lithium, and potassium.

Incipient Stage Fire. A fire which is in the initial or beginning stage and which can be controlled or extinguished by portable fire extinguishers, Class II standpipe, or small hose systems without the need for protective clothing or breathing apparatus.

Fire Extinguishers

Classifications

Portable fire extinguishers are classified to indicate their ability to handle specific classes and sizes of fires. Labels on extinguishers indicate the class and the numerical ratings indicates the relative size of fire that an experienced person can be expected to handle.

Extinguisher Class	Type of Fire	Numerical Rating
Class A	Ordinary combustibles, such as wood, cloth, and paper	1-A, 2-A, 3-A, 4-A, 6-A, 10-A, 20-A, 30-A, 40-A
Class B	Liquids, greases, and gases	1-B, 2-B, 5-B, 10-B, 20-B, 30-B, 40-B Up to 640-B
Class C	Energized electrical	Tested only for

	equipment	electrical conductivity. No extinguisher receives a Class C rating without a Class B rating
Class D	Metals such as magnesium, titanium, zirconium, sodium, potassium	Tested only for metal fires. Agent used depends on the metal for which the extinguisher is designed. Check the extinguisher faceplate for effectiveness on specific metals

The recommended marking system to indicate the extinguisher suitability according to class of fire is a pictorial concept that combines the uses and non-uses of extinguishers on a single label.

Portable fire extinguishers are classified to indicate their ability to handle specific classes and sizes of fires. Labels on extinguishers indicate the class and relative size of fire that they can be expected to handle.

Class A extinguishers are used on fires involving ordinary combustibles, such as wood, cloth, and paper.

Class B extinguishers are used on fires involving liquids, greases, and gases.

Class C extinguishers are used on fires involving energized electrical equipment.

Class D extinguishers are used on fires involving metals such as magnesium, titanium, zirconium, sodium, and potassium.



The recommended marking system to indicate the extinguisher suitability according to class of fire is a pictorial concept that combines the uses and non-uses of extinguishers on a single label. This system is illustrated in the accompanying figure. The first set (row) of symbols illustrated in the figure is a label for use on a Class A extinguisher. The symbol at the left (which depicts a Class A fire) is blue. Since the extinguisher is not recommended for use on Class B or C fires, the remaining two symbols (which depict Class B and Class C fires) are black, with a diagonal red line through them. The second set (row) of symbols illustrated in the figure is a label for use on a Class A/B extinguisher. The two left symbols are blue. Since the extinguisher is not recommended for use on

Class C fires, the symbol on the far right (which depicts a Class C fire) is black, with a diagonal red line through it. The third set of symbols is a label for use on Class B/C extinguishers. The two right symbols are blue. Since the extinguisher is not recommended for use on Class A fires, this symbol is black, with a diagonal red line through it. The fourth set of symbols is a label for use on Class A/B/C extinguishers. All symbols on this label are blue.



Extinguisher Suitability

Letter shaped symbol marking is also used to indicate extinguisher suitability according to the class of fire. Extinguishers suitable for more than one class of fire should be identified by multiple symbols placed in a horizontal sequence. Letter-shaped symbol markings are also used to indicate extinguisher suitability according to class of fire.

Extinguishers suitable for Class A fires should be identified by a triangle containing the letter "A." If colored, the triangle should be green.

Extinguishers suitable for Class B fires should be identified by a square containing the letter "B." If colored, the square shall be colored red.

Extinguishers suitable for Class C fires should be identified by a circle containing the letter "C." If colored, the circle should be colored blue.

Extinguishers suitable for fires involving metals should be identified by a five-pointed star containing the letter "D." If colored, the star shall be colored yellow.

Extinguishers suitable for more than one class of fire should be identified by multiple symbols placed in a horizontal sequence.

Class A and Class B extinguishers carry a numerical rating to indicate how large a fire an experienced person can put out with the extinguisher. The ratings are based on reproducible physical tests conducted by Underwriters' Laboratories, Inc. Class C extinguishers have only a letter rating because there is no readily measurable quantity for Class C fires which are essentially Class A or 8 fires involving energized electrical equipment. Class D extinguishers likewise do not have a numerical rating. Their effectiveness is described on the face plate.

Class A	Fires involving the combustion of ordinary materials such as wood, cloth, paper, plastics etc. The extinguishers contain pressurized water or water based extinguishing agents.
Class B	Fires involving combustible or flammable liquids such as gasoline, kerosene and many chemical agents including gases. Extinguishers

	contain carbon dioxide or a dry chemical extinguishing agent. When extinguishing electrical fires in or around sensitive equipment such as computers, a carbon dioxide extinguisher is preferred, as it does not leave any residue that will harm subsequent operation of the equipment.
Class C	Fires involving energized electrical equipment such as appliances of all kinds, motors, computers. Etc. Extinguishers contain carbon dioxide, Halon, dry chemical, or liquid extinguishing agent.
Class D	Fires involving combustible metals such as sodium, lithium, titanium, magnesium. Extinguishing agent usually comes in dry powder form stored in a bucket.
Extinguisher Type	Type of Fire

Water - Air-Pressurized Water Extinguishers (APW)



Water is one of the most used extinguishing agents for type A fires. You can recognize an APW by its large silver container. They are filled about two-thirds of the way with ordinary water, then pressurized with air. In some cases, detergents are added to the water to produce a foam. They stand about two to three feet tall and weigh approximately 25 pounds when full.

APWs extinguish fire by cooling the surface of the fuel to remove the "heat" element of the fire triangle.

APWs are designed for Class A (wood, paper, cloth, rubber, and certain plastics) fires only.



Important:

- Never use water to extinguish flammable liquid fires. Water is extremely ineffective at extinguishing this type of fire and may make matters worse by the spreading the fire.
- Never use water to extinguish an electrical fire. Water is a good conductor and may lead to electrocution if used to extinguish an electrical fire. Electrical equipment must be unplugged and/or de-energized before using a water extinguisher on an electrical fire.

CO₂ or Dry Chemical – Carbon Dioxide Extinguishers



This type of extinguisher is filled with Carbon Dioxide (CO₂), a non-flammable gas under extreme pressure. These extinguishers put out fires by displacing oxygen or taking away the oxygen element of the fire triangle. Because of its high pressure, when you use this extinguisher pieces of dry ice shoot from the horn, which also has a cooling effect on the fire.

You can recognize this type of extinguisher by its hard horn and absent pressure gauge. CO₂ cylinders are red and range in size from five to 100 pounds or larger. CO₂ extinguishers are designed for Class B and C (flammable liquid and electrical) fires only.



Important:

- CO₂ is not recommended for Class A fires because they may continue to smolder and re-ignite after the CO₂ dissipates.
- Never use CO₂ extinguishers in a confined space while people are present without proper respiratory protection.

Locations:

Carbon dioxide extinguishers will frequently be found in industrial vehicles, mechanical rooms, offices, computer labs, and flammable liquid storage areas.

Multi-Purpose – Dry Chemical Extinguishers



Dry chemical extinguishers put out fires by coating the fuel with a thin layer of fire-retardant powder, separating the fuel from the oxygen. The powder also works to interrupt the chemical reaction, which makes these extinguishers extremely effective.

Dry chemical extinguishers are usually rated for class B and C fires and may be marked multiple purpose for use in A, B, and C fires. They contain an extinguishing agent and use a compressed, non-flammable gas as a propellant.

ABC fire extinguishers are red in color, and range in size from five pounds to 20 pounds.

Dry Chemical extinguishers will have a label indicating they may be used on class A, B, and/or C fires.



Locations:

These extinguishers will be found in a variety of locations including public hallways, laboratories, mechanical rooms, break rooms, chemical storage areas, offices, commercial vehicles, and other areas with flammable liquids.

The ratings for Class "A" or "B" portable extinguishers are also accompanied by a numerical value which corresponds its extinguishing capacity.

CLASS A

Fire extinguishers with a Class "A" ratings are effective against fires involving paper, wood, textiles, and plastics. The primary chemical used to fight these fires is monoammonium phosphate, because of its ability to smother fires in these types of materials.



To achieve the Class A rating, an extinguisher must be capable of extinguishing the wood crib, wood panel, and *excelsior fire tests. Ratings are based on the size of the crib, panel, and excelsior fires that are repeatedly extinguished. The following dimensions are approximate sizes, supplied for informational purposes only.

Rating	Wood Crib (Inches)	Wood Panel (Feet)	Excelsior (Pounds)
1-A	20x20x20	8x8	6
2-A	25x26x26	10x10	12
3-A	30x30x30	12x12	18
4-A	33x30x30	14x14	24
6-A	38x38x38	17x17	36
10-A	48x38x38	17x17	36

Excelsior fine curled wood shavings used especially for packing fragile items.

CLASS B

Fire extinguishers with a Class "B" ratings are effective against flammable liquid fires. These can be fires where cooking liquids, grease, oil, gasoline, kerosene, or paint have become ignited. Two commonly used chemicals are effective in fighting these types of fires. Monoammonium phosphate effectively smothers the fire, while sodium bicarbonate induces a chemical reaction which extinguishes the fire.



To achieve the Class B rating, an extinguisher must repeatedly put out a flaming liquid fire. The rating is again based on the size of the fire extinguisher.

Rating	Pan Size (Sq. Ft.)	Gallons of Heptane
1-B	2.5	3.25
2-B	5.0	6.25

5-B	12.5	15.5
10-B	25	31.0
20-B	50.0	65.0
30-B	75.0	95.0
40-B	100.0	125.0

Class C

Fire extinguishers with a Class C rating are suitable for fires in “live” electrical equipment. Both monoammonium phosphate and sodium bicarbonate are commonly used to fight this type of fire because of their non-conductive properties.

To achieve the Class C rating, an extinguisher and contents must pass certain Electrical Conductivity measurements in accordance with UL 711 and UL 299.



All extinguisher ratings are shown on the extinguisher faceplate. Each extinguisher is rated with a letter (A, B, C, D or K) corresponding to the type of fire that it can be used on (See table above).

How to Choose a Fire Extinguisher

Some extinguishers are rated to be used on more than one type of fire. These combinations are AB, AC, BC, and ABC, which can be used on those types of fires corresponding to their rating letters as defined above. The combination extinguishers usually contain dry or wet chemical extinguishing agents, water, or carbon dioxide.

Class C extinguishers do not have a numerical rating, as the fires that they are used for usually are made up of both Class A and B fires, thus requiring them to also carry an A or B rating. Class C only refers to the fact that the extinguishing medium is non-conducting and can be used on electrical fires in which the equipment is energized.

Class D extinguishers usually are specific to the metal that would potentially ignite. It only carries the letter rating to indicate the type of fire it is to be used on.

If you have any questions regarding the type of extinguisher that is required in your office, or work area, please feel free to contact us.

What Each Type of Fire Extinguisher Looks Like

Generally, you can tell with a glance which type of extinguisher is hanging on the wall, or in the cabinet, just by looking at its shape. Check the labels of the extinguishers in your area and note the color and shape/size of the extinguisher. This may help if someone assists you in fighting a fire with the WRONG extinguisher (i.e. water on an electrical fire) -you can STOP them before they are injured or make matters worse!

ABC-rated multipurpose dry powder extinguishers are the most common on campus, particularly in the corridors of academic buildings. They are almost always RED in color and have either a long narrow hose or no hose (just a short nozzle). These extinguishers are very light (5-25 lbs. total weight).

Water extinguishers are usually SILVER (chrome-metal) in color, have a flat bottom, have a long narrow hose, and are quite large (2-1/2 gallons).

CO₂ (carbon dioxide) extinguishers are generally red (often yellow around aircraft or on military sites), have a LARGE "tapered" nozzle (horn), are VERY HEAVY (5-100 lbs. handheld or wheeled units). CO₂ Extinguishers are all high-pressure cylinders.

Care should be used not to drop a CO₂ cylinder; if it is damaged pressure released can punch a hole through the nearest wall(s) and end up on the other side of the building! (The containers are quite sturdy, but don't abuse them.)

Note: CO₂ extinguishers do not have pressure gauges and must be weighed to determine the exact amount of extinguishing agent inside.

Flammable and Combustible Liquids Storage

Indoor Storage

1. No more than 25 gallons of flammable or combustible liquids shall be stored in a room outside of an approved storage cabinet.
2. Quantities of flammable and combustible liquid in excess of 25 gallons shall be stored in an acceptable or approved cabinet.
 - Cabinets shall be labeled in conspicuous lettering: "FLAMMABLE- KEEP FIRE AWAY"
 - Not more than 60 gallons of flammable or 120 gallons of combustible liquids shall be stored in any one storage cabinet.
 - Not more than three such cabinets may be located in a single storage area.

Outdoor Storage

1. Storage of containers (not more than 60 gallons each) shall not exceed 1,100 gallons in any one pile or area.
2. Within 200 feet of each pile of containers, there shall be a 12-foot-wide access way to permit approach of fire control apparatus.
3. The storage area shall be graded in a manner to divert possible spills away from buildings or other exposures or shall be surrounded by a curb or earth dike at least 12 inches high. When curbs or dikes are used, provisions shall be made for draining off accumulations of ground or rainwater, or spills of flammable or combustible liquids. Drains shall terminate at a safe location and shall be accessible to operation under fire conditions.
4. Outdoor portable tanks shall not be nearer than 20 feet from any building.
5. Portable tanks, not exceeding 660 gallons, shall be provided with emergency venting and other devices, as required by Chapters III and IV of NFPA 30-1969. The Flammable and Combustible Liquids Code.

Fire Control

1. At least one portable fire extinguisher, having a rating of not less than 20-B units, shall be located outside of, but not more than 10 feet from, the door opening into any room used for storage of more than 60 gallons of flammable or combustible liquids.
2. At least one portable fire extinguisher having a rating of not less than 20-B units shall be located not less than 25 feet, nor more than 75 feet, from any flammable liquid storage area located outside.

Dispensing Liquids

1. Areas in which flammable or combustible liquids are transferred at one time, in quantities greater than 5 gallons from one tank or container to another tank or container shall be separated from other operation by 25 feet distance or by construction having a fire resistance of at least 1 hour. Draining or other means shall be provided to control spills.

Training

1. All employees will receive training for job specific hazards prior to job commencement. They will also receive fire extinguisher training annually. Records will be kept for employees who have received training.



Hot Work Program

Introduction

Anytime work with equipment that provides a spark or open flame, or a work procedure that generates excess heat is done, this process is known as "Hot Work". Hot work includes:

Cutting	Grinding	Riveting
Brazing	Welding	Soldering

Rather than accept the fact that accidents happen, this Hot Work Program will require the issuance of a HOT WORK PERMIT.

When "Hot Work" is to be performed, the employee performing the hot work shall complete a "Hot Work Permit" before commencing work. Upon completion of the work, the permit shall be turned into the permit issuer. Permit issuer shall retain the permit for a minimum of two (2) months from the date of return.

A new permit shall be completed when there is an interruption in the work process, such as the end of a shift, or changes in the work area.

Fire Prevention and Protection

1. The affected area(s) shall be inspected and results documented on the Hot Work Permit before beginning hot work activities.
2. All moveable fire hazards in the vicinity shall be moved at least 35 feet from the work site.
3. Papers and other combustibles or flammables that cannot be moved shall be isolated from the ignition source by flameproof covers or otherwise shielded with metal or fire-resistant guards or curtains.
4. Appropriate fire extinguishing equipment shall be readily available for use whenever Hot Work is performed.
5. A fire watch standby shall be provided when Hot Work is performed where there is a potential for a fire for a minimum of thirty (30) minutes after the completion of the Hot Work activities.
6. Compress gas cylinders must be labeled and inspected before each use.
7. When working with flammable or toxic materials / container the following precautions shall be taken:
 - Materials / Container shall be disconnected or blanked off.
 - Materials / Container shall be cleaned of the flammable or toxic materials.
 - Materials / Container shall be purged with an inert gas. After purging is completed, the atmosphere in the container shall be sampled to ensure it is safe for Hot Work.
8. Adequate ventilation (natural, mechanical) or respirator shall be provided for all Hot Work.

Employee Protection

1. All outer clothing shall be free from oil or grease.

2. Synthetic or plastic clothing shall not be worn.
3. Personal Protective Equipment (eye protection, gloves, footwear, etc.) shall be used as needed.
4. Long sleeve shirts shall be worn with sleeves and collars buttoned.

Training

Any person conducting hot work operations must be certified in the operations they are conducting. If you need training and certification, see Gartner Safety Director.

Hot Work Permits Procedure

Hot Work Operations:

Any operation that could cause a source of ignition in a hazardous area. A hot work permit is required for any hot work operations.

Process:

All activities that involve the receipt, storage, handling, compression, or movement of ammonia, including utility systems, required for the safe operation of the ammonia facility.

Source of Ignition:

A source of ignition is a flame, tool spark, static electric charge, or electric spark that would cause a fire or explosion.

Example:

- Welding, burning, brazing, soldering, or any use of an open flame;
- Metal removing such as drilling, chipping, abrasive cutting, milling, grinding, etc.;
- Internal combustion engines;
- Explosive-actuated fastening tools;
- Cutting or chipping concrete with or without reinforcements;
- Operating non-explosion-proof equipment and tools in an explosion-proof area. Includes battery powered equipment and tools;
- Operating any cleaning device utilizing a metal or any other material contact that can produce sparks; and,
- Work on live electrical circuits of any voltage in hazardous locations.

The hot work permit procedures that should be followed can be outlined by the following major steps:

- 1) Initiating a Hot Work Permit
- 2) Issuing a Hot Work Permit
- 3) Performing Hot Work
- 4) Completing the Hot Work Permit Procedure

Several different persons and departments may also be involved. The following information describes the responsibilities at various levels in the organization for the major steps in the hot work permit procedure.

Initiating a Hot Work Permit

The request for a hot work permit may be made by any facility employee or by Gartner if they feel that an operation presents an unusual hazard that requires special safety precautions. A hot work permit is required for any operation that could cause a source of ignition in a hazardous area. The request for a hot work permit should be submitted (verbally or in writing) to the site maintenance supervisor on the day that the hot work is to be performed.

Issuing a Hot Work Permit

- a) The site maintenance supervisor has the responsibility to fill out the hot work permit once a request for a hot work permit is made. The permit should be filled out before the hot work is started. The site maintenance supervisor should inspect the work area before filling out the hot work permit.
- b) The hot work permit should show the date and time that the work will be performed, the location, a shmi description of the work to be performed, the name of the cutter/welder, and the name of the fire watch (if one is required). A fire watch is required in locations where a minor fire might develop, where there are wall or floor openings within 35 feet, or where there is a presence of combustible material within 35 feet of the hot work (29 CFR 1910.252 (a)). The hot work permit is valid only for the job and the time listed in this section. It is suggested that the hot work pennit should be valid for no longer than an eight hour shift, but may have a shorter valid period.
- c) The site maintenance supervisor to review the list of hot work precautions with the cutter/welder and with the fire watch (see *Form*). These precautions are summarized in checklist form on the hot work permit (see Section 2 of Form), posted in the maintenance shop, and to be posted on the equipment where the work is to be performed. Note that the hot work precautions outlined in Section 2 of the form are minimum precautions; additional measures for safety of personnel or property may be taken by the site maintenance supervisor as deemed necessary.
- d) After the site maintenance supervisor is assured that all necessary hot work precautions have been taken, he/she should initial each item in Section 2 of the pennit, sign the permit, and then issue it to the cutter/welder. The cutter/welder and the fire watch should sign Section 1 indicating that they have reviewed the hot work precautions with the supervisor and understand their responsibilities. Site maintenance supervisor should make and keep a copy of the permit.

Performing Hot Work

- a) The cutter/welder should affix the hot work pennit and the hot work precautions to a visible place in the work area. The pennit should remain in this place until the hot work is completed. The cutter/welder is responsible for conducting the hot work within the authorized parameters and time limit set by the pennit. Hot work may continue as long as conditions remain safe and no new hazards (such as ammonia leaks) have been introduced.
- b) The following precautions should be taken when performing any hot work operations
 - Perfonn hot work in the maintenance shop except when the job cannot be moved to the shop.
 - Use only equipment that is in good condition. Valves, regulators, hoses and torches should be thoroughly checked.
 - Do not perfonn portable welding, cutting, or other hot work equipment in a building where sprinklers are out of service.
 - Move combustibles at least 35 feet from hot work operations. If combustibles cannot be moved, they should be protected by metal guards or by flame proof curtains or covers rather than by ordinary tarpaulins.
 - Do not perform hot work in or on any vessels containing flammable or combustible materials (includes ammonia) including residues, until they have been disconnected or blanked, completely cleaned out, and purged. Safe Work Practices for Opening of System should be adhered to.
 - Check the atmosphere for combustible gases or vapors, where necessary, using reliable combustible gas (ammonia) detection equipment. If there is a chance of gas

release during hot work operations, continuous-duty portable combustible gas detectors should be used to continuously monitor the area.

Ensure that a fire extinguisher, a small hose and/or bucket of sand are readily available for instant use in the area.

Do not perform hot work until surrounding floors have been swept clean, and, if combustible, wet down with water.

Do not perform hot work until all wall and floor openings within 35 feet of the operations have been tightly covered or otherwise protected with metal guards or flame proofed tarpaulins.

Do not perform hot work until a fire watch has been assigned to watch for dangerous sparks in the area and on floors above and below the operation.

Secure gas cutting and welding cylinders so they will not be damaged and replace protective caps (and closed gas supply valves) on all cylinders not actually in use. Carefully and securely connect the ground clamp when using electrical arc welding equipment. Since improperly made ground can be a source of ignition, the ground clamp should be connected as close to the work as possible so that it may easily be observed.

Use portable stands to elevate welding hose or cable off floor areas to avoid damage to the hose or cable.

Ensure adequate ventilation is maintained during hot work operations to assure that personnel are not exposed to harmful fumes. This may include positioning of an exhaust blower close to the point of the exhaust fumes. Respiratory protection should also be considered.

Remove all electrodes from the holders, carefully locate them so that accidental contact cannot occur, and disconnect the welding machine from the power source if hot work is to be suspended for any substantial period (e.g., lunch or overnight).

- c) The fire watch shares the responsibility for fire/safety with the cutter/welder. The fire watch should maintain a constant vigil during the operation (including lunch and coffee breaks) to watch for stray sparks, ignition sources, or other fire hazards. This individual should be specifically trained in the use of a fire extinguisher, small hose and/or bucket of sand and should stay with this equipment. He/she should be familiar with the facilities and also know how to sound the fire alarm. It is the fire watch's responsibility to try to extinguish any fires if they occur, as long as they are within the capacity of the equipment available, or otherwise sound the fire alarm.

The site maintenance supervisor should inspect the work area during the hot work operations to ensure that the conditions of the hot work permit are being fulfilled.

Completing the Hot Work Permit Procedure

- a) When the hot work is completed, the cutter/welder and the fire watch should remain for at least another 30 minutes, carefully inspecting the work area and adjacent areas for the possibility of any smoldering fires. This inspection extends to floors above and below the work area and to adjacent rooms.
- b) Barring any fires, the cutter/welder then removes the hot work permit. The cutter/welder should sign Section 3 of the permit, write the completed time and then return the permit to the site maintenance supervisor.
- c) The site maintenance supervisor, the cutter/welder, or the fire watch should return to the area two to four hours later; smoldering fires may take that long to become apparent. After this final inspection, the site maintenance supervisor should sign Section 3 of the hot work permit,

write the time the system was inspected, and retain the permit in the maintenance files as a record of the work.

Personnel Responsibilities

The following describes the various persons/departments who may be involved in the hot work permit procedure, and summarizes their responsibilities.

Originator

- Identifies the need for a hot work permit;
- Submits hot work permit request (verbally or in writing) to site maintenance supervisor; and
- Works with other departments, as assigned, during the implementation of the hot work permit procedure.

Site Maintenance Supervisor / Customer

- Has overall responsibility for ensuring that the hot work permit procedure is followed at the facility;
- Inspects the work area before filling out the hot work permit;
- Makes a determination as to whether a fire watch is necessary;
- Completes Sections 1 and 2 of the hot work permit after completing inspection of work area;
- Reviews the list of hot work precautions with the cutter/welder and the fire watch;
- Specifies any additional precautions that may be necessary for the hot work permit;
- Signs the hot work permit and issue it to the cutter/welder when assured that all necessary hot work precautions have been taken;
- Inspects the work area during the hot work operations to ensure that the conditions of the hot work permit are being fulfilled;
- Returns to the hot work area (or direct cutter/welder or fire watch to return to the area) two to four hours later to inspect for smoldering fires; and,
- Signs Section 3 and file the hot work permit after the final site inspection has been completed.

Cutter/Welder

- Reviews the list of hot work precautions with the site maintenance supervisor and sign Section 1 of the permit;
- Affixes the hot work permit and the hot work precautions to a visible place in the work area;
- Conducts the hot work operations within the authorized parameters and time limit set by the hot work permit;
- Stops hot work operations if any new hazards are introduced to the process;
- Remains in the area for 30 minutes after work is completed, carefully inspecting the work area and adjacent areas for any smoldering fires;
- Signs and return the hot work permit to the site maintenance supervisor after the 30 minute inspection; and,
- Returns to hot work area two to four hours later to inspect for smoldering fires if instructed to do so by the site maintenance supervisor.

Fire Watch

- Reviews the list of hot work precautions with the site maintenance supervisor and sign Section 1 of the permit;
- Maintains a constant vigil during the hot work operations (including lunch and coffee breaks) to watch for stray sparks, ignition sources, or other fire hazards;

Ensures that a fire extinguisher, a small hose and/or bucket of sand are readily available for instant use in the area;

Stops hot work operations if any new hazards are introduced to the process;

Extinguishes any fires if they occur as long as they are within the capacity of the equipment available, or otherwise sound the fire alarm;

Remains in the area for at least 1 hour after work is completed, carefully inspecting the work area and adjacent areas for any smoldering fires;

Returns to hot work area two to four hours later to inspect for smoldering fires if instructed to do so by the site maintenance supervisor.



Personal Protective Equipment

Certain personal protective equipment is required. Personal protective equipment is designed for a specific need and is mandatory for specific operations.

Generally, the company will provide the necessary Personal Protection Equipment. If the employee chooses to provide his or her own Personal Protection Equipment the following requirement must be met:

- They must inform his/her supervisor or Foreman that they are using non-company issued Personal Protection Equipment.
- The Personal Protection Equipment must meet all ANSI requirements.
- The Personal Protection Equipment must be properly maintained.

Eye Protection

- ANSI approved Safety glasses/goggles are to be worn by all employees working in or having business in designated areas or if there is a chance of getting chemical liquids or a foreign object in your eye. This includes clean-up time.
- Operators of cutters and others in the close proximity of cutting operations shall wear safety glasses. This includes clean-up time.
- Adherence to eye protection standards will be included in inspections.
- In addition to safety glasses/ goggles, face shields will be required in specific jobs. Ask your Supervisor or Foreman if you have any questions on your job.
- Welding, soldering and certain cutting operations require special eye protection.

Hand Protection

Hand protection is designed to prevent contact with skin and the substance being used. Be sure the gloves used are designed for the application that applies. Proper gloves are required when performing hot work or if specified in the product MSDS.

- Inspect gloves prior to use. If any tears, cuts, or excessive wear is found, replace them prior to work.
- After use, clean gloves thoroughly. If using acids, caustics, or solvents, inspect to ensure that material has not penetrated the glove.

Body Protection

Typically, full-length trousers and a shirt are sufficient body protection. If special body protection is needed for your job, you will be notified by your Supervisor, Foreman or by the Safety Director.

Head Protection

In most cases, head protection (hard hat) is not required. Head protection is required when:

- There is a chance of being struck by flying or falling objects.
- When working within 10 feet of a power line carrying greater than 440vAC.
- If required by the building owner or contractor.

Hearing Protection

Hearing protection must be worn in areas identified as high noise areas. A high noise area is one that has noise levels above 85 decibels. If you need to raise your voice to speak to someone three feet away, you should be using hearing protection.

Ear plugs and muffs are rated for reduction of decibels. Plus, and muffs rated for 30 dB are required for use on Gartner Refrigeration projects for high noise areas. Exposure to sound may change/vary based upon location and surrounding conditions.

The following is a list of activities that call for mandatory hearing protection:

- Grinding
- Working in an Engine Room that's in operation
- Operating power actuated tools
- Chop saws on metal
- Cutoff saw

The above list only includes a few examples and is *not* considered to be comprehensive.

When employees are subjected to sound levels exceeding those listed in the Table below, feasible administrative or engineering controls shall be utilized. If such controls fail to reduce the noise levels within the levels of the table, personal protective equipment as required in Subpart E shall be provided and used to reduce sound levels within the levels of the table.

Permissible Noise Exposures

During per day, hours	Sound level dB slow response
8	40
6	92
4	95
3	97
2	100
1½	105
1	105
½	110
% Or less	115

In all cases, where the sound levels exceed the values shown herein, a continuing effective hearing conservation program shall be administered 1926.52 (d)(1).

When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect should be considered, rather than the individual effect of each. Exposure to different levels for various periods of time shall be computed according to the formula set forth in paragraph (d)(2)(ii) of 1926.52.

Respiratory Protection

If your work involves the wearing of a respiratory your foreman will inform you and a respirator will be issued. Respirator use without a medical evaluation and training is prohibited.

Only approved respiratory equipment shall be used.

Training

Personal Protection Equipment Training shall consist of the following.

- When Personal Protection Equipment is necessary.
- What Personal Protection Equipment is necessary?
- Proper care, maintenance, and disposal of Personal Protection Equipment.

Retraining

Retraining is required when.

- The workplace changes, making previous training obsolete.
- The type of Personal Protection Equipment changes.
- When lack of use, improper use, or insufficient skills and/or understanding is shown.

**DEFECTIVE OR DAMAGED PERSONAL PROTECTION
EQUIPMENT MUST NOT BE USED**



RESPIRATOR SAFETY PROCEDURE

Gartner Refrigeration Inc. (GRC) has determined that employees in Ammonia Refrigeration Service, and Construction are exposed to respiratory hazards during routine operations. These hazards include ammonia vapors, and in some cases represent Immediate Dangerous to Life or Health (IDLH) conditions. The purpose of this program is to ensure that all Gartner Refrigeration employees are protected from exposure to these respiratory hazards.

In occasional ammonia leak situations, respirators, and other protective equipment must be used. Respirators are also needed to protect employees' health during emergencies. The work processes requiring respirator use at (GRC) are outlined in Table 1 in the Scope and Application section of this program.

1. Scope and Application

This program applies to all employees who are required to wear respirators during ammonia service work operations, and during some non-routine or emergency operations such as a spill of an ammonia substance. This includes employees servicing customer's equipment in their facility.

In addition, any employee who wears a respirator when a respirator is subject to the medical evaluation, cleaning, maintenance, and storage elements of this program, and must be provided with certain information specified in this section of the program.

Employees participating in the respirator protection program do so at no cost to them. The expense associated with training, medical evaluations and respiratory protection equipment will be borne by GRC.

The following PPM can be determined using your personal NH₃ monitor.

TABLE 1: VOLUNTARY AND REQUIRED RESPIRATOR USE AT GRC	
Personal Protective Equipment	
Respirator	MSA Test PPM
MSAGasMask	25-400 PPM
SCBA w/ Splash Suit and Gloves	400-1000 PPM Only with a certified assistant.
SCBA w/Level A Suite	Call Fire Department for assistance 1000 PPM and above
Leave Area Immediately	1000 PPM and above

Ammonia Safety Guidelines

Take hermetic tube/pump samples through cracked open door before entering spill area.

1%	10,000 ppm
4%	40,000 ppm Safe lower Level of Explosive Limits
35 ppm	P.E.L. (Personal Exposure Level) Irritation max ppm for 8-hour working conditions
25-300 ppm	Gas Mask Required
300-500 ppm & above	SCBA use required
Above 500 ppm	SCBA Required I.D.L.H. Immediate Danger to Life & Health
Above 900 ppm	Level "A" Protection required by OSHA (Need back up team with Level "A" suit per OSHA).

NOTE:

- A. Gartner Service Personnel are NOT Level 'A' Responders on their OWN. You need back up help using FIRE DEPARTMENT or HAZMAT Team.
- B. Work with FIRE DEPARTMENT and/or "HAZMAT" team to assist them.
- C. Level 'A' Response can only be performed on customers who have a PSM* Process Safety Management Tenn

40,000 ppm and above

LEAVE AREA IMMEDIATELY-LOWER LEVEL OF EXPLOSIVE LIMIT.

NOTE: Often indicated by a dense cloud filling the room to near zero visibility.

2. Responsibilities

Each individual must determine whether or not to wear a respirator or/SCBA by first sampling the NH₃ leak with a MSA "Kwick Draw" pump.

- " Conducting qualitative fit testing with the safety equipment supplier
- " Administering the medical surveillance program.
- " Maintaining records required by the program.
- " Evaluating the program
- " Updating written program as needed.

Program Administrator

The Program Administrator is responsible for administering the respirator protection program. Duties of the program administrator include:

- " Identifying work areas, processes that require workers to wear respirators, and evaluating hazards.
- " Selection of respirator protection options.
- " Monitoring respirator use to ensure that respirators are used in accordance with their certifications.
- " Arranging for and/or conducting training.
- " Ensuring proper storage and maintenance of respiratory protection equipment.
- " Conducting qualitative fit testing.
- " Administering the medical surveillance program.
- " Maintaining records required by the program.
- " Evaluating the program.
- " Updating written program, as needed.

Supervisors

Supervisors are responsible for ensuring that the respiratory protection program is implemented in their particular areas. In addition to being knowledgeable about the program requirements and followed by the employees under their charge. Duties of the supervisor include:

- " Ensuring that employees under their supervision (including new hires) have received appropriate training, fit testing, and annual medical evaluation.
- " Ensuring the availability of appropriate respirators and accessories.
- " Being aware of tasks requiring the use of respiratory protection.
- " Enforcing the proper use of respiratory protection when necessary.
- " Ensuring that respirators are properly cleaned, maintained, and stored according to the respiratory protection plan.
- " Ensuring that respirators fit well and do not cause discomfort.

Continually monitoring work areas and operation to identify respiratory hazards.
Coordinating with the Program Administrator on how to address respiratory hazards or other concerns regarding the program.

Employees

Each employee has the responsibility to wear his or her respirator when and where required and in the manner in which they were trained. Employees must also:

Care for and maintain their respirators as instructed, and store them in a clean sanitary location.
Inform their supervisor if the respirator no longer fits well, and request a new one that fits properly.
Inform their supervisor or the Program Administrator of any respiratory hazards that they are not adequately addressed in the workplace and of any other concerns that they have regarding the program.

All examinations and questionnaires are to remain confidential between the employee and the physician.

3. Medical

Medical Evaluation

Employees who are either required to wear respirators, or who choose to wear an APR voluntarily, must pass a medical exam before being permitted to wear a respirator on the job. Employees are not permitted to wear respirators until a physician has determined that they are medically able to do so. Any employee refusing the medical evaluation will not be allowed to work in an area requiring respirator use.

A licensed physician at our designated medical clinic, where all company medical services are provided, will provide the medical evaluation. Medical evaluation procedures are as follows:

The medical evaluation will be conducted using the questionnaire provided by the health care clinic and/or the respiratory protection standard. The Program Administrator will provide a copy of this questionnaire to all employees requiring medical evaluations.
To the extent feasible, the company will assist employees who are unable to read the questionnaire (by providing help in reading the questionnaire). When this is not possible, the employee will be sent directly to the physician for medical evaluation.
All affected employees will be given a copy of the medical questionnaire to fill out, along with a stamped and addressed envelope for mailing the questionnaire to the company physician. Employees will be permitted to fill out the questionnaire on company time.
Follow up medical exams will be granted to employees as required by the standard, and/or deemed necessary by the medical clinic physician.

- " All employees will be granted the opportunity to speak with the physician about their medical evaluation, if they so request.

The Program Administrator has provided the medical clinic physician with a copy of this program, a copy of the Respiratory Protection standard, the list of hazardous (ammonia) substances by work area, and for each employee requiring evaluation: his or her work area or job title, proposed respirator type and weight, length of time required to wear respirator, expected physical work load (moderate, heavy), potential temperature and humidity extremes, and any additional protective clothing required.

After an employee has received clearance and begun to wear his or her respirator, additional medical evaluations will be provided under the following circumstances:

- " Employee reports signs and/or symptoms related to their ability to use a respirator, such as shortness of breath, dizziness, chest pains, or wheezing.
- " The medical clinic physician or supervisor informs the Program Administrator that the employee needs to be reevaluated.
- " Information from this program, including observations made during fit testing and program evaluation, indicates a need for reevaluation.
- " A change occurs in workplace conditions that may result in an increased physiological burden on the employee.

Fit Testing

Fit testing is required for employees wearing MSA Gas Masks on SCBA's. Employees who are occasionally required to wear gas masks/SCBA's will be fit tested:

- " Prior to being allowed to wear any respirator/SCBA.
- " Annually.
- " When there are changes in the employee's physical condition that could affect respiratory fit (e.g., obvious change in body weight, facial scarring, etc.)

Employees will be fit tested with the make, model, and size of respirator that they will actually wear. Employees will be provided with several models and sizes of respirators so that they may find an optimal fit. Fit testing of respirators is to be conducted in the negative pressure mode.

4. Selection Procedure

Approved Respirator Use- OSHA has set up standards for the use of respirators in IDLH and non-IDLH atmospheres:

Approved respirators for IDLH atmospheres:

Full face piece, pressure demand, self-contained breathing apparatus (SCBA) not less than 30 minute tanks,

-or-

Combination full-face piece pressure demand supplied-air respirator (SAR) with auxiliary self-contained air supply.

Exception for areas with only oxygen deficiency: if an employer can demonstrate that, under all foreseeable conditions, oxygen levels in the work area can be maintained within OSHA defined safe ranges, then any atmosphere supplying respirator may be used. This is usually airline (SAR) without the escape bottle.

Approved respirators for non-IDLH atmospheres- for protection against gases and vapors:

An atmosphere supplying respirator (SCBA or SAR)

-or-

An air purifying respirator, provided that respirator is equipped with an end-of-life indicator (ESLI)

-or-

if there is no ESLI, the employer implements a change schedule for canisters and cartridges based on the workplace usage.

For protection against particulates

An atmosphere supplying respirator (SCBA or SAR)

-or-

An air-purifying respirator equipped with high efficiency particulate (HEPA) filters,

-or-

An air-purifying respirator equipped with any particulate filter as long as it is certified for the condition(s) it is being used at the workplace (N,R,P).

Respirator Use

The SCBA's:

SCBA's are positive pressure or pressure demand respirators. There is nothing electrical on the system. The system is alarmed for safety. The alarm is designed to signal the wearer that he is nearing tank exhaustion, with about 25% the air remaining. When this alarm sounds the wearer should immediately exit the contaminated area. All alarms are mechanical. Some companies use bells, some whistles, and some other sounds.

This tank is under high pressure and the wearer cannot breathe directly from it. To reduce this pressure to something that the lungs can tolerate a regulator is employed. This regulator reduces the pressure to slightly higher pressure than the air that we normally breathe making the face piece positive pressure.

Provisions are made to insure, that in the event of regulator failure, the wearer can bypass the regulator and get air directly from the main tank. If the bypass is manual, cracking it slightly will get adequate air to allow the wearer to reach fresh air prior to air exhaustion. If the bypass is automatic, it will automatically switch to a secondary regulator in the event of primary regulator failure. If this occurs, the alarm will sound alerting the wearer that a problem exists.

A gauge on the tank always indicates the pressure remaining in the tank. OSHA requires that all tanks be maintained in a fully charged state and must be recharged for use when the gauge shows less than 90% pressure level.

OSHA requires that all self-contained breathing apparatus must be inspected monthly.

Breathing Air:

Breathing air in SCBA's is composed of 21% oxygen and 78% nitrogen. It can be obtained from commercial sources and sometimes from local fire departments.

The requirements for air purity are specified by the Compressed Gas Association as Class D breathing air. This standard also specifies the amounts of allowable impurities. OSHA mandates this standard be used.

While on the subject of breathing air, it should be pointed out that the air in a tank can become stale. The exact time for this to occur depends on many factors including temperature and type of tank materials. It has been suggested that the air in these tanks be used or emptied every three-four months. This can easily be accomplished by scheduling training sessions and using the air. An easy way to keep up with the filing dates is to affix a piece of masking tape to the bottle and write the date the tank was last filled.

Respirator Malfunction

For any malfunction of an respirator/SCBA, such as breakthrough, face piece leakage, or improperly working valve), the respirator wearer should inform his or her supervisor that the respirator no longer function as intended, and go to the designated safe area to maintain the respirator. The supervisor must ensure that the employee receives needed parts to repair the respirator, or is provided with a new respirator.

Maintenance

Cleaning, Maintenance, Cartridge Change Schedules, and Storage:

Cleaning- Respirators are to be regularly cleaned and disinfected using approved alcohol wipes.

Monthly:

The following procedure is to be used when cleaning and disinfecting respirators:

- Disassemble respirator, removing any filters, canisters, or cartridges.
- Wash the face piece and associated parts in a mild detergent with warm water. Do not use organic solvents.
- Rinse completely in clean warm water.
- Wipe the respirator with disinfectant wipes (70% Isopropyl Alcohol) to kill germs.
- Air dry in a clean area.
- Reassemble the respirator and replace any defective parts.
- Place in a clean, dry plastic bag or other airtight container.

Note: The Program Administrator will ensure an adequate supply of appropriate cleaning and disinfection materials at the cleaning station. If supplies are low, employees should contact their supervisor, who will inform the Program Administrator.

Maintenance

Respirators are to be properly maintained at all times in order to ensure that they function properly and adequately, protect the employee. Maintenance involves a thorough visual inspection for cleanliness and defects. Worn or deteriorated parts will be replaced prior to use. No components will be replaced or repairs made beyond those recommended by the Manufacturer. All major repairs will be performed by the Manufacturers' Authorized Service Center.

The following checklist will be used when inspecting respirators:

Face piece:

- Cracks, tears, or holes
- Facemask distortion
- Cracked, or loose lenses/face shield

Headstraps:

- Breaks or tears
- Broken buckles

Valves:

- Residue or dirt
- Cracks, or tears in valve material

Filters/Cartridges:

- Approval designation
- Gaskets

Cracks or dents in housing
Proper cartridge for hazard

Cartridge Change Schedule

Employees wearing respirators shall change the cartridges on their respirators when they first begin to experience difficulty breathing (i.e., resistance) while wearing their masks.

**DO NOT USE CARTRIDGES BEYOND THE MANUFACTURER DATE CODE.
CHANGE SCBA AIR TANKS WHEN ALARM GOES OFF.**

SCBA Air Tanks:

Air tanks for breathing air are available in different materials. The first generation air tanks were made of steel. In order to reduce the weight of SCBA units the next tanks were made of aluminum. These were lighter in weight, generally of the same size, and painted the same color as the steel tanks.

The next generation was even lighter in weight being made from a thin shell of aluminum with an outer coating of fiberglass (referred to as composite tanks). The latest generation of composite tanks, usually used by fire fighters, is called the "stealth" tanks. These tanks have a thin wall of Kevlar and are wrapped with carbon fibers. Again, very light weight and very expensive.

The breathing air tanks are pressure tanks and as such fall under the responsibility of the Department of Transportation (DOT).

Testing:

As pressure tanks are filled, they expand. As they are used, they contract. As long as the tank continues to expand and contract there will be no problem. To ensure that the tank maintains its elasticity, the DOT requires hydrostatic testing or testing of these tanks at regular intervals.

