



Building Careers.
Changing Lives.



Plumbing Basic

General Assessment Information

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Test Type: This certification assessment is a customized assessment for the Home Builders Institute. This assessment measures technical skills at the occupational level and includes items which gauge factual and theoretical knowledge. This assessment offers both a written and performance component and can be used at the secondary level and postsecondary level. This assessment can be delivered in an online or paper/pencil format.

Revision Team: The assessment content is based on input from secondary, post-secondary, and business/industry representatives from the state of Arizona, California, Indiana, Maryland, North Carolina, Pennsylvania, South Carolina, Tennessee, and Washington.



46.0503 – Plumbing
Technology/Plumber



Career Cluster - Architecture
and Construction



47-2152.02 – Plumbers



The Association for Career and Technical Education (ACTE), the leading professional organization for career and technical educators, commends all students who participate in career and technical education programs and choose to validate their educational attainment through rigorous technical assessments. In taking this assessment you demonstrate to your school, your parents and guardians, your future employers and yourself that you understand the concepts and knowledge needed to succeed in the workplace. Good Luck!



The Home Builders Institute (HBI) trains skilled workers for the building industry. Through pre-apprenticeship training, certification programs and job placement services, HBI provides graduates with the skills and experience they need to build a career and change their lives. HBI assessments, in partnership with the National Association of Home Builders (NAHB), are based on national skills standards set by industry professionals and educators. Participants passing the assessments are eligible for certification through HBI/NAHB at the entry, semi-skilled, or skilled levels.

Selection of curricula and instructional materials chosen to support assessment achievement must be obtained from material that has been aligned to the Residential Construction National Skill Standards and approved by HBI. For a current listing, please go to <http://www.hbi.org/curriculum/>

Visit www.hbi.org for more information.

Written Assessment

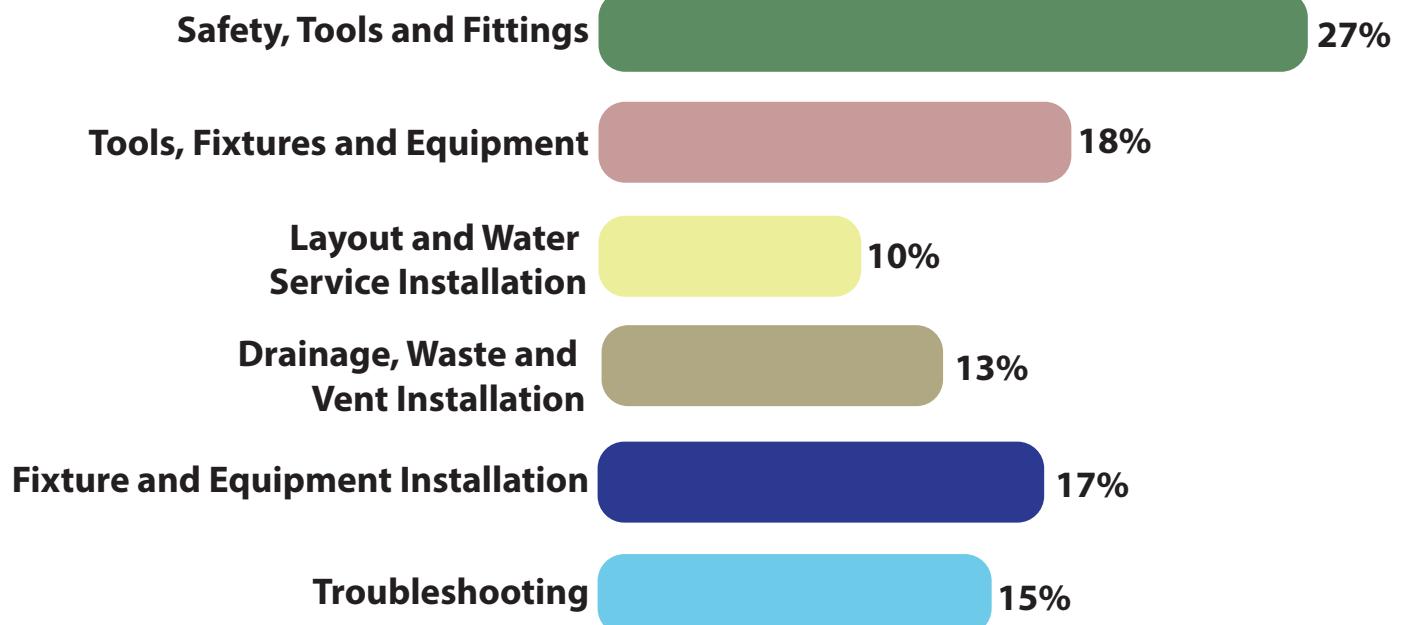
This written assessment consists of questions to measure an individual's factual theoretical knowledge.

