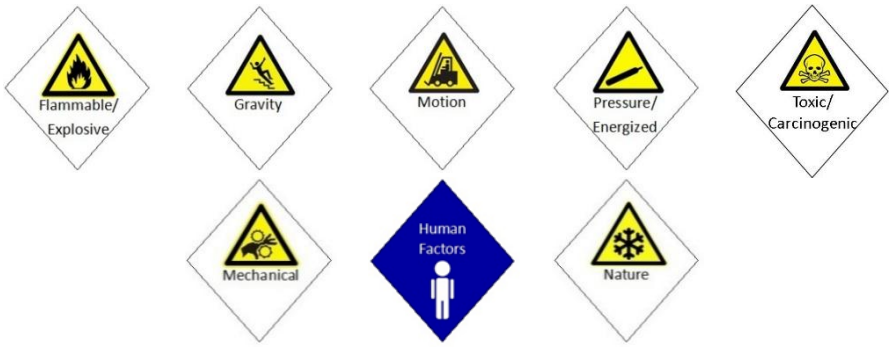
PURPOSE/APPLICATION

Tie-in welding is a necessary procedure when building a Pipeline. Tie-in points are where two joints of pipe are welded together to complete a pipeline. Generally, tie-in's are completed in a ditch or Bell Hole. Tie-in welds may also occur above ground.

COMMON HAZARD SOURCES AND CONCERNS



PERSONAL PROTECTIVE EQUIPMENT (PPE)

- CPES Minimum Requirements
- Flame Resistant Clothing (FRC) (as per site requirements)
- Other PPE as per HIAC (Hearing Protection, Reflective Vest, Face Shield)

TRAINING

- H2S Alive (as per site requirements)
- Client Orientation
- Strike Orientation
- WHMIS 2015

TOOLS/EQUIPMENT

- Equipment (sideboom, excavator or crane clamps, welder) with a qualified operator
- Fire extinguishers
- Atmospheric monitors (as per site requirements)
- Hammer, spacing tools
- Beveler and torch
- Skids

PRE-JOB ACTIVITIES

1. Assess the work according to the HIAC process, completing the Pre-Job or Site HIAC, ensuring that site hazard sources have been controlled (i.e. Motion – vehicles and equipment controlled).
2. Complete inspection of the area, confirm planned scope of work, and communicate plan.
3. Inspect all Tools and Equipment – Complete daily pre-use inspection of all tools and equipment.
4. Ensure excavation has been inspected and deemed safe.
5. Before starting work, ensure all LOTO requirements included in CPES's COP 05 Lock Out Tag Out are in place.

#	Job Steps	Hazards	Control Measures
1	Set pipe in ditch for tie-in weld using sideboom, crane, or excavator	▪ Suspended loads ▪ Equipment/rigging failure	▪ Don't stand or walk under suspended load ▪ Inspect all equipment and rigging prior to use ▪ Tag lines on suspended load
2	Ensure both sections are supported by proper skid piles	▪ Skid piles not adequate ▪ Skid piles on uneven or soft/wet ground	▪ Review SWP-81 Cribbing & Pipe Cones
3	Use equipment to line up the pipe for the cut	▪ Stored energy ▪ Pinch/crush points	▪ Identify and avoid the line of fire
4	Cut pipe to appropriate length using beveler	▪ Hot surfaces ▪ Sparks/molten metal	▪ Stay out of the path of sparks ▪ Watch hand placement ▪ Ensure the sling is not placed on a hot surface
5	Remove leftover pup from ditch	▪ Suspended/swinging loads ▪ Moving equipment ▪ Uneven terrain	▪ Use tag line ▪ Plan path of travel ▪ Ensure traction aids are used if the work area is slippery or snowy
6	Clean up pipe ends with grinder and buffer	▪ Sparks ▪ Flying debris ▪ Noise levels exceeding 85 dBA	▪ Double eye protection ▪ Hearing protection
7	Set pipe ends in clamps and fit up for alignment	▪ Stored energy ▪ Pinch/crush points	▪ Watch hand placement ▪ Clear communication with equipment operators
8	Pre-heat for welding	▪ Open flame ▪ Burns	▪ Ensure slings are far enough back from open flame ▪ Keep tank at the top of ditch (secure tank)
9	Complete the tie-in weld and remove the clamps	▪ Hot surfaces ▪ UV exposure from welding arc ▪ MSI ▪ Pinch points	▪ Keep eyes directed away from the welding arc ▪ Watch hand placement when removing clamps

ADDITIONAL PRECAUTIONS

Avoid using cones in the ditch when possible. Side loading on the pipe during alignment may cause cones to become unstable and tip over or collapse. Always set the pipe down on skids when you are able to.

If using inflatable lifting cushions (airbags) to assist in the alignment of pipe sections, ensure they are placed on a stable, flat surface. Read the operator's manual prior to use.

REFERENCES / ADDITIONAL INFORMATION

CPES Safe Work Manual

- COP 02 - Respiratory Protective Equipment
- SWP 17 - Chemical Hazards, Biological Hazards and Harmful Substances
- SWP 18 - Tools/Equipment/Machinery
- SWP 22 - Ergonomics - Manual Material Handling
- SWP 34 - Cranes Hoisting and Lifting Devices
- SJP 25 - Tie into Existing Pipe System

Regulations:

Alberta OHS Code

- Part 4 Chemical Hazards, Biological Hazards, and Harmful Substances
- Part 10 Fire and Explosion Hazards
- Part 15 Managing the Control of Hazardous Energy
- Part 16 Noise Exposure
- Part 18 Personal Protective Equipment
- Part 20 Radiation Exposure
- Part 25 Tools, Equipment and Machinery

British Columbia OHS Regulation

- Part 12 Tools, Machinery and Equipment Welding, Cutting and Allied Processes

Manitoba OHS Regulations

- Part 16 Machines, Tools, and Robots
- Part 17 Welding and Allied Processes
- Part 18 Radiation
- Part 19 Fire and Explosive Hazards
- Part 36 Chemical and Biological Substances

Saskatchewan OHS Regulation

- Part 361 Fire Extinguishers
- Part 370 5 Hot Work

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