The intervals for testing these tanks are as follows:

Non-Composite Tanks:

Steel Tanks – 5 years
Aluminum Tanks 5 years

Composite Tanks:

Aluminum tank wrapped with fiberglass – 3 years
Kevlar Tank wrapped with carbon fibers-3 years

The size of the tanks and the air pressure in the tanks dictate the amount of air that the tanks could contain. The tank sizes are as follows:

30-minute tanks contain 45 cubic feet of air under pressure of 2216 psig.

45-minute tanks contain 60 cubic feet of air under a pressure of 3000 psig.
60-minute tanks contain 90 cubic feet of air under a pressure of 4500 psig.

The 30-minute and 45-minute bottles are interchangeable on the backpack assemblies due to the fact that the regulators will handle either pressure bottle. The 60-minute bottles and regulators are not interchangeable with other lower pressure bottles. (See following illustration of Air Tank Capacities).

Defective Respirators:

Respirators/SCBA's that are defective or have defective parts shall be taken out of service immediately. If during an inspection, an employee discovers a defect in a respirator, he/she is to bring the defect to the attention of his or her supervisor. Supervisors will give all defective respirators to the Program Administrator. The Program Administrator will decide whether to:

- ▮ Temporarily take the respirator/SCBA out of service until it can be repaired.
- ▮ Perform a simple fix on the spot such as replacing head straps.
- ▮ Dispose of the respirator due to an irreparable problem or defect.

When a respirator is taken out of service for an extended period of time, the respirator will be tagged out of service, and the employee will be give a replacement of similar make, model and size. All tagged out respirators will be kept in the storage cabinet inside the Program Administrator's office.

Emergency Malfunctions:

An operator must be prepared to take emergency action in the event that the self-contained breathing apparatus malfunctions.

Some causes might be:

- ▮ Regulator malfunction
- ▮ Face piece dislodged from the face
- ▮ Lens pop out
- ▮ Tank runs out of air
- ▮ The breathing tube develops a leak.

If the regulator sticks are closed, you can use the bypass control.

If the regulator stick opens, close the cylinder tank valve to regulate the flow to satisfy the breathing requirements.

If the face piece is pulled from the face or the face piece lens breaks or pops out, you can breathe directly from the breathing tube.

If the breathing tube develops a leak, you can hold your hand over the leak.

If the tank runs out of air, it is an indication that either the alarm malfunctioned or the operator did not hear or heed the alarm. In this case, the operator should immediately exit the contaminated area.

Training

The Program Administrator will provide training to respirator users and their supervisors on the contents of the Gartner Refrigeration Seating Respiratory Protection Program and their responsibilities under it, and on the OSHA Respiratory Protection standard. Workers will be trained prior to using a respirator in the workplace. Supervisors will also be trained prior to using respirator in the workplace or prior to supervising employees that must wear respirators.



HAND AND PORTABLE POWER TOOLS

1.0 SCOPE

This section summarizes that basic safety rules we must practice when operation different types of tools so as to avoid the potential power tools present.

2.0 GENERAL SAFETY PRECAUTIONS

1. Gartner Refrigeration employees working on jobsite must be trained in the use of tools or equipment needed to perform their job. They should understand the potential hazards as well as the safety precautions required to prevent those hazards from occurring.
2. Personal Protective Equipment, safety glasses, gloves, steel toe boots. Should be worn due to hazards that may be encountered while using portable power tools and hand tools. Approved safety glasses meeting ANSI Z87.1 with attached side shields are to be worn during all work activities on Gartner Refrigeration jobsites.
3. Floors shall be kept as clean and dry as possible to prevent accidental slips with or around dangerous hand and portable power tools
4. Around flammable substance, sparks produced by steel hand tools can be a dangerous ignition source.

2.1 HAND TOOLS

Definition

Hand tools are non-powered. They include anything from wrenches. The greatest hazards posed by hand tools result from misuse and improper maintenance.

Potential Hazard

Hazard	Citation	Example
Employer shall not issue or permit the use of unsafe hand tools.	1926.301(a)	Using a chisel as a screwdriver may cause the tip of the chisel to break off, hitting the user or others
Wrenches, including adjustable, pipe and socket, shall not be used when jaws are sprung to the point that slippage occurs.	1926.301(b)	A wrench might slip if its jaws are sprung.

Impact tools, such as drift pins, wedges, and chisels, shall be kept free of mushroomed heads	1926.301(b)	Mushroomed heads could shatter on impact, sending sharp fragments flying.
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The wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight in the tool.	1926.301(d)	If a wooden handle on a tool, such as a hammer, is loose, splintered, or cracked, the head of the tool may fly off and strike the user or others
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2.2 POWER TOOLS

Potential Hazards

Power tools can be hazardous when improperly used. The following precautions should be observed by power tools users.

1. Never carry a tool by the cord or hose. 1923.302(a) 1923.302(b)(6)
2. Never yank the cord or the hose to disconnect it from the receptacle.
3. Keep cords and hoses away from heat, oil and sharp edges.
4. Disconnect tools when not in use, before servicing, and when changing accessories such as blades, bits and cutters.
5. Keep all observers at a safe distance away from the work area.
6. Secure work with clamps or vise, freeing both hands to operate the tool.
7. Avoid accidental starting. The worker should not hold a finger on the switch button while carrying an energized tool.
8. Maintain tools with care. They should be kept sharp and clean for the best performance. Follow instructions in the user's manual for lubricating and changing accessories.
9. Wear the correct PPE. No loose clothing, ties, or jewelry they can get caught be the moving parts. Be sure to keep good footing and maintain good balance.
10. Remove any damage portable electric tools from use. Tag them with "DEFECTIVE TOOL" or "DO NOT USE" and return them for repair

2.3 Guards

Hazardous moving parts of a power tool need to be safeguarded. For example, grinders, any type of cutting saws or any other rotating or moving parts of equipment must be guarded if such parts are exposed to contact employees.

1926.300(b) (1)

Safety guard must never be removed when a tool is being used. For example, portable circular saws must be equipped with guards. An upper guard must cover the entire blade of the saw. A retractable lower guard must cover the teeth of the saw, except when it makes contact with work material. The lower guard must automatically return to the covering position when the tool is withdrawn from the work.

2.4 Safety switches

All hand-held powered grinders with wheels 2-inch diameter or less, jigsaws with blade shanks one fourth of an inch wide or less may be equipped with only a positive "on-off" control.

All hand-held powered drills, fastener drivers, horizontal, vertical and angle grinders with wheel greater than 2 inches in diameter or any other similar operating powered tools shall be equipped with a monetary contact "on-off" control may have a lock-on control provided that turnoff can be accomplished by single motion of the finger or fingers that turn it on.

2.5 Electric Tool

Any worker using electric tools must be aware of several dangers; the most serious is the possibility of electrocution. Among the hazards of electrical power tools are burns and electrical shocks that can lead to injuries or even heart failure. Under certain conditions, even a small amount of current can result in fibrillation of the heart and eventual death. A shock also can cause the user to fall off a ladder or other elevated work surface.

Tools must have a three-wire cord with ground and be grounded, be double insulated. Three-wire cords contain two current carrying conductors and a grounding conductor. One end of the grounding conductor connects to the tool's metal housing. The other end is grounded through a prong on the plug. Anytime an adapter is used to accommodate a two-hole receptacle, the adapter wire must be attached to known ground. **THE THIRD PRONG SHOULD NEVER BE REMOVED FROM THE PLUGS.**

2.6 Double insulated protects the user and the tools in two ways:

1. Normal insulation on the wires inside
2. Housing that cannot conduct electricity to the operator in the event of malfunction

3.0 Safety Precautions:

1. Operate electric tools within their design limitation
2. Wear gloves and safety glasses include face shields for any type of cutting, safety footwear when using electric tools
3. Store tools in a dry place when not in use.
4. Do not use electric tools in damp or wet locations.
5. Keep work areas well lighted.

3.1 Pneumatic Tools

Pneumatic tools are powered by compressed air.

There are several dangers encountered in the use of pneumatic tools. The main one is the danger of getting hit by one of the tool's attachments or by some kind of fastener the workers in using with the tool.

Safety Precautions:

1. All pneumatic tools which shoot nails, rivets, or staples and that operate at pressures more than 100 pounds per square inch shall have a device to keep

2. Fasteners from being ejected unless the muzzle is pressed against the work surface. 1926.302(b)(3)
3. Use proper eye protection when using pneumatic tools; it is required. Full facial protection is recommended for employees working with pneumatic tools, in form of a face shield.
4. Use proper hearing protection
5. Regularly inspect pneumatic tools.

3.3 Liquid Fuel-Powered Tools

Liquid fuel-powered tools usually use gasoline. The most hazards with fuel-powered tools come from fuel vapors that can burn or explode and give off dangerous exhaust emissions. 1926.30 (c)(2)

Fuels must be stored in approved flammable liquid containers and in accordance with proper procedures for flammable liquids.

3.4 Safety Precautions:

1. Before refueling tools, shut down the engine and allow it to cool in order to prevent accidental ignition of hazardous vapors. 1926.302(c)(1)
2. If a fuel-powered tool is used inside a closed area, provide effective ventilation and/or personal protective equipment so as to avoid harmful concentrations of exhaust gases. 1926.302(c)(2)
3. Keep fire extinguishers readily at hand in the area.

3.5 Powered Abrasive Wheel Tools

Powered abrasive grinding, cutting, polishing, and wire buffing wheels create special safety problems because they may throw off flying fragments.

4.0 Safety Precautions:

1. Before an abrasive wheel is mounted, inspect it carefully. Sound-or ring-test it to be sure it is free from cracks or defects. To test wheels should be tapped gently with a light non-metallic instrument. A sound and undamaged wheel will give a clear metallic tone or "ring". 1926.303(c)(7).
2. To prevent the wheel from cracking, be sure it fits freely on the spindle. The spindle nut must be tightened enough to hold the wheel in place, without distorting the flange.
3. All portable grinding tools shall have guards to protect workers not only from the moving wheel surface but also from flying fragments in case of breakage. 1926.303(c)(5).
4. Always use eye protection. Full facial protection is recommended 1926.303(c)(9).
5. Always turn the power off when not in use.
6. Never clamp a hand-held grinder in a vise.



LADDERS and STAIRWAYS

1.0 SCOPE

This procedure is to insure proper use and minimum requirements for ladders and stairways for all Gartner Refrigeration employees and subcontractors.

1.1 TRAINING REQUIREMENTS

All Gartner Refrigeration employees on jobsites must be trained on safe use of ladders and stairways.

2.0 LADDERS

2.1 Construction Requirements

1. All ladders shall be constructed of wood, metal, or other equivalent material and shall have a safety factor of not less than four times maximum intended load. Each step or rung shall be capable of supporting a single concentrated load of at least 250 pounds.
2. Rungs, cleats, and steps of portable metal ladders shall be corrugated, knurled, dimpled, coated with skid-resistant material, or otherwise treated to minimize slipping.

2.2 Safety Guidelines

1. Non-conductive, type I, portable, fiberglass ladders are recommended for use on Gartner Refrigeration jobsites.
2. Use only the proper type of ladder, matched to the job or task, according to manufacturer's instructions.
3. Make sure hands, shoes, and ladder rungs are free of oil, grease or other material before climbing.
4. All ladders must be regularly inspected by a competent person to ensure their safe working condition.
5. Ladders placed in any location where they can be displaced by workplace activities or traffic, such as in passageways, doorways, or driveways shall be secured to prevent accidental displacement or a barricade shall be used to keep the activities or traffic away from the ladder.
6. Do not leave ladders unattended unless properly secured.
7. Tie-off and secure ladders to prevent slippage for proper access.
8. A ladder must extend 3 feet above the upper level when used for access to an upper elevation. 1926.1053(b)(1)
9. Never use a metal ladder when doing electrical work.
10. Never use ladders in horizontal position as platforms, walkways, or scaffold



11. Always face the ladder when climbing, maintaining a 3-points contact with the ladder.
12. Do not overreach while on the ladder. Move the ladder to correct position before climbing.
13. Ladders shall be used at an angle such that the horizontal distance from the top support to the foot of the ladder is approximately one-quarter, or 4:1 of the working length of the ladder.
14. Fall protection may be required for certain types of work for extended periods while working from a ladder. Ladder use in areas exposed to dangerous falls, building edges, open stairways, call for fall protection of adjusting the work.
15. A stairway or ladder shall be provided at all personnel points of access where there is a break in elevation of 19 inches or more, and no ramp, runway, sloped embankment, or personnel hoist provided.

2.3 Stepladders

1. The standard stepladder, a general purpose ladder has flat steps and a hinged back. It is self-supporting and nonadjustable. An industrial model, designed for heavy service demands, had oversize back legs, heavy-duty flat steps, and knee braces that increase rigidity and durability.
2. Stepladders shall not exceed 20' in height.
3. The top or top step of a stepladder shall not be used as a step. See specific manufacturers label warnings.
4. Stepladders must be set level on all four feet, with spreaders fully extended and locked into place.
5. Tie-off stepladders when used close to edges of different levels, in high traffic areas, or when the type of work and location could cause the ladder to become unstable.
6. Cross-bracing on the rear section of a stepladder shall not be used for climbing unless the ladder is designed and provided with steps for climbing on both front and rear sections.

2.4 Portable Ladders

1. Portable ladders used for access to an upper landing surface must have side rails that extend at least 3' about the upper landing surface to which the ladder is used to gain access.
2. There are many different types of portable ladders but they all receive one of four ratings, based on the maximum weight they can safely support. Refer to the manufacturer specifications.
3. The top or top step of a stepladder shall not be used as a step.
4. Stepladders must be set level on all four feet, with spreaders fully extended and locked into place.
5. Tie-off stepladders when used close to edges of different levels, in high traffic areas, or when the type of work and location could cause the ladder to become unstable.



6. Cross-bracing on the rear section of a stepladder shall not be used for climbing unless the ladder is designed and provided with steps for climbing on both front and rear sections.

2.5 Portable Ladders

1. Portable ladders used for access to an upper landing surface must have side rails that extend at least 3 feet (0.9 meters) above the upper landing surface to which the ladder is used to gain access.
2. There are many different types of ladders but they all receive one of four ratings, based on the maximum weight they can safely support. Refer to the manufacturer specifications.

Rating	Working loads
Extra Heavy Duty (I-A)	300 lbs
Heavy Duty (I)	250 lbs
Medium Duty (II)	225 lbs
Light Duty (III)	200 lbs

These following diagrams are the decals on ladders for rating purpose

3. Single portable ladders must not be longer than 30 feet and are intended for use by only one worker at a time. Such ladders come in wood, metal, and reinforced fiberglass versions.

2.6 Extension Ladders

1. Extension ladders are made of wood, metal, or reinforced fiberglass.
2. Wood ladders can't have more than two sections and must not exceed 48 feet. Metal and fiberglass ladders can have as many as three sections; however, the overall length must not exceed 60 feet. Individual sections of any extension ladder must not be longer than 30 feet.
3. Extension ladders are for use by only one person at a time.
4. Extension ladders must be tied off at the top, if possible, or blocked or held at the bottom. Have someone hold the bottom or top of the ladder until it can be tied off.
5. Extension ladders offer the greatest length in a general purpose ladder. The ladder consists of two or more sections that travel in guides or brackets, allowing adjustable lengths. The sections must be assembled so that the sliding upper section is on top of the lower section. Each section must overlap its adjacent section a minimum distance, based on the ladder's



overall length. The overall length is determined by the lengths of the individual sections, measured along the side rails. The table below shows the minimum overlap for ladders up to 60 feet long.

Rating Load	Working
Up to and including 36 feet	3 feet
Over 36 through 48 feet	4 feet
Over 48 through 60 feet	5 feet

6. Ladders should be placed using the 4:1 rule -the base of the ladder set one foot out from the supporting structure for every 4 feet of working height. (Example: A ladder extending 20 feet should be set 5 feet from the wall.)

3.0 STORING AND CARE OF LADDERS

1. The ladder storage area should be well ventilated.
2. Wood ladders shouldn't be exposed to moisture or excessive heat. Avoid storing ladder near stoves, steam pipes, or radiators.
3. Store straight or extension ladders in flat racks or on wall brackets. Make sure there are enough brackets to support the ladder so that it doesn't sag. If the ladder rails have a lateral curve, the wall brackets should match the curve.
4. Store stepladders and tripod ladders vertically, in closed position, to reduce the risk of sagging or twisting. Secure stored ladders so that they won't tip over if they are stuck.
5. Store ladders, especially wood ladders, promptly after using them. Exposure to moisture and sun will shorten the life of a wood ladder.

4.0 STAIRWAYS

4.1 Construction Requirements

1. Stairways that will not be a permanent part of the structure on which construction work is being performed shall have landings of not less than 30 inches (76 em) in the direction of travel and extend at least 22 inches (56 em) in width at every 12 feet (3.7 m) or less of vertical rise. 1926.1052(a)(1)
2. Riser height and tread depth shall be uniform within each flight of stairs, including any foundation structure used as one or more treads of the stairs. Variation in riser height or tread depth shall not be over inch (0.6 em) in any stairway system. 1926.1052(a)(3)
3. Where doors or gates open directly on a stairway, a platform shall be provided, and the swing of the door shall not reduce the effective width of the platform to less than 20 inches (51 em). 1926.1052(a)(5)



4. Stairways under construction with potential fall hazards shall be barricaded and only authorized employees shall be allowed to work on them with proper fall protection. 1926.1052

4.2 Safety Guidelines

1. Slippery conditions on stairways shall be eliminated before the stairways are used to reach other levels. 1926.1052(a)(6)



Scaffold Program

General Requirements

Each supported scaffold must be able to support four times its "maximum intended load." Maximum intended load means the total weight of all workers, materials and equipment that will be on the scaffold at any one time. A scaffold also has to support its own weight and any force transmitted to it by means of wind, snow, ice buildup and other external forces.

OSHA requires that a qualified person must design all scaffolds. OSHA defines a qualified person as "one who by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project."

All scaffolds must be constructed within the limits of its design and loaded within its designed capacity. Only qualified and or competent personnel are allowed to modify scaffolding systems.

Platform Construction

A qualified person shall design scaffold.

Scaffold working levels need to be fully planked or decked, using scaffold planks.

There should be no more than a 1-inch gap between the scaffold uprights and decking.

- e When an employer can demonstrate that a 1-inch gap or less is not feasible, the deck still needs to be planked as fully as possible. In any case, OSHA does not allow gaps of more than 9/16 inches.

Scaffold platforms and walkways must be at least 18 inches wide. There are three exceptions to this rule:

- e Ladder-jack, roof-bracket and pump-jack scaffolds can be as narrow as 12 inches.
- a If the scaffold is erected in an area that is too narrow to accommodate an 18-inch platform, the platform must be as wide as possible and guardrails or personal fall-arrest systems must protect employees.
- a The front edge of the scaffold platform should not be more than 14 inches from the face of the building. If the distance is greater than 14 inches, there must be guardrails erected along the front surface or employees must wear personal fall-arrest systems.

Platform planks have to extend a minimum of 6 inches over their supports. If they are too short, movement on the scaffold may cause them to move and fall; if they are too long, the weight distribution may cause them to tip.

- For platforms that are 10 feet or less in length, the cantilevered portion (i.e., the end that hangs over the support) should not be more than 12 inches long.
- a For scaffold planks longer than 10 feet, the cantilevered portion should not be more than 18 inches long.

- o Regardless of plank length, excess length of the cantilevered portion is not a problem if there are guardrails to prevent worker or material weight from being applied to the length or it is secured to the supports so that it will not tip when weight is applied.

When more than one plank is used to create a longer platform, the following rules apply:

- e If the planks are abutted, they must rest on separate supports. Common support members, such as T-sections, can be used, as can hook-on platforms designed to rest on the same support.
- s If the scaffold changes direction, they must be put over a support by at least 12 inches. If the overlap is less than 12 inches, the planks should be nailed or otherwise restrained.
- e If the scaffold changes direction, any planks that will be laid on a bearer at a right angle should be laid first. Planks that will be at a right angle should be laid on top of the first planks.
- o Wood platforms cannot be covered with opaque finishes.

Platform edges may be covered or marked for identification and the platforms themselves may be painted with wood preservatives or fire-retardant finishes and slip-resistance finishes, but the coating must not obscure the top or bottom.

Unsafe equipment must be tagged "DO NOT USE, UNSAFE" or "SCAFFOLD UNDER CONSTRUCTION--- STAY OFF" by a competent person and must be complied with.

Note: Platforms used only as walkways or by employees who are erecting or dismantling scaffolds are not considered working surfaces and are exempt from these requirements.

Component Mixing

Scaffold components can be mixed under two conditions. The first is that the components must fit together easily and without force. Additional parts must not be modified in order to fit unless a competent person determines that the resulting scaffold will be structurally sound.

The second condition is that dissimilar metals may not be combined unless the competent person approves the match. Some metals may react to one another and weaken the scaffold.

Supported Scaffolds

Basic requirements for supported scaffolds:

- o All parts of a scaffold must be plumb and braced.
- e All parts, including legs, poles, posts, frames and uprights, must be on a firm foundation. The best way to ensure a firm foundation is through the use of base plates and mudsills. Footings have to be level, sound and rigid, and there must be no chance of settling or displacement. Unstable materials or equipment cannot be used anywhere on a scaffold or under its footing. Equipment such as forklifts must not be used to support a scaffold, unless it is designed to be supported this way and the forklift is not moved at all while the scaffold is occupied.
- e Anytime a scaffold has a height that is more than four times its width; it has to be restrained with ties and/or braces. These must be installed according to the manufacturer's recommendations and at the following:
 - e Where horizontal members support both inner and outer legs.
 - e At the closest horizontal member to the 4:1 height.
 - e Every 20 feet vertically or less for scaffolds less than 3 feet wide, or every 26 feet or less for scaffolds wider than three feet. (At each of these heights, the ties and braces must be placed at each end and at intervals of less than 30 feet horizontally.)

Access

This section applies to all employees who have access to scaffolds for reasons other than erecting and dismantling them. Anytime scaffold platforms are more than two feet higher or lower than another level, access must be provided by means of one of the following:

Portable ladders	Stairway-type ladders
Hook-on ladders	Ramps and walkways
Attachable ladders	Integral prefabricated scaffold access
Stair towers	Personnel hoist

Access must not be provided by cross bracing under any circumstances.

Portable, hook-on and attachable ladders must be set up with the bottom rungs no further than 24 inches above the ground (or level), equipped with rest platforms at least every 35 feet and used in such a way that they won't cause the scaffold to tip.

Integral prefabricated scaffold access frames also must have rest platforms every 35 feet. They must be designed specifically to be used as ladders and be spaced uniformly within each frame section. Spacing between rungs cannot be larger than 16 inches, and rung length has to be at least 8 inches.

In all cases, rungs and steps need to line up vertically between rest platforms.

Access for Erecting and Dismantling Scaffolds

OSHA requires that a safe means of access must be provided for employees who are erecting or dismantling a scaffold. A competent person will make the determination about how the safe access will be accomplished. Ladders must be installed as soon as it is safe to do so. On fabricated frame scaffolds, also known as tubular welded frame scaffolds, cross bracing should not be used as access, but end frames can be if they are designed to be used as ladders and have horizontal members spaced no more than 22 inches apart

Use

A competent person, before each work shift and after any event that could affect the scaffold's integrity, must inspect scaffolds. Any part of the scaffold that is at all damaged or weakened should be removed, repaired or braced.

Erecting, moving, dismantling or altering can take place only under the supervision of a competent person or trained employees chosen by the competent person.

Clearance between scaffolds and power lines must be calculated. For any power of over 50 kilovolt (kV), the minimum distance is 10 feet. After that, the distance has to be increased by 4 inches for each 10 kV over 50.

Storms and high winds must bring an end to scaffold work unless the competent person determines that it is safe for employees to continue working. In such cases, a windscreen or personal fall-arrest systems must protect employees.

Debris must not be allowed to accumulate on the scaffold.

Employees who need to reach higher than the scaffold allows may not stand on boxes, barrels or other makeshift devices. A ladder can be used if the ladder legs, scaffold planks and scaffold itself is secured against movement. Both ladder legs must be on the same platform plank.

Scaffold platforms may not deflect more than one-sixtieth of the total span at any time. For a 5-foot span, the maximum deflection is 1 inch; on a 10-foot span, it is 2 inches.

Fall Protection

The height trigger for OSHA fall-protection rules on scaffolds is 10 feet. Whenever a scaffold is 10 feet or more above a lower level, a personal fall-arrest system or guardrails is needed.

Guardrail systems must be installed along all open edges and meet certain the following OSHA requirements:

- s Capable of supporting a 200-pound force.
- g1 Top-rails must be between 38 and 45 inches above the platform and able to with stand a force of 200 pounds from a downward or horizontal direction.
- s When mid rails are used, they should be about halfway between the top-rail and platform level. If screen or mesh is used instead, it must extend all the way from the top rail to the platform. If intermediate members (such as balusters or rails) are used, they must be spaced so there is never more than a 19-inch gap between them. These mid-rail systems must be able to withstand a force of at least 150 pounds.
- g1 Guardrails must be surfaced and constructed for employees' protection. They must be free of any imperfections that could puncture or impale employees' skin or snag their clothing.
- e Steel or plastic banding must not be used for top-rails or mid-rails. Manila or plastic rope can be used but only under a competent person's supervision.
- o Cross bracing can be used as mid or top-rails, as long as the height is appropriate: Mid-rail cross-braces must be 20 to 30 inches high, and top-rails must be at 38 to 48 inches high. The ends of the cross bracing must not be more than 48 inches apart where they attach to the end-frame.

Falling Object Protection

Fall object protection rules specify that anyone working in an area where an object could fall from above must wear a hard hat. There are also a number of additional ways to protect people from the dangers of falling objects. This potential danger must be considered for employees working on scaffolds, as well as for those below the scaffold.

- g1 Protection from falling objects can be provided by toe-boards, screens, guardrails systems, debris nets, catch platforms or canopies.
- e Objects should be kept safely away from the edges of surfaces from which they may fall.
- u1 Barricades below the area will prevent people from walking into an area where they may be struck by a falling.
- g1 Debris nets, catch platforms and canopies must be strong enough to stop any object that may fall into them.
- e Toe-boards must be able to withstand a force of 50 pounds, be at least 3 inches high, and have no more than a 1/4-inch clearance from the platform. They must be secured at the outermost edges, and they cannot have any holes larger than 1 inch.

Specific Scaffold Systems

This section covers additional OSHA requirements for the following scaffold systems: fabricated frame scaffolds, roof brackets, pump jacks, ladder jacks, crawling boards, and mobile scaffolds. All the general information presented previously also applies to these systems. For additional requirements pertaining to suspended scaffolds, refer to 29 CFR 1926.452

Fabricated Frame Scaffold

When moving platforms to the next level, existing platforms must be left in place until the new frames are braced and ready to receive the planks.

All brace connections must be secured and all members must fit together so that the scaffold automatically is squared and aligned.

Frames and panels must be secured by pins.

Brackets that support cantilevered loads must be used appropriately and only to support personnel, unless otherwise designed by a qualified engineer.

Scaffolds more than 125 feet high must be designed by a registered professional engineer.

Mobile Scaffolds

Scaffolds must be securely braced to prevent collapse. They must be plumb, level and squared.

Casters and wheels need to be locked to prevent movement. Caster and wheel stems must be pinned or otherwise secured in the scaffold legs.

When the scaffold is being moved manually, the force must be applied at a height of no more than 5 feet.

When the scaffold is moved by a power system, the system must be specifically designed for this purpose.

Employees on the scaffold must be warned before the scaffold is moved. For it to be moved while employees are on it, the following conditions must exist:

- > The ground surface must be within 3 degrees of level and free of pits, holes and obstructions.
- e The height-to-base ratio of the scaffold has to be a ratio of 2:1 or less.

If outrigger frames are used, they must be used on both sides of the scaffold.

When power systems are used, the force must be applied directly to the wheels and must not move the scaffold faster than 1 foot per second.

All employees must be on the area of the platform that is within the wheels, casters and supports.

Suspended Scaffolds

For more information about suspended scaffolds, contractors should refer to 29 CFR 1926.451(d) and various parts of 29 CFR 1926.452.

Training

Employees who perform work while on a scaffold need to be trained in the type of scaffold being used and understand the procedures to control or minimize those hazards. This training should include:

- o The nature of any electrical, fall and falling object hazards in the work area,
- e The correct procedures for dealing with such hazards and if needed the correct procedures for erecting, maintaining and disassembling the fall protection system and fall object protection systems being used,
- e The proper use of the scaffold and the proper handling of materials on the scaffold and
- e The maximum intended load and the load-carrying capacities of the scaffold used.

Employees involved in erecting, disassembling, moving, operating, repairing, maintaining or inspecting a scaffold need to be trained to recognize any hazards associated with the work in question. This training should include:

- e Nature of scaffold hazards,

- a Correct procedures for erecting, disassembling, moving, operating, repairing, maintaining the type of scaffold in question and
- o The design criteria, maximum intended load-carrying capacity and intended use of the scaffold.

Retraining

Retraining shall be provided when the following are noted:

- e When there is reason to believe that an affected employee, who has already been trained, does not have the understanding and skill required to work safely,
- e When workplace changes present a hazard for which employees have not been trained and
- e When scaffold or equipment changes present a hazard for which employees have not been trained.

Certification

Any employee who works on scaffolds shall receive training by a competent person. Training will address the type of scaffold, hazards that may be encountered and safety controls to minimize those hazards.

All documentation shall bear the names of the employees trained, the date of the training and the name, signature and title of the person who conducted the training.



Fall Protection

Fall protection is required whenever employees are exposed to fall from heights of six (6) feet or greater to a lower level. Protection will be using Conventional Fall Protection (Personal Fall Arrest, System a Fall Protection System), or Alternative Fall Protection (Warning Lines, Fall Protection Plan)

Definitions

Anchorage A secure point of attachment for lifelines, lanyards, or deceleration devices. Anchorages used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds per employee attached, or shall be designed, installed, and used as follows:

- As part of a complete personal fall arrest system which maintains a safety factor of at least two; and
- Under the supervision of a qualified person.

Body Belt – A strap with means both for securing it about the waist and for attaching it to a lanyard or lifeline. To be used for restraint or positioning work only, not for fall arrest.

Body Harness – Straps which may be secured about the employee in a manner that will distribute the fall arrest forces over at least the thighs, pelvis, waist, chest, and shoulders, with means for attaching it to other components of a personal fall arrest system.

Controlled Access Zone (CAZ)-An area in which certain work may take place without the use of guardrail systems, Personal fall arrest systems, or safety net systems; access to the zone is controlled.

Fall Arrest System-The use of multiple approved safety equipment components such as: body harness, lanyards, deceleration devices, drop lines and or vertical lifelines and anchorages interconnected and rigged as to arrest a free fall.

Fall Restraint-Any approved safety equipment components that function together to restrain an employee in such a manner as to prevent that employee from falling from the work surface such as: a standard guardrail system or body harness and lanyard that does not allow movement beyond the surface edge.

Free Fall-The act of falling before a personal fall arrest system begins to apply force to arrest the fall.

Guardrail Systems A barrier erected to prevent employees from falling to lower levels.

Hole-A gap or void 2 inches (5.1 cm) or more in its least dimension in a floor, roof, or other walking/working surface.

Leading Edge Any advancing edge of a floor, roof or formwork which changes location as additional flooring or roofing is placed, formed, or constructed. Leading edges not actively under construction are considered to be unprotected sides and edges and positive methods of fall arrest or fall restraint shall be required to protect exposed workers.

Lifelines-To be constructed of synthetic fibers such as nylon or rayon.

Low-Slope Roof-A roof having a slope less than or equal to 4:12 (vertical to horizontal).

Rake Edges -Any unprotected side, of which, is not a constant elevation.

Roof- The exterior surface on the top of a building. This does not include floors or framework, which, if a building has not been completed, temporarily become the top surface of the building.

Roofing Work – The hoisting, storage, application and removal of roofing materials and equipment, including related insulation, sheet metal, and vapor barrier work, but not including the construction of the roof deck.

Steep-Roof- A roof having a slope greater than 4:12 (vertical to horizontal).

Toe board- A low protective barrier that will prevent the fall of materials and equipment to lower levels and provide protection from falls for personnel.

Walking/Working Surface- Any surface, whether horizontal or vertical, on which an employee walk or works.

Conventional Fall Protection

A fall protection system must be used to protect employees that are working on roofs with unprotected edges that are six (6) feet or more above the lower levels. Forms of fall protection systems and their requirements are as follows:

Guardrail Systems

Must have an overall height of 42 inches (give or take 3 inches)

Must have a top and 1mid rail, and toe boards.

All rails must be a smooth surface rail, at least a minimum of 1/4 inch thick.

If rails are made of a wire rope, than:

- o It must be flagged with a highly visible material at an interval of not less than every six feet. The wire rope must be a minimum of 1/4 inch thick.

The top rail must be capable of withstanding 200 pounds of pressure with a total deflection of no more than three (3) inches at a point within two (2) inches of the top.

Personal Fall Arrest Systems (Full-Body Harness and Lanyards)

When employees are exposed to a fall hazard greater than six (6) feet and are not protected by a Fall Restraint System (such as a guardrail), a full body harness and lanyard assembly shall be used.

Maximum arresting force on a person can be no greater than 1800 pounds. When the whole system is assembled, it shall allow the employee a freefall of no more than six (6) feet.

Alternative Fall Protection

Warning Line Systems

When used, warning line systems must be set up according to the following provisions:

- e Identifying the work area,
- e Establishing a 15-foot perimeter that shall be 34 to 39 inches from the working surface, able to sustain a force of 16 pounds horizontally at the base and have a tensile strength of at least 500 pounds (e.g. yellow 1/4 inch nylon rope),
 - o No work or work-related activities is to take place in the area between the 15-foot perimeter and the roof edge,

- Employees are prohibited from going past the 15-foot perimeter.
- Appropriate staging of materials and equipment,
- Restricting access to areas below and adjacent the work area,
- Eliminating impalement hazards,
- Ceasing work during adverse weather conditions and
- Permitting only properly trained workers to use the alternative measure.

Fall Protection Plans

A Fall Protection Plan can be used only if it can be demonstrated that other Fall Protection Systems are not feasible, and/or would create a greater fall hazard.

The Fall Protection Plan must correspond with the following:

- Be prepared by a qualified, knowledgeable person and implemented by the same.
- Must be site-specific, up-to-date, and maintained at the worksite.
- Must designate by name or other means of identification, who is authorized to be in the work area.
- A competent person must investigate any accident promptly and modify the Fall Protection Plan accordingly.
- Establish a Safety Monitoring Person(s) or system.
- In the event of a fall, all available employees should assist in the prompt rescue of the fallen employee

All accidents and serious incidents that happen when using a Fall Protection Plan must be investigated, implementing changes to the fall protection plan as necessary.

Roof Openings and Tow boards

Openings, which are commonplace for such things as skylights and rooftop equipment, must be securely covered and marked or labeled as such.

- Securely covered is identified as nailed or screwed down, or attached so the wind, equipment, or employees may not inadvertently remove them.
- Marked or labeled is identified as color coded or marked with the word "hole" or "cover" to provide warning of the hazard.
- Covers, structurally, must be capable of holding twice the weight of any worker traffic that may be on it at any given time.

The proper covering and marking of rooftop openings is the responsibility of the General Contractor.

- All rooftop openings should be inspected prior to beginning the roofing operations, and if the rooftop openings are not deemed to be properly covered, the Supervisor or Foreman will see it is properly done and will also notify the General Contractor of the situation.

Toe boards, when used as falling object protection, will be erected along the edge of the overhead walking/working surface for a distance sufficient to protect employees below.

- the toe boards will be capable of withstanding, without failure, a force of at least 50 pounds applied in any outward or downward direction.
- The toe boards must be a minimum of 3.5 inches in vertical height and have not more than inch of clearance above the working surface.
- the toe boards must be solid or have openings not more than 1 inch in greatest dimension.

Training

Any employee who is exposed to a fall hazard shall receive training by a competent person who is knowledgeable in the nature of:

- o fall hazards associated with the job,
- o fall protection systems,
- the use of personal protective equipment and
- the handling and storage of equipment and materials.

Training will address the prevention and protection against fall hazards as well as outline safety systems to be utilized for the hazards involved. This training shall enable each employee to recognize the hazards of falling and in the procedures needed to minimize these hazards.

Employees who are covered under a Fall Protection Program shall be trained in alternate fall protection systems, in special fall hazards and in general fall safety as needed.

Specific Training

When an employee is required to use fall protection equipment that they are not familiar with, or in a location that could pose additional hazards, they will receive specific training on the hazard.

This training will cover special equipment and procedures the employee needs to follow in order to safely perform the work.

Retraining

Retraining shall be provided when the following are noted:

- e There is reason to believe any affected employee who has already been trained does not have the understanding and skill required by this section,
- e Workplace changes and
- o Fall protection systems or equipment changes that render previous training obsolete.

Certification

All documentation shall bear the names of the employees trained, the date of the training and the name, signature and title of the person who conducted the training.

All documentation shall be maintained in the employee personnel file, located in the main office.



Confined Space Program

The Minnesota Department of Labor & Industry OSHA Laws and Rules Chapter 182 Parts 5207.0300 – 5207.0304 defines a confined space as:

- An atmospheric condition in which a dangerous air contamination, oxygen deficiency or oxygen enrichment may exist or develop.
- A condition where the emergency removal of a suddenly disable person is difficult due to the location or size of the opening; or
- A condition where the risk of engulfment exists or could development.

Some examples of confined spaces are storage tanks, process vessels, bins, boilers, ventilation or exhaust ducts, sewers, underground utility vaults, tunnels, and pipelines. Open-top spaces more than four feet in depth such as pits, tubs, vaults, and vessels are also classified as confined space.

Because of the unique dangers associated with working in confined spaces, the Project Manager and Superintendent should review work of this type before starting a project. Using a pre-entry checklist can identify dangers associated with various types of spaces.

An annually review of this program will be conducted with revised as necessary to protect employees from confined space hazards.

Definitions

Atmospheric Testing: The testing of the atmosphere of all confined spaces by a qualified person before entry. Records will be kept each day or shift and filed at the jobsite until completion of the work.

Attendant: A person posted at the entrance to any Class II or III occupied confined space that monitors the activities of the person inside the confined space.

- This attendant is not a rescue person. Under no circumstance should the standby person enter the confined space without informing the rescue team.
- The attendant is not allowed to monitor more than 1 confined space entry at a time.

Authorized Entrant: The person who is authorized to enter and work in the confined space. This person name must be on the entry (work) permit.

Confined Space Entry: Any action, which results in or requires any part of the workers body to break the plane of any opening of the confined space. Confined space entry also includes any ensuring work activities within the confine space.

Dangerous Air Contamination: An atmosphere, which presents a threat of acute injury, illness, disablement, or death due to the present of toxic, flammable, explosive or otherwise injurious or incapacitating substances.

Engulfment: The surrounding of a worker by particulate matter, liquid, or gas in a confined space.

Entry (Work) Permit: A documentation form that has to be completed before entry into a confined space is permitted. The permit should be posted at the entrance to the space for the duration of the

work (Class I) or shift (Class II & III). When work in the confined space is completed, a copy of the permit should be kept in the jobsite file.

Entry Supervisor: The person who supervises work within the confined space.

Host Company: A company that arranges to have employees of another company perform work.

Immediately Dangerous to Life & Health (IDLH): The maximum concentration of a substance from which a worker could escape from the confined space within 30 minutes without experiencing any impairing symptoms or adverse, irreversible health effects.

Labeling and Posting: The entry to the confined space must be labeled with a sign. Such sign should read “Danger - Confined Space - Entry by Permit Only”.

Oxygen Deficiency: An atmosphere containing less than 19.5 percent oxygen by volume.

Oxygen Enrichment: An atmosphere containing greater than 23.5 percent oxygen by volume.

Confined Space Entry Identification

A confined space has the following characteristics.

- Contains or has a potential to contain a safety hazard or hazardous atmosphere
- Contains or has a potential to contain a material that has the potential for engulfing an entrant.
- Is not meant for continuous work or occupancy.
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or
- Any other recognized serious safety or health hazard.

Types of Confined Spaces

Confined spaces falls under two regulatory categories --- Construction (Minnesota Department of Labor & Industry OSHA Laws and Rules Chapter 182 Parts 5207.0300 – 5207.0304) and General Industrial (CFR 1910.146).

Construction

When working on new constructions or installing new equipment Minnesota Department of Labor & Industry OSHA Laws and Rules Chapter 182 Parts 5207.0300 – 5207.0304 will apply. These rules divide confined spaces into the following categories:

Class I Confined Spaces are confined spaces where an atmosphere with dangerous air contamination, oxygen deficiency, or oxygen enrichment is unlikely to develop and are divided into two categories --- Class IA and Class IB.

Class IA confined spaces are spaces where no risk of engulfment can exist, and where the atmosphere cannot develop a dangerous air contaminant or oxygen enrichment and all known hazardous sources are positively controlled.

Class IB confined spaces are spaces that are unlikely to develop a dangerous air contaminant, oxygen deficiency, or oxygen enrichment and have no potential for an engulfment condition.

Entry permits may be issued for the duration of the job and no standby person is needed if the following requirements are met:

- Specific entry procedures are established and listed on the Confined Space Entry Permit.
- Workers are trained in confined space practices and procedures.

- The atmosphere is tested before each entry.
- That continuous air monitoring and/or ventilation is performed.

Class II Confined Spaces are confined spaces where an atmosphere free of dangerous air contamination, oxygen deficiency or oxygen enrichment has been verified.

When entering a Class II confined space, an entry permit must be completed and posted at the entrance of the confined space. A standby person must assist the person or persons within the confined space and must have visual, voice or signal line communication with each individual in the confined space.

Class III Confined Spaces are confined spaces where an atmosphere free of dangerous air contamination, oxygen deficiency or enrichment cannot be verified.

When entering a Class III confined space, an entry permit must be completed and posted at the entrance of the confined space. A standby person must assist the person or persons within the confined space and must have visual, voice or signal line communication with each individual in the confined space.

Rescue equipment must be readily available and proper personal protection equipment needs to be worn. When respirators are used, a person trained in CPR shall be immediately available.

When there are changes in the use or configuration of a non-permit confined space that might increase the hazards to entrants, the employer shall reevaluate that space and, if necessary, reclassify it as a permit-required confined space. A space classified by the employer as a permit-required confined space may be reclassified as a non-permit confined space under the following procedures:

1. If the permit space poses no actual or potential atmospheric hazards and if all hazards within the space are eliminated without entry into the space, the permit space may be reclassified as a non-permit confined space for as long as the non-atmospheric hazards remain eliminated.
2. If it is necessary to enter the permit space to eliminate hazards, such entry shall be performed under subsections (d) through (k). If testing and inspection during that entry demonstrate that the hazards within the permit space have been eliminated, the permit space may be reclassified as a non-permit confined space for as long as the hazards remain eliminated.

General Industry

CFR 1910.146 rules will apply when routine maintenance is performed, when repairs to existing systems are made, replacing equipment or parts or when working in a Host Company designated confined space. Before working in a Host Company confined space the following should be completed:

- Obtain any available information regarding permit spaces hazards and entry operations.
- Coordinate, develop and implement entry and rescue procedures with the host company.
- Inform the Host Company of any confined space hazards that might be generated during work activities.
- If no Host Company Program is available, entry will be treated as a Class II or Class III entry depending upon the conditions.

Rescue Team

If the Host Company or contractor does not provide a rescue team, the rescue team shall consist of offsite personnel, usually the local fire department. The entry supervisor will contact the Host Company rescue team or off-site personnel; and notify them that a confined space entry is going to be made.

Entry (Work) Permit System

An entry (work) permit is required for all employees requiring access into any area defined as a confined space. The work permit will authorize specified employees to access the confined space indicated on the work permit so long as all conditions are met.

