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# 7 Safety Measures That Every Field Equipment Shelter Should Have

Safety precautions can make all the difference for the personnel who service your equipment, as well as the surrounding communities those applications serve

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## Safety Measures That Every Field Equipment Shelter Should Have

For a wide range of industrial and municipal equipment applications, you can never be too careful.

Whether you are working with hazardous chemicals at a waste water treatment plant, protecting critical gas pipelines that have to work in extreme temperatures, or housing vital equipment at one of our nation's nuclear power plants, safety needs to be a top priority.

Here is a list of essential safety measures for you to consider the next time you are specifying a field equipment shelter.

## 1. Alarms

Alarms provide warnings to issues that arise on-site. They can ring at the job site, send a signal from a remote location back to a central work area, or both.

### Alarms can be triggered for a variety of reasons:

- **Smoke Alarms** warn of equipment malfunction and the presence of noxious fumes
- **Gas detection alarms** warn of hazardous working conditions within the field equipment shelter
- **High temperature alarms** go off when equipment overheats
- **Low temperature alarms** indicate when supplemental heat is needed to protect the equipment
- **Power failure alarms** caution when electricity shuts off and no power is flowing to the shelter or the equipment
- **Door alarms** signal of intruders



## 2. Light

When servicing equipment, it's important to see exactly how that equipment is functioning. Light can come from many different sources:

- **Interior lights** — Interior lighting is used when high visibility is required for equipment viewing.
- **Exterior lights** — exterior lighting is used when nighttime visibility or security is needed
- **Skylights** — Skylights are a great alternative for bringing light into the shelter. They are a translucent area of fiberglass with no foam or wood. They are created during the manufacturing process so they will not leak. They come in multiple sizes and are especially useful for buildings with no electrical service.
- **Explosion-proof electrical packages** — Class I Div I and Class I Div II electrical packages are available for projects when flammable gases or vapors are or may be present.



*Nighttime exterior lighting*



*An explosion-proof fluorescent light*

### 3. Ventilation

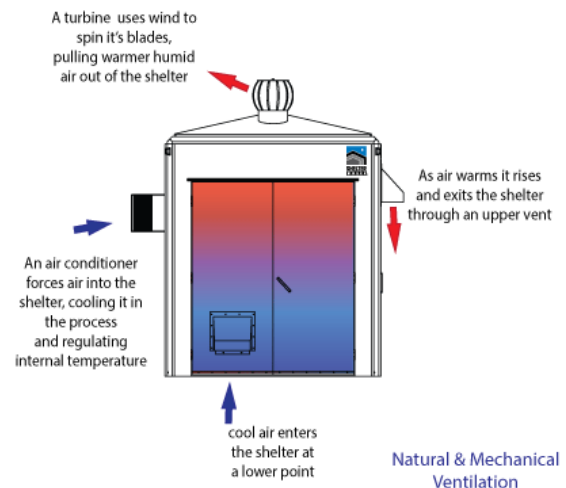
Proper ventilation can prevent dangerous gas build-up or remove excessive moisture from the air within a field equipment shelter.

Ventilation can be achieved naturally or mechanically. In most cases, a mix of both natural and mechanical ventilation can produce the desired results.

- **Wind-driven roof or wall turbines** —use natural breezes to encourage air circulation.
- **Electric fans** —circulate air when you need consistent results
- **Triggered natural ventilation systems** —activate when a specified interior temperature is reached



*A wind-driven roof turbine*



*Illustration: Ventilation system*

## 4. Heating & Cooling

When it is critical that your equipment functions no matter the weather forecast, heating and cooling units will regulate interior temperatures, and protect the equipment environment.



*Wall-mounted heater*

- **Heaters** – maintain an ideal working environment above a specified temperature.
- **Air conditioning** – Maintains cooler, less humid environments for equipment that generates additional heat or requires cooler working environments.



