



To: All Employees, Subcontractors, Suppliers and Customers of Badger Swimpools, Inc.

Re: Badger Swimpools, Inc. Safety Program

The purpose of this Safety Program is to provide policy and guidelines that will aid in the elimination of serious injuries and illness on all company jobsites. Prevention of injuries to our employees, customers, the public and those that visit our jobsites is the first and primary concern addressed in this Safety Program. Our secondary concern is for our property, the property of others in our care and control, and the property of those in close proximity to our operations. We recognize safety as a team effort. Therefore, this program assigns responsibility, outlines actions to be taken, methods of reducing/eliminating losses that may result from an accident. These methods provide efficient utilization of resources for advancing the effectiveness by which the company's projects will be completed. Therefore, there is no justification for the willful performance of unsafe acts or the taking of unnecessary risks by any member of this team.

Our Director of Field Operations, Superintendents and Foremen have the full backing of our management team to enforce the provisions of this Policy as it relates to the responsibilities assigned to them.

Badger Swimpools Inc. is committed to safety. All officers, management and employees of Badger Swimpools Inc. will actively participate in meeting and exceeding this commitment.

It is imperative that all employees of Badger Swimpools Inc. strive to achieve the safest possible working conditions at all times.

SAFETY & HEALTH RESPONSIBILITIES

It is the desired result of Badger Swim pools to protect employees from accidental injury and damage to health while working for our organization. This matter must be valued and receive attention from all levels.

Safety is the responsibility of each employee, who has the right to demand safe operations. It is the obligation of Badger Swim pools to teach employees to work safely. Each level of our organization is accountable for safe performance.

Duties and responsibilities of all personnel under Badger Swim pools safety program are as follows:

Summary of Non-negotiables:

- Hard hats and safety glasses must be worn at all times.
- Dust masks must be worn while working in a dusty environment.
- Hearing protection must be worn when working around noise levels over comfort levels.
- Long pants and a minimum of ankle high work boots are recommended and must be worn at all times.
- Tennis shoes are not allowed.
- Sleeveless shirts are not allowed.
- Respirators must be worn while working around toxic materials.
- Install safety railings where needed (see fall protection).
- Use all guards per manufacturer's recommendations for protection from moving parts.
- Follow all Confined Space rules and regulations (see Confined Space).
- Chaps are to be worn when using a chain saw.
- Before using chemicals or solvents of any kind, refer to the Safety Data Sheet (SDS) to ensure you use proper protection.
- Before starting a new work assignment or task, take a moment to think about performing it in a safe manner.
- Non-Compliance of these rules will result in disciplinary action as described in the Disciplinary Section.
- Jobsite inspection should take place daily to insure proper housekeeping and safety procedures are being utilized.
- Abate all violations or unsafe conditions immediately.
- A competent person for safety shall be on site at all times. That person shall be responsible for implementing the Badger Swim pools Safety Program. If there are any questions as who the competent person in charge is, contact the foreman and/or supervisor.

Management Responsibilities

As leaders, it is management's responsibility to create a safe environment where employees can reach their full potential. Each of the sections outlined in the Badger Swim pools Safety Program includes specific guidelines on accident/incident-prevention activities. Management tasks include:

- Ensuring that each employee has measurable safety goals as part of their daily work procedure. Badger Swim pools expects the following safety activities be documented by management and the Safety Department be notified thereafter (within 24 hours).
 - Any incident involving vehicle, personal injury, or property damage
- Promptly addressing safety problems or issues that employees bring to management's attention.
- Implementing an Incident Review Process when necessary.
- Ensuring that sufficient employee time, adequate leadership resources, and appropriate funds are budgeted for safety.
- Evaluating supervisors each year to make sure they are carrying out their responsibilities as described in this program.

- Ensuring that incidents are fully investigated.
- Taking preventative action to ensure that hazardous conditions or unsafe behaviors do not reoccur.
- Ensuring that a record of injuries and illnesses is maintained and posted as described in this program.
- Setting a good example by following established safety rules and attending required training.
- Promptly addressing unsafe practices or conditions.
- Utilizing the policies and procedures set forth by Badger Swimpools to resolve safety issues and administer disciplinary action.

Supervisor Responsibilities:

Safety is considered a critical function of the supervisor's job, **not an additional duty**. The following tasks are part of this critical function:

- Ensuring that each supervised employee has received an initial safety training/orientation **before** beginning work.
- Ensuring that each supervised employee is competent in the safe practices of their job tasks and receives training on safe operation of equipment **before** starting work on that equipment or task.
- When necessary, scheduling retraining for employees who appear unfamiliar with safety concepts.
- Ensuring that each employee receives the required tools, associated training, and personal protective equipment (PPE) **before** starting a job task.
- Promptly addressing safety problems or issues that employees bring to their attention.
- Performing a daily huddle to preplan activities for the day.
- Performing safety observations on supervised employees as they work. Promptly correct any unsafe behavior, provide on-the-spot training, and take corrective action as necessary. Document all employee safety observations.
- Setting a good example for employees by following safety rules and attending required training.
- Talking to management about changes to work practices, environment, or equipment that will improve employee safety.
- Promptly addressing unsafe practices or conditions.
- Utilizing the policies and procedures set forth by Badger Swimpools to administer disciplinary action.
- Ensuring that incidents are fully investigated and corrective action taken to prevent hazardous conditions or unsafe behaviors from reoccurring.

Employee Responsibilities

Employees are responsible for:

- Adhering to safety rules and avoiding safety shortcuts. Employees are responsible for following the guidance of this safety program and performing all work safely so as not to injure themselves or someone else.
- Promptly reporting unsafe conditions or actions to their supervisor.
- Promptly reporting all injuries to their supervisor, regardless of how minor they may seem.
- Promptly reporting all near-miss incidents to their supervisor.
- Always using personal protective equipment (PPE) and tools in good working condition.
- Not removing or defeating any safety device or safeguard provided for employee protection.
- Encouraging co-workers by words and example to use safe work practices on the job.
- Making suggestions to their supervisor or management about changes they believe will improve employee safety.
- Completing required safety training and utilizing necessary safety equipment while performing work.
- Adhering to manufacturer safety recommendations and limitations for tools, vehicles, and other equipment.
- Following established environmental policies and practices and properly disposing of hazardous wastes.

Subcontractor Responsibilities

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

The concern for our fellow employees must be communicated to subcontractors working on our projects. It is imperative that we observe our subcontractors' operations and, where deficiencies are noticed, identify them to the subcontractors as well as to our safety department. It is the responsibility of the project managers, project engineers, superintendents, and foremen to do so. However, all Badger Swimpools employees are empowered to stop work presenting an imminent exposure to danger.

All contracts issued to subcontractors require that Federal laws, State laws and Badger Swimpools policy concerning safety be observed by the subcontractor. Failure to fulfill this requirement is a failure to meet the conditions of our contract. Safety on the project extends through all subcontractor operations, as one unsafe condition unattended generally encourages deficiencies in other areas.

Safety & Health Responsibilities (Rev 2022)

STRETCHING

Soft tissue injuries are consistently one of the more costly and debilitating injuries in the workplace. At Badger Swimpools, we believe that an employee who is prepared physically for the work day will be more safe and productive. In addition, it is recommended that stretching be performed following two or more hours of driving, after lunch, and following long periods of repetitive work.

Badger Swimpools's stretching guide can be seen in various locations. The recommended stretches should be followed each day, with alterations made only to the type of stretch performed. Modification to the body part should be made if it is believed that performing the particular stretch could cause injury.

Benefits of stretching

- Stretching may increase flexibility. Flexible muscles may improve your daily performance. Tasks such as lifting packages and bending to tie your shoes may become easier and less tiring.
- Stretching may improve range of motion of your joints. Good range of motion keeps you in better balance, which may help keep you mobile and less prone to injury from falls, especially as you age.
- Stretching may improve circulation. Improved circulation may speed recovery after muscle injuries by increasing blood flow to your muscles.
- Stretching may promote better posture. Frequent stretching keeps your muscles from getting tight, allowing you to maintain proper posture and may minimize aches and pains.
- Stretching may relieve stress. Stretching relaxes the tense muscles that often accompany stress.
- Stretching may help prevent injury. Preparing your muscles and joints for activity may protect you from injury, especially if your muscles or joints are tight.

Stretching essentials

- Target major muscle groups. When you're stretching, focus on your calves, thighs, hips, lower back, neck, and shoulders. Also, stretch muscles and joints that you routinely use at work or play.
- Warm up first. Stretching muscles when they're cold increases your risk of injury, including pulled muscles. Warm up by walking while gently pumping your arms.
- Hold each stretch for a minimum of 15-30 seconds. It takes time to lengthen tissues safely. Hold your stretches for at least 15-30 seconds and up to 60 seconds for additional flexibility. That can seem like a long time, so keep an eye on your watch. Then repeat the stretch on the other side.
- Don't bounce. Bouncing as you stretch can cause small tears in the muscle. These tears can leave scar tissue as the muscle heals, which tightens the muscle even further, making you less flexible and more prone to pain.
- Focus on a pain-free stretch. Expect to feel tension while you're stretching. If it hurts, you've gone too far. Back off to the point where you don't feel any pain, then hold the stretch.
- Relax and breathe freely. Don't hold your breath while you're stretching.

It is encouraged that you stretch each day prior to beginning work. Take this time in the morning to focus your mind, as well as your body, and make the right preparations for your day.

OSHA INSPECTIONS (SEE APPENDIX A)

It is the policy of Badger Swimpools to allow OSHA and any other government agency to inspect any of our job sites, for safety and health reasons, during normal working hours.

Immediately upon notification of any such inspection, the Safety Department must be notified by telephone.

Definitions

Bargaining Agent - An exclusive representative of all bargaining unit employees.

Catastrophe - Incident resulting in three or more employees needing to go to the hospital.

Compliance Officer - Person(s) working for OSHA or that is conducting the inspection.

Good Faith Compliance - Immediately correcting or working with OSHA to solve any apparent violations.

HAZCOM Program - Hazard Communications Program that directs management to inform all employees of the hazards pertaining to the chemicals to which they are exposed.

OSHA (Occupational Safety and Health Administration) - Created by Congress in 1970 to ensure that every man and woman in the nation has a safe and healthy workplace.

OSHA Area Director - Person who has the authority to hand down penalties for safety and health violations.

OSH Act - The Occupational Safety and Health Act passed in 1970 to assure safe and healthy working conditions for men and women.

OSHA-Funded Consultation - A free consultation service used by employers to find out the potential hazards at their workplace and how to improve their safety and health management. Employers can then be free from OSHA inspections for one year.

OSHA No. 300 - Log and summary of occupational injuries and illnesses that a company must record and update on injury and illness occurrences.

OSHA 2203 (or 3165) Workplace Poster - A poster that employers must display in a conspicuous place where workers can see it. The poster informs workers "You have the right to a safe and healthy workplace."

Safety and Health Standards - Standards created by OSHA, for which companies must abide by to ensure safe and healthy working conditions.

Purpose

The purpose of this section is to dictate the appropriate conduct for any inspection of Badger Swimpools job sites and facilities. Representatives and employees will be guided and instructed in proper participation and cooperation that will be given during inspections.

Pre-Inspection Process

- **Inspector Credentials**
 - When the OSHA compliance officer arrives at the job site, he or she must display their official credentials.
 - An OSHA compliance officer must display U.S. Department of Labor credentials bearing his or her photograph and a serial number. The serial number can be verified by calling the nearest OSHA office.
 - The compliance officer will then ask to see an appropriate employer representative. The Badger Swimpools employer representative will be the superintendent, project manager, and/or project engineer.
 - At any time before, during, or after the inspection, the OSHA compliance officer is not allowed to promote the sales of products and/or services, nor are they allowed to collect immediately on penalties. Anyone who attempts to do so is misrepresenting an OSHA compliance officer and the Safety Department should be called immediately.
- **Opening Conference**
 - The compliance officer will determine the purpose, scope of the inspection, and standards that will apply.
 - The compliance officer will also explain how the establishment was selected and determine whether it will be subject to a comprehensive safety inspection.
 - The compliance officer will then determine whether an OSHA-Funded Consultation is in progress or whether the facility is pursuing an inspection exemption. If so, the inspection may be terminated.
 - If not, the compliance officer will provide copies of the applicable Safety and Health Standards, as well as a copy of the complaint that may be involved (with the employee's name deleted, at the employee's request).
- **Employer Representation**
 - We will be asked to select an employer representative to accompany the compliance officer during the inspection. This representative will be the superintendent, project manager, and/or project engineer.
 - In addition to the employer representative, a bargaining agent that represents our employees may also join the inspection. The employer must accommodate this if the bargaining agent is requested to represent the employees.

Inspection Process

- **Walkthrough**
 - The compliance officer and accompanying representatives will proceed through the establishment to inspect work areas for safety and health hazards.
 - The compliance officer usually determines the route and duration of the inspection.
 - An inspection tour may cover a part of or the entire job site, even if the inspection is the result of a specific complaint, fatality, or catastrophe.
 - Employer representatives should ask the compliance officer what they want to see, but never divulge any additional information.
- **Documentation During Walkthrough**
 - Employee representatives should take notes as to what the compliance officer is looking at and observing.
 - If the compliance officer is taking pictures, additional documentation should be noted on the whereabouts and what was being done at the time the picture was taken.
 - During this time, the compliance officer will point out any unsafe and unhealthy working conditions they observe.
- **Consulting Employees**
 - Our employees may be consulted during the inspection tour.

- The compliance officer may stop and question any employee, in private, on safety and health conditions and practices in their work environment. This is acceptable as long as the compliance officer does not disrupt production for more than 5 -10 minutes.
- Each employee is protected under the OSH Act from discrimination for exercising his or her safety and health rights.
- **Postings and Record Keeping**
 - OSHA places special importance on postings, record keeping, and hazard communications (HazCom).
 - The compliance officer will inspect any records of death, injury, and illnesses. We are required to keep all of these records.
 - The compliance officer will then check to see that a copy of the totals from the last page of the OSHA No. 200 has been posted.
 - The OSHA 2203 (or 3165) Workplace Poster must be prominently displayed.
 - In addition, the compliance officer will ask to see our HazCom Program and may review our safety data sheets, which we are required to have readily available.
- **Apparent Violations**
 - When the compliance officer points out an apparent safety or health violation, at the same time the officer may discuss possible corrective actions that could be taken.
 - If these apparent violations can be corrected immediately, they should be done so immediately. Immediately correcting apparent violations will help our company to be considered in good faith compliance.
 - Even if corrected, the apparent violation may still serve as the basis for a citation and, if appropriate, a notice of proposed penalty.

Post-Inspection Process

- **Closing Conference**
 - After the inspection tour, a closing conference is held between the compliance officer and the employer representatives.
 - The compliance officer will discuss all unsafe and unhealthful conditions observed throughout the inspection, and indicate all apparent violations for which a citation may be issued or recommended.
 - This is the time for free discussion of problem areas and corrective needs. This is also a time for frank questions and answers.
 - The representatives will be informed of appeal rights.
 - The compliance officer will also give the representatives a copy of the employer's rights and responsibilities following an OSHA inspection, briefly describe the contents, and answer any questions about the copy.
 - The compliance officer will not indicate any specific penalties since only the OSHA Area Director has the authority to do so.
 - Whatever happens, do not intimidate the compliance officer.
 - A closing conference may be held with the employees, or the bargaining agent if requested, to discuss matters of direct interest to the employees.

Insurance Inspections

- **Insurance Walkthrough**
 - Occasionally, our insurance company will inspect some of our job sites. Normally, they will call prior to inspecting, but sometimes they will show up unannounced.
 - Employees and representatives will show the insurance company full courtesy and cooperation during the inspection.

- The insurance company will leave a copy of any recommendations with the superintendent and also with a member of the Safety Department.
- A follow up letter will be received by the Safety Department two to three weeks after the inspection.

It is the intention of the management of Badger Swimpools to have a safe and healthy work environment. To achieve this environment, job sites must comply with OSHA regulations. In this way, OSHA will have the company's complete cooperation and courtesy when legal inspections are being done. Both company representatives and employees shall fulfill their obligations when dealing with OSHA, other government agencies, and our insurance company to ensure a safe and healthy work site.

OSHA Inspections (Rev 2022)

INCIDENT IDENTIFICATION & REVIEW

Definitions:

Incident - An event or occurrence.

Injury Incident - An incident causing an injury to a person, or persons, regardless of severity. For example: An individual is struck in the shoulder by a piece of drywall, resulting in bruising and soreness.

General Incident - An incident causing damage to the property of a 3rd party. Some examples are: Pipe break that causes water damage to owner's property; object falls from roof of building striking vehicle of subcontractor employee.

Near Miss Incident - An incident that occurs but does not result in an injury or damage of any kind. Using the same scenario used to describe "Injury", in this case, the material did not strike the individual as the employee was able to jump clear of the object path. In another example, an object fell from the roof, not striking any person or property.

Auto (Accident Kit) Incident - An auto incident is any incident that involves a Badger Swim pools-owned vehicle.

First Aid Only - For Badger Swim pools reporting purposes, "First Aid Only" is any injury that was treated on the jobsite using available first aid supplies. (Bandage, ice pack, burn cream, etc.)

Medical Only - For Badger Swim pools reporting purposes, "Medical Only" refers to an injury that results in the individual seeking medical attention from a licensed medical provider.

Incident Reporting

Prompt incident reporting is crucial to the success of effective claims management, as well as the elimination of unsafe conditions. It is important that all injuries and incidents, including property damage, are verbally reported to the Safety Department as soon as affected individuals are out of danger. The written report must be submitted to the Safety Department within 24 hours of the occurrence. These two simple tasks, if consistently adhered to, will assist in preventing similar incidents from reoccurring and will allow for prompt action to mitigate the current loss.

The foreman must complete the appropriate Badger Swim pools Incident Report. Each section within the respective report MUST be completed thoroughly. Sections that do not have relevance to the specifics of the incident can be marked as "N/A". Incident Reports without all sections completed will be sent back to the preparer for completion.

Timely information from incidents serves many purposes

For incidents involving injury to Badger Swim pools team members, and Near-Miss incidents:

- Timely reporting helps management, the injured employee, and the Safety Department meet the requirements established by OSHA. More importantly, the information can be used to identify hazards in the workplace. Once the hazards are identified, corrective actions will be taken. The Safety Department uses this information to file worker's compensation claims, assist in future training, and identify accident trends.

For incidents causing damage to Badger Swim pools property, the customer's property, or any third party's property:

- The information assists in early intervention of claim management. The reporting of these incidents sets in motion the early intervention process of claims management. The severity and type of loss often determine the level of action taken. Without prompt notification, this process cannot begin, and much needed information can be lost. This, in turn, compromises the ability to properly protect the best interest of our people, company, and customers.

It is the responsibility of the Safety Department or assigned personnel to report these claims to our agency and insurance company within 24 hours.

Each recordable injury or illness must be recorded on the OSHA 300 Log and 301 Incident Report within seven calendar days of receiving information that a recordable injury or illness has occurred.

If you have any questions regarding incident reporting, please contact a member of the Safety Department.

Incident Review and Root Cause Analysis

Badger Swim pools firmly believes all jobsite accidents are preventable. This is a core belief and supports the values of the organization. The Incident Review process further supports these beliefs and values by acting as a guide for identifying the incident, contributing factors, root causes, and corrective actions.

Incident Review Meeting Attendees

Attendees may vary but can include examples listed below:

Injured/Affected Employee(s)

Witness(es)

Specific Job Foreman

Field Operations Manager

Member of the Safety Department

Incident Review and Root Cause Analysis Process

A Badger Swim pools Safety Department member will schedule the review meeting for as soon as reasonably possible but not more than 10 business days from date of incident. Details will be dependent upon specifics of the incident.

Step 1: Incident Review Meeting

Meeting Agenda:

1. Review Incident Details
2. Accumulate List of Contributing Factors
3. Identify Root Cause
4. Create Potential Corrective Actions For Review

Step 2: Leadership Team Review

1. Safety Department communicates review summary to Team
 - A. Summary of Process
 - B. Descriptive Incident Details
 - C. Contributing Factors with Details of Event
 - D. Root Cause
 - E. Corrective Action Recommendations
2. Team to Discuss Corrective Actions
3. "Implementation Plan for Action" Developed Using Recommendations from Review Team

Follow-up and Communication

The action plan will be incorporated into the agendas for all Safety Team meetings until the desired outcome(s) have been accomplished. Progress towards completion will be recorded and communicated via meeting minutes of the respective team meeting.

Incident Identification & Review (Rev 2022)

HAZARD COMMUNICATION

Badger Swim pools is committed to providing a safe and healthy workplace. This program directs management to inform all employees of the hazards pertaining to the chemicals to which they are exposed. This will be accomplished through the implementation of a comprehensive Hazard Communication Program, container labeling, providing Safety Data Sheets (SDS), and proper employee training.

Definitions

Absorption - Substance entering the body through the skin.

Acute Exposure - Pertains to a single exposure to a chemical over a short period of time.

Chronic Exposure - Pertains to a repeated exposure over a long period of time.

Corrosives - Chemicals or materials that can burn or damage on contact with the body or in close proximity with the eyes; can also damage the lungs if inhaled (e.g., some cleaners, acids and caustics).

Flammables - Liquids that emit vapors that can ignite and materials that burn; can also be gases or solids.

Globally Harmonized System of Classification and Labeling of Chemicals (GHS) - The GHS includes criteria for the classification of health, physical and environmental hazards, as well as specifying what information should be included on labels of hazardous chemicals as well as safety data sheets.

HAZCOM (Hazard Communication §1910.1200) - This OSHA standard is to ensure that the hazards of all chemicals produced or imported are evaluated, and that information concerning their hazards is relayed to employers and employees. Means of communication consist of a comprehensive hazard communication program, container labeling, SDS, and employee training.

Hazardous Materials - Any material which is a physical or health hazard, generally including only those materials to which employees may be exposed in their workplaces under normal conditions of use or in foreseeable emergencies.

Ingestion - Substance entering the body through act of swallowing.

Inhalation - Substance entering the body through breathing.

OSHA (Occupational Safety and Health Administration) - Created by Congress in 1970 to ensure that every man and woman in the nation has a safe and healthy workplace.

Reactives - Materials that, when mixed with certain other materials, can react explosively or violently; reaction can cause fire, toxic vapors, or gases.

SDS (Safety Data Sheet) - Device used to inform employers and employees of current and potential hazards of a specific chemical/material.

Toxics - May poison the body and cause harmful effects under improper exposure; effects can result from immediate or long-term overexposure.

Location of Company Hazard Communication Materials

Badger Swim pools Hazard Communication Program, list of all hazardous chemicals within the workplace, and corresponding SDS's, are available for observation at any time by any company worker and any affected job site employer. SDS's can be obtained by calling the 3E Company at 1-800-451-8346. Hard copies will be emailed or faxed to the applicable job site. Workers who have questions about anything regarding hazard communication should direct their questions to Badger Swim pools Safety Department.

Purpose

The purpose of this Hazard Communication Program is to protect Badger Swim pools workers from chemical hazards. Workers will have access to the program at all times and will be provided with an additional copy at any time upon request.

Labeling

Badger Swim pools is responsible for ensuring that all job site containers and shipped containers of chemicals that belong to Badger Swim pools are properly labeled. The labeling system will follow the requirements of the OSHA Hazard Communication Standard to be consistent with the UN Globally Harmonized System of Classification and Labeling of Chemicals (GHS), Revision 3. All labels will be in English, easy to read, and prominently displayed. Each label will include:

- A product identifier
- A signal word
- Pictogram(s)
- Hazard statement
- Precautionary statements
- Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

The chemical containers will be inspected on a regular basis to ensure that they are properly labeled and that the labels are current and legible. Containers with labels that have been removed or defaced will be immediately removed from the work area until a proper label is securely attached to the container.

When a chemical is transferred into a secondary container, the container will be properly labeled unless the contents are to be used immediately and completely. When contents of the secondary container are altered or changed, a new label must be placed on the container.

Safety Data Sheets (SDS)

Badger Swim pools is responsible for obtaining and maintaining SDS's for every chemical that Badger Swim pools workers could be exposed to on the job site. Badger Swim pools requires all of its suppliers to provide an SDS for each chemical that it provides to the company. In addition to supplier SDS's, the Safety Department will provide the most current version of all product information. SDS's will be maintained by the Safety Department.

Worker Information and Training

Badger Swim pools is responsible for conducting hazard communication training for their workers.

General

The training format will be as follows:

- The training will be based on the specific criteria established by OSHA for classification of health hazards, physical hazards, and mixtures. Specific information on each chemical will be readily accessible to all workers through container labels and SDS's.

- Each worker will receive a copy of the company's hazard communication program.

Badger Swimpoools' training will cover:

- The applicable requirements of OSHA's Hazard Communication Standard;
- Routes of chemical entry into the human body;
- The hazards covered by the health, flame, exclamation mark, gas cylinder, corrosion, exploding bomb, flame over circle, and skull and crossbones pictograms.
- The measures that workers can take to protect themselves from the hazards, such as safe work practices, personal protective equipment (PPE), emergency procedures, etc.
- The identity of the company's designated person for worker questions or concerns regarding hazardous chemicals on the job site;
- The location of the company's hazard communication program and SDS's;
- The contents of the company's hazard communication program;
- The chemical container labeling requirements;
- How to read and interpret hazard warning labels and SDS's;
- Specific job site operations where hazardous chemicals are present;
- The methods and observations that may be used to detect the presence or release of hazardous chemicals in the workplace; and
- How workers can obtain and use the appropriate hazard information.

Workers will be encouraged to ask questions and engage in discussion about hazard communication. Each time a new chemical hazard is introduced into the workplace, all company workers will receive training on the identity of the new chemical, the hazards associated with it, and how they can protect themselves from the hazards.

Non-Routine Tasks

Each time it is necessary to conduct a non-routine work task where chemicals are involved, each company worker who could be exposed to a chemical hazard will receive task-specific chemical hazard training before starting the work. Training participants will be encouraged to ask questions and engage in discussion about the task-specific chemical hazards and the means by which they can protect themselves from the hazards. All hazard communication training will be carefully documented.

Multi-Employer Work Sites

Each employer on a multi-employer work site will receive information referencing the 3E Company. Badger Swimpoools employees will explain how to use the 3E system and give them the number for access. If an employer requests hardcopies of our SDS's, contact the Safety Department for assistance.

Average Joint Cure Schedule for WELD-ON PVC/CPVC Solvent Cements **

Relative Humidity 60% or Less	Cure Time Pipe Sizes 1/2" to 1 1/4"		Cure Time Pipe Sizes 1 1/2" to 2"		Cure Time Pipe Sizes 2 1/2" to 8"		Cure Time Pipe Sizes 10" to 15"	Cure Time Pipe Sizes 15" +
Temperature range during assembly and cure periods	up to 160 psi	above 160 to 370 psi	up to 160 psi	above 160 to 315 psi	up to 160 psi	above 160 to 315 psi	up to 100 psi	up to 100 psi
60° - 100 °F	15 min	6 hrs	30 min	12 hrs	1 1/2 hrs	24 hrs	48 hrs	72 hrs
40° - 60 °F	20 min	12 hrs	45 min	24 hrs	4 hrs	48 hrs	96 hrs	6 days
0° - 40 °F	30 min	48 hrs	1 hour	96 hrs	72 hrs	8 days	8 days	14 days

Note - Joint cure schedule is necessary time to allow BEFORE pressurizing system. In damp or humid weather allow 50% more cure time.

** These figures are estimates based on our laboratory tests; extended set and cure times are required for chemical applications. Due to the many variables in the field, these figure should be used as a general guide only.

Source: IPS Corporation www.ipscorp.com

PERSONAL PROTECTIVE EQUIPMENT

Badger Swim pools is committed to providing a safe work place. We provide various types of Personal Protective Equipment (PPE) for employee use. The employee is responsible for wearing appropriate PPE in operations where there is exposure to hazardous conditions or where the need is indicated to reduce hazards. PPE includes safety glasses, splash-proof goggles, face shields, hard hats, fall protection, protective gloves, aprons, hearing protection, respiratory protection, appropriate footwear, and other specialized equipment designed to protect Badger Swim pools employees from hazards that cannot be controlled through engineering, administrative, or other work practice means.

Inspections

All PPE is to be inspected by the user at the beginning of his/her shift **prior** to wearing it to ensure it is in good condition. Any damaged PPE is to be replaced immediately. **PPE must also be properly stored after being used.** This includes fall protection, harnesses, face shields, etc.

PPE Condition

All PPE shall be kept clean and in good repair.

Personal Protective Equipment (PPE)

Hard Hats

- Hard hats must be worn on all construction sites.
- Employees working in areas where there is a possible danger of a head injury from impact, or from electrical shock or burns, shall be protected by hard hats.
- All hard hats are provided by Badger Swim pools and meet the most current standards of the American National Standards Institute.
- Hard hats will be replaced per manufacturer recommendations.

Eye and Face Protection

- All Badger Swim pools employees must wear safety glasses with side shields or a wrap-around design while on construction sites.
- Employees who forget their prescription safety glasses must wear protective goggles over their street-type glasses. **Prescription eyewear will not be provided by the Company.**
- All eye protection must meet the most current American National Standards Institute regulation.
- Badger Swim pools will furnish each employee with approved eye protection, and replace or repair damaged or broken glasses due to accidental breakage while working.

Face Shield

- It is required that a full-face shield be used while grinding, cutting, or any other task where high-speed projectile impact exposure is present.
- The use of eye and face protection with structural or optical defects shall be prohibited.

Foot Protection

- Each employee is responsible for his or her own footwear.
- All employees entering the construction site must wear suitable footwear. It is recommended that this type of footwear be leather-type construction boots with ankle support. Badger Swim pools will not allow any type of open toe, side, high heel, or tennis shoes to be worn on construction sites.

Road Protection

- Appropriate Hi-Viz garments must be worn when performing work adjacent to or in traffic.
- Badger Swim pools will provide appropriate class code relative to the exposure.

Clothing

- Long pants and shirts with sleeves are required on all of our construction sites.
- Shorts and sleeveless shirts are prohibited.
- The wearing of torn, ragged, or loose-fitting clothing is prohibited on our construction sites.
- Hi-viz shirts are required while performing exterior work.

Respiratory Protection

- Refer to Badger Swim pools Respiratory Protection Program.

Hearing Protection

- Refer to Badger Swim pools Hearing Conservation Program.

FIRE PROTECTION & PREVENTION

Definitions

ABC Dry Chemical Extinguisher - A multi-purpose dry chemical fire extinguisher used on ordinary combustibles, flammable liquids, and electrical equipment fires.

Firewatch - An employee designated and trained to monitor a process where a flame is created to ensure the safety of other employees and pedestrians.

Hot Work - Operations involving open flames or producing heat and/or sparks. This includes, but is not limited to: brazing, cutting, grinding, soldering, thawing pipe, and welding.

Purpose

The purpose of this section is to inform all employees of necessary procedures to prevent fires and to protect employees in case of a fire.

Fire Protection

- It is Badger Swimpools responsibility to provide adequate fire protection for all of our work areas throughout all phases of construction that corresponds with the type of fire exposures that may exist during the project.
- Access for firefighting equipment shall be maintained at all times during working hours.
- All firefighting equipment must be periodically inspected and maintained in operating condition. Defective equipment shall be immediately replaced and returned to the shop.
- All of Badger Swimpools large gang boxes will be provided with a minimum of a 5-pound ABC Dry Chemical type fire extinguisher.
- Whenever welding or handling flammable liquids, a 10-pound ABC fire extinguisher shall be provided within 50 feet of that working area. This does not include the refueling of integral fuel tanks of motor vehicles.

