

Avoiding the Hazards of Wet and Damp Locations With a Complete Electrical Safety Solution

The Occupational Safety and Health Administration (OSHA) drives workplace safety procedures that span multiple industries. On the surface it may seem that different industries such as food and beverage processing and oil and gas drilling and refining should have very different safety standards. In fact, there are several safety standards that are applicable to both due to the similarities in their harsh, wet environments and the types of devices used in them.

This article focuses on identifying industries where wet or damp environments might exist, highlighting examples of how these environments are often much more susceptible to electrical hazards than typical industrial settings and establishing multipart solutions that can help mitigate the risk of those hazards.

1910.303(b)(6) and 1926.432(a)(1)

Electrical safety is a major overlapping area of concern for industries or operations situated in wet and damp locations due to the inherent danger of combining water and electricity. In fact, two of the top ten most cited violations by OSHA in 2016 involved electrical safety, related to broader general requirements as well as wiring methods. Violations surrounding electrical wiring methods and electrical general safety requirements can result from improper installation or installation of the wrong equipment for the job. Certain OSHA standards specific to electrical safety, including 1910.303(b)(6) and 1926.432(a)(1), focus on the necessary requirements for installation and on the suitability of equipment for an identified purpose. Part of the standard language details: **“Unless identified for use in the operating environment, no conductors or equipment shall be located in damp or wet locations...”**

What is considered a wet or damp location?

According to OSHA, damp or wet locations can be found both outdoors and indoors, and include areas that are unprotected from weather and/or subject to water, liquids or moderate amounts of moisture. These types of environments can be present in several industries, whether it be the “clean room” in a meat processing facility where washdown with water and chemicals occurs at least once a day, or out on an oil rig with minimal protection from rain, snow or other harsh weather.

The key to driving a culture of electrical safety is to enforce the use of appropriate devices in wet locations, but continuous training and maintenance are required to avoid accidents and keep industrial workers safe.

To support a complete electrical safety solution, OSHA recommends focusing on three aspects, including:

- Proper Training
- Regular Inspection
- Installation of products that facilitate a safety culture and make it easier and safer for industrial workers

Supporting a Complete Electrical Safety Solution

Establishing Safety Training Programs

Electrical safety training programs help to make the protection of industrial workers a priority and ensures workplace safety. Training programs should center on identifying the electrical hazards unique to your work environment and the ways that each employee or job function might be exposed to them. After a training, employees should be capable of recognizing where exposure to an electrical hazard exists and understanding which standing guidance applies to each work task. Annual trainings, as well as periodic refresher trainings following inspections and “close call” unsafe incidents can confirm if employees are adequately trained on current regulations and requirements, and will help to establish a culture of electrical safety in your organization.

Regular Equipment Maintenance

Through a critical examination of the workplace, inspections help to identify and record hazards for corrective action. Regular workplace inspections are an important part of electrical safety programs, but how often they should be conducted can be informed by a number of factors such as past incidents, type of equipment and processes, number of shifts and the size or complexity of the operation. High hazard or high risk areas should receive extra attention.

One commonly recommended approach is to conduct inspections as often as committee meetings are held. Planning is essential for an inspection to effectively identify if, when and how a worker might be exposed to an electrical hazard. In turn, this also indicates what steps the worker must take to minimize or avoid their exposure.

OSHA Compliant Devices

A simple way that facilities can both avoid accidents and maintain compliance with OSHA standards is to use devices specifically designed to prevent electrical hazards in wet and damp environments. There are a variety of industrial, OSHA-compliant products available that satisfy current safety procedures.

For wet and damp locations found in food processing, chemical processing, water and sewage treatment, oil exploration, agricultural operations, marine environments and more, commonly used devices which are designed to help avoid electrical hazards include:

Watertight Devices

Watertight devices include plugs, connectors, inlets, outlets and FD boxes which commonly feature:

- IEC IP66/IP67 and NEMA 4, 4X, 6, 6P, 12 ratings
- UV stabilized elastomer parts that resist water and most acids, grease, and oil
- Nickel-coated brass blades, contacts, wiring screws and wiring clamps for corrosion-resistance
- Strain relief systems that provide watertight seals and prevent cord slippage
- Heavy-duty contacts for maximum conductivity

Corrosion Resistant Devices

Extra heavy-duty plugs, connectors and receptacles for use in harsh wet and damp locations that:

- Industrial-grade construction ideal for use in extreme weather and other corrosive environments
- More stringent performance testing than weather-resistant devices, including salt-fog testing
- Nickel-plated contacts and blades
- Stainless steel shrouds and screws

Solving for Electrical Safety Today and Tomorrow

To maintain OSHA compliance and maximize safety for your employees, start by conducting an audit of your facility to determine where workers might be most at-risk for exposure to electrical hazards. Then form short-term and long-term plans that incorporate periodic safety trainings, regular equipment maintenance, and a family of OSHA compliant devices. This multi-part approach will optimize your wet and damp workplace not only for safety, but for productivity.

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