NOCTI

Job Ready Pilot Blueprint

Pilot Assessment

Content is Subject To Change Prior to Full Implementation



Facilities Maintenance and Repair - Pilot

(Replacing Building Trades Maintenance - 4012)

Code: 4112 / Version: 01

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JOB READY ASSESSMENT BLUEPRINT

FACILITIES MAINTENANCE AND REPAIR - PILOT

Test Code: 4112
Version: 1

Specific Competencies and Skills Tested in this Assessment:

Safety
Demonstrate knowledge of the use of PPE
Display understanding of fire safety requirements
Identify OSHA lockout/tagout and hazardous materials requirements

Tools and Materials
Exhibit knowledge of the selection and maintenance of tools
Demonstrate understanding of the use of instruments and measuring devices
Display understanding of how to estimate and order materials for maintenance and repair projects
Demonstrate knowledge of the maintenance and care of materials

Basic Carpentry
Identify and interpret drawings and symbols
Demonstrate knowledge of framing and finish carpentry components, including stairs
Display understanding of roofing materials, systems, and repair methods
Demonstrate knowledge of door and window installation and repair procedures

Painting and Wall Covering
Exhibit knowledge of drywall repair techniques
Display understanding of paint and finish repair methods
Identify surface preparation requirements for painting and wall covering applications

Basic Masonry
Demonstrate knowledge of brick and block repair methods
Display understanding of concrete forming and placement procedures
Identify techniques used to repair ceramic floor and wall tiles

Facilities Maintenance and Repair - PILOT (continued)

Basic Electrical

Display understanding of NEC and NFPA 70E requirements
Demonstrate knowledge of switch and device replacement and upgrade procedures
Identify common electrical power sources
Identify electrical symbols used in diagrams and drawings
Exhibit knowledge of GFCI operation, testing, and maintenance

Basic Plumbing

Demonstrate knowledge of piping, fittings, and valve applications
Display understanding of drain maintenance procedures
Identify and interpret plumbing blueprint drawings and symbols
Exhibit understanding of fixture installation and repair, including faucets

Basic HVAC (Heating, Ventilation, and Air Conditioning)

Demonstrate knowledge of the refrigeration cycle
Display understanding of HVAC maintenance procedures
Identify components and functions of HVAC systems

Flooring

Identify common types of flooring materials and applications
Demonstrate knowledge of flooring repair and patching techniques
Display understanding of flooring installation and sealing methods

Procedural Use and Adherence

Demonstrate knowledge of applicable laws, rules, and ethical standards
Display understanding of effective workplace communication techniques
Identify appropriate emergency procedures and response protocols
Demonstrate understanding of professional standards in facilities maintenance and repair
Display knowledge of situational awareness principles in the workplace
Demonstrate knowledge of documentation and paperwork requirements

Applied Industry Math

Calculate area and volume using industry-standard formulas
Display understanding of mathematical formulas and rules
Demonstrate knowledge of fractions, decimals, and their applications
Identify types of measurements used in facilities maintenance and repair

Written Assessment:

Administration Time: 2 hours and 30 minutes
Number of Questions: 139

Areas Covered:

10% Safety
9% Tools and Materials
10% Basic Carpentry
6% Painting and Wall Covering
7% Basic Masonry
12% Basic Electrical
10% Basic Plumbing
7% Basic HVAC (Heating, Ventilation, and Air Conditioning)
7% Flooring
13% Procedural Use and Adherence
9% Applied Industry Math

Sample Questions:

It is important to keep fire exits clear in a facilities maintenance work area to

A. allow equipment to be moved more easily
B. provide quick and safe evacuation
C. improve workplace appearance
D. reduce cleaning time after the fire

The primary reason tools and materials should be cleaned, inspected, and properly stored after use is to

A. extend service life and safe operation
B. reduce the need for employee training
C. make the work area look more organized
D. eliminate the need for future inspections

Which is a primary structural component used in wall framing during carpentry construction?

A. baseboard
B. casing
C. handrail
D. stud

Before applying touch-up paint to a repaired wall surface, it is important to ensure the area is clean, smooth, and dry to

A. reduce the amount of paint needed
B. improve paint adhesion and achieve a uniform finish
C. make the paint dry faster
D. avoid applying additional full coats of paint to the entire wall

When repairing a cracked or damaged concrete block wall, what should be done before applying repair materials?

A. paint over the damaged area
B. cover the crack with tape
C. clean and remove loose or deteriorated material
D. apply repair mortar directly over dirt and debris

Which is a common electrical power source used in facilities and building systems?

A. compressed air distribution system
B. alternating current electrical supply
C. hydraulic fluid power system
D. natural gas delivery system

A floor drain repeatedly develops unpleasant odors even though water is flowing through it properly. First, check if the drain

A. trap contains enough water to prevent sewer gases from entering the building
B. piping has sufficient slope to allow proper wastewater flow through the system
C. system has adequate venting to balance air pressure in the line
D. opening is properly sized for the volume of water discharged

Which HVAC component is responsible for moving conditioned air through a building's ductwork?

A. thermostat used to monitor and regulate indoor temperature settings
B. air handler equipped with a blower to circulate air throughout the system
C. condensate drain designed to remove moisture from the cooling system
D. expansion valve used to control refrigerant flow within the system

It is important to allow a newly installed floor finish or sealer to fully cure before opening the area to traffic to

A. ensure the finish achieves its intended durability
B. reduce the amount of care needed in the finished area
C. make future floor inspections easier to complete
D. eliminate the need for future routine floor maintenance

A maintenance technician needs to determine the area of a rectangular floor that is 12 feet long and 10 feet wide. Which calculation should be used?

A. Length ÷ Width
B. Length + Width
C. (Length + Width) × 2
D. Length × Width

Performance Assessment:

Administration Time: 2 hours and 50 minutes
Number of Jobs: 4

Areas Covered:

32% **PVC Fabrication and Installation**

Participant will fabricate and fully assemble a PVC piping system from a provided diagram by demonstrating proper cutting, preparation, and installation, completing the build to installation-ready standards, and cleaning the work area.

27% **Wiring a Basic 3-Way Switch Circuit**

Participant will install and wire a lighting circuit with two 3-way switches and two light fixtures by selecting appropriate materials, completing rough wiring and device installation, and verifying proper operation.

20% **Drywall Installation and Repair**

Participant will measure, cut, and install drywall on a stud wall, then complete a square drywall patch repair with tape coating while following proper fastening practices and maintaining a clean work area.

21% **Window Installation**

Participant will prepare a rough opening and install a window that is level, plumb, square, securely fastened, watertight, and ready for trim installation.

Sample Job: Drywall Installation and Repair

Maximum Job Time: 30 minutes

Participant Activity: Using a 48-inch by 48-inch piece of 1/2-inch drywall, the participant will cut the drywall for width of the stud wall provided and attach the drywall to the frame using 12-inch spacing. The participant will then use scrap drywall to create, install, and tape coat a square patch to repair a hole before cleaning the work area.