Fire Prevention

- The inside storage of flammable liquids shall not exceed 25 gallons. Flammable liquids shall be stored in safety type containers and properly labeled. This does not include small amounts of flammables (one gallon or less) in original supplied containers.
- When transferring flammable liquids from one container to another, they must be electrically interconnected (bonded).
- There shall be no smoking or open flames in the areas of any types of flammable storage or refueling. No smoking signs shall be posted if these areas are considered somewhat permanent.

Portable Fire Extinguishers

- All jobsites having potential for fire shall have fire extinguishers conspicuously located and employees shall be made aware of these locations, whether placed by Badger Swimpools or other contractor.
- The owner or occupant of a property in which fire extinguishers are located has an obligation for the care and use of these extinguishers at all times. By doing so, he is contributing to the protection of life and property. The nameplate(s) and instruction manual should be read and thoroughly understood by all persons who may be expected to use extinguishers.
- In case of a fire emergency, employees are expected to evacuate. It is not expected that employees without proper training use fire extinguishers.
- Hands-on training must be provided to employees where portable fire extinguishers are expected to be used. Upon initial assignment and at least annually after that, training shall be conducted. Where the employer has provided portable fire extinguishers for employees' use in the workplace, the employer also shall provide an

educational program to familiarize employees with the general principles of fire extinguisher use and the hazards involved in incipient stage firefighting.

- Portable fire extinguishers shall be readily accessible in case of emergency.
- A procedure must be in place to ensure that portable fire extinguishers shall be replaced or recharged annually (i.e., inspection tags).
- Inspections
 - A visual inspection of housing, components, labels, and gauge shall be completed daily.
 - If it is established that an extinguisher is deficient during the inspection, it shall be removed and a suitable replacement shall be put in place immediately.

Hot Work

- Hot Work permits shall be completed for operations involving open flames or producing heat and/or sparks. This includes, but is not limited to: brazing, cutting, grinding, soldering, thawing pipe, and welding.
- Hot Work permits shall be completed by a competent person.
- Permits shall be kept on site for the entire operation, plus adequate time after the operation.
- A fire watch shall be provided where deemed necessary by competent person or job site rules.
 - A fire watch is required when welding, cutting, brazing and/or soldering is performed near combustible materials and/or in locations where fire may develop.
 - Fire watches will be provided during Hot Work and for 30 minutes after operation.
 - Training: Fire watches shall have proper training on how to use the designated fire extinguisher.
 - Fire watches shall be provided with suitable extinguishers.
 - A fire watch shall only have the duties of a fire watch while completing this task.
 - One fire watch may be responsible for more than one Hot Work area as long as all areas are within visual contact.
- At a minimum, the five conditions that require a fire watch are:
 - 1) Locations where other than a minor fire might develop;
 - 2) Combustible materials are closer than 35 feet to point of operation;
 - 3) Combustibles are 35 feet or more away but are easily ignited;
 - 4) Wall or floor openings within 35 feet radius expose combustible materials;
 - 5) Combustible materials are adjacent to the opposite side of metal partitions, ceilings, or roofs.

HEARING CONSERVATION

Noise, or unwanted sound, is one of the most pervasive occupational health problems. It is a by-product of many industrial processes.

Repeated exposure to high levels of noise causes hearing loss, and may cause other harmful health effects as well. The extent of hearing loss depends on the frequency and intensity of the noise and on the duration of exposure. Noise-induced hearing loss can be temporary or permanent.

Temporary hearing loss, also called temporary threshold shift, results from short-term exposures to noise, with normal hearing returning after a period of rest. Generally, prolonged exposure to high noise levels over a period of time causes permanent hearing loss. A person who regularly sustains noise-induced temporary threshold shifts eventually will suffer a permanent threshold shift.

Hearing loss is particularly insidious because it occurs very gradually over time. In fact, for a long time the worker may not notice any change in hearing acuity until the hearing loss begins to interfere with everyday communication.

Noise induced hearing loss is not reversible and cannot be treated medically.

Engineering controls are the most effective defense against the hazards of noise. In many instances, however, the application of engineering controls is not feasible due to the configuration of equipment or the tasks being performed. When noise controls are not feasible, or until controls can be installed, an effective hearing conservation program must be emphasized.

Definitions

Medical Pathology - A disease or disorder, other than noise-induced hearing loss, that affects the ear and should be treated by a physician.

Presbycusis - Naturally occurring hearing loss that results from aging.

Recordable Hearing Loss - Defined by OSHA in a memorandum dated June 4, 1991 as a work-related change in hearing threshold, relative to the baseline audiogram, of an average of 25 dB or more at 2000, 3000, and 4000 Hz in either ear.

Standard Threshold Shift (STS) - Defined by OSHA as a permanent change in hearing threshold, relative to the baseline audiogram, of an average of 10 dB or more at 2000.

Purpose

When employee noise exposures equal or exceed the action level of 85 dB, Badger Swim pools shall administer an effective and continuing Hearing Conservation Program. The major mandatory elements for this program include noise exposure monitoring, audiometric testing, use of hearing protection, and employee training.

The primary objectives of the program shall be to:

- Evaluate **noise levels and exposures** in the workplace.
- Identify job positions with noise exposures equal to or exceeding the **action level** (85 dBA as an 8-hour time-weighted average), and positions with noise exposures exceeding the **permissible exposure limit** (90 dBA as an 8-hour time-weighted average).

- Provide an effective **audiometric testing program** for all employees exposed to noise at or above the action level.
- Reduce noise exposures that exceed the permissible exposure limit through use of **engineering and/or administrative controls** when feasible.
- Ensure the availability and use of **hearing protectors** in areas where noise levels exceed 85 dBA, and in job positions exposed at or above the action level, to reduce noise exposures and protect employee hearing capabilities.
- Provide an effective **training program** for all employees exposed to noise at or above the action level.

Responsibilities

Safety Department

The Safety Department has overall responsibility for the Hearing Conservation Program, and shall ensure that management receives the technical assistance needed to carry out the program effectively.

Management

The management of Badger Swim pools is responsible for ensuring that the Hearing Conservation Program is implemented and administered effectively. This includes assurance of compliance with hearing protection requirements and other aspects of the program.

Employees

The employees' responsibilities are to follow all requirements of hearing protection set forth by this program. Other responsibilities would be to assist management and the Safety Department with recommendations for a safer workplace.

Noise Exposure Monitoring

Purpose

Sound level measurements and exposure monitoring are necessary to identify high noise areas; employees who must be included in the Hearing Conservation Program; and job positions for which noise controls must be implemented. These activities also enable the proper selection of hearing protectors when they are required.

Procedures

Sound level measurements generally are to be made using standard calibrated sound level meters. However, at times, meters equipped with octave band filter sets may be needed to measure sound levels at specific frequencies as well as impact noises. The information obtained through sound level measurements should be used to support noise exposure monitoring data, identify noise sources, and develop noise control strategies.

Noise exposures should be determined through the use of calibrated audio dosimeters, which are worn by the employees. This approach is referred to as personal monitoring. The audio dosimeters continuously measure and integrate sound levels during the work shift. At the end of the monitoring period, the audio dosimeters are removed from the employees, and the time-weighted average noise exposures are determined.

When it is more expedient to do so, daily noise exposures may be determined using sound level meters and an area monitoring approach. Generally this is done when employees are exposed to relatively constant noise levels throughout the day or to noise levels predominantly below 85 dBA.

If employees work for extended periods of time (e.g. 10 hour shift), the measured noise exposures must be adjusted accordingly.

Frequency of Testing

Following initial assessment, personal noise exposure monitoring should be performed as often as necessary to keep the data current and representative of the existing conditions. In addition, personal exposure monitoring should be performed within 60 days of any significant changes in production, process, equipment, or controls causing increased noise exposures such that: (1) additional employees may be exposed at or above the action level, or (2) the attenuation provided by hearing protectors being used in the area may be rendered inadequate.

Observation of Monitoring

When noise exposure monitoring is performed, employees or their representative must be afforded an opportunity to observe the monitoring procedures.

Notification of Results

Noise exposure monitoring results are to be reported to management in writing. All affected employees must be informed of the results by their supervisor. The results should be shown by job position. A copy of the results also should be provided to the Safety Department or other group responsible for scheduling audiometric testing.

Records Retention

Noise exposure monitoring and sound level measurement records shall be retained for a minimum of five years.

FIRST AID & CPR

In the absence of a reasonably accessible clinic, hospital, or physician, a designated First Responder who has a valid certificate in first-aid, CPR, and AED training shall be available at the job site to render first aid. First aid kits/supplies shall be located in all of Badger Swimpools job trailers, designated gang boxes and company vehicles, and will be easily accessible to all employees. They will be inspected and restocked on a regular basis. In situations where a person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing shall be provided within the work area for immediate emergency use.

First Aid

Provisions shall be made prior to commencement of a project for prompt medical attention in case of serious injury.

- First Responders shall be trained and qualified in first aid techniques to control the degree of loss during the immediate post-incident phase.
- In the absence of medical assistance within four minutes of the job site, a designated person with a valid training certificate in first aid, ASHI, NSC, American Red Cross standards, or equivalent shall be available at job sites to render emergency first aid.
- Each job site shall have an adequate amount of first aid supplies readily available. First aid kits shall be available at all times (e.g., in the gang box kit, superintendent's truck, job site trailer).
- First aid kits shall consist of appropriate items determined to be adequate for the environment in which they will be used. Items shall be stored in a weatherproof container with individually sealed packages of each type of item (to meet ANSI/ISEA Z308.1-2015 requirements).
 - Kits shall be inspected regularly, at least once every 12 months. Out of stock or expired material shall be replaced immediately.
- Procedures and suitable facilities shall be provided for quick drenching or flushing of eyes or body where they may be exposed to injurious corrosive materials.
- Proper equipment for prompt transportation of the injured person to a physician or hospital, or a communication system for contacting necessary ambulance service shall be provided.
- 911 shall be used as an emergency contact when ambulance service is needed. In an instance that a job location is outside of the 911 area of response, the numbers of physicians, hospitals, or ambulances shall be conspicuously posted.

SEVERE WEATHER

Purpose

To establish a procedure that will be followed when severe weather is forecast near any of Badger Swimpools operations.

Lightning Policy

Follow the 30-30 rule by immediately seeking adequate shelter for at least **30 minutes** when lightning strikes within a **6-mile radius**. The clock restarts if a strike occurs within this radius during the 30-minute window. Adequate shelter includes dry-in structures in which the roof, exterior walls, windows, and doors have ALL been installed. Mobile office trailers also qualify as adequate shelter. If no buildings or adequate structures are present on site, workers must return to their vehicles. Small shelters, storage buildings (conex boxes), and sheds **DO NOT** qualify as adequate shelter.

If a crane or any other heavy equipment is in use as inclement weather approaches, be sure to cease operations, lower the boom, shut off all electrical power, and exit the equipment when lightning is present within a **10-mile radius**.

Required Weather Monitoring Tool:

All superintendents and foremen **MUST** download the WeatherBug app on their cell phones in order to properly monitor lightning strike distances. This app constantly monitors lightning strikes based on your location and displays all occurrences within the last 30 minutes based on distance.

Tornadoes

If Badger Swimpools is doing business in an area that is prone to tornadoes, FEMA recommends the following steps:

- Ensure that employees understand the difference between a “tornado watch” and a “tornado warning.”
 - A watch is when conditions could lead to a tornado.
 - A warning is issued if a tornado has been sighted or indicated by weather radar.
- Designate an area in the building or job site where all employees can go in the event of a tornado threat. If the room is not large enough to fit all employees, designate more than one room.

Tornado danger signs:

- An approaching cloud of debris can mark the location of a tornado even if a funnel is not visible.
- Before a tornado hits, the wind may die down and the air may become very still.
- Tornadoes generally occur near the trailing edge of a thunderstorm. It is not uncommon to see clear, sunlit skies behind a tornado.

During:

- Many construction sites use mobile homes as project centers. These are particularly vulnerable during a tornado since they overturn easily even if precautions have been taken to tie down the unit.
- When a tornado warning is issued, take shelter in a building with a strong foundation. If shelter is not available, lie in a ditch or low-lying area, a safe distance away from the unit.
- If possible, go to the basement or to an inside hallway at the lowest level of the building. Avoid places with wide-span roofs, such as auditoriums, cafeterias, large hallways, or shopping malls.
- Take shelter under a piece of sturdy furniture such as a workbench or heavy table or desk and hold on to it.
- Use arms to protect head and neck.

If you are outdoors:

- If shelter is not available or there is no time to get indoors, lie in a ditch or low-lying area or crouch near a strong building. However, be aware that there is a potential for flooding in ditches.

If you are in a car:

- Never try to out-drive a tornado in a car or truck. Tornadoes can change direction quickly and can lift up a car or truck and toss it through the air.
- Get out of the car immediately and take shelter in a nearby building or lie in a ditch or low-lying area away from the vehicle.

Heat Illness

The purpose of this plan is to protect our employees from the hazards of hot working environments.

This plan implements efficient and safe work practices that will prevent both indoor and outdoor heat-related illnesses among employees at our workplace. It will be used for training new employees and for the annual refresher training of employees. All employees potentially exposed to hot working environments are subject to this plan.

Heat-related illnesses can happen if workplace activities in a hot environment overwhelm the body's ability to cool itself. This becomes more likely if any of the risk factors are present. Examples include working in a hot environment without adequate access to water for rehydration, working in protective gear that does not allow air circulation across the skin, or working where the humidity is too high for sweat to evaporate.

The following are environmental risk factors for heat illness:

- Air temperature above 90 degrees F.
- Relative humidity above 40 percent
- Radiant heat from the sun and other sources
- Conductive heat sources such as dark-colored work surfaces
- Lack of air movement
- Physical effort needed for the work
- Use of non-breathable protective clothing and other personal protective equipment

The following are personal risk factors for heat illness:

- Lack of acclimation to warmer temperatures
- Poor general health
- Dehydration
- Alcohol consumption
- Caffeine consumption
- Previous heat-related illness
- Use of prescription medications that affect the body's water retention or other physiological responses to heat such as beta blockers, diuretics, antihistamines, tranquilizers, and antipsychotics.

The following are examples of heat-related illnesses:

- *Heat rash* is the most common health problem in hot work environments. It is caused by sweating and looks like a red cluster of pimples or small blisters. Heat rash usually appears on parts of the body that overlap or rub other parts of the body, such as in the groin area, under the arms or breasts, and in knee or elbow creases. If an employee has symptoms of heat rash, provide a cooler, less humid work environment, if possible. Advise the employee to keep the area dry and not to use ointments and creams that make the skin warm or moist, which can make the rash worse.

- *Heat exhaustion* can best be prevented by being aware of one's physical limits in hazardous environment on hot, humid days. The most important factor is to drink enough clear fluids (especially water, not alcohol or caffeine) to replace those lost to perspiration. Signs and symptoms of heat exhaustion typically include:
 - Profuse sweating
 - Weakness and fatigue
 - Nausea and vomiting
 - Muscle cramps (associated with dehydration)
 - Headache
 - Light-headedness or fainting; fainting or loss of consciousness is potentially serious and should be treated as a medical emergency.

When you recognize heat exhaustion symptoms in an employee, you must intervene; stop the activity, and move the employee to a cooler environment. Cooling off and rehydrating with water (or electrolyte-replacing sports drinks) is the cornerstone of treatment for heat exhaustion. If the employee resumes work before their core temperature returns to normal levels, symptoms may quickly return. If there is no intervention and the body's temperature regulation fails, heat exhaustion can rapidly progress to heat stroke, a life-threatening condition!

- *Heat stroke* requires an immediate emergency medical response. The person may stop sweating, become confused or lethargic, and may even have a seizure! The internal body temperature may exceed 106 degrees F. Signs and symptoms of heat stroke typically include:
 - Absence of sweating
 - Dry skin
 - Agitation or strange behavior
 - Dizziness, disorientation, or lethargy
 - Seizures or signs that mimic those of a heart attack

Ensure that emergency responders are summoned immediately if heat stroke is suspected. While waiting for emergency responders to arrive, cool the employee; move the employee to an airconditioned environment or a cool, shady area; and help the employee remove any unnecessary clothing. Do not leave the employee unattended. Heat stroke requires immediate medical attention to prevent permanent damage to the brain and other vital organs that can result in death.

The following are preventative measures to reduce the risk of heat-related illnesses:

- Gradually increase workloads and allow more frequent breaks during the first week of work so that employees become acclimatized to higher temperatures, especially those who are new to working in the heat or have been away from that work for a week or more.
- Encourage employees to frequently drink small amounts of water before they become thirsty to stay hydrated. During moderate activity, in moderately hot conditions, employees should drink about 8 ounces of liquid every 15 to 20 minutes. Employees can monitor their hydration with a urine chart. Urine should be clear or slightly colored; dark urine is a warning sign! See urine color chart.
- Encourage employees to eat regular meals and snacks as they provide enough salt and electrolytes to replace those lost through sweating as long as enough water is consumed.
- Provide a buddy system where employees encourage each other to drink water, use shade to stay cool, and to watch each other for symptoms of heat-related illness.
- Educate employees that drinking extreme amounts of water can also be harmful (more than 12 quarts in a 24-hour period).
- Schedule frequent rest periods with water breaks in shaded or air-conditioned recovery areas. Note that air conditioning does not result in loss of heat tolerance.

- Ensure employees are aware of the signs of heat-related illnesses and encourage them to report immediately they or their co-workers show symptoms.
- Monitor weather reports daily and reschedule jobs with high heat exposure to cooler times of the day, if possible. Be extra vigilant when air temperatures rise quickly. When possible, schedule routine maintenance and repair projects for the cooler parts of the year.
- Provide shade or cool areas for breaks

Severe Weather (Rev 2022)

HAZARDOUS MATERIALS

Introduction

This policy and procedure applies to all Badger Swimpools employees and subcontractors that work for our company who may be exposed to asbestos, lead (paint), silica, and hexavalent chromium (Cr VI). Where state OSHA agencies may have more stringent requirements, contact the Badger Swimpools Safety Department to address these specific requirements.

Scope and Application

This program is for employees who may be exposed to asbestos, lead (paint), silica and hexavalent chromium (Cr VI) due to any or all of the following situations:

- Potential asbestos or lead exposure from the demolition or removal of piping, insulation, ceiling tile, floor tiles, and disturbing painted surfaces, etc. in buildings built prior to 1970.
- Potential silica exposure while cutting, chipping, or drilling silica containing material, such as concrete, brick or stone.
- Performing hot work, such as welding on stainless steel or Cr VI painted surfaces, paint removal containing Cr VI, or soil disturbance activities such as drilling, or from heavy equipment moving on soils containing Cr VI soils.

These are only a few examples. Contact the Safety Department if you have questions or concerns regarding Hazardous Materials.

Definitions

Asbestos - A fibrous incombustible magnesium and calcium silicate used in thermal insulation; its dust causes asbestosis and acts as an epigenetic carcinogen for pleural mesothelioma.

Asbestos Containing Material (ACM) - Any material containing more than 1% asbestos.

TWA - Time-weighted average.

Authorized Person - Any person authorized by Badger Swimpools and required by work duties to be present in regulated areas.

Building/Facility Owner - The legal entity, including a lessee, who exercises control over management and record keeping functions relating to a building and/or facility in which activities covered by this standard take place.

Certified Industrial Hygienist (CIH) - An individual certified in the practice of industrial hygiene by the American Board of Industrial Hygiene.

Competent Person - An employee who is capable of identifying existing hazards in the workplace, selecting the appropriate control strategy for hazard material exposure, and has the authority to take prompt corrective measures to eliminate them.

Lead - Metallic lead, all inorganic lead compounds, and organic lead soaps. Excluded from this definition are all other organic lead compounds.

Regulated Area - An area established by Badger Swimpools to demarcate areas where Class I, II, and III asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate. Also a work area within which airborne concentrations of asbestos exceed, or there is a reasonable possibility they will exceed, the permissible exposure limit.

Removal - All operations where hazardous material is taken out or stripped from structures or substrates, and includes demolition operations.

Renovation - The modifying of any existing structure or a portion of the structure.

Repair - Overhauling, rebuilding, reconstructing, or reconditioning of structures or substrates, including encapsulations.

Fiber - A particulate form of asbestos, 5 micrometers or longer, with a length-to-diameter ratio of at least 3-to-1.

Employee Exposure - Exposure to airborne particulates/fumes that would occur if the employee were not using respiratory protective equipment.

Equipment Room (change room) - A contaminated room located within the decontamination area that is supplied with impermeable bags or containers for the disposal of contaminated protective clothing and equipment.

Decontamination Area - An enclosed area adjacent and connected to the regulated area and consisting of an equipment room, shower area, and clean room, which is used for the decontamination of employees, materials, and equipment that are contaminated with a hazardous material.

Demolition - The wrecking or taking out of any load-supporting structural member and any related razing, removing, or stripping of hazardous products/materials.

Lead Action Level - Exposure to a level of airborne contamination that requires an employer to implement some, but not all, of the surveillance and control activities of an OSHA standard. The action level is usually equal to one-half of the permissible exposure level. An exception is the action level for lead, which is 30 micrograms per cubic meter of air as compared to the permissible exposure limit of 50 micrograms per cubic meter of air.

Silica Dust - A type of dust from silica (crystalline quartz) that causes breathing problems in workers in the fields of mining, stone cutting, quarrying (especially granite), blasting, road and building construction industries that manufacture abrasives, and farming. Breathing the dust causes silicosis, a severe disease that can scar the lungs.

Silica Dust Action Level - 25 µg/m³ calculated as an 8-hour TWA.

Cr VI - Hexavalent Chrome.

Cr VI Action Level (AL) - The action level for implementation of this program is a concentration of airborne Cr VI of 2.5 micrograms per cubic meter (2.5µg/m³) of air calculated as an 8-hour time-weighted average (TWA).

Chromium VI or Hexavalent Chrome - Chromium with a valence of positive six, in any form and in any compound.

Emergency Cr VI Release - Any activity that results or is likely to result in an uncontrolled release of Cr VI. If an incidental release of Cr VI (measured at or below the Permissible Exposure Limit) can be controlled at the time of release by workers in the immediate release area, it is not an emergency.

Worker Exposure - The exposure to airborne Cr VI that would occur if the worker was not using respiratory protection.

High-Efficiency Particulate (HEPA) Filter - Filter that is at least 99.97% efficient in removing mono-dispersed particles of 0.3 micrometers (μg) in diameter or larger.

Historical Monitoring Data - Hexavalent chromium exposure assessment monitoring conducted prior to May 30, 2006, obtained during work operations conducted under workplace conditions closely resembling the processes, types of material, control methods, work practices, and environmental conditions in the employer's current operations.

Objective Data - Information such as air monitoring data from industry-wide surveys or calculations based on the composition or chemical and physical properties of a substance demonstrating the worker exposure to Cr VI associated with a particular product or material or a specific process, operation, or activity. The data must reflect workplace conditions closely resembling the processes, types of material, control methods, work practices, and environmental conditions in the employer's current operations.

Permissible Exposure Limit Cr VI (PEL) - The level of worker exposure to an airborne concentration of Cr VI, without regard to the use of respirators, at 5 micrograms per cubic meter of air ($5 \mu\text{g}/\text{m}^3$) calculated as an 8-hour time-weighted average (TWA) that cannot be exceeded.

Asbestos

Introduction

In the construction industry, asbestos is found in installed products, such as shingles, floor tiles, cement pipe and sheet, roofing felts, insulation, ceiling tiles, fire-resistant drywall, and acoustical products. Very few asbestos-containing products are currently being installed. Consequently, most worker exposures occur during the removal of asbestos and the renovation and maintenance of buildings and structures containing asbestos.

Asbestos fibers enter the body by the inhalation or ingestion of airborne particles that become embedded in the tissues of the respiratory or digestive systems. Exposure to asbestos can cause disabling or fatal diseases, such as asbestosis, an emphysema like condition; lung cancer; mesothelioma, a cancerous tumor that spreads rapidly in the cells of membranes covering the lungs and body organs; and gastrointestinal cancer. The symptoms of these diseases generally do not appear for 20 or more years after initial exposure.

In 1994, OSHA revised its asbestos standard for the construction industry. This revision lowered the Permissible Exposure Limit (PEL) to 0.1 fibers per cubic centimeter of air (f/cc). This means that Badger Swimpools must ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 f/cc as an 8-hour TWA. OSHA also established a short-term exposure limit (STEL) for asbestos. Badger Swimpools must ensure that no employee is exposed to an airborne concentration of asbestos in excess of 1 f/cc as averaged over a sampling period of 30 minutes.

Requirements

It is Badger Swimpools policy **not** to engage in any asbestos removal "abatement." If an employee encounters an asbestos exposure or potential exposure, they are to report it immediately to their supervisor, who in-turn **will** report it directly to the Safety Department and Project Manager. The Project Manager will notify the owner. Once the asbestos or potential asbestos is recognized, all work in that immediate area will be discontinued until the Badger Swimpools Safety Department gives written approval.

Lead

Introduction

Lead adversely affects numerous body systems and causes forms of health impairment and disease that arise after periods of exposure as short as days (acute exposure) or as long as several years (chronic overexposure). A short-term dose of lead exposure can lead to acute encephalopathy, a condition affecting the brain that develops quickly into seizures, coma, and death from cardiorespiratory arrest. Short-term occupational exposures of this type are highly unusual, but not impossible. Similar forms of encephalopathy, however, may arise from extended chronic exposure to lower doses of lead. Consequently, there is no sharp distinction between rapidly developing acute effects of lead and longer chronic effects.

Long-term overexposure to lead may result in severe damage to the blood-forming, nervous, urinary, and reproductive systems. Damage to the central nervous system in general and the brain in particular is one of the most severe forms of lead poisoning. It can also significantly impair the reproduction systems in both men and women.

If an employee suspects potential exposure, they are to report it immediately to the foreman, who will in-turn report it directly to the Project Manager, who in turn contacts the Safety Department. It is the Project Manager's responsibility to notify the owner and/or general contractor. Once the lead or the material that looks like lead is recognized, all work in the immediate area shall discontinue until the material can be tested. This does not include the exposure of pouring lead joints.

If we are required to disturb any lead-based paint, Badger Swimpools will implement engineering and work practice controls in order to reduce and maintain employee exposure to lead at or below the permissible exposure limit. Where the above controls are not sufficient to reduce the employee exposure, these controls shall be supplemented by the use of personal protective equipment.

General Requirements

Lead Abatement

- Badger Swimpools will **NOT** perform lead abatement activities. Lead abatement activities will include any of the following
 - Demolition or salvage of structures where lead or materials containing lead are present
 - Removal or encapsulation of materials containing lead
 - In the event a project requires lead abatement activities, the Project Manager will find an appropriate vendor, licensed in the state where the work will be performed, as required to conduct the abatement.

Installation of Materials Containing Lead

- Badger Swimpools will make every attempt to not install materials containing lead.
- In the event this is not possible, the Project Manager will notify the Safety Department of upcoming work requiring materials made of lead.
- The Project Manager and Safety Department will develop a protection plan to ensure no employee is exposed to lead concentration greater than $40\mu\text{g}/\text{m}^3$.

Incidental Exposure

In the event a Badger Swimpools employee is found to have been exposed to lead above $40\mu\text{g}/\text{m}^3$, the exposed employee will be referred to an appropriate medical facility for medical evaluation. The medical evaluation will include, at a minimum, the following examinations:

- A medical examination to include detailed work and medical histories, with particular attention to past lead exposure (both occupational and non-occupational), personal habits (e.g., smoking and hygiene), and past gastrointestinal, hematological, renal, cardiovascular, reproductive, and neurological problems.
- A thorough physical exam with particular attention to gums, teeth, gastrointestinal, hematological, renal, cardiovascular, reproductive, and neurological systems.
- A blood pressure measurement.
- A blood sample and analysis to determine blood lead level, hemoglobin, and hematocrit determinations, red cell indices and an exam of peripheral smear morphology, zinc protoporphyrin, blood urea nitrogen, and serum creatinine.
- A routine urinalysis with microscopic exam.
- Other tests as determined by the physician.

The exposed employee will be re-evaluated after two months.

- In the event the blood lead level is below 40µg/dl, no further re-evaluation is needed.
- If the blood lead level remains above 40µg/dl, the exposed employee will be re-evaluated every six months thereafter until a blood test reveals a blood lead level of below 40µg/dl.

The Badger Swim pools Safety Department will provide all treating physicians with a copy of the OSHA Lead Standard.

Disposal of Lead Containing Materials and Waste

Badger Swim pools shall coordinate with local and/or state authorities to determine the proper procedures for disposal of lead containing materials. All lead waste shall be stored in properly marked, sealed containers in accordance with local jurisdiction requirements while awaiting transportation.

Working in Regulated Areas

Per State and Federal laws, areas where children reside must be protected against potential lead exposure during renovation activities. These areas include, but are not limited to, residences (including apartments), preschool facilities, and kindergarten schools. The Project Manager must notify the Safety Department prior to any work in these facilities which may disturb more than six square feet of paint.

Silica

Refer to CDI Respirable Crystalline Silica Program within this handbook.

Hexavalent Chrome

General

Badger Swim pools employees can potentially be exposed to hexavalent chromium in many different scenarios. Industrial uses of hexavalent chromium compounds include chromate pigments in dyes, paints, inks, and plastics; chromates added as anti-corrosive agents to paints, primers, and other surface coatings; and chromic acid electroplated onto metal parts to provide a decorative or protective coating.

Hexavalent chromium can be formed when performing "hot work," such as welding on stainless steel or melting chromium metal. In this situation, the chromium is not originally hexavalent, but the high temperatures involved in the process result in oxidation that converts the chromium to a hexavalent state.

Occupational exposures occur mainly among employees who handle pigments containing dry chromate, spray paints and coatings containing chromate, operate chrome plating baths, and weld or cut metals containing chromium, such as stainless steel.

Badger Swim pools employees who breathe hexavalent chromium compounds at their jobs for many years may be at increased risk of developing lung cancer. Breathing high levels of hexavalent chromium can irritate or damage the nose, throat, and lungs. Irritation or damage to the eyes and skin can occur if hexavalent chromium contacts these organs in high concentrations or for prolonged periods of time.

Exposure Determination

- Initial exposure monitoring must be conducted to document worker breathing-zone exposures over the course of a full shift. A representative 8-hour TWA sample shall be collected to determine employee exposure for each job classification in each work area.
- Air monitoring will be performed at the beginning of each job task.
- Exposure determinations must follow the current, accepted sampling and analytical method equivalent to that used by OSHA.
- Sample media used for Cr VI monitoring will be analyzed using an industrial hygiene laboratory accredited by the American Industrial Hygiene Association (AIHA). An equivalent laboratory accreditation can be substituted in countries that do not have an AIHA-accredited industrial hygiene laboratory.
- Periodic monitoring of workers is required at least every six months when the initial monitoring indicates TWA results are equal to or greater than the Action Level (AL) but below the Permissible Exposure Limit (PEL).
- When initial monitoring results are greater than the PEL, additional periodic monitoring, at least quarterly, for each worker involved is required.
- Periodic monitoring every six months or quarterly may be halted when two consecutive samples taken at least seven days apart are equal to or below the AL.
- When monitoring results fall below the AL, monitoring may be suspended.
- Additional monitoring is required when there has been a change in production process, control equipment, personnel, or work practices that may result in new or additional exposures.
- A performance-oriented option may be used to determine the initial 8-hour TWA exposure for each worker on the basis of any combination of air monitoring data, historical monitoring data, or objective data sufficient to accurately characterize exposure to Cr VI.
- Workers shall be informed in writing of exposure monitoring results within five working days after receipt of the results.
- When the PEL has been exceeded, notification to the affected worker shall include the control measures utilized to reduce the exposure to below the PEL.

