

**COMPETENCY ANALYSIS PROFILE  
WELDER 456A**

***(All unshaded skill sets must be demonstrated/completed)***

***NOTE: For Skill Sets 6007.0 to 6012.0, 3 out of 6 must be completed***

**SKILL SETS**

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<b>USE AND MAINTAIN TOOLS &amp; EQUIPMENT</b>  <b>6000.0</b>	Use and maintain metal working and trade specific hand tools and associated equipment  6000.01	Use and maintain electrical, pneumatic and hydraulic power tools & associated equipment and supplies  6000.02	Use shop and metal forming equipment  6000.03	Use and maintain measuring devices and layout equipment  6000.04	
<b>USE AND MAINTAIN MATERIAL HANDLING AND SAFETY EQUIPMENT</b>  <b>6001.0</b>	Select and inspect rigging equipment  6001.01	Position and employ rigging  6001.02	Select and inspect hoisting and lifting equipment  6001.03	Operate hoisting equipment  6001.04	Select, inspect and erects scaffolding  6001.05
	Work on scaffolding and at heights  6001.06	Dismantle and stores scaffolding  6001.07			
<b>MAINTAIN WELDING EQUIPMENT AND SUPPLIES</b>  <b>6002.0</b>	Maintain oxy-fuel equipment  6002.01	Maintain arc welding equipment  6002.02	Store welding consumables  6002.03		
<b>PREPARE WORK SITE</b>  <b>6003.0</b>	Plan work site layout  6003.01	Set up work area  6003.02	Communicate/consult with supervisor, technical advisor and other workers  6003.03		
<b>LAY OUT, CUT AND FORM METALS TO SPECIFICATION</b>  <b>6004.0</b>	Prepare job layout  6004.01	Cut and gouge metal with oxy-fuel equipment  6004.02	Cut metal with arc-air equipment  6004.03	Cut metal with SMAW cutting equipment  6004.04	Cut metal with plasma arc equipment  6004.05
	Cut metal using hand tools  6004.06	Cut metal using power tools  6004.07	Form metal to specified design  6004.08	Prepare welding joints  6004.09	Select material preparation method  6004.10

<b>FIT SUB-ASSEMBLIES AND ASSEMBLIES</b>  <b>6005.0</b>	Make jigs, fixtures and templates with or without actual components  6005.01	Check measurements and fit of components  6005.02	Pre-heat components or assembly  6005.03	Perform tack welding  6005.04	Plan for the control of distortion  6005.05
<b>PREPARE ASSEMBLY FOR WELDING</b>  <b>6006.0</b>	Plan sequence of operations  6006.01	Verify fabricated materials and assemblies  6006.02	Prepare job for welding  6006.03	Ensure correct consumables are on hand  6006.04	Check weld joint fit up, tack welds and fixture condition  6006.05
	Check that joints to be welded are clean and dry  6006.06				
<b>WELD WITH THE SHIELDED METAL ARC WELDING (SMAW) "stick" PROCESS</b>  <b>6007.0</b>	Select and set up welding equipment  6007.01	Install electrode  6007.02	Adjust and verify welding process parameters  6007.03	Fillet weld using the SMAW "stick" process  6007.04	Groove weld using the SMAW "stick" process  6007.05
	Clean welds  6007.06	Measure welds for completeness  6007.07			
<b>WELD WITH THE GAS METAL ARC WELDING (GMAW/MIG) PROCESS</b>  <b>6008.0</b>	Select and set up welding equipment  6008.01	Install consumables  6008.02	Adjust and verify welding process parameters  6008.03	Fillet weld using the GMAW/ MIG process  6008.04	Groove weld using the GMAW/ MIG process  6008.05
	Clean welds  6008.06	Measure welds for completeness  6008.07			

<b>WELD WITH THE GAS TUNGSTEN ARC WELDING (GTAW/TIG) PROCESS</b>  <b>6009.0</b>	Select and set up welding equipment  6009.01	Install consumables  6009.02	Adjust and verify welding process parameters  6009.03	Fillet weld using the GTAW/ TIG process  6009.04	Groove weld using the GTAW/ TIG process  6009.05
	Clean welds  6009.06	Measure welds for completeness  6009.07			
<b>WELD WITH FLUX CORED (FCAW) OR METAL CORED (MCAW) ARC WELDING</b>  <b>6010.0</b>	Select and set up welding equipment  6010.01	Install consumables  6010.02	Adjust and verify welding process parameters  6010.03	Fillet weld using the FCAW or MCAW process  6010.04	Groove weld using the FCAW or MCAW process  6010.05
	Clean welds  6010.06	Measure welds for completeness  6010.07			
<b>WELD WITH SUBMERGED ARC WELDING (SAW) PROCESS</b>  <b>6011.0</b>	Install consumables  6011.01	Adjust and verify welding process parameters  6011.02	Fillet weld using the SAW process  6011.03	Groove weld using the SAW process  6011.04	Clean welds  6011.05
	Measure welds for completeness  6011.06				
<b>WELD WITH THE PLASMA ARC WELDING (PAW) PROCESS</b>  <b>6012.0</b>	Set up welding equipment  6012.01	Install consumables  6012.02	Adjust welding parameters  6012.03	Groove weld using the PAW process  6012.04	Clean welds  6012.05
	Measure welds for completeness  6012.06				

<b>BRAZE METAL</b>       <b>6013.0</b>	Select and configure oxy-fuel-gas heating equipment       6013.01	Obtain consumables       6013.02	Braze lap and tee joints       6013.03	Carry out shut down procedure       6013.04	
<b>WELD STUDS</b>       <b>6014.0</b>	Select and set up welding equipment       6014.01	Install consumables       6014.02	Weld studs       6014.03	Remove ferrules from welded studs       6014.04	Repair a failed weld       6014.05
<b>CONTROL FOR QUALITY WHILE WELDING</b>       <b>6015.0</b>	Comply with company quality control standards, customer standards and code requirements       6015.01	Ensure ongoing weld quality       6015.02	Benchmark weld quality       6015.03		
<b>CARRY OUT POST-WELD QUALITY CONTROL</b>       <b>6016.0</b>	Visually inspect welds       6016.01	Perform post-weld product control of weldment temperature       6016.02	Correct excessive welding distortion       6016.03	Perform any non-destructive check       6016.04	Prepare weld samples and perform destructive tests       6016.05
<b>DEMONSTRATE SAFE WORKING PRACTICES AND PROCEDURES</b>       <b>6017.0</b>	Identify and take corrective action against potential workplace health and safety hazards       6017.01	Handle, store and dispose of hazardous workplace materials       6017.02	Comply with workplace legislation relating to health & safety       6017.03	Wear and maintain personal protective equipment       6017.04	Practice good housekeeping in the workplace       6017.05