In situations where the permit conditions are not met, where the work conditions have changed or when requested by the Authorized Entrant or Attendant, the work permit shall be revoked and reviewed ---- prohibiting any further work activities within the confined space.

A work permit for any confined spaces shall be completed before entering into that confined space. Permits issued for Class I confined spaces are valid for one year or until the job is completed. Work permits issued for Class II & Class III confined spaces are valid for one shift (12 hour maximum).

Each canceled entry permit shall be retained for at least 1 year to facilitate the review of the permit space program. Any problems encountered during an entry operation shall be noted on the pertinent permit so that appropriate revisions to the permit space program can be made. The permit space program must be reviewed using the canceled permits retained within 1 year after each entry and revise the program as necessary, to ensure that employees participating in entry operations are protected from permit space hazards.

When an employer (host employer) arranges to have employees of another employer (contractor) perform work that involves permit space entry or confined space entries, the host employer shall:

1. Inform the contractor that the workplace contains permit spaces and that permit space entry is allowed only through compliance with a permit space program meeting the requirements of this section, section 5158 or section 8355, depending on which section applies to the contractor
2. Apprise the contractor of the elements, including the hazards identified and the host employer's experience with the space, that make the space in question a permit space
3. Apprise the contractor of any precautions or procedures that the host employer has implemented for the protection of employees in or near permit spaces where contractor personnel will be working
4. Coordinate entry operations with the contractor, when both host employer personnel and contractor personnel will be working in or near permit spaces, as required by subsection (d)(11)
5. Debrief the contractor at the conclusion of the entry operations regarding the permit spaced program followed and regarding any hazards confronted or created in permit spaces during entry operations.

Entry Preparation

The following operating procedures should be implemented where access into a confined space is required:

1. The area must be isolated from any systems or processes that might present a hazard.

- Air monitoring of the confined space.
- Posting of completed permit at confined space location along with all required safety signs to alert employees.
- All required PPE can be obtained at no charge to employee when performing in confined spaces

Training

Any employee who is exposed to a confined space shall receive training by a competent person. Training should address confined space hazards as well as outline safe working procedures. All employees who will be working in a confined space shall receive training upon first entering a confined space and annually thereafter. Training shall be provided whenever the employer has reason to believe either that there are deviations from the permit space entry procedures required by subsection (d)(3) or that there are inadequacies in the employee's knowledge or use of these procedures. Training will include:

Attendant

- Know hazards that may be faced during entry.
- Know possible behavioral effects of the hazards.
- Continuously maintain accurate count of entrants.
- Remain outside space during entry operations until relieved.
- Communicate with entrants to monitor their status and alert them of need to evacuate.
- Monitor activities inside and outside of space.
- Summon rescue and emergency services when necessary.
- Warn unauthorized persons to stay away.
- Perform non-entry rescues per employer's procedure.
- Perform no duties that interfere with your primary duty to monitor entrants.

Authorized Entrant

- Know the hazards you may face during entry, including symptoms, signs, and consequences of exposure.
- Properly use all required personal protective equipment.
- Communicate with the attendant as necessary to enable the attendant to monitor your status and alert entrants of any need to evacuate.
- Alert the attendant whenever you detect any warning sign or symptom of exposure to a dangerous situation or a prohibited condition.
- Exit from the space as quickly as possible when the attendant tells you to do so, when you recognize any warning sign, when you detect a prohibited condition, or when you hear the evacuation alarm

Entry Supervisor

- Know hazards that may be faced during entry.
- Verify that acceptable conditions for entry exist.
- Terminate entry when prohibited condition arises.
- Verify that rescue services are available.
- Remove unauthorized persons who enter or attempt to enter during the entry operations.
- Determine that acceptable entry conditions are maintained.
- Coordinate with others trades that be working in the confined space.

Certification

All documentation shall bear the names of the employees trained, the date of the training and the name, signature and title of the person who conducted the training.

All documentation is maintained in the main office.

Confined Space Pre-Entry Checklist

Forward a completed copy of this form to the Safety Director.

Use this checklist to evaluate the confined space. If question is not applicable, write N/A.

Do not enter a confined space until you have considered every question and have determined the space to be safe.

Yes No
____ _____

Is entry necessary?

Possible Hazards

List possible hazards within the confined space: i.e., atmospheric hazards (Oxygen, flammables, toxics) mechanical hazards, piping and valves, temperatures, etc.

Yes, No
____ _____
____ _____

Testing

Are the instruments used in atmospheric testing properly calibrated?
Has the person doing the atmospheric testing been trained in the proper usage of the testing equipment?

Yes, No
____ _____
____ _____
____ _____

Monitoring

Will the atmosphere in the space be monitored while work is going on?
Continually?
Periodically? (If yes, give interval: _____)

Yes, No
____ _____
____ _____
____ _____

Cleaning

Has the space been cleaned before entry is made?
Was the space steamed?
If so, was it allowed to cool?

Yes, No
____ _____
____ _____
____ _____
____ _____

Ventilation

Has the space been ventilated before entry?
Will ventilation be continued during entry?
Is the air intake for the ventilation system located in an area that is free of combustible dusts, vapors, and toxic substances?
If atmosphere was found unacceptable and then ventilated, was it re-tested before entry?

Yes, No
____ _____
____ _____
____ _____
____ _____
____ _____

Isolation (Lock-Out/Tagout)

Has the space been isolated from other systems?
Has electrical equipment been locked out?
Have disconnects been used where possible?
Has mechanical equipment been blocked, chocked, and disengaged where necessary?
Have lines under pressure been blanked and bled?

Confined Space Pre-Entry Checklist Cont

Yes,	No	<u>Clothing/Equipment</u>
_____	_____	Is special clothing required (boots, chemical suits, glasses, etc.)? If so specify: _____.
_____	_____	Is special equipment required (rescue equipment, communications equipment, etc.)? If so specify: _____.
_____	_____	Are special tools required (spark proof)? If so specify _____

Yes,	No	<u>Respiratory Protection</u>
_____	_____	Is respiratory protection required (air-purifying, supplied air, self- contained breathing apparatus, etc.)? If so, specify type: _____
_____	_____	(Coordinate with Safety Director.) Are MSHA/NIOSH - approved respirators available? (Coordinate with Safety Director.)

Yes,	No	<u>Training</u>
_____	_____	Have entrants been trained in proper use of a respirator?
_____	_____	Are entrants medically capable of wearing a respirator?
_____	_____	Is supervision and rescue team certified in first aid/CPR?
_____	_____	Have entrants been trained in confined space entry and do they know what hazards to look for?

Yes,	No	<u>Attendants</u>
<input type="checkbox"/>	<input type="checkbox"/>	Will there be an attendant on the outside in constant visual or auditory communication with the person on the inside?
<input type="checkbox"/>	<input type="checkbox"/>	Will the attendant be able to see and/or hear the person inside at all times?
<input type="checkbox"/>	<input type="checkbox"/>	Will safety lines and harness be required to remove a person?
<input type="checkbox"/>	<input type="checkbox"/>	Are company rescue procedures available to be followed in the event of an emergency?
<input type="checkbox"/>	<input type="checkbox"/>	Is the attendant familiar with emergency rescue procedures?
<input type="checkbox"/>	<input type="checkbox"/>	Does the attendant know who to notify and how in the event of an emergency?

Yes	No	<u>Permit</u> (The permit is an authorization in writing that states that the space has been tested by a qualified person, that the space is safe for entry; what precautions, equipment, etc. are required; and what work is to be done.)
<input type="checkbox"/>	<input type="checkbox"/>	Has a confined space entry permit been issued?

Person completing checklist

Person issuing permit

Date

CONFINED SPACE WORK PERMIT

Type of Permit: Class I (Expiration Date: _____) Class II Class III
 ** Class II & III Permit valid for one shift or maximum of 12 hours

JOB # _____ SUPERINTENDENT _____
 CITY _____ PERSON-IN-CHARGE _____
 WORK AREA _____ DATE _____
 PERSON PERFORMING ATMOSPHERIC TEST _____

Permit Required

Non-Permit Required

1. Atmospheric Testing

Type of testing instrument: _____	Reading	Reading	Reading	Reading
Time	_____	_____	_____	_____
<i>Oxygen</i>	_____	_____	_____	_____
<i>Flammable</i>	_____	_____	_____	_____
<i>Toxic H₂S and CO</i>	_____	_____	_____	_____
<i>Other (_____)</i>	_____	_____	_____	_____

2. Descriptions of Hazards: _____

	Yes	No		Yes	No
3. Continuous Monitoring <small>If not continuously monitored, periodic tests are needed. Document readings in the above table.</small>	()	()	9. Safety Equipment and Clothing		
			Head Protection	()	()
			Hearing Protection	()	()
4. Respirator Use	()	()	Hand Protection	()	()
			Foot Protection	()	()
5. Training of Personnel	()	()	Body Protection	()	()
			Respiratory Protection	()	()
6. Labeling and Posting	()	()	Ground Fault Protection	()	()
7. Preparation:			Low Voltage	()	()
Isolate/Lockout/Tag	()	()	10. Rescue Equipment	()	()
Purge and Ventilate	()	()	SCBA's	()	()
Special			Tri-Pod/Hoisting Device	()	()
Equipment & Tools	()	()	Body Harness	()	()
8. Procedures:			11. Recordkeeping/Exposure	()	()
Initial Work Plan	()	()	12. Attendant Required at Entry	()	()
Communications	()	()			
Rescue	()	()			

I have received instruction on this work and fully understand and have complied with all provisions noted on this form and will follow all confined space safety procedures.

ENTRY SUPERVISOR _____
 Employees _____

MNOSHA CONFINED SPACE CLASSIFICATION TABLE FOR CONSTRUCTION

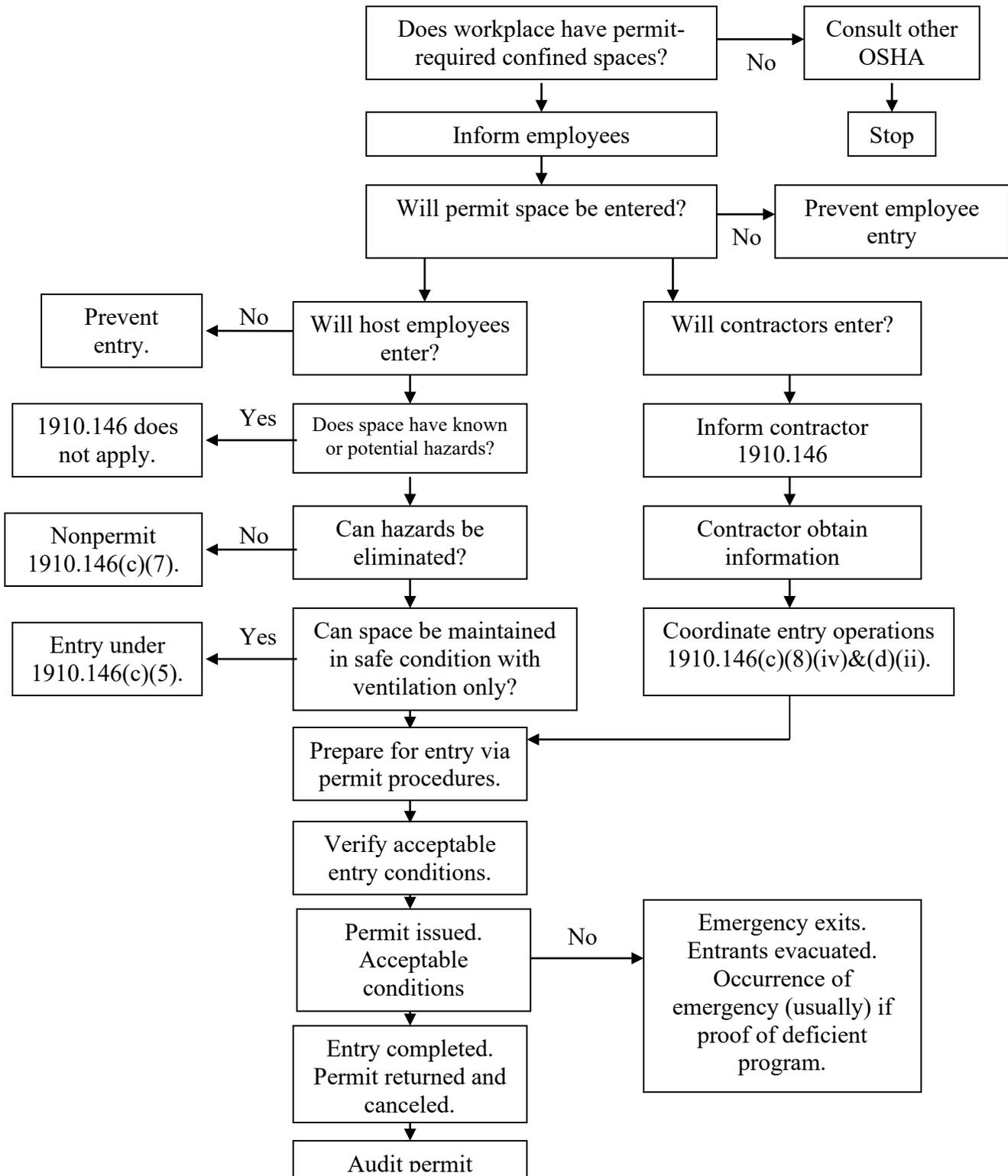
PARAMETERS	CLASS I	CLASS II	CLASS III
Characteristics	Confined space where an atmosphere with dangerous air contamination, oxygen deficiency, or oxygen enrichment is unlikely to develop.	Confined spaces where an atmosphere free of dangerous air contamination, oxygen deficiency or oxygen enrichment has been verified.	Confined space where an atmosphere free of dangerous air contamination, oxygen deficiency or enrichment cannot be verified.
Oxygen	19% to 21.4%	19% to 21.4%	19.4% or less
Flammability Characteristics	10% LEL or less	10% LEL or less	10% or greater of LEL
Entry Requirements	<ol style="list-style-type: none"> 1. Annual Permit Required 2. Space tested for oxygen & air contaminates before each entry 3. Continuously and effective ventilated or continuous monitoring is performed 4. Personal Protective Equipment 5. No standby required 6. Safety belt or harness (optional) 7. Hoisting devices (optional) 	<ol style="list-style-type: none"> 1. Permit required for each entry 2. Safety belt or harness 3. Hoisting devices 4. Standby required 5. Personal Protective Equipment 6. Standard rescue procedures <p>*Maintain communication *Alert rescue team before entering</p>	<ol style="list-style-type: none"> 1. Permit required for each entry 2. Approved respirators shall be provided & worn, other PPE 3. Safety belt or harness 4. Hoisting devices 5. Standby required 6. Standard rescue procedures <p>*Maintain communication *Respirator & SCBA available *Alert rescue team before entering * Personal trainer in CPR Available</p>
Entry Preparation	<ol style="list-style-type: none"> 1. The area must be checked for and isolated from any system or processes that might present a hazard. 2. All electrical and mechanical systems associated with the space must be locked and tagged. 3. The area must be purged and ventilated to reduce the amount of toxic materials or increase oxygen content as required. 4. Work processes must be reviewed before starting to ensure they are the least hazardous methods available. 5. Special tools and equipments need to be identified before the work begins. 6. The Entry supervisor shall review confined space entry permit and work procedures with employees who will be working in that confined space. The Entry supervisor and all employees working in the confined space will sign the entry permit. 		

Note: Safety Director should be notified for confined spaces with possible toxic atmospheres other than Hydrogen Sulfide, Carbon Monoxide, or Chlorine

FERERAL OSHA CONFINED SPACE CLASSIFICATION TABLE

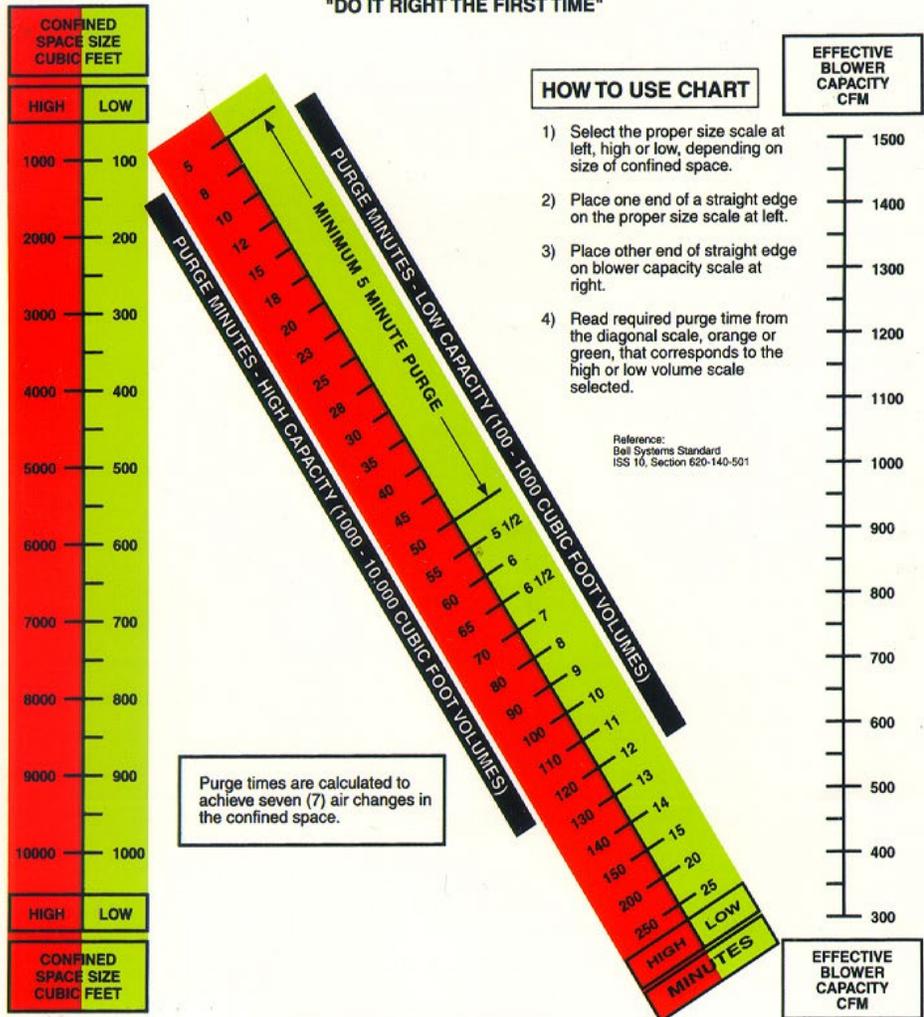
PARAMETERS	PERMIT REQUIRED CONFINED SPACE	NON-PERMIT CONFINED SPACE
Characteristics	Atmosphere that has one or more of the following characteristics: 1) Confined space contains or has a potential to contain a hazardous atmosphere; 2) Contains a material that has the potential for engulfing an entrant; 3) Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly covering walls or by a floor which slopes downward and tapers to a smaller cross-section; or Contains any other recognized serious safety or health hazard.	Atmosphere where dangerous air contamination, oxygen deficiency or oxygen enrichment cannot develop or have the potential to contain any hazard capable of causing death or serious physical harm.
Oxygen	19.4% or less or 23.6% or more	19.5% to 23.5%
Flammability Characteristics	Greater than 10% LEL	10% LEL or Less
Toxicity	Hydrogen Sulfide 1ppm to 10ppm Carbon Monoxide 1ppm to 35 ppm Hydrogen Sulfide greater than 15 ppm is IDLH Carbon Monoxide greater than 200 ppm is IDLH	Hydrogen Sulfide 0 ppm Carbon Monoxide 0 ppm
Procedures	1) Contact Safety Department 2) Permit required 3) Personal protective equipment 4) Attendant require *Maintain communication *Alert rescue team 5) Rescue equipment *Hoisting device *SCBA's available Rescue team trained in CPR/First Aid	1) Space tested for oxygen and air contaminates 2) Recommend to monitor and/or ventilate continuously 3) No attendant required 4) Standard rescue procedures

CONFINED SPACE DECISION FLOW CHART



ESTIMATING APPROXIMATE PURGE TIMES

CONFINED SPACE ENTRY "DO IT RIGHT THE FIRST TIME"



SPECIAL NOTES

- 1) Air quality of the confined space should be tested prior to ventilation.
- 2) Ventilate confined space for the minimum times as determined in the above chart and then retest air quality.
- 3) If toxic (combustible) gases or low oxygen is encountered, increase purge times by 50%.
- 4) If 2 blowers are used, add the two capacities, then proceed with the "How to use chart" above.
- 5) Effective blower capacity is measured with one or two 90° bends in 8" diameter 25 ft. blower hose.



Rigging and Lifting

PURPOSE AND SCOPE

■ Purpose

This procedure provides the guidelines for the proper rigging and lifting activities are accomplished safely and in accordance with applicable specifications, codes, and regulations.

■ Scope

This procedure applies to all personnel and subcontractors working on projects where rigging and lifting safety requirements are applicable.

REFERENCES

- Title 29, Code of Federal Regulations, Parts 1910 and 1926, *Occupational Safety and Health Administration* (OSHA), U.S. Department of Labor.
- ANSI B-30 Series Standards, Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings.
- ISO 15513 Cranes – Competency Requirements for Crane Operators, Slings

GENERAL

- Lifts that exceed 85% of the cranes manufacturers rated capacity are prohibited.
- Mats shall be used on all lifting equipment, equipped with outriggers.
- Outriggers shall be used on all lifts over the side or whenever scoping out with a load on the hook.
- Pick and carry shall have the load secured to the rig in front.
- These work practices are not intended to take the place of common sense or good judgment.

■ Definitions

None

PROCEDURE

■ Rigging Practices

1. Use loops, thimbles, and corner pads to prevent damage to slings when used around corners or on cutting edges.
2. Never allow wire rope to lie on the ground for any length of time or on rusty steel or near solvents, chemicals, or corrosive substances.
3. Slings shall not be pulled from between or under loads with load resting on the sling.

4. Keep all rope away from flame cutting or welding operations.
5. Never use rope as sling material.
6. Never wrap a wire rope completely around a hook.
7. Do not bend wire rope near any attached fitting.
8. The sling must be selected to suite the most heavily loaded leg rather than the total weight when using multi-legged sling to lift loads in which one end is heavier than the other.
9. When using 3- and 4-legged sling configurations, any two legs must be capable of supporting the entire load.
10. Where possible, wire rope choker hitches should include a shackle with the eye around the shackle pin to prevent breaking wires of the choke. The choker hitch should be “snugged down” prior to lifting, not after tension is applied.
11. Unless authorized by the hook manufacturer when more than two rope eyes are placed over a hook, install a shackle, pin resting in the hook, and place the rope eyes in the bowl of the shackle.
12. Properly rig all loads to prevent dislodgment of any part.
13. Use guide ropes or tag lines to prevent the rotation or uncontrolled motion of the load when necessary.
14. Loads must be safely landed and properly blocked before being unhooked and unslung. Tag lines shall not be used in situations that jeopardize the safety of the lift.
15. Lifting beams should be plainly marked with their weight and designed working load and should only be used in the manner for which they were designed.
16. The hoist rope or chain shall never be wrapped around the load. The load shall be attached to the hook by slings or other rigging devices that are adequate for the load being lifted.
17. Multiple part lines shall not be twisted around each other.
18. The hook should be brought over the center of gravity of load before the lift is started.
19. Latches will be present on all hooks. If the latch is missing the latch must be tagged and removed.
20. If there has been a slack rope condition, determine that the rope is properly seated on the drum and in the sheaves prior to lifting.
21. Keep hands away from pinch points as the slack is being taken up.
22. Leather gloves are recommended when handling wire rope.
23. Avoid impact loading caused by sudden jerking when lifting or lowering. Lift the load gradually until the slack is eliminated.
24. Never ride on a load that is suspended.
25. Avoid allowing the load to be carried over the heads of any personnel.
26. Never work under a suspended load until the load has been adequately supported from the floor and all conditions have been approved by the supervisor in charge of the operation.

27. Never leave a load suspended unless emergency evacuation is required.
28. Never make temporary repairs to sling.
29. The capacity of a sling is determined by its angle, construction, type of hitch and size.
30. Never lift loads with one leg of a multi-leg sling until the unused legs are made secure.
31. Never point load a hook unless it is especially designed and rated for such use.
32. Make certain that the load is broken free before lifting and that all legs are taking the load.
33. When using two or more slings on a load make certain all slings are made from the same materials.
34. Lower the loads on to adequate blocking to prevent damage to the slings.
35. Materials and equipment being hoisted must be loaded and secured to prevent any movement which could create a hazard in transit.
36. The weight of the hook, load block and any material handling devices shall be included when determining crane capacity.
37. Calculated weights cannot exceed 75% of the chart without written approval.

Note 1: When calculating load weight, two independent people shall do calculations. Calculations should be within 5% of each other.

Note 2: When lifting used or formerly in-service equipment, on-site external and internal (if possible), inspection is required to validate calculation basis.

38. Chains should not be used for lifting in place of slings. Chain hoists and come-a-longs may be used for lifting.
39. All wire rope sling eyes shall be made with Flemish splice and compressed steel swaged sleeves.
40. Sling eyes shall not be shackled together on lifting hook to prevent spreading. Slings should be placed in a shackle of sufficient size and the shackle shall be placed with the pin on the hook.
41. Rigging equipment, when not in use shall be removed from the immediate work area.
42. Rigging equipment shall be inspected to ensure it is safe. Rigging equipment for material handling shall be inspected prior to use on each shift and as necessary during its use to ensure that it is safe.

■ **Additional requirements of synthetic slings.**

1. Synthetic slings shall be marked to show the rated capacity for each type of hitch and type of web material.
2. Nylon web slings shall not be used where fumes, vapors, sprays or mists or liquids of acids or phenolics are present. Web slings with aluminum fittings shall apply in this category.
3. Synthetic web slings shall be removed from service and destroyed if any of the following conditions are present:
 4. Acid or caustic burns
 5. Melting or charring of any part of the sling surface

6. Snags, punctures tears or cuts
7. Broken stitches
8. Distortion of fittings
9. Synthetic web slings of polyester or nylon shall not be used at or come in contact with temperatures in excess of 180 degrees F.
10. Polypropylene web slings shall not be used at or come in contact with temperatures in excess of 200 degrees F.
11. Insulated hooks shall be tested yearly to ensure insulation integrity to at least manufacturer's specifications.

■ **Requirements of plate clamps:**

1. The rated load of the plate clamp shall be marked on the main structure.
2. Care should be taken to make certain the load is correctly distributed for the plate clamp being used.
3. Do not allow load or plate clamp to come into contact with any obstruction.
4. The plate clamp shall not be used for side pulls or sliding the load.
5. When lifting stainless steel or special alloys, ensure plate clamp is designed for use on the specific metal.

■ **Signal Person**

Riggers are frequently required to act as a signal person for equipment operators. Whenever the operator is obstructed in his view of the path of travel of any part of the equipment, it's load or components; a qualified signal person shall be stationed:

- In full view of the operator or accompanying signal person.
- With full view of the intended path of travel of the equipment, load or components, yet clear of the intended path of travel.
- Keep all unauthorized personnel outside the radius of the operation.
- Direct the load so that it does not pass over anyone.

■ **Rigging Crew:**

- The rigging crew must be capable of 1) selecting tackle and lifting gear suitable for the load to be lifted, 2) directing the safe movement of the load, and 3) maintaining full load control.
- The Rigging Crew shall:
- Review the planned operation and requirements with the job supervisor or PIC of lift.
- Know and never exceed the safe working load of the equipment and tackle to be used.
- Confirm the total load weight or confirm the maximum load weight is less than the capacity of the rigging equipment.
- The weight of the hook, load block and material handling devices shall be included when calculating the total weight of a load.
- Examine all hardware, equipment, tackle and slings before using.

- Report unsafe or unsuitable equipment or tackle to the job supervisor.
- **CAUTION: Defective components which cannot be repaired should be destroyed.**
- Recognize and make appropriate allowances for the factors that can reduce the capability of the equipment.
- Personal Protective Equipment (PPE)
- PPE shall be used in accordance with the Company's Policy.

■ Inspection

Each sling used by the Company shall be inspected prior to each use.

Wire rope slings shall be removed from service immediately if any of the following conditions are present:

1. Ten (10) randomly distributed wires broken in one (1) rope lay, or five (5) broken wires in one (1) strand in one (1) rope lay.
2. Wear or scraping of one-third the original diameter of outside wires.
3. Kinking, crushing, bird caging or any other damage resulting in distortion of the wire rope structure.
4. Evidence of heat damage.
5. End attachments that are cracked, deformed worn.
6. Corrosion of the rope or end attachments.
7. Metal mesh slings shall be immediately removed from service if any of the following conditions are present:
 8. A broken weld or broken brazed joint along the sling edge.
 9. Reduction in wire diameter of 25 percent due to abrasion or 15 percent due to corrosion.
 10. Lack of flexibility due to distortion or corrosion.
11. Synthetic web slings shall be removed from service and destroyed if any of the following conditions are present:
 12. Acid or caustic burns
 13. Melting or charring of any part of the sling service
 14. Snags, punctures, tears or cuts
 15. Broken stitches
 16. Distortion of fittings

■ Critical Lifts

A written rigging procedure shall be required for:

- Lifts or movements over 50 tons (100,000 lbs.)
- Erection of process columns, towers or vessels, and turbine/generator systems.
- Lifts over operating units/equipment

- Other instances deemed prudent by the Company.
- Lifts or movements of unusual difficulty or geometry.
- Where required by contract.
- Lifting a Personnel Basket.
- 2 picker operations.
- 75% of crane capacity

Critical Lifts shall include:

- a. Critical Lift Plan
- b. Drawings to scale
- c. An equipment lists
- d. Equipment certifications
- e. Proof load tests
- f. Lift weights
- g. Hoisting capacities
- h. Calculations
- Calculations shall be provided for the following:
 - a. Sling and wire rope safety factor determinations
 - b. Blocks and rigging tackle analysis
 - c. Ground loadings
 - d. Load distribution variations
 - e. Structural details
 - f. Stability analysis (barge off-loadings, soil loadings, etc.)
 - g. Load weight determinations

■ RECORDS RETENTION

Completed Equipment Lift Record Cards and the associated rigging procedures shall be retained in site files until project completion.



POWERED INDUSTRIAL TRUCKS/FORKLIFTS

Aerial lifts/Scissor lifts

SCOPE

The safe operation of forklifts on and around the jobsite is essential. Only trained and authorized persons may operate a powered industrial truck or lifts on our jobsites. This section applies to OSHA's Powered Industrial Truck Standards 1910.178 and 1926.602

DEFINITIONS

Competent Person: Employees will satisfactorily answer the forklift operator test as well as demonstrate their ability to safely perform operational skills in operating a forklift.

TRAINING

Before any person can be authorized to operate any of our lifts, they must earn the designation qualified by being trained by an approved lift trainer.

Gartner Refrigeration will arrange the training for all of our operators yearly and will document the training and will have documentation of training at our jobsite as well.

The Training consists of a combination of formal (lecture, discussion, video (dvd/vhs), written material and a driven demonstration.

Training Topics:

- Operating instructions
- Warning and precautions for the type of truck/lifts the operator will be authorized to operate
- Differences between the trucks/lifts and the automobile
- Truck/Lift controls and instrumentation (location, what they do, how the work)
- Engine or motor operation
- Steering and maneuvering
- Visibility (including restrictions due to loading)
- Forks/Basket operations, and use limitations
- Vehicle/Lifts capacity
- Vehicle/Lifts stability
- How to do an inspection that the operator will be required to perform
- Refueling and/or charging and recharging of batteries
- Operating limitations
- Workplace related topics

- Ramps and other sloped surfaces
- Surface conditions
- Composition of loads
- Hazardous locations of operation
- Closed environment
- Any additional instruction, warnings or precautions listed in the operator's manual for the type of vehicle being trained to operate.
- Pedestrian traffic

Additional training may be required to operate and perform safe lifts with specialized equipment. All lift operators will be trained on the type of machine they are operating under the conditions they will be expected to operate.

An evaluation of each powered industrial truck or lifts will be done yearly or when operator miss uses the machinery.

SAFETY REGULATIONS FOR OPERATORS

1. Never operate lifts unless trained and authorized to do so.
2. Wear appropriate personal protective equipment when operating lifts.
3. When using forklifts keep arms and legs inside the cab at all times.
4. When using an aerial lift, employees shall stand firmly on the floor and shall not climb on the rails or the edge of the basket.
5. A fall restraint system must be used and attached to the boom or basket when off of the ground.
6. When operating an aerial lift or forklift a minimum clearance between electrical lines and any part of the equipment will be 10'.
7. Inspect lifts daily and before each use.
8. Operate at a safe speed.
9. Do not exceed the rated capacity of lifts.
10. Operator must compensate for shifts in the center of gravity and maintain stability.
11. Always drive a loaded lift with the load on the uphill side.
12. Drive with the load tilted back and the forks raised only enough to clear the road.
13. Block and tie round objects so they don't roll out.
14. Watch for overhead structures.
15. Start/stop slowly to prevent load from shifting.
16. Turn at a safe speed smoothly and gradually.
17. Never raise or lower the load while traveling.
18. Be cautious on wet or slippery pavement.
19. Never refuel with the engine running.
20. Never let a gasoline/propane/diesel engine idle in an enclosed area.
21. Use mirrors mounted at corners and in blind spots to see pedestrians and on-coming vehicles
22. Watch for pedestrian

23. Never allow any person to stand or pass under the elevated portion of any truck, whether loaded or unloaded.
24. Never allow any person to ride in or on the forks on forklifts.
25. Never leave a forklift running while unattended.
26. Make sure the forks on lifts or loaders are on the ground, the brakes are set, the engine is off, and the keys removed.
27. Block/chock the wheels whenever a lift is left on an incline.
28. Never use a forklift as an elevator unless an approved personnel platform with handrails and toe board is securely fastened to the forks.
29. Modifications to the equipment shall not be made without the approval from the manufacturer. The approval must be in writing.

INSPECTION GUIDELINES

Lift inspections are required every day and before use. Remember that battery charging installations must be located in areas designated for that purpose.

Before each start-up of the lifts, check the following

- Engine oil level
- Radiator water level/battery level
- Fuel
- Any leaks
- Tires
- Lights
- Horn
- Any warning lights
- Gauges and instruments hour meter
- Steering
- Brakes, parking
- Hydraulic controls
- Any electrical connections
- Secured propane tank(if applicable)
- Condition of forks/baskets
- Check operation of lifting rack by raising and lowering the forks/boom

SAFETY REGULATIONS FOR PERSONNEL PLATFORMS

1. Personnel platforms shall be securely attached to the lifting carriage of forks.
2. Stepping out of the platform without the right methods of PPE is not allowed.
3. You must have PPE attire while in the basket (full body harness and double lanyards and maintain a 100% tie off).

EQUIPMENT INSPECTIONS

All operators are required to regularly inspect their equipment. Gartner Refrigeration employees must do a daily inspection and document and turn in at the end of the working week. Below are some common items that need to be included within a typical daily inspection.

- **Check engine oil**
 - ❑ Make sure that the oil level is within the full range.
 - ❑ Make sure that proper oil is added. Do not overfill.
 - ❑ Report equipment consuming an unusual amount of oil.
- **Check the radiator**
 - ❑ Check fluid level. NEVER OPEN WHILE HOT! Check in the morning.
 - ❑ If fluid is low, fill to the indicator level. Do not overfill.
 - ❑ Check for leaks.
 - ❑ Check for missing guards.
 - ❑ Report overheating.
- **Check the battery level**
- **Check hydraulic oil**
 - ❑ Bleed off pressure before opening hydraulic tank.
 - ❑ Only add the proper fluid.
 - ❑ Do not overfill.
- **Check transmission fluid**
 - ❑ Check the transmission oil level with the engine running at low idle.
 - ❑ Only add proper fluid.
 - ❑ Do not overfill.
- **Undercarriage**
 - ❑ Inspect sprockets, idlers, rollers, for damage or wear.
- **Hydraulic cylinders**
 - ❑ Check for leaking seals.
 - ❑ Inspect pins, bushing, and bearing.
- **Fuel system**
 - ❑ Use proper fuel.

➤ **General walk around**

- ❑ Inspect instruments and mirrors.
- ❑ Inspect lights.
- ❑ Inspect warning lights.
- ❑ Check for any leaks.
- ❑ Check tires and tire pressure.
- ❑ Check for cracks.
- ❑ Check for damaged components.
- ❑ Check for missing or damaged guards.
- ❑ Check for leaking brakes.
- ❑ Check to make sure that the seatbelt is functioning properly.
- ❑ Check for leaking or frayed hydraulic hoses.
- ❑ Check to see if the reverse alarm is operating properly.
- ❑ Check to see if the horn is operating properly.
- ❑ Check gauges and instruments – hour meter.
- ❑ Check for any loose electrical connections.
- ❑ Check steering controls.
- ❑ Check for and replace any damaged warning placards and signs.
- ❑ Grease and lube machine thoroughly.
- ❑ Check air filters.

➤ **Housekeeping**

- ❑ Keep your equipment clean!
- ❑ No accumulation of mud, grease, and oil on foot/hand holds is allowed to control slip hazards climbing in/out of machine.
- ❑ Do not let debris accumulate in the cab. Throw away all garbage at the end of your shift
- ❑ Do not let cans roll around in your cab. Debris can get stuck under the pedals and not allow them to function properly.
- ❑ Do not throw trash under the seats. This can affect the function of the seats suspension
- ❑ Keep windows clean.
- ❑ DO NOT stand on hydraulic hoses to clean the rear window.



Hazard Communication/Right-to-Know

Hazard Communication

General Information

In order to comply with 29 CFR 1910.1200 (Hazard Communication), the following written Hazard Communication Program has been established. The written program will be available in the office of the Safety Director at the company main office. Any employee may review this program in person at the aforementioned location or may obtain a written copy by submitting a written request, which is dated, signed, and contains a full return address.

Container Labeling

All manufacturers' containers received for use will be clearly labeled.

as to the contents,

- The appropriate warning hazard, including specific information regarding physical and health hazards, and
- the name and address of the manufacturer.

All secondary containers will be labeled with either an extra copy of the original manufacturer label, or with a generic label which will include.

The chemical identity and hazard warning prominently display in the English language.

Original labels on containers containing hazardous chemicals will not be removed.

If a different material is placed in a container, the label for the hazardous material contents must be changed to reflect the true contents in the container.

For non-English speaking employees, information shall be presented in their language.

The Safety Director will review the company labeling system yearly and update as required.

Portable containers for use on the job may be filled from larger containers and need not be labeled if.

the chemical is drawn for immediate use,
the hazardous chemical will be under the control of and used only by the person who transfers it from a labeled container, and
the contents will be used-up within the work shift in which it is transferred.

Material Safety Data Sheets

The Safety Director will be responsible for obtaining and maintaining the SDS system for the company. He/she will review incoming SDS, s for new and significant health and safety

information and see that any new information is passed on to all affected employees. SDS's may be in a language other than English, although an English version shall be maintained.

Copies of SDS's will be kept in the office of the Safety Director and/or online at SDS Online (www.msdsonline/binder/snarca).

SDS's will be available to all employees, as well as to other trades.

If SDS's are not available or new chemicals in use do not have a SDS's, the Safety Director must be contacted immediately.

- When ordering or purchasing materials and products not currently listed on the company's chemical inventory list, purchase orders should have attached a notice stating, *"This purchase is conditional upon receipt of an SDS"*.

Employees will be trained to recognize and interpret SDS's, labels, warnings, color-coding, and signs affixed to containers that they might handle.

Where employees must travel between workplaces during a work shift, (i.e., their work is carried out at more than one geographical location) the material safety data sheets may be kept at the primary workplace facility. In this situation, the employer shall ensure that employees can immediately obtain the required information in an emergency.

List of Hazardous Chemicals

A list of all known hazardous chemicals used by employees is contained as a separate section of the Company Safety Manual and located at the main office.

The hazardous chemical list will be updated as necessary to reflect the introduction or deletion of any chemical into or from the workplace.

Hazardous Non-Routine Tasks

Periodically, employees are required to perform hazardous non-routine tasks. Prior to starting work on such projects, each affected employee will be given information about the hazardous chemicals to which they may be exposed. This information includes but is not limited to.

- specific chemical hazards,
- protective/safety measures the employee can take, and
- measures taken to minimize the hazards.

Contractor and Adjacent Trade Notification

The prime contractors and other trades who may be exposed to hazardous materials shall be informed as to:

- the nature of the hazard
- the location of the available Material Safety Data Sheets and
- the precautions their employees may take to minimize the possibility of exposure.

Employee Information and Training

The Safety Director shall ensure compliance with all elements of this section.

Prior to starting work, each new employee, will receive information on:

- hazardous chemicals use in the work process.
- information on operations that may utilize hazardous chemicals.

- the availability and use of various personal protective equipment.
- who to contact to answer questions about chemicals.
- the location and availability of the written Hazard Communication Program, and
- how to request Material Safety Data Sheets.

Prior to the first exposure to hazardous chemicals and whenever there is a potential for exposure to chemicals, employees will be trained on:

- the methods and observation that may be used to determine the presence of hazardous chemicals in the work area.
- the physical and health hazards of the chemicals in the work area.
- the measures that can be taken to protect employees from these hazards, including safe work practices, emergency procedures, and personal protective equipment that should be worn.
- Instructed in the known potential fire, explosion or toxic release hazards related to his/her job.
- how to read MSDS's and labels to obtain appropriate hazard information.
- how to locate the MSDS's and hazardous chemical list, and
- applicable provisions of the emergency action plan.

Documentation

All Training shall be documented showing that each employee has received & understood the required training.

- Upon completion of *Right-to-Know* training, each employee will sign documentation to verify they attended the training, received a copy of the written Hazard Communication Program, and understand the company policy on hazard communication and chemicals.

Prior to the introduction of any new chemical hazard by the company into the workplace, each employee who may be at risk to exposure will be made aware of any and all pertinent information that will help minimize their risk.



ANHYDROUS AMMONIA (NH₃) REFRIGERATION SYSTEMS SAFE PRACTICES

When working on systems containing Anhydrous Ammonia the following safety precautions shall be followed. The foreman shall perform a hazard analysis and give a safety talk to employees covering this procedure, ammonia exposures and conditions pertaining to their work activities. Site specific emergency plans will be discussed. This training shall be documented on the weekly tailgate form.

What is Anhydrous Ammonia?

- Ammonia gas is lighter than air.
- It is not a cumulative poison.
- It has a distinctive, pungent odor that even at low concentrations is detectable.
- Is self-alarming, it serves as its own alarming agent. No person will voluntarily remain in concentrations that are hazardous.
- It is extremely hard to ignite under normal conditions.
- It is a very stable compound.
- Ammonia can cause burning of the eyes and skin.
- It can cause temporary blindness, coughing, chest pains and dizziness.
- If ammonia is inhaled it can cause burning of the nose, throat, and lungs

Note: Ammonia can form ignitable mixtures with 16% to 25% air; avoid sources of combustion.

Possible exposures points to Anhydrous Ammonia while working on a refrigeration system?

