

Job Ready Assessment Blueprint

**Construction Masonry-Brick**



Test Code: 4125 / Version: 01

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## General Assessment Information

### Blueprint Contents

General Assessment Information	Sample Written Items
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**Test Type:** The Construction Masonry-Brick assessment 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 Connecticut, Florida, Oklahoma, and Pennsylvania.



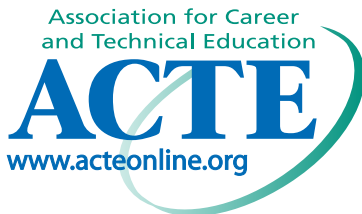
46.0101- Mason/Masonry



Career Cluster 2- Architecture and Construction



47.2021.00- Brickmasons and Blockmasons



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.



The Pennsylvania Concrete Masonry Association is a trade association dedicated to support, promote, and expand the use of concrete masonry within the State of Pennsylvania. Part of our mission is to support the development of future masons through Career and Technical Education programs at both the secondary and post-secondary levels. To that end, we strongly support the students that strive to promote their educational achievements by completing a NOCTI assessment based on national standards.



NATIONAL COLLEGE CREDIT RECOMMENDATION SERVICE  
University of the State of New York - Regents Research Fund

In the lower division  
baccalaureate/associate degree  
category, 3 semester hours in  
Construction

## Written Assessment

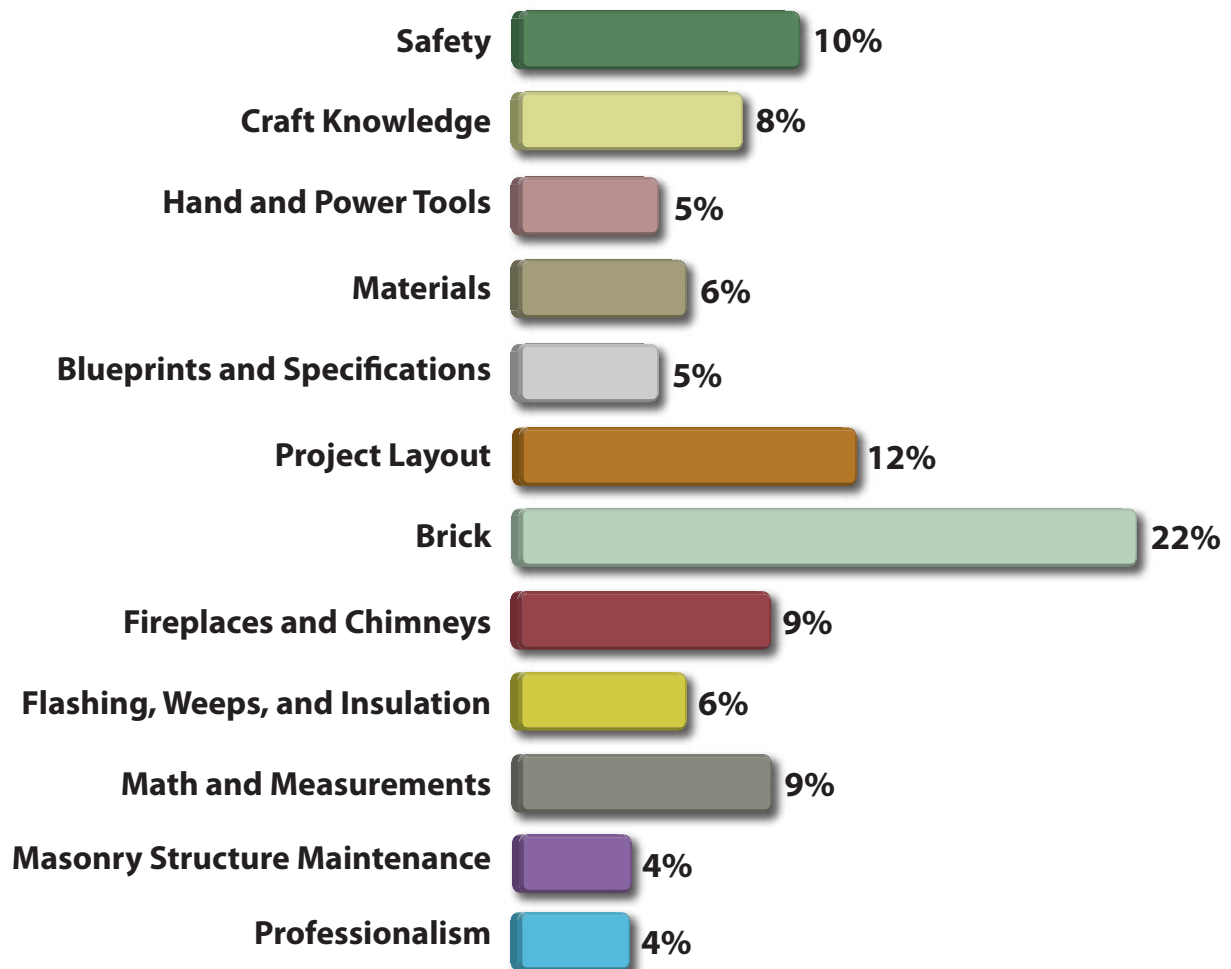
NOCTI written assessments consist of questions to measure an individual's factual theoretical knowledge.

