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# **Building Trades Maintenance**

Code: 4012 / 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 Building Trades Maintenance 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 Kentucky, New Jersey, New York, Oklahoma, Pennsylvania, and Wisconsin.



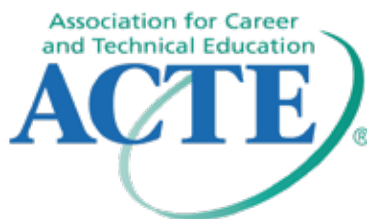
46.0401- Building/Property Maintenance



Career Cluster 2- Architecture and Construction



49-9071.00- Maintenance and Repair Workers, General



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.



Home Builders Institute (HBI), an affiliate of the National Association of Home Builders (NAHB), is a national leader for career training in the building industry. HBI's educational materials are designed to be relevant in today's rapidly changing environment, bringing increased professionalism, competency and effectiveness to those entering the residential construction workforce.

HBI/NAHB assessments are based on national skill standards set by NAHB industry professionals and educators as are the materials contained in the Residential Construction Academy Series. Participants passing the assessments are eligible for certification through HBI/NAHB at the entry, semi-skilled or skilled levels.



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 Building Trades, Facility Maintenance, Facility Management or Methods and Materials

## Written Assessment

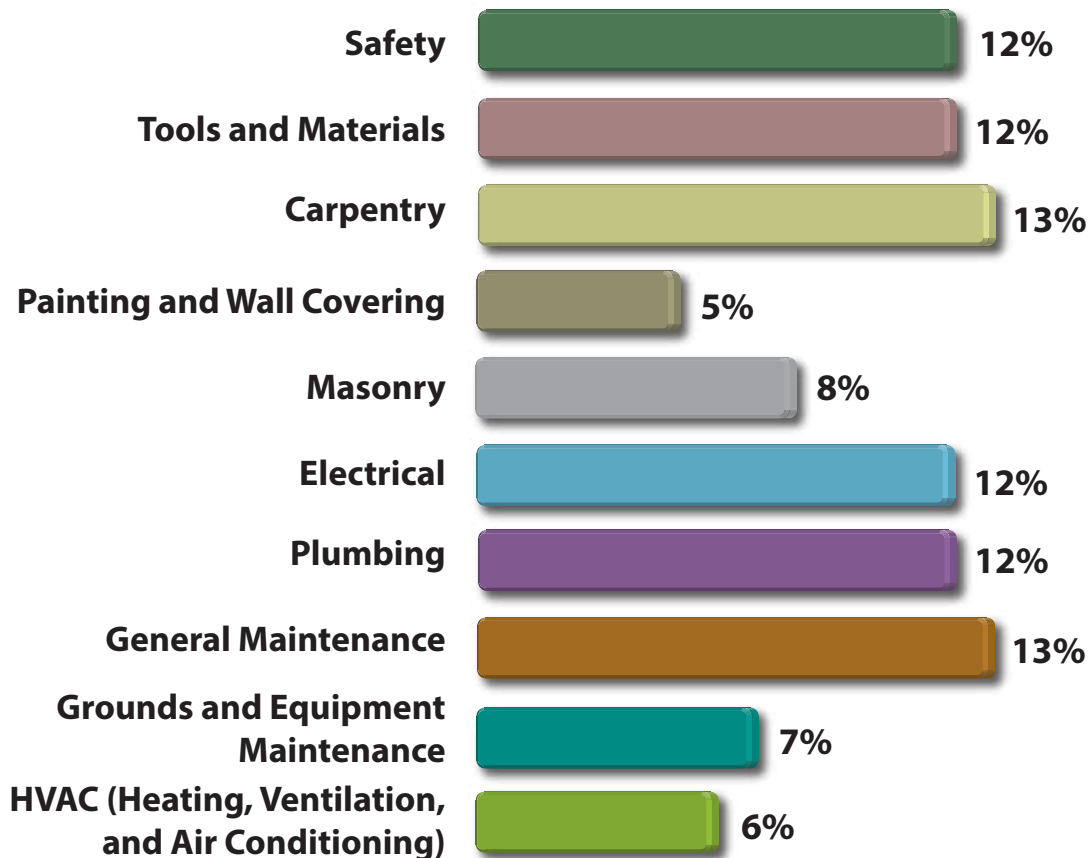
NOCTI written assessments consist of questions to measure an individual's factual theoretical knowledge.

