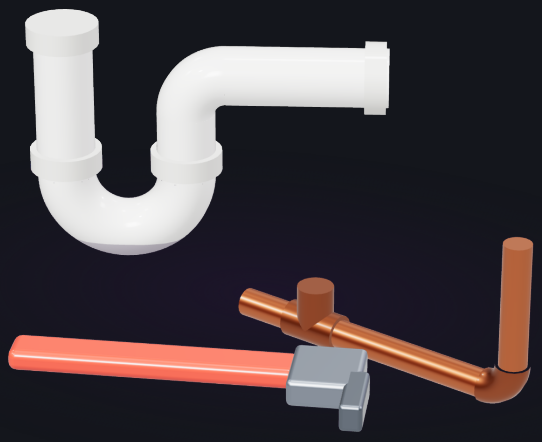
FREE STUDY GUIDE

Plumber License Study Guide 2026

How plumbing licenses work in the U.S., the codes on the exam, drain and vent basics, sizing tables, water heaters, tests and a 25-question practice quiz with answers.

- Apprentice, journeyman and master
- Traps, vents and slope, drawn
- The tables that show up on the exam
- 25-question practice quiz + answer key



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How plumbing licenses work

Each state sets its own rules

In the U.S., plumbing licenses are issued by each state, and in some places by a city or a county. There is no single national license. Most states use the same ladder: apprentice, journeyman and master.

Level	What it means
Apprentice	You work under a licensed plumber while you learn. Many states ask you to register as an apprentice.
Journeyman	You can work on your own on most jobs. Usually needs years of supervised work plus an exam.
Master	In many states, you can pull permits, design systems and run a plumbing business. Needs more experience and another exam.

How you get the work hours

- Union apprenticeship: paid work with classes, usually about 5 years.
- Non-union apprenticeship programs, often run by contractor associations.
- Trade school or community college: in some states, classes count for part of the hours.
- Working as a helper for a licensed contractor and logging your hours.

> **Tip**
> Many states ask for about 4 to 5 years of supervised work before the journeyman exam, but the number changes from state to state. Check your state board before you make a plan.

The exam and the codes

Know which code your state uses before you study

The journeyman exam tests your knowledge of the plumbing code your state uses. Most exams are multiple choice, and some states add a practical part. Some states let you bring the code book (open book), others do not. Ask your board.

Code	Where you see it
IPC	International Plumbing Code, from the ICC. Used in many states.
UPC	Uniform Plumbing Code, from IAPMO. Common in western states such as California.
State code	Some states write their own code or add amendments to the IPC or the UPC.

