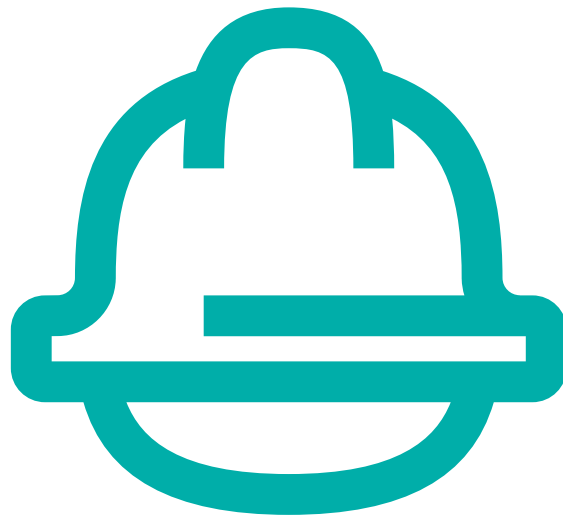




# NOCTI

State Customized  
Credential Blueprint



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## **Mason/Masonry (PA)**

Code: 8293 / Version: 01  
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## General Assessment Information

### Blueprint Contents

General Assessment Information	Sample Written Items
Written Assessment Information	Performance Assessment Information
Specific Competencies Covered in the Test	Sample Performance Job

**Test Type:** The Mason/Masonry PA assessment was developed based on a Pennsylvania statewide competency task list and contains a multiple-choice and performance component. This assessment is meant to measure technical skills at the occupational level and includes items which gauge factual and theoretical knowledge.

**Revision Team:** The assessment content is based on input from Pennsylvania educators who teach in approved career and technical education programs.



46.0101-  
Mason/Masonry



Career Cluster -  
Architecture & Construction

## Written Assessment

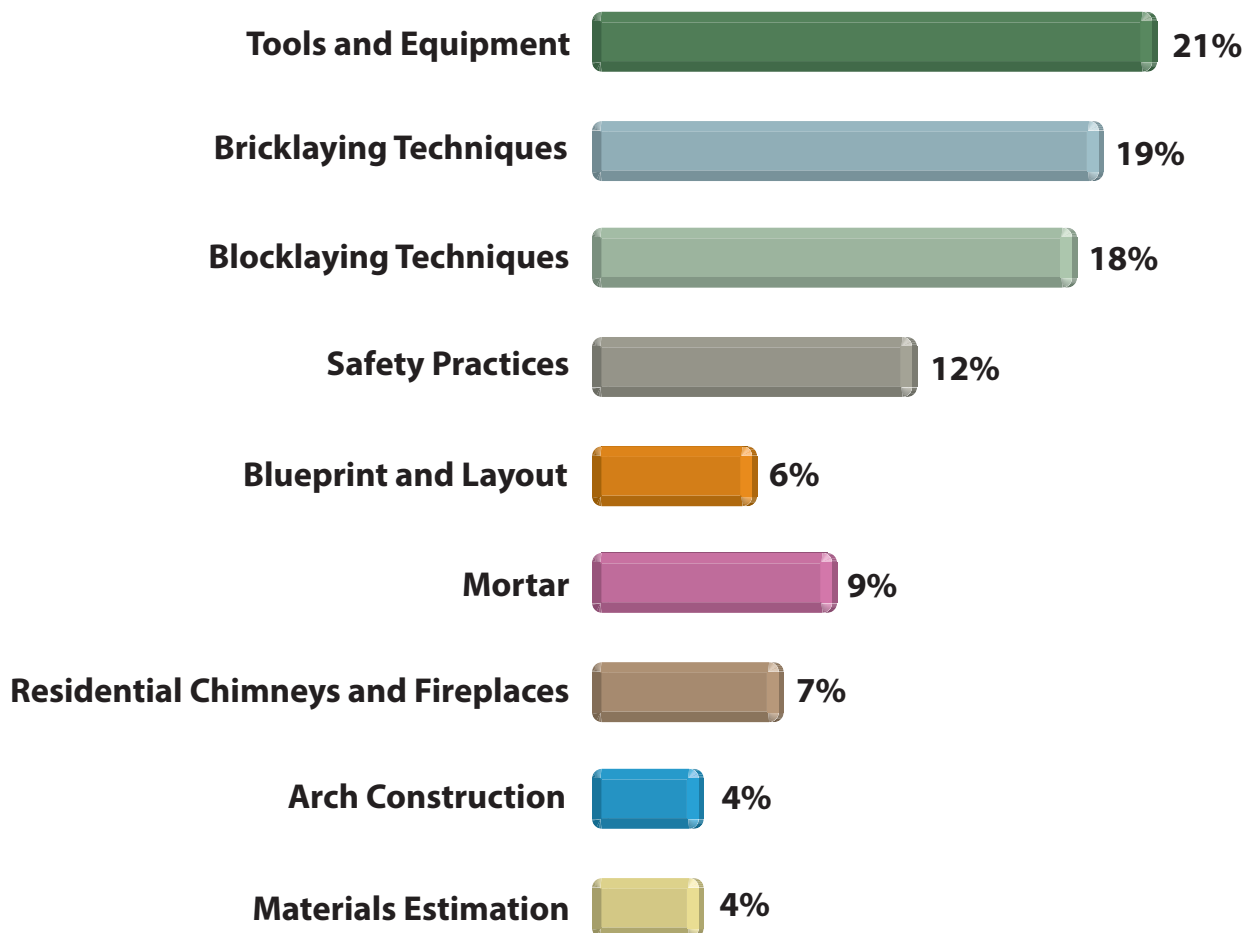
NOCTI written assessments consist of questions to measure an individual's factual theoretical knowledge.