*Wall-mounted air conditioning units*

## 5. Access Options

Egress is a critical factor for field equipment shelters, and there are many door options to consider (single, double or roll-up doors), but there are a few other factors that might increase worker safety:

- **Panic hardware on the door** – push-to-open doors with panic hardware allow for split-second exits if necessary
- **Secondary doors** – smaller access doors or secondary egress may be important for your application
- **Removable roof or roof hatch** –it may be that the safest way to get equipment out if it needs to be repaired or replaced



*Metal roof hatch*



*Panic push-bar on the door*

## 6. Hazardous Chemical Safety Precautions

When you are dealing with hazardous chemicals, safety features get taken to a whole new level.

- **Containment floors** – if a hazardous chemical should spill, a liquid-tight containment basin system with an elevated fiberglass grid flooring can ensure that workers can still safely walk while the liquid is pumped out with a sump or drainage system. This also avoids chemical exposure into groundwater as well.
- **Showers** – shelters can be designed with a safety shower on the interior or exterior of the building. If the shower is inside the building, you may want to include a containment basin that could capture the shower run-off.
- **Color** – often, there is a special shelter that is designated on-site to handle safety concerns, such as a safety shower room



*Orange shower*



*Safety orange-colored shower shelters*



## 7. Battery Backup

There are two types of battery powered back-up lighting: emergency and stand-by

- **Emergency** — in a sudden power outage, emergency lights instantly provide illumination for up to 90 minutes and can indicate where to exit the shelter safely
- **Standby** — standby lights can be controlled by a switch which reserves the battery power until it is needed. This is preferred for remotely located shelters when repairs can't begin immediately.



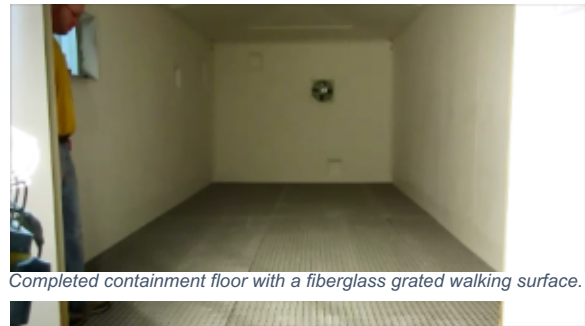
CASE STUDY #1:

## Shelter Works Field Equipment Shelter Adds Another Layer of Safety for A Nuclear Power Plant

*“I didn’t know you guys could do that!”*

That’s what one long-time client said to us when he heard that we had built a containment floor for another client. A containment floor does exactly what it says. It contains liquids preventing them from leaving the building.

We just finished a containment floor for a shelter that is headed to a nuclear power plant that services the Midwest. It will house the bleach and bromine equipment that’s used in one of the plants



Completed containment floor with a fiberglass grated walking surface.

cooling systems. Chemical spills could be problematic, therefore, they need to be contained until they can be properly cleaned up.

*“Anytime you are dealing with potentially hazardous chemicals, you need to take extra precautions,”* explained Tracy Switzer, President of Shelter Works.

*“By having a containment floor we’ve added an extra layer of protection for the facility. In addition, the floor construction allows workers to continue to walk on the elevated floor safely even if a spill has occurred. This Shelter Works building has been specifically designed to provide added peace of mind for our clients.”*

[CASE #1 CONTINUED]

This particular containment basin is 4 inches deep, allowing the building to hold up to 500 gallons of fluid. Besides for being made of our proprietary composite fiberglass construction materials, it's also covered with an easily removable fiberglass grid flooring material that allows the liquid to be contained below the walkable surface.

Additional structural elements were built in to the original construction of the floor to support the weight of the equipment that will be housed in the shelter.

Another interesting element of this shelter is that it included an emergency shower for the safety of the workers. The shower stall needed to have a hole that would drain water from the shower out (as opposed to the containment floor, which is meant to keep fluid in). In order to accomplish this, the subfloor was divided into two separate sections and the contained area under the shower included a drain to flow the shower water out.