**Administration Time:** 3 hours

**Number of Questions:** 171

**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**

- Use tools and equipment safely
- Demonstrate electrical safety
- Respond to emergency situations (e.g., first aid)
- Demonstrate safe use of chemicals and hazardous materials (e.g., MSDS, OSHA standards)
- Use (PPE) personal protective equipment

### **Tools and Materials**

- Select tools appropriate for task
- Select hardware, fasteners, and adhesives
- Demonstrate appropriate care of tools
- Read instruments and measuring devices
- Estimate and order materials

### **Carpentry**

- Read and interpret drawings
- Identify and install rough carpentry including sub-flooring and framing
- Identify and install appropriate interior finish carpentry, including insulation, drywall, trim work, and cabinetry
- Identify and install exterior rough carpentry and coverings (e.g., roof coverings, cornices, sheathings)
- Identify and install exterior finish carpentry, including siding, decking, and porches

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## Specific Standards and Competencies (continued)

### Painting and Wall Covering

- Demonstrate knowledge of cleaning and surface preparation
- Display knowledge of interior wall and ceiling finish products
- Display knowledge of painting and staining applications

### Masonry

- Install moisture barriers
- Lay and repair bricks and blocks
- Form and place concrete
- Install ceramic floor and wall tiles

### Electrical

- Remove or replace electrical equipment, components, and appliances
- Install and troubleshoot low-voltage circuits
- Identify electrical architectural symbols
- Maintain electrical systems and emergency generators
- Identify and maintain (GFCI) ground fault circuit interrupters



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## Specific Standards and Competencies (continued)

### Plumbing

- Identify, maintain, and install plumbing equipment
- Install, maintain, and repair piping
- Repair and replace plumbing fixtures
- Identify plumbing architectural symbols
- Perform weatherization procedures
- Identify and maintain various pumps

### General Maintenance

- Identify and measure appropriate filters for various equipment
- Employ various practices of weather proofing and energy conservation
- Identify and maintain security and property equipment
- Identify general principles of welding

### Grounds and Equipment Maintenance

- Maintain power equipment (e.g., filters, oil changes, spark plugs, belts, blade sharpening, batteries)
- Exhibit knowledge of proper lawn installation and maintenance
- Plant and maintain trees and shrubs

### HVAC (Heating, Ventilation, and Air Conditioning)

- Demonstrate knowledge of HVAC fundamentals
- Maintain HVAC systems



## Sample Questions

**The first action to be taken at an accident scene is to**

- A. direct traffic
- B. call for help
- C. check for blood loss
- D. initiate CPR

**The letters, **AFF**, on a set of blueprints stand for**

- A. Average Floor Fastening
- B. Above Finish Floor
- C. Almost Flat Formica
- D. Already Form Fitting

**Which size wire is normally connected to a doorbell transformer?**

- A. 00 gauge
- B. 10 gauge
- C. 18 gauge
- D. 30 gauge

**Which material is a good, lightweight insulator?**

- A. foam board
- B. drywall
- C. cellulose
- D. fiberglass

**The most frequent maintenance needed on HVAC systems is**

- A. lubricating the motor brushes and belts
- B. recharging the condenser apparatus
- C. cleaning the unit and changing filters
- D. bleeding the coolant lines

*(Continued on the following page)*

Sample Questions (continued)

**A 16-penny nail (16D coated) is normally used on**

- A. rough carpentry (studs)
- B. installation of vinyl or cedar siding
- C. finish carpentry (cabinets)
- D. fabrication of large laminated beams

**A \_\_\_\_\_ joint is the simplest wood joint to make.**

- A. miter
- B. butt
- C. dado
- D. lap

**GFCI outlets will trip if**

- A. there is power surge
- B. the electricity goes out
- C. moisture is introduced
- D. the outlet is touched

**Lubrication of moving machine parts reduces**

- A. loosening of parts
- B. loss of parts
- C. wearing of parts by friction
- D. destruction of parts due to tension

**The "20" in 20-gauge metal used in a plenum refers to**

- A. thickness
- B. length
- C. weight
- D. density



## 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 45 minutes

**Number of Jobs:** 5

### Areas Covered:

#### 31% Carpentry: Construct Frame

Participants will correctly select tools, cut joints, assemble joints with accurate measurements and frame appearance.

#### 21% Plumbing: Sweat Piping

Participants will select the correct tools, assemble joints, accurately measure, install piping, and test for leaks.

#### 17% Electricity: Rough Wiring

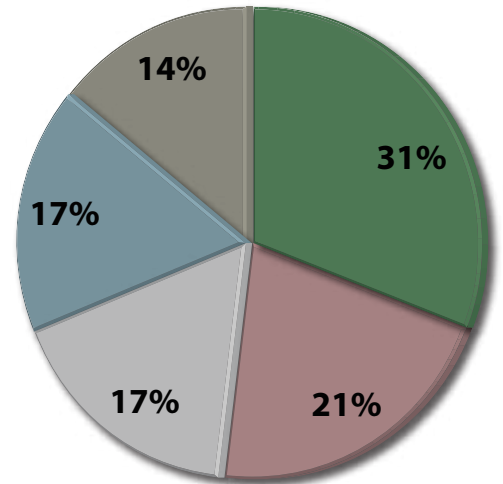
Participants will mount electrical boxes, install nonmetallic cable, and prepare wires in a box.

#### 17% Dry Wall

Participants will accurately measure, cut, install, and finish drywall.

#### 14% Electricity: Finish Wiring

Participants will install and test a switching device and light fixture.



## Sample Job

### Electricity: Finish Wiring

**Maximum Time:** 15 minutes

**Participant Activity:** The test participant will use the rough wired frame with the drywall installed from the previous job, finish wiring the switch and light according to code, install cover plate, connect test leads and test, and install fixture to box.