Methods of Compliance

Engineering and work practice controls must be applied to reduce the Cr VI worker exposure level to below the OSHA PEL unless it can be demonstrated that such controls are not feasible. Rotating employees to different jobs shall not be used to achieve compliance with the PEL. Methods of compliance in the hierarchy of controls include the following:

- Substitution – Gas tungsten arc welding (GTAW) instead of shielded metal arc welding (SMAW) or fluxcored arc welding (FCAW).
- Engineering controls – Mechanical ventilation to remove fumes from the breathing zone.
- Administrative controls – Safe work practices for the worker on proper positioning to minimize fume trail in their breathing zone, either through positioning upwind in an open area or in proper alignment with ventilation controls.
- Personal protective equipment (PPE) – Use of respiratory protection as the last resort in reducing exposure or as an interim measure until substitution can be applied or engineering controls installed.

Respiratory Protection

Where engineered controls are infeasible, respiratory protection will be provided by Badger Swimpools and worn by the worker sufficient to reduce the exposure to below the Cr VI action level. Respiratory protection will be used only as a last resort to ensure that worker exposure to Cr VI is maintained below the action level, or as an interim measure while applying substitution of materials or processes, implementation of work practice controls, or installation of mechanical ventilation. When employee exposures are above the PEL for no more than 30 days per year (12 consecutive months) from a particular process or task, respiratory protection can be primarily relied upon to ensure employee exposure is maintained below the PEL. The elements of the respiratory protection program must comply with Badger Swimpools Respiratory Protection Policy.

Personal Protective Equipment (PPE) and Work Clothing

Personal protective equipment and work clothing shall be provided to workers, at no cost to them, where an eye or skin hazard to Cr VI may exist. The elements of the PPE and work clothing program must comply with Badger Swimpools Personal Protective Equipment Policy, and Eye and Face Protection. Key elements for an appropriate protective work clothing program are highlighted in Badger Swimpools PPE Policy and Procedure.

Hygiene Areas and Practices

Where work clothing is required to be worn in place of street clothing to prevent skin exposure to Cr VI, change rooms and washing facilities must be provided. Change rooms must include separate storage facilities for work clothing and for street clothes. Washing facilities must be readily accessible to workers, and must be used by them at the end of the work shift and prior to eating, drinking, smoking, chewing tobacco or gum, applying cosmetics, or using the toilet. An area on the worksite must be designated to be free of Cr VI for workers to consume food or beverages.

General Work Practices and Housekeeping

Work areas or project sites where Cr VI can potentially expose workers must implement and follow work practices to maintain acceptable housekeeping conditions to minimize contact or exposure. General work practices and housekeeping must include the following:

- All surfaces must be maintained as clean as practical to minimize accumulation of Cr VI containing substances, dust or particles.
- All spills and releases of Cr VI containing material must be cleaned up promptly.
- Surfaces contaminated with Cr VI must be cleaned with HEPA-filter vacuuming or equivalent methods or practices that minimize the potential for worker exposure.
- Avoid using compressed-air, dry shoveling, dry sweeping, or dry brushing, and use only when a HEPA-filter vacuum system or equivalent method has been tried and found to be not effective.

- Collection of waste, scrap, debris, or other materials contaminated or containing Cr VI must be in impermeable containers or bags and labeled meeting hazard communication requirements described in Badger Swimpools' Hazard Communication.
- Waste containing significant amounts of chromium may be subject to hazardous waste regulations and the corresponding generation, treatment, and disposal requirements.

Medical Surveillance

Employees who are or will be potentially exposed to airborne Cr VI above the action level for at least 30 days per year, without regard to respirator use, will participate in Badger Swimpools Cr VI medical surveillance program.

Further participation in periodic Cr VI medical surveillance will be based on exposure conditions (such as an emergency or when a worker shows signs or symptoms of exposure), conducted annually, or within a specified frequency determined by a consulting physician (or equivalent), and at termination of employment.

Subcontractors are responsible for their workers receiving medical surveillance for Cr VI as required by regulatory requirements, contract, or their own company's requirements.

Training Requirements

Workers who may be exposed to airborne Cr VI above the action level (or anticipate working on projects where they could be exposed to airborne Cr VI above the action level), or to soil that contains elevated levels of Cr VI, must complete initial Cr VI exposure training. This training covers the following information:

- Where Cr VI is typically encountered at Badger Swimpools projects.
- The regulatory requirements, exposure limits, potential hazards including toxicity and physical characteristics, and medical monitoring requirements.
- For site-specific Cr VI hazards, discussion on the location and tasks associated with potential exposure and associated control measures.
- Information contained in the site-specific Health, Safety, and Environmental Protection Plan or Job Hazard Analysis created for the project.
- Quantity, location, manner of use, storage, sources of exposure, and the specific nature of operations that could result in exposure to Cr VI, as well as any necessary protective steps.
- Purpose, proper use, and limitation of respirators.
- Purpose and a description of the medical surveillance program.
- Engineering controls and work practices associated with the employee's job assignment.
- A review of this program.

Each worker must be provided with a copy of the OSHA Chromium Standard (General Industry and/or Construction) and appendices, if requested.

Hazardous Material Recordkeeping

An accurate record of all worker personal air sampling and other air monitoring related to determining Hazardous Material exposure for Badger Swimpools employees must be completed and maintained that includes the following:

- Industrial hygiene sampling surveys
- Specific information on the sample date, worker(s) sampled, job classification, process or task sampled, materials used, PPE worn, sample duration, air sampling, and analytical method

For historical monitoring data, an accurate record of the determination must include the following information:

- Confirmation that the data was collected using acceptable sampling and analytical methods
- Description of the process that matches the task, conditions, materials, equipment, and process for which the exposure is being determined

Badger Swimpools, Inc.

Written Silica Exposure Control Plan

Program Administration

This program was developed to help minimize, if not eliminate employee exposure to respirable silica. Our competent person for this program is the Director of Field Operations. This program will be reviewed and evaluated annually by the Director of Field Operations, to determine its effectiveness. This review will determine if there are any additional silica producing tasks we perform that were not previously identified. This review will also determine if existing controls and equipment use are being followed per this program and manufacture specifications. This annual review and evaluation will be documented to include the date it was conducted, and if any changes are being made to the program. This will be documented on the Annual Program Review and Evaluation Form.

Tasks/Controls for Potential Silica Exposure

Our evaluation of potential exposures has identified that we will be able to adhere to the Specified Exposure Control Methods listed in Table 1 of OSHA 1926.1153 Respirable Crystalline Silica. The list of tasks our annual review and evaluation identified along with the controls are listed in the table below;

Tasks with Potential Silica Exposure	Implemented Controls/Work Practices per Table 1 of 1926.1153
Overhead drilling into cast-in-place or precast concrete	<ol style="list-style-type: none"> 1) Use of drill equipped with commercially available shroud/cowling with dust collection system. 2) Operate tool in accordance with manufacturer's instructions to minimize dust 3) Dust collection must meet flow rate recommended by manufacture with a filter with 99% or greater efficiency. 4) Cleaning of filter/shroud/catch basin must be done within sealed bag to eliminate exposure of residual dust.
Core drilling in cast-in-place or precast concrete	<ol style="list-style-type: none"> 1) Use drill with integral water system. 2) Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.

Description of Housekeeping Measures to Reduce Silica Exposure

Housekeeping to remove silica containing dust must be done using wet sweeping or HEPA filtered vacuuming.

Dry sweeping/dry brushing or use of compressed air to clean-up silica containing dust will not be allowed.

Vacuums used for Housekeeping and Tools with Dust Collection Systems

Only vacuums with HEPA filters and filter cleaning mechanisms can be used for vacuuming as part of housekeeping requirements and for tools listed in Table 1 that require dust collection systems.

All emptying of vacuum canisters must be done in a manner that does not produce any airborne dust. Our procedure for emptying vacuum canisters will be.....

Protection of others

When we are drilling, cutting, grinding, or performing other dust producing activities on silica containing material, no other workers should be in the area. Work generating suspected silica dust by other trades working near us that is not properly controlled will result in our employees evacuating the work area until such time the exposure no longer exists and any residual silica dust is properly cleaned-up.

Job Site Inspections

The Director of Field Operations will conduct regular job site inspections to evaluate work practices, changes in materials in use, and equipment to make sure the controls in this program are being met. These job site inspections will be documented on the Job Site Inspection Form.

Training

All employees with potential silica exposure will be required to review this program. Training will be provided to cover the following topics;

- 1) The hazards of silica exposure.
- 2) How to properly use, maintain, and safely clean the equipment we have chosen to protect our workers.
- 3) Control measures to help avoid silica exposure generated by others, proper personal hygiene, and housekeeping practices to avoid silica exposures.

This training will be documented on the Employee Training Log.

Program Availability

This program and a copy of it will be made available to all employees and designated representatives upon request.

Annual Program Review and Evaluation Form

On this date, this program was reviewed to determine if the tasks listed in this program are still being completed and if any additional tasks have been added to our daily activities that could pose potential silica exposure. At this time, we also evaluated the current effectiveness of the controls we put in place.

Check one of the three boxes below.

No additional silica exposures were identified during this review and evaluation.

Additional tasks were identified with the following tasks and controls added to the table above. Those tasks are;

Tasks that were previously listed in this program are no longer performed and are being removed from the table. Those tasks are;

Printed Name

Signature

Date

Job Site Silica Inspection Form

Job Site Evaluated: _____

List the task(s) that were evaluated for potential silica exposure

1) _____

2) _____

3) _____

List the equipment used to control potential silica exposure as part of this evaluation

1) _____

2) _____

3) _____

List the material(s) worked on that might contain silica

1) _____

2) _____

3) _____

Controls adequate for tasks performed? (If not list corrective action below)

Equipment being used properly? (If not list corrective action below)

Housekeeping controls adequate? (If not list corrective action below)

Printed Name of Competent Person

Signature

Date

Employee Training Log

This Silica Exposure Control Plan was reviewed with me and I understand the requirements of this program.

I have also received training on the following topics;

- 1) The hazards of silica exposure
- 2) How to properly use, maintain, and safely clean the equipment we have chosen to protect us.
- 3) Control measures to help avoid silica exposure when it is generated by others, proper personal hygiene I should be using, and proper housekeeping practices to avoid silica exposure.

Printed Name

Signature

Date

RESPIRATORY PROTECTION PROGRAM

Badger Swimpools is committed to providing a safe and healthy workplace. This program will help in providing protection against harmful airborne contaminants.

Definitions

The following terms are used in the OSHA respiratory protection standard and/or in this written program.

Air-purifying respirator - A respirator with an air-purifying filter or cartridge that removes specific air contaminants by passing ambient air through the air-purifying element.

Approved - Tested and listed as satisfactory by the National Institute for Occupational Safety and Health (NIOSH), or the Mine Safety and Health Administration (MSHA).

Atmosphere-supplying respirator - A respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere. Included are supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.

Cartridge - A container with a filter, sorbent, or catalyst that removes specific contaminants from the air.

Demand respirator - An atmosphere-supplying respirator that allows breathing air to the face piece only when a negative pressure is created inside by inhalation.

Emergency - An unplanned event requiring immediate use of a respirator for escape from or entry into a hazardous atmosphere to carry out maintenance or some other task. May or may not include clean-up, maintenance, or repair in unknown contaminant concentrations or oxygen deficiency.

Emergency situation - Any occurrence, such as equipment failure, rupture of containers, or failure of control equipment that may or does result in an uncontrolled release of an airborne contaminant.

Employee exposure - An exposure to a concentration of an airborne contaminant that would occur if the employee were not wearing a respirator.

End-of-service life indicator (ESLI) - A system that warns the user that the end of adequate respiratory protection is approaching. For example, a sorbent that is approaching saturation or that is no longer effective.

Escape-only respirator - A respirator intended only for emergency exit.

Filter or air-purifying element - A component used in respirators to remove solid or liquid aerosols from the air.

Filtering face piece (dust mask) - A negative pressure particulate respirator with the filter as an integral part of the face piece or with the entire face piece composed of the filter.

Fit factor - A quantitative estimate of the fit of a respirator to a specific individual. Typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator.

Self-Contained Breathing Apparatus (SCBA) - An atmosphere-supplying respirator where the user carries the breathing air source.

Service life - The period of time that a respirator, filter, or sorbent provides adequate protection to the wearer.

Supplied-Air Respirator (SAR) or airline respirator - An atmosphere-supplying respirator where the source of breathing air is not carried by the user. Typically, an approved air hose supplies the air.

Tight-fitting face piece - A respiratory inlet covering that forms a complete seal with the face.

User seal check - An action conducted by the respirator user to determine if the respirator is properly seated to the face.

Purpose

The purpose of this Respiratory Protection Program is to ensure that all employees of Badger Swimpools who may be exposed to respiratory hazards are provided with the proper protection through training, distribution, and use of respiratory protection. Respirators shall be used when atmospheric contaminants are present and where effective engineering controls are not feasible or adequate. Respirators may also be used as an interim measure while controls are developed. Accepted engineering controls, such as enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials, must be the primary methods used to reduce employee exposure and prevent atmospheric contamination. Respirators, training, and medical evaluations shall be provided at no cost to the employee.

Implementation

Badger Swimpools Respiratory Protection Program shall be implemented whenever it has been determined that an employee's exposure to dusts, mists, fumes, or gases/vapors exceeds the action level of established limits set by OSHA (permissible exposure limit – PEL) or the ACGIH (threshold limit value – TLV); or the atmosphere in the work area becomes oxygen deficient (less than 19.5%) and engineering controls cannot be implemented; or temporarily while engineering controls are being put into place.

Responsibilities

Safety

- Maintain and interpret Respiratory Protection Standard.
- Provide employee training as required.
- Perform employee respiratory fit testing.
- Respiratory program administrator shall be named by position or job title, and this individual must be knowledgeable of the complexity of the program, able to conduct evaluations and have received the proper training.

Management

- Maintain and implement a Respiratory Protection Standard.
- Provide appropriate respiratory protection when such equipment is necessary to protect employee health.

Employee

- Use assigned respiratory protective equipment in association with the safety procedures outlined in this program.
- Care for, clean, and guard against damage to their assigned respirator.

- Report any malfunction or need for parts for their respirator to their supervisor.

Documentation Required

To comply with 29 CFR 1910.134 – Respiratory Protection, the following materials must be kept on file. Recordkeeping and records of medical evaluations must be retained and made available in accordance with 29 CFR 1910.1020. These records and medical evaluations are kept by the Safety Department.

Written Program

A written program detailing steps to come into compliance with the Respiratory Protection Standard will be kept on record and made available to employees.

Training Program

All training given to employees shall be documented and retained on record.

Medical Records

All employee medical records pertaining to this program shall be kept up-to-date and on file.

Fit Testing Records

Records of each affected employee's fit testing results shall be kept on file and updated annually.

Program Evaluations

Annual program evaluations shall be kept on file for future reference.

Respiratory Hazards

There are two very distinct categories of respiratory hazards that must be considered when analyzing any work area. These are toxic contaminants (dusts, mists, fumes, etc.) and oxygen deficiencies. Both of these categories may coexist with each other, creating even more hazardous work conditions.

Toxic Contaminants

Particulate Contaminants – Made up of very small particles of a substance, usually small enough to float in the air, which makes them easy to inhale.

Dusts – Solid particles generated by handling, grinding, or crushing materials such as rock, ore or wood (e.g. breaking cast iron produces dust).

Fumes – Formed through the condensation of solid particles from a gaseous state (e.g. heating metals by welding, torching or brazing).

Mists – Finely divided and suspended liquid droplets generated by spraying, mixing, atomizing, or agitating liquids (e.g. spray painting).

Gaseous Contaminants

Gases – Invisible in form and can readily mix with the air we breathe. Has the ability to change form depending on the environmental conditions it is in (e.g. carbon dioxide is a gas at room temperature, a solid "dry ice" at low temperature, and a liquid if pressurized).

Vapors – Formed through the evaporation of liquids. The characteristics of vapor are the same as those of the substance from which they were formed.

Oxygen Deficiency

Atmospheres are considered "oxygen deficient" when the concentration of oxygen in the air falls below 19.5% (at standard temperature and pressure). Oxygen deficient atmospheres are considered Immediately Dangerous to Life

and Health (IDLH), and are restricted from human occupancy unless respiratory protective equipment is supplied. There are two ways that oxygen deficient atmospheres are created:

- Oxygen is used up – Oxygen may be used up in the area by natural means (rusting of metal, decomposition of organic matter, etc.), or by chemical reaction (fire, welding, etc.).
- Oxygen is displaced – Other gases, which are heavier or lighter than oxygen, may displace oxygen. Heavier gases may seep into low areas forcing oxygen out, or lighter gases may float into high areas also forcing oxygen out.

Combination Atmospheres

All of the atmospheric conditions described above have the capability of occurring in conjunction with each other (e.g. Paint spraying produces paint mist, solvent vapors, and may create an oxygen deficient atmosphere if proper ventilation is not provided). All of these conditions must be considered when applying respiratory protective equipment.

Immediately Dangerous to Life and Health (IDLH)

An atmosphere is classified as IDLH when the concentrations of contaminants are so high that serious injury or death may occur from either acute (short term) or chronic (long term) exposure, or if the oxygen level is reduced enough to make it uninhabitable for human life. Under no circumstances will an employee enter a confined space classified as IDLH. Steps must be taken to purge the atmosphere and remove the hazardous contaminants from the confined space prior to entry.

Evaluation of Hazards

Once the hazardous substances present in the work area have been identified, it is necessary to evaluate the concentrations of these materials in the “breathing zone” of each employee. This information, when used together with the identification of the substances, will be used to select the proper respiratory protective equipment.

Gaseous and Vapor Contaminants

Gases and vapors are typically measured in parts per million (ppm) or parts per billion (ppb). This is the parts contaminant per million or billion parts of air. The following instruments may be used to quantify the concentration of contaminants:

- Detector Tubes – Available for most of the gases found in a working environment. Only detector tubes approved by NIOSH should be used. Results from detector tubes should not be considered conclusive, but should only be used as a screening device to determine if further testing is merited.
- Personal Monitors – Personal badges worn by employees near their breathing zone may be worn to determine an employee’s time weighted average (TWA) exposure to a contaminant. The badges should be sent to an independent lab for evaluation.

Particulate Contaminants

Most particulate contaminants are measured in milligrams per cubic meter (mg/m^3), which is the milligrams of contaminant per cubic meter of air, or fibers per cubic centimeter (f/cm^3). There are very few direct reading instruments available for particulates. Those that are available are only able to detect total particulate concentration in the air, not the concentration of individual contaminants. The most accurate method is to use an air-sampling pump with a specific type of collection media for the contaminant screened for, followed up by lab analysis. This should be used when the total dust levels are measured in excess of the PEL/TLV levels established for the suspected or known contaminants.

Interpretation of Results

The results of the testing performed above should be compared with the PEL (OSHA) or the TLV (ACGIH) set for the particular contaminant to determine if there is a harmful exposure to employees, and what level of protection should be provided. In the event that a contaminant concentration is close to the TLV/PEL, the level that allows the most protection shall be used. For a list of limits for air contaminants, see FED-OSHA 29 CFR 1910.1000, Table Z-1, Z-2 and Z-3.

Types of Respirators

There are many different types of respiratory protective equipment available for use by employees. The use of each type depends on the type and concentration of the contaminant, environmental factors which are present, the amount of oxygen in the air, and the physical condition and layout of the work area.

Filtering Facepiece Respirators

A negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium.

Full-Face Air-Purifying Respirators

This type of respirator uses a face-shield to protect the face and eyes from irritants and contaminants. They provide more protection than half-face respirators and can be used for protection against most vapors, acid gases, dust or welding fumes. Cartridges/filters must match contaminant(s) and be changed periodically.

Half-Face Air-Purifying Respirators

This type of respirator covers the face from underneath the chin to just above the nose. Air is pulled into the respirator from the outside through one or two filters, which remove the contaminants before they can be inhaled. Employees may use half-mask respirators while torching/welding, or when involved in paint spraying operations.

Powered-Air Purifying Respirators (PAPR)

PAPR systems offer breathing comfort from a battery-powered fan which pulls air through filters and circulates air throughout helmet/hood. Cartridges/filters must match contaminant(s) and be changed periodically.

Supplied-Air Respirators

This type of respirator uses a central supply of breathing air, which is delivered to the employee through an air supply line or hose connected to an air pump.

Self-Contained Breathing Apparatus

The SCBA allows the user to carry a breathing air supply with him/her. This air supply may last from three minutes to four hours depending on the type of unit being used (escape vs. full air).

Operation – This type of SCBA exhausts the air used by the employee into the atmosphere after use instead of recirculating it. A tank of air carried on the back supplies air through a regulator to the face piece. Since there is no recirculation of air, the service life of the open-circuit SCBA is shorter than closed-circuit systems. The regulator and valve design of the SCBA creates positive pressure in the face piece at all times regardless of the demand of the user. This means that there is no problem with contaminant leakage into the face piece.

Condition of Use – Due to the fact that they supply a respirable supply of breathing air, all SCBAs may be used in oxygen deficient atmospheres, as well as to combat particulates, vapors, and gases. Approvals for SCBA use as stated in equipment information are based on:

- Entering into and escaping from a hazardous atmosphere.
- Escape only from hazardous atmosphere.
- The work setting.

When using the SCBA, the approval label should be checked to be certain of the conditions of use.

Limitations – The limitations of open-circuit, pressure-demand SCBAs are:

- The air supply is limited to the amount in the cylinder, so it cannot be used for extended periods of time without replacing or recharging the air supply.
- It is very bulky and heavy and is often unsuitable for strenuous work in confined spaces.

Air Quality Reports – Air quality reports should be received from the vendor with each shipment of breathing air. They must certify that the breathing air meets the requirements set forth for Grade D breathing air by the Compressed Gas Association. These requirements are:

- Oxygen content must be between 19.5% and 23.5% with the remaining air being mostly nitrogen.
- Hydrocarbon concentrations must not exceed 5 ppm.
- Carbon monoxide concentrations must not exceed 20 ppm.
- Carbon dioxide concentrations must not exceed 1000 ppm.
- There must not be any pronounced odor present.

Selection of Respirators

The selection of respirators is based on the type, concentration, and characteristics of the contaminant, the oxygen level in the work area, and NIOSH recommendations for the limitations, capabilities, and protection factors of the available equipment.

Respiratory protection equipment used at Badger Swim pools shall be limited to that which is approved by the National Institute of Occupational Safety and Health (NIOSH) and the Mine Safety and Health Administration (MSHA).

Respirator Fit

Proper respirator fit is essential to the effectiveness of the respirator. Even the tiniest gap between the respirator seal and the face could result in contaminated air seeping in, and, consequently, the employee breathing in the contaminant. At times, even the smallest amount of a contaminant is enough to cause serious harm or even death.

Proper Respirator Fit

- Respirator should fit securely to the face, but not too tightly around the chin.
- The respirator should not pinch the nose, and should not slip.
- The respirator should leave enough room around the facial area to allow the moving of the head in order to talk.

Testing the Face Seal

Testing the seal of a respirator should be performed each time the respirator is put on to make sure there is no chance any contaminant can get in.

Positive Pressure Test – Close the respirator’s exhalation valves and breathe out gently. The face piece should bulge slightly, and it should have no air leaks for at least 10 seconds.

Negative Pressure Test – Close the inhalation valves on the respirator and breathe in gently. The face piece should collapse slightly, and should have no air leaks for at least 10 seconds.

Restrictions of Respirator Use

Hair – Stubble, mustaches, sideburns, beards, low hairlines, and bangs that pass between the face and sealing surface of a respirator will produce a break in the respirator seal. This will allow the introduction of contaminants to the employee. Employees with any of these hair conditions must modify their hair to correct this condition prior to respirator use.

Spectacles – Corrective spectacles or goggles must be worn in a manner that will not interfere with the seal of the respirator to the employee’s face. Special mounting brackets for lenses may have to be purchased for the respirators.

Employee Medical Monitoring

Using a respirator may place a physiological burden on employees that vary with the type of respirator worn, the job and workplace conditions in which the respirator is used, and the medical status of the employee. This section covers all employees of Badger Swim pools fabrication shops who work in an area that requires the use of respiratory protection.

Medical Evaluation Procedures

A physician or other Licensed Health Care Professional (PLHCP) shall use a medical questionnaire for the initial evaluation. A follow-up medical exam will be provided for the employee as determined by the designated PLHCP. The medical questionnaire and examinations shall be administered confidentially during the employee’s normal working hours. The PLHCP will make a recommendation regarding the employee’s ability to wear a respirator.

Information includes:

- Any limitations on respirator use related to the medical condition of the employee.
- Any limitations related to the workplace conditions in which the respirator will be used.
- Whether there is a need for follow-up evaluations.
- A statement that the PLHCP has provided the employee with a copy of the recommendation.

Information for the PLHCP

The following information must be provided to the PLHCP before the PLHCP makes a recommendation concerning an employee’s ability to use a respirator.

- The type and weight of the respirator to be used by the employee.
- The duration and frequency of respirator use.
- The expected physical work effort.
- Additional protective clothing and equipment to be worn.
- Temperature and humidity extremes that may be encountered.
- The PLHCP shall be provided with a copy of the written Respiratory Protection Program.

Additional Medical Evaluations

Reevaluation may occur if any of the following exists:

- The employee reports medical signs or symptoms that are related to the ability to wear a respirator.
- A PLHCP, or the respirator program administrator, informs management that an employee needs to be reevaluated.
- If observations made during fit testing and program evaluations indicate a need for an employee to be reevaluated.

- If a change occurs in workplace conditions that may result in a substantial increase in the physiological burden placed on an employee.

Employee Fit Testing

The proper fit is essential to the effectiveness of an assigned respirator. Without the proper fit, a respirator can give the wearer a false sense of security causing that person to enter work areas with contaminated air. To prevent this from happening, each worker required to wear a respirator shall be properly fit tested prior to respirator use.

- Prior to using any respirator, the employee must be fitted to the specific respirator being used by qualitative and/or quantitative fit testing.
- Things that can affect the seal must be prohibited, and include facial hair, glasses, etc.
- The seal must be checked each time the unit is put on.

Respirator Cleaning and Maintenance

Replacing Respirator Filter Cartridges

Each employee shall be required to leave the work area and replace filter cartridges whenever a significant increase in breathing resistance is detected.

An adequate supply of filter cartridges will be kept on hand at all times.

Cleaning and Disinfecting

Every employee who is required to wear a respirator is responsible for its regular cleaning and disinfecting.

To properly clean a respirator:

- Completely disassemble the respirator and wash with detergent in warm water (use soft brush).
- Rinse thoroughly in clean water.
- Air-dry in a clean place.
- Each respirator should be handled carefully while cleaning to prevent damage. Alcohol wipes should not be used to clean a respirator, as they may damage it.

To disinfect:

- Immerse the respirator in a water/bleach solution (one teaspoon bleach per two quarts water) for a couple of minutes.
- Rinse in warm, clean water.
- Air-dry in a clean place.
- Once clean, each respirator should be placed into a clean plastic bag, then be placed in a dry, sanitary storage location, such as a cabinet.

Respirator Inspections

Respirators shall be inspected regularly (before each use), as they can pose a serious hazard to their wearer if they are damaged. Supervisors should also perform spot inspections to see that procedures are being followed.

Air-Purifying Respirators

- Face Piece
 - Excessive dirt
 - Cracks, tears, holes or physical distortion of shape from improper storage
 - Inflexibility of rubber face piece
- Head Straps
- Breaks in the straps
- Loss of flexibility
- Broken or malfunctioning buckles or attachments
- Worn serrations on straps (may cause slippage)

- Exhalation Valve
 - Foreign material under valve seat
 - Cracks, tears, or distortion of valve material
 - Improper insertion of valve body into face piece
 - Cracks or chips in valve body
 - Missing or defective valve cover
- Air-Purifying Element
 - Incorrect filter cartridge for hazard
 - Incorrect installation, missing or worn gasket, or cross threading on holder
 - Check shelf-life on the cartridge

Supplied-Air Respirators

- Hood and Helmet
- Examine hood for rips and tears
- Examine helmet for general condition and suspension system inside
- Examine face shield for cracks, breaks, or scratches
- Protective screen must be secured correctly to helmet
- Air-Supply System
- Airline hoses and supply hoses, end fittings, and attachments for cracking, scuffs, etc.
- Check regulators for correct operation
- Check all valves for proper operation

Self-Contained Breathing Apparatus (SCBA)

For all SCBA, inspection should include all those criteria listed above, plus:

- **High-Pressure Cylinder** – The cylinder should be routinely checked to make sure that it is charged enough for the tasks it will be used for.
- **Open-Circuit SCBA** – Make sure that the cylinder is recharged if less than 25% of the useful service time remains.
- **Air Certification** – A written certificate of air quality must accompany each delivery of breathing air. If this certificate is not with the delivery, **Do Not Accept**.

Parts Repair and Replacement

Qualified personnel shall only conduct maintenance of respirators. All manufacturers' instructions for maintenance must be followed, and only replacement parts supplied by the manufacturer of the respirator in question shall be used. Using parts from other brands of respirators is forbidden.

Employee Training

Each employee involved in the Respiratory Protection Program of Badger Swimpools will receive proper training. Employees required to use Self-Contained Breathing Apparatus or work in an IDLH atmosphere must receive specific training relating to the respirator and hazards present. The minimum contents of this training are outlined below.

Content

Badger Swimpools shall ensure that each employee can demonstrate knowledge of at least the following:

- Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator.
- What the limitations and capabilities of the respirator are.
- How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions.
- How to inspect, put on and remove, use, and check the seals of the respirator.
- What the procedures are for maintenance and storage of the respirator.

- How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.
- The general requirements of this program.
- To verify written program effectiveness, employees must be asked about fit, selection, use, maintenance, etc.

Frequency

Retraining shall be administered annually, and when the following situations occur:

- Changes in the workplace or the type of respirator render previous training obsolete.
- Inadequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the requisite understanding or skill.
- Any other situation arises in which retraining appears necessary to ensure safe respirator use.

Respiratory Protection Program (Rev 2022)

Badger Swimpools Respiratory Protection Program
Voluntary Respirator Use Agreement

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations. NOTE: air filtering/ purifying respirators DO NOT supply oxygen. Do not use in situations where the oxygen levels are questionable or unknown.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

Employee Information (Please print clearly)

Employee Name (Last, First)	Department/ Shop
Respirator Type: <input type="checkbox"/> Filtering facepiece (e.g.: N95, dust mask) <input type="checkbox"/> Other:	

I have read and understood the information provided above regarding voluntary respirator use.

Employee Signature

Date

COMPRESSED GAS CYLINDERS

Compressed gas cylinders are designed and constructed to withstand high pressures. Improper handling and/or use of compressed gas cylinders can lead to serious incidents / injury. This compressed gas cylinder program provides guidelines for the safe transportation, storage, use and handling of compressed gas cylinders.

