

## Red Seal Occupational Standard - 2015

### A – Performs Common Occupational Skills

Task A-1 Performs safety-related functions	A-1.01 Maintains safe work environment	A-1.02 Selects, inspects and uses personal protective equipment (PPE) and safety equipment	A-1.03 Follows lock-out procedures		
Task A-2 Uses and maintains tools and equipment	A-2.01 Uses common tools and equipment	A-2.02 Uses access equipment	A-2.03 Uses welding equipment	A-2.04 Uses soldering and brazing equipment	A-2.05 Uses oxy-fuel equipment
Task A-3 Organizes job	A-3.01 Plans work	A-3.02 Generates drawings	A-3.03 Interprets drawings and specifications	A-3.04 Develops piping templates	A-3.05 Performs quality control functions

### B – Performs Layout, Fabrication and Piping Installation

Task B-4 Performs fabrication	B-4.01 Fabricates piping system components	B-4.02 Fabricates brackets, supports, hangers, guides and anchors				
Task B-5 Lays out, identifies and installs piping, tubing, fittings and related components	B-5.01 Lays out, identifies and installs copper piping, tubing, fittings and related components	B-5.02 Lays out, identifies and installs plastic piping, tubing, fittings and related components	B-5.03 Lays out, identifies and installs carbon steel piping, tubing, fittings and related components	B-5.04 Lays out, identifies and installs stainless steel piping, tubing, fittings and related components	B-5.05 Lays out, identifies and installs fiberglass piping, fittings and related components	B-5.06 Lays out, identifies and installs specialty piping, fittings and related components
Task B-6 Installs, maintains, troubleshoots, repairs and tests valves	B-6.01 Installs valves	B-6.02 Maintains, troubleshoots, repairs and tests valves				
Task B-7 Installs, tests, maintains, troubleshoots and repairs heat tracing systems	B-7.01 Installs steam tracing systems	B-7.02 Maintains, troubleshoots, repairs and tests steam tracing systems	B-7.03 Installs liquid-filled tracing systems	B-7.04 Maintains, troubleshoots, repairs and tests liquid-filled tracing systems		

### C – Performs Rigging, Hoisting, Lifting and Positioning

Task C-8 Performs common rigging, hoisting, lifting and positioning	C-8.01 Determines load	C-8.02 Prepares lift plan(s)	C-8.03 Selects rigging, hoisting, lifting and positioning equipment	C-8.04 Inspects rigging, hoisting, lifting and positioning equipment	C-8.05 Secures lift area	C-8.06 Sets up rigging, hoisting, lifting and positioning equipment
	C-8.07 Performs lift and positioning	C-8.08 Maintains and stores rigging, hoisting, lifting and positioning equipment.				
Task C-9 Performs complex and critical rigging, hoisting, lifting and positioning	C-9.01 Prepares lift plan for complex and critical rigging, hoisting, lifting and positioning	C-9.02 Performs calculations for complex and critical rigging, hoisting, lifting and positioning	C-9.03 Selects rigging, hoisting, lifting and positioning equipment for complex and critical lifts	C-9.04 Sets up rigging, hoisting, lifting and positioning equipment for complex and critical lifts	C-9.05 Performs complex and critical lifts and positioning	

### D – Installs, Tests, Maintains, Troubleshoots and Repairs Low and High Pressure Steam and Condensate Systems

Task D-10 Installs, tests, maintains, troubleshoots and repairs low pressure steam and condensate systems	D-10.01 Installs equipment for low pressure steam and condensate systems	D-10.02 Installs piping for low pressure steam and condensate systems	D-10.03 Tests low pressure steam and condensate systems	D-10.04 Maintains, troubleshoots and repairs low pressure steam and condensate systems
Task D-11 Installs, tests, maintains, troubleshoots and repairs high pressure steam and condensate systems	D-11.01 Installs equipment for high pressure steam and condensate systems	D-11.02 Installs piping for high pressure steam and condensate systems	D-11.03 Tests high pressure steam and condensate systems	D-11.04 Maintains, troubleshoots and repairs high pressure steam and condensate systems