**Administration Time:** 3 hours

**Number of Questions:** 172

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

### Areas Covered



## Specific Competencies and Skills Tested in this Assessment

### **Safety**

- Identify and use PPEs (personal protective equipment)
- Demonstrate knowledge of workplace/jobsite safety procedures, including lock-out/tag-out
- Exhibit understanding of OSHA safety standards and MSDS
- Erect and use scaffolds safely
- Display understanding of ladder safety

### **Craft Knowledge**

- Explain the history of the craft
- Identify job opportunities in the masonry industry
- Identify craft terminology

### **Hand and Power Tools**

- Identify, use, and properly care for hand tools
- Identify, use, and properly care for power tools

### **Materials**

- Identify and select materials, including synthetic stone and brick products
- Identify various mortars (M, S, N, O) and cements (Type I, II, III) and their uses
- Identify material sizes

### **Blueprints and Specifications**

- Read and interpret written specifications
- Identify and interpret lines and symbols
- Read and interpret drawings and plans

(Continued on the following page)

## Specific Competencies and Skills (continued)

### Project Layout

- Square a building, use of 3-4-5/Pythagorean theory
- Install a corner/story pole and determine heights
- Identify masonry bond types
- Install a metal door/window frame
- Lay out and construct control joints
- Identify and install anchor bolts and masonry fasteners

### Brick

- Set up job site
- Lay brick to the line
- Tool off/joint units
- Build brick leads and corners
- Identify and construct steps and components
- Install masonry pavers
- Identify and install wall ties and accessories
- Identify and position various types of lintels
- Identify types of arches
- Exhibit understanding of arch applications

### Fireplaces and Chimneys

- Identify parts of fireplace/chimney
- Install fireplace/chimney components
- Display familiarity with building codes

### Flashing, Weeps, and Insulation

- Install flashing correctly
- Install weep holes correctly
- Install insulation correctly

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## Specific Competencies and Skills (continued)

### Math and Measurements

- Exhibit comprehension of construction masonry-related mathematics
- Exhibit understanding of measurements and conversions
- Estimate/calculate materials needed

### Masonry Structure Maintenance

- Restore and repoint masonry units
- Select and use masonry cleaning agents

### Professionalism

- Exhibit understanding of communication/leadership skills
- Display understanding of professional ethics and behavior





## Sample Questions

**To avoid accidents, ladders must be kept away from**

- A. walkways and traffic lanes
- B. a level floor
- C. the boiler room
- D. carpeting

**A piece of metal used for securing line at both ends of course height is a**

- A. brick tie
- B. line block
- C. line pin
- D. brick set

**Expansion and control joints are used to**

- A. provide strength
- B. improve appearance
- C. allow for movement
- D. eliminate movement

**Place a strip of wood in the cavity during construction to**

- A. prevent mortar from falling in the cavity
- B. use as a guide to keep the units from moving
- C. prevent wall ties from moving
- D. prevent water from entering the cavity in case of rain

**Flashing around a brick chimney requires a**

- A. base and counter
- B. base and silicone
- C. membrane and tar
- D. coat of epoxy

*(Continued on the following page)*

### Sample Questions (continued)

**If the mortar used to lay face brick is too wet, the proper corrective procedure is to**

- A. add more sand to the mix
- B. discharge mortar
- C. add more cement to the mix
- D. add proper proportions of all ingredients

**The #6 on a standard modular rule equals a \_\_\_\_\_ size bed joint.**

- A. 3/8-inch
- B. 1/4-inch
- C. 5/16-inch
- D. 1/2-inch

**Mortar joints between ends of masonry units are called \_\_\_\_\_ joints.**

- A. flushed
- B. bed
- C. collar
- D. weep

**To build a 7-inch brick rise, a bricklayer should use a**

- A. soldier
- B. double header
- C. rowlock and a stretcher
- D. double stretcher and a rowlock

**How many courses of standard 8-inch blocks are in a wall 16 feet high?**

- A. 20 courses
- B. 22 courses
- C. 24 courses
- D. 26 courses



## 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:** 3 hours and 10 minutes

**Number of Jobs:** 3

### Areas Covered:

#### 18% Job Layout

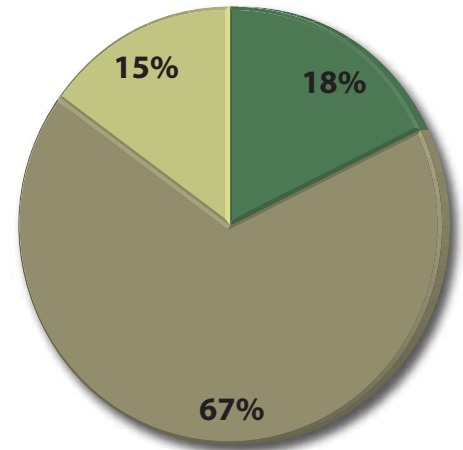
Selection and safe use of tools, project length measured according to drawing specifications, squared the project, and time to complete Job 1.

#### 67% Construct a Brick Wall/Pier in Stretcher/Running Bond

Level top course; plumb points A, B, C, D, E, F, G, and H; pier and wall are square and in range; stayed on coursing dimensions; fullness of joints; maintained proper half-bond; and time to complete Job 2.

#### 15% Project Jointing

Jointing, overall project appearance, and time to complete Job 3.



## Sample Job

### Job Layout

**Maximum Time:** 15 minutes

**Participant Activity:** The participant, using appropriate tools, will measure project size according to drawing specifications. Snap a chalk line, dry bond the first course using 3/8 inch mortar joints. Mark off dimensions for the project, and square the project.