Transporting, Moving and Storing Compressed Gas Cylinders

- Valve protection caps shall be in place and secured.
- When cylinders are hoisted, they shall be secured on an approved cart with lifting eye, cradle, slingboard or pallet. They shall not be hoisted or transported by means of magnets or choker slings.
- Cylinders shall be moved by tilting and rolling them on their bottom edges. They shall not be intentionally dropped, struck, or permitted to strike each other violently.
- When cylinders are transported by powered vehicles, they shall be secured in a vertical position.
- Valve protection caps shall not be used for lifting cylinders. If caps are frozen or stuck, they shall not be pried off. Instead, use warm (not boiling) water.
- Unless cylinders are firmly secured on a special carrier intended for this purpose, regulators shall be removed and valve protection caps put in place before cylinders are moved.
- A suitable cylinder truck, chain, or other steadying device shall be used to keep cylinders from being knocked over while in use.
- The cylinder valve shall be closed when work is finished, when cylinders are empty, or when cylinders are moved at any time.
- Compressed gas cylinders shall be secured in an upright position at all times except (if necessary) for short periods of time while cylinders are actually being hoisted or carried.
- Oxygen cylinders in storage shall be separated from fuel-gas cylinders or combustible materials (especially oil or grease) by a minimum distance of 20 feet or by a noncombustible barrier at least 5 feet high and having a fire-resistance rating of at least one-half hour.
- Inside of buildings, cylinders shall be stored in a protected, well ventilated, dry location, at least 20 feet from highly combustible materials such as oil or excelsior. Cylinders should be stored in assigned places away from elevators, stairs, or gangways. Assigned storage places shall be located where cylinders will not be knocked over or damaged by passing or falling objects, or subject to tampering by unauthorized persons.

Placing Cylinders

- Cylinders shall be kept far enough away from the actual welding or cutting operation so that sparks, hot slag, or flame will not reach them. When this is impractical, fire resistant shields shall be provided.
- Cylinders shall be placed where they cannot become part of an electrical circuit. Electrodes shall not be struck against a cylinder to strike an arc.
- Fuel gas cylinders shall be placed with valve end up whenever they are in use. They shall not be placed in a location where they would be subject to open flame, hot metal, or other sources of artificial heat.
- Cylinders containing oxygen or acetylene or other fuel gas shall not be taken into confined spaces.

Treatment of cylinders

- Cylinders, whether full or empty, shall not be used as rollers or supports.
- Never attempt to mix gases or refill a cylinder.
- Never use a damaged or defective cylinder.
- No one shall use a cylinder's contents for purposes other than those intended by the supplier.

Use of Fuel Gas

- Before a regulator to a cylinder valve is connected, the valve shall be opened slightly and closed immediately. (This action is generally termed “cracking” and is intended to clear the valve of dust or dirt that might otherwise enter the regulator.) The person cracking the valve shall stand out of the way of the outlet. The valve of a fuel gas cylinder shall not be cracked where the gas would reach welding work, sparks, flame or other sources of ignition.
- The cylinder valve shall always be opened slowly to prevent damage to the regulator. For quick closing, valves on fuel gas cylinders shall not be opened more than 1 ½ turns. When a special wrench is required, it shall be left in position on the stem of the valve while the cylinder is in use so that the fuel gas flow can be shut off quickly in case of an emergency. In the case of manifold or coupled cylinders, at least one such wrench shall always be available for immediate use. Nothing shall be placed on top of a fuel gas cylinder when in use, which may damage the safety device or interfere with the quick closing of the valve.
- Fuel gas shall not be used from cylinders through torches or other devices that are equipped with shutoff valves without reducing the pressure through a suitable regulator attached to the cylinder valve or manifold.
- Before a regulator is removed from a cylinder valve, the cylinder valve shall always be closed and the gas released from the regulator.
- If, when the valve on a fuel gas cylinder is opened, there is found to be a leak around the valve stem, the valve shall be closed and the gland nut tightened. If this action does not stop the leak, the use of the cylinder shall be discontinued, and it shall be properly tagged and removed from the work area. In the event that fuel gas should leak from the cylinder valve, and the gas cannot be shut off, the cylinder shall be properly tagged and removed from the work area. If a regulator attached to a cylinder valve will effectively stop a leak through the valve seat, the cylinder need not be removed from the work area.
- If a leak should develop at a fuse plug or other safety device, the cylinder shall be removed from the work area.

Fuel Gas and Oxygen Manifolds

- Fuel gas and oxygen manifolds shall bear the name of the substance they contain. The sign letters should be at least 1-inch high and be either painted on the manifold or on a sign permanently attached to it.
- Fuel gas and oxygen manifolds shall be placed in safe, well ventilated, and accessible locations.
- Manifold hose connections shall be such that the hose cannot be interchanged between fuel gas and oxygen manifolds and supply header connections. Hose connections shall be kept free of grease and oil.
- Manifold and header hose connections shall be capped when not in use.
- Nothing shall be placed on top of a manifold when in use.

Hose

- Fuel gas hoses and oxygen hoses shall be easily distinguishable from each other.
- When parallel sections of oxygen and fuel gas hose are taped together, not more than 4 inches out of 12 inches shall be covered by tape.
- All hoses shall be inspected at the beginning of each working shift. Defective hoses shall be removed from service.
- Hose couplings shall be of the type that cannot be unlocked or disconnected by means of a straight pull without rotary motion.
- Boxes used for the storage of gas hoses shall be ventilated.
- Hoses, cables, and other equipment shall be kept clear of passageways, ladders, and stairs.

Torches

- Clogged torch tip openings shall be cleaned.

- Torches in use shall be inspected at the beginning of each working shift for leaking shutoff valves, hose couplings, and tip connections. Defective torches shall not be used.
- Torches shall be lit by friction lighters or other approved devices, and not by matches or from hotwork.

Regulators and Gauges

- Oxygen and fuel gas pressure regulators, including their related gauges, shall be in proper working order while in use.

Oil and Grease Hazards

- Oxygen cylinders and fittings shall be kept away from oil or grease. Cylinders, cylinder caps and valves, couplings, regulators, hose, and apparatus shall be kept free from oil or greasy substances and shall not be handled with oily hands or gloves. Oxygen shall not be directed at oily surfaces, greasy clothes, or within a fuel oil or other storage tank or vessel.

Compressed Gas Cylinders (Rev 2022)

FALL PROTECTION / PREVENTION

Badger Swim pools is committed to providing a safe and healthy workplace. This program has been developed to serve as a guide to proper fall protection/prevention for employees.

Definitions

Anchorage - A secure point of attachment for lifelines, lanyards, or deceleration devices.

Body Harness - Straps which may be secured around 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.

Buckle - Any device for holding the body belt or body harness closed around the employee's body.

Connector - A device that is used to couple (connect) parts of the personal fall arrest system and positioning device systems together. It may be an independent component of the system, such as a karabiner, or it may be an integral component of part of the system (such as a buckle or D-ring sewn into a body belt or body harness, or a snap-hook spliced or sewn to a lanyard or self-retracting lanyard).

Controlled Access Zone (CAZ) - An area in which certain work (e.g., overhand bricklaying) may take place without the use of guardrail systems, personal fall arrest systems, or safety net systems, and access to the zone is controlled.

Dangerous Equipment - Equipment (such as pickling or galvanizing tanks, degreasing units, machinery, electrical equipment, and other units) that as a result of form or function, may be hazardous to employees who fall onto or into such equipment.

Deceleration Device - Any mechanism, such as a rope grab, rip-stitch lanyard, specially-woven lanyard, tearing or deforming lanyards, automatic self-retracting lifelines/lanyards, etc., that serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy imposed on an employee during fall arrest.

Deceleration Distance - The additional vertical distance a falling employee travels (excluding lifeline elongation and free fall distance) from the point at which the deceleration device begins to operate, to stopping. It is measured as the distance between the location of an employee's body belt or body harness attachment point at the moment of activation (at the onset of fall arrest forces) of the deceleration device during a fall, and the location of that attachment point after the employee comes to a full stop.

Equivalent - Alternative designs, materials, or methods to protect against a hazard that the employer can demonstrate will provide an equal or greater degree of safety for employees than the methods, materials, or designs specified as standard.

Failure - Load refusal, breakage, or separation of component parts. Load refusal is the point where the ultimate strength is exceeded.

Free Fall - The act of falling before a personal fall arrest system begins to apply force to arrest the fall.

Free Fall Distance - The vertical displacement of the fall arrest attachment point on the employee's body belt or body harness between onset of the fall and just before the system begins to apply force to arrest the fall. This distance excludes deceleration distance and lifeline/lanyard elongation, but includes any deceleration device slide distance or self-retracting lifeline/lanyard extension before they operate and fall arrest forces occur.

Guardrail System - A barrier erected to prevent employees from falling to lower levels.

Hole - A gap or void at least 2 inches (5.1 cm) or more in dimension, in a floor, roof, or other walking/working surface.

Infeasible - That it is impossible to perform the construction work using a conventional fall protection system (e.g., guardrail system, safety net system, or personal fall arrest system), or that it is technologically impossible to use any one of these systems to provide fall protection.

Lanyard - A flexible line of rope, wire rope, or strap that generally has a connector at each end for connecting the body belt or body harness to a deceleration device, lifeline, or anchorage.

Leading edge - The edge of a floor, roof, or formwork for a floor, or other walking/working surface (such as the deck) that changes location as additional floor, roof, decking, or formwork sections are placed, formed, or constructed. A leading edge is considered to be an "unprotected side and edge" during periods when it is not actively and continuously under construction.

Lifeline - A component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline), or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline), and that serves as a means for connecting other components of a personal fall arrest system to the anchorage.

Low-Slope Roof - A roof having a slope less than or equal to 4/12 (vertical to horizontal).

Lower Level - Areas or surfaces to which an employee can fall. Such areas or surfaces include, but are not limited to: ground levels, floors, platforms, ramps, runways, excavations, pits, tanks, material, water, equipment, structures, or portions thereof.

Mechanical Equipment - All motor or human propelled wheeled equipment used for roofing work, except wheelbarrows and mop carts.

Opening - A gap or void 30 inches (76 cm) or more high and 18 inches (48 cm) or more wide, in a wall or partition, through which employees can fall to a lower level.

Personal Fall Arrest System - A system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, a body belt, or body harness, and may include a lanyard, deceleration device, lifeline, or suitable combinations of these. As of January 1, 1998, the use of a body belt for fall arrest is prohibited.

Positioning Device System - A body belt or body harness system rigged to allow an employee to be supported on an elevated vertical surface (such as a wall) and work with both hands free while leaning.

Rope Grab - A deceleration device that travels on a lifeline, and by friction automatically engages the lifeline and locks so as to arrest the fall of an employee. A rope grab usually employs the principle of inertial locking, cam/level locking, or both.

Roof - The exterior surface on the top of a building. This does not include floors or formwork that temporarily become the top surface of a building because a building has not yet been completed.

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.

Safety-Monitoring System - A safety system in which a competent person is responsible for recognizing and warning employees of fall hazards.

Self-Retracting Lifeline/Lanyard - A deceleration device containing a drum-wound line that can be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, and that, after onset of a fall, automatically locks the drum and arrests the fall.

Snaphook - A connector comprised of a hook-shaped member with a normally closed keeper, or similar arrangement, that may be opened to permit the hook to receive an object and, when released, automatically closes to retain the object. Snaphooks must be the locking type with a self-closing, self-locking keeper that remains closed and locked until unlocked and pressed open for connection or disconnection.

Steep Roof - A roof having a slope greater than 4/12 (vertical to horizontal).

Toeboard - A low protective barrier that will prevent the fall of materials and equipment to lower levels and provide protection from falls for personnel.

Unprotected Sides And Edges - Any side or edge (except at entrances to points of access) of a walking/working surface (e.g., floor, roof, ramp or runway), where there is no wall or guardrail system at least 39 inches (1.0 m) high.

Walking/Working Surface - Any surface (whether horizontal or vertical) on which an employee walks or works, including, but not limited to: floors, roofs, ramps, bridges, runways, formwork, and concrete reinforcing steel. Walking/working surfaces do NOT include ladders, vehicles, or trailers, on which employees must be located in order to perform their job duties.

Warning Line System - A barrier erected on a roof to warn employees that they are approaching an unprotected roof side or edge, and designates an area in which roofing work may take place without the use of guardrail, body belt, or safety net systems to protect employees in the area.

Purpose

In recognition of 29 CFR 1926, Subpart M, Badger Swim pools has developed the following outline to provide employees with a guide to proper fall protection/prevention.

In order to comply with OSHA's revised construction industry safety standards for fall protection, Badger Swim pools has designed its systems and procedures to prevent employees from falling off, onto, or through working levels, and to protect employees from being struck by falling objects.

In order for this to be accomplished, employers and employees alike need to do the following:

- Where protection is required (1926.501 – Duty to Have Fall Protection), select fall protection systems appropriate for given situations. Fall protection equipment will meet the requirements of applicable ANSI, ASTM, or OSHA requirements.
- Use proper construction and installation of safety systems.
- Supervise employees properly.
- Use safety work procedures.
- Train workers in the proper selection, use, and maintenance of fall protection systems.

Note - While this program provides an outline detailing Badger Swimpools policies and procedures regarding fall protection/prevention, specific contractual agreements between Badger Swimpools and a customer may require that additional safety requirements be followed.

Workplace Assessment

Before a fall protection system can be selected, it is required that a competent person assess the working environment by determining the following factors:

- Do the walking/working surfaces on which employees will be working have the strength and structural integrity to safely support them?
- Is the walking/working surface six feet or more above a lower level or dangerous equipment?
- Will the employee working on this surface be exposed to overhead or slipping hazards?
- Will the employee working on this surface create overhead hazards for those working below?
- Will this employee require extensive lateral/longitudinal mobility?
- Will this employee require free usage of his/her hands and/or feet?

Fall Protection Needs of Particular Walking and Working Surfaces

OSHA has specifically outlined 15 particular walking/working surfaces and situations, and the requirement options for each. Whichever system is selected for use, it is imperative that it be implemented early in the construction process and maintained in place until all work has been completed, or until the permanent elements of the structure which will eliminate the exposure to falling hazards are in place.

Unprotected Sides and Edges

Employees must be protected when they are exposed to falls from unprotected sides and edges of walking/working surfaces that are six feet or more above levels. The options from which to choose are:

- Guardrail systems
- Personal fall arrest systems
- Safety net systems

Leading Edge Work

When constructing leading edges six feet or more above lower levels, implement one of the following:

- Guardrail systems
- Personal fall arrest systems
- Safety net systems

Hoist Areas

Each employee in a hoist area must be protected from falling six feet or more by implementing one of the following:

- Guardrail systems
- Personal fall arrest systems

In the event that a guardrail system or portion thereof must be removed to facilitate hoisting operations (as during the landing of materials), the affected employees must then be protected by a personal fall arrest system.

Holes

Employees on walking/working surfaces must be protected from:

- Falling into or through holes (including skylights) six feet or more above lower levels by placing covers over the hole, erecting a guardrail system around the hole, or by use of a personal fall arrest system.
- Tripping in or stepping into or through holes (including skylights) by placing covers over the hole, erecting a guardrail system around the hole, or by use of a personal fall arrest system.
- Objects falling through holes onto employees below.

Formwork and Reinforcing Steel

Employees working on formwork and reinforcing steel six feet or more above lower levels must be protected by one of the following:

- Personal fall arrest system
- Safety net system
- Positioning device system

Ramps, Runways, and other Walkways

Ramps, runways, and other walkways must be equipped with guardrails when employees are subject to a fall of six feet or more to lower levels.

Excavations

The edges of excavations which cannot be readily seen (e.g., concealed from view by plant growth) must be protected by guardrail systems, fences, or barricades to prevent employees from falling into them if the excavation depth is six feet or more.

Dangerous Equipment

Employees working six feet or more above dangerous equipment must be protected by one of the following methods:

- Guardrail systems
- Personal fall arrest systems
- Safety net systems

Note: A safety net or personal fall arrest system using a 6-foot lanyard would not be appropriate while working on a surface six feet or less above dangerous equipment.

Wall Openings

Employees who are exposed to the hazard of falling out or through wall openings (including those with chutes attached) where the outside bottom edge of the wall opening is six feet or more above lower levels and the inside bottom edge of the wall opening is less than 39 inches above the walking/working surface, must be protected from falling by the use of:

- Guardrail Systems
- Safety net systems
- Personal fall arrest systems

Note: Wall openings are defined as openings 30 inches or more high and 18 inches or more wide.

Walking/Working Surfaces not Otherwise Addressed

All employees must be protected by a guardrail system, personal fall arrest system, or a safety net system (except when otherwise provided in this reference) when exposed to falls of six feet or more to a lower level.

Not all of the listed working situations apply to work typically performed by Badger Swimpools employees. However, it is important to understand how workers can best protect themselves if they are performing tasks that present hazards, even if the tasks are those that are usually associated with other construction trades, such as roofing. Ultimately, it is Badger Swimpools policy to provide the most effective means of fall protection and prevention, and this program should be used as a guide to achieve the company's safety goals.

Protection from Falling Objects

When an employee is exposed to falling objects, he/she must wear a hard hat and must implement one of the following measures:

- Erect toeboards, screens, or guardrail systems to prevent objects from falling from higher levels.
- Erect a canopy structure and keep potential falling objects far enough from the edge of the higher level so that those objects would not go over the edge if they were accidentally moved.
- Barricade the area to which objects could fall, prohibiting employees from entering the barricaded area, and keep objects that may fall far enough away from the edge of a higher level so that those objects would not go over the edge if they were accidentally moved.

Fall Protection Systems Guardrail Systems

- The top edge height for top rails must be 42 inches high, +/- 3 inches.
- Midrails, screens, mesh, intermediate vertical members, or equivalent intermediate structural members shall be installed between the top edge of the guardrail system and the walking/working surface when there is no wall or parapet wall at least 21 inches high.
- Intermediate members (such as balusters) when used between posts, shall not be more than 19 inches apart, and other structural members (such as additional midrails and architectural panels) shall be installed such that there are no openings over 19 inches wide.
- Guardrail systems shall be so surfaced as to prevent injury to an employee from punctures or lacerations, and to prevent snagging of clothing. In addition, they must not overhang the terminal posts so as to create a projection hazard.
- Top rails and midrails shall be at least ¼ inch nominal diameter or thickness to prevent cuts and lacerations. If wire is used for top rails, it shall be flagged at not more than six foot intervals with highly visible material.
- When guardrail systems are used at hoisting areas, a chain, gate, or removable guardrail section shall be placed across the access opening between guardrail sections when hoisting operations are not taking place.
- Guardrail systems used on ramps and runways shall be erected along each unprotected side or edge.

Personal Fall Arrest Systems

- At Badger Swimpools, body harnesses shall be used and must be capable of limiting the maximum arresting force on an employee to 1,800 pounds.
- Only locking type snaphooks shall be used, and snaphooks shall never be engaged to each other, rope, or a horizontal lifeline.
- Personal fall arrest systems shall be rigged such that an employee can neither free fall more than six feet, nor contact any lower level.
- Personal fall arrest systems must be capable of bringing an employee to a complete stop and limiting maximum deceleration distance an employee travels to 3.5 feet.
- The attachment point of the body harness shall be located in the center of the wearer's back near shoulder level, or above the wearer's head.
- Body harnesses and components of the personal fall arrest system shall be used for employee protection only and not to hoist materials.
- Prompt rescue must be provided for employees in the event of a fall.
- Personal fall arrest systems shall be inspected prior to each use for wear, damage, and other deterioration, and defective components must be removed from service.

Aerial Work Platform, Scaffolds, Ladders

Note: For specific policies regarding aerial work platforms and scaffolds, refer to their dedicated Safety Program sections.

- While working in a boom lift the use of a personal fall arrest system which includes a retractable lanyard shall be used at all times.
- Badger Swimpools believes that a personal fall arrest system is not necessary while operating a scissor lift unless:
 - The operator's feet are not in constant contact with the walking/working surface of the scissor lift; or,
 - A contractual statement agrees that employees will do so.
- On scaffolds, a personal fall arrest system is not necessary unless:
 - The walking/working surface of the scaffold is 10 feet or more above the ground and does not have a top rail, midrail, and toeboard; or,
 - If a contractual statement agrees that employees will do so.
- On all ladders, personal fall arrest systems are not necessary unless:
 - Working on the ladder exposes employee to a fall to lower level; or,
 - A contractual statement agrees that employees will do so.

Positioning Device Systems

Positioning device systems shall be rigged such that an employee cannot fall more than two feet. They shall also be secured to an anchorage capable of supporting at least twice the potential impact load of an employee's fall or 3,000 pounds, whichever is greater.

- Connecting assemblies shall have a minimum tensile strength of 5,000 pounds while D-rings and snaphooks shall be proof-tested to a minimum tensile load of 3,600 pounds.
- Positioning device systems shall be inspected prior to each use for wear, damage, and other deterioration, and defective components must be removed from service.
- Body harnesses and components of the positioning device system shall be used only for employee protection and not to hoist materials.

Warning Line Systems

- When mechanical equipment is being used, warning lines should be erected not less than 15 feet from the roof edge that is parallel to the direction of the equipment's operation, and not less than ten feet from the roof edge that is perpendicular to its operation.
- When mechanical equipment is not being used, the warning line must be erected not less than 15 feet from the roof edge.

- Points of access, material handling areas, storage areas, and hoisting areas should be connected to the work area by an access path formed by two warning lines.
- The rope, wire, or chain used as a warning line shall be flagged at not more than six-foot intervals with high visibility material, and supported in such a way that its lowest point is no less than 34 inches above the walking/working surface, and no higher than 39 inches.
- The rope, wire, or chain shall have a minimum tensile strength of 500 pounds once attached to the stanchions.

Controlled Access Zones

- When control lines are used, they shall be erected no less than 15 feet and no more than 25 feet from the unprotected or leading edge.
- The control line shall extend along the entire length of the unprotected or leading edge and shall be approximately parallel to the unprotected or leading edge.
- The control line shall be connected on each side to a guardrail system or wall.
- Each line shall be flagged or otherwise clearly marked at no more than six-foot intervals, with high visibility material.
- Each line shall be rigged and supported in such a way that its lowest point is not less than 39 inches from the walking/working surface and its highest point is not more than 45 inches from the walking/working surface.
- Each line shall have a minimum breaking strength of 200 pounds.

Safety Monitoring Systems

Note: Safety Monitoring Systems shall only be used when it is deemed infeasible to protect employees with conventional fall protection systems.

The competent person designated as the safety monitor must comply with the following requirements:

- Be competent to recognize all fall hazards.
- Warn the employee(s) when it appears that he/she is unaware of a fall hazard or is acting in an unsafe manner.
- Be on the same walking/working surface and within visual sighting distance of the employee(s) being monitored.
- Be close enough to communicate verbally with the employee(s).
- Avoid other responsibilities which could take the monitor's attention from the monitoring function.
- Direct each employee working in a controlled access zone to comply with fall hazard warnings from safety monitors.

Covers

- Covers located in roadways and vehicular aisles shall be capable of supporting at least twice the maximum axle load of the largest vehicle expected to cross over the cover.
- All other covers must be capable of supporting at least twice the weight of employees, equipment, and materials that may be imposed on the cover at any one time.
- All covers shall be secured when installed so as to prevent accidental displacement by the wind, equipment, or employees.
- All covers shall be color-coded or they shall be marked with the word "Hole" or "Cover." (Not including manhole covers or steel grates used on streets or roadways.)

Training

Training shall be performed and documented as deemed by OSHA in the area of fall protection and prevention. Each employee will receive training from a competent person qualified in:

- The nature of fall hazards in the work area.
- The correct procedures for donning, doffing, erecting, maintaining, disassembling, and inspecting the fall protection systems to be used.
- The use and operation of the fall protection systems described in this program.
- The limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs.

- The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection.
- The role of employees in fall protection plans.
- Emergency procedures in case of a fall, rescue procedures/plan.

Retraining

Fall protection training must be repeated when:

- Changes in workplace conditions render previous training obsolete.
- Changes in the types of fall protection systems or equipment to be used render previous training obsolete.
- Inadequacies in an affected employee's knowledge or use of fall protection systems or equipment indicate that he/she has not retained the understanding or skill required.

Fall Protection / Prevention (Rev 2022)

STAIRWAYS & LADDERS

Badger Swim pools is committed to providing a safe and healthy workplace. This program has been developed to assist employees to better understand the hazards of working with temporary stairs and ladders. This program also establishes the responsibilities and expectations of all Badger Swim pools employees when working on such equipment.

Definitions

Cleat - A ladder crosspiece of rectangular cross section placed on edge upon which a person may step while ascending or descending a ladder.

Double-cleat ladder - A ladder similar in construction to a single-cleat ladder, but with a center rail to allow simultaneous two-way traffic for employees ascending or descending.

Equivalent - Alternative designs, materials, or methods that the employer can demonstrate will provide an equal or greater degree of safety for employees than the method or item specified in the standard.

Failure - Load refusal, breakage, or separation of component parts. Load refusal is the point where the structural members lose their ability to carry the loads.

Fixed ladder - A ladder that cannot be readily moved or carried because it is an integral part of a building or structure. A side-step fixed ladder is a fixed ladder that requires a person getting off at the top to step to the side of the ladder side rails to reach the landing. A through-fixed-ladder is a fixed ladder that requires a person getting off at the top to step between the side rails of the ladder to reach the landing.

Handrail - A rail used to provide employees with a handhold for support.

Individual-rung/step ladders - Ladders without a side rail or center rail support. Such ladders are made by mounting individual steps or rungs directly to the side or wall of the structure.

Job-made ladder - A ladder that is fabricated by employees, typically at the construction site, and is not commercially manufactured. This definition does not apply to any individual-rung/step ladders.

Ladder stand - A mobile, fixed size, self-supporting ladder consisting of a wide flat tread ladder in the form of stairs. The assembly may include handrails.

Lower levels - Those areas to which an employee can fall from a stairway or ladder. Such areas include ground levels, floors, roofs, ramps, runways, excavations, pits, tanks, material, water, equipment, and similar surfaces. It does not include the surface from which the employee falls.

Maximum intended load - The total load of all employees, equipment, tools, materials, transmitted loads, and other loads anticipated to be applied to a ladder component at any one time.

Nosing - That portion of a tread projecting beyond the face of the riser immediately below.

Point of access - All areas used by employees for work-related passage from one area or level to another. Such open areas include doorways, passageways, stairway openings, studded walls, and various other permanent or temporary openings used for such travel.

Portable ladder - A ladder that can be readily moved or carried.

Riser height - The vertical distance from the top of a tread to the top of the next higher tread or platform/landing, or the distance from the top of a platform/landing to the top of the next higher tread or platform/landing.

Single-cleat ladder - A ladder consisting of a pair of side rails, connected together by cleats, rungs, or steps.

Spiral stairway - A series of steps attached to a vertical pole and progressing upward in a winding fashion within a cylindrical space.

Tread depth - The horizontal distance from front to back of a tread (excluding nosing, if any).

Unprotected sides and edges - Any side or edge (except at entrances to points of access) of a stairway where there is no stair rail system or wall 36 inches (.9 m) or more in height, and any side or edge (except at entrances to points of access) of a stairway landing, or ladder platform where there is no wall or guardrail system 39 inches (1 m) or more in height.

Purpose

Stairways or ladders shall be implemented at all worker points of access where there is a break in elevation of 19 inches or more and no ramp, runway, embankment, or personnel hoist exists. All such points of access must be kept clear to permit free passage. Variations in riser height or stair tread depths may not exceed 1/4 inch.

Stairways

Stairways in Temporary Service During Construction

- Except during stairway construction, foot traffic is prohibited on stairways with pan stairs where the treads and/or landings are to be filled in with concrete or other material at a later date, unless the stairs are temporarily fitted with wood or other solid material at least to the top edge of each pan. Such temporary treads and landings shall be replaced when worn below the level of the top edge of the pan.
- Stairways having four or more risers or rising more than 30" (76 centimeters, whichever is less) shall be equipped with at least one handrail and one stairway unprotected side or edge.

Stair rails and Handrails

- The height of the handrail shall be no more than 37" (94 centimeters) nor less than 30" (76 centimeters) from the upper surface of the handrail to the surface of the tread in line with the face of the riser at the forward edge of the tread.

Ladders

General: (See Appendix F)

- Ladders used shall meet OSHA/ANSI specifications
- Ladders shall be inspected by a competent person for visible defects on a quarterly basis, using the Badger Swimpools color coding system of white, green, red and orange. (Refer to the Ladder Inspection Checklist for detailed inspection procedures. This form is available from the Safety Department.)
- Tagging shall be secured on all ladders at approximately eye height, depending on the height of the ladder. Tagging shall be secured to the back brace of a stepladder, and outer-most portion of a rung on an extension ladder.

- Portable ladders with structural defects (such as, but not limited to: broken or missing rungs, cleats, or steps; broken or split rails; corroded components; or other faulty or defective component) shall either be immediately marked in a manner that readily identifies them as defective, or be tagged with "Do Not Use" or similar language, and should be withdrawn from service until repaired.
- Rungs, cleats, and steps of portable ladders must not be spaced less than 10 inches nor more than 14 inches apart and shall be of uniform spacing.
- Portable ladders shall have non-conductive side rails.
- Ladders shall be used only for the purpose for which they are designed.
- Ladders shall have the correct load capacity for the task.
- Take the ladder down when you are through using it.
- Face the ladder and use three points of contact when climbing.
- Move the ladder when necessary. Do not overreach while on a ladder. Always dismount the ladder before moving; do not walk it.

Extension Ladders

- When portable ladders are used for access to an upper landing surface, the ladder side rails shall extend at least **three feet** above the upper landing surface to which the ladder is used to gain access.
- Non-self-supporting ladders shall be used at an angle such that the horizontal distance from the top support to the foot of the ladder is approximately 1/4 of the working length of the ladder.
- Ladders shall not be moved, shifted, or extended while occupied.
- Ladders shall not be used on slippery surfaces unless secured or provided with slip resistant feet to prevent incidental displacement. Slip resistant feet shall not be used as a substitute for care and placing, lashing, or holding a ladder that is used upon slippery surfaces including, but not limited to, flat metal concrete surfaces that are constructed so they cannot be prevented from becoming slippery.
- Do not use **metal type ladders** where they may come in contact with electricity.

Step Ladders

- Step ladders shall be used fully opened. Do not use step ladders as straight ladders.
- Do not use "A" Type or step ladders as ends for scaffolding supports.
- The top or top step of a step ladder shall not be used as a step. Follow manufacturers' recommendations that are posted on the ladder.
- Cross bracing on the rear section of the step ladder shall not be used for climbing unless the ladders are designed and provided with steps for climbing on both front and rear sections.

Inspection

- Inspect step ladders:
 - When received
 - As part of daily visual
 - When damage is suspected
 - Formally, in accordance with quarterly inspection program
- Inspect the entire ladder for:
 - Legible manufacturer and warning labels
 - Cracks, splits, splinters and decay
 - Protruding nails and loose rivets
 - Loose, bent or broken rungs, braces or tie rods
 - Rungs free from grease and oil
 - Non-slip foot grips on all ladders and insulating foot grips on conducting ladders
 - Improvised repairs are not allowed.

SCAFFOLDING PROGRAM

Scaffolds pose a serious safety hazard if not used or erected properly. It is the policy of Badger Swimpools to ensure employees are trained on hazards associated with scaffold use, how to properly inspect scaffolds, and safe work practices pertaining to the use of scaffolds.

Purpose

This program has been established to:

- Ensure the safe use of scaffolds.
- Ensure that all employees understand and comply with safety standards related to scaffolds.
- Assign responsibilities to personnel which are necessary for successful implementation.

Definitions

Bakers Scaffold - This scaffold has wheels for easy mobility and consists of two end frames, one on each end, and a work platform. The wheels contain a manually operated lock to prevent movement while the scaffold is in use.

Base Plate - A plate used to distribute the load of a leg/post/frame/upright.

Competent Person - A person who is capable of identifying existing and predictable hazards in the surroundings or working conditions, which are unsanitary or hazardous to employees, and who has authorization to take prompt corrective measures to eliminate them. For the purposes of this program, an employee is considered a Competent Person after they have completed both the User and Erector portions of the training.

Fabricated Frame Scaffold / Frame Scaffold - A type of scaffold that consists of large, prefabricated (modular) metal or fiberglass pieces that fit together. Cross-bracing is utilized on the sides of the scaffold. This is a common type of scaffold because they are versatile, economical, and easy to use. They are frequently used in one or two tiers. Can also be mobile.