- Leaking valves on system
- Purge points
- Relief valves
- Replacing valves
- Ammonia tanks
- Draining oil
- Valve flanges
- Compressor shaft seals
- Overhauling compressors

Safe Practices:

- Ensure that exhaust ventilation equipment is adequate
- Provide emergency lighting as required, the use of explosion proof lights may be required when risk of explosive atmosphere is present
- When entering confined spaces comply with Company approved confined space procedures
- Make sure compressor and lubrication temperatures are within manufacturer's limits
- Avoid standing on refrigeration piping
- Eliminate excessive piping vibration immediately
- Maintain guards on all equipment
- Never valve off a vessel filled with liquid refrigerant, unless it is protected with a properly sized relief valve
- Never expose refrigerant vessels, drums, or bottles to excessive heat
- Liquid refrigerant pumps should have a properly sized relief valve whether positive or centrifugal type to protect against excessive pressure
- Before starting the project designate areas where employees will assemble in case of an ammonia release. Know the areas where shut off valves are located, emergency phone numbers and evacuation routes
- Make sure fire extinguishers are filled and have current inspection certificates
- Remove sources of combustion
- Wear all the required personal protective equipment (PPE) When required by the owner's specification or there is a possibility of contamination the use of chemical resistant gloves, goggles, rubber impervious outer wear and a respirator or self-contained breathing apparatus may be required. These items will be discussed at the pre job safety set up meeting
- When respirators or SCBA is required assure that employees comply with Company respirator program
- Isolate areas where work is being performed to alleviate foot or motor traffic
- Always confer with the plant maintenance manager before commencing work activities or instituting our Lockout/Tag out programs

Note: When performing tie ins in refineries and food processing or beverage facilities, have a pre shutdown safety meeting and review PPE, Lockout /Tag out and rescue gear requirements

Ammonia (NH₃) is an extremely hazardous chemical that is widely used in many industries. Ammonia can be explosive, especially in an enclosed space or when other flammable chemicals are present. By itself, its flammable range is between 15 percent and 28 percent by volume in air. When mixed with lubricating oils, the flammable range increases. Ammonia will react dangerously with some chemicals – most notably, chlorine bleach. Ammonia is one of the most commonly produced industrial chemicals in the United States. It is used in industry and commerce and exists naturally in humans and in the environment. Ammonia is essential for many biological processes. In the environment, ammonia is part of the nitrogen cycle and is produced in soil from bacterial processes. Ammonia is also produced naturally from decomposition of organic matter, including plants, animals, and animal wastes.

Ammonia can be in liquid or gas form. Ammonia is colorless and has a strong pungent odor similar to your household cleaning ammonia. It is a common refrigerant in many industries. In agriculture, it is injected into soil as fertilizer. It is also used in the manufacture of plastics, dyes, textiles, detergents, and pesticides. Ammonia may be found in solution, as ammonia hydroxide (the form most people are familiar with), or packaged as a pressurized gas, in a waterless (anhydrous) form. Anhydrous ammonia gas is lighter than air and will rise, so that generally it dissipates and does not settle in low-lying areas. However, in the presence of moisture (such as high relative humidity), the liquefied anhydrous ammonia gas forms vapors that are heavier than air. These vapors may spread along the ground or into low-lying areas with poor airflow where people may become exposed. Some examples may include, but not limited to:

- working on/near industrial refrigeration machinery rooms, equipment and/or piping
- working in petroleum refineries
- working with/near agricultural fertilizer
- working in industrial process facilities
- working in or around industrial meat packing plants

Anhydrous Ammonia can cause harm if inhaled and/or if it comes into contact with the eyes or skin. Ammonia interacts immediately upon contact with available moisture in the skin, eyes, oral cavity, respiratory tract, and particularly mucous surfaces to form the very caustic ammonium hydroxide. Ammonium hydroxide causes the necrosis of tissues through disruption of cell membrane lipids leading to cellular destruction. As cell proteins break down, water is extracted, resulting in an inflammatory response that causes further damage.

Exposure of the eyes to ammonia may cause burning, tearing, temporary blindness and severe eye damage. **Do NOT WEAR CONTACT LENSES if working near Ammonia!** Exposure of the skin to ammonia may cause severe burns and blistering. Exposure of the respiratory tract (mouth, nose, and throat) to ammonia may cause runny nose, coughing, chest pain, severe breathing difficulties, severe burns and death. Skin and respiratory related diseases could be aggravated by exposure.

RULE OF EXPOSURE:

5-30 PPM – You can smell it, **No PPE Required**

30-300 PPM – It can harm you – Long Term Exposure, **Air Purifying Respirator Required**

300-1000 PPM – Immediate Danger to Life & Health, **SCBA Required for Trained Personnel only.**

5,000 PPM – It can kill you

What to do if you are exposed:

Use an air monitor that detects ammonia in your work area. You may become desensitized to ammonia and not realize how strong it really is. When the air monitor alarms, leave the area immediately. The air monitor must have an ammonia sensor in it to be able to detect ammonia.

Wear personal protective equipment. Employees will be provided with and required to use impervious gloves, face shields or full-face respirators and other appropriate impervious protective clothing necessary to prevent any possibility of skin contact. Liquid ammonia can burn your eyes. Know where the emergency eyewash station is located in your work area and how to use it. **If your eyes become exposed flush eyes with water from eye wash station for a minimum of 15 minutes.**

Take hot work permitting precautions whenever hot work will be performed in areas where ammonia is present. If piping, vessels, or containers that have held ammonia will be welded, soldered, drilled, or cut, purge all ammonia first.

Use proper ventilation. Never work with ammonia in an unventilated area. Always ensure that you have adequate ventilation. Store ammonia separately from incompatible chemicals, away from heat and ignition sources. Know what to do in case of a spill or leak. Employees should be aware of customers' contingency plans and provisions. Employees must be informed where ammonia is used in the host facility and aware of additional plant safety rules. Report the spill or leak so it can be appropriately controlled.



Nitrogen

Purpose

To instruct employees on the hazards associated with Nitrogen. This policy will provide guidelines for employee training, safe handling, and storage of nitrogen.

Scope

This policy applies to Gartner Refrigeration Inc. operations where employees whose work activities may involve working with or around nitrogen. When work is performed on a non-owned or operated site, the client facility policy shall take precedence, however this document shall be used when client facility doesn't have a program or client facility program is less stringent.

Responsibilities

The Program Administrator: Gartner Refrigeration Inc. Safety Manager

This person is responsible for: Issuing and administering this program and making sure that it satisfies all applicable federal, state and local requirements. Scheduling annual training and maintaining records for all employees included in the training sessions.

Project Managers, Superintendents and Foremen:

These people are responsible for: conducting and documenting a pre-job hazard assessment prior to employees commencing any work with nitrogen. identifying all possible locations where nitrogen may be used on their projects.

Inform Safety Manager of upcoming work involving nitrogen, allowing the Safety Manager to provide any necessary monitoring or other required actions. (such as Pressure Testing Procedure Documents)

Ensure all personnel on project are aware of work that may expose them to Nitrogen hazards.

Ensure all employees comply with the nitrogen awareness safety requirements.

Employees:

Attend required annual Training.

Comply with nitrogen assessment requirements and direct any questions or concerns to their Supervisor or Safety Manager.



Nitrogen

General

Hazards of Nitrogen: Nitrogen is an inert gas, which means that it does not react with other chemicals under most normal circumstances. Nitrogen is often used in industrial setting to displace other gases that are toxic, corrosive, reactive or prevent fire or explosion hazards, making processes safer. Using nitrogen to remove oxygen from process equipment decreases the chances of a fire or explosion, but it also can make the atmosphere in and around the equipment hazardous for humans to breathe. When used for pressure testing the stored energy from the pressurized nitrogen is equated to TNT (trinitrotoluene) and can have catastrophic or fatal results when released in an uncontrolled manner.

- Being odorless, colorless, tasteless, and nonirritating, nitrogen has no properties that can warn people of its presence. Inhalation of excessive amounts of nitrogen can cause dizziness, nausea, vomiting, loss of consciousness, and death.
- Nitrogen can displace oxygen in the air, reducing the percentage of oxygen to below safe levels (OSHA defines oxygen deficient as less than 19.5%).
- Oxygen-deficient atmospheres can be deadly in only a few breaths. Death may result from errors in judgement, confusion, or loss of consciousness, which prevent self-rescue when Oxygen levels less than 15%
- Oxygen-deficient atmospheres may exist inside a confined space or outside of a confined space.
- Discharge of liquid nitrogen creates a vapor cloud that will be visible in the air, this vapor cloud can cause asphyxiation as well as decrease visibility.

Methods of Mitigation

Pre-Job Planning for Nitrogen Related Work: Pre-Job planning, or a site assessment will be conducted prior to starting work with nitrogen and that assessment will be documented and kept on site for employee reference for the duration of the project. Documented planning will be conducted for those operations involving potential nitrogen exposure and this includes, purging of systems, pressure testing of systems, or any other reason Nitrogen is brought onto a Gartner Refrigeration Inc. job site.

- Pre-Job Planning Assessments must include all areas of project that could be affected by Nitrogen hazards, must be documented, must include planned mitigation strategies to protect all personnel from nitrogen exposure, must be presented to all employees at risk of exposure, prior to Nitrogen being brought onto job site.



Nitrogen

- Pre-Job Assessment should accurately identify all equipment, piping, vessels, relief valves where inert gas purging or pressure testing will take place.
- All relief valves will be plumbed as to vent to a safe location outside and away from all work areas.
- Access will be restricted during Nitrogen purging or testing. Only those persons attending pre-shift THA meeting and complying with Pre-Job Assessment requirements will be authorized. Warning Signs (Authorized Persons Only) will be posted at all access points.
- Barricades shall be set up a minimum of 3 feet diameter away from all parts of system under purge or pressure test with nitrogen. Barricades may be set at a greater diameter from nitrogen charged system if determined by the Pre-Job Assessment or Oxygen monitoring showing levels less than 19.5% oxygen.
- All nitrogen relief vents and system release valves shall be piped out doors away from other employee work or common areas if able to do so. All relief vents shall be documented on Pre-Job Assessment, marked with warning signs, and barricades prior to nitrogen being placed in system.
- Authorized employees shall wear and use a personnel O2 monitor during all nitrogen work.

If nitrogen is to be used inside a confined space, then refer to Gartner Refrigeration Inc. Confined Space Policy and any applicable client facility policies.

If working with Nitrogen above 150 psi. then Gartner Refrigeration Inc. representative will give a Nitrogen Awareness toolbox talk to all crews working on that project at least one week prior to bringing Nitrogen onto work site.

If pressure testing with Nitrogen above 150 psi. a Gartner Refrigeration Inc. Pressure Testing Standard of Procedure will be produced specific to that site's construction and volumes of nitrogen.

Handling and Storage

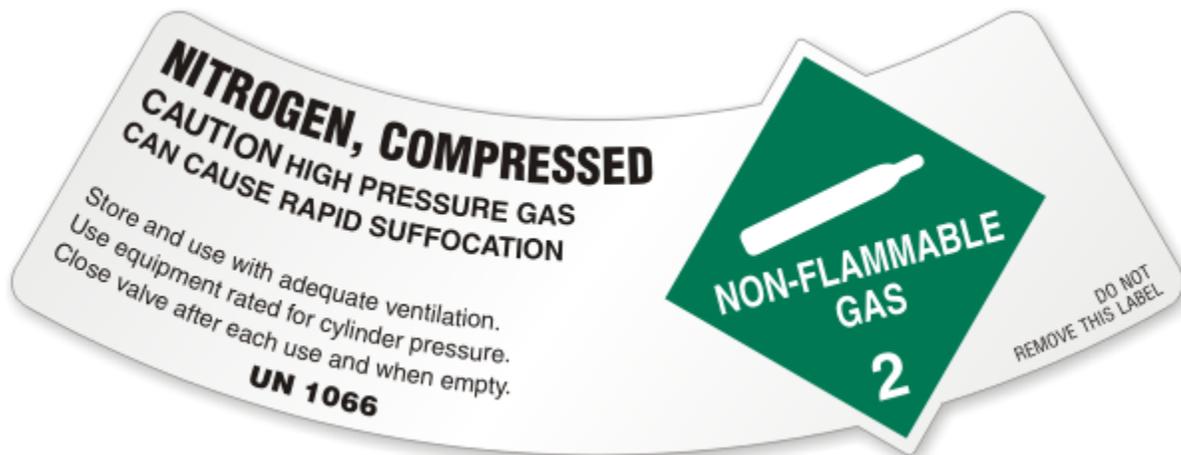
Proper handling and storage of nitrogen cylinders includes the requirements that the cylinder(s) shall be upright, properly supported and stored outdoors or in a well-ventilated area. Cylinder(s) shall be chained or otherwise secured to prevent movement.

A protective cap must be in place when the cylinder is not in use.

All Nitrogen cylinders shall contain an identifying label. Nitrogen cylinders shall contain an identifying label UN1066



Nitrogen



Safety Data Sheets must be available for Nitrogen on site to all employees.

The correct size and type of trolley or cart should always be used for the safe transportation of gas cylinders.

Nitrogen must not be used to power pneumatic tools or blowers.

Training

All Gartner Refrigeration Inc. employees shall be trained in nitrogen hazards, handling, and PPE prior to initial work assignment, and annually thereafter.

Gartner Refrigeration Inc. shall provide Nitrogen Awareness tool box talk training for all multi-trade job sites prior to bringing nitrogen onto the job site.

The Training will be documented including employee name, dates of training and subject matter.



Asbestos Policy

If you are working in an area where you know there is asbestos, or even suspect asbestos, you must stop working and notify your foreman/supervisor.

You will not go back to work in the area until the material has been positively identified as not being asbestos, the material has been encapsulated, or the material has been removed. If the material is encapsulated or removed, the area must have been monitored and found safe per the existing regulations put out by the EPA and OSHA.

On an infrequent basis you may work in an area where there is asbestos. Only workers who have attended asbestos training will be authorized to work in these areas. Even those workers will not, while in the employment of Gartner Refrigeration, intentionally remove, or disturb asbestos materials.

Asbestos causes adverse health effects on the respiratory system and can cause respiratory disease known as asbestosis and is a recognized cause of malignant mesothelioma. Symptoms may not appear for about 12-20 years.

Gartner Refrigeration employees will only mark areas needing to have asbestos removed and then they will leave the area while the actual abatement is taking place. If you have reason to believe that pipe/insulation or ceiling material is contaminated with asbestos, you may not remove the insulation or ceiling, under any circumstance. If, however, based on previously obtained air sample or other reliable data, you believe that workspace air quality is within OSHA guidelines, you may work in the work area as long as you do not disturb any asbestos containing materials and as long as you adhere to other portions of this policy.

In order to be doubly safe, we are also going to require people who are working in an area where asbestos is known to exist, has been encapsulated, or has been recently removed, to wear respirators. This precaution is not required by law but is required by Gartner Refrigeration.

All employees that work in an area that contains asbestos will be required to have asbestos training. They may be required to take a physical prior to beginning work. The training will be documented and maintained in the Gartner Refrigeration Office.

THIS IS A MANDATORY POLICY. NO EXCEPTIONS WILL BE PERMITTED

Asbestos is a naturally occurring mineral fiber. It was used in numerous building materials and vehicle products for its strength and ability to resist heat and corrosion before its dangerous health effects were discovered. Individual asbestos fibers cannot be seen by the naked eye, which puts workers at an increased risk. The Occupational Safety and Health Administration (OSHA) has regulations to protect workers from the hazards of asbestos.

What is the hazard?

Asbestos fibers are released into the air during activities that disturb asbestos-containing materials. The asbestos fibers can then be inhaled without knowing and trapped in the lungs. If swallowed, they can become embedded into the digestive tract as well. Asbestos is a known human carcinogen and can cause chronic lung disease as well as lung and other cancers. Symptoms and/or cancer may take many years to develop following exposure.

Where is the hazard?

The hazard may occur during manufacturing of asbestos-containing products; performing brake or clutch repairs; renovating or demolishing buildings or ships; or cleanup from those activities; contact with deteriorating asbestos containing materials and during cleanup after natural disasters. Some materials are presumed to contain asbestos if installed before 1981. Examples of these materials, as well as other presumed asbestos-containing materials are: *Thermal system insulation, Roofing and siding shingles, Vinyl floor tiles, Plaster, cement, putties and caulk, Ceiling tiles and spray-on coatings, Industrial pipe wrapping, Heat-resistant textiles, Automobile brake linings and clutch pads*

OSHA Standards

OSHA has three standards to protect workers from the hazards of asbestos depending on the type of workplace. For complete information on all the requirements, see the standard specific to your type of workplace:

General Industry: 29 CFR 1910.1001 covers work in general industry, such as exposure during brake and clutch repair, maintenance work, and manufacture of asbestos-containing products.

Shipyards: 29 CFR 1915.1001 covers construction, alteration, repair, maintenance, renovation, and demolition of structures containing asbestos during work in shipyards.

Construction: 29 CFR 1926.1101 covers construction, alteration, repair, maintenance, or renovation and demolition of structures containing asbestos.

Major Elements of OSHA's Asbestos Standard

The following include some of the major requirements of the asbestos standard. For complete information on all requirements, see 29 CFR 1926.1101.

- A permissible exposure limit (PEL) of 0.1 fiber of asbestos per cubic centimeter of air as averaged over an 8-hour period, with an excursion limit of 1.0 asbestos fibers per cubic centimeter over a 30-minute period.
- Requirements for an initial exposure assessment completed to determine if asbestos is present and if the work will generate airborne fibers by a specific method under each standard.
- Monitoring necessary to detect if asbestos exposure is at or above the PEL or EL for workers who are or may be expected to be exposed to asbestos. Frequency depends on work classification and exposure. The construction and shipyard standards require assessment and monitoring by a competent person.

- Use of engineering controls, to the extent feasible, to meet the PEL. Where this is not possible, engineering controls must be used to reduce exposures to the lowest levels possible and then supplemented by the use of appropriate respiratory protection.
- Proper hazard communication and demarcation with warning signs containing specified language in areas that have exposures above the PEL or EL is necessary. No smoking, eating, or drinking should occur in these areas and proper PPE must be provided and used to prevent exposure.
- Separate decontamination and lunch areas with proper hygiene practices must be provided to workers exposed above the PEL to avoid contamination.
- Training requirements depend on the workplace exposure and classification. Training must be provided to all workers exposed at or above the PEL before work begins and yearly thereafter. Workers who perform housekeeping operations in buildings with presumed asbestos containing materials but not at the PEL must also be provided asbestos awareness training.
- Medical surveillance must be provided for workers who engage in certain classifications of work, or experience exposures at or above the PEL in construction and shipyards. In general industry, medical examinations must be provided for workers who experience exposure at or above the PEL.

Records must be kept on exposure monitoring for asbestos for at least 30 years, and worker medical surveillance records retained for the duration of employment plus 30 years. Training records must be kept for at least 1 year beyond the last date of employment.



Hexavalent Chromium Program

This program is intended to convey the potential hazards associated with working with hexavalent chromium (aka chromium (VI), hex chrome, Cr (VI)) and to provide a means by which employees can protect themselves, their co-employees, the public and the environment. While significant exposure to hex chrome would not be expected when working at typical construction sites, employees can best protect themselves by being aware of hex chrome concerns and where it might be encountered.

Chromium is a naturally occurring element found in rocks, animals, plants, and soil. This naturally occurring form of chromium is called trivalent chromium (chromium +3 or Cr+3) and is an essential nutrient, meaning that the body needs small amounts of it to maintain health. However, other forms of chromium such as hexavalent and elemental chromium are produced by industrial processes and can cause significant health effects.

Hex chrome exposure can occur by inhalation, ingestion and by skin contact. Inhaling hex chrome dust can result in irritation to the nose, causing runny nose, nose bleeds, ulcers and even holes in the nasal wall upon high exposures. Ingesting or eating hex chrome can result in upset stomach and ulcers as well as kidney and liver damage. Skin contact with hex chrome can cause skin irritation and some individuals have allergic reactions to this material. Finally, studies have shown that excessive exposure to this compound may increase the risk of lung cancer.

The greatest potential for exposure to employees is in industrial facilities that are making chromium containing pigments, dyes, inks, and plastics as well as chrome plating operations. While construction site exposure potential is significantly less, employees may be exposed to hex chrome when welding on stainless steel or chromium alloys or conducting hot work on paints or coatings that contain chromium pigments. Another potential source is contact with portland cement which may have small amounts of hex chrome as a contaminant.

Applicable Regulation

OSHA 1926 CFR 1926.1126 Chromium (VI)

Exposure Assessment

Initial Determination:

Each project shall determine whether the potential for hex chrome exposure exists prior to the start of work. Potential sources of hex chrome exposure may be identified in the owner specification or related documents. Information related to Hazard Communication should be reviewed in detail. References to coated or painted steel that involves hot work such as torch cutting, welding, brazing, or other application of heat shall be considered potential flags as would any hot work operation on stainless steel or other unidentified metal alloys or mixtures.

Additionally, a survey of the project site should be conducted to ensure that other potential sources are identified prior to work commencing. Ongoing assessment must be conducted as surfaces not visible at the start of a project may become apparent as work progresses.

If the initial determination establishes that hex chrome may be present in coatings or paints, paint chip samples shall be collected and forwarded to an accredited laboratory for analysis. The presence of hex chrome at detectable levels establishes the need for exposure monitoring as described below. Stainless steel surfaces, by definition, contain hex chrome and working on such surfaces utilizing hot methods also requires exposure monitoring.

Activities that may result in chromium exposure:

- Demolition or salvage of structures where chromium or materials containing chromium are present
- New construction, alteration, repair or renovation of structures, substrates, or portions that contain chromium or chromium containing materials
- Installation of products containing chromium
- Working with dry or wet portland cement mixtures that contain hex chrome as a contaminant.
- Welding stainless steel pipe or Chromium alloys

Initial Exposure Monitoring

If the presence of chromium has been confirmed in a material, work activities involving that material shall be subject to exposure monitoring. A representative number of employees conducting the activity shall be identified and personal 8 hr. Time Weighted Average (TWA) sampling shall be conducted. The employee expected to have the highest potential chromium exposure shall be included in the representative sampling program.

Periodic Exposure Monitoring

Results less than the Action Level (AL) - If initial monitoring indicates that exposures are below the Action Level of 2.5 ug/m³, additional monitoring for employees represented by such monitoring is not required.

Results at or above the Action Level (AL) – If initial monitoring results are equal to or greater

than the Action Level of 2.5 ug/m³, periodic monitoring for those activities shall be conducted every 6 months. Regulated areas must be established when an employee's exposure is or is expected to be in excess of the PEL. Regulated areas shall be marked with warning signs to alert employees. Access is restricted to "authorized persons".

Results above the Permissible Exposure Limit (PEL) – If initial monitoring results are greater than the Permissible Exposure Limit of 5.0 ug/m³, periodic monitoring shall be conducted every 3 months.

If periodic monitoring indicates that an exposure level is below the Action Level, and the result is confirmed by a second monitoring episode conducted at least 7 days later, periodic monitoring for that particular activity may be discontinued.

Additional exposure monitoring shall be conducted when there has been a change in the production process, raw materials, equipment, personnel, work practices, or control methods that are used.

Employee Notification

Employees shall be notified of air sampling results within 5 days of results being received by Gartner Refrigeration & Manufacturing. Sampling results shall be provided to employees by hand delivery at the worksite or by certified letter delivery. If the employee receives the letter by hand, he/she will be required to sign off on the air monitoring results to document that they have received the notification.

In the event that the monitoring indicates that employee exposure is above the PEL, Gartner Refrigeration & Manufacturing shall describe in the written correspondence to the employee the corrective steps being taken to reduce the exposure to less than the PEL. Employees are not permitted to work unrestricted (that is, exposed to) environments that are above the PEL of 5.0 ug/m³.

Methods of Compliance

Engineering and Work-Practice Controls

Engineering and work practice controls shall be implemented that reduce and maintain employee exposure to or below the PEL. If Gartner Refrigeration & Manufacturing can demonstrate that such measures are not feasible or sufficient, they shall be used to reduce exposure to the lowest level achievable, and they shall be supplemented by the use of respiratory protection as described in the Respiratory Protection section of this document.

In the event that Gartner Refrigeration & Manufacturing can demonstrate that a process or task does not result in any employee exposure to hex chrome above the PEL for 30 or more days per year, the requirement to implement engineering and work practice controls does not apply to the task and personal protective equipment can be implemented immediately as an exposure control measure.

Employee rotation to different jobs shall not be used as a means of achieving compliance with the chromium standard.

Appropriate engineering controls that may be implemented include but are not limited to:

- HEPA vacuum shrouded scalers and grinders
- HEPA vacuum blasters
- Chemical paint stripping
- Dust collection / ventilation
- Removing paint before burning
- Cleaning with HEPA (high efficiency particulate air) filter vacuums
- Wet methods to remove dust
- Use of long cutting torches to keep employees further away from any fumes that are generated
- Use of local exhaust ventilation equipped with HEPA filtration at the point of fume generation
 - Use of mechanical ventilation to move fumes and dust away from employees
 - Positioning employees upwind or otherwise outside of visible fume or dust clouds.

Hex chrome Program

This document shall be considered the governing compliance program when addressing hex chrome exposure. This will be further supplemented by site-specific programs including the worksite Construction Plan and Gartner Refrigeration & Manufacturing Respiratory Protection Program.

The Construction Plan shall detail:

- All specific elements of the activity
- Engineering and administrative controls
- Respiratory protection
- Personal Protective Equipment (PPE)

PPE shall be furnished at no cost by Gartner Refrigeration & Manufacturing. PPE must be provided when there is a hazard from skin or eye contact. Gloves, aprons, coveralls, goggles, foot covers etc. Contaminated PPE will be removed at the end of the work shift. Employer must clean, launder, repair and replace protective clothing as needed.

Where work involving hex chrome is subcontracted out, the Subcontractor shall be responsible for providing a Site-Specific Compliance Program. This program shall be approved by the RSO, Safety Director, prior to the Subcontractor commencing work.

Respiratory Protection

Respirators shall be handled and worn in accordance with the Respiratory Protection section of this

Health and Safety Program

Respiratory protection shall be provided in the following situations:

- During the installation of engineering and work practice controls designed to control exposures above the PEL
- During work operations such as maintenance and repair activity for which engineering, and work practice controls are not feasible
- During work operations where the usage of engineering and work practice controls alone are not adequate to reduce exposures to or below the PEL
- During work operations where employees are exposed above the PEL for less than 30 days per year and Gartner Refrigeration & Manufacturing has elected not to implement engineering and work practice controls to achieve the PEL
- Emergencies

Respirator usage must comply with all aspects of Gartner Refrigeration & Manufacturing's Respiratory Protection Program. When required, they shall be worn, used, stored, cleaned and maintained in a manner consistent with Gartner Refrigeration & Manufacturing Respiratory Protection Program.

Respirator usage shall not be discontinued or modified without the approval of the Project Safety Manager, who will evaluate air monitoring data and other pertinent information prior to downgrading or discontinuing respirator usage.

Protective Work Clothing and Equipment

If an operation poses the potential to result in skin or eye contact with hex chrome, Gartner Refrigeration & Manufacturing shall provide protective clothing and equipment to the employee. Where issued, employees are required to wear this equipment. Such equipment may be required during the initial installation and implementation of engineering and work practice controls, until monitoring suggests that hex chrome exposure is not a concern.

Removal and Storage

Employees who wear protective clothing to minimize exposure to hex chrome shall comply with the following requirements:

- All protective clothing and equipment shall be removed at the end of the work shift or at the completion of tasks involving exposure to hex chrome
- Hex chrome contaminated clothing shall not be removed from the site, except for by an

- employee or employee whose job it is to launder, clean or dispose of such equipment
- All potentially contaminated clothing or equipment shall be stored and transported in sealed, impermeable bags or containers and labeled appropriately

Cleaning and Replacement

- Gartner Refrigeration & Manufacturing shall be responsible for laundering, cleaning, repairing, or replacing all protective clothing or equipment in order to maintain its effectiveness.
- Hex chrome shall not be removed from clothing by any methods that disperse the material into the air or onto an employee's body. This includes blowing, shaking, slapping or other aggressive means of removal. Vacuuming with a HEPA vacuum would be an acceptable means of removal.
- Any employee involved in laundering or cleaning protective clothing shall be informed of the potential health effects of hex chrome and the need to minimize airborne levels and skin and eye contact.

Hygiene Facilities and Practices

Change Areas

If site conditions require the use of protective clothing or equipment, Gartner Refrigeration & Manufacturing shall provide change areas for employee usage. These areas will be equipped with separate storage facilities for protective work clothing and equipment and for street clothes to prevent cross-contamination.

At no time shall employees leave the job wearing any protective clothing or equipment.

Washing Facilities

Gartner Refrigeration & Manufacturing shall provide washing facilities where employees have potential skin contact with hex chrome. These facilities are supplied with clean water, non-alkaline soap, and paper towels.

Employees shall wash exposed skin areas as appropriate to remove dust, cement, or other materials. Regardless of whether direct exposure is believed to have occurred, all employees shall wash their hands and face at the end of each shift and prior to eating, drinking, smoking, chewing tobacco or gum, applying cosmetics, or using the toilet.

Eating and Drinking Areas

Employees shall not enter eating and drinking areas while wearing protective work clothing or equipment.

All area eating and drinking surfaces shall be kept as free as practicable of hex chrome. This can be accomplished by periodic HEPA vacuuming and/or wet wiping of all horizontal surfaces.

Prohibited Activities

Employees shall not eat, drink, smoke, chew tobacco or gum or apply cosmetics in areas where skin or eye contact with hex chrome may occur.

Medical Surveillance

Gartner Refrigeration & Manufacturing shall make medical surveillance available, at no cost to the employee and at a reasonable time and place, where employees:

- Are occupationally exposed to hex chrome at or above the PEL for 30 or more days per year
- Are experiencing signs or symptoms of adverse health effects associated with hex chrome exposure
- Are exposed in an emergency

Frequency of Examination

Gartner Refrigeration & Manufacturing makes medical examinations available:

- Within 30 days of initial assignment, unless the employee has received a hex chrome related medical exam within the past 12 months
- Annually
- Within 30 days after a licensed health care provider provides a written medical opinion recommending an additional examination
- Whenever an employee shows signs or symptoms of adverse health effects associated with hex chrome
- Within 30 days after exposure during an emergency which results in an uncontrolled release of hex chrome
- At the termination of employment, unless the last examination that meets the requirement of the standard was less than 6 months prior to the date of termination

Contents of Examination

Hex chrome medical examinations shall include the following:

- Medical and Work History emphasizing
 - Past, present and anticipated future exposure to hex chrome
 - Any history of respiratory dysfunction
 - Any history of asthma, dermatitis, skin ulceration or nasal septum perforation
 - Smoking status and history
- A physical examination of the skin and respiratory tract; and
- Any tests deemed necessary by the examining healthcare provider

Gartner Refrigeration & Manufacturing shall ensure that the healthcare provider is given the following information:

- A description of the affected employees former, current and anticipated duties related to hex chrome
- The employees former, current, and anticipated levels of occupational exposure to hex chrome
- A description of the personal protective equipment used or to be used by the employee, including when and how long the employee has used the equipment
- Information from records of employment-related medical examinations previously provided to the affected employee that are currently within the control of Gartner Refrigeration & Manufacturing

Gartner Refrigeration & Manufacturing shall also ensure that the healthcare provider is given a copy of the hex chrome standard.

Healthcare Provider Medical Opinion

The healthcare provider shall provide a medical opinion regarding each examination within 30 days of examining the employee. This medical opinion shall contain the following:

- The providers opinion as to whether the employee has any detectable medical condition that would place the employee at increased risk of material impairment to health from further exposure to hex chrome
- Any recommended limitations on the employee's exposure to hex chrome or on the use of respirators
- A statement that the provider has explained to the employee the results of the medical examination, including any medical conditions associated with hex chrome exposure that require further evaluation or treatment, and any special provisions for protective clothing or equipment

The healthcare provider shall not reveal to Gartner Refrigeration & Manufacturing specific findings or diagnoses not related to occupational exposure to chromium.

Gartner Refrigeration & Manufacturing shall provide the employee with a copy of the healthcare provider's medical opinion within two weeks of receiving it.

Housekeeping

Housekeeping of the work environment can decrease the potential for hex chrome exposure. Appropriate housekeeping methods include:

- All surfaces shall be kept as free as practical of hex chrome accumulations
- Compressed air shall not be used for cleaning
- Vacuuming is the preferred choice for cleaning, however, wet methods such as washing, wet sweeping, wet shoveling and wet brushing may be used when vacuuming is not practical
- Vacuums will be equipped with HEPA filters and shall be emptied in a manner that

minimized the dispersion of chromium into the air

Employee Information and Training

Gartner Refrigeration & Manufacturing shall ensure that all employees are informed regarding the requirements of the hex chrome standard. At a minimum, they should be familiar with the following:

- The contents of the standard
- The purpose and description of the medical surveillance program

This training is in addition to the coverage provided in Hazard Communication training.

Recordkeeping Requirements

Air Monitoring

Gartner Refrigeration & Manufacturing is responsible for maintaining an accurate and complete record of all air monitoring conducted to comply with the requirements of the hex chrome standard. At a minimum, this record shall include:

- Sample dates for all air monitoring
- The operation being monitored
- Sampling and analytical methods being employed and information supporting the accuracy of each
- Number, duration, and results of completed samples
- Type of PPE worn during sampling
- Name, social security number and job classification of all employees being represented by the monitoring, indicating which employees were actually monitored

Initial and periodic sampling results shall be stored onsite and at the Corporate Health and Safety Department. All support documentation including field worksheets, Chain of Custody form copies and associated documents shall be stored as part of the exposure monitoring record.

All monitoring records shall be maintained and made available to employees in accordance with 29 CFR 1910.1020.

Historical Monitoring Data

In the event that historical monitoring data was used to determine current exposure to hex chrome, the record shall include data that reflects the following:

- The data were collected using methods that meet the accuracy requirements of the standard
- The processes and work practices that were in use when the historical data were collected are essentially the same as the operation being assessed

- The hex chrome containing material being assessed is essentially similar to the material assessed in the historical information
- The environmental conditions between the current operation being assessed and those present when the historical data were collected are essentially the same.

Objective Data

Gartner Refrigeration & Manufacturing shall maintain a record of all of the objective data that was used to determine employee exposure. This includes the following at a minimum:

- The chromium containing material in question
- The source of the objective data
- The testing protocol and results of testing regarding the release of chromium from the material under typical conditions
- A description of the process, operation or activity and how that supports the determination that was made
- Other data relevant to the process, operation, activity, material or employee exposures

Medical Surveillance

Medical surveillance shall be provided when an employee experiences signs or symptoms of the adverse health effects of Hexavalent Chromium (dermatitis, asthma, bronchitis, etc.). Medical evaluations will be provided at no cost to employees. Examinations will be performed by or under the supervision of a physician or other licensed health care professional. Gartner Refrigeration & Manufacturing shall maintain an accurate record for each employee covered by medical surveillance. The record shall include the following:

- Employee name and social security number.
- A copy of the health care provider's written opinion
- A copy of the information provided to the health care providers as required by the standard
- A copy of the employee's training record

Responsibilities

Project Management shall:

- Be required to attend a half day supervisory hex chrome safety training course
- Assess operations and project conditions in which employees or the general public may be exposed to hex chrome
- Institute engineering and work practice controls whenever feasible to reduce employee exposure to Hexavalent Chromium below 5 µg/m³
- Provide all necessary Personal Protective Equipment, respirators, hygiene facilities, etc. for employees performing operations with hex chrome exposure
- Provide training for employees performing operations with potential hex chrome exposure
- Ensure all employees working with hex chrome are familiar with Gartner Refrigeration & Manufacturing's medical surveillance program
- Maintain all employee medical surveillance records and hex chrome monitoring records

The Employee shall:

- Take part in hex chrome field training safety training prior to taking part in any operation involving hex chrome exposure
- Follow up on procedures or work plans established by their supervisors for working with hex chrome exposures
- Use all personal protective equipment issued to them for use when working with hex chrome exposures
- Take part in the project's medical surveillance program when working with hex chrome exposures



Hydrogen Sulfide (H₂S)

Employees with Gartner Refrigeration & Manufacturing may have to work near an environment where Hydrogen Sulfide is present. Our employees do not directly work with the chemical, however on rare occasions may be on a job that has Hydrogen Sulfide as part of the processes of the building. Project managers will identify if Hydrogen Sulfide will be present prior to commencing work activities and notify all supervisors of the potential risk when working near the chemical compound.

Background

Exposure to Hydrogen Sulfide occurs in many industries. Most exposures center on the oil and natural gas industries. Hydrogen sulfide is an extremely toxic, flammable gas that may be encountered in the production of gas well gas, high-sulfide high sulfur content crude oil, crude oil fractioning, associated gases, and waters. Hydrogen sulfide is heavier than air, and can collect in low places. As an employee of the company, potential exposure to various forms and amounts of hydrogen sulfide may occur during certain job activities. However, any exposure should be avoided. If an exposure cannot be avoided through ventilation, etc., proper personnel protective equipment must be used.

Hydrogen Sulfide is a colorless gas at normal temperature and pressure with an odor similar to that of rotten eggs. However, presence of this gas may deaden the sense of smell, so odor alone cannot be used for detection. In cases of extreme low temperature and/or high pressure H₂S may be a liquid. Permissible Exposure Limit (PEL) for Hydrogen Sulfide is 10 PPM. Hydrogen Sulfide is soluble in water and can ignite in certain concentrations.

Health effects from contact with Hydrogen sulfide can result in serious injury and/or death. Early warning signs can include eye irritations, and effects nerve centers of the brain which control breathing.

Procedures

If it has been determined by the project manager that Gartner Refrigeration & Manufacturing employees may be exposed to Hydrogen Sulfide, an on-site safety orientation will be held to identify the hazardous locations and correct safety procedures to mitigate any contact with the chemical.

Supervisors and employees will use an air monitoring device that will alarm when levels reach 10 PPM. If the alarm sounds all employees must evacuate the area until deemed safe to return. Employees with Gartner will not work an environment that exceeds 10 PPM of Hydrogen Sulfide.



Lead (Pb) is a heavy metal that can threaten the health of workers in many occupations. Lead can be inhaled or swallowed and once inside the body tends to remain in tissue and organs. Eventually, after repeated exposures, lead build-up becomes toxic.

How You Can Become Exposed to Lead: Lead is an ingredient in thousands of products widely used throughout industry, including lead-based paints, lead solder, electrical fittings and conduits, tank linings, plumbing fixtures, and many metal alloys. Although many uses of lead have been banned, lead-based paints continue to be used on bridges, railways, ships, and other steel structures because of its rust- and corrosion-inhibiting properties. Also, many homes were painted with lead-containing paints. Significant lead exposures can also occur when paint is removed from surfaces previously covered with lead-based paint.

Operations that can generate lead dust and fumes include:

- Demolition of structures.
- Flame-torch cutting.
- Welding.
- Use of heat guns, sanders, scrapers, or grinders to remove lead paint; and
- Abrasive blasting of steel structures

You can be exposed to lead in a variety of ways, including:

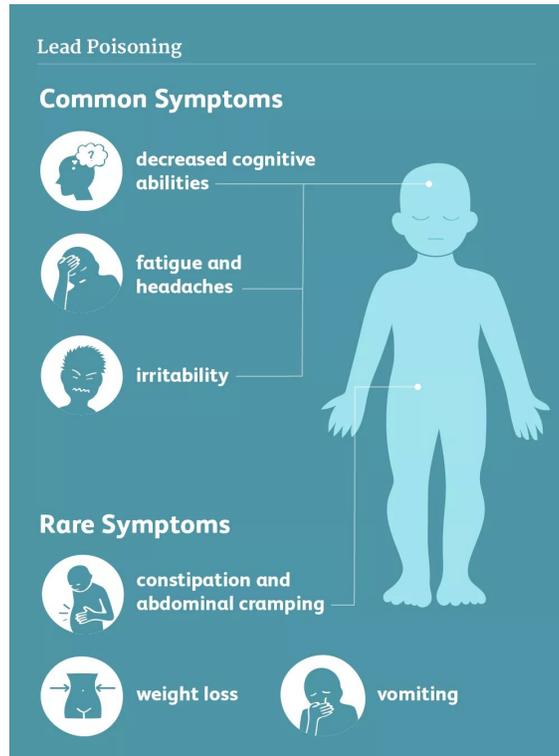
- Breathing workplace air (lead smelting, refining, and manufacturing industries)
- Eating lead-based paint chips
- Drinking water that comes from lead pipes or soldered fittings
- Breathing or ingesting contaminated soil, dust, air, or water near waste sites
- Breathing tobacco smoke
- Eating contaminated food grown on soil containing lead or eating food covered with lead containing dust
- If you are not properly protected, your chances of getting lead poisoning increase.

HOW LEAD CAN HARM YOU

Lead can be absorbed into the body by inhaling it or ingesting it. As exposure to lead continues, the amount stored in your body may increase. Even though you may not be aware of any immediate symptoms of the disease, the lead stored in your tissues can be slowly causing irreversible damage. Damage occurs to individual cells, then to your body organs and eventually your entire body system. The exposure can damage the nervous system, kidneys, immune system, reproductive system, and possibly cause cancer.

In areas where there is lead, signs must be posted in each work area where the permissible exposure level is exceeded. The signs must bear the legend:

**WARNING
LEAD WORK AREA
POISON
NO SMOKING
NO EATING**



HOW YOU CAN PROTECT YOURSELF

Lead exposure can be maintained at acceptable levels if the following practices are followed:

- Use an exhaust ventilation system where provided.
- Use a respirator that will properly protect you.
- Keep the worksite clean.
- Use only a vacuum with a HEPA filter or wet cleaning methods when removing lead dust. Never use compressed air for cleaning.
- Eat, drink, or smoke in areas away from the worksite.
- Keep all lunch boxes and coffee cups away from the work area.
- Use protective clothing. Store street clothes separate from work clothes. Never wear contaminated clothing home.

Employees have the responsibility to comply with all elements of Worker Protection Program developed for project specific Lead Exposure, including using all required PPE. Employees are also responsible to report any discovery of Lead in their work areas to their supervisors immediately.



Compressed Air

The purpose of this safety policy and procedure is to establish procedures for the protection of Gartner Refrigeration & Mfg. employees working with or on compressed air equipment.

Background

Air compressors are used for a variety of applications. Air compressor storage tanks store excess air that is generated from the compressor, providing a convenient and readily accessible air source. Because of the air pressure within these storage tanks, potential dangers can develop if certain practices and precautions are not followed. This safety policy and program provides guidelines for the safe use of air compressor storage tanks. It lists training requirements, guidelines for locating drains and traps, and requirements for gauges and valves.

Responsibilities

Management

- Ensure adequate funds are available for the purchase and repair of necessary air compressor storage tanks. Identifying and list employees affected by this safety policy and procedure.
- Provide training for affected employees.
- Ensure proper use and maintenance of air compressor storage tanks and equipment.

Supervisors

- Ensure that only those employees who have been trained to work with air compressor storage tanks are allowed to operate such equipment.
- Ensure that equipment needed is available and is in good working condition.
- Ensure damaged equipment is removed from service until repaired and tested.
- Ensure that air compressor storage tanks are inspected every six months
- Provide employees with Personal Protective Equipment (PPE) necessary for their job.

Employees

- Inspect air compressor storage tanks prior to use and note any damage or defects.
- Inspect all hoses and equipment before connecting to any compressed air system.
- Immediately report any damages or defects to their supervisors.
- Empty manual drains and taps on a regularly scheduled basis.

Safety Manager

- Provide prompt assistance to managers, supervisors, or others on any matter concerning this safety policy and procedure.
- Assist in developing required training.
- Coordinate with Purchasing to ensure that all newly purchased air compressor storage tanks comply with current safety regulations.
- Provide consultative service and audit assistance to ensure effective implementation of this safety policy and procedure.

Training

All affected employees will be trained in:

1. The purpose of air compressor storage tanks.
2. The basic operation of air compressor storage tanks.
3. Maintenance requirements of drains and traps.
4. Reading gauges and operating valves.
5. Identifying damage and defects in the storage tanks, hoses or air driven equipment.

This training must be performed upon initial employment and/or job reassignment. Periodic refresher training shall also be conducted at the discretion of the supervisor or Safety Department.

Equipment

Drain valves are installed at the lowest point of an air compressor storage tank to provide for the removal of accumulated oil and water. Drain valves must be opened once a week to purge water build-up unless they are automatically operated traps.

