# Competency Task List – Secondary Component

# Plumbing Technology/Plumber CIP 46.0503

# High School Graduation Years 2020, 2021, 2022

## 100 Safety

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 101 | RESERVED |   |   |
| 102 | RESERVED |  |  |
| 103 | RESERVED |  |  |
| 104 | RESERVED |  |  |
| 105 | RESERVED |  |  |
| 106 | RESERVED |  |  |
| 107 | RESERVED |  |  |
| 108 | RESERVED |  |  |
| 109 | RESERVED |  |  |
| 110 | RESERVED |  |  |
| 111 | RESERVED |  |  |
| 112 | RESERVED |  |  |
| 113 | Follow OSHA safety standards as they relate to the industry.  |  |  |

## 200 Reserved

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 201 | RESERVED |   |   |
| 202 | RESERVED |   |   |
| 203 | RESERVED |   |   |

## 300 Blueprints and Sketching of Pipe Systems

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 301 | Interpret types of drawings. |  |   |
| 302 | Interpret various lines used on drawings. |  |   |
| 303 | Interpret specifications and dimensions. |  |  |
| 304 | RESERVED |  |  |
| 305 | Interpret piping systems according to color-coding.  |  |  |

## 400 Pipe Specifications and Systems

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 401 | Install pipe and connections according to manufacturer specifications. |  |   |
| 402 | Follow plumbing standards, codes, and specifications. |  |   |
| 403 | RESERVED |  |  |
| 404 | RESERVED |  |  |
| 405 | Explain the effects and corrective measures for thermal expansion in a piping system. |  |  |
| 406 | Install various types of pipe insulation.  |  |  |
| 407 | RESERVED |  |  |

## 500 Hand and Power Tools

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 501 | Use and maintain hand tools. |   |   |
| 502 | Use and maintain power tools and equipment. |   |   |
| 503 | Explain laser or transit level for sitework.  |  |  |

## 600 Valves

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 601 | Use backflow prevention devices |   |   |
| 602 | Use types of valves that start and stop flow.  |   |   |
| 603 | Use valves that regulate flow.  |   |   |
| 604 | Use valves that relieve pressure.  |   |   |
| 605 | Select valves. |  |  |
| 606 | Disassemble and assemble various types of valves, e.g., gate valve, globe valve, flushometer. |  |  |

## 700 Copper Piping Operations

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 701 | Join, cut, and bend various types of copper pipe tube, e.g., solder, compression, flare, swage, press fit, brazing. |   |   |
| 702 | RESERVED |  |  |
| 703 | RESERVED |  |  |
| 704 | RESERVED |  |  |

## 800 Plastic Pipe and Tubing

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 801 | Measure, cut and assemble PVC, CPVC, and ABS. |   |   |
| 802 | Measure, cut and assemble PEX plastic tubing and PE and HDPE. |   |   |
| 803 | RESERVED |   |   |
| 804 | RESERVED |  |  |

## 900 Pipe Hangers and Supports

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 901 | Use hangers to secure horizontal and vertical pipe to masonry, metal, and wood. |   |   |
| 902 | Layout and explain, various fixture carriers.  |   |   |

## 1000 Water Distribution Lines

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 1001 | RESERVED |   |   |
| 1002 | Rough-in water supply lines for residential and commercial fixtures according to manufacturer sheet.  |   |   |
| 1003 | RESERVED |   |   |

## 1100 Steel Pipe Operations

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 1101 | Thread steel pipe with an adjustable die, power threading machine, and non-adjustable die. |   |   |
| 1102 | Measure, cut, ream, and assemble various types of steel piping. |   |   |
| 1103 | Adapt steel pipe to other piping materials. |   |   |

## 1200 Cast Iron Pipe Operations

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 1201 | Use tools for working with cast iron pipe.  |   |   |
| 1202 | Measure and cut cast iron soil pipe with various cutting methods. |   |   |
| 1203 | Assemble cast iron with No Hub, Fernco, and rubber gasketed joints.  |   |   |

## 1300 Reserved

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 1301 | RESERVED |   |   |
| 1302 | RESERVED |   |   |

