Skills Compétences Canada
British Columbia

Cariboo Regional Skills Competition

Scope Document

Welding (Secondary) (2026)

Thompson Rivers University
March 6, 2026

THOMPSON RIVERS UNIVERSITY | Trades & Technology

WELDING (Secondary) (2026)

Purpose of the Challenge:

- To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of fabrication and welding.
- To enable students to demonstrate their knowledge of blueprint reading, welding and Oxy-fuel cutting principles.

Skills & Knowledge to be tested: Students will be expected to:

- Start and use the welding equipment supplied by the organizer, following the appropriate safety regulations.
- Check that the dimensions of the materials are in accordance with the material list and the prints/drawings.
- Prepare the materials
- Assemble the materials in accordance with the drawings provided.
- Utilize their practical skills in drawing interpretation, Oxy-fuel cutting, fitting and welding.
- Demonstrate an ability to read blueprints and interpret welding symbols.
- Classify and identify electrodes.

Safety Requirements:

Safety awareness/requirements will be maintained within WorksafeBC standards at all times. A contestant will not be allowed to compete without the safety equipment noted in this scope document.

Equipment / Tools / Materials:

Supplied by Committee:

- Plans and instructions
- Set or practice materials
- All basic materials required to complete projects
- All filler materials
- Welding machines and accessories for Secondary competition: Miller XMT350 MPa
- Competitor can use any function on the machines.
- Low carbon steel
- Plate thickness: 3 mm - 9.5 mm
- Pipe wall thickness: 3.56 mm – 6.02 mm

- Diameter: 42.2 mm – 114.3 mm
- Filler materials
- SMAW = E4918, 2.4 mm and 3.2 mm
- SMAW = E4310, 3.2 and 2.5 mm or E4311, 3.2 and 2.5 mm
- GMAW = ISO B-G49A SC G6 (ER49S-6), 0.9 mm
- FCAW = E491T-9-CH, 1.2 mm
- Shielding gas
- GMAW / FCAW = 75% Ar + 25% CO2

Supplied by Contestant:
Clothing/PPE:

- Hat, leather coat or apron, leather gauntlet welding gloves
- Welding helmet complete with #10, #11 or #12 filter plate/lens and protective cover plate
- CSA Approved steel-toed boots,
- Cutting goggles, #4 or #5 lens,
- Safety glasses
- Hearing and/or ear protection

Tools

- Tool box
- Lead pencil and pen
- Soap stone
- Combination square
- Minimum 10-foot (3.1 meter) steel tape measure
- 16-ounce ball peen hammer
- Centre punch
- Cold chisel
- 10-inch adjustable wrench
- 10-inch vice grips
- 6-inch side cutting pliers or diagonal cutting pliers
- 6 – 10-inch dividers
- Chipping hammer
- Carbon steel wire brush
- Oxy-fuel tip cleaner
- Oxy-fuel striker

Note: Should the competitors bring any other equipment or tools, they must be approved by the technical chair at contest time.

Judging / Distribution of Marks:

JUDGING CRITERIA

- Undercut-Are all the welds free of undercut?
- Weld size-Are welds consistent in size per dwg requirement?
- Crater fill-Are end craters filled in?
- Weld profile-Are all weld profiles as per symbols?
- Weld appearance-Are welds beads consistence in appearance?
- Fit up-Are parts fitted as per drawing?
- GMAW fillet size-Are the GMAW fillet sizes according to prints?
- GMAW porosity-Are the GMAW welds free of surface porosity?
- SMAW fillet size-Are the SMAW fillet sizes according to prints?
- Are the SMAW welds free of surface porosity?
- GMAW undercut & overlap-Are the GMAW beads free of undercut & overlap?
- SMAW undercut & overlap-Are the SMAW beads free of undercut & overlap?
- GMAW Fillet joints are completely fused to the parent material
- SMAW Fillet joints are completely fused to the parent material
- SMAW reinforcement-Does the SMAW groove weld have excessive reinforcement
- Joints are free from Misalignment
- Arc strikes-Is the project free of arc strikes?
- Cleanup-Is all weld spatter, fume residue and slag removed?
- Overall appearance

Safety & Professionalism - Evaluated during work 10%

Does the student:

- Wear suitable clothing
- Have personal safety equipment
- Have adequate hand tools
- Wear eye protection at all times
- Wear ear protection when required
- Employ safe oxy-fuel cutting practices
- Employ safe arc welding practices
- Employ good job planning
- Employ good layout technique

Quality of SMAW 35%

- Are weld sizes adequate
- Are weld profiles acceptable ie. concave/convex
- Are welds correctly placed
- No visible undercut
- Is good fusion evident
- Is welding consistent
- Is all spatter removed
- Conforms to drawings

Quality of GMAW 35%

- Are weld sizes adequate
- Are weld profiles acceptable ie. concave/convex
- Are welds correctly placed
- No visible undercut
- Is good fusion evident
- Is welding consistent
- Is all spatter removed
- Conforms to drawings

General Workmanship & Accuracy 20%

- There should be no distortion evident
- Are finished dimensions accurate
- Are the welds correctly placed
- Is the project as drawn on prints

Technical Committee:

Technical Chair:	Larry Franzen	lfranzen@tru.ca
Members:	John Sutton	jsutton@tru.ca