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HDPE Pipe Welding Safety

High-density polyethylene (HDPE) welding is a relatively simple process, but workers should be aware of the many safety hazards involved.

Common HDPE Welding Hazards:

HDPE pipe is typically welded together to distribute liquids or gases in large volume.

For example, large sections of HDPE pipe may be joined together to build water mains in a new residential development.

This can mean sections of HDPE weighing hundreds of pounds or more will be joined together and must be moved throughout the jobsite.

The machinery used to complete this process may include:

- Excavators
- Front Loaders
- Backhoes
- HDPE Fusion Equipment

Pipe welders, construction workers, and supervisors need to be trained on the safe use of HDPE welding machines.

Impact and Crush Accidents:

HDPE machines have many moving parts that create immense pressure and heat. Workers should never reach into the gap between pipe sections to remove pipe cuttings. Use a stick or brush instead to keep hands safely out of harm's way, even when the machine is off.

Crush injuries may also occur once the long sections of pipe that have been joined together are being lifted or repositioned.

HDPE pipe becomes increasingly heavy and unwieldy the longer it gets. When you are working with several hundred feet of pipe and heavy equipment, be aware of your surroundings and use proper lifting and transport techniques to avoid accidental impacts and crush injuries.

Burns:

Always use the proper personal protective equipment (PPE) including gloves and steel-toed shoes when working with the HDPE welder.

Whenever you handle the heating element, treat it as if it is hot to make proper care and storage a habit.
This will help you and your coworkers avoid burns.

Whipping:

HDPE pipe is known for its flexibility. When it is bent, it can whip back to straighten itself out unexpectedly.

HDPE may whip as it is being moved or if it is pressurized before it is secured. The stored energy from flexing or bending can be strong enough to cause serious injury.

All workers need to be aware of the potential path of bent HDPE pipe should it whip itself back into a straight line.

Hand and Strain Injuries:

Hand injuries and strain injuries are common when handling HDPE pipe.

Workers often try to move or reach into areas where it is safer to use alternate equipment.

It is tempting to take shortcuts to save time, but these decisions often result in injuries that could have been avoided.

Strains occur when a worker tries to move excessive weight or uses poor lifting techniques.

When you try to lift an object and it shifts further away from your center of gravity, you run the risk of losing control of the object or pulling a muscle.

Strain injuries can happen quickly with HDPE, considering the weight and awkwardness of a few hundred feet of joined pipeline. On the construction site, HDPE sections will often be too long and heavy for manual lifting, so heavy equipment is needed.

Workers should never try to shift or scoot pipe sections into position manually.

Be smart and use the proper tools and techniques for better leverage.

Most workers in skilled trades use their hands every day. Hand injuries can result in missed days at work or even permanent disability.

Do not compromise for the sake of time. Use machines to lift and position pipelines, and never place your hands in a position where they can be impacted, pinned, or crushed.

Most likely, the HDPE pipe you are working with will need to be moved. Do not try to lift or move it yourself. Always use power machinery like front end loaders.

Controlling foot traffic in the work area while moving the pipe will also prevent possible injuries.

Be sure everyone stays clear of the intended path of the HDPE pipe and stay away from areas where the pipe will need to bend significantly.

Never compromise safety.

Safe HDPE welding takes time. Be prepared to stop your task and take corrective action when needed.