**Administration Time:** 3 hours

**Number of Questions:** 200

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

### Areas Covered



## Specific Standards and Competencies Included in this Assessment

### Tools and Equipment

- Identify masonry lab tools and equipment
- Read and use a modular and spacing rule
- Mark and use a story pole to gauge work
- Demonstrate the ability to secure mason's line to line blocks, pins, and line stretchers
- Discuss and set a trig properly
- Demonstrate the use of a hammer and chisel to cut block and brick
- Demonstrate proper trowel techniques
- Demonstrate proper use and techniques of masonry joiners
- Identify various cutting blades for a masonry saw
- Safely operate a gas cut-off saw
- Safely operate a mortar mixer
- Safely operate a masonry saw



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## Specific Standards and Competencies (continued)

### Bricklaying Techniques

- Identify different types of masonry fasteners and reinforcements
- Identify brick types and bonds
- Lay out proper dry bond of a brick wall
- Lay brick to the line
- Install window and door openings in brick walls (jambs)
- Install flashing for windows and doors
- Install weep holes/vents
- Install a soldier course
- Lay a brick and block composite wall
- Build brick columns
- Construct a brick veneer wall
- Construct a brick cavity wall
- Corbel a brick wall
- Demonstrate cleaning a brick wall
- Lay a course of rowlocks
- Lay a course of headers
- Construct a brick rack back lead
- Construct a 4-inch brick inside corner
- Construct a 4-inch brick outside corner



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## Specific Standards and Competencies (continued)

### Blocklaying Techniques

- Identify different types of masonry fasteners and reinforcements
- Identify and construct various block types and bonds
- Lay block to the line
- Construct a brick ledge using various size block
- Discuss and install a control joint
- Install window and door openings in block walls
- Set lintels
- Construct block piers
- Parge a block wall
- Construct a jamb block lead
- Construct an inside corner block lead
- Construct an outside corner block lead



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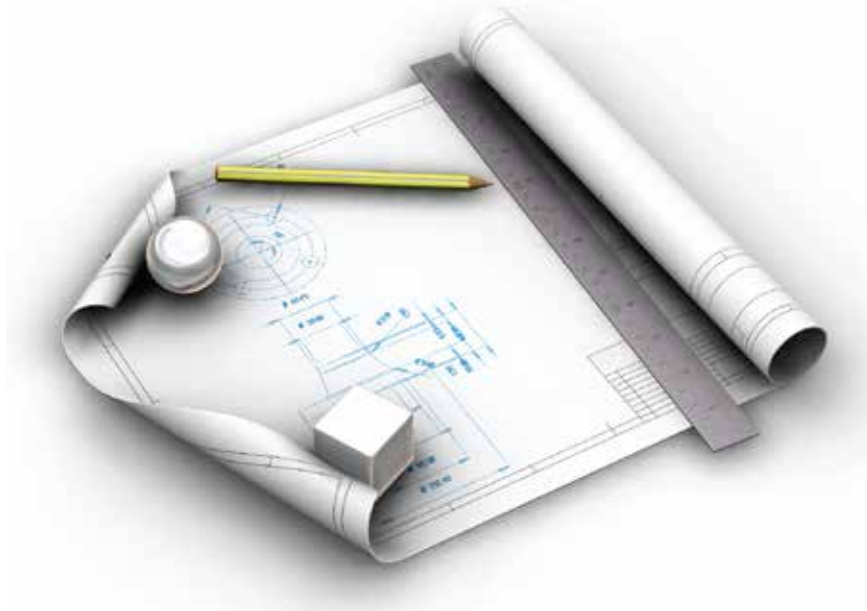
## Specific Standards and Competencies (continued)