Drain Traps are devices, installed on the lowest point of a storage tank, which use venting head pressure to automatically purge the tank from condensed water.

Gauges and Valves All air compressor storage tanks must be equipped with a least one safety valve and pressure gauge. Gauges and safety valves will be tested at least every six months to ensure proper operation. No valve of any type shall be placed between the air receiver and its safety valve.

Accessibility Air compressor storage tanks must be installed such that all drains, hand holes, and manholes are easily accessible. Air compressor storage tanks shall never be buried underground or located in an inaccessible place.

Air Powered Equipment and tools that use compressed air must be inspected before each use. This includes all hoses and connections. Only approved snap-type connectors are permitted on hoses. Use of hose clamps to connect fittings to hoses is not permitted. All hoses must be connected only to approved supply valve locations.

Air power equipment must not be connected to any air supply unless the design pressure of the equipment meets or exceeds the supply air pressure. Temporary reducers may not be installed in any compressed air supply system without approval by the Safety Department. All air-lance/wand equipment must have an automatic hand closure valve that is positioned such that the employee holds the valve open while using the lance/wand. Maximum air pressure for blowdown and cleanup is not to exceed 30 PSI. Goggles are required during air cleaning of facilities or equipment. Other PPE may be required based on the task and tools used.

Storage Tank Safety Checks

1. All drains, handles, and manholes easily accessible.
2. Drain pipe and valve is installed on the lowest point of the air compressor storage tank.
3. Drain valve is opened and frequently drained to prevent the accumulation of excessive amounts of liquids.
4. Air compressor storage tanks have a pressure gauge.
5. Safety valves operate to prevent the internal tank pressure from exceeding 10% above the maximum allowable working pressure of the air compressor tank.



Silica Written Exposure Control Plan

Task:

Coring or hammer drilling into concrete walls and/or floors.

Control Description:

Controls:

- Using hammer drill or core machine make sure you have the commercially available shrouds or cowlings and any available dust collection attachment.
- Vacuum will be used to clean out the concrete dust and miscellaneous material.

Work Practices:

- Check shrouds and hoses to make sure they are not damaged before starting, and do not become bent or kinked while working.
- Use switch on vacuum to activate filter cleaning at the frequency recommended by the manufacturer.
- Replace bags as needed.
- Use hammer drill and dust collection attachment per manufacturer's instructions.

Housekeeping

- Work surfaces and equipment must be cleaned by using wet methods or a HEPA-filtered vacuum.
- When cleaning, do not use compressed air or dry sweeping for removing dust and debris.
- Dispose of used vacuum bags in a container that keeps the container sealed.

Procedures used to restrict access to work areas:

Schedule the work so only employees engaged in the task are in the vicinity.

Crystalline silica is a common mineral found in the earth's crust. Materials like sand, stone, concrete, and mortar contain crystalline silica. It is also used to make products such as glass, pottery, ceramics, bricks, and artificial stone.

Respirable crystalline silica – very small particles at least 100 times smaller than ordinary sand you might find on beaches and playgrounds – is created when cutting, sawing, grinding, drilling, and crushing stone, rock, concrete, brick, block, and mortar. Activities such as abrasive blasting with sand; sawing brick or concrete; sanding or drilling into concrete walls; grinding mortar; manufacturing brick, concrete blocks, stone countertops, or ceramic products; and cutting or crushing stone result in worker exposures to respirable crystalline silica dust. Industrial sand used in certain operations, such as foundry work and hydraulic fracturing (fracking), is also a source of respirable crystalline silica exposure. About 2.3 million people in the U.S. are exposed to silica at work.

Workers who inhale these very small crystalline silica particles are at increased risk of developing serious silica-related diseases, including:

- Silicosis, an incurable lung disease that can lead to disability and death.
- Lung cancer.
- Chronic obstructive pulmonary disease (COPD); and
- Kidney disease.

To better protect workers exposed to respirable crystalline silica, OSHA has issued new respirable crystalline silica standards: OSHA will begin enforcing most provisions of the standard for construction on September 23, 2017.

For Gartner Employees using our core drill with water supply per manufactures instructions no special PPE is required, using a hand-held hammer drill without a water supply or vacuum collection system with a HEPA filter, a dust mask with a rating of APF10 shall be used by the worker performing the drilling and any workers in the immediate work area.





Carbon Monoxide

What is carbon monoxide?

Carbon monoxide (CO) is a poisonous, colorless, odorless, and tasteless gas. Although it has no detectable odor, CO is often mixed with other gases that do have an odor. So, you can inhale carbon monoxide right along with gases that you can smell and not even know that CO is present. CO is a common industrial hazard resulting from the incomplete burning of natural gas and any other material containing carbon such as gasoline, kerosene, oil, propane, coal, or wood. Forges, blast furnaces and coke ovens produce CO, but one of the most common sources of exposure in the workplace is the internal combustion engine.

How does CO harm you?

Carbon monoxide is harmful when breathed because it displaces oxygen in the blood and deprives the heart, brain, and other vital organs of oxygen. Large amounts of CO can overcome you in minutes without warning—causing you to lose consciousness and suffocate.

Besides tightness across the chest, initial symptoms of CO poisoning may include headache, fatigue, dizziness, drowsiness, or nausea. Sudden chest pain may occur in people with angina. During prolonged or high exposures, symptoms may worsen and include vomiting, confusion, and collapse in addition to loss of consciousness and muscle weakness. Symptoms vary widely from person to person. CO poisoning may occur sooner in those most susceptible: young children, elderly people, people with lung or heart disease, people at high altitudes, or those who already have elevated CO blood levels, such as smokers. Also, CO poisoning poses a special risk to fetuses.

CO poisoning can be reversed if caught in time. But even if you recover, acute poisoning may result in permanent damage to the parts of your body that require a lot of oxygen such as the heart and brain. Significant reproductive risk is also linked to CO.

Who is at risk?

You may be exposed to harmful levels of CO in boiler rooms, breweries, warehouses, petroleum refineries, pulp and paper production, and steel production; around docks, blast furnaces, or coke ovens; or in one of the following occupations: Welder, Garage mechanic, Firefighter, Carbon-black maker, Organic chemical, synthesizer, Metal oxide reducer, Longshore worker, Diesel engine operator, Forklift operator, Marine terminal worker, Toll booth or tunnel attendant, Customs inspector, Police officer, Taxi driver.

What can you do if you suspect someone has been poisoned?

When you suspect CO poisoning, promptly taking the following actions can save lives:

- Move the victim immediately to fresh air in an open area.
- Call 911 or another local emergency number for medical attention or assistance.
- Administer 100-percent oxygen using a tight-fitting mask if the victim is breathing.
- Administer cardiopulmonary resuscitation if the victim has stopped breathing.

Warning: You may be exposed to fatal levels of CO poisoning in a rescue attempt. Rescuers should be skilled at performing recovery operations and using recovery equipment. Employers should make sure that rescuers are not exposed to dangerous CO levels when performing rescue operations.

How can employers help prevent CO poisoning?

To reduce the chances of CO poisoning in your workplace, you should take the following actions:

- Install an effective ventilation system that will remove CO from work areas.
- Maintain equipment and appliances (e.g., water heaters, space heaters, cooking ranges) that can produce CO in good working order to promote their safe operation and to reduce CO formation.
- Consider switching from gasoline-powered equipment to equipment powered by electricity, batteries, or compressed air if it can be used safely.
- Prohibit the use of gasoline-powered engines or tools in poorly ventilated areas.
- Provide personal CO monitors with audible alarms if potential exposure to CO exists.
- Test air regularly in areas where CO may be present, including confined spaces.
- Install CO monitors with audible alarms.
- Use a full-facepiece pressure-demand self-contained breathing apparatus (SCBA) certified by the National Institute for Occupational Safety and Health (NIOSH), or a combination full-facepiece pressure demand supplied-air respirator with auxiliary self-contained air supply in areas with high CO concentrations, i.e., those immediately dangerous to life and health atmospheres. (See 29 CFR 1910.134.)
- Use respirators with appropriate canisters for short periods under certain circumstances where CO levels are not exceedingly high.
- Educate workers about the sources and conditions that may result in CO poisoning as well as the symptoms and control of CO exposure.

In addition, if your employees are working in confined spaces where the presence of CO is suspected, you must ensure that workers test for oxygen sufficiency before entering.

What can employees do to help prevent CO poisoning?

Employees should do the following to reduce the chances of CO poisoning in the workplace:

- Report any situation to your employer that might cause CO to accumulate.
- Be alert to ventilation problems—especially in enclosed areas where gases of burning fuels may be released.
- Report promptly complaints of dizziness, drowsiness, or nausea.
- Avoid overexertion if you suspect CO poisoning and leave the contaminated area.
- Tell your doctor that you may have been exposed to CO if you get sick.
- Avoid the use of gas-powered engines, such as those in powered washers as well as heaters and forklifts, while working in enclosed spaces.

What are the OSHA standards for CO exposure?

- The OSHA PEL is 50 parts per million (ppm). OSHA standards prohibit worker exposure to more than 50 parts of the gas per million parts of air averaged during an 8-hour time period.
- MNOSHA PEL is 35 parts per million (ppm) averaged during an 8-hour time period.



Process Safety Management – Contractor Responsibilities

Purpose

The purpose of Process Safety Management (PSM) is to prevent or minimize consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals in various industries such as refineries and industrial refrigeration. The requirements of a Process Safety Management Program are outlined in 29 CFR 1910.119. Gartner Refrigeration employees will perform work at the job sites that are covered by this standard. Therefore, the purpose of this written program is to ensure our employees are trained in the practices necessary to conduct their work at PSM covered work sited and to ensure they abide by the safe work practices of the employers that hire us to perform various jobs.

General

Contractors under the Process safety Management program are those who are involved in the installation or maintenance of equipment and systems at a facility that has one of the following:

- (i) A process which involves a chemical at or above the specified threshold quantities listed in Appendix A to this section.
- (ii) A process which involves a flammable liquid or gas (as defined in 1910.1200) on site in one location, in a quantity of 10,000 pounds (4535.9 kg) or more except for:
 - a. Hydrocarbon fuels used solely for workplace consumption as a fuel (e.g., propane used for comfort heating, gasoline for vehicle refueling), if such fuels are not part of a process containing another highly hazardous chemical covered by this standard.
 - b. Flammable liquids stored in atmospheric tanks or transferred which are kept below their normal boiling point without benefit of chilling or refrigeration.

As contractors covered under the PSM Program, we will be provided necessary information concerning the hazardous process, equipment, and procedures of the particular job site out employees are working at.

Specific Requirements

Pre-Work Review

Prior to allowing Gartner Refrigeration employees to commence work in a process covered under PSM, the following requirements must be completed by the PSM Company we will be doing work for:

- Obtain and evaluate the information regarding Gartner Refrigeration's safety performance and programs (written documentation required).
- Inform Gartner Refrigeration Site Foremen or other designated Gartner Refrigeration employee of the known potential fire, explosion, or toxic release hazards related to the work area and processes of the Company.
- Explain the applicable provisions of the emergency action plan to Gartner Refrigeration employees.
- Provide the Site Forman with copies of local safety programs, safety and emergency procedures and a copy of the PSM program.
- Complete all the requirements of the Company's Contractor Liability Agreement.
- Inform Gartner Refrigeration that a periodic performance evaluation will be conducted to ensure our employees are fulfilling our obligations.
- Inform Gartner Refrigeration that a contract employee injury and illness log related to our work in process areas must be maintained on site for the duration of the contract work.

Gartner Refrigeration will provide information to the Contractor Employer relating to any unique hazards presented by our employee's work or any hazards found by our employees.

Training

Prior to the start of any work at a facility covered under PSM standard, Gartner Refrigeration will assure that each employee is trained in the work practices necessary to safely perform his or her job. Gartner Refrigeration will provide the following documentation to each PSM covered facility that we will be performing work at:

- Our safety program information and other documentation required by the Company's Contractor Liability and Safety Agreement.

- Certification that we have informed our employees of potential fire, explosion, or toxic release hazards that may exist at or near their work area at the facility, and that we have explained the Company's Emergency Action Plan to our employees. Material Safety Data Sheets will be used to discuss process safety information for the particular site we will be working at.
- Training documentation concerning training provided to our employees to ensure they understand the safe work practices necessary to safely perform tasks.
- Certification that we have explained the Hot Works Permit Program for the Company we are working for and other permits the Company uses that will be needed during their time on Company property.
- Agreement to advise the Company we are working for of any unique hazards presented by our work and found during our work.
- Certification that materials, parts and equipment to be installed meet industry and engineering standards for the application used.

Gartner Refrigeration will assure that our employees have been instructed in known potential fire, explosion, or toxic release hazards related to his/her job. The Site Foreman will be responsible for ensuring that each employee has received and understood the required training. Training will be documented and will consist of the employee's name, the date of training, and the means used to verify that the employee understood the training.

Safe Work Practices

Gartner Refrigeration employees will be required to abide by PSM employer's safety work practices during operations such as lockout/tagout, confined space entry, opening process equipment or piping, and controls over entrance to the facility. Safe work practices will be covered during site-specific training. Training will be documented.

Hot Work

Before cutting or welding is permitted at a work site, the area must be inspected by the individual responsible for authorizing cutting and welding operation at the Company we are performing work for. Gartner Refrigeration employees will not be allowed to perform hot work until a hot work permit is obtained from the employer's designated representative. The permit shall document that provisions of CFR 1910.252 (a) have been met. See the Hot Work written program for more information about safe work practices.

Incident Investigations

Employees must immediately report all accidents, injuries and near misses to their Site Foreman, who will then notify the correct Company individuals. An incident investigation must be initiated within 48 hours. Resolutions and corrective actions must be documented and maintained for five years.

Trade Secrets

Gartner Refrigeration employees must respect the confidentiality of trade secret information when any Process Safety Information is released to them.



Lock Out/Tag Out Program (LO/TO)

Gartner Refrigeration has established a written safety program applying to work on any machine or equipment where there is the potential for unexpected energizing, startup, or release of stored energy from electrical, mechanical, thermal, gravity, or material flow equipment.

The program consists of an energy control program, periodic inspections, and employee training, and has been put in place to ensure that machines are effectively locked out, tagged out, and in a Zero Energy Potential (ZEP) before any employee performs any servicing, maintenance, or demolition on that equipment.

Although an electrical subcontractor will usually handle the lock out, tag out, for electrical devices, company personnel need to be aware that the LO/TO program also applies to many other areas of our work. These areas include all of the following:

- Any hydraulic equipment (mechanical concrete buggies, etc.)
- Any lines that have pressure built up in them (standby fire lines, etc.)
- Any rigging that is under tension
- The concrete buckets that are spring loaded
- The come-along that are used to tweak a forming system
- The pneumatic powered tools (Jackhammers, etc.)
- Any powder activated power tools
- Any equipment that is under tension and could release all of its energy and strike you if it were to break
- or any equipment that could cause a pinch to occur (Forks of a forklift being lowered, an engine that is being turned over which catches, etc.)

Definitions

Affected Person is a person who may work or is working in an area when lockout/tagout is being performed.

Authorized person is a person who has the authority to lockout/tagout a potential energy source.

Lock out is defined as the placement of a locking device that prevents the equipment from being operated until the locking device is removed. The locking device is considered an item that only the installer can remove. (A padlock is a locking device; a sign or tape is not.)

Tag out is a sign that identifies who installed the lockout device, so they may be contacted in case of emergency.

Energy source means any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy, including gravity.

Lock Out

All employees are required to comply with the rules governing the use of the lock out/tag out procedures.

- The company will provide the lock out, tag out, devices for securing, isolating, or blocking of machines or equipment from their energy sources.
- These devices may only be used for lock out/tag out situations.
- These devices must be strong enough to prevent their removal without the use of excessive force.
- The tag out devices must include a message about the hazardous conditions such as, 'Do Not Start', 'Do Not Open', 'Do Not Close', etc.
- The tag out devices must include the name of the person placing the lockout device.

Tag Out

If a lock out device cannot be used, then a tag out system must be utilized. The tag out device must be attached as close to the location that the lock out device would have been attached. One or more of the following measures must also be taken:

- Removal of an isolating circuit element
- Blocking of a control switch
- Removal of a valve handle
- Blocking of the equipment control panel
- Locking of the access door to the controls
- Proper training of the affected individuals

Inspection

Documented inspections of the lock out/tag out program must be conducted at least yearly. A senior employee who allows but is not using the program must perform this inspection. (e.g., Superintendent inspecting his or her employees' program.)

Equipment

Lockout/tagout equipment will be made available to employees who are authorized and trained in LOTO procedures.

For Construction

1. Use "Lock Out Key Box"
 - Inside Box: Place official safety lock out padlock key. This can be customer's or Gartner's blue safety padlock.
 - Outside: 3 locks; customer, electrician, and Gartner blue safety lock
 - Goal: Customer, electrician and Gartner Foreman are informed about unlocking and placing system online.
2. Use chains lock and tags on valves to be kept closed during pump down and cut in.
3. Only the job supervisor will have keys to Gartner blue safety locks.

For Service

1. Use Gartner orange padlocks, chain and tags on all valves that you have shut while working on the ammonia system.

If work continues for more than one shift, the control of the lock is passed on to the individual on the second shift or that employee will place their LOTO device on the piece of equipment in repair.

- The second shift employee must ensure the equipment is still in the zero-energy state.
- Any change made by either shift must be communicated in person to the other shift.

Emergency Lock Out Tag Out Removal

Lock out or tag out may be removed by a management person, using the emergency master key only when:

- Conditions exist that may jeopardize plant and/or personnel safety.
- The employee performing the work cannot be located after a reasonable period of time and every effort has been made to locate the individual responsible for the lock out/tag out equipment prior to the removal of locks/tags.

If the lockout or tag needs to be removed, then the following procedures must be followed:

- The Supervisor must follow the procedure the employee was using from start to finish to ensure all steps were completed.
- The Supervisor must inform all employees in the area that the equipment needs to be energized and ask if there are any reasons that it should remain shut down.
- e The Supervisor must take all other precautions.

Sequence of Lock Out Tag Out

1. Notify all affected employees that servicing, or maintenance is required on a machine or equipment and that the machine must be shut down and locked out to perform the work on it.
2. The authorized employee must identify the type, magnitude, and hazards of the energy the machine utilizes and must know the methods required to control that energy source(s).
3. Deactivate the energy isolating device(s) so the machine is completely isolated from the energy source(s).
 - Electrical Lock Out
 - a) Have the operator stop the equipment.
 - b) If necessary, have an electrician or other qualified electrical person open the disconnect switch and verify ZEP.
 - c) Install your lock on the service disconnect.
 - d) Have the operator push the start button or device.
 - e) Personally look at the equipment to verify it is not running.
 - f) Have the operator push the stop button. Do not push the start button again.
 - Mechanical Lock Out
 - a) Have the operator shut down and secure the equipment.
 - b) The operator will close any valves needed to isolate product (i.e., stock, water, steam, chemicals, etc.) Close any valves needed to isolate hydraulic or pneumatic contact and drain the system if necessary. *Note:* If there are not valves, install blinds or otherwise secure to ZEP.
 - c) Install your lock on each valve or blind. The Supervisor will install a system lock on the valve or blind.
 - d) Block any portion of equipment where movement (through release of pressure, gravity, mechanical breaks, etc.) could cause an injury and install necessary lock out device.
4. Work may begin.

5. When work is complete, remove your lock and notify all affected employees that servicing, or maintenance has been completed.

Restoring Equipment to Service

1. Check the machine or equipment and the immediate area around the machine to ensure that nonessential items have been removed, and the machine components are intact and in proper order.
2. Check the work area to ensure all employees are in an area of safety.
3. Verify the controls are in neutral.
4. Remove all lock out/tag out devices and re-energize the machine or equipment.
5. Notify the affected employees that the machine is ready for use.
6. Check to ensure the machine is operating correctly.

Group Lock Out Tag Out Procedure

When more than one authorized person is involved in a lockout/tagout situation, the following provisions need to be observed.

- o One authorized person will be designated overall responsibility and authority for the lockout/tagout.
- o The lockout/tagout procedures will be reviewed with all group members.
- o If more than one contractor is involved, a single employee must be selected as being ultimately responsible for the lockout/tagout.
- o Each authorized employee will affix his or her lockout/tagout device, with identification, to the group lock. As each authorized employee finishes their work and no longer requires lockout/tagout protection, their lockout/tagout device can be removed.

Shift or Personnel Changes

Shift changes and personnel changes will be coordinated by an authorized person in charge of the group or individual lockout/tagout. This will include:

- o Changing locks and/or tags from off-going to on-coming authorized employees,
- o Retesting to ensure equipment or machinery being serviced is de-energized, and
- e Informing on-coming employees of the changes in the job that effects the lockout/tagout procedures.

Special Procedures

There are some routine maintenance and operation procedures into which the above procedures cannot be applied. In every case, necessary precautions will be taken to ensure the safety of personnel.

- o in instances where any machine must be in motion for proper adjustment. Testing or repairs to be done, the following precautions must be observed:
 - a) The machine must be operated at slow or jog speed.
 - b) Extension tools, which minimize personnel exposure, must be used where possible.
 - c) The operating controls must, at all times, be under the direct control of a qualified operator or crafts \Worker.

- d) All personnel must remain in view of the operator or other means of communication must be established whenever possible.
- Local safety disconnect switches may, in special situations, be used as alternate means to isolate an electrical power source.

Long Term Lock Out Tag Out

Construction activities that requiring a long term lock out will be permitted by placing a prestart-up lock with an informational tag (or sign in a large area) signed by the key holder stating:

- The reason for the lock out
- The duration of the lock out
- The key holders name and 24-hour phone number

Training

Training must be provided to all employees to ensure everybody understands the purpose and function of the LO/TO/CO program.

Training must be given to the employees actually using the LO/TO/CO program, which must include the following:

- Recognition of energy sources, type and magnitude of those sources of energy, and the method needed to control and isolate those sources by the use of the lock out/tag out program
- Safe working rules
- Electrical safety rules
- Safe working procedures
- The proper sequence to follow to lock out/tag out a piece of equipment
- The proper sequence to follow to restart the equipment

The "DANGER" tag alone is to be considered a direct warning notice. It is to be obeyed and any equipment bearing such a tag MUST NOT BE OPERATED UNDER ANY CIRCUMSTANCE.

Retraining

Retraining is required when there is a change in job procedures, a change in the energy control procedures, or when a new hazard is introduced.

Certification

All documentation shall bear the names of the employees trained, the date of the training and the name, signature and title of the person who conducted the training.

All documentation should be maintained in the employee personnel file, located at the main office.

It is the company policy that locks be used in conjunction with tags for all lockout/tagout procedures.

Equipment/Task Specific LOTO Procedures

Reciprocating and/or Screw Compressors

Start-Up Sequence

- a. Remove tags and locks on electrical.
- b. Any water necessary for the operation of the system should be turned on. Re-install and remove tags.
- c. Open suction and discharge service valves, also liquid injection and economizer service valves, if applicable.
- d. Close disconnect switches for compressor, motor and oil pump starters.
- e. Turn on oil heater circuit breaker.
- f. Perform checkpoints on manufacturer's pre-start checklist, then start unit.

Shut Down Sequence

For seasonal or prolonged shut downs, the following procedure should be followed:

- a. Reduce the system pressure to the desired condition.
- b. Turn/Press STOP button/key to cease operation of the compressor.
- c. Open disconnect switches for compressor motor and oil pump starters.
- d. TAG & LOCK OFF (*)
- e. Turn off oil heater circuit breaker.
- f. Close suction and discharge service valves, also liquid injection, and economizer service valves, if applicable. Attach CLOSED TAGS & LOCK (*).
- g. Protect oil cooler from ambient temperatures below freezing. Shut off cooling water supply valve to oil cooler, if applicable or remove water heads. Attach CLOSED TAG and LOCK (*).

Evaporator Coils

Start Up Sequence

- a. Turn on electric for fans
- b. Check fans operation for correct direction
- c. Open suction valve
- d. Open liquid valve
- e. Open hot gas valve remove tags
- f. Check hot gas defrost pressure regulator operation. Note: factory set at 75 psig
- g. Check temperature and defrost setpoints, confirm calibration

Shut Down Sequence

- a. Close liquid shut off valve
- b. Let fan run 5 minutes
- c. Shut electric disconnect- TAG and LOCK OFF (*)
- d. Close hot gas shut off valve and TAG
- e. Close suction shut off valve and TAG
- f. Reduce pressure to desired condition

Note: For fan motor/blade and coil cleaning only

- a. Shut liquid solenoid or stop valve and TAG
- b. Shut hot gas solenoid or stop valve and TAG

- c. Shut electric disconnect
- d. TAG and LOCK OFF (*)

Liquid Ammonia Pumps

Start Up

- a. Open suction valve slowly, look for leaks and then open fully
- b. Open liquid valve slowly, look for leaks and then open fully
- c. Remove Lock and Tag. Turn on electric disconnect

Shut Down Sequence

- a. Shut electric disconnect
- b. TAG and LOCK OFF (*)
- c. Close liquid valve and TAG
- d. Close suction valve and TAG
- e. Reduce pressure to the desired condition

Evaporative Condenser

Fans Motors & Water Pumps

- a. Shut electric disconnect
- b. TAG and LOCK OFF (*)
- c. Remove Locks and Tags when work is complete

Fans

- a. Turn on electric disconnect for fan. Check for proper operation and direction of rotation.
- b. Adjust fan cycle pressure range.
- c. Adjust fan to run primary before water

Water Pumps

- a. Fill water tank
- b. Turn pump on manual.
- c. Adjust water pressure at condenser header to a maximum of 10 psig.
- d. Check to see that all spray nozzles are clear and directed at tube bundle

Electric Control/Solenoid Valves

Start Up

- a. Remove Lock and Tag
- b. Open valves
- c. Turn on electric disconnect/control circuit

Shut Down Sequence

- a. Valve off upstream pressure
- b. Valve off downstream pressure
- c. Shut off zone disconnect - TAG and LOCK OFF (*)

Electric Control/Solenoid Valves

Start Up

- a. Open valves cautiously
- b. Check for leaks
- c. Turn on electric disconnect/control circuit

- d. Check temperature and defrost control cycle operation
- e. Check defrost relief to 75 psig. Note: factory set at 75 psig



Standard Operating Procedures

SOP - Charging Refrigerant into System

Equipment

Charging valves on equipment or at side of refrigeration building.

Operator Requirements

Operator training is required for this procedure. The training can be from on-the-job experience or classroom instruction.

Procedure requires two persons to conduct; One (1) Gartner Technician and One (1) trained delivery person.

PPE Required for each Gartner Employee

Butyl rubber gloves
Face shield
Goggles

Tools/Equipment Required

1 pipe wrench 10"
1 crescent wrench

STEP NUMBER	PROCEDURE DESCRIPTION
	Truck bulk delivery
1	Ensure that appropriate plant operators are aware of a bulk delivery 24 hours in advance.
2	Response personnel are to be ready with ammonia safety equipment.
3	Delivery driver is shown connecting location and receiving vessel and informed about its pressure and location of safety shower/eye wash stations.
4	Gartner Refrigeration and Building Maintenance Planner removes lockout on receiving connection valve. Valve remains closed.
5	Delivery driver connects his transfer hose to plant connection point.
6	Delivery and Gartner personnel must equip themselves with Personal Protective Equipment (PPE).
7	Install check valve between system and charging hose
8	Delivery driver performs his hose purge and truck hose valve operations and checks for leaks.
9	Delivery driver opens the outside charge line valve and checks for leaks.
10	Delivery driver starts delivery pump.

11	Gartner operator watches the level in the receiving vessel to ensure that 80% liquid level is not exceeded.
12	When proper amount has been received, delivery driver shuts off delivery pump.
13	Delivery driver shuts outside charge line valve.
14	Delivery driver performs his connection purge and other necessary functions.
15	Delivery driver disconnects delivery hose.
16	Refrigeration operator inspects connection point for leakage.
17	When all is ok, operator caps charge line valve
18	Refrigeration Technician and delivery driver complete all necessary paperwork

STEP NUMBER	SYSTEM CHARGING FROM CYLINDER:
	NOTE: It is the intent not to use cylinders. This procedure is in the event the Refrigeration and Building Maintenance Planner and Environmental Engineer determine to use cylinders.
1	All cylinders are to be properly secured to prevent them from being knocked over.
2	Alert support person who has had Emergency Response training.
3	Move cylinder in cart to charging location near POC (pump out compressor)
4	Secure proper transfer hose and all necessary tools.
5	Dawn PPE i.e. gloves, full face canister respirator or face shield & goggles
6	Install check valve on the liquid line access valve.
7	Install stop valve on the end of the hose near access valve. (Use this valve to purge hose into barrel of water when done).
8	Connect hose to check and access valve.
9	Connect other end of hose to cylinder outlet, with outlet pointed upward (this positions the cylinder dip tube downward).
10	Open hose purge line and place its tubing or hose into bucket half full of water.
11	Crack open valve on cylinder and reclose it, check for leaks
12	Close purge valve.
13	Close receiver King valve
14	Position cylinder cart so cylinder head is slightly lower than its bottom and the outlet remains points upward.
15	Open cylinder valve
16	Remain in the immediate area until operation is completed.
17	When cylinder reaches the operating pressure of the Low Temperature system, shut the cylinder valve
18	Shut the access valve to the liquid line.
19	Open receiver King valve
20	Purge the connection hose into a barrel of water.
21	Remove hose form cylinder and check valve from system.
22	Install cover cap over cylinder valve.
23	Mark cylinder as empty.
24	Put hose and other tools away.



SOP - Line Break Procedure

Purpose

The purpose of this safety policy and procedure is to establish procedures for the protection of Gartner Refrigeration & Mfg. employees for repairs and modifications that require the opening of the refrigeration system.

Background

Depending on the scope of the project, Gartner will be required to open a closed circuit refrigeration system to repair or add new piping. A well planned out line break will help minimize the potential for injury to workers/operators in the event of an uncontrolled release and be able to quickly and effectively stop the release without consequence to the surrounding environment.

Responsibilities

Management

- Ensure employees are trained on the hazards of the line break procedure
- Ensure proper LOTO procedures are being followed
- Ensure required PPE is readily available for line break
- Help develop site specific procedures for line break

Employees

- Use required PPE as stated in the line break policy
- Complete Line Break Checklist form prior to opening system
- Provide feedback to management when encountering unique situations

Safety Manager

- Provide prompt assistance to managers, supervisors, or others on any matter concerning this safety policy and procedure.
- Assist in developing required training.
- Audit the use of the line break procedure

Training

All affected employees will be trained in:

1. Proper selection and use of PPE
2. Procedure to develop a site specific line break plan

This training must be performed upon initial employment and/or job reassignment.

Periodic refresher training shall also be conducted at the discretion of the supervisor or safety department.

Line Opening Procedure

1. Verify location of the nearest eye wash/safety shower station.
2. Follow Pump applicable client or Gartner Refrigeration Pump out Procedure to empty system area that is intended for repair or maintained.
3. Verify that you know the location of all valves that would be required to isolate the equipment in the event of a problem
4. Verify that the ventilation fans in the area are operating
5. Verify that you know the escape routes to take in case of a refrigerant release
6. Assemble the appropriate general PPE as noted above.
7. Follow LOTO procedures
8. Close, lock and tag a valve in the supply line to isolate the equipment/line you are trying to evacuate. The valve should be located as close to the equipment/line as possible.
9. Verify there are no other lines connected to equipment/line to be evacuated. Close, lock and tag valves in these lines if necessary.
10. Allow the equipment/line to evacuate as long as possible using the suction line. Try to evacuate until there is no more frost on the line and/or the pressure drops to approximately 0 psig.
11. After the equipment/line is evacuated, completely isolate the line by closing, locking, and tagging the valve in the suction line.
12. If possible, conduct a pressure test by attaching a pressure gauge and monitoring the pressure to verify that the pressure is not increasing above 0 psig.
13. Verify that the line is not cold – this will let you know the line is evacuated.
14. Slowly vent the line/equipment at the best place possible so you can isolate it quickly if necessary. For example, use a vent line where possible to vent residual refrigerant into a bucket of water.
15. To verify 0 psig has been maintained prior to cutting the line.
 - a. Use drill bit to drill hole into top of pipe in same location as intended saw cut.
 - b. If Pressure is still in line use #8 Self Tapping Screw and ¼ driver bit to plug hole, then locate valves to isolate pipe area to be opened.
 - c. If #8 screw will not stop leak, place 6"x6" Garlock gasket over drilled hole and use hose clamps around pipe and gasket to stop leak, then locate valves to isolate pipe area to be opened.
16. Once 0 psig has been verified via drilled hole the system is now ready for maintenance operations.
17. When placing the equipment/line back in service after maintenance operations, conduct a pressure test on the system by opening a valve in the suction line. Then work backwards, opening the suction valve(s) first and finally the valve(s) in the supply line.

ALWAYS ASSUME THAT THERE IS PRESSURE IN THE LINE UNTIL PHYSICALLY VERIFIED

National Response Center 1-800-424-8802

Required PPE

- Goggles
- Full Face Shield
- Chemical Resistant Gloves (rated for appropriate temperature levels)
- Chemical resistant boots
- Emergency showers/eye wash stations
- First Aid Kit
- Full Face Respirator
- Hearing Protection

Pipe Penetration Kit:

- Box to hold Kit items (small tool box)
- (6) 1/8" drill bits
- (12) #8 Self Tapping Cap screws with rubber washers
- (4) 1/4" drill driver bits (magnetic)
- (8) 6" stainless steel hose clamps (tighten the entire length of clamp)
- (1) 6"x6" Garlock gasket 3,000 1/16"
- (1) 6"x6" Rubber gasket material 1/16" thick



LINE BREAK CHECKLIST

CUSTOMER: _____
LOCATION: _____

DATE, TIME: _____
JOB NO.: _____

- PPE REQUIRED:
(Check all that apply)
- Goggles
 - Face Shield
 - Chemical Gloves
 - Chemical Apron
 - Full Face Respirator
 - Hearing Protection
 - First Aid Kit

<input type="checkbox"/> Yes <input type="checkbox"/> No	PPE Inspected and in good condition
	Location of nearest Eye Wash/Shower
<input type="checkbox"/> Yes <input type="checkbox"/> No	Nearest Eye Wash/Shower is Operational <i>No Work until Eye Wash/Shower is operational</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No	Emergency Ventilation Tested and Operational <i>No Work until Emergency Ventilation is operational</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No	Written LOTO Plan for affected lines and equipment is attached <i>No Work until written plan is attached</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No	Facility Emergency Response Plan has been reviewed <i>No Work until Review has been completed</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No	Pipe Penetration Kit Inspected Ready to use
<input type="checkbox"/> Yes <input type="checkbox"/> No	Line Break Plan has been discussed with Affected Parties

ALWAYS ASSUME THAT THERE IS PRESSURE IN THE LINE UNTIL PHYSICALLY VERIFIED
National Response Center 1-800-424-8802

COMMENTS:

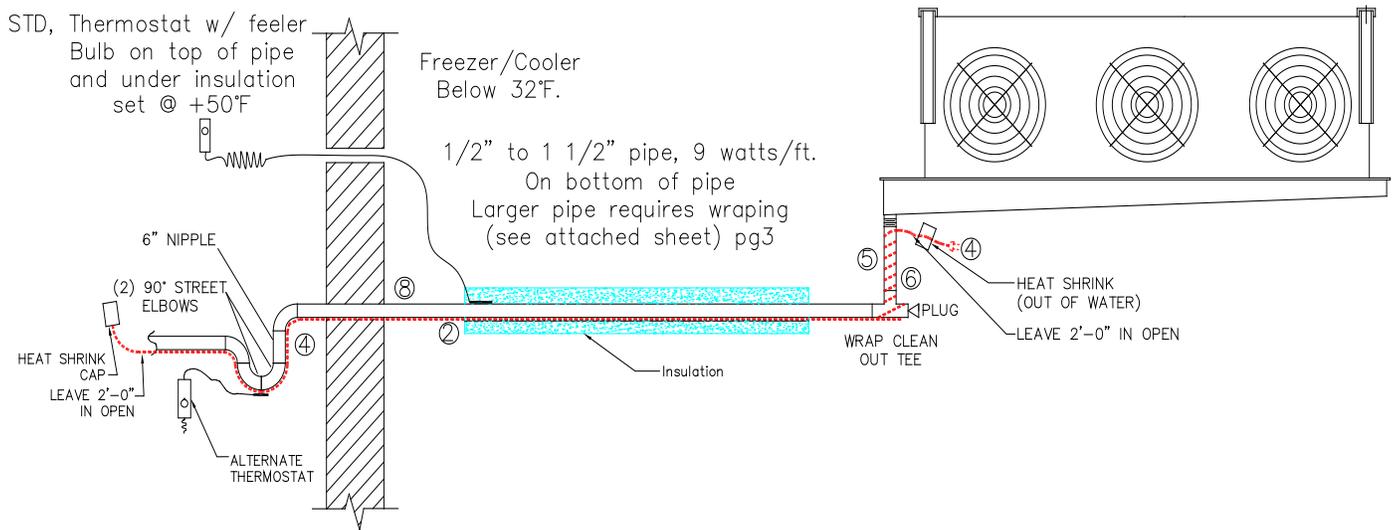
SERVICE TECHNICIAN SIGNATURE: _____

CONSTRUCTION FOREMAN SIGNATURE: _____

CUSTOMER SIGNATURE: _____



SOP - HEAT TAPE FOR DRAIN LINES



NOTES:

- A. Clean outs (tee & plug) used instead of 90° elbows
- B. Pipe to be the same size as evaporator outlet.
- C. 1/2" per 10' pitch to horizontal pipe runs.

HEAT TAPE INSTALLATION

1. Measure drains piping run, allowing for extra at coil pan end and 6" extra at the power ends.
2. Refer to attached sheet as to length of heat tape per foot of pipe. 6 Watts/ft heat attached to bottom of pipe works on 1/2" thru 1 1/2" pipe. Watts/ft. varies with larger pipe.
3. Measure and cut tape as per manufactures recommendations. (See attached drawing)
4. Affix heat shrink at end and power connections, leave 2 ft. in open before heat shrinking, keep heat shrink out of water.
5. Spiral wrap pipe to provide extra heat near drain pan connection.
6. Spiral wrap all traps, outside or in freezer locations.
7. Do not wrap heat tape over itself, it will cause burn out and, or electrical short.
8. Run heat tape through insulated wall and terminate in warehouse area.
9. Use (see pg 4) insulation on all pipes.
10. DO NOT USE PVC PIPE!

11. Fuse circuit 20-amp max @ 120 volt @ 300 ft. max/15 amp @ 150 ft.
(Special 10 watt/ft) 15-amp max @ 240 volt @ 300 ft. max/10 amp @ 150 ft.
12. Safety Requirement: Ground Outer Braid

COIL INSTALLATION
FREEZER DRAIN, HEAT TAPE AND PIPING

1. Place on start up punch list
2. Place on job supervisor's punch list
3. Cut Heat tape (FEP 9-1) per instructions on pg 5 allowing for proper electrical connection
 - a) Safety: Ground Outer Braid – Mandatory!
 - b) Good for -20°F @ 6 watts/ft up to 2" pipe with H.T. straight on bottom side of pipe
(Do not wrap)
 - c) Tape in position each foot using foil tape
 - d) Temps below -20°F See pg4

4. Insulate pipe with minimum 1" THK Styro or Armaflex → See pg 4

5. Fuse Circuit – 10-amp max @ 120 volts
4-amp max @ 240 volts

6. **Water Drain Line Size – DO NOT USE PVC ON FREEZER DRAINS**

- a) Do not install a drain line smaller than the drain connection size on the air unit
- b) If heat tape is installed inside the drain line, the drain must be at least on size larger.

7. **Water Drain Line Piping**

The drain line from each unit must be individually tapped to prevent reverse flow of warm moist air into the refrigerated space. This is especially true with multiple evaporators piped to a common drain line header. The reverse flow will cause ice build in drain pans if the room is operating below 32°F. The ice build up will trap water in the drain pan.

- A) The dept of the trap should be two drain line pipe diameters. In rooms below freezing the drain line must be heated and insulated.
- B) Minimum of 1/8" per foot slope

A. PENTHOUSE COILS

- 1) Place thermostat on drain trap when drain requires heat tape
 - a) Set Thermostat @ 40°F to 50°F
- 2) Place trap @ minimum distance of 10 feet from coil

B. CEILING HUNG COILS (WITHOUT PENTHOUSE)

- 1) Place trap in warm room location above 32°F when possible
- 2) Trap in cold location using heat tape
 - a) Install T. Stat on trap and set @ 40°F to 50°F

C. REFRIGERANT PIPE SIZE

The size of the refrigerant connection on the air unit is not necessarily the size required for the suction and liquid piping (check GRC print). They also may not match control valve sizes.

D. REFRIGERANT PIPE SUPPORTS

- A) The liquid, suction and hot gas connections on the air unit evaporator ***will not*** support the weight of the piping and control valve stations.
- B) All control valves and piping must be hung and supported before the final connections are made to the air unit evaporator.

FREEZER DRAIN HEAT TAPE

PREPARATION:

1. Determine the pipe or tubing size to be used, insulation thickness, and lowest temperature.
2. Refer to the following table to calculate the footage and spiral pitch of TC heater. Required for each foot of pipe.
3. Find the total footage of TC heating cable needed ambient by multiplying the measured pipe length by the amount of heating cable per foot of pipe found in the table.

NOTE: When only 1.0 foot of TC heating cable is needed per foot of pipe, spiraling is not required. In such cases, install a straight length of heating cable. Locate the heating cable on the bottom of the pipe whenever possible.

