

Specific Competencies and Skills Tested in this Assessment:

General Maintenance - Glazing, Welding

- Score and cut glass
- Apply glazing compound/bead
- Repair sheet screening (window/door screen)
- Apply linseed oil
- Choose electrodes
- Select metals
- Demonstrate arc welding
- Braze various metals
- Interpret scaled drawing measurements
- Caulk
- Weatherstrip windows/doors
- Repair suspended ceiling/tile
- Select hardware/fasteners/adhesives
- Dress/care for tools
- Estimate materials
- Clean gutters/downspouts
- Remove/replace ceiling fan lights
- Remove/replace dishwasher
- Differentiate types of glass
- Install glass in sash
- Set glazier points
- Remove/repair/install sash
- Select welding helmet
- Set-up equipment
- Demonstrate proper welding techniques
- Cut metal using oxyacetylene
- Build/install ductwork
- Select tool appropriate for task
- Repair roof
- Adjust windows
- Install door locks and hinges
- Repair siding
- Read tape measure
- Order materials
- Remove/replace range hood or exhaust fan
- Remove/replace 240v appliances



Specific Competencies and Skills continued:

Carpentry

- Select lumber by type/grade/size
- Frame floor, wall, ceiling
- Select insulation
- Construct stairway
- Install windows
- Build porch/deck
- Layout work
- Repair/replace underlayment
- Replace/repair roof flashing
- Replace/repair composition shingles
- Replace/repair prehung doors
- Construct concrete forms
- Replace/repair floor coverings
- Read blueprint
- Construct joints
- Install wood or metal studs
- Install insulation
- Frame wall openings for doors and windows
- Install doors
- Build cabinets/shelves
- Repair/replace floor joist
- Lay subfloor
- Replace/repair rolled roofing
- Weatherproof exterior siding
- Replace/repair door and window hardware
- Replace/repair moldings
- Identify nails



Electrical

- Install/replace electrical devices
- Install thin-wall conduit
- Troubleshoot circuits
- Read blueprints
- Test and maintain ATS panels
- Repair/replace electric plugs (caps)
- Install PVC conduit
- Use electrical math
- Maintain emergency generators
- Install low-voltage circuits
- Demonstrate electrical safety
- Replace/reset fuses and breakers
- Replace motors
- Install grounding wires
- Remove/replace main panel cover

Specific Competencies and Skills continued:

- Check circuit for proper operation
- Repair photoelectric cell
- Remove/replace phone outlets
- Repair/maintain battery backup systems
- Pull conductors in EMT
- Check circuit overload
- Repair door chime
- Remove/replace ground fault receptacles
- Use electrical test equipment

Plumbing

- Select tools/parts
- Measure pipe
- Cut plastic pipe
- Join pipe (copper, steel, plastic, cast iron)
- Secure pipes
- Install valves, gaskets, seals, washers
- Read blueprints
- Estimate materials
- Insulate water pipes
- Replace/repair lavatories
- Repair hot water heater
- Repair leaks in pipes and drains
- Repair pumps
- Repair tubing
- Cut tubing
- Ream pipe
- Join pipes of different types
- Install plumbing fixtures
- Perform plumbing repairs
- Install faucets
- Clean waste lines
- Replace/repair water supply line
- Replace/repair water closets
- Replace/repair kitchen sinks
- Repair valves and faucets
- Thaw frozen pipes



Specific Competencies and Skills continued:**Painting/Wall Covering**

- Finish dry wall
- Estimate dry wall
- Install ceramic wall tiles
- Install chair rail
- Install paneling, repair damaged paneling
- Prepare surfaces for wallpaper
- Measure and cut wall paper
- Repair damaged wall paper
- Mix and prepare paint
- Demonstrate ladder safety
- Paint doors and windows
- Apply stain
- Apply touch-up paint
- Cut in corners
- Apply paint with brush
- Estimate paint
- Install dry wall
- Patch holes in dry wall
- Estimate paneling
- Install border
- Install wainscoting
- Install cove base and moldings
- Mix and apply wallpaper paste
- Hang and trim wallpaper
- Select paint type
- Select brushes
- Apply paint to interior and exterior surfaces
- Paint concrete, railings, floors and stairwells
- Apply varnish
- Caulk cracks and moldings
- Apply paint with roller
- Clean-up after painting
- Demonstrate knowledge of tools and equipment



