

Regional Scope Document

WELDING (Secondary) 2009

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.
- ⌚ Have a working knowledge of electrode classification and identification.
- ⌚ The practical and theoretical components for secondary students are based on sections from training, including OFC, SMAW and GMAW.

Safety Requirements:

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

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Equipment / Tools / Materials:

Supplied by Committee:

- All equipment, testing materials and consumables
- All instructions and procedure sheets with drawings

Supplied by Contestant:

Confirmed list of required tools will be provided to all registered competitors two weeks prior to regional.

Clothing

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

Tools

- Lead pencil and pen
- Soap stone
- Combination square
- 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
- Tool box to contain the above items

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:

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 oxyfuel cutting practices
- Employ safe arc welding practices
- Employ good job planning
- Employ good layout technique

Flame Cutting 20%

- Are edges sharp
- Are edges square
- Is there an absence of nicks and gouges
- Is there an absence of drag lines

Quality of SMAW 25%

- 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 25%

- 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:

Ron Mckeown BC Technical Chair, National Committee
Bruce Hickey, Rod Walters,
Tony Sull, John Little,
Eric Sukkel, Al Wood

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