

Texas State Board of Plumbing Examiners
Master Plumber
Examination Review Course

The following Examination Review Course is designed to assist a Journeyman Plumber in preparing for the Master Plumber examination.

What to Expect From the Examination

The applicant for a Master Plumber License (the “applicant”) will be tested on his or her knowledge and understanding of the proper installation of commercial and residential plumbing systems. The examination relates to work performed and decisions made on the job by a Master Plumber. The examination consists of:

- 210 written multiple choice questions; including
 - 60 questions based on Plumbing Codes;
 - 25 questions based on the Plumbing Codes, specific to water heater installation;
 - 25 questions on the Occupational Safety and Health Administration (OSHA) Code Federal Regulations;
 - 25 questions on the Texas Accessibility Standards (TAS), as they apply to plumbing fixture installations;
 - 25 questions on Liquefied Petroleum Gas piping installation;
 - 25 questions on Plumbing Related Mathematics; and
 - 25 questions on the Plumbing License Law and Board Rules;
- 1 Fuel Gas Pipe Sizing chart;
- 1 Water Pipe Sizing chart;
- 1 Gas Fueled Appliance Vent Sizing chart;
- 1 Drainage System Pipe Sizing chart; and
- design of a three story sanitary drainage and vent system for sixteen (16) plumbing fixtures.

How to Study the Plumbing Codes

The applicant should study either the:

- **2012 International Plumbing Code and 2012 International Fuel Gas Code**, English and Spanish editions available by calling 800-786-4452 or website address is www.iccsafe.org/
- OR the
- **2012 Uniform Plumbing Code**, available by calling 800-854-2766 or website address is <http://iapmostore.org/>

The examination is not specific to any one of the plumbing codes named above. In other words, the individual needs to study only one of the above named codes and not both.

The applicant should study a plumbing code in the same manner as when the applicant studied for the Journeyman Plumber examination. If needed, the applicant should refer to the *Journeyman Plumber Examination Review Course*. When preparing for the examination, the applicant should pay particular attention to the following chapters and subject matter listed under each chapter:

Chapter on Definitions

Studying a plumbing code should begin with learning and understanding the proper plumbing terms and their meanings found in the chapter on Definitions. When the proper terms and their meanings are known and understood, the applicant will find the other chapters in the plumbing code much easier to understand. The plumbing codes use only correct plumbing terms and do not contain any slang terms. Since the examination is based on the plumbing codes, only correct terms are used in the examination.

- A Sample Question from the Master Plumber Examination:

A vent pipe connecting upward from a soil or waste stack to a vent stack to prevent pressure changes in the stacks is a:

- A. crown vent
- B. common vent
- C. loop vent
- D. yoke vent

Chapter on General Regulations or General Requirements

- A Sample Question from the Master Plumber Examination:

New, altered, or replaced plumbing:

- A. may be covered if not inspected after 48 hours
- B. may be covered if all ends are exposed
- C. shall be left uncovered until inspected and approved
- D. may be covered if bad weather damage should occur

Chapter on Plumbing Fixtures

- A Sample Question from the Master Plumber Examination:

Water closets or bidets shall not be set closer than _____ from its center to any sidewall or partition.

- A. 10 inches
- B. 12 inches
- C. 15 inches
- D. 18 inches

Chapter on Water Heaters

During the examination, the applicant will view several water heater installations. Each water heater installation will be numbered. Each water heater will have the manufacturer's warning and statistical labels affixed to the water heater. Each water heater installation will contain some code violations, which must be identified by the applicant.

- A Sample Question from the Master Plumber Examination:

The combustion air openings in the water heater #1 closet are 8 inches in diameter. One is located 12 inches down from the ceiling to the center of the opening. The other is located near

the bottom of the water heater, which is 18 inches off the floor. At 1 square inch of opening required per 2,000 Btu, the combustion air openings would be:

- A. properly located and sized.
- B. correctly sized, but the lower opening should be within 12 inches of the floor.
- C. correctly located, but should be at least 10 inches in diameter.
- D. sized correctly, but both openings should be in the upper 12 inches of the closet.

Chapter on Water Supply and Distribution

- A Sample Question from the Master Plumber Examination:

An approved type pressure regulator should be used when water pressure is over _____ psi gauge:

- A. 40
- B. 60
- C. 80
- D. 100

Chapter on Sanitary Drainage

- A Sample Question from the Master Plumber Examination:

Which one of these fixtures has the highest fixture unit rating?

