



Job Ready Assessment Blueprint

Building Construction Occupations



Test Code: 4011 / Version: 01

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General Assessment Information

Blueprint Contents

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Test Type: The Building Construction Occupations industry-based credential is included in NOCTI's Job Ready assessment battery. Job Ready assessments measure technical skills at the occupational level and include items which gauge factual and theoretical knowledge. Job Ready assessments typically offer both a written and performance component and can be used at the secondary and post-secondary levels. Job Ready assessments 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 states of Michigan, Montana, New York, Oklahoma, Pennsylvania, and Tennessee.



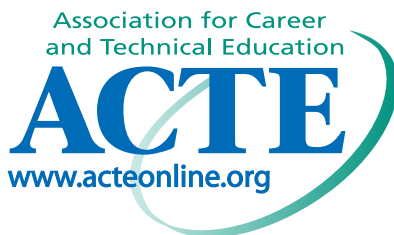
46.0415- Building Construction
Technology



Career Cluster 2- Architecture
and Construction



47-2031.01-
Construction Carpenters



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 Pennsylvania Builder's Association utilizes this assessment to assist in determining competencies for granting skill certificates to students graduating from Pennsylvania secondary trade programs that have been endorsed by the Pennsylvania Builder's Association (PBA)



PBA's services include support to workforce training and education by linking industry employers with educators to grow the workforce of tomorrow. PBA serves Pennsylvania communities and consumers through its steadfast efforts to protect homeownership rights and advocate for affordable housing options. PBA is affiliated with the National Association of Home Builders.



In the lower division
baccalaureate/associate degree
category, 1 semester hour in
Construction.

Written Assessment

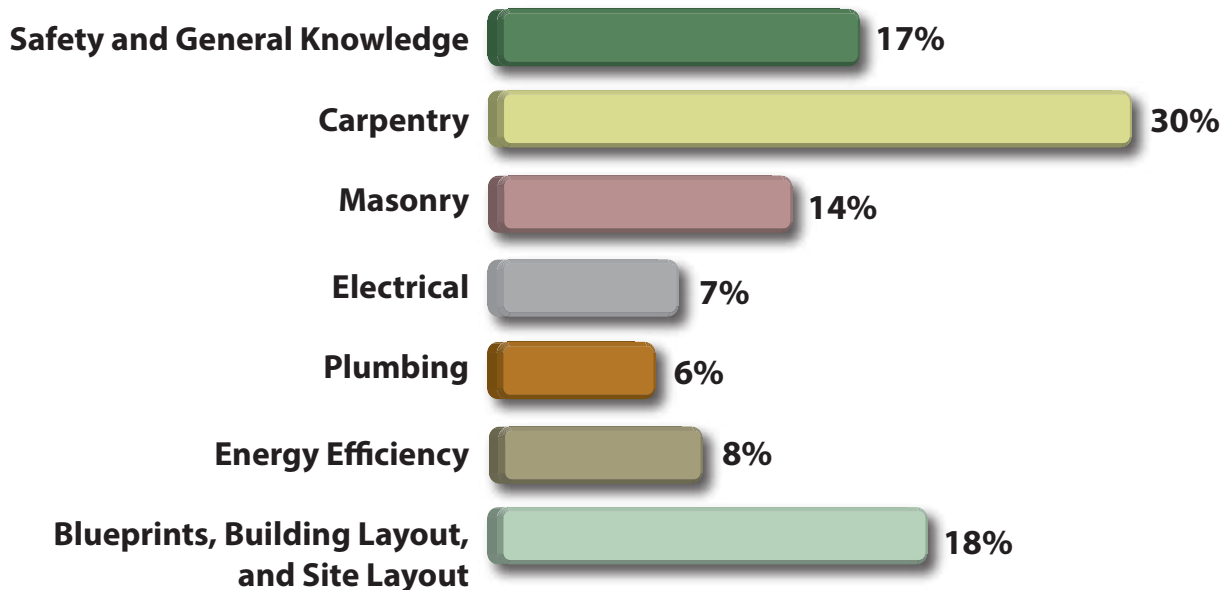
NOCTI written assessments consist of questions to measure an individual's factual theoretical knowledge.

Administration Time: 3 hours

Number of Questions: 151

Number of Sessions: This assessment may be administered in one, two, or three sessions.

Areas Covered



Specific Standards and Competencies Included in this Assessment

Safety and General Knowledge

- Recognize and adhere to worksite safety rules (housekeeping and health related)
- Utilize appropriate personal protective equipment (PPE)
- Demonstrate understanding of ladder and scaffold safety
- Recognize and adhere to governmental regulations (e.g., OSHA, SDS)
- Demonstrate safe and appropriate use of hand tools
- Demonstrate safe and appropriate use of power tools

Carpentry

- Identify carpentry materials
- Describe, lay out, and construct wood floor framing
- Calculate, lay out, and construct stairs
- Identify, lay out, and construct wood wall framing
- Describe, calculate, and construct ceiling and roof framing
- Identify and install roofing materials (e.g., shingles, fasteners, flashings)
- Differentiate various styles of roofs
- Identify, estimate, and install exterior windows and doors
- Identify, measure, calculate, and apply exterior finishes (e.g., sidings, trims)
- Describe and install interior finishes (e.g., drywall, doors, trims)

Masonry

- Identify, calculate quantities, and install footings and foundations
- Identify, calculate quantities, and install brick and block
- Identify, calculate quantities, and install various types of tile
- Identify, calculate quantities, place/pour, and finish concrete applications (e.g., sidewalks, steps)