Specific Competencies and Skills continued:**HVAC and Sheet Metal**

- Explain operation of HVAC
- Replace thermocouple
- Repair/replace HVAC components
- Service oil hot-air systems
- Repair/install duct
- Test low-voltage systems
- Light/adjust pilot
- Service fan motors
- Clean condensate line
- Inspect heat exchangers
- Replace air filters
- Install window AC unit
- Layout sheet metal
- Cut sheet metal
- Change drive belt
- Monitor/adjust pneumatic systems
- Perform scheduled PM
- Service hot water systems
- Replace/adjust thermostat
- Inspect ventilation system
- Adjust burners
- Clean condensing coils
- Charge system
- Inspect flues
- Sweat pipe
- Break sheet metal
- Test for gas leaks

Power Plant/Boiler

- Clean boiler for inspections
- Analyze/treat boiler water/steam
- Shut down/lay-up boiler
- Monitor boiler systems
- Fire boiler



Specific Competencies and Skills continued:**Masonry**

- Lay bricks
- Repoint
- Clean brick
- Place concrete
- Cut masonry materials
- Use level and string
- Install moisture barriers
- Lay cement blocks
- Repair brick and block
- Construct and repair retaining walls
- Edge joint and finish concrete
- Use trowel

Ground & Equipment Maintenance

- Mow lawn
- Seed/sod lawn
- Clean outside areas
- Grade topsoil
- Maintain lawn mower
- Select grass seed
- Remove snow and ice
- Prune trees/bushes

Safety/Tools

- Use power tools
- Demonstrate electrical safety
- Store tools properly
- Respond to emergency situations
- Explain proper disposal of hazardous material
- Demonstrate safe work habits
- Use hand tools
- Demonstrate safe use of hand and power tools
- Clean, inspect and repair tools
- Read drawings
- Demonstrate safe use of chemicals
- Use of MSDS information

Hydraulics/Pneumatics

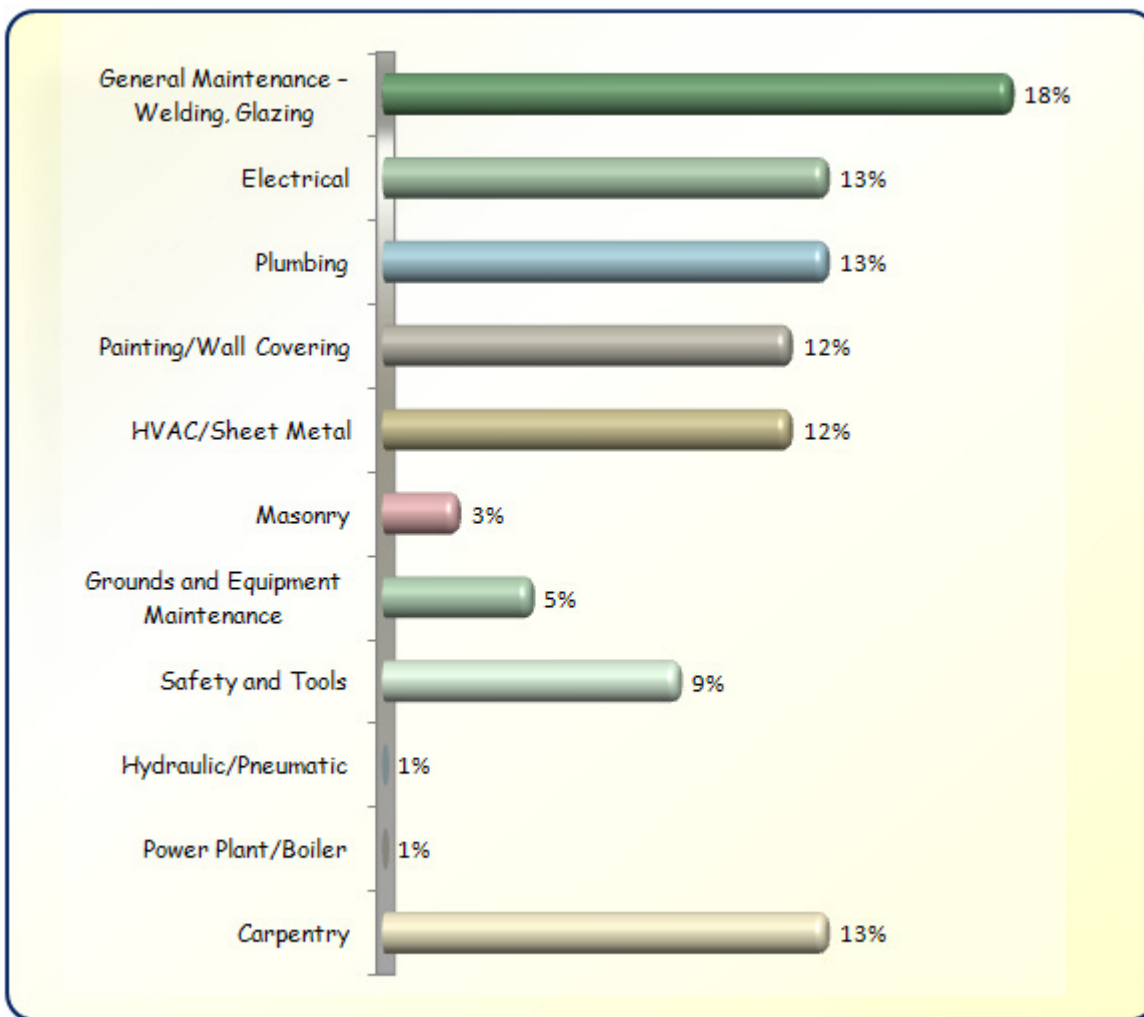
- Adjust air pressures
- Maintain/repair pneumatic components
- Maintain/repair dampers
- Adjust belts
- Monitor moisture traps
- Monitor oil levels, change oil
- Select hydraulic fluids/filters
- Repair/replace hydraulic jacks/pumps
- Check/replace V-belts
- Check hoses and connections