- A. Bathtub
- B. Water closet
- C. Lavatory
- D. Kitchen sink

Chapter on Indirect and Special Wastes

- A Sample Question from the Master Plumber Examination:

Piping receiving the discharge of chemical wastes shall not be made of:

- A. glass
- B. copper
- C. corrosion resistant material
- D. high silicone cast iron

Chapter on Vents

- A Sample Question from the Master Plumber Examination:

Increasing vents by one pipe size will:

- A. provide increased drainage.
- B. allow a uniform installation.
- C. allow vents of longer lengths.
- D. allow vents to be shorter.

Chapter on Traps

- A Sample Question from the Master Plumber Examination:

What is the maximum acceptable distance from the fixture outlet to the trap weir, except for washing machines?

- A. 12 inches
- B. 24 inches
- C. 36 inches
- D. 58 inches

Chapter on Fuel Gas or Fuel Piping

- A Sample Question from the Master Plumber Examination:

In a fuel gas steel pipe system, what size pipe shall be supported vertically at a minimum of every floor level?

- A. 1 ¼ inch or larger
- B. 1 inch
- C. ¾ inch
- D. ½ inch

What to Expect on the Pipe Sizing Charts

The applicant must know how to size fuel gas piping, water piping, fuel gas fired appliance vent piping and drainage piping, using the pipe sizing charts found in the plumbing and fuel gas codes. The applicant needs to know how to use pipe sizing charts, but is not required to memorize each chart. All information needed to size the different piping systems is provided with the examination.

- **Fuel Gas Pipe Sizing Chart**

The applicant will be provided a plan view diagram of fuel gas piping. The applicant will be expected to determine the minimum pipe sizes, beginning at a gas meter and continuing to a furnace, kitchen range (stove), clothes dryer and water heater.

- **Water Pipe Sizing Chart**

The applicant will be provided with an isometric diagram of water piping. The applicant will be expected to determine the minimum pipe sizes, beginning at the water meter and continuing to three hose bibs, two lavatories, two water closets, one shower, one bathtub, one sink, one laundry tray and one water heater.

- **Fuel Gas Fired Appliance Vent Pipe Sizing Chart**

The applicant will be provided with an elevation view diagram of an individual vent from one appliance and a combined vent system from two appliances. The applicant will be expected to determine the minimum pipe sizes of the vents.

- **Drainage Pipe Sizing Chart**

The applicant will be provided with isometric and riser diagrams of a five-story drainage system. The type and number of fixtures on each floor is provided. The applicant will be expected to determine the number of drainage fixture units and minimum pipe sizes for the drainage system.

How to Study the Occupational Safety and Health Administration Federal Regulations

The applicant should obtain a copy of the Occupational Safety and Health Administration (OSHA) Code Federal Regulations; Title 29, Labor Part 1926, and study the following chapters:

- Subpart A-B General 1926.1 thru 1926.16
- 1926.95 thru 1926.104 Subpart E - Personal Protective and Life Support Equipment
- 1926.300 thru 1926.303 Subpart I - Tools, Hand and Power
- 1926.350 thru 1926.354 Subpart J - Welding and Cutting
- 1926.451 thru 1926.452 Subpart L - Scaffolding
- 1926.650 thru 1926.652 Subpart P - Excavations

These regulations may be obtained by contacting OSHA by telephone at (866) 4-USA-DOL, or they may be printed free of charge from OSHA's website at www.osha.gov .

- A Sample Question from the Master Plumber Examination:

Scaffolds and their components shall be capable of supporting, without failure, at least _____ the maximum intended load.

- A. 4 times
- B. 10 times
- C. 12 times
- D. 2 times

How to Study the Standards for Liquefied Petroleum Gas

Important: The applicant should know, that in order to install liquefied petroleum (L.P.) gas, a separate license issued by the Texas Railroad Commission must first be obtained by anyone who installs L.P. gas piping. However, the Texas Railroad Commission does not require the holder of a current Texas Master Plumber License to take an additional examination in order to obtain the license. The Texas Railroad Commission may be contacted at (877) 228-5740 or www.rrc.state.tx.us.