## 1400 Drains, Stacks and Sewers

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 1401 | Lay out and establish grade/slope for drain lines. |   |   |
| 1402 | Explain backwater prevention. |   |   |
| 1403 | RESERVED |   |   |
| 1404 | RESERVED |  |  |
| 1405 | Rough-in drain lines for residential and commercial fixtures according to manufacturer sheet.  |  |  |

## 1500 Fixtures

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 1501 | Install gravity, pressure assist, and flush valve type water closets. |   |   |
| 1502 | Install bathtubs. |   |   |
| 1503 | Install wall mounted fixtures. |   |   |
| 1504 | RESERVED |  |  |
| 1505 | Install kitchen sinks. |  |  |
| 1506 | Install prefabricated shower base drains. |  |  |
| 1507 | Install lavatories. |  |  |
| 1508 | RESERVED |  |  |
| 1509 | Install fixture traps. |  |  |

## 1600 Appliances

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 1601 | Install a dishwasher. |   |   |
| 1602 | Install electric and gas water heater.  |   |   |
| 1603 | RESERVED |   |   |
| 1604 | Install a clothes washing machine. |  |  |
| 1605 | Install water heaters, e.g., oil, tankless, indirect, heat pump. |  |  |
| 1606 | Install a water re-circulating pump. |  |  |
| 1607 | Install a garbage disposal unit. |  |  |
| 1608 | Install a sump pump. |  |  |
| 1609 | Install a sewerage pump. |  |  |

## 1700 Vents

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 1701 | Explain principles and purposes of venting, e.g., common, individual, wet vent. |   |   |
| 1702 | RESERVED |   |   |
| 1703 | Explain vent termination. |   |   |
| 1704 | Explain air admittance valves. |  |  |

## 1800 Plumbing Systems Maintenance

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 1801 | Clear obstructions from lavatory drains. |   |   |
| 1802 | Clear obstructions from main drain lines. |   |   |
| 1803 | Clear obstructions from water closets. |   |   |
| 1804 | Repair/replace leaking water faucets or valves. |  |  |
| 1805 | RESERVED |  |  |
| 1806 | RESERVED |  |  |
| 1807 | RESERVED |  |  |
| 1808 | Preform methods to thaw frozen pipes. |  |  |
| 1809 | RESERVED |  |  |
| 1810 | RESERVED |  |  |
| 1811 | Replace all components in a gravity and/or pressure assist tank. |  |  |

## 1900 Tests on Systems

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 1901 | RESERVED |   |   |
| 1902 | RESERVED |   |   |
| 1903 | RESERVED |   |   |
| 1904 | Perform tests according to local plumbing and mechanical codes (air, hydrostatic, head pressure, etc.) |  |  |

## 2000 Advanced Pipe Fabrication

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 2001 | Calculate simple piping offsets. |   |   |
| 2002 | Calculate three-line, 45° equal-spread offsets around a vessel. |   |   |
| 2003 | Calculate three-line, 45° unequal-spread offsets. |   |   |
| 2004 | Convert center, back throat, and/or face measurement to an end measurement. |  |  |

## 2100 Pressure Boilers

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 2101 | Explain various near boiler fittings, controls, and accessories. |   |   |
| 2102 | Explain various types of boilers and fuel sources. |   |   |
| 2103 | RESERVED |   |   |
| 2104 | RESERVED |  |  |
| 2105 | RESERVED |  |  |
| 2106 | Explain the operation of water and steam boilers and their various controls. |  |  |
| 2107 | Explain the operation of draft controls. |  |  |
| 2108 | RESERVED |  |  |

## 2200 Hydronic Heating System

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 2201 | Identify piping for a hydronic heating system. |   |   |
| 2202 | Identify a primary and secondary piping system. |   |   |
| 2203 | Identify a radiant system. |   |   |

## 2300 Ladders and Scaffolds

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Task  | (X) Indicates Proficiency 1 | Secondary Course Crosswalk |
| 2301 | Use different types of ladders and scaffolds. |   |   |
| 2302 | Set up and inspect, stepladders, extension ladders, and scaffolding.  |   |   |

1 Student Demonstrated Entry-Level Industry Proficiency as Indicated by (X)

Secondary CTE Instructor Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_