Written Assessment:

Administration Time: 3 hours

Number of Questions: 167

Areas Covered:



Sample Questions:

A pipe reamer is designed to

- A. make the inside diameter of a pipe larger
- B. remove the burr from a pipe
- C. make the pipe easier to thread
- D. make the outside diameter of the pipe bigger

Double-acting hinges are used on

- A. exterior doors
- B. gates
- C. overhead garage doors
- D. casement windows

A basic testing instrument that is commonly used to test low voltage is

- A. a multimeter
- B. an outlet analyzer
- C. a continuity tester
- D. all of the above

The tool used to sink finishing nails below the surface of the wood is a nail

- A. driver
- B. press
- C. punch
- D. set

A screwdriver in good condition should have a blade with a bottom edge that is

- A. rounded
- B. flat
- C. chisel-shaped
- D. knife-sharp



Performance Assessment:

Administration Time: 3 hours and 15 minutes

Number of Jobs: 6

Areas Covered:

28% Carpentry - Construct Frame
Measuring, marking, cutting, nailing.
Selection and use of tools. Basic joint constructions.

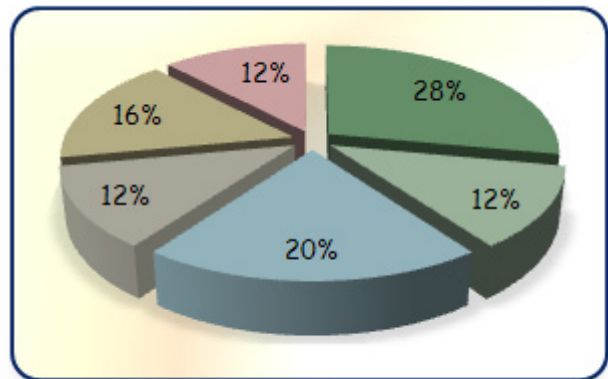
12% Electricity - Rough Wiring
Installation of electrical boxes,
switches, fixtures. Installation of cable.
Selection and use of tools. Drilling.

20% Plumbing - Sweat Piping
Measuring, cutting, reaming, joining of pipe. Selection and use of tools. Use of soldering equipment. Placement of holes for piping. Leak testing. Accuracy. Appearance. Quality of work. Safety.

12% Dry Wall
Measuring, cutting, fitting, nailing. application of "mud." Taping. Selection and use of tools. Accuracy. Appearance. Quality of work. Safety.

16% Electricity - Finish Wiring
Wire connections. Installation of grounding wires. Accuracy. Appearance. Quality of work. Safety.

12% Carpentry - Mortise Hinge
Installation of hinge. Accuracy. Appearance. Quality of work. Safety.



Sample Job: Carpentry - Construct a Frame

Maximum Time: 1 hour

Participant Activity: The test participant will construct a frame containing three types of joints. The frame should be secured to a workbench or table. A drawing is provided in each participant's test booklet.

