

Personal Protective Equipment

## An Overview of Welding in Oil and Gas, From the Pipelines to Steel Platforms, and the PPE Welders Require

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Did you know that 10% of all U.S. eye injuries happen in welding? It's a dangerous job, especially in the oil and gas industry. The main areas of the body at risk are eyes, hands, arms, and chest — but virtually any part of the body can suffer harm during welding.

While building new pipelines, working on rigs, or operating in the oil fields, welders are constantly exposed to a wide variety of hazards: metal splatters, molten liquids, UV and radiant heat, sparks, sharp surfaces, noise, harsh weather, and moving or falling objects.

Oil and gas industry welders need reliable protection through the use of personal protective equipment (PPE). It's not uncommon for pipeline and rig arc welders to work **10- to 12-hour days**. This means their PPE must not only be extremely safe, but also be very comfortable and flexible for long periods of work. Since MCR Safety knows welders want comfortable safety gear, they've answered their wishes with some brand new welding gear highlighted below.

Here's a look at the hazards oil and gas welders face, along with the PPE and apparel that keeps them safe.



### Extreme Weather

Harsh weather is a factor for any welder in this industry, because so much of their work is outdoors repairing structures and extending pipelines. They may work in a tropical environment that's very hot and humid or in a remote zone with 10 inches of blowing snow.

Some offshore welders work on ocean platforms where fast-shifting weather conditions exist. On rigs,

welders can experience strong winds that can easily sap their strength and make welding an extremely demanding task.

In the face of variable weather, welders need a variety of PPE options that are well-suited to both their job and the inconsistent conditions. For example, wearing an **S1T** FR Work Shirt is a mismatch for welding on an Alaskan pipeline. Instead, welders in colder climates will opt for warm, heat-resistant welding gear including the **DC5B** Extreme Climate FR Insulated Coveralls or **SS2BK** FR Sweatshirt.

## Electric Shock

Arc welding is the most common type of welding and is a daily activity at pipelines. It brings serious risk of electric shock from the arc that extends between the electrode and the base material used to fuse materials together.

Anytime two metal objects touch, with a voltage between the two, there is risk the welder can become the bridge between the materials, thus causing electrical shock, injury, and potentially loss of life.

With the risks and hazards that welders face, it makes no sense to skimp on high-quality welding products. The right kind of welding gear is extremely spark- and heat-resistant. Look for features like **Kevlar®-sewn**, premium leather materials, and a **drag patch** for additional heat and abrasion protection.

Lastly, be sure to always wear dry gloves when working around electricity!

## Eye Protection

Welders perform work that creates sparks and open flames. A welder should take extreme precautions and ensure eye protection is worn before looking into these bright lights, as a quarter of all welding injuries involve the eyes.

Pipeline welders work on or near oil rigs. They build and work to maintain the entire piping system. Every day, when welders make pipeline repairs, they are exposed to harmful sparks, flying debris, dusty conditions, and metal projectiles. In addition, they have constant exposure to UV rays, both from the welding arc and the sun. Oil and gas welders require proper eye and face protection that offers UV protection.

Welding face shields are also essential when cutting metal, as workers require a clear field of view. The **104PF**, with 6X greater Anti-Fog performance, is a popular choice for welders due to its extreme anti-fog protection, which is a must-have feature when exposed to extreme temperatures.

## Precarious Work Positions

Whether working on an ocean platform or suspended high in the air, welders must be able to do their work from some very precarious positions.

**Crush-protection gear** is essential PPE for welders. According to the **U.S. Bureau of Labor Statistics**, 76% of all hand injuries occur due to cuts and crushes, which can happen as easily to a welder as any other worker in the oil and gas industry. MCR Safety now makes welding gloves with both cut and impact protection.

## Sparks, Spills, Splatter, and Molten Metal

For welders, spills and splatters are always a concern. A welding jacket resists hot metal splashes, as does a wide range of other PPE: a welding face mask, a welding apron, and shoe protectors.

The right welding gloves are of critical importance. They allow a welder to work without fear of a sudden spill, splatter, or spark that could potentially harm their body and hands. After all, their hands are their livelihood, and a hand injury can destroy their career — not to mention the company's productivity.

Remember, welding also poses a threat to a welder's eyes, neck, chest, groin, legs, and feet. Use ***bib aprons, chaps, and shoe protectors*** to protect the entire body.

## Sharp Objects

While moving parts into position and adjusting welded objects, welders are exposed to extremely sharp surfaces. One wrong move and their hand or arm can easily receive a deep slice.

The best solution to protect from sharp objects is using ***cut-protection gloves*** that are flexible enough to allow the movements needed for welding activities, while also offering protection from cut hazards. Welding sleeves, ideally made with ***leather and Kevlar®***, extend the protection from wrist to shoulder.

## Hi-Visibility

Across all oil and gas operations, there are continuous construction projects occurring. In fact, there are over 30,000 construction laborers found in oil and gas. That means a lot of vehicles are always on the go and work conditions are always changing. It's imperative that welders are seen by vehicle traffic.

In addition to helping a welder be seen, the Hi-Vis garment needs to provide FR protection for flame resistance. Any hot spark that lands on a standard polyester vest has the potential of quickly catching fire or melting the polyester. The ***FRMBCL2L*** Class 2 Vest is break-away, meets ASTM F1506, and conforms to NFPA 70E- HRC1 specifications with an Arc Rating of 5.1 cal/cm<sup>2</sup>.

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