

# COMPETENCY PROFILE

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## SMAW PRACTICES – 6010 ELECTRODE

BTC: WLD 216 (2 credits)

Students will learn applications of power sources, electrode identification, & basic steel metallurgy, while practicing techniques in E6010 SMAW process in the 1F, 2F, & 3F positions.

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### Shield Metal Arc Welding Set-Up

- Demonstrate proper set-up for Shield Metal Arc Welding and minor troubleshooting with the following:
  - ✓ AC and/or DC power source
  - ✓ Clamps
  - ✓ Electrode holder
  - ✓ Ground lead
  - ✓ Welding booths or portable screens
  - ✓ Welding lead
  - ✓ Welders standard tool kit
  - ✓ Workpieces
- Workpiece is secured.
- Work lead provides continuity from the power source to the workpiece.
- The welding lead provides continuity from the power source to the electrode holder.
- Proper welding polarity is selected.
- The power source is plugged in and turned on.
- Welding booths or portable screens in place.
- Proper **6010 electrode** handling and storage techniques used.
- Demonstrate proper arc welding equipment and personal safety techniques.

### Shield Metal Arc Fillet Welding Techniques

- Demonstrate competency in SMAW techniques with E6010 in the Flat, Flat Fillet and Vertical Fillet weld positions on steel plate.
- Demonstrate understanding of simple layout and fit-up practices on mild steel plate.
- Make fillet welds using fast fill rod and the following:
  - ✓ Chipping hammer and wire brush
  - ✓ Electrodes
  - ✓ Grinder
  - ✓ SMAW equipment
  - ✓ Fast fill rods
  - ✓ Portable screens
  - ✓ Protective clothing/equipment
  - ✓ Weld gauge
  - ✓ Work pieces
- Weld is deposited with complete fusion, with a slightly convex uniform bead appearance, and is free from slag, overlapping, cracking and porosity.
- Weld is at least 25% greater in width than depth, & is approximately 1 1/2 times width of welding electrode.
- Demonstrate use of proper welding-related terminology.

**Assessment:** student and teacher complete the **SMAW-6010 Assessment Record** checklist and schedule an appointment with BTC instructor for final assessment to be completed at the college.

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### College Textbook Reference:

📖 Welding Principles and Applications; Sixth Edition; Larry Jeffus

This document is to certify that this student has completed the required coursework as defined by the Whatcom County Tech Prep Articulation Agreement and has demonstrated mastery for college credit. Further information about any aspect of this program may be obtained by contacting the school and instructor named on this profile.