Administration Time: 50 minutes

Number of Questions: 60

Number of Sessions: This assessment may be administered in one session.

Areas Covered



Specific Competencies and Skills Tested in This Assessment

Safety, Tools and Fittings

- Safety, GFCI, Personal Protective Equipment, OSHA First Aid Requirements, Drilling in Tight Spaces, Prevent Electrolysis, PEX Fittings, Water Shutoff, Backflow Protection, Water Hammer, Harmful Sewer Gases, Unprotected Blades

Tools, Fixtures and Equipment

- Hand Tools, Power Tools, Materials, Wrenches, Measurement, Faucets and Drains, Fixture Types, and Appliances

Layout and Water Service and Installation

- Blueprints and Water Distribution

Drainage, Waste and Vent Installation

- DWV, Vents, and Installation

Fixture and Equipment Installation

- Fix and Equipment, Appliances, Faucets/Drains, and Install Plastic Pipe

Troubleshooting

- Water Heater-Electric, Water Heater-Gas, and Toilets



Sample Questions

Which of these is a characteristic of a male adapter?

- A. Internal threads
- B. External threads
- C. A thread cover
- D. A slip-joint and washer

Which of these is used to connect the tailpiece to a kitchen sink?

- A. Lock nut
- B. Check valve
- C. Basket strainer
- D. Trap adapter

Which of these is required to install non-insulated copper pipe?

- A. A copper plated hanger
- B. A rubber coated hanger
- C. A PVC clip strap
- D. A black steel clamp

Which of these is the lowest horizontal portion of the drainage system inside the building?

- A. The building drain
- B. The waste stack
- C. The stack vent
- D. The building sewer

Which of these is most likely to cause a leak in a toilet tank?

- A. Loose closet bolts
- B. The wax ring
- C. Close-couple gasket
- D. Improper vent



Performance Assessment

This performance assessment allows individuals to demonstrate their acquired skills by completing actual jobs using the tools, materials, machines, and equipment related to the technical area.

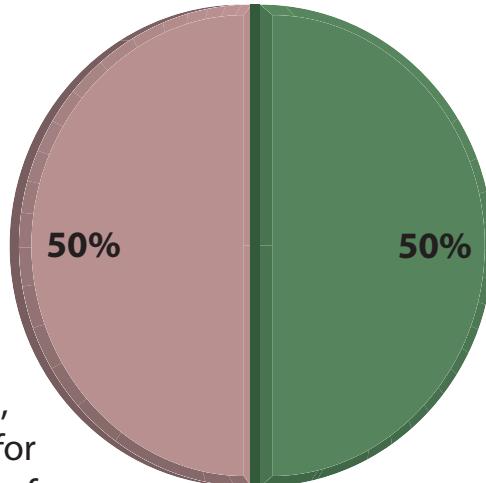
Administration Time: 3 hours

Number of Jobs: 2

Areas Covered:

50% Install and Prepare to Leak Test a DWV System

Selection of tools/materials, safe handling of tools and equipment, rough-in: lavatory #1 (vertical and horizontal), rough-in lavatory #2 (vertical and horizontal), techniques for joining pipe and fittings, installation techniques, accuracy of fittings chosen, workstation left in good condition, adhere to local plumbing code, leak test, and time to complete Job 1.



50% Install and Prepare to Leak Test a Water Supply System

Selection of tools/materials, safe handling of tools and equipment, rough-in: lavatory #1 (vertical and horizontal), rough-in lavatory #2 (vertical and horizontal), techniques for joining pipe and fittings, installation techniques, accuracy of fittings chosen, workstation left in good condition, adhere to local plumbing code, leak test, and time to complete Job 2.

Sample Job

Install and Prepare to Leak Test a Water Supply System

Maximum Time: 1 hour and 30 minutes

Participant Activity: The participant will study a rough-in sketch and drawings to install a water supply system, measure and cut the pipe to correct size, connect all pipe and fittings per rough-in dimensions, install appropriate nail plates, and prepare the system for leak testing.

