

Work Processes Schedule

WELDER, COMBINATION

RAPIDS: 0622N

O*NET/SOC: 51-4121.06

REVISION DATE: 12/2014

Welds metal components together to fabricate or repair products, such as machine parts, plant equipment, mobile equipment, motors, generators, and various structural components according to layouts, blueprints, or work orders, using brazing and variety of arc and gas welding equipment. Demonstrate knowledge and skills for qualifying as Journeyman. Applicable Job Qualification Requirements will be used as a guide in performing tasks and demonstrating knowledge in the following areas. Actual work time must be recorded in the Work Experience Log.

Applicable Ratings/MOS

USMC MOS 1316, 2161, 6043, 6092

USCG AMT, DC

USN AM, AS, AWF, HT, SW

Related Instruction

Any trade related schools/courses totaling 432 hours. Navy rates HT AM AWF personnel must have completed an Advanced Welding school/course in addition to their "A" school. AWF must have completed AM school. AS rating must have NEC 7222.

Additional Requirement

Completion of a Welding school/course in additional to "A" school training.

Total Hours: **6000**

Skill	Description	Hours
A	<p>FUNDAMENTALS</p> <p>Demonstration of knowledge required in all areas.</p> <ol style="list-style-type: none"> 1. Safety Precautions Fundamentals 2. First Aid And Rescue 3. Quality Assurance Administration Fundamentals 4. Quality Assurance Program Fundamentals 5. Levels Of Control Fundamentals 6. Hearing Conservation Program Fundamentals 7. Hazardous Material Control And Management-(HMC&M) Program Fundamentals 8. Respiratory Protection Program Fundamentals 9. Sight Conservation Program Fundamentals 10. General Administration (Log, Record And File Maintenance) 11. Technical Administration (Publications And Technical Manuals) 12. Logistics 13. Shop Fundamentals <ul style="list-style-type: none"> · Gas Tungsten Arc Welding Fundamentals And Safety · Gas Metal Arc Welding Fundamentals And Safety · Shield Metal Arc Welding Fundamentals And Safety · Electrical Fundamentals 	500
B	<p>EQUIPMENT</p> <p>Demonstrate safe operation and upkeep of shop equipment. The Equipment list is representative of tools and machinery typically found in the Work-Center associated with this trade.</p> <ol style="list-style-type: none"> 1. Dew Point Indicator 2. Grinder, Tool And Cutting (Tungsten) 3. Clamp-On Amp Meter 4. Oxygen Indicator, Battery Operated, LCD Readout 5. Contact Pyrometer 6. Welding Machine, Portable 7. Tig/Mig Welding Machine 8. Arc Welding Machine 9. Oxy/Acetylene Welder 10. Welding Set, Spoolmatic 11. Stress Relieving Equipment 12. Furnace, Heat Treating, Front Loading, 2,000 Deg. 13. End Prep Machine 	500

C	GAS METAL ARC WELDING (MIG) PULSE MODE 1. Hy-100 3/16" To 4" 2. Hy-80 3/16" To 4" 3. High Tensile Strength Steel 3/16" To 4" 4. Carbon Steel 3/16" To 4"	1000
D	GAS METAL ARC WELDING (MIG) SPRAY 1. Hy-100 Flat 3/16" To 4" 2. Hy-80 Flat 3/16" To 4" 3. High Tensile Strength Steel (HTS) Flat 3/16" To 4" 4. Carbon Steel Flat 3/16" To 4" 5. Cres Steel Flat 1/8" To 1" 6. Aluminum 3/16" To 2"	1000
E	GAS TUNGSTEN ARC WELDING (GTAW) 1. High Tensile Strength Steel (HTS) 1/8" To 1" 2. Carbon Steel 1/8" To 1" 3. Cres Steel 1/8" To 1" 4. Cuni 1/8" To 1" 5. Nicu 1/8" To 1 1/4" 6. Nickel Chromium-Iron 1/8" To 1" 7. Aluminum 0.58" To 3/8" 8. Hy-80 1/8" To 3/4" 9. Hy-100 (Pulse Mode) 3/16" To 4" 10. Manganese Bronze [S-37a] 3/16" To 2" 11. Tin Bronze [S-38] 3/16" To 2" 12. Phosphor Bronze [S-39] 1/8" To 2" 13. Manganese-Nickel-Aluminum Bronze [S-36b] 3/16" To 2" 14. Nickel-Aluminum Bronze [S-36b] 3/16" To 2" 15. Alloy Steel Alloy Content .10% Max [S-5] (CRMO)	1000
F	SHIELDED METAL ARC WELDING (SMAW) 1. Hy-80 3/16" To 4" 2. Hy-100 3/16" To 4" 3. High Tensile Strength Steel (HTS) 3/16" To 4" 4. Cres Steel 1/8" To 1" 5. Copper Nickel (CUNI) 1/8" To 1" 6. Nickel Copper (NICU [S-42]) 1/8" To 7/8"	700
G	SPECIFIC WELDING TECHNIQUES 1. Weld In Insert Aluminum 2. Weld In Insert Steel 3. Weld Attachments To Ship Hull & Superstructure 4. Perform Base Metal Repair 5. Groove Welds 6. Fillets Welds 7. Clad Welds 8. Tack Welds 9. Socket Welds (Joint Design P-13/P-14/P-15 Limited 2") 10. Socket Welds (Joint Design P-15) 11. Plug Welds (Maximum Diameter 2-1/2 Inches) 12. Consumable Insert Welds	700
H	SPECIAL WELDING TECHNIQUES AND PROCESSES (NON NUCLEAR) 1. Cobalt Overlay (Cocra 3/32 Inch Maximum) 2. Boiler Tube Seat Repair 3. Boiler Tube To Header 4. Boiler Hand Hole Seat Repair 5. Localized Preheat & Post Heat Treatment (Welded Joints) 6. Electrode Identification, Storage, and Disposal	500
I	RE-CERTIFICATION FOR WELDERS 1. GTAW Process 2. SMAW Process 3. GMAW Process 4. Boiler Components Qualification 5. Special Welds Qualification 6. Welds Recertification Test	100