### Safety Practices

- Explain and use personal protective equipment and safety practices
- Demonstrate safe use and care of masonry hand tools
- Demonstrate safe use and care of a mortar mixer
- Erect and dismantle steel tubular scaffolding within OSHA guidelines
- Place material and stock scaffolding properly
- Demonstrate knowledge of MSDS information

### Blueprint and Layout

- Identify types of blueprint plans
- Read and interpret blueprint plans
- Lay a building out using a builder's level
- Square a building using the 3-4-5 Pythagorean Theorem



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## Specific Standards and Competencies (continued)

### **Mortar**

- Describe various types of mortars and their characteristics
- Mix mortar by hand
- Mix mortar with a power mixer
- Demonstrate procedures for tempering mortar

### **Residential Chimneys and Fireplaces**

- Construct a brick chimney
- Construct a block chimney
- Discuss and install flashing on chimneys
- Identify parts of a chimney and fireplace

### **Arch Construction**

- Discuss arch terminology
- Identify types of arches

### **Materials Estimation**

- Estimate brick masonry work
- Estimate block masonry work
- Estimate mortar for brick and block



## Sample Questions

**Which of the following tools eliminates the need for constructing masonry leads?**

- A. corner poles
- B. plumb lines
- C. levels
- D. framing square

**Before masonry is installed above a window, the opening should be spanned with**

- A. wood headers
- B. angle iron
- C. flat metal
- D. square tubing

**The unit placed over an opening in a wall is called a**

- A. sill
- B. lintel
- C. refractory
- D. jamb

**The most frequently used scale for home construction is the**

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

**The distance between the two jambs of an arch is called a**

- A. spall
- B. spandrel
- C. span
- D. stretcher

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## Sample Questions (continued)

**Safety shoes are recommended because they**

- A. keep feet warm
- B. are more durable
- C. protect the feet
- D. look professional

**The masonry trade dates back many centuries. Before Portland cement was invented, masons used \_\_\_\_\_ in its place.**

- A. fine sand
- B. slaked lime
- C. wood pulp
- D. silt

**On the top of a chimney, the mason must install a \_\_\_\_\_ to prevent water from entering.**

- A. tar
- B. stretcher
- C. flashing
- D. cap

**Calculate the area of 25 feet 0 inches by 9 feet 6 inches, subtracting two 5 foot 6 inch by 5 foot 0 inch windows.**

- A. 181.0 square feet
- B. 182.5 square feet
- C. 210.0 square feet
- D. 237.5 square feet

**The base figure for estimating mortar mix is \_\_\_\_\_ per 1,000 bricks.**

- A. 4 bags
- B. 6 bags
- C. 8 bags
- D. 10 bags

## 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

**Number of Jobs:** 3

### Areas Covered:

#### 12% Job Layout

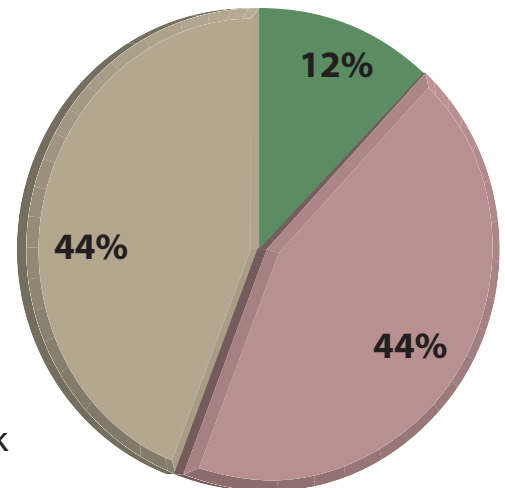
Participants will select and safely use tools to measure project size according to the drawing specifications provided. Participants will then snap a chalk line, dry bond the first course using 3/8-inch mortar joints, mark off the dimensions, and square the project.

#### 44% Construct Block Wall

Participants will lay appropriate masonry units according to the drawing specifications provided and maintain 3/8-inch head joints. Participants will then re-square the inside corner on the first course and measure the course height from the specified point. Participants will be required to level, plumb, range each course, and tool all exposed joints, cut (tags), brush, and retool the project.

#### 44% Construct a Brick Veneer

Participants will construct a brick veneer according to the drawing specifications provided. Steps will include laying the appropriate masonry units, re-squaring the corner on the first course, and measuring the course height from a specified point. Participants will be required to level, plumb, and range each course, tool all exposed joints and cut (tags), and brush and retool the project.



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## Sample Job

### Job Layout

**Maximum Time:** 15 minutes

**Participant Activity:** The participant, using appropriate tools, will measure project size according to drawing specifications provided, 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.