### E – Installs, Tests, Maintains, Troubleshoots and Repairs Heating, Cooling and Process Piping Systems

Task E-12 Installs, tests, maintains, troubleshoots and repairs hydronic systems	E-12.01 Installs equipment for hydronic systems	E-12.02 Installs piping for hydronic systems	E-12.03 Tests hydronic systems	E-12.04 Maintains, troubleshoots and repairs hydronic systems
Task E-13 Installs, tests, maintains, troubleshoots and repairs process piping systems	E-13.01 Installs equipment for process piping systems	E-13.02 Installs piping for process piping systems	E-13.03 Tests process piping systems	E-13.04 Maintains, troubleshoots and repairs process piping systems
Task E-14 Installs, tests, maintains, troubleshoots and repairs industrial water and waste treatment systems	E-14.01 Installs equipment for industrial water and waste treatment systems	E-14.02 Installs piping for industrial water and waste treatment systems	E-14.03 Tests industrial water and waste treatment systems	E-14.04 Maintains, troubleshoots and repairs industrial water and waste treatment systems
Task E-15 Installs, tests, maintains, troubleshoots and repairs hydraulic systems	E-15.01 Installs equipment for hydraulic systems	E-15.02 Installs piping, tubing and hoses for hydraulic systems	E-15.03 Tests hydraulic systems	E-15.04 Maintains, troubleshoots and repairs hydraulic systems
Task E-16 Installs, tests, maintains, troubleshoots and repairs heating, ventilation, air conditioning and refrigeration (HVACR) systems	E-16.01 Installs equipment for HVACR systems	E-16.02 Installs hydronic piping and refrigeration tubing for HVACR systems	E-16.03 Tests associated components of HVACR systems	E-16.04 Maintains, troubleshoots and repairs associated components of HVACR systems
Task E-17 Installs, tests, maintains, troubleshoots and repairs fuel systems	E-17.01 Installs equipment for fuel systems	E-17.02 Installs piping and tubing for fuel systems	E-17.03 Tests fuel systems	E-17.04 Maintains, troubleshoots and repairs fuel systems
Task E-18 Installs, tests, maintains, troubleshoots and repairs medical gas systems	E-18.01 Installs equipment for medical gas systems	E-18.02 Installs piping and tubing for medical gas systems	E-18.03 Tests medical gas systems	E-18.04 Maintains, troubleshoots and repairs medical gas systems
Task E-19 Installs, tests, maintains, troubleshoots and repairs compressed air and pneumatic systems	E-19.01 Installs equipment for compressed air and pneumatic systems	E-19.02 Installs piping and tubing for compressed air and pneumatic systems	E-19.03 Tests compressed air and pneumatic systems	E-19.04 Maintains, troubleshoots and repairs compressed air and pneumatic systems
Task E-20 Installs and tests fire protection systems (NOT COMMON CORE)	E-20.01 Installs equipment for fire protection systems (NOT COMMON CORE)	E-20.02 Installs piping for fire protection systems (NOT COMMON CORE)	E-20.03 Tests fire protection systems (NOT COMMON CORE)	

### F – Installs, Tests, Maintains, Troubleshoots and Repairs Renewable Energy Systems

Task F-21 Installs, tests, maintains, troubleshoots and repairs geo-exchange and geothermal systems	F-21.01 Installs equipment for geo-exchange and geothermal systems	F-21.02 Installs piping for geo-exchange and geo-thermal systems	F-21.03 Tests geo-exchange and geothermal systems	F-21.04 Maintains, troubleshoots and repairs geo-exchange and geothermal systems
Task F-22 Installs, tests, maintains, troubleshoots and repairs solar heating systems	F-22.01 Installs equipment for solar heating systems	F-22.02 Installs piping for solar heating systems	F-22.03 Tests solar heating systems	F-22.04 Maintains, troubleshoots and repairs solar heating systems
Task F-23 Installs, tests, maintains, troubleshoots and repairs heat recovery systems	F-23.01 Installs equipment for heat recovery systems	F-23.02 Installs piping for heat recovery systems	F-23.03 Tests heat recovery systems	F-23.04 Maintains, troubleshoots and repairs heat recovery systems

### G – Performs Commissioning, Start-Up and Turnover

Task G-24 Prepares system for commissioning, start-up and turnover	G-24.01 Flushes system	G-24.02 Chemically treats system.	G-24.03 Pre-checks system for commissioning	G-24.04 Selects and connects commissioning equipment	
Task G-25 Commissions systems	G-25.01 Secures commissioning area	G-25.02 Pressurizes system	G-25.03 Inspects system	G-25.04 Corrects faulty conditions	G-25.05 Participates in start-up and turnover procedures