Guardrail System - A vertical barrier, consisting of - but not limited to - top rails, midrails, and posts, erected to prevent employees from falling off a scaffold platform or walkway to lower levels.

Mudsill - Devices used to uniformly distribute the scaffold load over a larger area than that distributed by the base plate alone in order to prevent a scaffold from settling into the earth.

Outriggers - Devices that increase the stability of the scaffold.

Personal Fall Arrest System - A system including but not limited to an anchorage, connectors, and a body harness used to arrest a person in a fall from a working level. The use of a body belt for fall arrest is prohibited.

Qualified Person - One who by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or the project.

Qualified Third Party Trainer/Vendor - One that specializes in providing training on how to erect, safely use, inspect and maintain the types of scaffolds in question.

Suspended Scaffold - A type of scaffold where the platform is suspended by ropes, or other non-rigid means, from an overhead structure.

Toe-Board - A horizontal barrier that is erected along the exposed edges of an elevated surface to prevent materials, tools or equipment from falling. Must be at least 4 inches high.

Tube & Coupler Scaffold - A type of scaffold consisting of tubing which serves as posts, bearers, braces, ties, and runners. Special couplers connect the uprights and join the various members.

General Requirements

- Competent Person training and demonstrated competency is required before employees are allowed to operate/setup/erect a scaffold.
- User training and demonstrated competency is required before employees are allowed to utilize and work from scaffolding.
- Scaffolds must be erected and utilized according to the manufacturer's instructions.
- Base plates must be used at all times.
- Mudsills must be used on all surfaces except for concrete.
- Scaffolding platforms must be fully planked or decked.
- On scaffolds where platforms are overlapped to create a long platform, the overlap shall occur only over supports, and shall not be less than 12 inches (30 cm) unless the platforms are nailed together or otherwise restrained to prevent movement.
- Supported scaffolds with a height to base width (including outrigger supports, if used) ratio of more than four to one (4:1) shall be restrained from tipping by guying, tying, bracing, or equivalent means.
- Appropriate ladders must be used to gain access to scaffolding.
- Wheels on rolling tower scaffold must be locked prior to mounting scaffold.
- Employees cannot self-propel themselves while on the scaffold.
- When the working height of a scaffold reaches 10 feet, fall protection shall be addressed by the installation of a guardrail system on all open sides or a personal fall arrest system.

Training

- Training must be completed prior to using or erecting a scaffold.
- To be considered a Competent Person, both User Training and Hands-On Scaffold Erector Training must be completed.
- Employees who only perform work on scaffolds (do not erect) must complete User Training consisting of the following:
 - The nature of any electrical hazards, fall hazards and falling object hazards in the work area;
 - The correct procedures for dealing with electrical hazards and for erecting, maintaining, and disassembling the fall protection systems and falling object protection being used;
 - The proper use of the scaffold, and the proper handling of materials;
 - The maximum intended load and the load-carrying capacities of the scaffold;
 - Aware of the protocol regarding inspecting the scaffold.
- Refresher training in relevant topics will be provided when any of the following occur:

- An employee is observed using the scaffold in an unsafe manner;
- An accident or a near-miss incident occurs;
- Changes in the types of scaffold, fall protection, falling object protection, or other equipment present a hazard that an employee has not previously been trained on;
- Changes in the worksite present a hazard that an employee has not previously been trained on.

Inspection (See Appendix G)

- Each scaffold must undergo a daily documented inspection by a competent person prior to use.
- The scaffold shall be removed from service if a deficiency is found. In order to remove a scaffold from service, an out of service tag or equivalent shall be placed at the scaffold access point/s. The supervisor is then responsible for ensuring the necessary arrangements are made for replacement or repair.
- Scaffold users must immediately report any unsafe condition to their supervisor.
- Badger Swim pools employees are not permitted to repair damaged parts. Only qualified personnel (vendor/manufacturer) shall perform scaffold repairs.
- All replacement parts shall be the same design as the original or an equivalent design as designated by the manufacturer.

Before Use

- Follow all instructions from the manufacturer for erecting.
- Consideration shall be given to the amount of wind. Follow the manufacturer's instruction regarding operation in windy conditions. As a general rule, scaffolds shall not be used in winds exceeding 25 MPH.
- Modifications and additions that may affect the capacity or safe operation are prohibited.
- Welding operations completed while using scaffolds shall be conducted per the Badger Swim pools Hot Work program (part of the Fire Protection & Prevention Program).
- Inspect the scaffold. If the scaffold fails inspection or becomes unsafe, an "out of service" tag or equivalent shall be attached to the access points in a conspicuous location.
- Scaffolds with noted/reported deficiencies shall not be used until the deficiencies are corrected and the scaffold is re-inspected.

During Use

- Ensure fall protection is in place.
- Scaffolds may never be overloaded. Only tools and materials which are needed may be stored on the scaffold.
- Special consideration is needed to ensure no overloading or tipping of the scaffold occurs when utilizing add-ons such as pulleys for lifting materials/tools and shelves that attach to the scaffold to hold materials/tools.
- Cross bracing shall not be used as a ladder or to access the working levels of the scaffold.
- Mobile scaffolds may not be moved while occupied by personnel. Wheels must be locked when scaffolds are in use.
- Control or tag lines shall be used to control the swinging of materials or equipment during transport onto the scaffold.
- Ladders or other similar devices shall not be used on scaffolds to increase the working height of employees.
- Sitting or climbing on the guardrails is prohibited.
- Scaffold shall be kept clean of debris, excessive amounts of materials or tools, ice, snow, or other slippery substances.
- Consideration shall be given to the protection of bystanders via barricading, or other equivalent means.

After Use

- All equipment and debris must be removed from scaffolds at the end of the shift. Items may not be thrown off the

scaffold; items are to be lowered with a rope/bucket or handed off.

- Steps must be taken to protect against unauthorized use of scaffolds. (This may be necessary when a scaffold is located outdoors or in a high pedestrian traffic area). Options include but aren't limited to:
 - Dismantling the scaffold at the end of the shift;
 - Securing the worksite so that access to the scaffold is prohibited;
 - Barricading the scaffold;
 - Covering access points with fencing or other adequate item that will prevent climbing on the scaffold;
 - Removing the access ladder;
 - Placing caution/danger tape around the scaffold.

Scaffolding Program (Rev 2022)

ILLUMINATION

Proper Illumination

Construction areas, stairs, ramps, runways, corridors, offices, shops, and storage areas, where work is in progress, shall be lighted with natural or artificial illumination. The following are minimal standards that must be followed:

Foot-candles	Area or Operation
3	General construction areas, concrete placement, excavation and waste areas, access ways, active storage areas, loading platforms, refueling, and field maintenance areas
5	General construction area lighting
5	Indoors: warehouses, corridors, hallways, and exit ways
5	Tunnels, shafts, and general underground work areas (Exception: Minimum of 10 foot-candles is required at tunnel and shaft heading during drilling, mucking, and scaling. Bureau of Mines-approved cap lights shall be acceptable for use in the tunnel heading.)
10	General construction plant and shops (e.g., batch plants, screening plants, mechanical and electrical equipment rooms, carpenter shops, rigging lofts and active storerooms, barracks or living quarters, locker or dressing rooms, mess halls, and indoor toilets and workrooms)
30	First aid stations, infirmaries, and offices

A foot-candle meter can be made available through the insurance company if needed.

Temporary Lights

- Shall be equipped with guards to prevent incidental contact with the bulb, except that guards are not required when the construction of the reflector is such that the bulb is deeply recessed.
- Shall be equipped with heavy duty electric cords with connections and insulation maintained in safe condition. They shall not be suspended by their electric cords unless cords and lights are designed for this means of suspension. Splices that have insulation equal to that of the cable are permitted.
- Cords shall be kept clear of working spaces and walkways or other locations in which they are readily exposed to damage.
- Where temporary lighting is unavailable, portable lighting equipment shall be available to provide proper illumination.
- Employees shall not be permitted to enter dark spaces without a suitable portable light. The use of matches and open flame lights is prohibited.

Illumination (Rev 2022)

ELECTRICAL

Scope

This program applies to all Badger Swim pools operations regardless of job site location.

Definitions

Energy source - Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

Exposed electrical parts - Energized parts that can be inadvertently touched or approached nearer than a safe distance by a person. Parts not suitably guarded, isolated, or insulated. Examples include terminal contacts or lugs, and bare wiring.

Ground Fault Circuit Interrupt (GFCI) - A device of which the function is to interrupt the electric circuit to the load when a fault current to ground exceeds a predetermined value that is less than that required to operate the over-current protective device of the supply circuit.

Ground - A conducting connection (whether intentional or incidental) between an electrical circuit or equipment and the earth, or to some conducting body that serves in place of the earth.

General

- It is the responsibility of the employer to determine before operations start if there is any energized electrical circuit with which the employees may come in contact with and to provide protection and warning against all hazards.
- All circuits and equipment must be clearly identified. Circuits under repair or de-energized must be tagged and locked-out at all points where they may be energized.
- No employer shall permit an employee to work in such proximity to any part of an electric power circuit that the employee could contact the electric power circuit in the course of work, unless the employee is protected against electric shock by de-energizing the circuit and grounding it or by guarding it effectively by insulation or other means.
- All non-current carrying parts of electrical equipment must be grounded or have an approved double-insulation system.
- Grounding circuits must have enough capacity to carry all currents liable to be imposed on it. The resistance to ground must not exceed 25 ohms. Circuits must be checked to ensure that the circuit between the ground and the grounded power conductor has sufficient flow to blow the fuse or trip the circuit breaker.
- Any necessary open wiring must be made inaccessible to unauthorized people.
- Lighting on barricades, fences or sidewalk coverings shall be encased in a metal raceway.
- Splices shall have insulation equal to the cable.
- Attachment plugs shall have a cord grip so that there is no strain on the terminal screws.
- Receptacles for attachment plugs shall be of the approved, concealed contact type. Where different voltages, frequencies, or types of current are supplied, receptacles shall be of such design that attachment plugs are not interchangeable.
- Each disconnecting means for motors and appliances and each service feeder or branch circuit at the point where it originates shall be legibly marked to indicate its purpose, unless located and arranged so the purpose is evident.

Portable Electrical Equipment and Extension Cords

The following requirements apply to the use of cord-and-plug connected equipment and flexible cord sets (extension cords):

- Extension cords may only be used to provide temporary power.
- Portable cord-and-plug connected equipment and extension cords must be visually inspected before use on any shift for external defects such as loose parts, deformed and missing pins, or damage to outer jacket or insulation, and for possible internal damage such as pinched or crushed outer jacket. Any defective cord or cord-and-plug connected equipment must be removed from service and no person may use it until it is repaired and tested to ensure it is safe for use.
- Extension cords must be of the three-wire type. Extension cords and flexible cords must be designed for hard or extra hard usage (for example, types S, ST, and SO).
- Job-made extension cords are forbidden per the electrical code.
- Personnel performing work on renovation or construction sites using extension cords or where work is performed in damp or wet locations must be provided, and must use, a ground-fault circuit interrupter (GFCI).
- Portable equipment must be handled in a manner that will not cause damage. Flexible electric cords connected to equipment may not be used for raising or lowering the equipment.
- Extension cords must be protected from damage. Sharp corners and objects must be avoided. Flexible cords may not be run through windows or doors unless protected from damage, and then only on a temporary basis. Flexible cords may not be run above ceilings or inside or through walls, ceilings or floors, and may not be fastened with staples or otherwise hung in such a fashion as to damage the outer jacket or insulation.
- Cords must be covered by a cord protector or tape when they extend into a walkway or other path of travel to avoid creating a trip hazard.
- Pinch or drive-over hazards must be eliminated. Cords must either be rerouted or protected.
- Extension cords used with grounding-type equipment must contain an equipment-grounding conductor (i.e., the cord must accept a three-prong or grounded plug).
- Attachment plugs and receptacles may not be connected or altered in any way that would interrupt the continuity of the equipment grounding conductor. Additionally, these devices may not be altered to allow the grounding pole to be inserted into current connector slots. Clipping the grounding prong from an electrical plug is prohibited.
- Flexible cords may only be plugged into grounded receptacles. The continuity of the ground in a two-prong outlet must be verified before use. It is recommended that the receptacle be replaced with a three-prong outlet. Adapters that interrupt the continuity of the equipment grounding connection may not be used.
- Power tools must be protected by GFCI or internal grounding.
- All portable electric equipment and flexible cords used in highly conductive work locations (such as those with water or other conductive liquids, or in places where employees are likely to contact water or conductive liquids) must be approved for those locations.
- Employees' hands must be dry when plugging and unplugging flexible cords and cord-and-plug connected equipment if energized equipment is involved.
- If the connection could provide a conducting path to employees' hands (for example, if a cord connector is wet from being immersed in water), the energized plug and receptacle connections must be handled only with insulating protective equipment.
- Locking-type connectors must be properly locked into the connector.
- Lamps for general illumination must be protected from breakage, and metal shell sockets must be grounded.
- Temporary lights must not be suspended by their cords unless they have been designed for this purpose.
- Temporary lighting and wiring must be secured or suspended with non-conductive material.
- Extension cords are considered to be temporary wiring and must also comply with the section on "Requirements for Temporary Wiring" in this program.

GFCI Assured Equipment Grounding Requirements

Daily Visual Inspection

A visual inspection shall be performed daily, on each piece of equipment that is used, for the following items: cord sets, attachment cap, plug and receptacle of cord sets and any other equipment connected by cord and plug.

Equipment found to be damaged should be tagged and removed from service. This inspection shall be done in accordance with the daily job site pre-task planning.

Quarterly Testing

Grounding conductors tested for continuity shall be electrically continuous.

- Each receptacle and attachment cap or plug shall be tested for correct attachment of the equipment-grounding conductor. The equipment-grounding conductor shall be connected to its proper terminal. The above required tests shall be performed before first use, before equipment is returned to service following repairs, and before equipment is used after any incident which can be reasonably suspected to have caused damage (e.g. when a cord is run over or crushed). Cord sets and receptacles, which are fixed and not exposed to damage, shall be tested at three (3) month intervals.

Testing Procedures

- **Receptacles** – Use a receptacle tester to determine correct connections to terminals.
- **Cord Sets** – First, plug the cord set into a properly wired receptacle which has been tested as directed above. Then plug receptacle tester into cord connector (receptacle) of cord set to determine continuity of grounding conductor and correct connections to terminals.
- **Cord and Plug Connected Equipment** – Use continuity tester. Connect or touch one terminal of continuity tester to the metal frame of the equipment or tool and the other terminal to the grounding prong of the attachment cap plug at the end of the cord. A visual (light) signal of the tester indicates that there is continuity of the grounding conductor. This test should also be made between the metal frame and each of the other two prongs of the attachment cap plug. If this test results in a signal, there may be a ground fault and the tool should be further inspected to determine the exact cause.
- **Double insulated tools** – Visually inspect all double insulated tools for cracks, cuts burns, etc. If there is damage to the casing of a double insulated tool, the tool shall be considered defective and taken out of service.

The test may be performed quarterly either at the job site or taken to the yard for testing. **Don't forget the requirements of these standards also apply to tools and cord sets owned by employees and used at the site.** Under OSHA law, the employer has the responsibility to see that its employees comply even when using their own tools and equipment.

Color Code by Quarters

Quarter 1	January 1 – March 31	White
Quarter 2	April 1 – June 30	Green
Quarter 3	July 1 – September 30	Red
Quarter 4	October 1 – December 31	Orange

Color identifications of colored tape are to be affixed to both ends of all cord sets and cord and plug-connected equipment. At the beginning of a new quarter, the previous quarter's color should be removed before the new quarter's color is applied.

Wet or Damp Locations

Work in **wet** or **damp** locations (e.g., areas surrounded by or near water or other liquids) should not be performed unless it is absolutely critical. Electrical work should be postponed until the liquid can be cleaned up. The following special precautions must be incorporated while performing work in *damp locations*:

- Only use electrical cords that have Ground Fault Circuit Interrupters (GFCIs);
- Remove standing water before beginning work. Work is prohibited in areas where there is standing water;
- Do not use electrical extension cords in wet or damp locations; and
- Keep electrical cords away from standing water.

Electrical (Rev 2022)

LOCKOUT / TAGOUT

By controlling the energy sources used on our job sites many serious incidents can be avoided. The implementation of this lockout / tagout program will act as a building block for complete energy control on our construction sites. This is done through correct procedures, effective training, and program maintenance.

Definitions

Authorized Employees - Foremen: These employees will be provided locks and tags for isolating the energy source.

Affected Employees - Those employees operating the equipment being shut down and locked out or employees in the vicinity who may be affected by these actions.

Chemical - Reactions of some chemical compounds intended to perform function.

Electrical - The flow of currents through electrical wires and circuits.

Energized - Machines and equipment are energized when (1) they are connected to an energy source or (2) they contain residual or stored energy.

Energy-isolating device - Any mechanical device that physically prevents the transmission or release of energy. These include, but are not limited to, manually-operated electrical circuit breakers, disconnect switches, line valves and blocks.

Energy source - Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, kinetic or other energy.

Gravitational - Force of motion generated by gravity.

Hydraulic - Any type of liquid, including water, under pressure.

Kinetic - Energy an object has due to its motion or movement.

Lockout - The placement of a lockout device on an energy-isolating device, in accordance with an established procedure, ensuring that the energy-isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lockout device - Any device that uses positive means such as a lock (either key or combination type) to hold an energy-isolating device in a safe position, thereby preventing the energizing of machinery or equipment. When properly installed, a blank flange or bolted slip blind are considered equivalent to lockout devices.

Mechanical - Potential or "built-up" energy, such as spring energy, that may cause equipment parts to move without warning.

Multiple Energy Sources - A piece of equipment or process that has more than one energy source and is interconnected.

Pneumatic - Gas, including air, under pressure.

Tagout - The placement of a tagout device on an energy-isolating device, in accordance with an established procedure, to indicate that the energy-isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Tagout Device - Any prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy-isolating device in accordance with an established procedure. The tag indicates that the machine or equipment to which it is attached is not to be operated until the tagout device is removed in accordance with the energy control procedure.

Thermal - Elevated temperature intended to perform function in conjunction with operating equipment.

Zero Energy - No energy is coming into or moving inside the equipment.

Locks, tags and other locking devices may be obtained through the tool department.

Purpose

The purpose of this program is to inform Badger Swim pools employees of the potential hazards of energized equipment. This lockout / tagout program will serve as an educating instrument for the proper procedures when de-energizing equipment on construction sites. Every employee is responsible for the contents of this program. Further responsibilities are established throughout the following sections.

General Procedure

These general procedures must be followed in all lockout / tagout situations. Prior to completing work in a customer's facility or on a customer's equipment, the Badger Swim pools employee(s) shall be informed of the customer's lockout / tagout procedure and in turn inform the customer of Badger Swim pools' lockout / tagout procedure. Whether it is Badger Swim pools or the customer's, the procedures with the greatest level of protection shall be followed. If the customer's procedures for lockout / tagout are to be followed, this must be documented step by step prior to beginning work.

- Lockout / Tagout Sequence-Single Person
 - Notify all affected employees that a lockout or tagout system is going to be utilized and the reason.
 - If the equipment is operating, shut it down by normal stopping procedures.
 - Operate the switch, valve, or other energy-isolating device with assigned individual locks and tags.
 - Lockout and tagout the energy-isolating device with assigned individual locks and tags. Each employee shall have their own lock and tag and shall have their name on it.
 - After assuring that no personnel are exposed, run a test to be certain that all energy has been disconnected. Do this by operating the normal operating controls. The equipment should be inoperable.
 - Following the application of lockout or tagout devices to energy isolating devices, all potentially hazardous stored or residual energy shall be relieved, disconnected, restrained & otherwise rendered safe. If there is a possibility of accumulation of stored energy level, verification of isolation shall be continued until the servicing or maintenance is completed, or until the possibility of such accumulation no longer exists.
 - The equipment is now locked out.

- Restoring Power
 - Notify personnel in start-up area.

- Clear all tools and repair equipment.
- Once the area has been cleared of exposure remove all locks and tags.
- At this time the energy isolating devices may be used to restore energy to equipment.
- Notify operating personnel of operation status.
- Multiple Users/Multiple Trades
 - When multiple users or trades are working on the same equipment or different parts of a large overall system, multiple lockouts must be applied.
 - When more than one individual is required to lockout or tagout equipment, each shall place his/her own personal lock on the energy-isolating device.
 - Primary responsibility for a set number of employees working under the protection of a group lockout or tagout device must be vested in a single authorized employee.
 - Only the person who attached the individual lock to the energy-isolating device is authorized to remove that lock.
 - Group Lock Trees or Lock Boxes may be used when multiple users or trades are working on the same machine, equipment, system, etc.
 - A lock box must contain a lock for all persons working on that piece of equipment, with the group lock attached to the equipment and the key for the group lock inside of the lock box.
- Multiple Shifts
 - All locks shall be removed by employees finishing their shift and replaced by employees starting their shift.
 - In a situation where this is not possible, the person designated to be in charge of the group shall ensure that a proper transition occurs between shifts.
- Multiple Energy Sources
 - When de-energizing machines or equipment that is interconnected, the energy control procedures for all interconnected machines or pieces of equipment must be implemented by an authorized employee.
 - Prior to work being completed, a written job specific procedure needs to be completed when multiple energy sources need to be de-energized.
 - The written procedure shall consist of the same process as single source lockout / tagout but for every energy source.

***Never try to operate any switch valves or other operating device bearing a lock.**

Training

All authorized and affected employees will be trained.

- Training Requirements
 - Badger Swim pools shall provide training to ensure that the purpose and function of the energy control program are understood by employees and that the knowledge and skills required for the safe application, usage, and removal of the energy controls are acquired by employees. The training shall include the following:
 - Each authorized employee shall receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.
 - Each affected employee shall be instructed in the purpose and use of the energy control procedure.
 - All other employees whose work operations are or may be in an area where energy control procedures may be utilized, shall be instructed about the procedure, and about the

prohibition relating to attempts to restart or reenergize machines or equipment which are locked out or tagged out.

- Training Documentation
 - An attendance sheet will be signed upon completion of each training session.
 - The Safety Department will maintain records of all employees trained.

- Retraining
 - Retraining shall be provided for all authorized and affected employees whenever there is a change in their job assignments, a change in machines, equipment or processes that present a new hazard, or when there is a change in the energy control procedures.
 - Additional retraining shall also be conducted whenever the employer has reason to believe that there are deviations from or inadequacies in the employee's knowledge or use of the energy control procedures.
 - The retraining shall reestablish employee proficiency and introduce new or revised control methods and procedures, as necessary.
 - The employer shall certify that employee training has been accomplished and is being kept up-to-date. The certification shall contain each employee's name and dates of training.

Lockout / Tagout (Rev 2022)

FORKLIFTS

The purpose of this program is to communicate expectations and processes for safely operating powered industrial trucks, or forklifts. All employees must operate these devices in accordance with this program.

Inspection

- All forklifts shall be inspected every shift, prior to use.
- In the event a problem is found, the forklift shall be tagged "Out of Service" until it is repaired by a person qualified to perform repairs.
- Forklift Inspection checklists are available from the Safety Department.

Forklift Operations

Loading

- Only stable or safely arranged loads shall be handled. Caution shall be exercised when handling off-centered loads that cannot be centered.
- Only loads within the rated capacity of the forklift shall be handled.

Traveling

- All traffic regulations shall be observed.
- The forklift driver shall be required to slow down and sound the horn at cross aisles and other locations where vision is obstructed. If the load being carried obstructs forward view, the driver will be required to travel with spotter.
- Railroad tracks shall be crossed diagonally wherever possible.
- Forklifts may not be parked within eight feet of railroad tracks.
- The driver shall be required to look in the direction of, and keep a clear view of, the path of travel.
- Under all travel conditions, the truck shall be operated at a speed that will permit it to stop in a safe manner.
- Stunt driving and horseplay shall not be permitted.
- All forklift drivers shall slow down for wet or slippery conditions.
- Trailers must be chocked and secured.

Training

- All employees who will operate forklifts must be trained in safe operations of forklifts. The training program includes formal instruction, practical training, and operator evaluation in the workplace. Employee will receive a certification card upon completion of training. Recertification must occur every three years and be documented.
- Licensed Operators with a current, valid operator's license are considered to be trained.
- Training will consist of classroom training conducted by a member of the Safety Department who has the knowledge, experience, and the competency to evaluate the training and testing. Hands-on training on the specific style of forklift may be conducted by the job foreman.
- Retraining is required when unsafe operations, incidents, different vehicle type, or changes in conditions occur.

Training Program

The Training Program covers the following content:

- Operating instructions, warnings, and precautions for the types of truck the operator will be authorized to operate;
- Differences between the truck and an automobile;
- Truck controls and instrumentation: where they are located, what they do, and how they work;

- Engine or motor operation;
- Steering and maneuvering;
- Visibility (including restrictions due to loading);
- Fork and attachment adaptation, operation, and use limitations;
- Vehicle capacity;
- Vehicle stability;
- Any vehicle inspection and maintenance that the operator will be required to perform;
- Refueling and/or charging and recharging of batteries;
- Operating limitations; and
- Any other operating instructions, warnings, or precautions listed in the operator's manual for the types of vehicle that the employee is being trained to operate.

Workplace-Related Topics

- Surface conditions where the vehicle will be operated;
- Composition of loads to be carried and load stability;
- Load manipulation, stacking, and unstacking;
- Pedestrian traffic in areas where the vehicle will be operated;
- Narrow aisles and other restricted places where the vehicle will be operated;
- Hazardous (classified) locations where the vehicle will be operated;
- Ramps and other sloped surfaces that could affect the vehicle's stability;
- Closed environments and other areas where insufficient ventilation or poor vehicle maintenance could cause a buildup of carbon monoxide or diesel exhaust; and
- Other unique or potentially hazardous environmental conditions in the workplace that could affect safe operation.

Maintenance

- Any forklift not in safe operating condition shall be removed from service.
- All repairs shall be made by authorized personnel.
- Forklifts in need of repair to their electrical system shall have the battery disconnected prior to such repairs.
- All parts of the forklift in need of replacement shall be replaced with those used in the original design and approved by the manufacturer.

AERIAL / SCISSOR LIFTS

Introduction

Aerial / Scissor lifts pose a serious safety hazard if not used properly. It is the policy of Badger Swim pools to train employees on the hazards of operating aerial / scissor lifts and to ensure such equipment is safely maintained.

Purpose

This program has been established to:

- Ensure the safe operation of aerial and scissor lifts.
- Ensure that all employees understand and comply with safety standards related to aerial / scissor lifts.
- Assign responsibilities to personnel which are necessary for successful implementation.

Definitions

Aerial Lifts - Any powered, mobile, vehicle-mounted device that may elevate, telescopically extend, articulate and may (or may not) rotate around a substantial axis in order to raise and support personnel to elevated job sites.

Aerial lifts include extendible boom platforms; vehicle-mounted aerial ladders; articulating, rotating boom platforms; vertical self-elevating towers; cherry pickers; bucket trucks; and any other equipment built in accordance with either ANSI-A92.2 (1990), Vehicle-Mounted Elevating and Rotating Aerial Devices, or ANSI-A92.5 (1992), Boom Supported Elevating Work Platforms.

Scissor Lifts: Any powered, mobile device that has a personnel work platform which is mechanically raised vertically above the carriage by means of controls on the work platform.

This equipment is designed and fabricated according to either ANSI-A92.6 (1990), Self-Propelled Elevating Work Platforms, or ANSI-A92.3 (1990), Manually Propelled Elevating Aerial Platforms.

Anchorage - A secure point of attachment to be used with personal fall protection equipment.

Familiarization - Providing information regarding the control functions and safety devices for the aerial /scissor lift to an operator of the equipment.

Insulated Platform - A platform designed and tested to meet the specific electrical insulation ratings consistent with the manufacturer's identification plate.

Outriggers - Devices that increase the stability of the aerial lift platform and that are capable of lifting and leveling the aerial / scissor lift platform.

Rated Work Load - The designated capacity of the aerial platform as specified by the manufacturer.

Stabilizers - Devices that increase the stability of the aerial lift platform but are not capable of lifting or leveling the aerial / scissor lift platform.

General Requirements

- Operators shall review and follow the manufacturer's operating manual.
- A copy of the manual must be located on the equipment.
- Only certified operators shall operate an aerial / scissor lift.
- Operators shall follow safe work practices when operating an aerial / scissor lift.

Pre-Use Inspections

- Every aerial / scissor lift must undergo a pre-use inspection prior to use on each shift.
 - Aerial / scissor lifts not used during a shift do not have to undergo an inspection during that shift.
- Pre-use inspections must be documented using an appropriate checklist for the aerial / scissor lift. Refer to the manufacturer's inspection requirements for complete inspection details. (See Appendix N)
- The pre-use inspection will identify conditions that could affect the safe use of the aerial / scissor lifts. If any unsafe conditions exist, the aerial / scissor lift shall be removed from service. In order to remove an aerial / scissor lift from service, the operator shall remove the keys and place an "Out of Service" tag near the operator control panel.
- Operators must immediately report any unsafe aerial / scissor lift conditions to their supervisor. When an aerial / scissor lift has been removed from service, the operator must give the keys to the supervisor for safekeeping. The supervisor is then responsible for ensuring the necessary arrangements are made for repair.
- Only authorized personnel shall perform aerial / scissor lift repairs and adjustments. All replacement parts shall be the same design as the original or an equivalent design as designated by the manufacturer.

Personal Protective Equipment

Fall protection equipment must be used as follows when operating aerial / scissor lifts:

- Aerial Lift:
 - Operators shall be secured to the anchor point provided by the equipment manufacturer by either a self-retracting lanyard or by a lanyard short enough to prevent the employee from being ejected.
 - Operators must follow manufacturer's recommendations as to which fall protection system to use.
- Scissor lift:
 - The guardrail system provides fall protection. Should this protection be compromised, an adequate alternative method shall be implemented.
- Tying a lanyard off to an adjacent pole, structure, or equipment while working from an aerial lift shall not be permitted.

Training

- Training must be completed prior to any use of the aerial / scissor lift. Certification of aerial / scissor lift operators is a three-step process consisting of classroom instruction, hands-on training and hands-on evaluation.
- Classroom instruction, hands-on training and hands-on evaluation can be conducted by either a competent trainer, equipment manufacturer, safety consultant and/or a vendor who specializes in aerial / scissor lift training.
- Hands-on training and hands-on evaluation portions of the training can also be conducted by a supervisor who is experienced and competent with the aerial / scissor lift. This person could be a certified operator, supervisor / manager or Safety Department member.
- Training must be specific to the type of aerial / scissor lift being used.
- Training must cover the following:
 - The purpose and use of the equipment manuals.
 - A pre-start inspection.
 - Responsibilities associated with problems or malfunctions affecting the operation of the lift.

- Factors affecting stability.
- The purpose of placards and decals.
- Workplace inspection.
- Applicable safety rules and regulations.
- Authorization to operate.
- Operator warnings and instructions.
- Proper use of personal fall protection equipment.
- Hands-on operation.
- Trainees must successfully complete hands-on training and a hands-on evaluation before being allowed to operate an aerial / scissor lift independently. Trainees will be given adequate supervision and time to learn basic operating skills.
- Re-evaluations can be conducted by a supervisor who is experienced and competent with the aerial / scissor lift. This person could be a certified operator, supervisor / manager or Safety Department member.
- Refresher training in relevant topics will be provided to an aerial / scissor lift operator when any of the following occur:
 - The operator has been observed to be using the aerial / scissor lift in an unsafe manner.
 - The operator has been involved in an accident or a near-miss incident.
 - The operator is assigned to operate a different type of equipment.
 - A condition in the workplace changes in a manner that could affect safe operation of the equipment.