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Specific Standards and Competencies (continued)

Electrical

- Identify, estimate, and install rough electrical (including wire and cable)
- Identify, calculate quantities, and install finish electrical

Plumbing

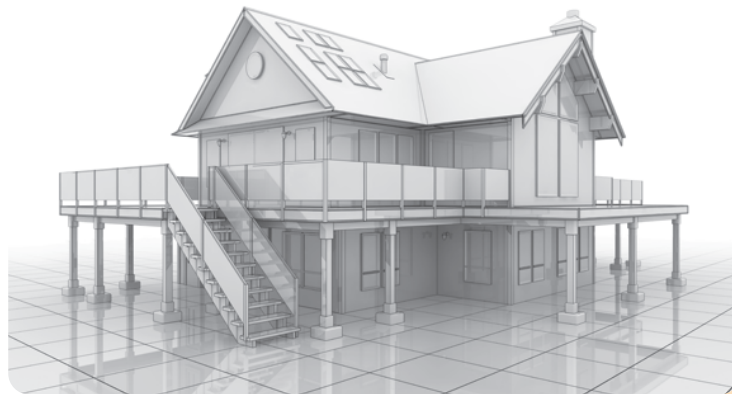
- Identify, estimate, design, and install rough plumbing (e.g., PVC, ABS, copper, PEX)
- Identify, calculate quantities, and install finish plumbing fixtures

Energy Efficiency

- Identify, estimate, and install insulation and interpret R-values
- Recognize various ventilation applications
- Identify “green” construction technology (e.g., lighting, Energy Star®)

Blueprints, Building Layout, and Site Layout

- Recognize blueprint terms, symbols, and abbreviations
- Interpret blueprints and calculate quantities
- Demonstrate use of architect’s scale
- Lay out buildings using various calculations, squaring, and leveling methods



Sample Questions

According to OSHA regulations, when working on a multilevel construction site, workers should wear _____ at all times.

- A. face shields
- B. hearing protection
- C. knee pads
- D. hard hats

To protect an outside drywall corner, it may be reinforced with a corner

- A. board
- B. lath
- C. bead
- D. rite

How many courses of concrete block are needed for a wall 8 feet high?

- A. 12
- B. 14
- C. 16
- D. 17

The allowable number of conductors within an electrical box is determined by the _____ of the box.

- A. volume
- B. area
- C. length
- D. depth

The purpose of a trap is to

- A. discharge sewer gas from the building
- B. prevent sewer gas from entering the building
- C. prevent excess pressure from building up in the system
- D. trap solid waste material

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Sample Questions (continued)

A _____ is a pre-cut length of rolled fiberglass insulation.

- A. filler
- B. batt
- C. cricket
- D. standard

The height of the window header is found in the

- A. site section
- B. plot plan
- C. wall section
- D. mechanical plan

The leading cause of fatalities in the construction industry is

- A. falls
- B. lacerations
- C. electrical shock
- D. structure fires

What unit of measure is used for a heating device size, such as a furnace?

- A. BTU - British thermal unit
- B. BHU - British heat unit
- C. ATU - American thermal unit
- D. AHU - American heat unit

Roof trusses are typically spaced _____ on center.

- A. 10 inches
- B. 15 inches
- C. 20 inches
- D. 24 inches

Performance Assessment

NOCTI performance assessments allow individuals to demonstrate their acquired skills by completing actual jobs using the tools, materials, machines, and equipment related to the technical area.

Administration Time: 2 hours and 25 minutes

Number of Jobs: 5

Areas Covered:

21% Solder Pipe

Participant will correctly cut, ream, clean, flux, and solder copper tubing into a complete, finished product.

19% Lay Out Rafter

Participant will position the rafter crown, create the correct rafter line length and overhang length, place and cut the bird's mouth correctly, and cut the tail plumb and ridge plumb correctly.

10% Calculate and Cut a Stud

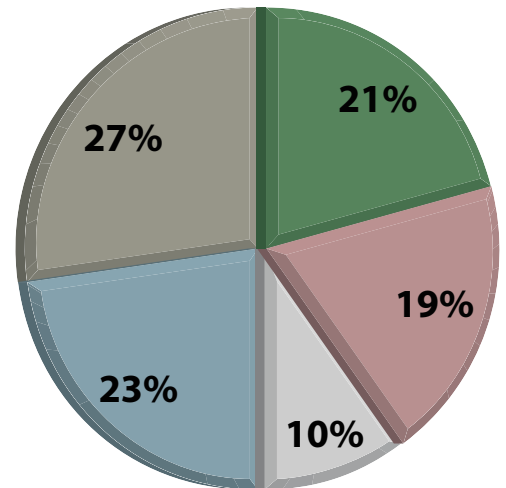
Participant will cut the stud to the correct length and shape.

23% Rough and Finish Electrical

Participant will correctly set boxes, choose and install cables, pre-wire boxes, choose, wire, and install switch properly, split and wire the receptacle correctly.

27% 8-Inch Block Wall Construction

Participant will construct the block course correctly, with correct wall height, length and straightness, as well as a correct wall plumb and level and full, finished joints.



Sample Job

8-Inch Block Wall Construction

Maximum Time: 45 minutes

Participant Activity: The participant is to construct a block wall 47-5/8-inches long by 24-inches high, strike all joints using a convex jointer, and finish wall with a clean appearance.

