

Mason/Masonry PA



Test Code: 8293 / Version 1

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General Assessment Information

Blueprint Contents

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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 2-
Architecture & Construction



In the lower division baccalaureate/associate degree category, 3 semester hours in Construction (11/13). NOTE: An additional 1-2 credits may be awarded based on successful completion of the Performance Component when given in conjunction with the written proficiency examination.

Written Assessment

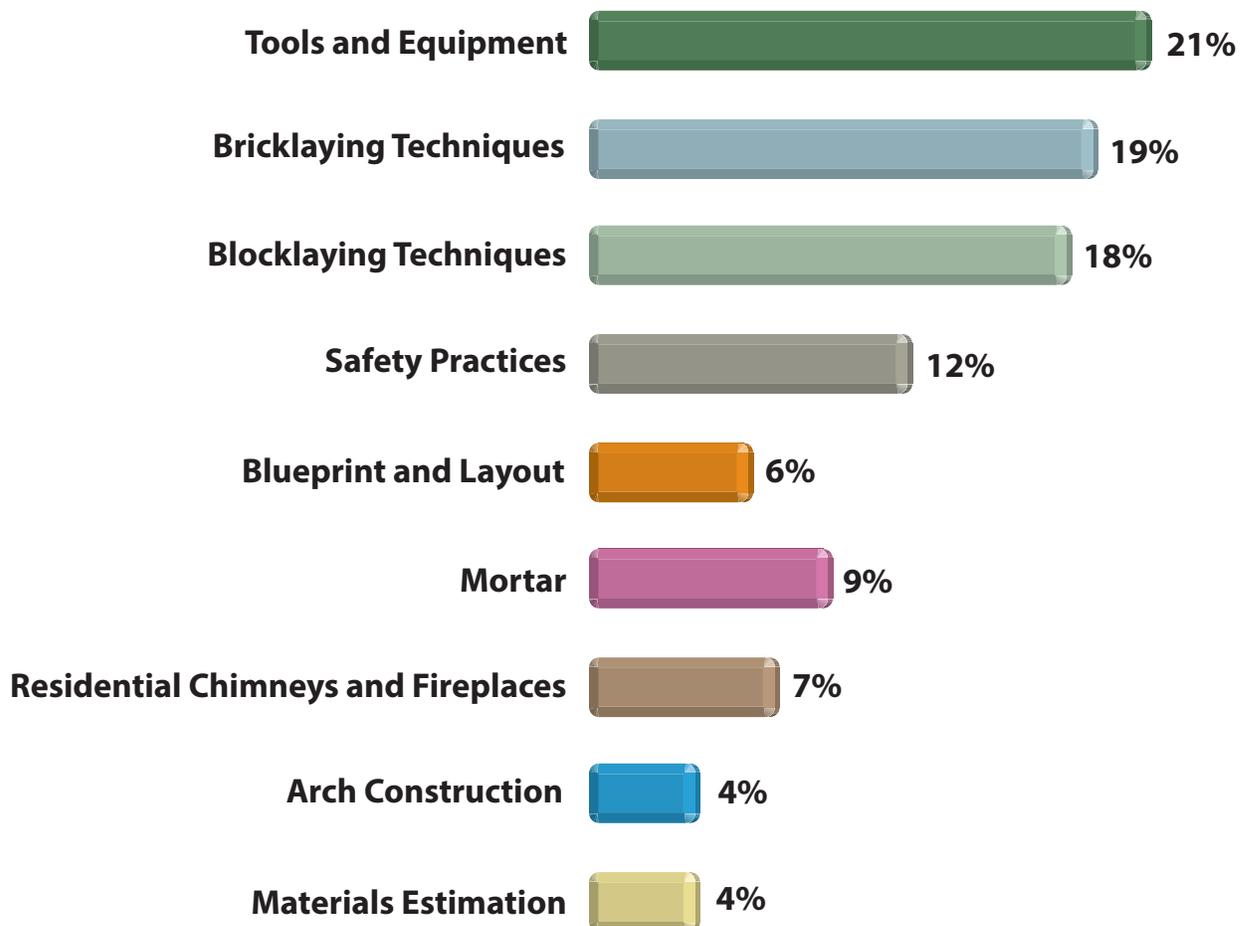
NOCTI written assessments consist of questions to measure an individual's factual theoretical knowledge.

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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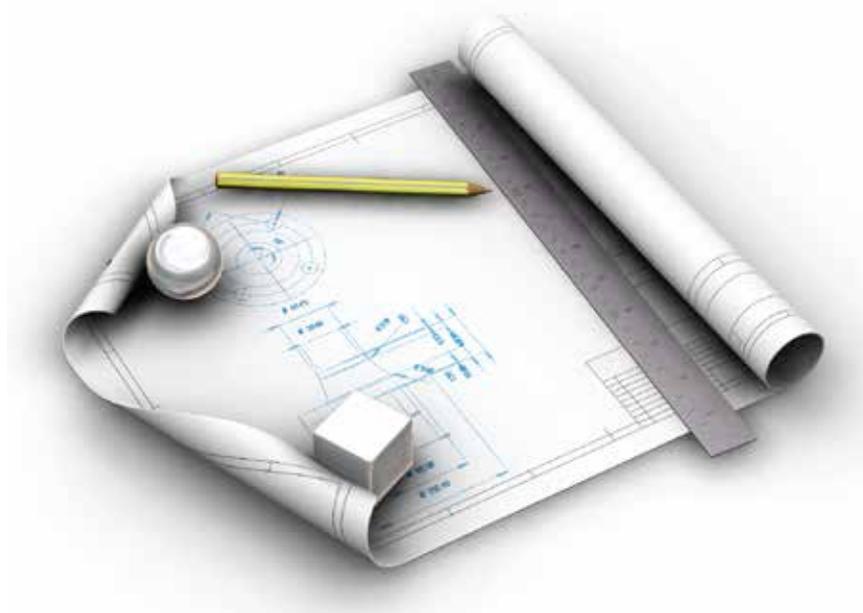
Specific Standards and Competencies (continued)

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

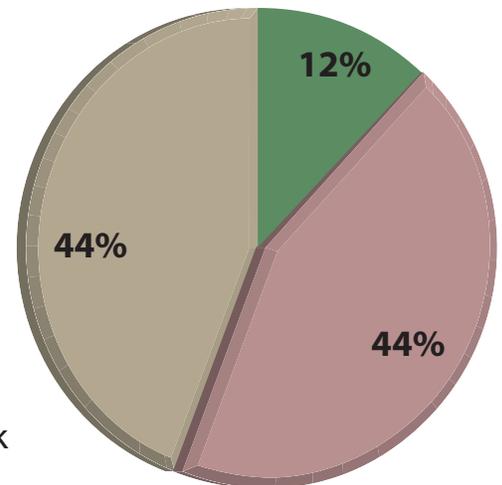
Participants will select and safely use tools to measure project size according to the drawing specifications provided. Participants will then snap a chalk line, dry bond the first course using 3/8-inch mortar joints, mark off the dimensions, and square the project.

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.