Maintenance

- The manufacturer's instructions regarding maintenance must be followed. (Such instructions are typically included in the owner's manual for the aerial / scissor lifts).
- Any aerial / scissor lift with an identified safety issue will be immediately removed from service.
- No aerial / scissor lift with a leak in the fuel system will be operated until the leak has been eliminated. Repairs to the fuel and ignition system that involve fire hazards will be conducted in a location (non-flammable) designated for such repairs.
- Any aerial / scissor lift that emits hazardous sparks or flames from the exhaust system will be immediately removed from service and not returned to service until the cause has been eliminated.
- Only replacement parts equivalent to the original parts are to be used.

Subcontractor Employees:

- Subcontractors are required to follow all applicable OSHA regulations and manufacturer's instructions.

Examples of Aerial / Scissor Lifts

	<p><u>Vehicle Mounted Aerial Lift / Bucket Truck</u> The lift platform is an integral part of an over-the-road vehicle.</p>
 <p>Hunan Sineboom Heavy Industry Co., Ltd.</p>	<p><u>Articulating Boom Aerial Lift</u> This aerial lift has at least 2 hinged sections which are used to increase mobility.</p>
	<p><u>Man Lift / Cherry Picker</u> This piece of equipment lifts personnel vertically, but not horizontally.</p>
	<p><u>Scissor Lift</u> This piece of equipment lifts personnel vertically, but not horizontally.</p>
	<p><u>Extendable / Telescoping Aerial Lift</u> This aerial lift has a boom that extends horizontally and vertically.</p>

HAND & PORTABLE TOOLS

Introduction

Tools are a common part of our lives and this often brings complacency. All tools are manufactured with safety in mind, but serious incidents often occur before steps are taken to search out and avoid or eliminate tool-related hazards. Often times, incidents result from using the wrong tool for the job, using the right tool incorrectly, failing to wear personal protective equipment, or failing to follow approved safety guidelines.

The purpose of this program is to provide Badger Swim pools employees with information on how they can recognize the hazards associated with the different types of tools and the safety precautions necessary to prevent these hazards.

General Requirements

- **Condition of Tools**
 - Keep tools in good working condition. Damaged, worn, or defective tools can cause injuries and shall not be used.
 - It is imperative that the right tool is used for the job and that it be used in accordance with manufacturer specifications.
 - Never make repairs to tools or equipment unless authorized by your supervisor.
 - Inspect electrical extension cords and other wiring to be certain they are properly insulated. Do not use tools with frayed or damaged cords.
- **Guarding**
 - When power-operated tools are designed to accommodate guards, the guards should be utilized whenever the tools are in use.
 - One or more methods of machine guarding shall be provided to protect the operator and other employees in the machine area from hazards, such as those created by point of operation, in-going nip points, rotating parts, flying chips, and sparks.
 - Never remove machinery or equipment guards.
 - Be sure that a power tool is off and motion stopped before setting the tool down.
 - Disconnect tool from power source before changing drills, blades, or bits or attempting repair or adjustment. Never leave a running tool unattended.
- **Personal Protective Equipment**
 - Employees using hand and power tools; exposed to the hazard of falling, flying, abrasive, and splashing objects; or exposed to harmful dusts, fumes, mists, vapors, or gases shall be provided with the specific personal protective equipment necessary to protect them from the hazard.

Hand Tools

- **General**
 - Badger Swim pools shall not issue or permit the use of unsafe hand tools.
 - Wrenches (including adjustable, pipe, end, and socket wrenches) shall not be used when jaws are sprung to the point that slippage occurs.
 - Impact tools (such as drift pins, wedges, and chisels) shall be kept free of mushroomed heads.
 - The wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight in the tool.

Power-Operated Hand Tools

- **Electric Power-Operated Tools**
 - Electric power-operated tools shall either be of the approved double-insulated type or grounded.
 - The use of electric cords for hoisting or lowering tools shall not be permitted.
- **Pneumatic Power Tools**

- Pneumatic power tools shall be secured to the hose or whip by some positive means to prevent the tool from becoming incidentally disconnected.
- Safety clips or retainers shall be securely installed and maintained on pneumatic impact (percussion) tools to prevent attachments from being incidentally expelled.
- Do not use compressed air for cleaning purposes except when pressure is reduced to less than 30 psi, and then only with effective chip guarding and proper personal protective equipment.
- The manufacturer's safe operating pressure for hoses, pipes, valves, filters, and other fittings shall not be exceeded.
- The use of hoses for hoisting or lowering tools shall not be permitted.
- **Fuel-Powered Tools**
 - All fuel-powered tools shall be stopped while being refueled, serviced, or maintained.
 - When fuel-powered tools are used in enclosed spaces, the applicable requirements for concentrations of toxic gases and use of personal protective equipment shall apply.
- **Hydraulic Power Tools**
 - The manufacturer's safe operating pressures for hoses, valves, pipes, filters, and other fittings shall not be exceeded.
- **Powder-Actuated Tools**
 - Only employees who have been trained in the operation of the particular tool in use shall be allowed to operate a powder-actuated tool.
 - The tool shall be tested each day before loading to see that safety devices are in proper working condition. The method of testing shall be in accordance with the manufacturer's recommended procedure.
 - Tools shall not be loaded until just prior to the intended firing time. Neither loaded nor empty tools are to be pointed at any employees. Hands shall be kept clear of the open barrel end. Loaded tools shall not be left unattended.
 - Fasteners shall not be driven into very hard or brittle materials (including, but not limited to, cast iron, glazed tile, surface-hardened steel, glass block, live rock, face brick, or hollow tile).
 - Tools shall not be used in an explosive or flammable atmosphere.

Abrasive Wheels and Tools

- **General**
 - All abrasive wheels shall be closely inspected and ring-tested before mounting to ensure that they are free from cracks or defects.
 - Grinding wheels shall fit freely on the spindle and shall not be forced on. The spindle nut shall be tightened only enough to hold the wheel in place.
 - All employees using abrasive wheels shall be protected by a face shield.
- When angle grinders are used for cutting activities, appropriate cut resistant gloves and sleeves must be worn.

Woodworking Tools

- **General**
 - All woodworking tools and machinery shall meet other applicable requirements of the most current American National Standards Institute, Safety Code for Woodworking Machinery.
 - Employees must learn a machine's applications and limitations, as well as the specific potential hazards peculiar to this machine. Follow available operating instructions and safety rules carefully.
 - Keep working area clean and be sure adequate lighting is available.
 - Do not wear loose clothing, gloves, bracelets, necklaces, or ornaments. Wear face, eye, ear, respiratory, and body protection devices as indicated for the operation or environment.

- Do not use cutting tools larger or heavier than the machine is designed to accommodate. Never operate a cutting tool at greater speed than recommended.
- Keep hands well away from saw blades and other cutting tools. Use a push stock or push block to hold or guide the work when working close to cutting tool.
- Never stand directly in line with a horizontally rotating cutting tool. This is particularly true when first starting a new tool, or a new tool is initially on the arbor.
- Be sure the power is disconnected from the machine before tools are serviced.
- Never leave the machine with the power on.
- Be positive that hold-downs and anti-kickback devices are positioned properly, and that the work-piece is being fed through the cutting tool in the right direction.
- Do not use a dull, gummy, bent, or cracked cutting tool.
- Be sure that keys and adjusting wrenches have been removed before turning power on.
- Use only accessories designed for the machine.
- Adjust the machine for minimum exposure of the cutting tool necessary to perform the operation.

CRANES

General

Employees of Badger Swimpools shall comply with the manufacturer's specifications and limitations applicable to the operation of any and all cranes and derricks. Where manufacturer's specifications are not available, the limitations of the equipment shall be based on the determinations of a qualified engineer competent in this field and such determinations will be appropriately documented and recorded. No modifications or additions which affect the capacity or safe operation of the equipment shall be made without the manufacturer's written approval.

- Rated load capacities, recommended operating speeds, and special hazard warnings shall be conspicuously posted on all equipment. Instructions or warnings shall be visible to the operator while he or she is at his or her control station.
- Rated load limits shall never be exceeded.
- Hand signals to crane and derrick operators shall be those prescribed by the applicable ANSI standard for the type of crane in use. Hand signal illustrations will be made available for all workers to reference on the job site.
- Hand signals given to crane or derrick operators shall come from a single, designated competent person. That person and all other persons shall be kept clear of loads about to be lifted and of suspended loads.
- A competent person shall inspect all machinery and equipment prior to each use and during use to make sure it is in safe operating condition. In addition, records of an annual inspection of the hoisting machinery shall be maintained on-site, including dates and results of the inspection.
- Belts, gears, shafts, pulleys or other reciprocating, moving or excessively hot (exhaust pipes, for example) parts shall be guarded if such parts are exposed to contact by employees.
- Areas within the swing radius of the rotating superstructure of the crane shall be barricaded to prevent any employee from being struck by the crane.
- An accessible fire extinguisher of 5BC rating or higher shall be available at all operator stations or in the cabs of equipment.
- Equipment or machines shall be operated proximate to power lines only in accordance with the following:
 - For lines rated 350 kV or below, minimum clearance between the lines and any part of the crane or load shall be 20 feet.
 - For lines rated over 350 kV and under 1000kV, minimum clearance between the lines and any part of the crane or load shall be 50 feet.
 - For lines rated over 1000kV, minimum clearance distance must be determined by utility owner/contractor.
 - A designated spotter shall be appointed to observe clearance of the equipment and ensure no part of the crane or the load will encroach the 20 foot minimum distance and give timely warning for all operations where it is difficult for the operator to maintain the desired clearance by visual means.
 - A visual aid shall be used to warn of power line encroachment when a crane or load has capability of coming within 20 feet of the power line.
 - Visual aid examples include: a clearly visible painted line, a clearly visible line of stanchions, clearly visible line of sight landmarks.
 - Adequate clearance shall be maintained between moving and rotating structures of the crane and fixed objects to allow the passage of employees without harm.
- All overhead gantry cranes shall be plainly marked on each side of the crane. If the crane has more than one hoisting unit, each hoist shall have its rated load marked on it or its load-block, and this marking shall be clearly legible from the ground or floor.
- During all lifting evolutions, one competent person shall be designated to communicate with the crane operator

- Do not pull the load-block to one side to attach it to the load. Center the boom-point directly over the load before hooking up.
- Use crane outriggers at all times, except when traveling. Make every reasonable effort to keep the outriggers extended when the crane is moving with a load.
- Operate cranes on firm level ground or use mats, particularly for near-capacity lifts.
- Rope off or barricade a space 360 degrees around the swing radius of the rear of the rotating superstructure of the cranes operating at a job site.
- Never leave the crane controls while the engine is running or when the platform is occupied.
- Cranes with telescoping booms shall be equipped with a device to indicate clearly to the operator, at all times, the boom's extended length or an accurate determination of the load radius to be used during the lift shall be made prior to hoisting.

Operator Credentials

- Crane operators must be certified by an accredited certification body in order to operate any crane with a lifting capacity greater than 2,000 pounds.
 - The certification must be based on crane type or type and capacity.
- Operator evaluation and training must be carried out and documented by the operator's employer.

Lifting Personnel

- Never ride a material hoist.
- Entrance to hoist-ways shall be protected with gates or bars.

Rigging

Inspections

Each day before being used, the sling and all fastenings and attachments shall be inspected for damage or defects by a competent person designated by the employer. Additional inspections shall be performed during sling use, where service conditions warrant. Damaged or defective slings shall be immediately removed from service.

- 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. Defective rigging equipment shall be removed from service.
- Welded alloy steel chain slings shall have permanently affixed durable identification stating size, grade, rated capacity, and sling manufacturer.
- Hooks, rings, oblong links, pear-shaped links, welded or mechanical coupling links, or other attachments, when used with alloy steel chains, shall have a rated capacity at least equal to that of the chain.
- In addition to the inspection required by other paragraphs of this section, a thorough periodic inspection of alloy steel chain slings in use shall be made on a regular basis, to be determined on the basis of (A) frequency of sling use; (B) severity of service conditions; (C) nature of lifts being made; and (D) experience gained on the service life of slings used in similar circumstances. Such inspections shall be at intervals no greater than once every 12 months.
- Rigging equipment shall not be loaded in excess of its recommended safe working load.
- Wire rope shall not be used if, in any length of eight diameters, the total number of visible broken wires exceeds 10% of the total number of wires, or if the rope shows other signs of excessive wear, corrosion, or defect.

Slings

- There are a wide variety of slings available for rigging. They can be manufactured from fiber or wire rope, metal mesh, chain, or synthetic materials such as nylon, polypropylene and polyester. Slings can also be combined with various attachments such as hooks and rings.
- The safe use of slings requires staying within their rated capacity, largely depends upon three important factors.

- The hitch in which the sling is configured.
- The angle of the sling.
- The sharpness of the edges of the load which the sling passes around.
- Sling legs shall not be kinked.
- Slings used in a basket hitch shall have the loads balanced to prevent slippage.
- Slings shall be padded or protected from the sharp edges of their loads.

Hitches

The method in which a sling is rigged or attached to a load is referred to as a hitch. The weight and shape of the load will largely determine which type of slings and hitches are used.

There are three basic types of hitches: vertical, choker, and basket, with each hitch capable of being set into various configurations. There are different kinds of hitches as described below:

- **Vertical** - When one end is attached to the load and the other end is attached to the lifting device or mechanism with the angle of loading being less than five degrees. This type of hitch should not be used for lifting loose material or loads that are difficult to balance. This type of hitch is best used with a shackle attached to an eye bolt or lifting eye.
- **Bridle** - A sling or hitch is composed of two or more individual legs attached to a lifting hook or gathered in a fitting. This hitch provides good load stability when the load weight is distributed among the legs and the hoisting hook is directly over the load's center of gravity. When using a three or four leg bridle, the weight may not be distributed evenly throughout all the legs. In this situation, the capacity of two sling legs must be great enough to support the load.
- **Basket** - A basket hitch is configured by wrapping or passing a sling around a load and attaching the eyes to a lifting device such as a hook. Because the load can shift or even fall out of the sling, a single basket hitch must not be used to lift loads that are difficult to balance. A double wrap basket hitch is the same as a basket hitch, but with an additional wrap that goes completely around the load; it is ideal for lifting loose material. The gripping effect helps prevent the slings from sliding inward.
- **Choker** - A choker hitch is accomplished by passing a sling around the load and through one eye or end fitting where it is then attached to a lifting hook. A double choker hitch can also be used, which is the same as a choker except that an additional wrap is placed around the load.
- **Angles** - It is very important for slings to remain within the rated capacities that are listed in capacity tables. The rated capacity of the slings used to lift a load largely depends on the angles that are formed between the sling legs and horizontal plane. As the sling angles decrease, the loading or tension on the slings increases. It is not recommended to use sling angles below 30 degrees.
- **Sharpness** - Some materials that are lifted have sharp edges that can wear on slings when wrapped around the material. Softeners must be placed between such materials and slings to protect the integrity of the sling. Softeners must be stabilized to ensure proper lift when used.

Hardware- General Information

Hardware is an integral and important part of a rigging operation. There are many different types of hardware, which include but are not limited to: hooks, shackles, eye bolts, hoist rings, master links, turnbuckles, and blocks. The hardware most commonly used by Badger Swimpools employees will be covered in this section.

Where practical, hardware should be marked with its size and rated capacity. Modifications should only be made when approved by the manufacturer, and repairs made in accordance to the manufacturer's instructions.

- **Hooks** - Hooks are made in many different sizes and shapes to meet a wide range of applications. There are many different types of hooks (e.g., eye, shank, clevis, grab, sorting, sliding choker). They can be attached to load blocks, slings, and other lifting devices such as lifting beams. When using two slings placed in a hook, ensure that the included angle between the slings is not greater than 90 degrees. This prevents the slings from

coming out of the hook and prevents points loading which reduces hook capacity. If the angle is greater than 90 degrees, use a shackle to attach the sling legs to the hook; this prevents the slings from coming out of the hook and from reducing the capacity of the hook. Ensure that the hook (not the latch) supports the load. The sling or lifting device must always be seated properly in the bowl of the hook. Never side, back, or point load a hook. These reduce hook strength and create an unsafe condition. Point loading can reduce hook capacity as much as 60%. Before use, hooks must be inspected by a competent person. Never repair, alter, or reshape a hook by welding, heating, burning or bending, unless approved by the hook manufacturer.

- **Shackles** - Shackles are normally used to connect two lifting devices and are an essential element of most rigging operations. They should be stamped or embossed with their rated capacity and size. Shackle size is determined by the diameter of the body, not by the diameter of the pin. Some shackles are designed for a specific application, such as shackles manufactured for synthetic web slings. This type of shackle provides a wider bearing surface giving an increased area for load distribution on the sling. When using a shackle with a hook, the shackle pin must be positioned across the hook. Shackles must be inspected by a competent person before being used. Any shackle that has been altered or repaired must be approved by the shackle manufacturer.
- **Lifting Beams** - The most common types of lifting beams are the rigid beam and the spreader beam. Rigid beams are of a rigid structural member and can either have fixed or adjustable lift points. Spreader beams are composed of a structural member supported by rigging which directs most of the load stress to attachment points. A combination of both can sometimes be used. Lifting beams are used so that slings can be used in a vertical configuration. The safe use of lifting beams require that the load be supported in such a manner that the beam and load remain level. The beam's rated capacity must never be exceeded. Inspection of lifting beams must be completed by a competent person before being used, and annually thereafter with documentation kept.

Procedures

- **Turning Loads** - To turn a load, use a double choker with sling body passing through the eyes of the sling, eyes being placed in the opposite direction of the turn. Ensure that the center of the sling body is placed over the hook and not the sling eyes. This method provides good control over the load because its weight is applied against the sling, allowing little or no movement between sling and load. Using only one hook requires the sling to be attached to the side of the load above the center of gravity. To prevent the load from sliding, load may have to be simultaneously lifted and moved in the direction of the turn.
- **Securing Loads** - Loads must be secured before lifting, especially when lifting loose material such as pipe. Loads must be well secured and properly balanced in the sling or approved lifting device. Any "homemade" rigging must be pre-approved by an engineer.
- **Taglines** - A common misconception is that a tagline is required to be used on every load. This can often make controlling a lift more difficult and sometimes even compromise safety if the tagline becomes tangled with a structure or piece of equipment. When a tagline is used, make sure that it has sufficient strength and is long enough to keep personnel from under the load. When working around power lines be sure to use a non-conductive rope.
- **Placement of Loads** - All loads must be placed on blocks. Slings must never be pulled from under a load while the load is resting on the slings. This can cause severe damage to the sling and ruin the integrity of the sling. Slings should be pulled from material by hand when possible; if pulled free by a crane, personnel should stand clear. When storing loads, make sure that blocking has sufficient strength to support the load and should be placed in a stable manner.

Qualified Signal Person

A Qualified Signal Person shall be trained in and have a basic understanding of the following:

- Equipment operation and limitations
- Crane dynamics
- Boom deflection
- Definitions applicable to signaling
- Power-line safety when signaling
- Problems when signaling
- When a signal person is required
- Who can give signals
- Types of Signals
- Transmission of Signals
- Signal person qualifications
- Pass a Written Test
- Pass a Practical Test - Employee will physically demonstrate examples of hand signals and show an understanding of voice commands.

Cranes (Rev 2022)

BLOODBORNE PATHOGENS EXPOSURE

PURPOSE

Badger Swimpools has established this written exposure control plan for all employees who handle, store, use, process, or dispose of potentially infected blood and blood products. This program includes requirements for personal protective equipment, engineering controls, housekeeping procedures, training, exposure reporting and recordkeeping. This exposure control plan is readily available to all Badger Swimpools employees.

Responsibilities

The company Safety Director will manage the blood-borne pathogens exposure control program, and maintain all records pertaining to it. Badger Swimpools management will ensure proper adherence to the program through periodic audits. The exposure-control plan will be reviewed and updated at least annually. The review process will include soliciting input from non-managerial employees.

Definitions

Biological Hazard: Any viable infectious agent that presents a potential risk to human health.

Blood-borne Pathogens: Microorganisms that can cause diseases such as human immunodeficiency virus (HIV) and hepatitis B (HBV), which are spread through contact with infected blood or blood products.

Medical Wastes/Infectious Wastes: Blood, blood products, bodily fluids, any waste from human and animal tissues; tissue and cell cultures; human or animal body parts removed by means of surgery or autopsy.

Universal Precautions: Preventing exposure to blood borne pathogens by assuming all blood and bodily fluids to be potentially infectious, and taking appropriate protective measures.

Training

Badger Swimpools will provide training on blood-borne pathogens exposure, by a qualified professional, to any employee whose assigned job duties include first aid, HAZMAT response or custodial work (such as cleaning restrooms).

All employees in affected jobs will receive training upon hiring, and yearly thereafter. The training will include:

- Badger Swimpools policy;
- Types and transmission of blood-borne pathogens;
- General safety rules;
- Universal precautions;
- Use of personal protective equipment (PPE);
- Medical waste disposal procedures;
- Post-exposure treatment and procedures;
- HBV vaccinations

General Work Procedures

Badger Swimpools personnel must follow these procedures for controlling exposure to blood-borne pathogens:

- Supervisors must ensure that their employees are trained in proper work practices, universal precautions, the use of personal protective equipment, and proper cleanup and disposal techniques.
- Handwashing facilities or antiseptic hand cleansers/towelettes must be available at each worksite.

- Engineering controls will be examined and maintained on a regular schedule to ensure their effectiveness.
- The company will provide resuscitation equipment and other ventilation equipment to eliminate the need for direct mouth-to-mouth contact for employees whose jobs would require them to perform resuscitation.
- Badger Swim pools will provide employees with the necessary personal protective equipment (PPE) to control their exposure to blood-borne pathogens.
- Do not eat, drink, smoke, handle contact lenses or apply cosmetics in areas where exposure to bloodborne pathogens is possible. Do not store food and drinks in refrigerators or cabinets where blood and other potentially infectious materials are stored.
- Wear disposable latex or vinyl gloves if:
 1. you have cuts, abrasions, chapped hands, dermatitis or similar conditions;
 2. you are examining a patient with an open skin wound and active bleeding;
 3. you are handling blood, blood products or body secretions.
- Wear gowns, aprons or lab coats whenever there is a possibility that bodily fluids could splash on an employee.
- Perform procedures involving blood and other potentially infectious materials in such a manner that will minimize splashing or spraying.
- Wear protective clothing if entering a work area where potentially infectious materials are handled.
- Wash your hands as soon as possible after handling potentially infectious materials, and after removing protective clothing and equipment.
- Remove all protective equipment when leaving the work area and, if the equipment is contaminated, place it in a proper storage container for washing, decontamination or disposal.
- Remove contaminated clothing before entering other areas of the building or leaving the building.
- All equipment and/or working surfaces shall be cleaned after contact with blood or other infectious material.

Medical / First Aid Wastes

- Separate all medical/infectious waste from other waste at the point of origin, and place (except for sharp objects) in double, disposable red bags with "Biohazard" and "Infectious Waste" labels.
- Place all 'sharps,' such as needles, scalpels, razor blades or broken glass, in puncture -proof, leak-proof, labeled or color-coded containers for proper disposal.
- Place all infectious waste in leak-proof bins or barrels marked "Biohazard" and "Infectious Waste." These will be collected by a licensed infectious-waste removal company.
- Disinfect contaminated reusable equipment before washing for re-use. Decontaminate reusable glassware in a 1-to-9-bleach solution before rinsing and acid washing; then sterilize the glassware in an autoclave.
- Decontaminate floors and other surfaces with a 1:9 bleach solution as well.

Engineering Controls

Changes in technology that eliminate or reduce exposure to bloodborne pathogens will be incorporated when identified. Consideration and implementation of appropriate, commercially-available, effective and safer medical/first aid devices are document annually.

Hepatitis B (HBV) Vaccinations

Badger Swimpools will provide, at its own expense, Hepatitis B vaccinations to employees covered under this program and who choose to be vaccinated. The company will document that it offered the vaccine, as well as the employees' decision to accept or decline and the date of vaccination.

Reporting

Any employee who has suffered a cut, needle stick or mucous membrane exposure to another person's bodily fluids, or who has been exposed to human blood and blood products, must report the incident immediately to the company Safety Director. An employee covered under this program, or an employee acting as a "Good Samaritan," who has been exposed on the job to HIV, HAV, HBV or HCV will be tested at the time of exposure to determine if the virus has been transmitted. The employee will be re -tested at six weeks, 12 weeks and six months after exposure. All testing will be performed at company expense. The company will also contact the exposure source and request that that person to be tested, at company expense. The testing for this person is not mandatory, however, and refusal will not affect his or her employment. Test results will be provided to source and exposed employees within five business days of their receipt. Confidentiality will be maintained for both the exposed employee and the exposure source during all phases of the post-exposure program.

Recordkeeping

Badger Swimpools Safety Director will maintain all exposure reports, training and HBV vaccination records. OSHA requires that records be kept for the duration of employment, plus 30 years, except training records which must be kept for 3 years. Hepatitis B or HIV contracted on the job will be recorded on the OSHA 300 log as an illness. Exposure to bloodborne pathogens from contact with 'sharps' will be recorded on the OSHA 300 log if a doctor prescribes treatment with gamma globulin, HBV immune globulin or HBV vaccine.

CONFINED SPACE ENTRY

Definitions

The following terms are used in the OSHA standard and/or this written program:

Attendant/Entry Attendant - An individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs all attendant's duties assigned in the employer's permit space program.

Authorized Entrant - An employee who is authorized by the employer to enter a permit space.

Blanking or Blinding - The absolute closure of a pipe, line, or duct by the fastening of a solid plate that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.

Competent Person - One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them.

Confined Space - A space that: (1) is large enough and so configured that an employee can bodily enter and perform assigned work; (2) has limited or restricted means for entry or exit; and (3) is not designed for continuous employee occupancy.

Engulfment - The surrounding and effective capture of a person by a liquid or finely divided solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.

Entrant - Any person who enters a confined space.

Entry - The action by which a person passes through an opening into a permit-required confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

Entry Permit - The written or printed document that is provided by the employer to allow and control entry into a permit space. (See Appendix K)

Entry Supervisor - The person responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this section.

Hazardous Atmosphere - An atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness from one or more of the following causes: (1) Flammable gas, vapor, or mist in excess of 10% of its lower flammable limit (LFL); (2) Airborne combustible dust at a concentration that meets or exceeds its LFL; (3) Atmospheric oxygen concentration below 19.5% or above 23.5%; (4) Any other atmospheric condition that is immediately dangerous to life or health.

Hot Work Permit - The employer's written authorization to perform operations (e.g. riveting welding, cutting, burning, and heating) capable of providing a source of ignition. (See Appendix L)

Immediately Dangerous to Life or Health (IDLH) - Any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a permit space.

Lower Flammable Limit or Lower Explosive Limit (LEL) - The minimum concentration of a substance in air needed for an ignition source to cause a flame or explosion.

Non-Entry Rescue - Occurs when a rescue service, usually the attendant, retrieves employees in a permit space without entering the permit space.

Non-Permit Confined Space - A confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm.

Oxygen Deficient Atmosphere - An atmosphere containing less than 19.5% oxygen by volume.

Oxygen Enriched Atmosphere - An atmosphere containing more than 23.5% oxygen by volume.

Permit-Required Confined Space - A confined space that has one or more of the following characteristics: (1) contains or has the 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 converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or (4) contains any other recognized serious safety or health hazard.

Permit System - The employer's written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.

Rescue Service - The personnel designated to rescue employees from the permit spaces.

Retrieval System - The equipment used for non-entry rescue of persons from permit spaces.

Testing - The process by which the hazards that may confront entrants of a permit space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.

Ventilate / Ventilation - Means controlling a hazardous atmosphere using continuous forced-air mechanical systems that meet the requirements of 1926.57 – Ventilation.

Introduction

Confined spaces can be ever-changing. Regardless of how many times a confined space is entered, it must be treated as "new" each time. Complacency can lead to a catastrophe.

OSHA has determined that asphyxiation is the leading cause of death in confined spaces, however, there are other life-threatening hazards. Explosive atmospheres, toxic atmospheres, engulfment and mechanical hazards may exist as well. It is important to consider all of the potential hazards before entering a confined space.

Examples of confined spaces:

- Boiler
- Warehouse
- Degreaser
- Furnace
- Pipeline
- Valve pit
- Reaction Vessel
- Manhole
- Digester
- Silo
- Excavation
- Sewer

The examples listed above are only a few of the many different types of confined spaces we encounter at our project sites. By definition, a confined space is a space which has any one of the following characteristics:

- Is large enough and so configured that an employee can physically enter the space and perform assigned work.
- Has limited or restricted means for entry or exit.
- Is not designed for continuous employee occupancy.

General Requirements

Badger Swimpoools Requirements

- It is our responsibility to obtain from the owner any available information regarding permit space hazards and entry operations.
- We must coordinate entry operations with the owner when both the owner's employees and our employees will be working in or near permit spaces, as required.
- We must inform the owner of the permit space program that we will follow and any hazards confronted or created in these spaces either through a debriefing or during the entry operation.
- We must not rely on the owner/customer to identify a confined space for us.
- We must not enter a confined space that has not been monitored.

Owner's Requirements

- The owner must inform us that the workplace contains permit spaces and that the permit space entry is allowed only through compliance with a permit space program meeting requirements of the OSHA standard.
- The owner must inform us of the elements, including the hazards identified and the owner's experience with the confined space, that make the space in question a permit space.
- The owner is to notify us of any precautions or procedures that their employees have implemented for the protection of our employees in or near permit spaces where we will be working.
- Coordinate entry operations with us, when both the owner's employees and our employees will be working in or near the permit space as required.
- Debrief us at the conclusion of the entry operation on the permit space program followed in regards to hazards confronted or created in permit spaces during entry operations.

Responsibilities

Entry Supervisor (Competent Person)

- Know the hazards that may be faced during entry, including the mode (how the contaminant gets into the body), signs or symptoms, and consequences of exposure.

- Complete the Badger Swimpools Confined Space Hazard Assessment form and determine whether the space is a permit or non-permit entry required confined space. (See Appendix I)
- Use the appropriate signage to identify the space as being a permit or non-permit entry confined space.
- Determine the entry requirements.
- Notify all involved employees of the entry requirements.
- Ensure requirements for entry have been completed before entry is authorized.
- Ensure continuous confined space monitoring is performed by personnel qualified and trained in confined space entry procedures and air monitoring procedures.
- Fill out the appropriate permit and sign the permit when all acceptable conditions have been met.
- Post the permit at the entrance to the confined space.
- Renew the permit or have it reissued as needed.
- Post any required barriers and signs.
- Remain alert to changing conditions that might affect the conditions of the permits (i.e., require additional atmospheric monitoring or changes in personal protective equipment).
- Ensure that personnel doing the work and all support personnel adhere to permit requirements.
- Ensure the permit is canceled when the work is done.
- Ensure the confined space is safely closed and all workers are cleared from the area.

Confined Space Attendant

- Maintain effective and continuous communication with personnel during confined space entry, work, and exit.
- Order personnel to evacuate the confined space if he/she:
 - Notices a change in the atmospheric conditions, or the gas monitor alarms go off;
 - Observes a condition which is not allowed on the entry permit;
 - Notices the entrants acting strangely, possibly as a result of exposure to hazardous substances;
 - Notices a situation outside the confined space which could endanger personnel;
 - Notices a hazard within the confined space that has not been previously recognized or taken into consideration;
 - Must leave his/her work station.
- Keep unauthorized persons out of the confined space, order them out, or notify authorized personnel of an unauthorized entry.