*Sectioned area of containment floor to sit below shower area*

CASE STUDY #2:

## Unique Natural Gas Compression Station Equipment Protection

*“It gets pretty cold here in the winter; because the equipment is critical to this operation, it has to be properly protected.”* That’s how Randy Cunningham described one particular safety valve at a Midwestern natural gas transmission compressor station.



*“This particular location is critical to the flow of natural gas to the Chicago market and because it is elevated off the ground, it is difficult to maintain in the case of a frozen vent. Now, should any problems occur, they have a safe environment to work in.”*

This particular ball valve rotates in a vertical position and acts as the emergency shutdown valve for this facility. Temperatures in the area can fall to  $-10^{\circ}$  in the winter months. When the valve is called on to move, the actuator vents a small amount of gas. If the vent should freeze, it may hinder the valve from moving, which would put expensive equipment at risk and potentially hinder the flow of gas. This could compromise the entire facility, which is why the equipment is now protected with the Shelter Works fiberglass enclosure.



Shelter Works custom-engineered compressor station equipment protection has been made specifically to cover and protect this critical safety device from the worst weather challenges that arise in that area. It has been designed for maximum functionality and minimum maintenance. The building has large skylights to provide light into the building and entry doors above and below.

Shelter Works built the skirted enclosure on an elevated, galvanized steel platform so that workers are able to walk around the actuator without stepping on the pipes. For the most part, workers are using the entry door above. However there is an alternate access panel to the pipes below, in case someone needs to service any of the pipes or electrical connections in the crawl space.

Cunningham explained that the client was enthusiastic about the final building, *“They were very pleased, as they felt the enclosure came together just as they had hoped. It’s a well-kept site, and the shelter just made it all that much safer. The 25-year warranty is great, and they will probably buy more in the future.”*

CASE STUDY #3:

## 32 Shelter Works Fiberglass Shelters Used By Sacramento County Water Agency

Water treatment can be a corrosive business. In order to have clean water, treatment facilities in Sacramento County use sodium hydrochloride to disinfect water once it's drawn from the well and then they fluoridate using hydroflourosylic acid. Both are hazardous chemicals that need to be confined, but hydroflourosylic acid, and particularly the fumes emitted during the fluoridation process, eats away at nearly any surface it comes in contact with. Since both chemical processes happen at the well site, the equipment needs to be contained separately.



Sacramento County Water Agency made the decision to upgrade 32 old Redwood buildings and turned to Shelter Works for its field equipment protection needs.

Tracy Switzer, President of Shelter Works, explains, “You can’t mess around with this stuff. This was a big project, and it was important to them that they work with a high-quality company that had specific QC procedures in place. The interior partition wall created an airtight environment that met their needs perfectly.”

There were nine shelters to be placed at water treatment plants and 23 shelters at individual well sites throughout Sacramento County. Because those individual well sites are situated within residential neighborhoods, they needed to be visually appealing as well as corrosive resistant. In order to contain the fumes and keep the equipment from corroding, Shelter Works supplied a series of multi-room fiberglass buildings to contain the fumes in one room and allow other equipment to be protected in another room.

Airtight partitions separate the equipment and protect each from harmful effects of the other, as well as protecting from the elements.



## Our 25-Year Warranty Lets You Specify with Confidence

Shelter Works products are engineered specifically to meet the rigid requirements of industrial applications because they need to live up to the tagline: “Built for Life.”

We take a tremendous amount of care in designing the highest quality shelters, engineering each aspect, from the submittal drawings and the construction process to core materials, resin and gel coats, door construction and hardware, to final electrical wiring and installation. All of our shelters go through extensive quality checks to ensure that every shelter will perform to expectations.







If it was built by Shelter Works, it was built for life.

Need a creative solution for your field equipment protection needs?  
Give us a call at **(800) 794-8037** or [Click here to submit a Request For Quote](#)