To prepare for the examination, the applicant should obtain a copy of the latest edition of the National Fuel Gas Code, NFPA-54, and study the following chapters:

- Chapter 4-General
- Chapter 5-Gas Piping Systems Design, Materials, and Components
- Chapter 6-Gas Piping Installation
- Chapter 7-Inspection, Testing, and Purging

- Chapter 8-Equipment Installation
- Chapter 9-Installation of Specific Equipment
 - 6.4-Clothes Dryer
 - 6.24-Room Heaters
- Chapter 10-Venting of Equipment

The National Fuel Gas Code, NFPA-54, may be obtained by telephone at (800) 772-6141 or on the internet at www.nfpacatalog.org .

- A Sample Question from the Master Plumber Examination:

The maximum allowable operating pressure for L.P. gas in a building shall not exceed:

- A. 5 psig
- B. 10 psig
- C. 20 psig
- D. 25 psig

How to Study the Texas Accessibility Standards

The applicant should obtain a copy of the Texas Accessibility Standards and study the following sections:

Chapter 1: Application and Administration

Chapter 2: Scoping Requirements

Chapter 3: Building Blocks

Chapter 6: Plumbing Elements and Facilities

The Texas Accessibility Standards may be obtained from the Architectural Barriers Division of TDLR by telephone at (877) 278-0999, or they may be printed free of charge at:
<https://www.tdlr.texas.gov/ab/abtas.htm>

- A Sample Question from the Master Plumber Examination:

Accessible Building: New Construction – where more than one drinking fountain or water cooler is provided on a floor, at least ____ percent is required to be accessible.

- A. 10
- B. 20
- C. 40
- D. 50

What to Expect From the Mathematics Questions

Each of the math questions relate to the practical application of the design and installation of plumbing systems. Each question has four multiple-choice answers. The correct answers will be determined by using common mathematical calculations. Determining the correct answers requires the same mathematical abilities that are required to earn a high school diploma or G.E.D. The applicant will be provided with a calculator, sizing tables, conversion tables, problem solving formulas and all information needed to perform the calculations to determine the correct answer to each question.

- Two Sample Questions from the Master Plumber Examination:

A sewer ditch is to be 148 feet long, the pipe is to be installed with a 2% grade. What would the total amount of fall be?

- A. 24-5/8 in.
- B. 35-1/2 in.
- C. 46-1/4 in.
- D. 9-1/4 in.

On a job site, a 6” diameter copper water riser, 50’ tall is full of water. A leak has developed and the pipe must be drained. How many gallons will be drained?

- A. 100.5 gallons
- B. 73.59 gallons
- C. 80.42 gallons
- D. 50.3 gallons

How to Study the Plumbing License Law and Board Rules

The Plumbing License Law and Board Rules contain the regulations for persons who work in the plumbing industry to follow. The applicant should be familiar with all of these regulations. However, for the purposes of preparing for the Master Plumber examination, the applicant should study the **Plumbing License Law, Sections** 1301.351, 1301.356, 1301.403, 1301.404, 1301.452, 1301.502, 1301.508, 1301.701, 1301.702 and the **Board Rules, Sections** 361.1, 365.1, 367.2, 367.4, 367.5 and 367.7.

The Plumbing License Law and Board Rules are available on the Texas State Board of Plumbing Examiners website at www.tsbpe.state.tx.us, or by calling the Board’s office at 512-936-5200.

- A Sample Question from the Master Plumber Examination:

A person may not install pipe used solely to transport gasses for medical purposes unless the person is:

- A. a licensed Journeyman or Master Plumber under the Plumbing License Law.
- B. licensed as a Journeyman or Master Plumber and holds a Medical Gas Piping Installation Endorsement under the Plumbing License Law.
- C. at least an apprentice registered with the Board.
- D. on a job where a licensed Master Plumber is working nearby.

How to Apply to Take the Master Plumber Examination

Once the applicant has:

- held a Journeyman Plumber License for at least one year; and
- has gained the knowledge and understanding of the proper installation of commercial and residential plumbing systems , as described in this preparation course;

the applicant may apply to take the Master Plumber examination by submitting to the Board:

- a completed Master Plumber examination application form;
- the examination fee; and
- other documentation detailed on the examination application form.

All forms are available on the Texas State Board of Plumbing Examiners website at www.tsbpe.state.tx.us, or by calling the Board's office at 512-936-5200.