Pipe Size	Nominal, Inches	3/8"	1/2"	3/4"	1"	1½"	2"	2½"	3"	4"	6"
Tubing Size	Nominal, Inches	1/2"	3/4"	1"	1¼"	2"	2½"	3"			
3/4" Thick Insulation											
Ambient Temperature -10°F	-10	S	S	S	S	S	S	S	1.2/16.0	1.4/14.4	
Ambient Temperature -20°F	-20	S	S	S	S	S	S	1.2/13.0	1.4/10.9	1.7/10.2	
Ambient Temperature -30°F	-30	S	S	S	S	S	1.2/11.0	1.4/9.0	1.6/8.5	2.0/8.1	
Ambient Temperature -40°F	-40	S	S	S	S	1.1/13.0	1.3/9.0	1.5/8.0	1.8/7.1	2.2/7.2	
1½" Insulation											
Ambient Temperature -20°F	-20	S	S	S	S	S	S	S	S	S	1.1/13
Ambient Temperature -40°F	-40	S	S	S	S	S	S	S	S	S	1.4/9.0

Heater No. 9/1 – 9 w/ft @ 120V 200°C (400°F) max. Maximum circuit length 120V, 300 feet

Safety: Ground Outer Braiding – Mandatory

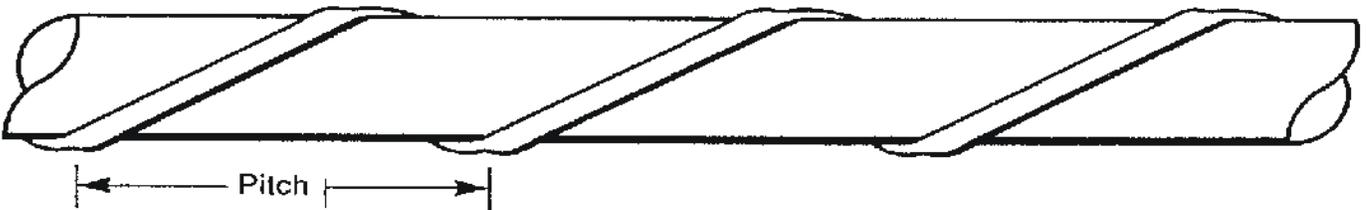
Note: 8.5 w/ft @ 100' circuit
6 w/ft @ 300' circuit

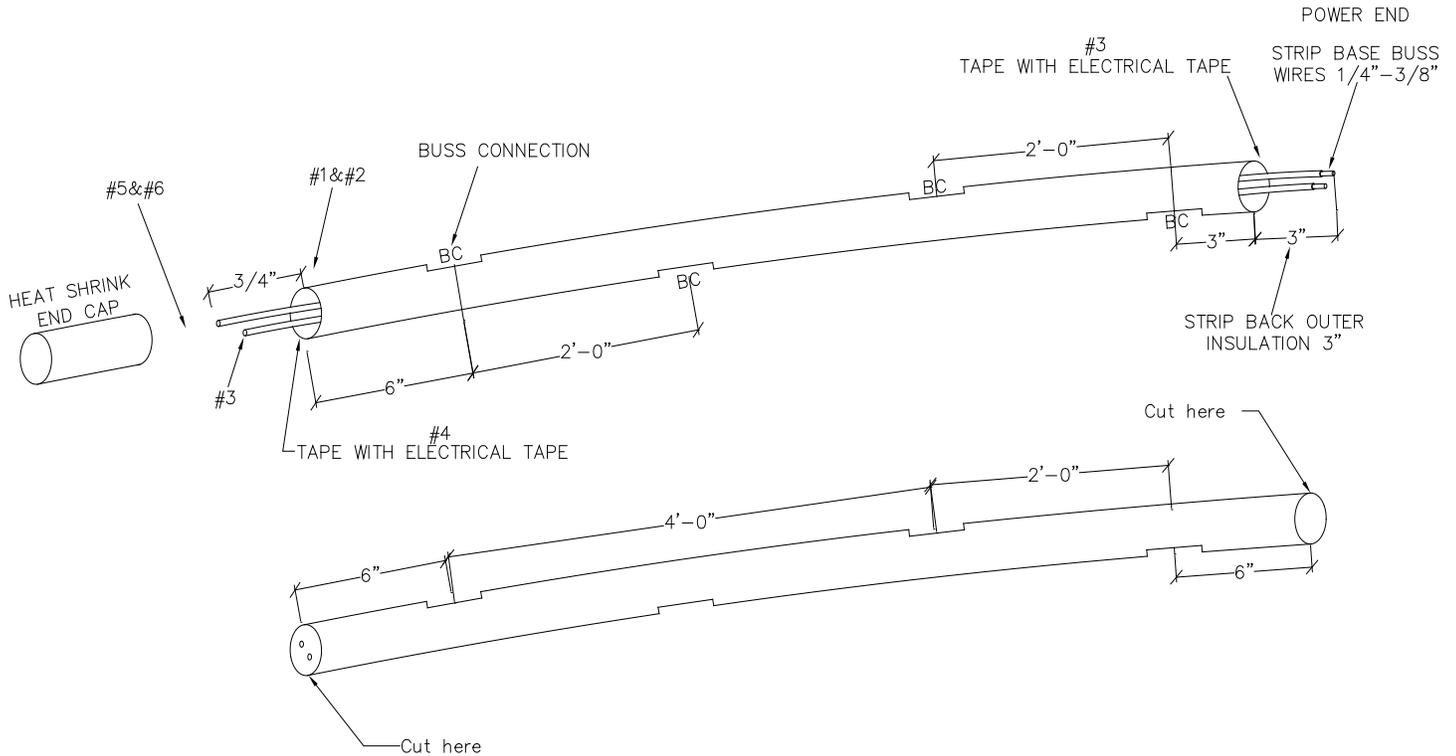


S	•
1.5/5.0	•

Install straight along bottom of pipe and tape in place
Feet of heater per feet of pipe
Spiral pitch in inches

(6 watts/ft.)





END TERMINATION

1. Cut & remove outer jacket
2. Remove heating wire
3. Stagger Buss wires length $1/4"$
4. Tape at cut $3"$ to $6"$ from BC
5. Apply electrical rubber splicing tape
6. Install heat shrink end cap & heat shrink in place
7. Leave 2 ft. @ end hang in open

POWER END

1. Cut & remove outer jacket
2. Remove outer layer down to buss wire insulation
3. Strip buss wire insulation $1/4"$ to $3/8"$
4. Use crimp connectors to conn. 14-16 ga. Power cord
5. Tape at cut
6. Apply electrical rubber splicing tape
7. Leave 2 ft @ ends in open
8. Have electrician provide pilot lite visible from the floor with the naked eye.
9. **Safety Requirement:** Ground Outer Braid



SOP – Pressure Testing

All pressure tests must be planned in advance with Project Engineer, Foreman, and Client.

Project Engineer is to use pneumatic test calculation spreadsheet to calculate total amount of stored energy and total exclusion zone.

All exclusion zones will be evacuated and Barricaded prior to pressure testing beginning.

All Barricades will have Foreman Name and Phone Number clearly listed at all possible entry locations for pressure testing area.

Only Authorized Employees will be allowed into Pressure Testing Area during testing and leaking checking. If a client wants to be present during testing they must attend that morning's pre-shift THA meeting with Gartner Crew, anyone not attending this meeting will not be allowed into test area.

Pneumatic Pressure Testing Checklist

Pre-Test

All affected persons informed (owner, PM, Foreman, other Trades) list Names:

Design Pressure and test pressure established:

Design Pressure _____ Test Pressure _____

Test Procedures:

___ Pre-test Hazard Safety briefing (THA) completed by Affected personnel

Immediately prior to test.

___ Affected workers properly trained.

___ Affected workers system of communication established: _____

Inert Gas for test: _____

___ All test equipment adequate for maximum test pressure.

___ Test gauge calibrated: Calibration Date: _____

___ Temperature verified: Temp _____

___ Test area barricaded with Danger tape and Warning signs posted to keep

___ non-essential Personnel at a safe distance.

___ Walk down inspection completed.

___ Vent valves closed.

___ Fill / Block valves closed.

- Joints and connections exposed.
- Valves properly configured.
- System parts undamaged / properly aligned.
- Bolted connection torqued according to manufacturer specifications.
- Lockout / tagout completed where applicable.
- Emergency contact information / Telephone numbers established: List

Emergency shutdown procedures established: List _____

- Equipment isolated / blocked from the piping system.
- parts of piping system not included in test removed or isolated.
- Pressure regulator is fully backed out allowing zero flow.

Test

- Test equipment securely attached to the system.
- Test pressure re-verified: Test pressure _____
- All non-essential personnel removed from area.
- All affected personnel wearing hardhats / safety glasses / gloves.
- All affected personnel wearing face shields and hearing protection as needed.
- Pressure applied gradually and maintained at each level for 10 minutes prior to increasing pressure. 50% 70% 90% 100% test pressure.
- Pressure maintained per test specifications: _____ min/hrs. circle one.
- All joints and connections carefully inspected for leaks with liquid leak detector.

Post Test

- Pressure released before leak repairs are started.**
- Stored energy gradually released.**
- Leak repairs made.**
- System re-tested per SOP with new checklist.**
- Return all Pressure testing documents to Gartner Safety Manager:
Pre-test THA / Permit / Checklist.**



Pneumatic Pressure Test Permit

Date: _____

Start Time: _____

Finish Time: _____

System to be tested: _____

Notifications:

Initials:

Owner / Facility: _____

General Contractor: _____

Other Affected Trades: _____

Gartner Safety Dept.: _____

Comments:

Pressure Test Supervisor:

___ SOP Established.

___ Maximum Allowable Test Pressure Verified: _____ Pressure

___ Design Pressure Verified. _____ Pressure

___ Pre-Test Portion of Checklist Complete.

Full Name: _____ Signature: _____

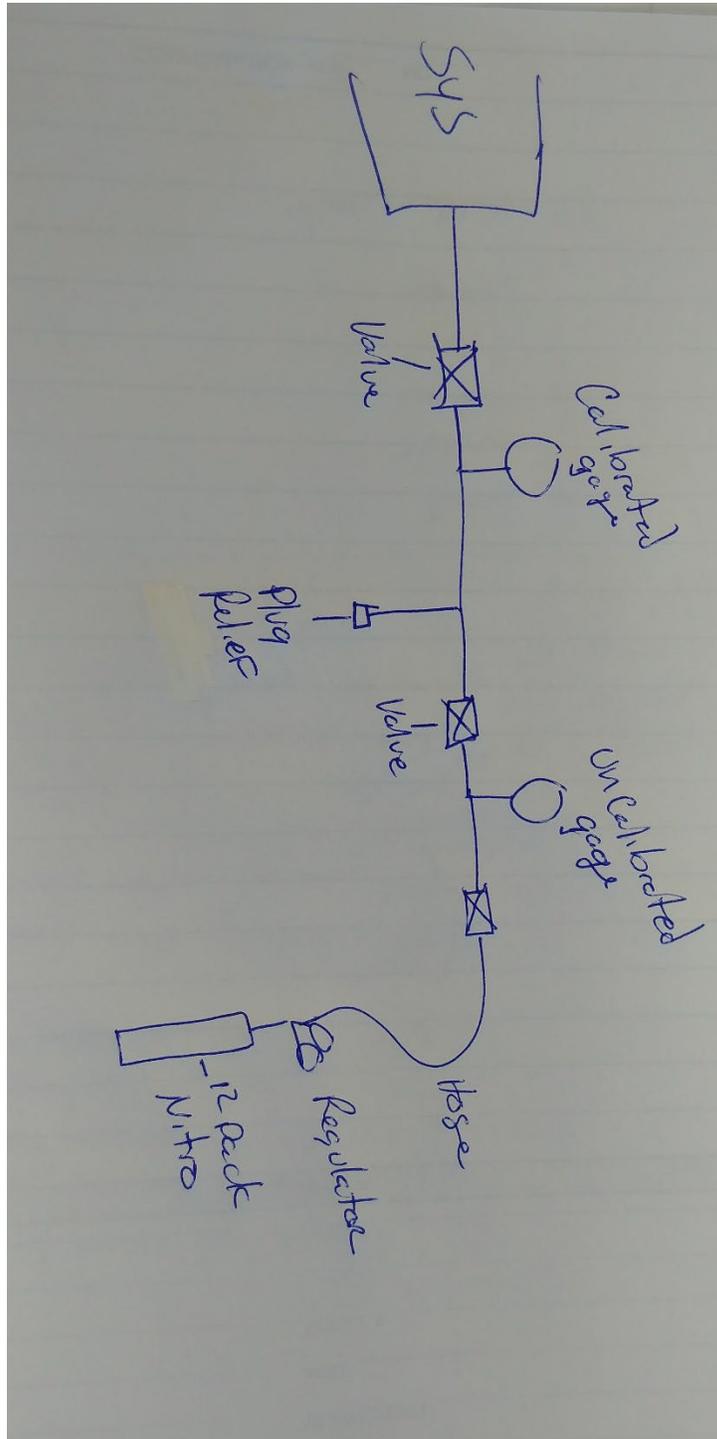
Pressure Test Approvals:

Superintendent: _____ Signature: _____

Site Safety Officer: _____ Signature: _____



Pressure Test Manifold Gauge Diagram





SOP - Cut-In Procedure – Ammonia Tie-In

Tie In Location

Refer to: OSHA 29 CFR 1910.119 (f) – Operating Procedures (Be certain all areas of this element are included).

1. Confirm the location for tie-in and the size of isolation valve(s) to be added per Gartner drawings and project engineer connecting into an existing system, consider installing a shut-off valve at the tie-in point. Consider installing tie-in valve(s) first, so planned system modifications can proceed without interrupting the system operation.
2. Coordinate the tie-in with plant operations. Consider the shutdown time necessary to make the required tie-in and the effect on facility production or storage temperatures.
3. Develop written procedures for testing the newly installed piping and equipment.
4. For all system modifications, follow "Management of Change" procedures. (See IIAR Process Safety Management Guidelines; OSHA 29 CFR 1910.119 Process Safety Management of Highly Hazardous Chemicals.) Ensure that all designs and installations are reviewed by the jurisdictional authority.

Prior To Pump Out

"HOT WORK PERMIT" PER SITE GUIDELINES Refer to OSHA 29 CFR 1910 (k)

Always reduce the system and equipment internal pressure to 0 psig before the tie-in process is started. "Hot Tap" tie-ins are a last resort option. "Hot Taping", if necessary, shall follow industry published guidelines, for example, API Publication 2201.

Prepare the equipment required for the pump-out procedure. Verify that all personal protective equipment is functional. Consider the following, as applicable:

1. Location and readiness of respirator protection equipment (SCBA or another respirator). Select respiratory protection as appropriate for escape, response, or nuisance exposure.
2. Goggles, safety shields, gloves.
3. Water hose.
4. Portable ventilation equipment.
5. Fire extinguisher.
6. Appropriate protective clothing.
7. Two-way radios.
8. Availability of trained back-up personnel in case of emergency.

All personnel involved in work shall be properly trained in the use of necessary personal protective equipment.

1. Review the pump-out procedure and tie-in procedure with personnel. Also review the facility Emergency Planning and Response Plan, making sure all personnel involved know what they are to do if an emergency occurs.
2. Identify the valves, piping and connected equipment that will be shut down. Use Lockout/Tagout procedures in shutting down any portion of the system or equipment. Be careful.

Pump-Out

1. Monitor temperatures and pressures during the pump-out process.
2. Shut off the liquid feed to the portion of the system in which the tie-in is to be made.
3. Continue operating any evaporators that will facilitate refrigerant evaporation.
4. Have a 30 inches Hg to 150 psig (compound) gauge connected to the portion of the system being pumped out.
 - Pump-out until the pressure is below 0 psig, and (if appropriate) down to 15-20 inches Hg. Let the pump-out
 - Let the system stand for several hours, overnight if possible. This will allow remaining liquid refrigerant to vaporize.
 - Any signs of frost on un-insulated piping or valves may indicate that liquid ammonia is present. If this condition persists after several pump-out attempts, check for leaking stop valves.
5. After the pump-out process, the system pressure shall be adjusted to near 0 psig before any cut-ins is made. It is not advisable to have a deep vacuum when the system is cut into because air mixed with any residual oil and ammonia can form an explosive mixture. It is recommended that dry nitrogen be used to raise the pressure to just above 0 psig.

LOCK OUT/TAG OUT Refer to OSHA 29 CFR 1926.417

Pump-out when system liquid storage capacity is inadequate

1. The system does not have liquid storage capacity to pump-out existing piping and equipment, it will be necessary to transfer excess ammonia into a temporary storage vessel or tanker truck.
2. Develop written procedures for the safe transfer of ammonia from the system. In the procedure consider the following:
 - All personnel involved shall use personal protective equipment: SCBA, or other appropriate respiratory protection, protective gloves, protective boots, and protective goggles.
 - Barricade area from traffic and unauthorized personnel while transfer is occurring.
 - Visually inspect and pressure test all transfer hoses and fittings.
 - There should be a functional permanent or portable eye wash and shower available.
 - Know what to do, and where to go if an ammonia release occurs.
 - Never leave the transfer process unattended. Monitor temperatures and pressures during the pump-out and transfer.

Tie-In

1. Piping insulation should be removed in the vicinity of the tie-in point.
 - i. Approximately 3 feet on each side of the tie-in point is recommended.
2. Follow Hot work Permit Procedures before any cutting, burning or welding is one.
3. Use appropriate personal protective equipment, even if the line is believed to be
 - i. entirely pumped down. Never assume that a line has been completely emptied of
 - ii. residual water, oil, and ammonia.
4. Portable fans are useful to direct vapors away from the work area.
5. Have all materials ready. Flange style isolation valves should have a short pipe section connected to it or a piece of pipe with valve flange connected.

6. Introduce a slow flow of dry nitrogen into the isolated section, allowing the pressure to escape through a small vent valve located at the opposite end of the piping section. Do not use air in the place of nitrogen. There should be a slightly positive nitrogen pressure in the system during the hot work. If nitrogen is not available, open a valve to atmosphere so pressure remains near atmospheric.
7. The actual cut-in and welding work should be done by certified and experienced persons.

Testing

1. For a initial test, introduce dry nitrogen into the new portion of the system. Test for leaks at pressures specified in the design or governed by applicable codes. Test for leaks using soap bubble solution. Hold the pressure for 24 hours when feasible. If the pressure falls more than five psi (compensating for temperature changes that may occur), re-check system for leaks. Repair all leaks and re-test as necessary.
 - After the system has been pressure tested, release pressure and re-pressurize with approximately 30 psig of ammonia, then boost the system pressure to at least 100 psig with nitrogen. Test for leaks using litmus paper or sulfur sticks.
 - Where the use of dry nitrogen is not practical. Use ammonia for the leak test. Use sulfur sticks or litmus paper to locate leaks.
2. After the pressure test and leak test are documented, release the ammonia/nitrogen mixture according to applicable codes. Notify appropriate authorities and utilities.
 - Remove all Lockout/Tagout tags.
3. Complete all Management of Change, Pre-Startup Safety procedures, and Training necessary for system addition. Perform Mechanical Integrity Audit (safety check) of all new equipment, piping, vessels, etc.

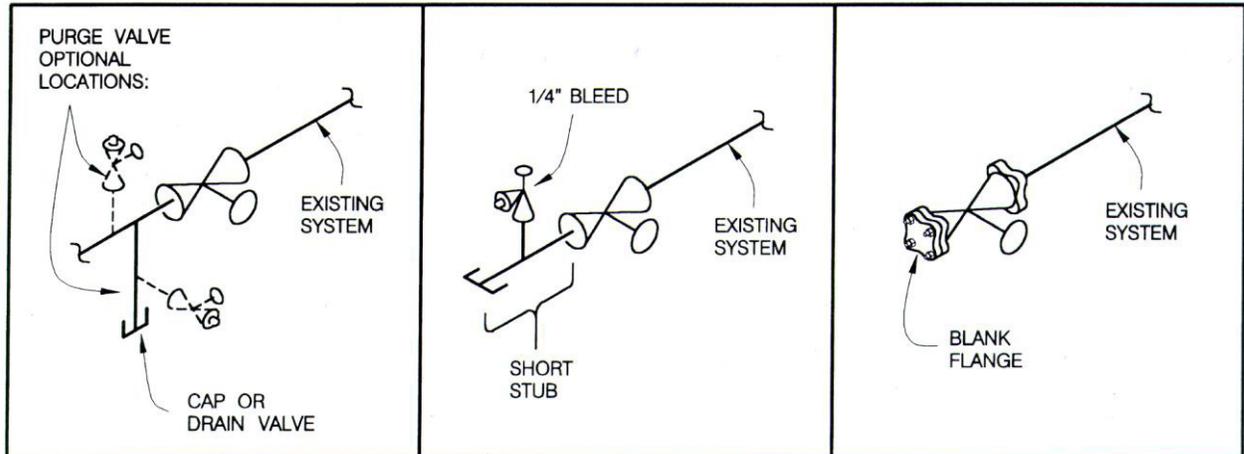
Bring On-Line **Following Site Standard Operating Procedures OSHA 29 CFR 1910.119 (f) and 29 CFR 1910.119 (i) pre-safety startup.**

1. Before bringing the new system addition on-line, purge the non-condensable gas.
2. Following testing, the system addition should already be at or near 0 psig. If not, purge the remaining pressure. Again, notify appropriate authorities and utilities.
 - Pump-out the system using a vacuum pump that is appropriate for ammonia. This should not be done with the system compressors. If available, use a water jet style pump, which absorbs ammonia.
 - Before bringing the system addition on-line, properly label and tag new piping, valves, and equipment.
3. New equipment should be brought on-line in a logical and sequential order so as to not overload compressor
4. Slowly adjust the system suction pressure. Monitor the effect on the original system.

Planning For Future Expansion

1. Determine locations and size for extra valves that could facilitate future expansion. Consider what portions of the system or equipment might have to be isolated or shut down to make a tie-in an extra valve is not installed during original construction.
2. Determine locations for purge/pump out connections. For those portions of the system or equipment that will have primary isolation valves, install purge valves to assist in the pump-out of that section of piping or equipment.

3. Size dead-end valves on main line stubs to which future connections are made. The size of the valve should be large enough to handle expected future capacity at an acceptable pressure loss. Consider the direction of flow and valve orientation when installing valves. If possible, the source of pressure or flow should come up under the valve seat. Main line dead-end valves should be plugged, blank-flanged, or have a short stub with a 1/4" bleed valve with gauge. See examples and Notes below:



- NOTE:**
- a. For dead-end valves, if a pipe stub is connected to the valve, it should be approximately 12" long. The added length of the stub, plus the use of a heat sink (like a wet rag) will reduce the possibility of damage to the valve seat when a future connection is made to the pipe stub.
 - b. Ensure that safe operating procedures (including lockout/tagout) are established and adhered to for dead-end valves.
 - c. For a dead-end liquid valves, do not open the valve and then close the valve leaving liquid trapped, unless some means is provided to relieve pressure.
4. Analyze possible future facility load additions that could reasonably be expected to occur. Consider providing future tie-in valves at the following locations:
 - End of main headers
 - Connection off of main headers for future compressor, condensers, vessels, and other equipment
 - Future processing equipment
 - Future mechanical refrigerant pumps or liquid transfer units.
 - Consider locating valves in the system so that they could be closed to facilitate future expansion.
 - Consider installing additional valves, which could reduce the possibility of an extended or difficult shutdown.
 - Consider locating valves to avoid the trapping of liquid during future expansion.
 5. During the installation verify that all refrigerant lines and valves are properly identified. See IIAR Bulletin 114.
 6. Make tie-in locations so that proper refrigerant flow will be aided by gravity. An alternative is to design for added pressure losses where return lines are trapped.



SOP - Ammonia Removal

1. Pump down the system using the system compressor(s).
2. Remove liquid ammonia from refrigeration system.
3. Evacuate pocketed ammonia as much as possible to attain near zero charge on the system.
4. Schedule transport trucks to dispose of ammonia properly.
5. Use top of tanker truck vent to plant low side suction (1" hose minimum)
6. Liquid hose (1" hose minimum) to truck pump.
7. Drain oil from oil pots (oil holds ammonia).
8. Drain oil from all compressors
9. When system is empty, dispose of residual of ammonia and nitrogen by using 100 gallons of water to 1 gallon of ammonia bubbling slowly into a 55-gallon barrel full of water. Tie the ammonia hose so it doesn't jump out. Place the 55-gallon barrel close to a Sanitary Drain and run water constantly to maintain 100 gallons water to 1-gallon ammonia ratio. Do not discharge to a storm sewer.
10. Place Stokes vacuum pump on system placing pump discharge and hose into 55-gallon barrel of constant water running down drain.
11. Use eight (8) packs of nitrogen to dilute ammonia when system is near empty.
 - (1) 8 pack per 5,000 lb. ammonia system
 - (2) 8 packs per 10,000 lb. system
12. Dump nitrogen ammonia press mix into water.
13. Isolate compressors properly.
14. Leave compressor with 5-psig nitrogen.



SOP - Ammonia Spills

1. You may be taking orders from the customer's Incident Commander or the Fire Department.
2. If there is no Incident Commander, work with the Fire Department.
3. Instruct help to dam area around ammonia spill to prevent ammonia from entering storm drains.
4. Never add water to ammonia
5. Ammonia can be added to water:
 - a) Safe dilution levels of 1 gallon of ammonia to 100 gallon (25 ppm) of water can be disposed of down a sanitary sewer.
6. Never enter a leak area on SCBA without a backup man with an SCBA and lifeline.
7. Measure ppm of the cracked door leak with MSA "Kwick Draw" pump tube test instrument.
 - a) 25-300 ppm Use gas mask
 - b) 300-1000 ppm Use SCBA with splash suit and gloves
8. Over 1,000 ppm
 - a) Use PPV Positive Pressure Ventilation fan to lower ammonia concentration in work area (up wind) to 1000 ppm or lower.
 - b) If Test Instrument shows level near work area above 1000 ppm LEAVE AREA
 - c) Working with SCBA over 1000 ppm requires Level "A" Sealed Suits
9. If you cannot lower ppm to less than 1000 ppm:
 - a) Continue PP Ventilation until up wind level near work area drops lower than 1000 ppm (Explosive Safety Alert/4%=40,000ppm)
10. Gartner Service Personnel are **NOT** Level 'A' Responders on their **OWN**. You need back up help using FIRE DEPARTMENT or HAZMAT Team.
 - a) Work with FIRE DEPARTMENT and/or "HAZMAT" team to assist them.
11. Level 'A' Response can only be performed on customers who have a PSM* Process Safety Management Team
12. 40,000 ppm LEAVE AREA IMMEDIATELY – **LOWER LEVEL OF EXPLOSIVE LIMIT.**
NOTE: Often indicated by a dense cloud filling the room to near zero visibility.

Air Monitoring (testing)

Take hermetic tube/pump samples through cracked open door before entering spill area.

1%	=	10,000 ppm
4%	=	40,000 ppm Safe lower Level of Explosive Limits
35 ppm	=	P.E.L. (Personal Exposure Level) Irritation max ppm for 8 hour working conditions
25-300 ppm	=	Gas Mask Required
300-500 ppm & Above	=	SCBA use recommended (gas masks may not be adequate for all personnel)
Above 500 ppm	=	SCBA Required I.D.L.H. – Immediate Danger to Life & Health
Above 1,000 ppm	=	Level "A" Protection required by OSHA (Need back up team with Level "A" suit per OSHA) Max worker body temperature (in ear) 100°F.

MSA QUICK DRAW PUMP

Note: 3 different tubes

1. MSA Tube #804405= 2 PPM – 500 PPM
 - a. 10-600 ppm Scale N=2 – Only 2 Strokes of MSA "Kwick Draw" pump
 - b. If reading is less than 50 ppm; take 8 more strokes (total 10) and read Scale N=10.
2. MSA Tube #800300 = 20 PPM – 1000 PPM 1 stroke = 20 PPM
3. MSA Tube #804400 = 10,000 (1%) – 100,000 RPM (10%)
1 stroke = 10,000 PPM 10 strokes = 100,000 PPM



SOP - Ammonia/Oil/Solvent Disposal

**Caution: Wear non-vented eye goggles, face shield and rubber gloves.
Never blow liquid into air.**

Liquid

All ammonia liquid must be transferred into:

1. Certified ammonia drums, caution, do not overfill/exceed net weight.
2. Ammonia Refrigeration vessels or piping
3. Certified ammonia tank trucks
4. Sanitary sewer
 - a. small quantities (under 10 lbs.) dilute with water, 100 gallons to 1 gallon of ammonia.
 - b. Always add ammonia to water, never water to ammonia.

NOTE: Never dump into storm sewer or areas that drain into storm sewers. Vapor Disposal

1. Into refrigeration systems, vessels and piping.
2. Into empty certified ammonia drums
3. Into certified ammonia tank trucks
 - a. check winds, clear area downwind 5,000 ft. and have watch person
4. Into air
 - a. only if small quantities (under 10 lbs.) with great caution, slowly making sure downwind area is clear with watch person.

Oil Disposal

- Dispose oil into oil reclaim barrels designated for refrigeration oil

Solvent Disposal

- Dispose of solvent into reclaim barrels designated
 - a. Bring used solvent to shop if customer does not have solvent recycle/reclaim system.



SOP - CFC/HCFC Safety

CFC/HCFC AND "FREON" SUBSTITUTES HCFC*

1. Pump out and reclaim with designated reclaimer and certified refrigerant reclaim drums.
2. Labels reclaim drum with proper refrigerant number
3. Bring refrigerant to shop for recycling.
4. Return used reclaimer for shop service to clean up.
5. Check out clean reclaimer machine and empty refrigerant drums.

CFC'S & HCFC'S* - Always follow OSHA rules on Class I & II refrigerants:

1. Do not vent to atmosphere (R12, R22, R502 and all replacements/blend refrigerants).
2. Pump out and reclaim with proper equipment.
3. Do not cross contaminate refrigerants.
4. Tag and label all refrigerant reclaim cylinders

Type of air conditioning or refrigeration equipment. CFC/HCFC & Blends	Inches of Vacuum (relative to Standard Atmospheric Pressure of 29.9 Inches Hg), using recovery or recycling equipment
Equipment or isolated component of such equipment, normally containing less than 200 pounds of refrigerant	0
Equipment or isolated component of such equipment, normally containing 200 pounds or more of refrigerant	10
Other high-pressure equipment, or isolated component of such equipment, normally containing less than 200 pounds of refrigerant	10
Other high-pressure equipment, or isolated component of such equipment, normally containing 200 pounds or more of refrigerant	15
Very high-pressure equipment (condensers 300-500 psig)	0
Intermediate-pressure equipment (R114)	25
Low-pressure equipment (low temp equipment)	29

Industrial/Commercial CFC/HCFC Equipment*

1. Must be repaired if total yearly leakage exceeds 35% of total charge

Comfort Cooling CFC/HCFC Equipment*

1. When total charge is more than 50 lbs., unit must be repaired if the yearly leak rate exceeds 15% of total charge
2. Customer/owners must keep records of how much refrigerant is added during servicing. Owners who become aware of leaks greater than the percentages outlined have 30 days to repair the leaks or program a replacement of the equipment.

For All Procedures:

- *Always use excess ventilation with opening CFC/HCFC equipment due to residual vapors*
- *Use PPE personal protection equipment when using an open flame around CFC/HCFC*
- *Residual vapors of CFC/HCFC's may cause toxic vapors when burned with open flame*



SOP - Hazardous Material Spill Prevention & Response Plan

This spill plan is designed to handle the requirements for a job site and associated hazardous materials and should be updated if the hazardous material inventory changes.

Spill Prevention

The following are general requirements for any hazardous materials stored or used on a Gartner Refrigeration jobsite.

General Requirements

1. Ensure all hazardous substances are properly labeled.
2. Store, dispense, and/or use hazardous substances in a way that prevents releases.
3. Provide secondary containment when storing hazardous substances in bulk quantities (~55gl).
4. Maintain good housekeeping practices for all chemical materials at the facility.
5. Routine/Daily checks in the hazardous material storage area to be performed by the field superintendent.
6. Monthly inspections of the hazardous material storage area, secondary containment, and annular space (interior cavity of double wall tank) on any present Above-ground Storage Tanks (AST) or Underground Storage Tanks (UST) need to be logged in.

Spill Containment

The general spill response procedure at a jobsite is to stop the source of the spill, contain any spilled material, and clean up the spill in a timely manner to prevent accidental injury or other damage.

Small spills will be contained by site personnel if they are able to do so without risking injury. Spill kits must be adequate for any anticipated spills and their locations should be outlined on a site map.

Personnel will ensure that used spill cleanup materials are properly characterized before disposal.

Emergency Procedures

- Immediately call **911** in the event of injury, fire or potential fire, or spill of a hazardous substance that gives rise to an emergency situation.
- If a spill has occurred, contact the following persons immediately:

	(Primary)	()	-
	(Secondary)	()	-
	(After Hours Emergency Contact)	()	-

- **In the event of a large spill, a properly trained employee should:**
 - Notify the primary and/or secondary contact from the list above. Continue your spill response. The primary contact at this time should assess additional notification requirements
 - Retrieve the spill kit from the closest location.
 - Assess the area for any immediate dangers to your health or safety (i.e., a wrecked car on fire). If any dangers are present, move away from the area, **call 911**.
 - Assess the size of the leak and any immediate threat of the spill reaching the floor/storm drains or permeable surfaces in the area. If there is an immediate threat and there are no safety concerns, then attempt to block the spill from coming in contact with the floor/storm drain or permeable surface. If no drain covers are available, then try to use absorbent (cat litter) and/or sock booms or rags to stop the spill from getting into the drains or to any permeable surfaces.
 - If there is no immediate threat to the floor/storm drains or permeable surfaces, or after controlling the spill, try to plug or stop the leak, if possible. If applicable, put-on protective gear (gloves, goggles, protective clothing, etc.) and plug the leak.
 - If the spill can be contained with absorbent booms, deploy them around the spill. Use the booms to direct the spill away from any immediate hazards (i.e., a wrecked car).
 - Once the spill has been contained and any immediate threat to storm drains or permeable surfaces has been minimized, contact the spill cleanup contractor and dispatch them to clean up the spill or commence spill cleanup procedures.

OPTIONAL: Spill cleanup for large spills should be handled by the Spill Cleanup Contractor that should be located near the jobsite. Their phone number should be posted.

Plan Management

The primary contact, or their designee, shall administer this plan and will be responsible for updating and including any required documentation.

Training

All personnel that may respond to a spill, large or small, need to be trained on the contents and procedures in this plan. Trained personnel will add their name, date of training, and phone number are to be entered into the Training Log. Only persons trained on this plan shall respond to a spill. If you are not trained and witness a spill, call or notify the job superintendent.

Spill Tracking

Any spills must be entered into the Spill Log. If a large catastrophic spill occurs, attach additional pages to describe the event. Include known or possible causes, areas affected, and effectiveness of the cleanup. Include a review of the cleanup contractor and their procedures. For small spills, it is sufficient to fill out the Spill Log, and to take measures to prevent a repeat occurrence.

Facility Inspections

Routine inspections will be conducted daily during regular business hours on standard business days. Daily inspections will include, at a minimum, a visual inspection of the hazardous materials containers and the area immediately adjacent to it for signs of a spill or leak. These inspections do not need to be logged unless a spill or leak is detected. Ideally, this inspection will be conducted by a manager or by regular employees.

Full site inspections will be conducted monthly by the field superintendent or their designee and will include, at a minimum, those items which have been designated as hazardous. The inspection form will be attached to this plan unless all items are deemed “acceptable”; in this case it is sufficient for the inspector to only log the inspection and the results in the Inspection Log.

Spill Reporting

If a hazardous substance has been released to soil, surface water, storm drains or the spill exceeds 25 gallons the proper agencies should be contacted. A list of the local and national agencies and response centers should be posted including their phone numbers.



IIPP – Illness and Injury Prevention Program SAFETY POLICY

Gartner Refrigeration will institute and administer a comprehensive and continuous occupational Injury and Illness Prevention Program (IIPP) for all employees. The health and safety of the individual employee, whether in the field, plant or office takes precedence over all other concerns. Gartner Refrigeration's goal is to prevent accidents, to reduce personal injury and occupational illness and to comply with all safety and health standards.

RESPONSIBILITY

The superintendent is responsible for overall management and administration of the Injury and Illness Prevention Program. Each Supervisor is responsible for implementing the IIPP in his/her work area. Questions regarding the program should be directed to the superintendent.

TRAINING

Names or designee shall assure that supervisors receive training to familiarize them with general safety and health hazards to which employees under their immediate direction and control may be exposed.

Supervisors are responsible to see that those under their direction receive training on general workplace safety as well as specific instructions with regard to hazards unique to any job assignment.

This training is provided:

To all employees and those given new job assignments for which training has not previously been received. The “New Employee Training Record” and/or the “Employee Safety Training Verification Form” are used to document training.

Whenever new substances, processes, procedures, or equipment are introduced to the workplace and represent a new hazard; and

3. Whenever the employer is made aware of a new or previously unrecognized hazard.

METHOD OF COMPLIANCE

Our supervisors or designee will observe employees work habits to ensure compliance with safety program. Employees who follow safe and healthy work practices will have this fact recognized and documented on their performance reviews. Employees who are unaware of correct safety and health procedures will be trained or retrained.

Willful violations of safe work rules and practices may result in disciplinary action in accordance with the following policy:

Disciplinary measures are progressive and involve four steps:

Should a safety and health violation be noted, the supervisor is to informally discuss the behavior with the employee, stating the potentially dangerous result and outline the correct procedure. If needed, the employee will be retrained to ensure understanding.

A second violation should generate either a formal verbal warning or a written warning to the employee, depending on the severity.

The third infraction results in a formal written or suspension of the employee.

A fourth violation may lead to employee termination.

SAFETY MEETINGS AND COMMUNICATION

Matters concerning occupational safety and health will be communicated to employees by written documentation, staff meetings, formal and informal training and posting. Communication from employees and/or the safety representatives about unsafe or unhealthy conditions is encouraged and may be verbal or written, as the employee chooses. The employee may use the “Report of Safety Hazard” form and remain anonymous.

NO EMPLOYEE WILL BE RETALIATED AGAINST FOR REPORTING HAZARDS OR POTENTIAL HAZARDS OR FOR MAKING SUGGESTIONS RELATED TO SAFETY!

The results of the investigations of any employee safety suggestion or report of hazard will be distributed to all employees affected by the hazard or shall be posted on appropriate bulletin boards.

Safety meetings will be held at least every 10 working days and more if possible or when necessary.

SAFETY INSPECTIONS

Each supervisor will conduct a formal inspection/investigation to identify unsafe work conditions and practices once a week in all work areas. Informal inspections will be conducted daily.

Also, whenever new substances, processes, procedures, or equipment are introduced into the workplace that represent a new occupational safety and health hazard, each supervisor will conduct an inspection.

In addition, each supervisor will conduct an inspection whenever they are made aware of a new or previously unrecognized hazard.

The "Safety Inspection Form" shall be used to document these inspections/investigations.

CORRECTION OF UNSAFE OR UNHEALTHY CONDITIONS

Whenever an unsafe or unhealthy condition, practice, or procedure is observed, discovered, or reported, the Supervisor will take appropriate corrective measures in a timely manner based upon the severity of the hazard. The "Safety Inspection Form" and/or the "Hazard Abatement Record" is used to document hazard corrections. Employees will be informed of the hazard and the interim protective measures taken until the hazard is corrected.

BASIC RULES FOR ACCIDENT INVESTIGATION

The purpose of an investigation is to find the cause of an accident and prevent further occurrences, not to fix the blame. An unbiased approach is necessary to obtain objective findings.

Visit the accident scene as soon as possible while the facts are fresh and before witnesses forget important details.

If possible, interview the injured worker at the scene of the accident and “walk” with him or her through a re-enactment.

All interviews should be conducted as privately as possible. Interview witnesses one at a time. Talk with anyone who has knowledge of the accident, even if they did not actually witness it.

Consider taking signed statements in cases where facts are unclear or there is an element of controversy.

Document details graphically. Use sketches, diagrams and photos as needed, and take measurements when appropriate.

Focus on causes and hazards. Develop an analysis of what happened, how it happened and how it could have been prevented. Determine what caused the accident itself, not just the injury.

Every investigation should include an action plan. How will you prevent such accidents in the future?

If a third party or defective product contributed to the accident, save any evidence. It could be critical to the recovery of claims costs.

Every employer shall report immediately (within 8 hours) by telephone or telegraph to the nearest District Office of the Division of Occupational Safety and Health any serious injury or illness, or death, of an employee occurring in a place of employment or in connection with any employment (see CCR Title 8, Section 342).

SUPERVISOR'S REPORT OF ACCIDENT

Name of injured Employee _____
Age _____ Married _____ Occupation _____

Home Address _____
City _____ Zip Code _____

Social Security No. _____ Pay Rate _____ Hire Date _____

Date of Accident _____ 19____ Time _____ [] A.M. [] P. M.

Type of Injury (be specific) _____

Who gave first aid, if any? _____

Name and address of Hospital or Physician _____
where employee went for treatment _____
(if applicable) _____

Did injured leave work? [] Yes [] No Date _____ Time _____ [] A.M. [] P.M.

When did injured return to work? (date) _____

Was another person responsible? [] Yes [] No

Was another person injured? [] Yes [] No

Was injured acting in line of duty? _____

Names of Witnesses _____

Name of Responsible or injured Person: _____

Where and How did Accident Occur? (Be specific) _____

What steps have been taken to prevent a similar accident? _____

Date _____

Employee's Signature

Supervisor's Signature

Safety Coordinator

VEHICLE ACCIDENT/INCIDENT REPORT

Name of operator of vehicle _____
Supervisor's name _____
Date/Time of accident (Date) _____ (Time) _____ Equipment # _____
Model: _____ Make: _____ Year: _____
Description of damage _____

Is vehicle still operational? Yes No
Description of accident. How did it occur? _____

↑
Weather conditions: _____
North _____
Police notified? Yes No

What can be done to prevent this type of accident/incident in the future?

Employee's Signature/Date _____ Supervisor's
Signature/Date _____

Director's Signature/Date _____ Safety Officer's
Signature/Date _____

Estimate of repair \$ _____
Vehicle/Equipment maintenance supervisor comments, suggestions, estimate for repair, etc.

NEW EMPLOYEE TRAINING RECORD

Date Employed **Date** **Name**
(Reassigned) (Completed) (Print) First Middle Last

Department assigned _____ **Type of work** _____

Outline employee's past work experience _____

Ask Employee: "Do you have any physical conditions or handicaps which might limit your ability to perform this job? If so, what reasonable accommodation can be made by us?"

Did employee have a pre-placement physical? Yes No

If yes, any work restrictions indicated? _____

The supervisor and the new employee are to review the following safety concerns, check and discuss those which apply:

**Check
Off**

Discuss where appropriate

- 1. Applicable Company, State and Federal policies and programs _____
- 2. Applicable Company, State and Federal safety rules, both general and specific to job assignment _____
- 3. Company safety rule enforcement procedures _____
- 4. Use of tools and equipment _____
- 5. Proper guarding of equipment _____
- 6. Proper work shoes and other personal protective equipment, as needed _____

- 7. Handling of product _____
- 8. Use of specific lifting equipment, such as hoists, hand truck, etc. _____

- 9. How, when and where to report injuries _____
- 10. Importance of housekeeping _____
- 11. Special hazards of the job _____
- 12. When and where to report unsafe conditions _____
- 13. Emergency procedures _____
- 14. Employee responsibility for the prevention of accidents _____

- 15. The law that only work-related injuries are covered under workers'

- compensation _____
- 16. Training on any toxic material employee might be exposed to _____
 - 17. Fire Safety _____
 - 18. Safe operation of motor vehicles _____
 - 19. Company policy on medical treatment for work related injuries _____
 - 20. Employee is to receive special additional instruction and guidance from _____
 - 21. Supervisor will adequately and frequently review performance of new employee. Superior behavior will be awarded and substandard behavior will be corrected.
 - 22. Probationary period is from _____ to _____
 - 23. Supervisor will formally review employee's performance on _____
 - 24. Employee agrees to fully cooperate with the safety efforts of the employer, follow all safety rules and use good judgment concerning safe work behavior.

Additional comments and notes: _____

Signed _____
 Supervisor Employee

EMPLOYEE SAFETY MEETING

DATE _____ TIME _____ A.M.

CONDUCTED BY _____ TITLE _____

SUBJECT DISCUSSED _____

SIGNATURES OF EMPLOYEES

APPROVED BY _____
MANAGER

DATE _____

INSTRUCTIONS: Make your meeting brief- 5 to 10 minutes. Cover only one subject. Use an object to focus the attention of the employees. Involve them in the talk.

HAZARD ABATEMENT RECORD

Safety items identified during monthly inspections/investigation will be submitted to Tommie Quam for review, and an action plan will be developed to resolve each safety item (hazards, needed policies, etc.) by a set completion date and those assigned responsibility. This form will be used to document identified problems, steps to be taken, and completion deadline.

OVERALL, ACTION PLAN

Priority (Assign Each Step a Number	Date	Projected Completed	Date Completed
----------------------------------------------	------	------------------------	-------------------

Major action steps taken:

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____



HIPP – Heat Illness Prevention Program

Heat Illness Prevention Program

(A) Scope and Application

This section of the Safety and Health Procedures Plan deals directly with methods of protecting each employee from the “Environmental risk factors of heat illness.”

Employer shall instruct and train each of their employees concerning and related to Safety and Health methods that will assure the safest and healthiest means of protection from heat stress. Certain protective measures such as, acclimatization, necessary shade, fluid intake, and frequent breaks, are mandatory steps employers must address when outdoor activities create dangerous environmental risks related to the employees’ outdoor activities.