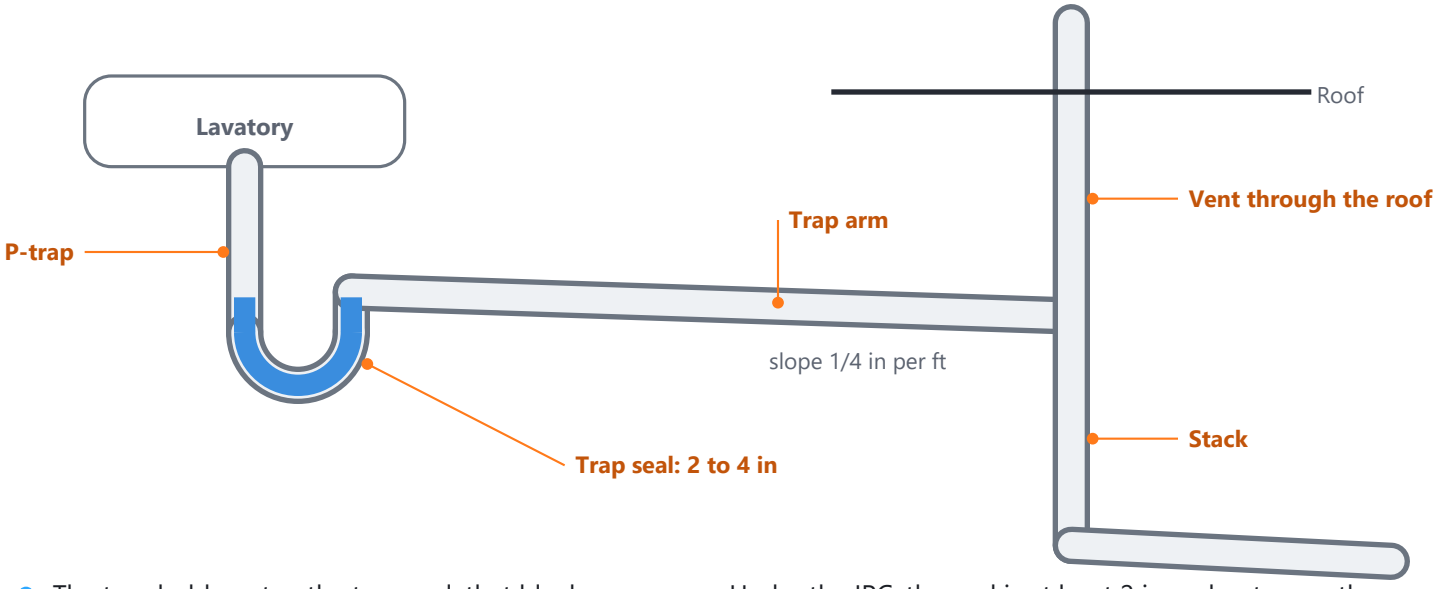
Topics that show up the most

- Drainage, waste and vent (DWV): pipe sizing, slope, traps and vents.
- Water supply: pipe sizing, pressure and backflow protection.
- Water heaters: relief valves and safe discharge.
- Fixtures: required traps and fixture units.
- Tests and inspections. Gas piping in some states.

> **Study smarter**
> Tab your code book by chapter and practice finding answers fast. On an open-book exam, knowing where each table is matters more than memorizing it. This guide uses IPC numbers.

Drain, waste and vent basics

How a drain works: trap, trap arm, vent and stack



- The trap holds water, the trap seal, that blocks sewer gas. Under the IPC, the seal is at least 2 in and not more than 4 in.
- The vent lets air into the system, so the water in the trap is not siphoned out.
- The trap arm is the pipe between the trap and the vent. It has a maximum length.
- S-traps are not allowed: they can siphon themselves dry.
- A vent through the roof ends at least 6 in above the roof under the IPC. Local rules can ask for more.

Minimum slope for horizontal drains (IPC)

Pipe size	Minimum slope
2-1/2 in or smaller	1/4 in per foot
3 to 6 in	1/8 in per foot
8 in or larger	1/16 in per foot

Sizing tables

The tables you will look up the most (IPC)

Minimum trap size and drainage fixture units (DFU)

Fixture	Minimum trap	DFU
Lavatory	1-1/4 in	1
Bathtub	1-1/2 in	2
Shower	2 in	2
Kitchen sink (home)	1-1/2 in	2
Laundry tray	1-1/2 in	2
Clothes washer standpipe	2 in	2
Water closet, 1.6 gpf gravity tank	Built in	4

Trap arm: maximum distance from trap to vent

Trap size	Slope	Maximum distance
1-1/4 in	1/4 in per foot	5 ft
1-1/2 in	1/4 in per foot	6 ft
2 in	1/4 in per foot	8 ft
3 in	1/8 in per foot	12 ft
4 in	1/8 in per foot	16 ft

> **Careful**
> The UPC has its own tables, and some numbers are different. Always study the code your state adopted, in the edition it uses.

Water supply and water heaters

Pressure, pipe, backflow and relief valves

- Static water pressure above 80 psi needs a pressure-reducing valve (IPC).
- Copper tube types: K is the thickest (green marking), L is in the middle (blue) and M is the thinnest (red).
- Pipe, fittings and fixtures for drinking water must be lead-free: no more than 0.25% lead, as a weighted average of the wetted surfaces.
- Backflow: an air gap is at least twice the diameter of the opening, and never less than 1 in.
- Water hammer arrestors go on quick-closing valves, like the ones on washers and dishwashers.

Water heater safety

- The T and P relief valve opens on high temperature or high pressure. Common ratings are 150 psi and 210 F.
- The discharge pipe is full size, drains by gravity and ends within 6 in of the floor or at an approved drain.
- No valve on the discharge pipe, and no threads on its end.
- Shower and tub-shower valves must limit the hot water to 120 F. They use pressure-balance, thermostatic or combination valves.

> **Remember**
> A plugged or capped relief line is one of the most dangerous mistakes in plumbing. Inspectors check it every time.

Tests, inspections and safety

What the inspector checks before the walls close

Test	How it works (IPC)
DWV water test	Fill the system to at least 10 ft of water above the highest fitting and hold it for 15 minutes with no leaks.
DWV air test	5 psi held for 15 minutes without a drop.
Water supply test	Test at not less than the working pressure before the pipes are covered.
Rough-in inspection	Done before the walls and floors are closed.
Final inspection	Fixtures set, connected and working.

Safety on the job

- Trenches 5 ft deep or more need a protective system, like shoring or a trench box (OSHA).
- Wear eye protection when you cut and gloves with solvent cement and drain chemicals.
- Primer and solvent cement: good ventilation and no open flame.
- Soldering: a heat shield behind the joint and an extinguisher close by.
- Sewage: gloves, wash your hands and keep tools clean.
- Confined spaces: follow the permit rules.

> **Remember**
> Safety rules on site come from your employer and the law. This page is a reminder, not a replacement for training.

Test day and a 4-week plan

Test-day checklist

- Confirm the code and the edition of your exam.
- If it is open book, bring the allowed books, already tabbed.
- Bring an approved calculator and your ID, as the testing company asks.
- Answer the easy questions first, then go back to the tables.
- Read every word: "minimum" and "maximum" change the answer.

