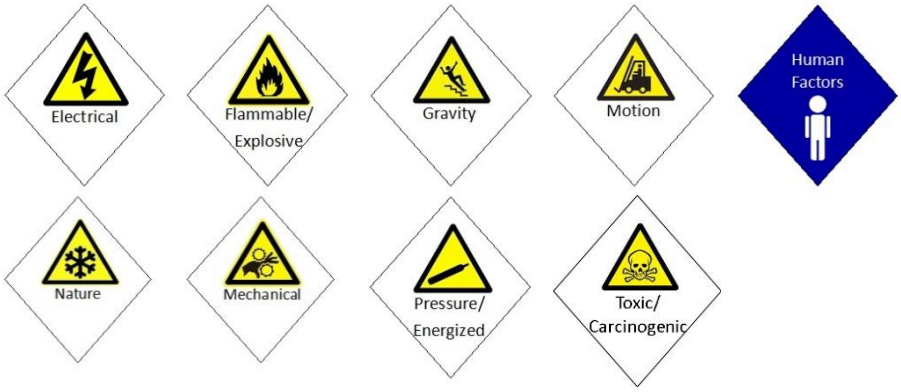
PURPOSE/APPLICATION

To ensure the potential hazards associated with welding on new pipeline construction are identified, assessed and controlled to ensure the safety of workers. This SJP is intended to provide direction on the key steps to perform mainline welding activities.

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
- CPES New Worker Orientation
- WHMIS 2015

TOOLS/EQUIPMENT

- Equipment (Side boom, clamps, welder) with a qualified operator
- Fire extinguishers
- Atmospheric monitors (as per site requirements)
- Hammer, spacing tools
- Seam turner
- Fire suppression cans

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 area, confirm planned scope of work, and communicate hazards and controls during daily tailgate meeting.
3. Inspect all Tools and Equipment – Complete daily pre-use inspection of all tools and equipment.
4. Verify wildfire requirements for area.
5. Ensure fire watch is in place as required.

#	Job Steps	Hazards	Control Measures
1	Mark centers and ensure seams are not aligned – seam positioning should be at 10 and 2	▪ Improper body position while using seam turner, MSI	▪ Don't overextend when pulling seam turner toward you
2	Buff pipe ends	▪ Congested work area ▪ Uneven ground ▪ Noise levels exceeding 85dBA ▪ Foreign objects in eyes	▪ Pre-job hazard assessment ▪ Double eye protection ▪ Buff with wheel spinning down in to bevel or inside of pipe
3	Pre-heat pipe ends with tiger torch	▪ Flammable/Explosion ▪ Burns	▪ Double eye protection ▪ Fire retardant outerwear (if required) ▪ Gauntlet gloves ▪ Ensure flame is directed away from other workers ▪ Keep away from combustible materials (grass, weeds)
4	Install calipers or sling onto pipe, lift pipe with sideboom or excavator and insert pipe end into clamps	▪ Suspended loads ▪ Pinch points ▪ Rigging failure	▪ Pre-use inspection ▪ Don't walk between pipe and equipment
External Clamps			
5	Tighten external clamps with ratchet or handle once desired space has been achieved	▪ Pinch points ▪ Muscle strain	▪ Keep hands and fingers on outside of clamps
Internal Pneumatic Clamps			
5A	Pull clamps through pipe to weld location using reach rod and align with edge of pipe	▪ Muscle strain ▪ Pulling clamps too far	▪ Ensure good posture is maintained ▪ Utilize two people if necessary ▪ Pull clamps in a controlled manner to ensure they don't come out of pipe
5B	Walk pipe joint back and set in to clamps	▪ Side boom moving backward ▪ Suspended load ▪ Pinch points	▪ Keep hands on outside of pipe ▪ Watch footing ▪ Don't stand between pipe and end of clamps
5C	Lock dogs with reach rod once desired space has been achieved	▪ Stored energy from compressed air	▪ Ensure connections are secure ▪ Keep face away from gap in weld joints
6	Weld pipe joints together	▪ Arc flash ▪ Flying debris	▪ Appropriate outerwear for welders ▪ Stay out of line of fire ▪ Reference SWP 43 – welding, cutting and allied processes
7	Welding on slopes	▪ Vehicle/equipment runaway ▪ Pipe sliding	▪ Chock tires ▪ Aim wheels away from mainline section

#	Job Steps	Hazards	Control Measures
			▪ Ensure deadman is in place to secure pipe section being welded
8	Set pipe down on to skids or cones	▪ Section too heavy ▪ Soft ground conditions ▪ Pipe growth due to thermal expansion	▪ Ensure skid piles are utilized every few joints ▪ Verify weights stamped on cones ▪ Inspect cones before use ▪ Assess ground conditions

REFERENCES / ADDITIONAL INFORMATION

CPES Safe Work Manual

COP 03 Respiratory Protective Equipment
SWP 17 Chemical hazards, Biological Hazards and Harmful Substances
SWP 18 Tools/Equipment/Machinery
SWP 22 Material Handling
SWP 34 Cranes Hoisting and Lifting devices
SWP 81 Cribbing and Pipe Cones

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