

CONTENT STANDARD 1.0: INTRODUCTION TO THE PLUMBING PROFESSION**Performance Standard 1.1: Introduction to the Plumbing Profession**

- 1.1.1 Describe Idaho Plumbing Code and Administrative Rules requirements.
- 1.1.2 Identify the basic principles on which plumbing is based.
- 1.1.3 Identify and maintain licensing, certification, and industry credentialing requirements.

CONTENT STANDARD 2.0: PLUMBING SAFETY**Performance Standard 2.1: Plumbing Safety**

- 2.1.1 Complete OSHA 10 Certification.
- 2.1.2 Identify common unsafe acts and conditions that cause accidents and how to handle these situations to make them safer.
- 2.1.3 Identify job site hazards – work specific to plumbers.
- 2.1.4 Use appropriate fire extinguishers and other safety devices.

CONTENT STANDARD 3.0: FITTINGS, PIPE, AND VALVES**Performance Standard 3.1: Fittings and Valves**

- 3.1.1 Identify the proper fittings and/or valves for specific systems.
- 3.1.2 Apply the various fittings and valves by type, size, materials and application.

Performance Standard 3.2: Types of Pipe

- 3.2.1 Identify the common types of pipes.
- 3.2.2 Identify the proper pipes for specific systems.

CONTENT STANDARD 4.0: INDUSTRY MATH**Performance Standard 4.1: Applied Mathematics**

- 4.1.1 Determine center-to-center and end-to-end lengths for parallel offsets.
- 4.1.2 Calculate the travel for a rolling offset.
- 4.1.3 Solve for end-to-end lengths of pipe.
- 4.1.4 Calculate area, water volumes, weights, and gallons for various geometric shapes.
- 4.1.5 Explain pressure measurement in terms of Pounds per Square Inch (PSI) and inches of mercury.
- 4.1.6 Perform angular, length, and converted temperature measure calculations.
- 4.1.7 Calculate material expansion and/or volume related to heat.

CONTENT STANDARD 5.0: THE UNIFORM PLUMBING CODE (UPC)**Performance Standard 5.1: The Uniform Plumbing Code (UPC)**

- 5.1.1 Identify proper code terminology.
- 5.1.2 Identify general plumbing requirements for hanging and securing piping.
- 5.1.3 Identify plumbing fixtures.
- 5.1.4 Perform water heater sizing, combustion air calculations, vent sizing, and installation.
- 5.1.5 Perform water pipe sizing calculations.
- 5.1.6 Explain when and what type of backflow prevention devices, assemblies, and methods are required.
- 5.1.7 Perform drain and waste pipe sizing calculations.
- 5.1.8 Perform indirect waste installation and usage.
- 5.1.9 Describe venting systems (horizontal, vertical wet venting, etc.).

- 5.1.10 Identify proper use of traps and interceptors.
- 5.1.11 Perform proper storm drain sizing and calculations.
- 5.1.12 Perform fuel gas sizing calculations.
- 5.1.13 Identify proper fire-stop installation.
- 5.1.14 Identify the proper use of gray water, reclaimed water, and rainwater systems.
- 5.1.15 Utilize appendices and reference standards.
- 5.1.16 Apply IDAPA Plumbing rules and statutes (Title 54).

CONTENT STANDARD 6.0: CONSTRUCTION DOCUMENTS**Performance Standard 6.1: Isometric Drawings**

- 6.1.1 Identify the various plumbing symbols and abbreviations.
- 6.1.2 Complete an isometric drawing with proper symbols.
- 6.1.3 Develop materials list based on isometric drawings.

Performance Standard 6.2: Plan Reading

- 6.2.1 Describe basic plumbing symbols, abbreviations, and specifications.
- 6.2.2 Explain how the specifications relate to the plan.
- 6.2.3 Identify the necessary requirements and locations to install the plumbing fixtures and plumbing appurtenances.
- 6.2.4 Describe the coordination of trades on the job site.
- 6.2.5 Recognize site plan, floor plans, elevations, sectional views, details, and schedules.
- 6.2.6 Locate specific information on building plans.

CONTENT STANDARD 7.0: KNOWLEDGE OF RELATED INDUSTRIES**Performance Standard 7.1: Knowledge of Related Industries**

- 7.1.1 Explain how to use alternating-current meters and instruments in the pipe trades.
- 7.1.2 Apply basic building codes.

CONTENT STANDARD 8.0: CUT AND JOIN PIPES**Performance Standard 8.1: Cut and Join Pipes**

- 8.1.1 Join different types of pipes (including PVC, galvanized, steel, plastic, copper, and cast-iron pipes).
- 8.1.2 Measure, mark, and cut different types of pipes using various pipe cutters.
- 8.1.3 Thread a steel pipe with a power-driven vise stand or a pipe-threading machine.

CONTENT STANDARD 9.0: MAINTENANCE AND REPAIR**Performance Standard 9.1: Maintenance and Repair**

- 9.1.1 Diagnose water heater problems (e.g. gas, electric, tankless).
- 9.1.2 Identify repairs for residential fixtures.
- 9.1.3 Identify repairs for commercial fixtures.