4-week study plan

Week	What to study
1	Definitions, traps and trap seals, slope of drains.
2	Vents and trap arms, fixture units and pipe sizing.
3	Water supply, backflow, water heaters and relief valves.
4	Tests and inspections. Take the practice quiz twice and time yourself.

Practice quiz: 25 questions

Circle one answer. Key on the last page.

1 **Under the IPC, the minimum trap seal is:**

a) 1 in b) 2 in
c) 3 in d) 6 in

2 **Under the IPC, the maximum trap seal is:**

a) 2 in b) 3 in
c) 4 in d) 8 in

3 **Minimum slope of a 2 in horizontal drain:**

a) 1/16 in per ft b) 1/8 in per ft
c) 1/4 in per ft d) 1/2 in per ft

4 **Minimum slope of a 4 in horizontal drain:**

a) 1/16 in per ft b) 1/8 in per ft
c) 1/4 in per ft d) 1 in per ft

5 **The main job of a vent is to:**

a) Carry water b) Protect the trap seal from siphoning
c) Lower the pressure d) Hold the trap

6 **S-traps are:**

a) Required on sinks b) Not allowed
c) Only for showers d) Allowed with a vent

7 **Minimum trap size for a lavatory:**

a) 1 in b) 1-1/4 in
c) 1-1/2 in d) 2 in

8 **Minimum trap size for a shower:**

a) 1-1/4 in b) 1-1/2 in
c) 2 in d) 3 in

9 **DFU of a 1.6 gpf gravity tank water closet (IPC):**

a) 1 b) 2
c) 4 d) 6

10 **Max trap arm length for a 1-1/2 in trap:**

a) 3-1/2 ft b) 5 ft
c) 6 ft d) 12 ft

11 **Max trap arm length for a 3 in trap:**

a) 6 ft b) 8 ft
c) 10 ft d) 12 ft

12 **A pressure-reducing valve is needed when static pressure is above:**

a) 40 psi b) 60 psi
c) 80 psi d) 120 psi

13 **The thickest copper tube type is:**

a) K b) L
c) M d) DWV

Practice quiz: 25 questions (cont.)

14 **Type M copper is marked in:**

a) Green
b) Blue
c) Red
d) Yellow

15 **Lead-free means no more than:**

a) 8% lead
b) 2% lead
c) 0.25% lead (weighted average)
d) 0% by law

16 **An air gap must be at least:**

a) Equal to the opening
b) Twice the opening, at least 1 in
c) 1/2 in
d) 6 in always

17 **A T and P discharge pipe ends:**

a) 18 in above the floor
b) Within 6 in of the floor or at an approved drain
c) Inside the wall
d) On the roof

18 **The end of a T and P discharge pipe must NOT be:**

a) Full size
b) Threaded
c) Made of approved material
d) Draining by gravity

19 **Max hot water temperature from a shower valve:**

a) 100 F
b) 110 F
c) 120 F
d) 140 F

20 **A DWV water test needs at least how much water above the highest fitting?**

a) 1 ft
b) 5 ft
c) 10 ft
d) 25 ft

21 **A DWV air test is held at:**

a) 5 psi for 15 min
b) 50 psi for 1 min
c) 1 psi for 1 hour
d) 100 psi for 15 min

22 **The rough-in inspection happens:**

a) After the fixtures are set
b) Before walls and floors are closed
c) Only on commercial jobs
d) After move-in

23 **The UPC is published by:**

a) ICC
b) IAPMO
c) OSHA
d) EPA

24 **OSHA requires a protective system in trenches at least:**

a) 2 ft deep
b) 3 ft deep
c) 5 ft deep
d) 10 ft deep

25 **Plumbing licenses in the U.S. are issued by:**

a) One national agency
b) Each state, and in some places a city or county
c) The ICC
d) Your employer

Answer key

Check your score: 20 or more is a good sign

1. b
2 in minimum.

2. c
4 in maximum.

3. c
2-1/2 in or smaller: 1/4.

4. b
3 to 6 in: 1/8.

5. b
Air in, seal stays.

6. b
They siphon dry.

7. b
Table of trap sizes.

8. c
2 in.

9. c
4 DFU.

10. c
6 ft at 1/4 in per ft.

11. d
12 ft at 1/8 in per ft.

12. c
80 psi.

13. a
K > L > M.

14. c
K green, L blue, M red.

15. c
Wetted surfaces.

16. b
2x the opening, min. 1 in.

17. b
Visible and safe.

18. b
No threads, no valve.

19. c
120 F limit.

20. c
10 ft of head, 15 min.

21. a
5 psi, 15 minutes.

22. b
Pipes still visible.

23. b
IPC is from the ICC.

24. c
Shoring, sloping or a box.

25. b
No national license.

Free educational guide by Vifalio, based on the International Plumbing Code (IPC), the Safe Drinking Water Act lead-free rule and OSHA, checked in November 2026. Not affiliated with the ICC, IAPMO or any state board. Codes change with each edition and state: always follow the code your state adopted and your local inspector.