Authorized Entrants

- Report unusual conditions associated with the confined space equipment or confined space operations to the Confined Space Entry Supervisor immediately (i.e., before entering a confined space).
- Take care of PPE.
- Follow instructions from the Confined Space Entry Supervisor and the Confined Space Attendant.
- Read and observe the entry permit requirements.
- Remain alert to the hazards that could be encountered while in the confined space.
- Properly use the personal protective equipment that is required by the permit.
- Immediately exit the confined space when:
 - they are ordered to do so by an authorized person;
 - they notice or recognize signs or symptoms of exposure;
 - a prohibited condition exists; or
 - the portable gas monitor alarm goes off.
- Alert Attendant(s) when a prohibited condition exists and/or when warning signs or symptoms of exposure exist.

Entry Procedures

Permit-Required Confined Space Entry (See Appendix K)

- Use the Badger Swim pools Confined Space Hazard Assessment to identify and evaluate the hazards of confined spaces before employees enter them. (See Appendix I)
- Use the appropriate signage to identify the space as being a permit-required confined space.
- Specify acceptable entry conditions.
- Perform air monitoring of the space prior to entry and continuously during entry.
- Isolate the permit space using lockout / tagout methods.
- Purge, inert, flush, or ventilate the permit space as necessary to eliminate or control atmospheric hazards.
- Provide barriers as necessary to protect entrants from external hazards.
- Verify that conditions in the permit space are acceptable for entry throughout the duration of an authorized entry.
- Designate the communication methods that will be used between the entrant and the attendant.
- Designate non-entry rescue requirements and place equipment needed next to the permit-required confined space in the event that rescue is needed.
- Provide at least one attendant outside the permit space for the duration of entry operations.
- Designate employees who have active roles in the entry process (Entry Supervisor, Entrant, Attendant, etc.).
- The Badger Swim pools Confined Space Entry Permit shall be completed and signed by the Entry Supervisor. (See Appendix K)
- Permits shall be cancelled when entry is complete, or when new hazards arise.

Non-Permit Required Confined Space Entry

- Use the Badger Swim pools Confined Space Hazard Assessment to identify and evaluate the hazards of confined spaces before employees enter them.
- Use the appropriate signage to identify the space as being a non-permit required confined space.
- Perform air monitoring of the space prior to each entry.
- Document the atmospheric readings prior to each entry on the Badger Swim pools Ventilation & Air Sampling Non-Permit Entry form.
- If hazards arise while employees are working in the non-permit space, each employee shall exit the space immediately.
- The site shall then reevaluate the space and determine whether it must be reclassified as a permit space.

Atmospheric Testing

Using a Monitor

- It is very important to make sure the monitor(s) on your job site is calibrated on a regular basis. There will be a date of calibration sticker on every monitor. If you have any questions regarding whether or not a monitor is due for calibration, contact the Safety Department.
- A "bump test" must be conducted before each day's use in accordance with the manufacturer's instructions. In order to perform a bump test, the monitor must be connected to the test gas cylinder to test the function of the sensors.
 - If the monitor fails the bump test, it must be calibrated before use.
 - If it fails calibration, it must be removed from service.
- The employee(s) responsible for monitoring a confined space shall be trained on how to properly operate a monitor.
- If there is any potential for the atmospheric conditions to change while working in a confined space, continuous monitoring is required.

- Prior to entering a confined space, be sure to check the entire space with a monitor. Some gases and vapors tend to accumulate into “pockets” within a confined space, and they may not be detected if the entire space is not monitored.
- Never ignore a monitor’s alarm. Even though you might strongly believe there is no atmospheric hazard, get out of the confined space and continue to monitor from the outside, perhaps with a different monitor. Call the Safety Department if ventilation is necessary.

Gases and Vapors

- It is important to understand that some gases or vapors are heavier than air and will settle to the bottom of a confined space. Also, some gases are lighter than air and will be found around the top of the confined space.
- Never trust your senses to determine if the air in a confined space is safe. You cannot see or smell many toxic gases and vapors, nor can you determine the level of oxygen present.

Precautions

Ventilation

- Ventilation by a blower or fan may be necessary to remove harmful gases and vapors from a confined space. There are several methods for ventilating a confined space. The method and equipment chosen are dependent upon the size of the confined space openings, the gases to be exhausted (e.g., are they flammable?), and the source of makeup air.
- Under certain conditions where flammable gases or vapors have displaced the oxygen level but are too rich to burn, forced air ventilation may dilute them until they are within the explosive range. Also, if inert gases (e.g., carbon dioxide, nitrogen, argon) are used in the confined space, the space shall be well ventilated and re-tested before a worker may enter.

Isolation

Isolation of a confined space is a process in which the space is removed from service by:

- **Locking out** electrical sources, preferably at disconnect switches remote from the equipment. Protective shields, protective barriers or insulating materials as necessary shall be used when working in confined or enclosed work spaces where electrical hazards may exist;
- **Blanking and bleeding** pneumatic and hydraulic lines;
- **Disconnecting** belt and chain drives, and mechanical linkages on shaft-driven equipment where possible; and
- **Securing** mechanical moving parts within confined spaces with latches, chains, chocks, blocks, or other devices.

Respirators

- In most cases, it is preferred to eliminate an atmospheric breathing hazard rather than use respirators. Contact the Safety Department before you choose respirators as your method of controlling these hazards.
- Only individuals who have been properly trained, have completed the OSHA Respirator Medical Evaluation Questionnaire, have been approved for respirator use by a PLHCP, and have been fit-tested will be permitted to wear respirators.
- Two types of respirators are: air-purifying and air-supplying (which deliver a supply of safe breathing air from a tank or an uncontaminated area nearby). **Only air-supplying respirators should be used in confined spaces where there is not enough oxygen.**

Standby/Rescue

- Rescues performed by Badger Swimpools personnel will be non-entry rescues only. This means the rescue is made by using a winch-type device, allowing the standby person to remove an injured employee without entering the confined space itself.

- If an entry rescue is required, call 911 immediately.
- The Safety Department will coordinate with local first responders ahead of all critical permit-required confined space entries to assure that they are equipped to perform entry rescues.
- A standby person shall be assigned to remain on the outside of the confined space and be in constant contact (visual or speech) with the workers inside.
- The standby person must not have any other duties but to serve as standby and know whom shall be notified in case of emergency.

Training

- Employees exposed to confined spaces shall be trained in the National Utility Contractors Association (NUCA) confined space entry program. Only an authorized trainer shall conduct the training. Training shall be documented as instructed within the NUCA program.
- All employees exposed to confined spaces shall be trained on identification and procedures for work in and around confined spaces, as well as specific roles in a confined space entry procedure.
- Requirements of training shall be conducted prior to initial assignment, prior to a change in assigned duties, and if a new hazard has been created or special deviations have occurred.

Confined Space Entry (Rev 2022)

EXCAVATION, TRENCHING & SHORING

Introduction

Excavation cave-ins cause serious and often fatal injuries to workers in the United States. Fortunately, cave-ins are preventable through the use of proper work practices and training.

Badger Swimpools is committed to providing a safe and healthy workplace. This program will help in providing protection from injuries sustained as a result of working with excavations.

Definitions

Aluminum Hydraulic Shoring - A pre-engineered shoring system comprised of aluminum hydraulic cylinders (cross braces) used in conjunction with vertical rails (uprights) or horizontal rails (wales). Such a system is designed specifically to support the sidewalls of an excavation and prevent cave-ins.

Benching (Benching System) - A method of protecting employees from cave-ins by excavating the sides of an excavation and forming one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.

Cave-In - The separation of a mass of soil or rock material from the side of an excavation, or the loss of soil from under a trench shield or support system, and its sudden movement into the excavation, either by falling or sliding, in sufficient quantity so that it could entrap, bury, or otherwise injure and immobilize a person.

Crossbraces - The horizontal members of a shoring system installed perpendicular to the sides of the excavation, the ends of which bear against either uprights or wales.

Excavation - Any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal.

Excavation Work Permit - Form in which the competent individual documents their daily pre-entry trench / excavation inspection. The competent individual is required to fill out a permit for each trench / excavation that is 4 feet in depth or greater, or where there's potential for injury due to cave in.

Faces or Sides - The vertical or inclined earth surfaces formed as a result of excavation work.

Failure - The breakage, displacement, or permanent deformation of a structural member or connection so as to reduce its structural integrity and its supportive capabilities.

Hazardous Atmosphere - An atmosphere that by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritating, oxygen deficient, toxic, or otherwise harmful, may cause death, illness, or injury.

Protective System - A method of protecting employees from cave-ins, from material that could fall or roll from an excavation face or into an excavation, or from the collapse of adjacent structures. Protective systems include support systems, sloping benching systems, shield systems, and other systems that provide the necessary protection.

Ramp - An inclined walking or working surface that is used to gain access to one point from another, and is constructed from earth or from structural materials, such as steel or wood.

Registered Professional Engineer - This is a person who is registered as a professional engineer in the state where the work is to be performed. However, a professional engineer registered in any state is deemed to be a "registered professional engineer" within the meaning of this standard when approving designs for "manufactured protective systems" or "tabulated data" to be used in interstate commerce.

Sheeting - The members of a shoring system that retain the earth in position and in turn are supported by other members of the shoring system.

Shield (Shield System) - A structure that is able to withstand the forces imposed on it by a cave-in, and thereby protects employees within the structure. Shields can be permanent structures, or can be designed to be portable and moved along as work progresses. Additionally, shields can either be pre-manufactured or job-built. Shields used in trenches are usually referred to as "trench boxes" or "trench shields."

Shoring (Shoring System) - A structure, such as a metal hydraulic, mechanical, or timber shoring system that supports the sides of an excavation and which is designed to prevent cave-ins.

Sides - See "Faces"

Sloping System - A method of protecting employees from cave-ins by excavating in a way that forms sides inclined away from the excavation so as to prevent cave-ins. The angle of incline required to prevent a cave-in varies with such factors as the soil type, environmental conditions of exposure, and application of surcharge loads.

Stable Rock - Natural solid mineral material that can be excavated with vertical sides and will remain intact while exposed. Unstable rock is considered to be stable when the rock material on the side or sides of the excavation is secured against caving-in or movement by rock bolts or by another protective system that has been designed by a registered professional engineer.

Structural Ramp - A ramp built of steel or wood, usually used for vehicle access. Ramps made of soil or rock are not considered structural ramps.

Support System - A structure, such as underpinning, bracing, or shoring that provides support to an adjacent structure, underground installation, or the sides of an excavation.

Tabulated Data - Tables and charts approved by a registered professional engineer and used to design and construct a protective system.

Trench (Trench Excavation) - A narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet. If forms or other structures are installed or constructed in an excavation so as to reduce the dimension measured from the forms or structure to the side of the excavation 6 to 15 feet or less, (measured at the bottom of the excavation), the excavation is also considered to be a trench.

Trench Box - See "Shield"

Trench Shield - See "Shield"

Uprights - The vertical members of a trench shoring system placed in contact with the earth and usually positioned so that individual members do not contact each other. Uprights placed so that individual members are closely spaced, in contact with, or interconnected to each other are often called "sheeting."

Wales - Horizontal members of a shoring system placed parallel to the excavation face whose sides bear against the vertical members of the shoring system or earth.

Trench & Excavations

OSHA standards require that walls and faces of all trenches and excavations, in which workers are potentially exposed to danger from moving ground, be guarded by a shoring system, safe sloping of the ground, or equivalent means of protection, such as trench shield or boxes.

OSHA standards require additional shoring and bracing procedures when excavations or trenches are located adjacent to previously backfilled excavations, or where excavations are subject to vibrations from railroad or highway traffic, the operation of machinery, or other sources. For the first step in preventing any injury or fatality, Badger Swimpools will ensure that all trenching and excavation operations will be done only in full compliance with existing OSHA standards.

Badger Swimpools requires that the following procedures be observed and followed whenever any trenching and/or excavation work is initiated and completed:

- Badger Swimpools will have all utilities marked before digging. Call 811 to locate on public property and use existing plans or GPR for privately owned facilities. Badger Swimpools will call utility companies to protect, support, and/or shut off all electricity, gas, and water pipes in the trench / excavation.
- The competent person must perform a soil analysis. This helps choose the right employee protection system.
 - A trench can be in stable rock, or type A, type B, or type C soil. Stable rock and type A soils are the safest. Most soils are type B. Sand and trenches with water are type C soils.
- The designated competent person will inspect and complete an Excavation Work Permit (this form is available from the Safety Department and can be found in the field paperwork spreadsheet) for every active trench / excavation:
 - Before entering any excavation 4 feet in depth or greater.
 - If atmospheric hazards are expected (e.g., if the trench is in a sewer or near a dump or stored chemicals).
 - After anything that can increase hazards (e.g., heavy loads near the trench or rainstorms can cause the trench walls to move, causing cracking, scaling, or bulging).
- The completed permit shall be kept in the Badger Swimpools job trailer throughout the duration of the work day.
- Sloping, benching, shielding, or shoring will be used in all excavations 5 to 20 feet to prevent cave-ins.
 - Benching is not permitted in Type C Soil.
- Appropriate shoring, shielding, or sloping requirements for all excavations deeper than 20 feet will be determined by a registered professional engineer qualified to make these determinations.
- Trench / excavation walls will be sloped at an angle of no more than 34 degrees. A wall that is sloped at a steeper angle can collapse causing serious injury or death to the employee.
- A stairway, ladder, ramp or other safe means of access/egress shall be located in all trench / excavations that are 4 feet or more in depth so as to require no more than 25 feet of lateral travel for employees.
- All spoil piles shall be kept 2 feet or more away from the edge of the trench / excavation.
- All surface encumbrances that are located so as to create a hazard to employees will be removed or supported, as necessary, to safeguard employees.

- Materials will not be placed less than four feet from the edge of the trench / excavation.
- Stop logs or barriers will be placed; where vehicles, and/or equipment that operates near the excavation to prevent accidental falls into the trench / excavation.
- If the trench / excavation contains or has the potential to contain a hazardous atmosphere, contains a material that has the potential for engulfment, has an internal configuration that could trap or asphyxiate an entrant, or contains any other safety or health hazard it shall be considered a Permit-Required Confined Space.
 - Refer to Badger Swimpools
 - Confined Space Entry Program for Permit Required Confined Space entry requirements.
- Employees shall not work in excavations where water is accumulating, unless adequate precautions have been taken.
- Precautions necessary to protect employees from accumulating water include special support or shield systems to protect from cave-ins and water removal to control the level of accumulating water.
- Water removal equipment and operations shall be monitored by a competent person.

Soil Classification

Stable Rock - Natural solid material matter that can be excavated with vertical sides and remain intact while exposed.

Type "A" Soil - Cohesive soils with an unconfined compressive strength of 1.5 tons per square foot or greater. Examples of cohesive soils are clay, silt clay, sandy clay, clay loam, and in some cases silt clay loam and sandy clay loam. Cemented soils, such as the caliche and hardspan are also considered type "A". However, no soil is type "A" if the soil is fissured or the soil is subjected to vibration from heavy traffic, pile driving, or other similar effects; the soil has been previously disturbed; the soil is part of a sloped layered system where the layers dip into the excavation on a slope of 4 horizontal to 1 vertical or greater; or it contains material subject to other factors that would not require it to be classified as a less stable material.

Type "B" Soil - Cohesive soil with an unconfined compressive strength greater than 0.5 ton per square foot or granular cohesionless soil, including angular gravel that is similar to crushed rock, silt, silt loam, sandy loam, and in some cases silt clay loam and sandy clay loam. Type "B" soils also include previously disturbed soils (except those that would otherwise be classified as type "C" soil). Soil that meets the unconfined compressive strength or cementation requirements for type "A," but is fissured or subject to vibration or dry rock that is not stable or material that is part of a sloped, layered system where the layers dip into the excavation on a slope less steep than 4 horizontal to 1 vertical, but only if the material would otherwise be classified as type "B."

Type "C" Soil - Cohesive soil with an unconfined compressive strength of 0.5 ton per square foot or less, or granular soils including gravel, stone, and loamy sand or submerged soil; soil from which water is freely seeping; submerged rock that is not stable; or material in a sloped layered system where the layers dip into the excavation, or have a slope at or steeper than 4 horizontal to 1 vertical.

If a Trench Caves-in, Trapping Employee

- Get out of the trench. Call 911 (or emergency services).
- Help the employees from outside the trench.
- Never go into a trench that is caving in or has bad air, even to rescue a co-worker. The employee trying to perform the rescue could be killed.

Training

- Employees exposed to trenching work shall be trained in the National Utility Contractors Association (NUCA) competent person program. The Safety Director authorized to do such training, or another authorized trainer, shall conduct the training. Training shall be documented as instructed by the NUCA program.
- All employees exposed to trenching work shall be trained on identification and procedures for work in and around trenches.
- Requirements of training shall be conducted prior to initial assignment, prior to a change in assigned duties, and if a new hazard has been created or special deviations have occurred.

Excavation, Trenching & Shoring (Rev 2022)

HOT WORK PROGRAM

Purpose

The purpose of the hot work program (permit system) is to prevent fires and explosions whenever hot work such as welding, cutting, burning and spark-producing activities are performed outside of a regulated area set aside for this purpose.

Responsibility

The superintendent has the overall responsibility for the implementation and functioning of the hot work program. All hot work procedures shall be coordinated by the competent person on-site (superintendent, foreman). The competent person is responsible for performing a pre-work site inspection, and completing the hot work permit.

Procedures

- Hot Work permits shall be completed prior to performing work involving open flames or producing heat and/or sparks. This includes, but is not limited to: brazing, cutting, grinding, soldering, thawing pipe, and welding.
- Hot Work permits shall be completed by a competent person.
- Permits shall be kept on site for the entire operation, plus adequate time after the operation.
- Combustible materials must be removed from the area prior to performing hot work.
 - Combustible materials must be protected with fire-resistant sheets and/or guards if they cannot be adequately separated from the hot work activities.
- Appropriate fire extinguishers must be immediately available while hot work is being performed.
- Hot work equipment must be inspected and in good repair prior to performing hot work.
- Damaged or defective hot work equipment must be removed from service and either repaired or replaced.
- A fire watch shall be provided where deemed necessary by competent person or job site rules.
 - A fire watch is required when welding, cutting, brazing and/or soldering is performed near combustible materials and/or in locations where fire may develop.
 - Fire watches will be provided during Hot Work and for 30 minutes after operation.
 - Fire watches shall be provided with suitable extinguishers.
 - A fire watch shall only have the duties of a fire watch while completing this task.
 - One fire watch may be responsible for more than one Hot Work area as long as all areas are within visual contact.
- At a minimum, the five conditions that require a fire watch are:
 - 1) Locations where other than a minor fire might develop;
 - 2) Combustible materials are closer than 35 feet to point of operation;
 - 3) Combustibles are 35 feet or more away but are easily ignited;
 - 4) Wall or floor openings within 35 feet radius expose combustible materials;
 - 5) Combustible materials are adjacent to the opposite side of metal partitions, ceilings, or roofs.
- Ventilation and/or respiratory equipment must be used when hazardous fumes, dust, or gases may be present.
 - Refer to Badger Swim pools Respiratory Protection and Confined Space Entry Program for additional information.

Training

- Employees that will be involved with hot work activities shall be trained by the Safety Department prior to performing hot work.
- Fire watches shall have proper training on how to use the designated fire extinguisher.
- The competent person will be trained in pre-work site inspection, the completion of hot work permits, and fire watch requirements.

Retraining

Hot work training must be repeated when:

- Changes in workplace conditions render previous training obsolete.
- Changes in the types of hot work equipment render previous training obsolete.
- Inadequacies in an affected employee's knowledge or use of the hot work program or equipment indicate that he/she has not retained the understanding or skill required.

Hot Work Program (Rev 2022)

ENFORCEMENT & DISCIPLINARY ACTIONS POLICY

The best safety program, best policy, and greatest commitment are ineffective without enforcement and discipline. Violations will be dealt with firmly, fairly, and in a consistent manner. No employee will be above reproach - everyone will follow the rules. Safety will be approached in the same manner as other work assignments. If an employee does not follow work orders, he or she will be disciplined. Safety violations must therefore be dealt with in the same manner.

Scope

- Every Badger Swimpools employee

Purpose

- Addressing disciplinary issues can be a very sensitive and stressful process for most managers, supervisors, and employees. However, if disciplinary issues are avoided or handled poorly, it can lead to serious consequences such as injury, property damage, or fatality.
- At Badger Swimpools, we do not view discipline as a form of punishment but as a rule or system of rules governing conduct or activity in order to eliminate unsafe behaviors/conditions.
- Badger Swimpools believes that education is the key to establishing proper disciplinary procedures and holding all employees accountable to our company's safety policies and procedures, as well as to applicable regulatory requirements.

Policy

- The objective of our disciplinary program is to ensure that Badger Swimpools' rules and safe work practices are taken seriously and followed by all employees.
- Where disciplinary action is deemed to be appropriate, it shall be conducted in a timely manner.
- The goal of enforcement and disciplinary action is to correct the problem, action, or behavior. The type of discipline shall fit the severity of the misconduct and shall be conducted in private.

Enforcement

The severity of discipline shall fit the severity of the misconduct.

- **Verbal Warning** - Verbal warnings will be communicated to the immediate supervisor and/or noted within the jobsite safety assessment.
- **Written Warning** - A written warning will be issued for repeated unacceptable behaviors. Written warnings are maintained in an employee's personnel file.
- **Suspension Without Pay** - A suspension without pay will be issued for repeated unacceptable behaviors. Prior to the employee being reinstated, he or she may be required to complete training appropriate for the specific offense. A suspension without pay is maintained in an employee's personnel file.
- **Termination** - A termination will result in an employee being considered "Not for Rehire." Grounds for immediate termination include, but are not limited to:
 1. Drinking alcohol, and/or drug abuse prior to or during working hours
 2. Fighting, provoking or engaging in an act of violence against another person
 3. Theft
 4. Willful damage to property
 5. Engaging in dangerous horseplay
 6. Any other major violations of company rules or policies
 7. Actions that put the company and its employees at risk

Enforcement Responsibilities & Authority				
Job Title	Verbal	Written	Immediate Suspension	Termination
General Foreman	X	X		
Safety Director	X	X	X	X
Field Operations Manager	X	X	X	X
V.P.	X	X	X	X
President	X	X	X	X

Enforcement Guidelines				
Violation	Verbal Warning	Written Warning	Immediate Suspension / Layoff without Pay (minimum suspension)	Termination
Failure to enforce safety policies	X	X	X (3 working days)	X
Failure to wear required PPE	X	X	X (3 working days)	X
Haz Com / Environmental Exposures	X	X	X (3 working days)	X
Failure to Complete Field Safety Paperwork	X	X	X (3 working days)	X
Unsafe Ladder Use	X	X	X (3 working days)	X
Improper use of Equipment (e.g., forklift, aerial lift)	X	X	X (3 working days)	X
Electrical	X	X	X (3 working days)	X
Flammable Storage	X	X	X (3 working days)	X
Tampering with machine safeguards		X	X (5 working days)	X
Lockout / Tagout		X	X (5 working days)	X
Unsafe Rigging / Crane		X	X (5 working days)	X
Fall Protection			X (5 working days)	X
Unprotected Excavation			X (5 working days)	X
Confined Space			X (5 working days)	X

Procedure

In order to ensure effectiveness and fairness of the program, the following four steps must be addressed with equal importance. Safety Director will oversee the process to ensure consistency throughout the company:

1. Review of disciplinary policies and procedures
 - a. New employee orientation
 - b. New employee paperwork
 - c. Reviewed and signed by all current employees (upon revisions)

2. Investigation of accusations and infractions
 - a. Safety Director will direct action with the following parties:
 - i. General Foreman
 - ii. Field Operation Manager
 - iii. V.P.
 - iv. President (optional)

3. Determining and reviewing disciplinary action
 - a. Safety Director will direct action with the following parties:
 - i. General Foreman
 - ii. Field Operations Manager
 - iii. V.P.
 - iv. President (optional)

4. Documenting disciplinary action and program enforcement
 - a. All appropriate documentation will be maintained in the employee's personnel file.
 - b. The Safety Director will ensure that the program is being enforced consistently throughout the company.

EMPLOYEE SAFETY HANDBOOK & ORIENTATION ACKNOWLEDGEMENT

I have received and reviewed Badger Swimpools Employee Safety Handbook, including the Enforcement and Disciplinary Actions Policy. I acknowledge that it is my responsibility to read and be familiar with the contents of the Handbook.

I further acknowledge and agree that:

- I have been through Badger Swimpools New Employee Orientation led by the General Foreman.
- Working safely, complying with, and obeying any and all Badger Swimpools safety rules and procedures as set forth in the Employee Safety Handbook, along with Federal and State regulations, is a condition of my employment with Badger Swimpools
- Should I not comply with the aforementioned rules and regulations, I am subject to disciplinary action up to and including termination of employment.
- I will report any suspected safety violations, unsafe behaviors, or physical hazards I observe to my supervisor.
- In the event of an injury, no matter how minor, while in the course of my employment with Badger Swimpools, I will report the injury immediately to my supervisor.
- I will direct any questions pertaining to this booklet to my supervisor.

Employee Name (please print): _____

Employee Signature: _____

Date: _____

Date:		Project Name:	
Project Address:			
Supervisor in Charge: <i>(Print Name)</i>			
OSHA Inspecting Officers Name: <i>(Print Name)</i>			
OSHA Inspecting Officer's ID Number:			
Time OSHA Arrived:		Time OSHA Departed:	
Does OSHA Inspector have a search warrant? (If yes, obtain a copy and send to Director of Safety)		YES <input type="checkbox"/>	NO <input type="checkbox"/>
At this time, contact at <u>Office Cell</u>			
OPENING CONFERENCE		Start Time:	Ending Time:
Contractor Representative(s): (Name)		Company Name:	
Employee Representative(s): (Name)		Company Name:	
Did the Inspector Request to Review:			
Hazard Communication Program?			YES <input type="checkbox"/>
OSHA 300 Forms? <i>(If "Yes", contact BSP Main Office for copies of forms)</i>			NO <input type="checkbox"/>
BSP Safety Handbook?			<input type="checkbox"/>
Documentation of Employee Training?			<input type="checkbox"/>
Reason for Inspection and/or Type of Inspection:			Check if "YES"
Imminent Danger			<input type="checkbox"/>
Catastrophe/Fatality (Catastrophe = 3 or more employees hospitalized)			<input type="checkbox"/>
Special Emphasis Program Inspection			<input type="checkbox"/>
Programmed Inspection			<input type="checkbox"/>
Follow-up Inspection			<input type="checkbox"/>
Employee Complaint			<input type="checkbox"/>
NOTE: If there is an employee complaint, ask the OSHA Inspector for a copy of the complaint prior to the inspection being performed. The inspector is allowed to inspect only the issues that relate to that complaint.			

WALK-AROUND INSPECTION	Start Time:	Ending Time:	
Contractor Representative(s): (Name)	Company Name:		
Employee Representative(s): (Name)	Company Name:		
General Inspection Questions		YES	NO
Did the OSHA Inspector record the walk-around on Video?		<input type="checkbox"/>	<input type="checkbox"/>
<i>If YES, did the company duplicate the OSHA Inspector's video?</i>		<input type="checkbox"/>	<input type="checkbox"/>
Did the OSHA Inspector take photos during the walk-around?		<input type="checkbox"/>	<input type="checkbox"/>
<i>If YES, did the company duplicate the OSHA Inspector's photos?</i>		<input type="checkbox"/>	<input type="checkbox"/>
Did the OSHA Inspector question employees during the walk-around?		<input type="checkbox"/>	<input type="checkbox"/>
<i>If YES, did the company document (on a separate sheet of paper) the questions asked by the OSHA Inspector, & the employee's answers?</i>		<input type="checkbox"/>	<input type="checkbox"/>
Did the OSHA Inspector ask for a private conversation with any employees? <i>(Note: By law, the OSHA Inspector has a right to question employees privately, but has to offer the employee a choice to have a company representative present.)</i>		<input type="checkbox"/>	<input type="checkbox"/>
Did the employee request a company representative?		<input type="checkbox"/>	<input type="checkbox"/>
CLOSING CONFERENCE	Start Time:	Ending Time:	
Contractor Representative(s): (Name)	Company Name:		
Employee Representative(s): (Name)	Company Name:		
Questions to be asked by company supervisor during the Closing Conference		YES	NO
Did the Inspector observe any violations? <i>(If yes, please attach)</i>		<input type="checkbox"/>	<input type="checkbox"/>
Does the company need to take immediate corrective action with any items? <i>(Attach recommended corrective action & abatement periods)</i>		<input type="checkbox"/>	<input type="checkbox"/>

SAFETY ASSESSMENT

Assessor: _____

Inspection Date: _____

Job Name: _____

Supervisor: _____

A = Acceptable U = Unacceptable N/A = Not Applicable Issues identified must be shared with Supervisor. Comments must accompany any unacceptable box.					
	1. Recordkeeping, Posters		F. First Aid Kit		C. Roof top work / plan completed
	A. OSHA Notice/300 Log		4. Cranes, Riggers, Signal Person		D. Open sided floors or platforms 6' or more from ground equipped with proper guard rail
	B. Emergency Telephone #'s		A. Daily Inspection		E. Openings properly barricaded or covered
	C. Location of nearest Occupational Clinic		B. Qualified Operator		7. Fire Protection & Housekeeping
	2. Communication		C. Qualified Rigger/Signal Person		A. Trash picked up and disposed of regularly
	A. Stretching		D. Swing Radius Controlled		B. Aisles and passageways clear
	B. Daily Huddle		E. Critical Lift Permit		C. Flammable and explosive materials stored and handled safely
	C. JHA		5. Ladders		D. Required number of fire extinguisher properly located and inspected
	3. PPE		A. Properly inspected		E. All vehicles & other mobile equipment provided with fire protection
	A. Hard Hat, Safety Glasses, Work Gloves, Proper Boots		B. Properly Used		8. Aerial Lifts
	B. FR Clothing		C. Necessary labels visible		A. Daily Inspection
	C. High Visibility Clothing		6. Fall Protection		B. Proper Use
	D. Respirator		A. Proper fall protection at 6' or greater		C. Fall Protection (if required)
	E. Other PPE		B. Personnel below are protected from falling objects		
					9. Scaffolding
					A. Fall protection/prevention
					B. Properly erected/competent person
					C. Tied to structure 30' horizontally and 20' vertically
					D. Plank spacing 1" or less; cleated or extends ≥ 6"
					10. Haz Com
					A. Information Posted
					B. Employees know about subject
					11. Hot Work
					A. Welding screens provided
					B. Proper additional PPE utilized
					C. Equipment in good repairs, insulators, grounding, welding leads
					D. Adequate ventilation or respirator placard

A = Acceptable U = Unacceptable N/A = Not Applicable

Issues identified must be shared with Supervisor. Comments must accompany any unacceptable box.