(B) Definitions

“Acclimatization”

Acclimatization is a temporary adaptation of the body at work, in the heat that occurs gradually when a person is exposed to it. Acclimatization peaks in most people within four to fourteen days of regular work for at least two hours per day in the heat.

“Heat Illness”

Heat Illness means a serious medical condition resulting from the body’s inability to cope with a particular heat load. Employers must remember each employee is an individual, therefore control and prevention of heat stress may vary.

“Environmental Risk Factors”

Environmental risk factors for heat illness means working conditions that create the possibility that heat illness could occur, including air temperature, relative humidity, radiant heat from the sun and other sources, conductive heat sources such as the ground, air movement, workload severity and duration, protective clothing and personal protective equipment worn by employees.

Physical Work Factors

Workload severity and duration: Strenuous work causes the body to heat up and is a major source of heat gain for the body. Therefore, employees’ performing strenuous work in the heat need

more frequent breaks than other employees performing less strenuous work in the heat, all else being equal.

Protective clothing and personal protective equipment (PPE) worn by employees: The type and level of PPE worn are major factors which determine an employees' additional risk of heat illness. The types of PPE employees are required to wear can vary widely. PPE worn can range from hard hats, gloves, FR clothing, boots all the way up to a fully encapsulated level A Hazmat suit and SCBA. Wearing impermeable PPE which covers the body or face, limits air movement and the cooling effects of sweating. This results in the greatly reduced release of heat from the body to the surrounding environment and an increased heat load on the body. Also, inappropriate work clothing (e.g. dark colored or tight fitting) can increase the risk of heat illness or injury.

“Personal Risk Factors”

Personal risk factors for heat illness means factors such as an individual's age, degree of acclimatization, alcohol consumption, caffeine consumption, and use of prescription medications that affect the body's water retention or other physiological responses to heat.

“Preventive Recovery Period”

Preventative recovery period means a period of time to recover from the heat in order to prevent heat illness. This shall be implemented by administrative decisions controlled by the Project Superintendent and communicated to all sub-contractors' supervisory personnel.

“Shade”

Shade means blockage of direct sunlight. Canopies, umbrellas and other temporary structures or devices may be used to provide shade. One indicator that blockage is sufficient is when objects do not cast a shadow in the area of blocked sunlight. Shade is not adequate when heat in the area of shade defeats the purpose of shade, which is to allow the body to cool. For example, a car sitting in the sun does not provide acceptable shade to a person inside it, unless the car is running with air conditioning.

(C) Provisions for Water

Employees shall have access to potable drinking water. Water shall be provided in sufficient quantity at the beginning of the work shift to provide one quart per employee per hour for drinking for the entire shift. Employees may begin the shift with smaller quantities of water, however, effective procedures for replenishment during the shift will be followed as needed to allow employees to drink one quart or more per hour.

(D) Access to Shade

Employees suffering from heat illness or believing a preventative recovery period is needed shall be provided access to an area with shade that is either open to the air or provided with ventilation or cooling for a period of no less than five minutes. Such access to shade shall be permitted at all times. Each area foreman will bring 1 shade structures to the site, to accommodate at least 25 percent of the employees on the shift and either chairs, benches, sheets, towels or any other items to allow employees to sit and rest without contacting the bare ground. However, chairs, benches, etc. are not required

for acceptable sources of shade such as trees.

The area foreman will ensure that 1 shade structures are opened and placed as close as practical to the workers, when the temperature equals or exceeds 85 degrees Fahrenheit. When the temperature is below 85 degrees Fahrenheit, the shade structures will be brought to the site, but will be opened and set in place upon worker(s) request. Note: The interior of a vehicle may not be used to provide shade unless the vehicle is air-conditioned, and the air conditioner is on.

When working on the high roof, the penthouses will serve as the shade structure, and shall have seating for at least 25% of the work force on the roof.

(E) Training and Instruction

(1) Employee training. Training in the following topics shall be provided to all supervisory and non-supervisory employees.

- (a) The Environmental, Physical Work, and Personal Risk factors for heat.
- (b) Supervisors Must take personal risk factors into consideration before assigning tasks where employees are at a greater risk for exposure to heat related illness or injury
- (c) The employer's procedures for identifying, evaluating, and controlling exposures to the environmental and personal risk factors for heat illness.**
- (d) The importance of frequent consumption of small quantities of water, up to 4 cups per hour under extreme conditions of work and heat.
- (e) The importance of acclimatization.
- (f) The different types of heat illness and the common signs and symptoms of heat illness.
- (g) The importance of immediately reporting to the employer, directly or through the employee's supervisor, symptoms or signs of heat illness in themselves, or in co-workers.
- (h) The employer's procedures for responding to symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary.**
- (i) Procedures for contacting emergency medical services, and if necessary for the transporting employees to a point where they can be reached by an emergency medical service provider.**
- (j) How to provide clear and precise direction to the work site.**

(1) Supervisor training. Prior to assignment to Supervision of employees working in the heat, training on the following topics shall be provided

- a) The information required to be provided by section (e) (1) above.
- b) The procedures the supervisor is to follow to implement the applicable provisions in this section.

- c) The procedures the Supervisor is to follow when an employee exhibits symptoms consistent with possible heat illness, including emergency response procedures.
- d) How to monitor weather reports and how to respond to hot weather advisories.

(k) Access to the company heat prevention program/procedures shall be made available to all employees.

Site Specific Heat Illness Training and Emergency Plan

- I. The job superintendent will conduct weekly safety meetings for all job site supervisors, foreman, and any persons having direct responsibility for directing employees work activities at the job site. Each sub-contractor will be responsible for their weekly safety meetings with all non-supervisory employees. All safety meetings by sub-contractors shall be documented and shall contain the date, subjects discussed, questions asked by employees and signatures by all employees in attendance. One copy of each safety meeting conducted by sub-contractor shall be given to the Superintendent no later than the next scheduled workday. The job superintendent will audit safety meeting records to ensure that all aspects of heat illness training are being conducted. All safety controls and procedures for the prevention of heat illness shall be implemented by superintendent and changes concerning the systems and safety measures installed or provided shall meet his/her final approval,
- II. All definitions communicated under section (b) Definitions, will be discussed and any questions resolved during safety meetings or whenever changes in this plan or job site conditions are required.
- III. Train every employee that one quart of water, per hour, is the minimum requirement under extreme environmental conditions. This should help maintain consistent perspiration.
- IV. Employees shall be given frequent breaks, in shaded areas designed by management, the duration of breaks shall be decided by the superintendent and the management team, based on the environmental risks.
- V. Adequate water supply and individual drinking cups shall be made available at all areas of shade, with trash containers for disposal of drinking cups. Train employees to avoid liquids containing caffeine, which can affect their body's water retention and greatly affect their protection. Alcoholic beverages or liquids containing alcohol are prohibited.

VI. Employees will be trained to recognize the signs and symptoms of heat illness

Symptoms of Heat Cramps

- Muscle spasms in the arms, legs, and stomach
- Heavy Sweating

Symptoms of Heat Exhaustion

- Headaches, dizziness, light headedness or illness
- Weakness and moist skin
- Mood changes such as irritability or confusion
- Upset stomach or vomiting, nausea
- Thirst

Symptoms of Heat Stroke

- Dry, hot skin with no sweating
- Mental confusion or losing consciousness
- Seizures or convulsions

VII. Superintendents shall train employees to take these precautions when symptoms are suspected or recognized (in the early stages if possible).

- Move to a cool, shaded area
- Loosen or remove heavy clothing
- Drink cool water
- Fan and moist with water
- Immediately notify area foreman

VIII. **911** is the local emergency number. Should the Superintendent be off site, assistant superintendents will make the necessary emergency contacts.

IX. Supervision requesting emergency services (**911**) shall instruct emergency services with clear and precise directions to the work site.

The job Superintendent will assign the assistant superintendents in specific locations for directing emergency medical service providers to the location.

Site specific directions as stated for ambulance

The 911 operator will receive the instructions and directions from the job Superintendent (should they be off site; Assistant Superintendent will be responsible for this activity).

Job Site Location

Address

Ambulance shall be directed to the construction entrance. Supervisory personnel will be waiting at the Construction trailer and will escort the emergency medical services to the victim's location on site.

Review

There should be additional supervisory personnel trained and prepared to direct the emergency medical provider with specific directions to the necessary location, should additionally shifts, vacations, personnel sickness, or routine business require normal assignments in the plan to change. The superintendent will be responsible for designating the qualified personnel should situations occur that leave a void in the emergency plan.

The superintendent shall provide each sub-contractor with the requirements of the Gartner Refrigeration Construction Heat Illness Prevention Plan. Gartner Refrigeration shall require that all sub-contractors provide each of their employees the protection such as shade, water dispensers, cups, and materials necessary for the requirement of the Heat Illness Prevention Plan.

Procedures for Monitoring the Weather:

2 weeks in advance (or with as many days in advance as possible), Project Superintendent will go on the internet (www.nws.noaa.gov), call the National Weather Service Phone Numbers (see CA numbers attached) or check the Weather Channel TV Network to view the extended weather forecast in order to plan in advance the work schedule, know whether a heat wave is expected and if additional schedule modifications will be necessary.

This type of advance planning should take place all summer long.

CALIFORNIA Dial-A-Forecast

Eureka 707-443-7062

Hanford 559-584-8047

Los Angeles 805-988-6610(#1)

Sacramento 916-979-3051

San Diego 858-297-2107(#1)

San Francisco 831-656-1725(#1)

Prior to each workday, the Project Superintendent will review the forecasted temperature and humidity for the worksite and compare it against the National Weather service Heat Index to evaluate the risk level for heat illness, for instance whether or not workers will be exposed at a temperature and humidity characterized as either “extreme caution” or “extreme danger” for heat illnesses such as heat stroke. It is important to keep in mind that the temperature at which these warnings occur must be lowered as much as 15 degrees if the workers under consideration are in direct sunlight.

Prior to each workday, the Project Superintendent will be responsible for monitoring the weather (using www.nws.noaa.gov or with the aid of a simple thermometer) at the worksite. This critical weather information will be taken into consideration, to determine when it will be necessary to make modifications to the work schedule (such as stopping work early, rescheduling the job, working at night or during the cooler hours of the day, increasing the number of water and rest breaks).

The Project Superintendent will be responsible for using a thermometer at the jobsite and checking the temperature every hour to monitor for sudden increases in temperature, to ensure that once the temperature exceeds 85 °F, the shade structures are opened and accessible to the workers and to make certain that once the temperature equals or exceeds 95 °F additional preventive measures such as the High Heat Procedures are implemented.

High Heat Procedures are additional preventive measures that this company will use when the temperature equals or exceeds 95 degrees Fahrenheit.

The area foreman will ensure that effective communication by voice, observation, or electronic means is maintained so that employees at the worksite can contact a supervisor when necessary. If the area foreman is unable to be near the workers to observe them or communicate with them, then an electronic device, such as a cell phone or text messaging device, may be used for this purpose only if reception in the area is reliable.

The area foreman will observe employees for alertness and signs and symptoms of heat illness.

The area foreman will remind employees throughout the work shift to drink plenty of water.

The area foreman will closely supervise a new employee or assign a “buddy” or more

experienced coworker for the first 14 days of the employee's employment by the employer, unless the employee indicates at the time of hire that he or she has been doing similar outdoor work for at least 10 of the past 30 days for 4 or more hours per day.

Handling a Heat Wave:

If necessary, during a heat wave or heat spike (e.g., a sudden increase in daytime temperature of 9 degrees or more), the workday will be cut short (example 12 PM), will be rescheduled (example conducted at night or during cooler hours) or if possible, cease for the day.

If schedule modifications are not possible and workers have to work during a heat wave, the area foreman will provide a tailgate meeting to reinforce heat illness prevention with emergency response procedures and review the weather forecast with the workers. In addition, the area foreman will institute alternative preventive measures such as provide workers with an increased number of water and rest breaks every 2 hours, supervise workers to ensure that they do stop work and take these breaks, and observe closely all workers for signs and symptoms of heat illness.

During a heat wave or heat spike (e.g., a sudden increase in daytime temperature of 9 degrees or more), and the start of the workday, the area foreman will hold a tailgate meeting with the workers to review the company heat illness prevention procedures, the weather forecast and emergency response.

The area foreman will assign each employee a "buddy" to be on the lookout for signs and symptoms of heat illness and ensure that emergency procedures are initiated when someone displays possible signs or symptoms of heat illness.

Procedures for Acclimatization:

Acclimatization is the temporary and gradual physiological change in the body that occurs when the environmentally induced heat load to which the body is accustomed is significantly and suddenly exceeded by sudden environmental changes. In more common terms, the body needs time to adapt when temperatures rise suddenly, and an employee risks heat illness by not taking it easy when a heat wave strikes or when starting a new job that exposes the employee to heat to which the employee's body hasn't yet adjusted. Inadequate acclimatization can imperil anyone exposed to conditions of heat and physical stress significantly more intense than what they are used to. Employers are responsible for the working conditions of their employees, and they must act effectively when conditions result in sudden exposure to heat their employees are not used to.

Gartner Refrigeration will monitor the weather and in particular be on the look out for sudden heat wave(s) or increases in temperatures to which employees haven't been exposed to for several weeks or longer.

During a heat wave or heat spike (e.g., a sudden increase in daytime temperature of 9 degrees or more), the workday will be cut short (example 12 PM), will be rescheduled (example conducted at night or during cooler hours) or if possible, cease for the day.

If necessary, during the hot summer months, the work shift will start one hour earlier in the day or later in the evening. For new employees, the area foreman will try to find ways to lessen the intensity of the employees work during a two-week break-in period (such as scheduling slower paced, less physically demanding work during the hot parts of the day and the heaviest work activities during the cooler parts of the day (early-morning or evening)). Steps taken to lessen the intensity of the workload for new employees will be documented.

The area foreman will be extra-vigilant with new employees and stay alert to the presence of heat related symptoms. The area foreman will assign new employees a "buddy" or experienced coworker to watch each other closely for discomfort or symptoms of heat illness.

During a heat wave, the area foreman will observe all employees closely (or maintain frequent communication via phone or radio) and be on the look out for possible symptoms of heat illness.

Gartner Refrigeration training for employees and supervisors will include the importance of acclimatization, how it is developed and how these company procedures address it.



CALOSHA Scaffold Program

General Requirements

Each supported scaffold must be able to support four times its “maximum intended load.” Maximum intended load means the total weight of all workers, materials and equipment that will be on the scaffold at any one time. A scaffold also has to support its own weight and any force transmitted to it by means of wind, snow, ice buildup and other external forces.

OSHA requires that a qualified person must design all scaffolds. OSHA defines a qualified person as “one who by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.”

All scaffolds must be constructed within the limits of its design and loaded within its designed capacity. Only qualified and or competent personnel are allowed to modify scaffolding systems.

Platform Construction

A qualified person shall design scaffold.

Scaffold working levels need to be fully planked or decked, using scaffold planks.

There should be no more than a 1-inch gap between the scaffold uprights and decking.

- When an employer can demonstrate that a 1-inch gap or less is not feasible, the deck still needs to be planked as fully as possible. In any case, OSHA does not allow gaps of more than 9½ inches.

Scaffold platforms and walkways must be at least 18 inches wide. There are three exceptions to this rule:

- Ladder-jack, roof-bracket and pump-jack scaffolds can be as narrow as 12 inches.
- If the scaffold is erected in an area that is too narrow to accommodate an 18-inch platform, the platform must be as wide as possible and guardrails or personal fall-arrest systems must protect employees.
- The front edge of the scaffold platform should not be more than 14 inches from the face of the building. If the distance is greater than 14 inches, there must be guardrails erected along the front surface or employees must wear personal fall-arrest systems.

Platform planks have to extend a minimum of 6 inches over their supports. If they are too short, movement on the scaffold may cause them to move and fall; if they are too long, the weight distribution may cause them to tip.

- For platforms that are 10 feet or less in length, the cantilevered portion (i.e., the end that hangs over the support) should not be more than 12 inches long.
- For scaffold planks longer than 10 feet, the cantilevered portion should not be more than 18 inches long.

- Regardless of plank length, excess length of the cantilevered portion is not a problem if there are guardrails to prevent worker or material weight from being applied to the length or it is secured to the support so that it will not tip when weight is applied.

When more than one plank is used to create a longer platform, the following rules apply:

- If the planks are abutted, they must rest on separate supports. Common support members, such as T-sections, can be used, as can hook-on platforms designed to rest on the same support.
- If the scaffold changes direction, they must be put over a support by at least 12 inches. If the overlap is less than 12 inches, the planks should be nailed or otherwise restrained.
- If the scaffold changes direction, any planks that will be laid on a bearer at a right angle should be laid first. Planks that will be at a right angle should be laid on top of the first planks.
- Wood platforms cannot be covered with opaque finishes.

Platform edges may be covered or marked for identification and the platforms themselves may be painted with wood preservatives or fire-retardant finishes and slip-resistance finishes, but the coating must not obscure the top or bottom.

Unsafe equipment must be tagged “**DO NOT USE, UNSAFE**” or “**SCAFFOLD UNDER CONSTRUCTION --- STAY OFF**” by a competent person and must be complied with.

Note: Platforms used only as walkways or by employees who are erecting, or dismantling scaffolds are not considered working surfaces and are exempt from these requirements.

Design Loads of Scaffolds

The design loads for all scaffolds shall be calculated and put into three (3) categories. The calculated design load will be complete on the basis of:

- (A) Light – Designed and constructed to carry a working load of 25 pounds per square foot
- (B) Medium - Designed and constructed to carry a working load of 50 pounds per square foot
- (C) Heavy - Designed and constructed to carry a working load of 75 pounds per square foot

Component Mixing

Scaffold components can be mixed under two conditions. The first is that the components must fit together easily and without force. Additional parts must not be modified in order to fit unless a competent person determines that the resulting scaffold will be structurally sound.

The second condition is that dissimilar metals may not be combined unless the competent person approves the match. Some metals may react to one another and weaken the scaffold.

Supported Scaffolds

Basic requirements for supported scaffolds:

- All parts of a scaffold must be plumb and braced.
- All parts, including legs, poles posts, frames and uprights, must be on a firm foundation. The best way to ensure a firm foundation is through the use of base plates and mudsills. Footings have to be level, sound and rigid, and there must be no chance of settling or displacement. Unstable materials or equipment cannot be used anywhere on a scaffold or under its footing. Equipment such as forklifts must not be used to support a scaffold, unless it is designed to be supported this way and the forklift is not moved at all while the scaffold is occupied.
- Where leveling of the elevated work platform is require, screw jacks or other similar means for adjusting the height shall be provided in the base section of each mobile unit. The screw jack shall

extend into its leg tube at least 1/3 its length, but in no case shall the exposed portion of the screw jack exceed 12 inches.

- Anytime a scaffold has a height that is more than four times its width; it has to be restrained with ties and/or braces. These must be installed according to the manufacturer's recommendations and at the following:
- Where horizontal members support both inner and outer legs.
- At the closest horizontal member to the 4:1 height.
- Every 20 feet vertically or less for scaffolds less than 3 feet wide, or every 26 feet or less for scaffolds wider than three feet. (At each of these heights, the ties and braces must be placed at each end and at intervals of less than 30 feet horizontally.)
- The platform height for scaffold shall not exceed 3 times the smallest dimension of the base. The maximum work level height shall not exceed 3 times the least base dimension below the platform.

Access

This section applies to all employees who have access to scaffolds for reasons other than erecting and dismantling them. Anytime scaffold platforms are more than two feet higher or lower than another level, access must be provided by means of one of the following:

Portable ladders	Stairway-type ladders
Hook-on ladders	Ramps and walkways
Attachable ladders	Integral prefabricated scaffold access
Stair towers	Personnel hoist

Access must not be provided by cross bracing under any circumstances.

Portable, hook-on and attachable ladders must be set up with the bottom rungs no further than 24 inches above the ground (or level), equipped with rest platforms at least every 35 feet and used in such a way that they won't cause the scaffold to tip.

Integral prefabricated scaffold access frames also must have rest platforms every 35 feet. They must be designed specifically to be used as ladders and be spaced uniformly within each frame section. Spacing between rungs cannot be larger than 16¾ inches, and rung length has to be at least 8 inches.

In all cases, rungs and steps need to line up vertically between rest platforms.

Access for Erecting and Dismantling Scaffolds

OSHA requires that a safe means of access must be provided for employees who are erecting or dismantling a scaffold. A competent person will make the determination about how the safe access will be accomplished. Ladders must be installed as soon as it is safe to do so. On fabricated frame scaffolds, also known as tubular welded frame scaffolds, cross bracing should not be used as access, but end frames can be if they are designed to be used as ladders and have horizontal members spaced no more than 22 inches apart

Use

A competent person, before each work shift and after any event that could affect the scaffold's integrity, must inspect scaffolds. Any part of the scaffold that is at all damaged or weakened should be removed, repaired or braced.

Erecting, moving, dismantling or altering can take place only under the supervision of a competent person or trained employees chosen by the competent person.

Clearance between scaffolds and power lines must be calculated. For any power of over 50 kilovolts (kV), the minimum distance is 10 feet. After that, the distance has to be increased by 4 inches for each 10 kV over 50.

Storms and high winds must bring an end to scaffold work unless the competent person determines that it is safe for employees to continue working. In such cases, a windscreen or personal fall-arrest systems must protect employees.

Debris must not be allowed to accumulate on the scaffold.

Employees who need to reach higher than the scaffold allows may not stand on boxes, barrels or other makeshift devices. A ladder can be used if the ladder legs, scaffold planks and scaffold itself is secured against movement. Both ladder legs must be on the same platform plank.

Scaffold platforms may not deflect more than one-sixtieth of the total span at any time. For a 5-foot span, the maximum deflection is 1 inch; on a 10-foot span, it is 2 inches.

Fall Protection

The height trigger for OSHA fall-protection rules on scaffolds is 30 inches. Whenever a scaffold is 30 inches or more above a lower level, a personal fall-arrest system or guardrails is needed.

Guardrail systems must be installed along all open edges and meet certain the following OSHA requirements:

- Capable of supporting a 200-pound force.
- Top-rails must be between 38 and 45 inches above the platform and able to withstand a force of 200 pounds from a downward or horizontal direction.
- When mid rails are used, they should be about halfway between the top-rail and platform level. If screen or mesh is used instead, it must extend all the way from the top rail to the platform. If intermediate members (such as balusters or rails) are used, they must be spaced so there is never more than a 19-inch gap between them. These mid-rail systems must be able to withstand a force of at least 150 pounds.
- Guardrails must be surfaced and constructed for employees' protection. They must be free of any imperfections that could puncture or impale employees' skin or snag their clothing.
- Steel or plastic banding must not be used for top-rails or mid-rails. Manila or plastic rope can be used but only under a competent person's supervision.
- Cross bracing can be used as mid or top-rails, as long as the height is appropriate: Mid-rail cross-braces must be 20 to 30 inches high, and top-rails must be at 38 to 48 inches high. The ends of the cross bracing must not be more than 48 inches apart where they attach to the end-frame.

Falling Object Protection

Fall object protection rules specify that anyone working in an area where an object could fall from above must wear a hard hat. There are also a number of additional ways to protect people from the dangers of falling objects. This potential danger must be considered for employees working on scaffolds, as well as for those below the scaffold.

- Protection from falling objects can be provided by toe-boards, screens, guardrails systems, debris nets, catch platforms or canopies.
- Objects should be kept safely away from the edges of surfaces from which they may fall.
- Barricades below the area will prevent people from walking into an area where they may be struck by a falling.
- Debris nets, catch platforms and canopies must be strong enough to stop any object that may fall into them.

- All scaffold work levels 6' or higher above the ground or floor shall have a toe board at locations where persons are required to work or pass under the scaffold. Toe boards must be able to withstand a force of 50 pounds, be at least 3½ inches high, and have no more than a ¼-inch clearance from the platform. They must be secured at the outermost edges, and they cannot have any holes larger than 1 inch.

Specific Scaffold Systems

This section covers additional OSHA requirements for the following scaffold systems: fabricated frame scaffolds, roof brackets, pump jacks, ladder jacks, crawling boards, and mobile scaffolds. All the general information presented previously also applies to these systems. For additional requirements pertaining to suspended scaffolds, refer to 29 CFR 1926.452

Fabricated Frame Scaffold

When moving platforms to the next level, existing platforms must be left in place until the new frames are braced and ready to receive the planks.

All brace connections must be secured, and all members must fit together so that the scaffold automatically is squared and aligned.

Frames and panels must be secured by pins.

Brackets that support cantilevered loads must be used appropriately and only to support personnel, unless otherwise designed by a qualified engineer.

Scaffolds more than 125 feet high must be designed by a registered professional engineer.

Mobile Scaffolds

Scaffolds must be securely braced to prevent collapse. They must be plumb, level and squared.

Casters and wheels need to be locked to prevent movement. Caster and wheel stems must be pinned or otherwise secured in the scaffold legs. Caster and wheels shall be properly designed for strength and dimensions to support 4 times the design working load. All scaffold wheels, casters and swivels shall be provided with positive locking device, or effective means to prevent movement of the scaffold.

When the scaffold is being moved manually, the force must be applied at a height of no more than 5 feet.

When the scaffold is moved by a power system, the system must be specifically designed for this purpose.

Employees on the scaffold must be warned before the scaffold is moved. For it to be moved while employees are on it, the following conditions must exist:

- The ground surface must be within 3 degrees of level and free of pits, holes and obstructions.
- The height-to-base ratio of the scaffold has to be a ratio of 2:1 or less.

If outrigger frames are used, they must be used on both sides of the scaffold.

When power systems are used, the force must be applied directly to the wheels and must not move the scaffold faster than 1 foot per second.

All employees must be on the area of the platform that is within the wheels, casters and supports.

Suspended Scaffolds

For more information about suspended scaffolds, contractors should refer to 29 CFR 1926.451(d) and various parts of 29 CFR 1926.452.

Training

Employees who perform work while on a scaffold need to be trained in the type of scaffold being used and understand the procedures to control or minimize those hazards. This training should include:

- The nature of any electrical, fall and falling object hazards in the work area,
- The correct procedures for dealing with such hazards and if needed the correct procedures for erecting, maintaining and disassembling the fall protection system and fall object protection systems being used,
- The proper use of the scaffold and the proper handling of materials on the scaffold and
- The maximum intended load and the load-carrying capacities of the scaffold used.

Employees involved in erecting, disassembling, moving, operating, repairing, maintaining or inspecting a scaffold need to be trained to recognize any hazards associated with the work in question. This training should include:

- Nature of scaffold hazards,
- Correct procedures for erecting, disassembling, moving, operating, repairing, maintaining the type of scaffold in question and
- The design criteria, maximum intended load-carrying capacity and intended use of the scaffold.

Retraining

Retraining shall be provided when the following are noted:

- When there is reason to believe that an affected employee, who has already been trained, does not have the understanding and skill required to work safely,
- When workplace changes present a hazard for which employees have not been trained and
- When scaffold or equipment changes present a hazard for which employees have not been trained.

Certification

Any employee who works on scaffolds shall receive training by a competent person. Training will address the type of scaffold, hazards that may be encountered and safety controls to minimize those hazards.

All documentation shall bear the names of the employees trained, the date of the training and the name, signature and title of the person who conducted the training.



CALOSHA Fall Protection

Fall protection is required whenever employees are exposed to fall from heights of six (6) feet or greater to a lower level. Protection will be by the use of Conventional Fall Protection (Personal Fall Arrest, System a Fall Protection System), or Alternative Fall Protection (Warning Lines, Fall Protection Plan)

Definitions

Anchorage – A secure point of attachment for lifelines, lanyards, or deceleration devices.

Anchorage used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds per employee attached, or shall be designed, installed, and used as follows:

- As part of a complete personal fall arrest system which maintains a safety factor of at least two; and
- Under the supervision of a qualified person.

Body Belt – A strap with means both for securing it about the waist and for attaching it to a lanyard or lifeline. To be used for restraint or positioning work only, not for fall arrest.

Body Harness – Straps which may be secured about the employee in a manner that will distribute the fall arrest forces over at least the thighs, pelvis, waist, chest and shoulders, with means for attaching it to other components of a personal fall arrest system.

Controlled Access Zone (CAZ) – An area in which certain work may take place without the use of guardrail systems, personal fall arrest systems, or safety net systems; access to the zone is controlled.

Fall Arrest System – The use of multiple approved safety equipment components such as: body harness, lanyards, deceleration devices, drop lines and or vertical lifelines and anchorages interconnected and rigged as to arrest a free fall.

Fall Restraint – Any approved safety equipment components that function together to restrain an employee in such a manner as to prevent that employee from falling from the work surface such as: a standard guardrail system or body harness and lanyard that does not allow movement beyond the surface edge.

Free Fall – The act of falling before a personal fall arrest system begins to apply force to arrest the fall.

Guardrail Systems – A barrier erected to prevent employees from falling to lower levels.

Hole – A gap or void 2 inches (5.1 cm) or more in its least dimension in a floor, roof, or other walking/working surface.

Leading Edge – Any advancing edge of a floor, roof or formwork which changes location as additional flooring or roofing is placed, formed, or constructed. Leading edges not actively under construction are considered to be unprotected sides and edges and positive methods of fall arrest or fall restraint shall be required to protect exposed workers.

Lifelines – To be constructed of synthetic fibers such as nylon or rayon.

Low-Slope Roof – A roof having a slope less than or equal to 4/12 (vertical to horizontal).

Rake Edges – Any unprotected side, of which, is not a constant elevation.

Roof – The exterior surface on the top of a building. This does not include floors or framework, which, if a building has not been completed, temporarily become the top surface of the building.

Roofing Work – The hoisting, storage, application and removal of roofing materials and equipment, including related insulation, sheet metal, and vapor barrier work, but not including the construction of the roof deck.

Steep-Roof – A roof having a slope greater than 4/12 (vertical to horizontal).

Toe board – A low protective barrier that will prevent the fall of materials and equipment to lower levels and provide protection from falls for personnel.

Walking/Working Surface – Any surface, whether horizontal or vertical, on which an employee walks or works.

Conventional Fall Protection

A fall protection system must be used to protect employees that are working on roofs with unprotected edges that are six (6) feet or more above the lower levels. Forms of fall protection systems and their requirements are as follows:

Guardrail Systems

Must have an overall height of 42-45 inches

Must have a top and mid rail, and toe boards.

All rails must be a smooth surface rail, at least a minimum of ¼ inch thick.

If rails are made of a wire rope, than:

- It must be flagged with a highly visible material at an interval of not less than every six feet.
- The wire rope must be a minimum of ¼ inch thick.

The top rail must be capable of withstanding 200 pounds of pressure with a total deflection of no more than three (3) inches at a point within two (2) inches of the top.

Personal Fall Arrest Systems (Full-Body Harness and Lanyards)

When employees are exposed to a fall hazard greater than six (6) feet, and are not protected by a Fall Restraint System (such as a guardrail), a full body harness and lanyard assembly shall be used. Attachment/anchorage points shall be capable of 5000lbs per employee unless it is part of an engineered system.

Maximum arresting force on a person can be no greater than 1800 pounds. When the whole system is assembled, it shall allow the employee a freefall of no more than six (6) feet, and bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet. The fall arrest system shall have sufficient strength to withstand twice the potential impact energy of an employee free falling a distance of 6 feet, or the free fall distance permitted by the system, whichever is less.

Positioning device systems and their use shall conform to the following provisions:

1. Positioning devices shall be rigged such that an employee cannot free fall more than 2 feet.
2. Positioning device systems shall be inspected prior to each use for wear, damage, and other deterioration, and defective components shall be removed from service.
3. The use of non-locking snap hooks shall be prohibited after January 1, 1998.
4. Anchorage points for positioning device systems shall be capable of supporting two times the intended load or 3,000 pounds, whichever is greater.

The employer shall provide for prompt rescue of employees in the event of a fall or shall assure the employees are able to rescue themselves.

All fall arresting, descent control, and rescue equipment shall be approved and used in accordance with the manufacturer's recommendations.

All safety belts, harnesses and lanyards placed in service or purchased on or before February 1, 1997, shall be labeled as meeting the requirements contained in ANSI A10.14-1975, Requirements for Safety Belts, Harnesses, Lanyards, Lifelines and Drop Lines for Construction and Industrial Use.

All personal fall arrest, personal fall restraint and positioning device systems purchased or placed in service after February 1, 1997, shall be labeled as meeting the requirements contained in ANSI A10.14-1991 American National Standard for Construction and Demolition Use, or ANSI Z359.1-1992 American National Standard Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components.

Alternative Fall Protection

Warning Line Systems

When used, warning line systems must be set up according to the following provisions:

- Identifying the work area,
- Establishing a 15-foot perimeter that shall be 34 to 39 inches from the working surface, able to sustain a force of 16 pounds horizontally at the base and have a tensile strength of at least 500 pounds (e.g. yellow 1/4 inch nylon rope),
- No work or work-related activities is to take place in the area between the 15-foot perimeter and the roof edge,
- Employees are prohibited from going past the 15-foot perimeter.
- Appropriate staging of materials and equipment,
- Restricting access to areas below and adjacent the work area,
- Eliminating impalement hazards,
- Ceasing work during adverse weather conditions and
- Permitting only properly trained workers to use the alternative measure.
- A competent person shall monitor the area for compliance to this policy.

Fall Protection Plans

A Fall Protection Plan can be used only if it can be demonstrated that other Fall Protection Systems are not feasible, and/or would create a greater fall hazards.

The Fall Protection Plan must correspond with the following:

- Be prepared by a competent, knowledgeable person and implemented by the same.
- Must be site-specific, up-to-date, and maintained at the worksite.
- Must designate by name or other means of identification, who is authorized to be in the work area.
- A competent person must investigate any accident promptly and modify the Fall Protection Plan accordingly.
- Establish a Safety Monitoring Person(s) or system.

- In the event of a fall, all available employees should assist in the prompt rescue of the fallen employee.
- Safety nets are not an approved fall protection plan for Gartner Refrigeration & Manufacturing.

All accidents and serious incidents that happen when using a Fall Protection Plan must be investigated, implementing changes to the fall protection plan as necessary.

Roof Openings and Toe boards

Openings, which are commonplace for such things as skylights and rooftop equipment, must be securely covered and marked or labeled as such.

- Securely covered is identified as nailed or screwed down, or attached so the wind, equipment, or employees may not inadvertently remove them.
- Marked or labeled is identified as color coded or marked with the word “hole” or “cover” to provide warning of the hazard.
- Covers, structurally, must be capable of holding twice the weight of any worker traffic that may be on it at any given time.

The proper covering and marking of rooftop openings is the responsibility of the General Contractor.

- All rooftop openings should be inspected prior to beginning the roofing operations, and if the rooftop openings are not deemed to be properly covered, the Supervisor or Foreman will see it is properly done, and will also notify the General Contractor of the situation.

Toe boards, when used as falling object protection, will be erected along the edge of the overhead walking/working surface for a distance sufficient to protect employees below.

- The toe boards will be capable of withstanding, without failure, a force of at least 50 pounds applied in any outward or downward direction.
- The toe boards must be a minimum of 3.5 inches in vertical height and have not more than ¼ inch of clearance above the working surface.
- The toe boards must be solid or have openings not more than 1 inch in greatest dimension.

Training

Any employee who is exposed to a fall hazard shall receive training by a competent person who is knowledgeable in the nature of:

- fall hazards associated with the job,
- fall protection systems,
- the use of personal protective equipment and
- the handling and storage of equipment and materials.

Training will address the prevention and protection against fall hazards as well as outline safety systems to be utilized for the hazards involved. This training shall enable each employee to recognize the hazards of falling and in the procedures needed to minimize these hazards.

Employees who are covered under a Fall Protection Program shall be trained in alternate fall protection systems, in special fall hazards and in general fall safety as needed.

Specific Training

When an employee is required to use fall protection equipment that they are not familiar with, or in a location that could pose additional hazards, they will receive specific training on the hazard.

This training will covers special equipment and procedures the employee needs to follow in order to safely perform the work.

Retraining

Retraining shall be provided when the following are noted:

- There is reason to believe any affected employee who has already been trained does not have the understanding and skill required by this section,
- Work place changes and
- Fall protection systems or equipment changes that render previous training obsolete.

Certification

All documentation shall bear the names of the employees trained, the date of the training and the name, signature and title of the person who conducted the training.

All documentation shall be maintained in the employee personnel file, located in the main office.

Sample Fall Protection Program

THIS FALL PROTECTION PLAN IS SPECIFIC FOR THE FOLLOWING PROJECT:

SITE LOCATION:

SITE ADDRESS:

SITE CITY:

COMPANY WORKING ON SITE:

PREPARED DATE:

Plan Prepared By

Plan Approved By

Plan Supervised By

The following Fall Protection Plan is a sample program prepared for the prevention of injuries associated with falls. A Fall Protection Plan must be developed and evaluated on a site-by-site basis.

STATEMENT OF COMPANY POLICY

Gartner Refrigeration & Mfg., Inc. is dedicated to the protection of its employees from on-the-job injuries. All employees of Gartner Refrigeration & Mfg., Inc. have the responsibility to work safely on the job. The purpose of this plan is: (a) To supplement our standard safety policy by providing safety standards specifically designed to cover fall protection on this job and; (b) to ensure that each employee is trained and made aware of the safety provisions which are to be implemented by this plan prior to the start of erection.

This Fall Protection Plan addresses the use of other than conventional fall protection at a number of areas on the project, as well as identifying specific activities that require non-conventional means of fall protection. These areas include:

- A. Leading edge work.
- B. Unprotected sides or edge.
- C. Hoisting areas.

This plan is designed to enable employers and employees to recognize the fall hazards on this job and to establish the procedures that are to be followed in order to prevent falls to lower levels or through holes and openings in walking/working surfaces. Each employee will be trained in these procedures and strictly adhere to them except when doing so would expose the employee to a greater hazard. If, in the employee's opinion, this is the case, the employee is to notify the Foreman of the concern and the concern addressed before proceeding.

Safety policy and procedure on any one project cannot be administered, implemented, monitored and enforced by any one individual. The total objective of a safe, accident free work environment can only be accomplished by a dedicated, concerted effort by every individual involved with the project from management down to the last employee. Each employee must understand their value to the company; the costs of accidents, both monetary, physical, and emotional; the objective of the safety policy and procedures; the safety rules that apply to the safety policy and procedures; and what their individual role is in administering, implementing, monitoring, and compliance of their safety policy and procedures. This allows for a more personal approach to compliance through planning, training, understanding and cooperative effort, rather than by strict enforcement. If for any reason an unsafe act persists, strict enforcement will be implemented.

It is the responsibility of Gartner Refrigeration & Mfg., Inc., Superintendent and/or Foreman to implement this Fall Protection Plan. The Superintendent or Foreman are responsible for continual safety checks of their work operations and to enforce that safety policy and procedures are followed. They are also responsible to correct any unsafe acts or conditions immediately. It is the responsibility of the employee to understand and adhere to the procedures of this plan and to follow the instructions of the Foreman. It is also the responsibility of the employee to bring to management's attention any unsafe or hazardous conditions or acts that may cause injury to either themselves or any other employees.

FALL PROTECTION SYSTEMS TO BE USED ON THIS PROJECT

Where conventional fall protection is infeasible or creates a greater hazard at the roof edge and during initial set up activity, a safety monitor system will be used. Specific areas are:

- LIST SPECIFIC AREAS ACCORDING TO JOB**
1. On the (2) small rooftops on the north side of the building, a scaffolding system will be erected for the purpose of elevating the safety monitor to the same working height of the person performing the roofing operations.
 2. A personal fall arrest system will be used when performing roofing operations on the asphalt shingle sections of the project utilizing anchorage points provided by ?????.
 3. Where the parapet walls are in excess of 39 inches it will be utilized as a guardrail system.
 4. On the upper roof, a safety monitor system will be used alone. This will be done in accordance with 29 CFR 1926.502(b)10 because the roof is less than 50 feet wide.

Safety Monitor(s) _____

Employee _____	Employee _____

Only individuals with the appropriate experience, skills, and training will be authorized as roofers. All employees that will be working as roofers under the safety monitoring system shall have been trained and instructed in the following areas:

1. Recognition of the fall hazards in the work area (at the leading edge and when making initial connections-point of erection of safety equipment).
2. Avoidance of fall hazards using established work practices, which have been made known to the employees.
3. Recognition of unsafe practices or working conditions that could lead to a fall, such as windy conditions.
4. The function, use, and operation of safety monitoring systems, warning line systems, guardrail systems, body belt/harness systems (PFAS), control zones and other protection to be used.
5. The correct procedure for erecting, maintaining, disassembling and inspecting the system(s) to be used.

Changes to Plan

Gartner Refrigeration & Mfg., Inc. will approve any changes to this plan. This plan shall be reviewed by a qualified person as the job progresses to determine if additional practices, procedures or training needs to be implemented by the competent person to improve or provide additional fall protection. Workers shall be notified and trained, if necessary, in the new procedures. A copy of this plan and all approved changes shall be maintained at the worksite.

Enforcement

Constant awareness of and respect for fall hazards, and compliance with all safety rules are considered conditions of employment. The Supervisor or Foreman, as well as individuals in the Safety and Personnel Department, reserve the right to issue disciplinary warnings to employees, up to and including termination, for failure to follow the guidelines of this program.

Accident Investigations

All accidents that result in injury to workers, regardless of their nature, shall be investigated and reported. It is an integral part of any safety program that documentation take place as soon as possible so that the cause and means of prevention can be identified to prevent a reoccurrence.

In the event that an employee falls or there is some other related, serious incident occurring, this plan shall be reviewed to determine if additional practices, procedures, or training need to be implemented to prevent similar types of falls or incidents from occurring.



CALOSHA Hazard Communication/Right-to-Know

Hazard Communication

General Information

In order to comply with 29 CFR 1910.1200 (Hazard Communication), the following written Hazard Communication Program has been established. The written program will be available in the office of the Safety Director at the company main office. Any employee may review this program in person at the aforementioned location or may obtain a written copy by submitting a written request, which is dated, signed, and contains a full return address.

Container Labeling

The manufacturer, importer, or distributor shall ensure that each container of hazardous substances leaving the workplace is labeled, tagged or marked with the following information:

- Product identifier
- Signal Word
- Hazard statement(s)
- Pictogram(s)
- Precautionary statement(s)
- Name, address, and telephone number of the manufacturer, importer, or other responsible party. Manufacturer, importer, or other responsible party.

All secondary containers will be labeled with either an extra copy of the original manufacturer label, or with a generic label which will include;

- The chemical identity and hazard warning prominently displays in the English language.

Original labels on containers containing hazardous chemicals will not be removed.

If a different material is placed in a container, the label for the hazardous material contents must be changed to reflect the true contents in the container.

For non-English speaking employees, information shall be presented in their language.

The Safety Director will review the company labeling system yearly and update as required.

Portable containers for use on the job may be filled from larger containers and need not be labeled if;

- the chemical is drawn for immediate use,
- the hazardous chemical will be under the control of and used only by the person who transfers it from a labeled container, and
- the contents will be used-up within the work shift in which it is transferred.

Safety Data Sheets

The Safety Director will be responsible for obtaining and maintaining the SDS system for the company. He/she will review incoming SDS's for new and significant health and safety information and see that any new information is passed on to all affected employees. SDS's may be in a language other than English, although an English version shall be maintained.

Copies of SDS's will be given to all Field Superintendents and a copy kept in the office of the Safety Director.

SDS's will be available to all employees, as well as to other trades.

If SDS's are not available or new chemicals in use do not have a SDS's, the Safety Director must be contacted immediately.

- When ordering or purchasing materials and products not currently listed on the company's chemical inventory list, purchase orders should have attached a notice stating, "*This purchase is conditional upon receipt of an SDS*".

The safety director will replace old SDS's with updated sheets when they are received.