12. Electrical		14. Excavations		15. Confined Space		16. Concrete/Masonry	
A. Assured Grounding Program		A. Was one-call system contacted		A. Declared permit or non-permit		A. Masonry walls over 8' braced/reinforced	
B. All electrical equipment in good condition		B. Protective system		B. Air monitor onsite (properly calibrated, properly used)		B. Fall Protection/Prevention	
C. Proper use of GFCI		C. Surface encumbrances protected/supported		C. Atmosphere test results documented		C. All protruded rebar guarded	
D. Good work practices (cords out of pathways, kept out of water, etc.)		D. Ladder within 25' of all employees		D. Energy sources locked out		D. Additional PPE	
13. Cylinders		E. Utilities protected/supported		E. Adequate ventilation or air flow		E. Safe hoisting equipment	
A. Compressed gas cylinders stored and secured upright		F. Spoil piles minimum of 2' from edge of excavation				17. Hazmat	
B. Empty gas cylinders marked		G. Overhead power lines minimum distance requirement met				A. Lead; Asbestos; Silica; Mercury	
C. Cylinders capped							

Use this area for specific comments for each issue identified:

Positive Insight:

INCIDENT REPORT: INJURY
TYPE OR PRINT ALL INFORMATION

1. Job Information (Complete all fields.)

Job #:	Job Name:	Customer Name:
Supervisor:		Phone #:
Incident Street Address:		
City, State, Zip:		
Incident Involves: <input type="checkbox"/> BSP Employee <input type="checkbox"/> Owner Representative <input type="checkbox"/> Visitor (please specify): <input type="checkbox"/> Subcontractor's Employee (Subcontractor Company Name: _____)		

2. Personal / Bodily Injury Details

Name of Injured Person:	Date of Injury: Time of Injury: <input type="checkbox"/> AM <input type="checkbox"/> PM	Date Reported:
Home Street Address:		Sex: <input type="checkbox"/> Male <input type="checkbox"/> Female
City, State, Zip:		
Phone #:	Job Title:	Birthdate:
Injured Body Part(s): <input type="checkbox"/> Left <input type="checkbox"/> Right	Stitches: <input type="checkbox"/> Yes <input type="checkbox"/> No How Many:	
Severity of Injury: (Check one) <input type="checkbox"/> Notice Only <input type="checkbox"/> First Aid Provided on Job Site <input type="checkbox"/> *Professional Medical Attention Provided (<i>See below</i>) <input type="checkbox"/> Fatality		
*Medical Attention Provided By: Clinic/Hospital Name:		Phone #:
Clinic/Hospital Address:		
City, State, Zip:		
*Witness 1 Name:	*Witness 2 Name:	
Phone #:	Phone #:	
*Submit Incident Witness Form with this report. Each witness of this incident should complete an Incident Witness Form.		

3. Incident Details / Description (If additional space is needed, use a separate sheet of paper.)

<p>What work was employee doing at time of incident?</p> <p>What happened to cause injury?</p> <p>What injury(ies) did employee sustain?</p> <p>All incidents must verbally be reported immediately to the Safety Department following the occurrence. This written incident report must be SIGNED and sent to the Safety Department within 24 hours after occurrence. If you have any questions, contact the Safety Department at .</p>
--

*** I agree that the information contained in this report is true and accurate to the best of my knowledge. I understand that the assertion of a false claim is a violation of applicable state criminal code and may result in a fine and imprisonment and that dishonesty is cause for disciplinary action and/or termination of employment. ***

SUPERVISOR'S SIGNATURE: _____ DATE: _____

EMPLOYEE'S SIGNATURE: _____ DATE: _____

INCIDENT REPORT: GENERAL
TYPE OR PRINT ALL INFORMATION

1. Job Information (Complete all fields)

Job #:	Job Name:	Customer Name:
Supervisor:		Phone #:
Incident Street Address:		
City, State, Zip:		
Incident Involves: <input type="checkbox"/> BSP Employee <input type="checkbox"/> Owner Representative <input type="checkbox"/> Visitor (please specify): <input type="checkbox"/> Subcontractor's Employee (Subcontractor Company Name: _____)		

2. General Incident / Damage (Damage to 3rd-party property)

Date Incident occurred:	Time of Incident / Damage: <input type="checkbox"/> AM <input type="checkbox"/> PM	Date Reported:
Street Address where Incident occurred:		
City, State, Zip:		
Description of Damage(s):		Estimated Cost of Damage(s): \$
Have we previously completed work at this location: <input type="checkbox"/> *Yes <input type="checkbox"/> No <i>*If yes, complete the next 2 boxes.</i>		
Name of Project Manager/Supervisor Responsible for Previous Work:		Previous work type: <input type="checkbox"/> New Construction <input type="checkbox"/> Remodel <input type="checkbox"/> Service <input type="checkbox"/> Other
*Witness 1 Name: _____		*Witness 2 Name: _____
Phone #: Phone #: _____		Phone #: _____
<i>*Submit Incident Witness Form with this report. Each witness of this incident should complete an Incident Witness Form.</i>		

3. Incident Details / Description (If additional space is needed, use a separate sheet of paper.)

What work was being done (if any) at time of incident? What happened to cause incident / damage?

All incidents must verbally be reported immediately to the Safety Department following the occurrence. This written incident report must be SIGNED and sent to the Safety Department within 24 hours after occurrence. If you have any questions, contact the Safety Department at .

*** I agree that the information contained in this report is true and accurate to the best of my knowledge. I understand that the assertion of a false claim is a violation of applicable state criminal code and may result in a fine and imprisonment and that dishonesty is cause for disciplinary action and/or termination of employment.***

SUPERVISOR'S SIGNATURE: _____ DATE: _____

SCAFFOLDING INSPECTION

Competent Person

Date: _____

Competent Person: _____

Job #: _____

Instructions: The competent person should use this checklist for daily inspection of scaffolding. It is not all-inclusive and should be used as a starting point for the competent person to develop a checklist specific to the type of scaffolding and jobsite conditions encountered.

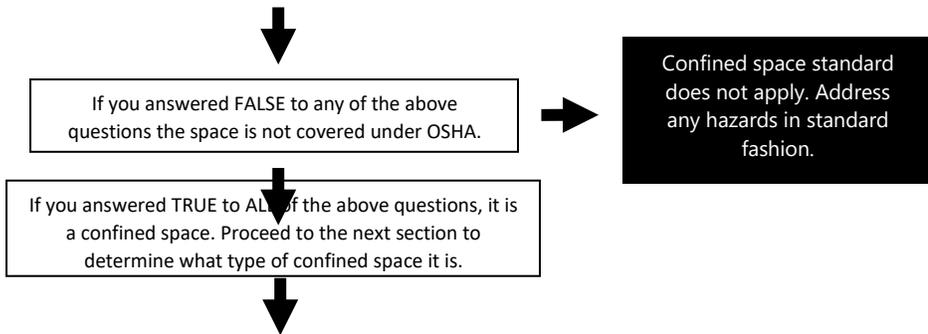
Yes	No	
<input type="checkbox"/>		Are scaffolds and scaffold components inspected before each work shift by a competent person?
<input type="checkbox"/>	<input type="checkbox"/>	Have employees who erect, disassemble, move, operate, repair, maintain, or inspect the scaffold been trained by a competent person to recognize the hazards associated with this type of scaffold and the performance of the duties relating to it?
<input type="checkbox"/>	<input type="checkbox"/>	Have the employees who use the scaffold been trained by a qualified person to recognize the hazards associated and know the performance of their duties relating to it?
<input type="checkbox"/>	<input type="checkbox"/>	Is the maximum load capacity of this scaffold known and communicated to all employees?
<input type="checkbox"/>	<input type="checkbox"/>	Is the load on the scaffold (including point loading) within the maximum load capacity of this particular scaffold?
<input type="checkbox"/>	<input type="checkbox"/>	Is the scaffold plumb, square, and level?
<input type="checkbox"/>	<input type="checkbox"/>	Is the scaffold on base plates and are mudsills used on pavement, sand, gravel, uneven surfaces?
<input type="checkbox"/>	<input type="checkbox"/>	Is there a safe access to all scaffold platforms?
<input type="checkbox"/>	<input type="checkbox"/>	Are all working surfaces fully planked?
<input type="checkbox"/>	<input type="checkbox"/>	Do planks extend at least 6 inches and no more than 12 inches over supports or cleated?
<input type="checkbox"/>	<input type="checkbox"/>	Are planks in good condition and free of visible defects?
<input type="checkbox"/>	<input type="checkbox"/>	Does the scaffold have all required guardrails and toeboards?
<input type="checkbox"/>	<input type="checkbox"/>	Are 4:1 (Height to width) scaffolds secured to a building or structure as required?

Scaffolding Inspection: Competent Person (REV - 2022)

CONFINED SPACE

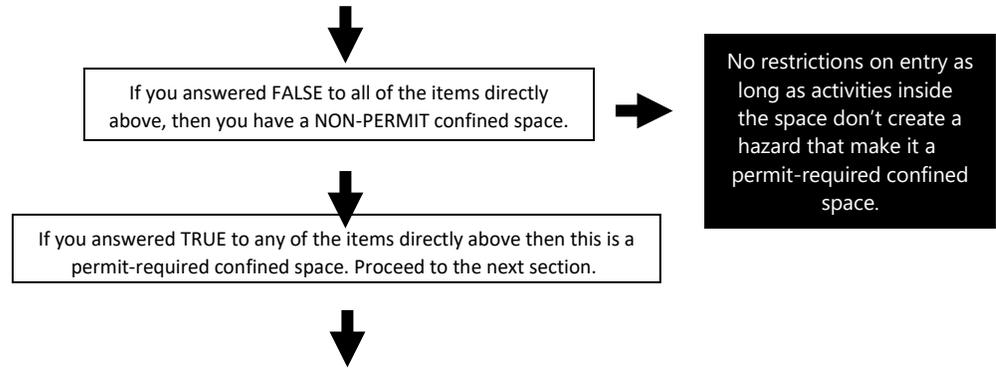
Hazard Assessment

CONFINED SPACE HAZARD ASSESSMENT	
Confined Space Assessor:	Date:
Facility Location:	Space Name:
Reasons For Entry and Frequency:	
CONFINED SPACE DETERMINATION	
If you answer TRUE to all of the following three items, then this is a confined space.	
<input type="checkbox"/> True <input type="checkbox"/> False	1. The space is large enough and so configured that an employee can bodily enter and perform assigned work.
<input type="checkbox"/> True <input type="checkbox"/> False	2. The space has limited or restricted means for entry or exit?
<input type="checkbox"/> True <input type="checkbox"/> False	3. The space is NOT designed for continuous employee occupancy.



PERMIT-REQUIRED DETERMINATION	
If you answer TRUE to one or more of the following four items, then this is a permit-required confined space.	
<input type="checkbox"/> True <input type="checkbox"/> False	1. Based on the nature and condition of the space itself, it contains or has the potential to contain a hazardous atmosphere. Examples include: <ul style="list-style-type: none"> • Oxygen Deficiency (O₂ content less than 19.5%) • Oxygen Enrichment (O₂ content greater than 23.5%) • Flammable gases, vapors, or mists (equal to or greater than 10% LFL) • Combustible Dusts (hard to see 10 feet) • Toxic vapors, gases, fumes, mists or dusts (carbon monoxide, hydrogen sulfide, acid gases, sodium hydroxide, solvent vapors, etc.) above exposure limit.
<input type="checkbox"/> True <input type="checkbox"/> False	2. The space contains a material that has the potential for engulfing an entrant. Examples include: <ul style="list-style-type: none"> • Sand • Dust • Grain • Powder • Freestanding liquid or sludge in excess of one inch
<input type="checkbox"/> True <input type="checkbox"/> False	3. The space has an internal configuration such as inwardly sloping (converging) walls that could trap someone. Examples include: Hoppers and Chutes
<input type="checkbox"/> True <input type="checkbox"/> False	4. The space contains any other recognized serious safety or health hazard. Examples include: <ul style="list-style-type: none"> • Extreme heat or cold • Moving machinery • Toxic residue • Radiation • Falling objects or overhead obstructions • Fall hazards

(Continued on back side)



HAZARD IDENTIFICATION AND CONTROL			
List the specific recognized hazards that are present, based on the nature and condition of the space itself. For each specific hazard, show what control measure would be used to eliminate or at least minimize the hazard. Indicate whether the control measure thoroughly eliminates the hazards or whether it just minimizes it. The shaded area shows an example of how this should be done. Attach a separate sheet, if necessary.			
HAZARDS	CONTROL MEASURE	ELIMINATE	MINIMIZE
<i>Ex: Mixer blade movement</i>	<i>Lock out mixer motor disconnect switch</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
RECLASSIFICATION DETERMINATION			
<input type="checkbox"/> True <input type="checkbox"/> False	1. The space either has no atmospheric hazards and does not even have a recognized potential for an atmospheric hazard, or if the space does have an atmospheric hazard, it is possible to thoroughly eliminate this hazard and ensure that there will not be even the potential for an atmospheric hazard during entry.*		
<input type="checkbox"/> True <input type="checkbox"/> False	2. It is possible to thoroughly eliminate any other safety or health hazards in and around the space.		
<input type="checkbox"/> True <input type="checkbox"/> False	3. All hazards would remain eliminated during entry into the space.		

*If an atmospheric hazard must be eliminated by the use of ventilation, it must remain eliminated without the continued assistance of ventilation. Simply controlling the atmospheric hazard to an acceptable level with ventilation is not sufficient to allow reclassification.

NOTE: If you answered True to all of the above, it is permissible to reclassify the permit-required space to non-permit status provided that those conditions are met and that the work done in the space does not introduce a hazard that would require permit entry.

**VENTILATION & AIR SAMPLING
DOCUMENTATION**

JOB NAME				JOB NO.	
CONFINED SPACE NAME OR DESIGNATION	NON-PERMIT				
WORK TO BE DONE					
DATE & START TIME			DATE & FINISH TIME		
NAME OF SUPERVISOR				PHONE #	

SAMPLING INSTRUMENT INFORMATION					
DIRECT READING GAS METER		PUMP AND DETECTOR TUBE		OTHER	
MAKE		MAKE		MAKE	
MODEL		MODEL		MODEL	
LAST CALIBRATED		LAST CALIBRATED		LAST CALIBRATED	
BUMP TESTED	<input type="checkbox"/>	BUMP TESTED	<input type="checkbox"/>	BUMP TESTED	<input type="checkbox"/>

NOTE: AIR QUALITY MONITORING SHALL BE CONTINUOUS, AND DOCUMENTED EVERY 60 MINUTES WHILE POTENTIAL HAZARD EXISTS.

AIR TEST RESULTS: PRIOR TO WORK BEGINNING						
	O2	L.E.L.	CO	H2S		
TARGET	19.5% - 23.5%	<10%	<35 PPM	<10 PPM		TESTED BY
DATE						
TIME						
RESULT	%	%	PPM	PPM	PPM	PPM

AIR TEST RESULTS: DURING SPECIFIC WORK LISTED ABOVE						
	O2	L.E.L.	CO	H2S		
TARGET	19.5% - 23.5%	<10%	<35 PPM	<10 PPM		TESTED BY
DATE						
TIME						
RESULT	%	%	PPM	PPM	PPM	PPM
TIME						
RESULT	%	%	PPM	PPM	PPM	PPM
TIME						
RESULT	%	%	PPM	PPM	PPM	PPM
TIME						
RESULT	%	%	PPM	PPM	PPM	PPM
TIME						
RESULT	%	%	PPM	PPM	PPM	PPM
TIME						
RESULT	%	%	PPM	PPM	PPM	PPM
TIME						
RESULT	%	%	PPM	PPM	PPM	PPM
TIME						

VENTILATION PLAN																				PAGE 2			
MARK ALL SAFETY EQUIPMENT NEEDED FOR THIS JOB																							
	HARD HAT		AIR-PURIFYING RESPIRATOR																				
	SAFETY GLASSES WITH SIDESHIELDS		AIRLINE RESPIRATOR																				
	CHEMICAL PROTECTIVE GOGGLES		ESCAPE RESPIRATOR																				
	FACESHIELD		LOCKOUT/TAGOUT SUPPLIES																				
	HEARING PROTECTORS		FIRE PROTECTION EQUIPMENT																				
	COTTON OR LEATHER GLOVES		SPARK RESISTANT TOOLS																				
	CHEMICAL RESISTANT GLOVES		VOICE COMMUNICATION EQUIPMENT																				
	COVERALLS		VENTILATION EQUIPMENT																				
	RAINSUIT		PORTABLE LIGHTING																				
	CHEMICAL RESISTANT CLOTHING		GROUND FAULT CIRCUIT INTERRUPTER																				
	SLIP/CHEMICAL RESISTANT BOOTS		WARNING SIGNS AND BARRIERS																				
	WELDING HELMET/GOGGLES		MECHANICAL RETRIEVAL DEVICE																				
	FULL BODY HARNESS		OTHER																				
DRAW VENTILATION DIAGRAM BELOW																							

CONFINED SPACE ENTRY PERMIT

This is the first page of a 2-page permit. Both pages must be completed by the job supervisor, signed, and posted at the job site, along with a copy of the written procedure for this confined space showing the hazards and control measures.

Page 1						
JOB NAME					JOB NO.	
CONFINED SPACE NAME OR DESIGNATION						
WORK TO BE DONE						
DATE & START TIME				DATE & FINISH TIME		
NAME OF ENTRY SUPERVISOR					PHONE #	
NAMES OF ENTRANTS						
NAMES OF ATTENDANTS						
EMERGENCY PHONE NO.						

SAMPLING INSTRUMENT INFORMATION					
DIRECT READING GAS METER		PUMP AND DETECTOR TUBE		OTHER	
MAKE		MAKE		MAKE	
MODEL		MODEL		MODEL	
LAST CALIBRATED		LAST CALIBRATED		LAST CALIBRATED	

AIR TEST RESULTS PRIOR TO VENTILATING						
	O ₂	L.E.L.	CO	H ₂ S		TESTED BY
TARGET	19.5% - 23.5%	<10%	<35 PPM	<10 PPM		
DATE						
TIME						
RESULT	%	%	PPM	PPM	PPM	

AIR TEST RESULTS AFTER VENTILATING						
	O ₂	L.E.L.	CO	H ₂ S		TESTED BY
TARGET	19.5% - 23.5%	<10%	<35 PPM	<10 PPM		
DATE						
TIME						
RESULT	%	%	PPM	PPM	PPM	

ADDITIONAL AIR TEST RESULTS						
	O ₂	L.E.L.	CO	H ₂ S		TESTED BY
TARGET	19.5% - 23.5%	<10%	<35 PPM	<10 PPM		
DATE						
TIME						
RESULT	%	%	PPM	PPM	PPM	

CLASSIFICATION	SAFE ATMOSPHERE		HAZARDOUS ATMOSPHERE	
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(Continued on back side)

CONFINED SPACE ENTRY PERMIT

MARK ALL SAFETY EQUIPMENT NEEDED FOR THIS JOB			
	HARD HAT		AIR-PURIFYING RESPIRATOR
	SAFETY GLASSES WITH SIDESHIELDS		AIRLINE RESPIRATOR
	CHEMICAL PROTECTIVE GOGGLES		ESCAPE RESPIRATOR
	FACESHIELD		LOCKOUT/TAGOUT SUPPLIES
	HEARING PROTECTORS		FIRE PROTECTION EQUIPMENT
	COTTON OR LEATHER GLOVES		SPARK RESISTANT TOOLS
	CHEMICAL RESISTANT GLOVES		VOICE COMMUNICATION EQUIPMENT
	COVERALLS		VENTILATION EQUIPMENT
	RAINSUIT		PORTABLE LIGHTING
	CHEMICAL RESISTANT CLOTHING		GROUND FAULT CIRCUIT INTERRUPTER
	SLIP/CHEMICAL RESISTANT BOOTS		WARNING SIGNS AND BARRIERS
	WELDING HELMET/GOGGLES		MECHANICAL RETRIEVAL DEVICE
	FULL BODY HARNESS AND RETRIEVAL LINE		OTHER

ALL ANSWERS MUST BE "NOT APPLICABLE" OR "YES" FOR JOB TO PROCEED	N/A	YES	NO
COPY OF CONFINED SPACE ENTRY PROCEDURE AVAILABLE AT SITE?			
COPY OF LOCKOUT/TAGOUT PROCEDURE AVAILABLE AT SITE?			
APPLICABLE CONTROL MEASURES (INCLUDING LO/TO) ARE IN EFFECT?			
REQUIRED SAFETY EQUIPMENT HAS BEEN PROVIDED AND HAS BEEN CHECKED OVER?			
HAZARDOUS MATERIALS REMOVED AND SPACE CLEANED TO EXTENT POSSIBLE?			
VENTILATION HAS BEEN SET UP AND IS BEING USED EFFECTIVELY?			
ENTRANTS/ATTENDANTS WERE INSTRUCTED ON PHYSICAL/CHEMICAL HAZARDS OF THIS JOB?			
ENTRANTS/ATTENDANTS HAVE REVIEWED MSDS OR EQUIVALENT, IF NEEDED?			
ENTRANTS/ATTENDANTS WERE INSTRUCTED ON SAFE WORK PROCEDURES FOR THIS JOB?			
ENTRANTS/ATTENDANTS WERE INSTRUCTED ON USE OF SAFETY EQUIPMENT, IF NEEDED?			
ENTRANTS/ATTENDANTS HAVE COMPLETED CONFINED SPACE ENTRY TRAINING?			
ENTRANTS/ATTENDANTS WERE INSTRUCTED ON EMERGENCY PROCEDURES?			
ENTRANTS HAVE BEEN TRAINED ON ANY RESPIRATORS THEY MAY HAVE TO USE?			
SPECIAL RESCUE ARRANGEMENTS IF RESCUE LIKELY TO BE DIFFICULT?			
SECURE FOOTING AND/OR FALL PROTECTION PROVIDED?			
AREAS AROUND ACCESS POINTS CORDONED OFF?			
"CONFINED SPACE ENTRY IN PROGRESS" SIGNS POSTED AT ENTRY POINTS?			
PHONE, RADIO, ALARM HORN OR OTHER DEVICE AT HAND TO SUMMON ASSISTANCE?			
OTHER NECESSARY PERMITS OBTAINED?			
RESCUE TEAM CONFIRMED AVAILABLE TO RESPOND IF NEEDED?			

SIGNATURE FOR SAFE ATMOSPHERE ENTRY			
ENTRY SUPERVISOR		DATE	

HOT WORK PERMIT

This Hot Work Permit is required for any temporary operation involving open flames or producing heat and/or sparks. This includes, but is not limited to cutting, grinding and welding.

Location: _____	Date: _____
Elevation: _____	Start Time: _____
Nature of Job: _____	Finish Time: _____

I verify the above location has been examined; the precautions checked on the Required Precautions Checklist below have been taken to prevent fire; and permission is authorized for this work.

Employee Name _____	Subcontractor Name _____
---------------------	--------------------------

_____	Permit Expires:
Authorized Signature	Time: _____ Date: _____

Required Precautions Checklist

- Available sprinklers, hose streams and/or extinguishers are in service and operable.
- Hot work equipment is in good repair.
- Fire blankets suspended beneath work (if required).
- Combustibles on other side of walls moved away.

Requirements within 35 Feet of Work

- Flammable liquids, dust, lint and oily deposits have been removed.
- Explosive atmosphere in area has been eliminated.
- Floors have been swept.
- Combustible floors have been wet down or covered with damp sand or fire-resistant sheets.
- Other combustibles have been removed or otherwise protected with fire blankets.
- All wall and floor openings have been covered.
- Areas have been barricaded as appropriate to protect employees.

Fire Watch/Hot Work Area Monitoring

- Fire watch will be provided during and 30 minutes after work, including coffee & lunch breaks.
- Fire watch is supplied with suitable extinguishers, charged small hose and/or suitable protective device.
- Fire watch may be required for adjoining areas above and below.

Other Precautions Taken

Fire Watch Signature

Time Completed

CRITICAL LIFT PERMIT

Check all that apply:	Tandem Lift	> 25 Ton	Man Basket	> 75%	Unusual	Job Requirement
1. Job No.	2. Job Name <input type="checkbox"/> <input type="checkbox"/>		3. Location of Lift <input type="checkbox"/> <input type="checkbox"/>			
4. Date / Time of Lift	5. Crane Manufacturer		6. Model #		7. Serial #	
8. Unit #	9. Total Boom/JIB Length (Ft.) at Time of Lift		10. Boom Angle During Lift Max: Min:		11. Lift Elevation (Ft.)	
12. Maximum Radius During Lift (Pick, Swing & Set)			13. Swing Direction & Location of Boom			
14. Will JIB be used? Yes <input type="checkbox"/> No <input type="checkbox"/> Length (Ft.) <input type="checkbox"/> Erected Weight (Lbs.) <input type="checkbox"/> Stowed JIB Offset Angle _____			15. LMI Yes <input type="checkbox"/> No <input type="checkbox"/> 16. Anti-Two-Blocking Device Yes <input type="checkbox"/> No <input type="checkbox"/>		17. Man Basket Yes* <input type="checkbox"/> No <input type="checkbox"/> *If Yes, refer to Man Basket Permit	
18. Wind Speed Indicator Yes <input type="checkbox"/> No <input type="checkbox"/>			19. Manufacturer-Rated Capacity Chart per Parameters Outlined in Blocks 9 through 13			
20. Component Weights: A) Load Block _____ B) Rigging (Slings, Spreaders, Etc.) _____ C) JIB / Boom Extension _____ D) JIB Ball & Hook _____ E) Wire rope beneath tip of JIB (If applicable) _____ Please see attachment 4.14 for "Weight of Rope" F. Miscellaneous (Stowed JIB) _____ G. Upper Boom Point _____ H. Upper Point Ball & Hook _____ TOTAL: _____			21. Load Description, Weight, and Center of Gravity			
			22. Who Determined Weight of Load & Lift? Name: _____ How Weight & Lift Determined: _____			
			23. Total Lift Load (Total Blocks 20 & 21)			
			24. Load % of Crane Capacity (Divide Block 23 by Block 19)			
			25. Rigging Safety Factors 5 to 1 Yes <input type="checkbox"/> No <input type="checkbox"/>			
			26. Choker / Shackles Size & Condition <input type="checkbox"/> <input type="checkbox"/>			
			27. Pick With: Main <input type="checkbox"/> Auxiliary <input type="checkbox"/>			
			28. Tag Line Required Yes <input type="checkbox"/> No <input type="checkbox"/>			
29. Parts of Wire Rope Main / Auxiliary <input type="checkbox"/> <input type="checkbox"/> _____ = _____ Parts Factor from 4.14			30. Single Line Pull <input type="checkbox"/> <input type="checkbox"/> Capacity Size			
31. Load Line Capacity _____ = _____ Block 30 Block 31 TOTAL			32. Weather <input type="checkbox"/> Wind <input type="checkbox"/> Ice <input type="checkbox"/> Freeze / Thaw <input type="checkbox"/> Rain Temperature _____ Other: _____			
33. Will Pick / Swing be above Personnel / Equipment? Yes <input type="checkbox"/> No <input type="checkbox"/>			34. Are Crane Inspections Current? Yes <input type="checkbox"/> No* <input type="checkbox"/> Daily <input type="checkbox"/> <input type="checkbox"/> Monthly <input type="checkbox"/> Annual *If not, Crane must be Downed			
35. Soil Conditions (If Mats are used, what size?)						

(Continued on back side)

36. Electrical Hazards? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Explain:	37. Underground Hazards? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Explain:
38. Other Hazards? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Explain:	39. Will Lift Meetings be Conducted? <input type="checkbox"/> Yes <input type="checkbox"/> No
40. Rigger's Name:	41. Flagman's / Signman's Name:
SIGNATURES	
1. Operator	4. Craft Supervisor
2. Equipment Supervision	5. On-Site Safety Representative and / or Safety Director
3. Rigging Supervision	6. Project / Construction Manager

SAFETY ASSESSMENT

Assessor: _____

Inspection Date: _____

Job Name: _____

Supervisor: _____

A = Acceptable U = Unacceptable N/A = Not Applicable					
Issues identified must be shared with Supervisor. Comments must accompany any unacceptable box.					
	1. Recordkeeping, Posters		F. First Aid Kit		C. Roof top work / plan completed
	A. OSHA Notice/300 Log		4. Cranes, Riggers, Signal Person		D. Open sided floors or platforms 6' or more from ground equipped with proper guard rail
	B. Emergency Telephone #'s		A. Daily Inspection		E. Openings properly barricaded or covered
	C. Location of nearest Occupational Clinic		B. Qualified Operator		7. Fire Protection & Housekeeping
	2. Communication		C. Qualified Rigger/Signal Person		A. Trash picked up and disposed of regularly
	A. Stretching		D. Swing Radius Controlled		B. Aisles and passageways clear
	B. Daily Huddle		E. Critical Lift Permit		C. Flammable and explosive materials stored and handled safely
	C. JHA		5. Ladders		D. Required number of fire extinguisher properly located and inspected
	3. PPE		A. Properly inspected		E. All vehicles & other mobile equipment provided with fire protection
	A. Hard Hat, Safety Glasses, Work Gloves, Proper Boots		B. Properly Used		8. Aerial Lifts
	B. FR Clothing		C. Necessary labels visible		A. Daily Inspection
	C. High Visibility Clothing		6. Fall Protection		B. Proper Use
	D. Respirator		A. Proper fall protection at 6' or greater		C. Fall Protection (if required)
	E. Other PPE		B. Personnel below are protected from falling objects		
					9. Scaffolding
					A. Fall protection/prevention
					B. Properly erected/competent person
					C. Tied to structure 30' horizontally and 20' vertically
					D. Plank spacing 1" or less; cleated or extends ≥ 6"
					10. Haz Com
					A. Information Posted
					B. Employees know about subject
					11. Hot Work
					A. Welding screens provided
					B. Proper additional PPE utilized
					C. Equipment in good repairs, insulators, grounding, welding leads
					D. Adequate ventilation or respirator placard

A = Acceptable U = Unacceptable

N/A = Not Applicable

Issues identified must be shared with Supervisor. Comments must accompany any unacceptable box.

12. Electrical		14. Excavations		15. Confined Space		16. Concrete/Masonry	
A. Assured Grounding Program		A. Was one-call system contacted		A. Declared permit or non-permit		A. Masonry walls over 8' braced/reinforced	
B. All electrical equipment in good condition		B. Protective system		B. Air monitor onsite (properly calibrated, properly used)		B. Fall Protection/Prevention	
C. Proper use of GFCI		C. Surface encumbrances protected/supported		C. Atmosphere test results documented		C. All protruded rebar guarded	
D. Good work practices (cords out of pathways, kept out of water, etc.)		D. Ladder within 25' of all employees		D. Energy sources locked out		D. Additional PPE	
13. Cylinders		E. Utilities protected/supported		E. Adequate ventilation or air flow		E. Safe hoisting equipment	
A. Compressed gas cylinders stored and secured upright		F. Spoil piles minimum of 2' from edge of excavation				17. Hazmat	
B. Empty gas cylinders marked		G. Overhead power lines minimum distance requirement met				A. Lead; Asbestos; Silica; Mercury	
C. Cylinders capped							

Use this area for specific comments for each issue identified:

Positive Insight:

DAILY MAINTENANCE CHECKLIST: AERIAL WORK PLATFORM

Equipment #:

Week Ending (Sat):

Type of Lift:

Inspection Date:

Job Name: __

Inspected By: _____

Instructions:							
1. This report is to be completed prior to use. Place an "S" (<i>Satisfactory</i>) next to a satisfactory item, and a "D" (<i>Defective</i>) next to any defective item and give details below. Inform the Foreman of any defective items immediately. 2. Write "N/A" next to any item that is not applicable.							
Daily Visual Check	Mon	Tue	Wed	Thurs	Fri	Sat	Comments
Date or NIS (Not In Service):							
Operation & Safety Manual							
Warning & Instruction Decals							
Capacity & Control Decals							
Controls & Emergency Down Valves Operate Properly							
Control Box Assembly							
All Covers & Shrouds in Place							
Pivot Pins, Cylinders (Master & Slave Lave) & Retainers							
Boom(s) Condition							
Turret Condition							
Battery & Charger Check - Properly Wired & Grounded							
Platform Rails & Cages							
Toe Boards & Mesh Condition							
Platform Lanyard Connections							
Hydraulic Oil & Coolant - Check Levels and Check for Leaks, Gas & Hydraulic Cap							
Inspect Tires							

**Details of Defective Item/
Corrective Action Taken:**