Employees will be trained to recognize and interpret SDS's, labels, warnings, color-coding, and signs affixed to containers that they might handle.

Where employees must travel between workplaces during a work shift, (i.e., their work is carried out at more than one geographical location) the safety data sheets may be kept at the primary workplace facility. In this situation, the employer shall ensure that employees can immediately obtain the required information in an emergency.

The employer shall ensure that labels or other forms of warning are legible, in English, and prominently displayed on the container, or readily available in the work area throughout each work shift. Employers having employees who speak other languages may add the information in their language to the material presented, as long as the information is presented in English as well.

List of Hazardous Chemicals

A list of all known hazardous chemicals used by employees is contained as a separate section of the Company Safety Manual and located at the main office.

The hazardous chemical list will be updated as necessary to reflect the introduction or deletion of any chemical into or from the work place.

Hazardous Non-Routine Tasks

Periodically, employees are required to perform hazardous non-routine tasks. Prior to starting work on such projects, each affected employee will be given information about the hazardous chemicals to which they may be exposed. This information includes but is not limited to;

- specific chemical hazards,
- protective/safety measures the employee can take, and
- measures taken to minimize the hazards.

Contractor and Adjacent Trade Notification

The prime contractors and other trades who may be exposed to hazardous materials shall be informed as to:

- the nature of the hazard
- the location of the available Material Safety Data Sheets and
- the precautions their employees may take to minimize the possibility of exposure.

Employee Information and Training

The Safety Director shall ensure compliance with all elements of this section.

Prior to starting work, each new employee, will receive information on:

- hazardous chemicals use in the work process;
- information on operations that may utilize hazardous chemicals;
- the availability and use of various personal protective equipment;
- who to contact to answer questions about chemicals;
- the location and availability of the written Hazard Communication Program, and
- how to request Safety Data Sheets.

Prior to the first exposure to hazardous chemicals and whenever there is a potential for exposure to chemicals, employees will be trained on:

- the methods and observation that may be used to determine the presence of hazardous chemicals in the work area;
- the physical and health hazards of the chemicals in the work area;
- the measures that can be taken to protect employees from these hazards, including safe work practices, emergency procedures, and personal protective equipment that should be worn;
- Instructed in the known potential fire, explosion or toxic release hazards related to his/her job;
- how to read SDS's and labels to obtain appropriate hazard information;
- how to locate the SDS's and hazardous chemical list, and
- applicable provisions of the emergency action plan.

Documentation

All Training shall be documented showing that each employee has received & understood the required training including a brief description of the training and the trainer's name. All training documents and sign-in sheets will be retained at the main office.

- Upon completion of *Right-to-Know* training, each employee will sign documentation to verify they attended the training, received a copy of the written Hazard Communication Program, and understand the company policy on hazard communication and chemicals.

Prior to the introduction of any new chemical hazard by the company into the workplace, each employee who may be at risk to exposure will be made aware of any and all pertinent information that will help minimize their risk.



CALOSHA Rigging Safety

Purpose

This procedure provides the guidelines for the proper rigging and lifting activities are accomplished safely and in accordance with applicable specifications, codes, and regulations.

Scope

This procedure applies to all personnel and subcontractors working on projects where rigging and lifting safety requirements are applicable.

References

- Title 29, Code of Federal Regulations, Parts 1910 and 1926, *Occupational Safety and Health Administration* (OSHA), U.S. Department of Labor.
- ANSI B-30 Series Standards, Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings.
- ISO 15513 Cranes – Competency Requirements for Crane Operators, Slings

General

- Lifts that exceed 85% of the cranes manufacturers rated capacity are prohibited.
- Mats shall be used on all lifting equipment, equipped with outriggers.
- Outriggers shall be used on all lifts over the side or whenever scoping out with a load on the hook.
- Pick and carry shall have the load secured to the rig in front.
- These work practices are not intended to take the place of common sense or good judgment.

Definitions

None

Procedure

Rigging Practices

1. Use loops, thimbles and corner pads to prevent damage to slings when used around corners or on cutting edges.
2. Never allow wire rope to lie on the ground for any length of time or on rusty steel or near solvents, chemicals or corrosive substances.
3. Slings shall not be pulled from between or under loads with load resting on the sling.
4. Keep all rope away from flame cutting or welding operations.
5. Never use rope as sling material.
6. Never wrap a wire rope completely around a hook.
7. Do not bend wire rope near any attached fitting.

8. The sling must be selected to suite the most heavily loaded leg rather than the total weight when using multi-legged sling to lift loads in which one end is heavier than the other.
9. When using 3 and 4 legged sling configurations, any two legs must be capable of supporting the entire load.
10. Where possible, wire rope choker hitches should include a shackle with the eye around the shackle pin to prevent breaking wires of the choke. The choker hitch should be “snugged down” prior to lifting, not after tension is applied.
11. Unless authorized by the hook manufacturer when more than two rope eyes are placed over a hook, install a shackle, pin resting in the hook, and place the rope eyes in the bowl of the shackle.
12. Properly rig all loads to prevent dislodgment of any part.
13. Use guide ropes or tag lines to prevent the rotation or uncontrolled motion of the load when necessary.
14. Loads must be safely landed and properly blocked before being unhooked and unslung. Tag lines shall not be used in situations that jeopardize the safety of the lift.
15. Lifting beams should be plainly marked with their weight and designed working load and should only be used in the manner for which they were designed.
16. The hoist rope or chain shall never be wrapped around the load. The load shall be attached to the hook by slings or other rigging devices that are adequate for the load being lifted.
17. Multiple part lines shall not be twisted around each other.
18. The hook should be brought over the center of gravity of load before the lift is started.
19. Latches will be present on all hooks. If the latch is missing the latch must be tagged and removed.
20. If there has been a slack rope condition, determine that the rope is properly seated on the drum and in the sheaves prior to lifting.
21. Keep hands away from pinch points as the slack is being taken up.
22. Leather gloves are recommended when handling wire rope.
23. Impact loading caused by sudden jerking when lifting or lowering is prohibited. Lift the load gradually until the slack is eliminated.
24. Never ride on a load that is suspended.
25. Avoid allowing the load to be carried over the heads of any personnel and keep area clear.
26. Never work under a suspended load until the load has been adequately supported from the floor and all conditions have been approved by the supervisor in charge of the operation.
27. Never leave a load suspended unless emergency evacuation is required.
28. Never make temporary repairs to slings or modify them in anyway other than directed by the manufacturer.
29. The capacity of a sling is determined by its angle, construction, type of hitch and size.
30. All slings and shackles must have permanently affixed and legible identification markings prescribed by the manufacturer that indicate the recommended safe working load. Do not use equipment if permanent markings are not affixed, or are unreadable.
31. Always use rigging per manufacturer’s recommendations.
32. Never lift loads with one leg of a multi-leg sling until the unused legs are made secure.
33. Never point load a hook unless it is especially designed and rated for such use.
34. Hooks with no manufacturer recommendations must be tested at twice the intended working load prior to use.
35. Make certain that the load is broken free before lifting and that all legs are taking the load.
36. When using two or more slings on a load make certain all slings are made from the same materials.
37. Lower the loads on to adequate blocking to prevent damage to the slings.

38. Materials and equipment being hoisted must be loaded and secured to prevent any movement which could create a hazard in transit.
39. The weight of the hook, load block and any material handling devices shall be included when determining crane capacity.
40. Calculated weights cannot exceed 75% of the chart without written approval.
Note 1: When calculating load weight, two independent people shall do calculations. Calculations should be within 5% of each other.
Note 2: When lifting used or formerly in-service equipment, on-site external and internal (if possible), inspection is required to validate calculation basis.
41. Chains shall not be used for lifting in place of slings. Chain hoists and come-a-longs may be used for lifting. Always follow manufacturer's recommendations for proper care and service life of chain hoists and come-a-longs.
42. All wire rope sling eyes shall be made with Flemish splice and compressed steel swaged sleeves.
43. Sling eyes shall not be shackled together on lifting hook to prevent spreading. Slings should be placed in a shackle of sufficient size and the shackle shall be placed with the pin on the hook.
44. Rigging equipment, when not in use shall be removed from the immediate work area. Rigging equipment shall be inspected to ensure it is safe. Rigging equipment for material handling shall be inspected prior to use on each shift and as necessary during its use to ensure that it is safe.
45. Slings and shackles shall not be loaded in excess of their rated capacities depicted on the identification markings permanently affixed to the sling.
46. When using slings loads must be balanced to avoid slippage during the lift.
47. All suspended loads shall be kept clear of all obstructions.
48. Any hooks or rings that have been deformed shall be taken out of service immediately and replaced with certified equipment.
49. Special custom design grabs, hooks, clamps, or other accessories shall be tested at 125 percent of rated load and permanently affix capacities to accessories.

Additional requirements of synthetic slings;

1. Synthetic slings shall be marked to show the rated capacity for each type of hitch and type of web material.
2. Nylon web slings shall not be used where fumes, vapors, sprays or mists or liquids of acids or phenolics are present. Web slings with aluminum fittings shall apply in this category.
3. Synthetic web slings shall be removed from service and destroyed if any of the following conditions are present:
4. Acid or caustic burns
5. Melting or charring of any part of the sling surface
6. Snags, punctures tears or cuts
7. Broken stitches
8. Distortion of fittings
9. Synthetic web slings of polyester or nylon shall not be used at or come in contact with temperatures in excess of 180 degrees F.
10. Polypropylene web slings shall not be used at or come in contact with temperatures in excess of 200 degrees F.
11. Insulated hooks shall be tested yearly to insure insulation integrity to at least manufacturer's specifications.

Requirements of plate clamps:

1. The rated load of the plate clamp shall be marked on the main structure.
2. Care should be taken to make certain the load is correctly distributed for the plate clamp being used.
3. Do not allow load or plate clamp to come into contact with any obstruction.
4. The plate clamp shall not be used for side pulls or sliding the load.
5. When lifting stainless steel or special alloys, ensure plate clamp is designed for use on the specific metal.

Signal Person

Riggers are frequently required to act as a signal person for equipment operators. Whenever the operator is obstructed in his view of the path of travel of any part of the equipment, it's load or components; a qualified signal person shall be stationed:

- In full view of the operator or accompanying signal person.
- With full view of the intended path of travel of the equipment, load or components, yet clear of the intended path of travel.
- Keep all unauthorized personnel outside the radius of the operation.
- Direct the load so that it does not pass over anyone.

Rigging Crew:

- The rigging crew must be capable of 1) selecting tackle and lifting gear suitable for the load to be lifted, 2) directing the safe movement of the load, and 3) maintaining full load control.
- The Rigging Crew shall:
- Review the planned operation and requirements with the job supervisor or PIC of lift.
- Know and never exceed the safe working load of the equipment and tackle to be used.
- Confirm the total load weight or confirm the maximum load weight is less than the capacity of the rigging equipment.
- The weight of the hook, load block and material handling devices shall be included when calculating the total weight of a load.
- Examine all hardware, equipment, tackle and slings before using.
- Report unsafe or unsuitable equipment or tackle to the job supervisor.
- **CAUTION: Defective components which cannot be repaired should be destroyed.**
- Recognize and make appropriate allowances for the factors that can reduce the capability of the equipment.
- Personal Protective Equipment (PPE)
- PPE shall be used in accordance with the Company's Policy.

Inspection

Each sling used by the Company shall be inspected by a qualified person prior to each use.

Wire rope slings shall be removed from service immediately if any of the following conditions are present:

1. Ten (10) randomly distributed wires broken in one (1) rope lay, or five (5) broken wires in one (1) strand in one (1) rope lay.
2. Wear or scraping of one-third the original diameter of outside wires.
3. Kinking, crushing, bird caging or any other damage resulting in distortion of the wire rope structure.

4. Evidence of heat damage.
5. End attachments that are cracked, deformed worn.
6. Corrosion of the rope or end attachments.
7. Metal mesh slings shall be immediately removed from service if any of the following conditions are present:
 8. A broken weld or broken brazed joint along the sling edge.
 9. Reduction in wire diameter of 25 percent due to abrasion or 15 percent due to corrosion.
 10. Lack of flexibility due to distortion or corrosion.
11. Synthetic web slings shall be removed from service and destroyed if any of the following conditions are present:
 12. Acid or caustic burns
 13. Melting or charring of any part of the sling service
 14. Snags, punctures, tears or cuts
 15. Broken stitches
 16. Distortion of fittings

Critical Lifts

A written rigging procedure shall be required for:

- Lifts or movements over 50 tons (100,000 lbs.)
- Erection of process columns, towers or vessels, and turbine/generator systems.
- Lifts over operating units/equipment
- Other instances deemed prudent by the Company.
- Lifts or movements of unusual difficulty or geometry.
- Where required by contract.
- Lifting a Personnel Basket.
- 2 picker operations.
- 75% of crane capacity

Critical Lifts shall include:

- a. Critical Lift Plan
 - b. Drawings to scale
 - c. An equipment list
 - d. Equipment certifications
 - e. Proof load tests
 - f. Lift weights
 - g. Hoisting capacities
 - h. Calculations
- Calculations shall be provided for the following:
 - a. Sling and wire rope safety factor determinations
 - b. Blocks and rigging tackle analysis
 - c. Ground loadings
 - d. Load distribution variations
 - e. Structural details
 - f. Stability analysis (barge off-loadings, soil loadings, etc.)
 - g. Load weight determinations

RECORDS RETENTION

Completed Equipment Lift Record Cards and the associated rigging procedures shall be retained in site files until project completion.



CALOSHA WELDING & CUTTING SAFETY

Purpose

Gartner Refrigeration & Manufacturing Inc. is dedicated to the protection of our employees from occupational injuries and illnesses. Gartner Refrigeration & Manufacturing Inc. is responsible for providing a safe working environment, and the employees have and must assume the responsibility of working safely.

The objective of this program is to supplement our safety policy by providing specific standards regarding Hot Work and to ensure that each employee is adequately trained and fully aware of safety procedures associated with Hot Work.

Welding and Hot Work, such as brazing or grinding presents a significant opportunity for fire and injury. Company employees or contractors must apply all precautions of this program prior to commencing any welding or hot work. Reference: OSHA 29 CFR 1910.252

Elimination of injuries and illnesses improves employee morale, improves customer service, improves product quality, and reduces Workers' Compensation costs. This policy serves as a tool to increase employee protection, and to reduce jobsite hazards.

Any Gartner Refrigeration & Manufacturing Inc. employee who disobeys and/or disregards the guidelines set forth in this program or the company's safety program will be subject to disciplinary action.

Definitions

Welding/Hot Works Procedures: any activity which results in sparks, fire, molten slag, or hot material which has the potential to cause fires or explosions.

Examples of Hot Works: Cutting, Brazing, Soldering, Thawing Pipes, Torch Applied Roofing, Grinding and Welding.

Special Hazard Occupancies: Any area containing Flammable Liquids, Dust Accumulation, Gases, Plastics, Rubber and Paper Products.

Hot Work Procedures

OSHA 29 CFR 1910.252

- Where practicable all combustibles will be relocated at least 35 feet from the work site.
- Where relocation is impractical, combustibles must be protected with flameproof covers, shielded with metal, guards, curtains, or wet down to help prevent ignition of material.
- Ducts, conveyor systems, and augers that might carry sparks to distant combustibles must be protected or shut down.
- Where cutting or welding is done near walls, partitions, ceilings, or a roof of combustible construction, fire-resistant shields or guards will be provided to prevent ignition.
- If welding is to be done on a metal wall, partition, ceiling, or roof, precautions must be taken to prevent ignition of combustibles on the other side, due to conduction or radiation of heat.
- Where combustibles cannot be relocated on the opposite side of the work, a fire watch person will be provided on the opposite side of the work.
- Welding will not be attempted on a metal partition, wall, ceiling or roof having a covering nor on walls having combustible sandwich panel construction.
- Cutting or welding on pipes or other metal in contact with combustible walls, partitions, ceilings, or roofs will not be undertaken if the work is close enough to cause ignition by combustion.
- In areas where there is dust accumulation of greater than 1/16 inch within 35 feet of the area where welding/hot works will be conducted, all dust accumulation will be cleaned up following the housekeeping program of the facility before welding/hot works are permitted.
- When the presence of hazardous fumes, gases, or dust is possible employ approved engineering practices to mitigate the risk of fire or health concerns.
- Suitable fire extinguishers must be provided and maintained ready for instant use.
- A fire watch person will be provided during and for one half hour past the completion of the welding project.
- A hot work permit will be issued on all welding or cutting outside of designated welding areas.

Cutting or welding will not be permitted in the following situations:

- In areas not authorized by management.
- In sprinklered buildings while such protection is impaired.
- In the presence of potentially explosive atmospheres.
- In areas near the storage of large quantities of exposed, readily ignitable materials.

Welding & Hot Work Fire Prevention Measures

A designated welding area should be established to meet the following requirements:

- Floors swept and clean of combustibles within 35 feet of work area.
- Flammable and combustible liquids and material will be kept 35 feet from work area.

- Adequate ventilation providing 20 air changes per hour, such as a suction hood system should be provided to the work area.
- At least one 10-lb. dry chemical fire extinguisher should be within access of the 35 feet of work area.
- Protective dividers such as welding curtains or non-combustible walls will be provided to contain sparks and slag to the combustible free area.

Requirements for Welding Outside Designated Areas

- Portable welding curtains or shields must be used to protect other workers in the welding area.
- A hot works permit must be completed and complied with prior to welding operation.
- Respiratory protection is mandatory unless an adequate monitored airflow away from the welder and others present can be established and maintained.
- Plastic materials must be covered with welding tarps during welding procedures
- Fire Watch must be provided for all hot work operations.

Welding Standard Operating Procedures (SOP)

The following lists Welding Standard Operating Procedures (SOP) and are applicable for all electric and gas welding. These SOP are to be posted at each Designated Welding & Hot Work Area for quick reference and review.

SOP—Electric Welding

- Perform Safety Check on all equipment
- Ensure fire extinguisher is charged and available
- Welding machines shall be left on the outside of a confined space and be blocked to prevent accidental movement.
- Ensure electrical cord, electrode holder and cables are free from defects (no cable splices are allowed within 10 feet of the electrode holder).
- Damaged cables are not to be used or repaired/protected except by insulation equivalent in performance to the original capacity.
- Ensure PPE (welding hood, gloves, rubber boots/soled shoes, and aprons) are available and have no defects.
- Ensure the welding unit is properly grounded to carry the current.
- All defective equipment must be repaired or replaced before use.
- Remove flammables and combustibles
- No welding is permitted on or near containers of flammable material, combustible material or unprotected flammable structures.
- Place welding screen or suitable barricade around work area to provide a fire safety zone and prevent injuries to passersby (do not block emergency exits or restrict ventilation).
- Ensure adequate ventilation and lighting
- Execute Hot Work Permit procedures

- Set Voltage Regulator no higher than the following for:
 - Manual Alternating Current Welders - 80 volts
 - Automatic Alternating Current Welders - 100 volts
 - Manual or automatic Direct Current Welders -100 volts
- Uncoil and spread-out welding cable
- To avoid overheating, ensure proper contact of work leads and connections, remove any metal fragments from magnetic work clamps (to avoid electric shock do not wrap welding cables around a body part and avoid welding in wet conditions)
- Additional protection when welding in wet or humid environments shall be used.
- Power supply switch must be in the off position when welders or cutters leave or stop work, or when machines are moved.
- Fire watch for one half hour after welding & until all welds have cooled
- Perform final fire watch and terminate permit.

SOP—Gas Welding

- Perform Safety Check on all equipment.
- Ensure tanks have gas and fittings are tight.
- Ensure fire extinguisher is charged and available.
- Inspect hoses for defects.
- Ensure PPE (welding hood, gloves, rubber boots/soled shoes, and aprons) are available and have no defects.
- All defective equipment must be repaired or replaced before use.
- Cylinders with defective safety devices or leaking fuse plugs be plainly tagged, the supplier notified, and warning signs placed around area to prohibit approach of an ignition source.
- Remove flammables and combustibles
- No welding is permitted on or near containers of flammable material, combustible material or unprotected flammable structures.
- Place welding screen or suitable barricade around work area to provide a fire safety zone and prevent injuries to passersby (do not block emergency exits or restrict ventilation).
- Use an authorized Air Filtering Respirator, if required.
- Ensure adequate ventilation and lighting.
- Execute Hot Work Permit procedures.
- Open valves on oxygen and gas tanks to desired flow.
- Shut tank valves & relieve hose pressure. Store hoses.
- Fire watch for one hour after welding and until all welds have cooled.
- Perform final fire watch and terminate permit.

Compressed Gas

Care, Transporting, Moving and Storage

- Valve caps on cylinders must be in place and secured. Valve caps must not be used for lifting. Do not pry cylinder caps while frozen. Loosen caps with warm water.
- Cylinders must be transported on a secured cradle only, and by tilting or rolling them.
- Cylinders must be moved by tilting and rolling them on their bottom edges. Avoid dropping cylinders or striking other cylinders.
- Cylinders transported by powered vehicles must be secured in a vertical position.
- Regulators must be removed, and caps put in place prior to moving cylinders, unless cylinders are secured on a special carrier.
- Proper steadying devices must be used to keep cylinders from falling over while in use.
- Cylinder valves must be closed when cylinders are empty or when cylinders are moved.
- Oxygen cylinders must be stored separated from fuel gas cylinders or combustible materials a minimum distance of 20 feet or by a five-foot-high non-combustible barrier with a fire-resistance rating of one-half hour.
- Cylinders stored inside buildings must be stored 20 feet from combustible materials where they are well protected, well ventilated, and dry. Cylinders must not be stored near elevators, stairs or gangways. Assigned storage locations must prevent cylinders from being knocked over or damaged.
- Cylinders must be kept away from welding or cutting operations to prevent sparks, hot slag, or flame from reaching them. Fire resistant shields must be used when this is impractical.
- Cylinders must be placed away from electrical circuits. Do not strike electrodes against a cylinder to strike an arc.
- Cylinders containing oxygen, acetylene or other fuel gas must not be used in confined spaces.
- Cylinders must not be used as rollers or supports.
- Only the gas supplier is authorized to mix gases in a cylinder. No damaged or defective cylinder may be used.

Use of Fuel Gas

- Gartner Refrigeration & Manufacturing Inc. employees will be instructed in the safe use of fuel gas and rules/instructions covering the operation and maintenance of fuel-gas supply equipment shall be readily available.
- Valves must be opened slightly and closed immediately before a regulator is connected to the cylinder. This is called “cracking” which clears the valve of dust and dirt. The employee must stand to the side of the outlet, not in front. Valves must be cracked away from welding work, sparks, flames or other sources of ignition.
- Valves must be opened slowly to prevent damage to the regulator. Valves must not be opened more than 1½ turns. If a wrench is required, it must stay in position in case of emergency for a quick shut off. Manifold or coupled cylinders must have a wrench

available for immediate use. Do not place objects on top of cylinders, or damage may occur to the safety device or interfere with the quick closing of the valve.

- Cylinders must be closed, and the gas released from the regulator before removing the regulator.
- If cylinders, valves, regulators, plugs, or other safety devices are damaged, they must be tagged out of service and removed from the work area.

Manifolds

- Fuel gas and oxygen manifolds must bear the name of the substance they contain.
- Fuel gas and oxygen manifolds must not be placed in confined spaces, but will be placed in safe, well ventilated, and accessible locations.
- Hose connections must be made so that they cannot be interchanged between fuel gas and oxygen manifolds and supply header connections. Keep hose connections free of grease and oil, and do not use adapters to interchange hoses.
- Manifold and header hose connections must be capped when not in use.
- Nothing may be placed on manifolds that will damage the manifold or interfere with the quick closing of the valves.

Hoses

- Fuel gas hose and oxygen hose must be distinguishable from each other, and not be interchangeable. Contrast may be made by different colors or by surface characteristics distinguishable by the sense of touch.
- Employees will inspect all hoses in use at the beginning of each work shift. Defective hoses will be tagged and removed from service.
- Hoses subjected to flashback, or which show severe wear or damage must be tested at twice the normal pressure for the hose, but not less than 300 p.s.i. If defective, the hose must not be used.
- Hose couplings must be disconnected by rotary motion only.
- Hoses stored in boxes must be well ventilated.
- Hoses, cables, and other equipment must be kept clear of passageways, ladders and stairs.

Torches

- Torches must be inspected at the beginning of each working shift for leaking shutoff valves, hose couplings, and tip connections. Defective torches may not be used.
- Clogged torch tip openings must be cleaned.
- Torches may be lit by friction lighters or other approved devices only.

Regulators and gauges

- Pressure regulators and related gauges must work properly while in use.

Oil and grease hazards

- Oxygen cylinders and fittings must be kept away from oil or grease. Cylinders and fittings must be kept free from oil or greasy substances and may not be handled with oily hands or gloves.
- Oxygen must not be directed at oily surfaces, greasy clothes, or within a fuel oil or other storage tank or vessel.

Fire Protection

- Objects to be welded, cut or heated must be moved to a designated safe location. If the object cannot be easily moved, all moveable fire hazards will be moved or protected.
- If the object to be welded, cut, or heated cannot be moved and if all the fire hazards cannot be removed, positive means must be taken to confine the heat, sparks, and slag, and to protect the immovable fire hazards from them.
- Welding, cutting, or heating must not be performed in the presence of flammable paints, flammable compounds or heavy dust concentrations.
- Fire extinguishers must be immediately available in the work area, free of obstruction, and maintained for instant use.
- Sufficient amount of time must be allowed after completion of work to ensure that the possibility of fire does not exist. The designated fire watch must be trained in fire fighting equipment.
- Gas supplies must be shut off during lunch breaks, overnight, or during shift breaks. Hoses and torches must be removed from confined spaces.

Training

Gartner Refrigeration & Manufacturing Inc. employees are required to become familiar with and understand the guidelines regarding Welding and Cutting operations. Designated welders and cutters must receive annual training and must demonstrate their understanding of these guidelines to a Gartner supervisor.

Training should include:

1. Review of requirements listed in OSHA 1910.252
2. Use of Hot Works Permit System
3. Supervisor responsibilities
4. Fire Watch responsibilities
5. Operator responsibilities
6. Contractors' responsibilities
7. Documentation requirements
8. Respirator usage requirements
9. Fire Extinguisher training

Upon completion of Welding and Cutting training, Gartner Refrigeration & Manufacturing Inc. will certify in writing that each designated welder has received and understands training requirements. Certification must include the employee's name, name of the trainer, date of training, and subject of certification.

Conclusion

All employees of Gartner Refrigeration & Manufacturing Inc. are required to comply with the rules set forth in this written program. This program is intended to provide the maximum protection for employees of Gartner Refrigeration & Manufacturing Inc. Any Gartner Refrigeration & Manufacturing Inc. employee who disobeys and/or disregards the guidelines set forth in this program or the company's safety program will be subject to disciplinary action.



CALOSHA Electrical Safety

Safe work practices as defined by the National Fire Protection Association (NFPA) 70E Standard and the National Electrical Standard (NEC) Handbook shall be used to prevent electric shock or other injuries resulting from either direct or indirect electrical contacts, when work is performed near or on equipment or circuits that are or may be energized.

Lockout/tagout specific safe work practices shall be used and be consistent with the nature and extent of the associated electrical hazard. Lockout/tagout should identify the person who is performing the task and should be used when:

- Working near or on de-energized parts,
- Working on or near energized parts,

This section will not discuss electrical safety for employees who are classified as a Qualified Electrical Person.

Definitions

De-energized parts – Parts or equipment on which the energy source is disconnected by means of lockout/ tagout or a live part that operates at less than 50 volts to ground if there will be no increase exposure to electrical burns or explosion due to electric arcs. Equipment or machines that have not been locked or tagged out will be considered energized.

Energized parts – Parts or equipment when the energy has not been disconnected or where the energy has been disconnected and lockout/tagout is not used.

Ground Fault Circuit Interrupter -- A device for the protection of personnel that will de-energize a circuit when the circuit is overloaded.

Authorized Person – A person responsible for removing from the work area any temporary personnel protective equipment and reinstalling all permanent barriers or covers.

Qualified Person – 1. A person that is trained in the operation of exposed energized and the hazards involved. 2. An employee who is undergoing on-the-job-training, who, in the course of such training, has demonstrated the ability to perform duties safely at their level of training and who is under the direction supervision of a qualified person.

Unqualified Person -- A person that is familiar with the construction and operation of exposed energized equipment and the hazards involved. They have received minimum training working with or near exposed energized equipment.

Safe Working Practices

Only qualified persons may work on electric circuits, parts or equipment that have not been de-energized. Such persons shall be familiar with the use of special precautionary techniques, personal protection equipment, insulating & shielding materials and insulated tools.

When working under overhead power lines, the lines shall be de-energized and grounded or other protective measures shall be provided before work is started.

- If the lines are to be de-energized, arrangements shall be made with the person or organization that operates or control the electric circuits involved to de-energized and ground them.
- If protective measures, such as guarding, isolating or insulating are provided, these precautions shall prevent employees from contacting such lines directly with any part of their body or indirectly through conductive materials, tools or equipment.
 - An qualified person working in the area may not approach or take any conductive object without an approved insulating handle closer than five (5) feet of the overhead line unless:
 - When gloves, with sleeves if necessary, rated for the voltage involved are considered to be insulation of the person from the energized part on which work is performed, or
 - The energized part is insulated from all conductive objects at a different potential and from the person, or
 - The person is insulated from all conductive objects at a potential different from that of the energized part.
 - Any vehicle or mechanical equipment capable of having parts of its structure elevated near an energized overhead line shall be operated so that a clearance of ten (10) feet is maintained. If the voltage is higher than 50kV, the clearance shall be increased by four (4) inches every additional ten (10) kV. Exception are:
 - If the vehicle is in transit with its structure lowered, the clearance is reduced to four (4) feet and shall be increased by four (4) inches every additional ten (10) kV if the voltage is higher than 50kV.
- Minimum approach distance for qualified employees shall be followed per 29 CFR 1910.333(c)(3)(ii)(C) Table S-5

Table S-5 – Approach Distances for Qualified Employees – Alternating Current

Voltage Range (phase to phase)	Minimum approach distance
300V and less	Avoid Contact
.....	
Over 300V, not over 750V	1 ft. 0 in. (30.5 cm),
.....	
Over 750V, not over 2kV	1ft. 6 in. (45 cm),
.....	
Over 2kV, not over 15kV	2 ft. 0 in (61 cm),
.....	
Over 15kV, not over 37kV	3 ft. 0 in. (91 cm),
.....	
Over 37kV, not over 87.5kV	3 ft. 6 in.(107 cm),
.....	
Over 87.5kV, not over 121kV	4 ft. 0 in. (122 cm),
.....	
Over 121kV, not over 140kV	
.....	

	4 ft. 6 in. (137 cm)
--	----------------------

- If properly rated insulating barriers are installed to prevent contact with the lines and are not part of the vehicle.
- Employees may not enter areas containing exposed energized parts unless illumination is provided enabling the employees to work safely.
- When working in confined spaces --- protective shields, barriers or insulating materials shall be provided as necessary.
- In work areas where conductive materials and equipment are in contact with any part of an employee’s body --- the use of insulation, guarding and materials handling techniques will be used to minimize the hazard.
- Portable ladders must have non-conductive side rails.
- When working around exposed energized equipment --- rings, metal watchbands and jewelry will not be worn. Long hair must be worn about the head or covered with a cap or hair net.
- Cleanup and other housekeeping duties must not be performed if such duties present an electrical contact hazard.
- When work is performed near a qualified person, a safe distance or a barrier shall be established based on the NFPA 70E Standard.
 - An unqualified person working in the area may not be closer than or bring any conductive object closer than ten (10) feet of any work area that is not de-energized. If the voltage is higher than 50kV, the distance shall be increased by four (4) inches every additional ten (10) kV.

Ground Fault Circuit Interrupters (GFCI)

Ground fault circuit interrupters will be provided on all job sites for all 120 volt, single-phase, 15 and 20-ampere receptacle outlets that are not part of the permanent wiring of the building or structure.

- Receptacles on the ends of extension cords are not part of the permanent wiring and therefore must be protected by GFCI whether or not the extension cord is plugged into permanent wiring.
- All tools must be double insulated or a GFCI must be used.
- GFCI must be tested be each use.

Assured Equipment Grounding Conductor Program

On construction sites where Ground Fault Circuit Interrupters cannot used, the following Assured Grounding Program will be implemented and the Safety Director or his/her designated person will be the program responsible person.

This program applies to 120 volt, single-phase, 15 and 20-ampere receptacle outlets that are not part of the permanent wiring of the building or structure and equipment connected by an extension cord. All defective equipment will be tagged “Out Of Service.” If the equipment is repaired a qualified individual must certify that the equipment may return to service.

A daily visible inspection of all cords sets shall be made.

Testing

Extension cords and equipment will be tested by a competent worker as follows:

- Receptacle Tester – plug in to show if terminals are correctly connected to ground and if wire is continuous with no breaks.
- Continuity Tester – check if ground is continuous from metal frame through cord to third prong. Also touch tester to ground prong to detect possible ground fault.

Testing will be done before initial use, after any repair work or when damage is suspected and every three months. A record will be made of the test and color-coded tag or tape, to identify in which month the test was conducted (see below), attached to the cord.

January – <i>White</i>	February – <i>White + Yellow</i>	March – <i>White + Blue</i>
April – <i>Green</i>	May – <i>Green + Yellow</i>	June – <i>Green + Blue</i>
July – <i>Red</i>	August – <i>Red + White</i>	September – <i>Red + Blue</i>
October – <i>Orange</i>	November – <i>Orange + Yellow</i>	December – <i>Orange + Blue</i>

Electrical Safety Rules

- Work shall not be performed on exposed energized parts of equipment or systems until the following conditions are met:
 1. Responsible supervision has determined that the work is to be performed while the equipment or systems are energized.
 2. Involved personnel have received instructions on the work techniques and hazards involved in working on energized equipment.
 3. Suitable personal protective equipment and safe guards are provided and used.
- All electrical equipment and systems shall be treated as energized until tested or otherwise proven to be de-energized.
- Suitable temporary barriers, or barricades, shall be installed when access to opened enclosures containing exposed energized equipment is not under the control of an authorized person.
- Conductive measuring tapes, ropes or similar devices shall not be used when working on or near exposed energized conductors or parts of equipment conductive fish tapes shall not be used in raceways entering enclosures containing exposed energized parts unless such parts are isolated by suitable barriers.
- Tools and equipment should always get their power through a Ground Fault Interrupter Circuit (GFIC).
- Electrical equipment must be visually inspected for damage and defects before each day's use. Any damaged or defective equipment must not be used until repaired.
- Always use grounded plugs on equipment. Do not cut the grounding lug off of any plug.
- Make sure the electrical requirements of your equipment match the outlet power rating.
- All power cords must be of the approved type and must be properly insulated according to applicable codes.
- When running any temporary cords across aisles, cover them with an approved trip reducing device or material. Any cord in place for more than two working days is not temporary.
- A cord is not deemed serviceable if any of the interior conductors have their insulating jacket cut or torn.
- Conductive items of jewelry or clothing shall not be worn.
- Do not patch cords with electrical or duct tape.
- Extension cords cannot be spliced together.

Training

The type of training shall be of the classroom or on-the-job type and the degree of training provided shall be determined by the risk to the employee.

Unqualified Person

Unqualified Person training should include:

- How electricity works
- How electricity can contact and harm the human body,
- Training in safe related work practices that pertain to their respective job assignment,
- How to perform lockout/tagout procedures on equipment so it can be worked on safely,
- Working with electric equipment and the electrical hazards involved with the work being performed,
- How to distinguish and identify exposed electrical equipment and energized parts,
- Clearance distances when working on or near energized equipment.
- How to identify potential electrical hazards and
- How to use equipment and machinery that is powered by electricity.

Retraining

Retraining shall be provided when the following are noted:

- When there is reason to believe an affected employee, who has already been trained, does not have the understanding and skill required to work safely and
- When workplace changes present a hazard for which employees have not been trained.

Certification

Any employee who faces the risk of an electrical shock that is not reduced to a safe level shall receive training by a competent person. Training will address the type of hazards that may be encountered and safety controls to minimize those hazards.

All documentation shall bear the names of the employees trained, the date of the training and the name, signature and title of the person who conducted the training.

All documentation is maintained in the employee personnel file, located in the main office.

Scan to view Safety Data Sheets

Company-Wide Inventory

Gartner Refrigeration & Mfg. Inc.



Contact: Rob Machetta 612-423-3549 robm@gartner-refrig.com



SAFETY INSPECTION CHECKLIST

Job Name: _____ Job #: _____ Date: _____

Superintendent: _____ Inspected By: _____

	YES	NO	N/A	COMMENTS/ACTIONS
GENERAL				
Toilet facilities available/maintained	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Drinking water cups on site	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Visitor hard hats and Safety Glasses available/used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PERSONAL PROTECTIVE EQUIPMENT (PPE)				
Hard hats are being worn per Gartner safety policy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Safety glasses are being worn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Face Shields are being worn over safety glasses for Grinding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
High-visibility vests are being worn where needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cut Resistant Gloves are being worn by all employees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Proper footwear is being worn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Respirators are used any time potential for exposure exists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hearing protection is being worn when required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Full Body Harnesses are being used and worn properly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
All PPE kept in sanitary and reliable condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
FIRE PREVENTION				
Adequate number of fire extinguishers on site	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Travel distance between extinguishers does not exceed 100'	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Extinguishers have current inspection (check tag)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Phone number of local fire department posted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LP tanks secured from falling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LP storage prohibited inside the building	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Flammable/combustible liquids stored in approved containers and labeled	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Flammable/combustible liquids located at least 10 feet from the unit under construction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fire extinguisher located near flammable/combustible liquid storage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
WELDING & BURNING				
Gas cylinders stored upright and chained	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Proper separation between fuels and oxygen (1/2 hr.-rated fire wall or a minimum distance of 20 feet)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Burning/welding/cutting goggles or shields are used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fire extinguishers are within 10 ft of Hot Work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Welding lead has been inspected for defects. No defects within 10 feet of stinger.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hoses are in good condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hoses are routed out of walkway or hung off floor completely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ELECTRICAL / LOTO				
Electrical cords being used are proper size of wire (12/3 gauge)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Extension cords with bare wires, Broken Grounds are taken out of service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ground fault circuit interrupters (GFCI) being used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Light bulbs covered with protective cages	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Circuit breakers/disconnects are properly identified (labeled) and accessible	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Energized panels/devices are covered	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Electrical dangers are posted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lockout/tagout devices are available and used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lockout devices are adequate to keep switches and valves from being opened	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

	YES	NO	N/A	COMMENTS/ACTIONS
HAND & POWER TOOLS				
Guards in place on all machines and Power Tools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Guards on machines/equipment in good condition and work properly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Tool cords and plugs in good condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Employees are using power tools properly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hand tools in good condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Right tool being used for job at hand	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hand and Power Tools are Stored Properly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Broken and Defective Hand and Power Tools are Red Tagged out of service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
FALL PROTECTION (where exposure to falls six feet or more exists)				
Safety guard rails are secured properly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Warning line 15 ft from fall hazard, 42" high	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Employees exposed to fall hazards are tied off (5,000# anchor)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fall protection equipment is appropriate for working height (Full body harness and Self Retracting Lifeline)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Employees working below are protected from falling objects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fall protection equipment has been inspected prior to use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
LADDERS & STAIRS				
Ladders are of appropriate type, Size, and duty rating for the task	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Extension Ladders extend at least 36 inches above the landing (ladder access always kept clear)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Extension Ladders are secured to prevent slipping, sliding or falling (ladders pitched at a 4:1 ratio, staked, tied)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Stepladders used only in fully open position	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
No stepping on top two Rungs of step ladders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ladders are being used in accordance with the manufacturer's specifications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Stairway or ladder provided at points of access where a break in elevation of 19 inches or more exists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Stairway rails or handrails installed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Damaged Ladders are marked with a Red Tag and taken out of service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SCAFFOLDING				
Erected on sound rigid footing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Scaffold is Tied to structure as required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Scaffold is plumb, square, and level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cross braces are complete (no missing parts)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Complete guardrail system around working platform (guardrail, intermediate rails, toe boards, screens in place)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
All working-level platforms fully planked/decked	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Proper access/egress provided and adequate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
All scaffolding inspected daily by a competent person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mobile scaffold equipped with locking casters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Proper pins (no wire, nails, etc.) used in all connections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Employees below Scaffolding are protected from falling objects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
FLOOR & WALL OPENINGS				
All floor/deck openings are planked, and planks are secured in place	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Perimeter protection is in place	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Floor opening coverings are labeled (HOLE)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Large wall openings have Guard Rail installed (Top, Mid Rails and Toe Board)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Aerial Man Lifts				
Aerial lift operators trained and authorized	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Aerial lift controls clearly marked	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Aerial lift platform chain or door closed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fall protection used in the ALL boom and scissor lifts as required by Gartner safety policies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fall protection used in the boom/scissor lift is appropriate type (Full Body Harness and Self Retracting Lifeline)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Reverse signal alarms working (audible) above surrounding noise levels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Spotters are used to move lifts in all engine rooms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Aerial Man Lifts have been Inspected Prior to use each shift.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

	YES	NO	N/A	COMMENTS/ACTIONS
Forklifts / Telehandlers				
Forklift Operator has been trained and authorized	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Forklift controls clearly marked	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Forklift Reverse signal alarms working (Audible) above surrounding noise levels.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotter is used for all lifts restricting operator vision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Forklift has been inspected prior to daily operation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
MATERIAL HANDLING				
Materials properly stored, clear of stairways and exit routes, and stacked using 4:1 maximum stack height to base ratio	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Material loading on roof in designated area with proper fall protection system in place	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Employees are using proper lifting methods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Employees are wearing cut resistant gloves when handling materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Proper number of workers for each operation (Team Lift of 50lbs or more)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Tag lines are used to guide suspended loads	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CRANES & RIGGING				
Lift plan developed and approved by Safety for every crane project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lift plan reviewed on-site and signed off prior to pick	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Annual crane inspection conducted, documented and on file	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ground conditions appear adequate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Swing radius of counterweight is barricaded to avoid striking workers/equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Outrigger pads are solid, sturdy and are used for every lift	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Employees kept from under suspended loads	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chains and slings inspected/tagged	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Maximum crane radius at least 20 feet from overhead power lines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fire extinguisher located in the cab	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Crane Operator has NCCO or equal Certification Training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Riggers trained in safe rigging principles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Riggers have knowledge of load weights (shipping documents, manufacturer's specifications, raw material calculations, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Signal person has been designated and trained	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CONFINED SPACE				
If confined space is on site, contact the safety coordinator for proper guidance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HOUSEKEEPING				
Work area neat, debris picked up and free of trip hazards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Waste containers provided/used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Passageways/walkways clear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Potential impalement hazards from protruding rebar, form stakes, pipe stubs, and nails removed, capped, or covered	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cords/welding leads/hoses off the floor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
First aid kit available/stocked and proper size for crew	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Work areas properly signed/barricaded	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Adequate lighting present	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
JOB INFORMATION/ADMINISTRATIVE				
OSHA 300A form posted between February 1 and April 30	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
OSHA posters posted (Federal and State)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Workers' compensation posters posted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Phone number for the nearest medical center posted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sanitizing Supplies stocked and used to keep common areas Sanitized	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Toolbox talks up to date	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
THA's completed prior to each shift, and delivered to Safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Equipment Inspections are completed and delivered to Safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

"Danger - Do Not Use" tags on site	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Safety manual on site	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Specific Site Emergency Plan posted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

UNSAFE ACTS OR PRACTICES OBSERVED (list)

COMMENTS

Subcontractors On Site (list name and trade):

Reviewed On-Site With:

Project Manager _____

Superintendent _____

General Contractor/Owner _____

Signature: _____