



# CARPENTRY 46.0400.30

## TECHNICAL STANDARDS

An Industry Technical Standards Validation Committee developed and validated these standards on April 9, 2019. The Arizona Career and Technical Education Quality Commission, the validating authority for the Arizona Skills Standards Assessment System, endorsed these standards on July 14, 2019.

Note: Arizona's Professional Skills are taught as an integral part of the Carpentry program.

**The Technical Skills Assessment for Carpentry is available SY2020-2021.**

Note: In this document i.e. explains or clarifies the content and e.g. provides examples of the content that must be taught.

### STANDARD 1.0 MAINTAIN A SAFE WORK ENVIRONMENT ACCORDING TO OSHA STANDARDS

- 1.1 Recognize the purpose of OSHA
- 1.2 Recognize how workers protect themselves from hazards associated with stairways and ladders
- 1.3 Recognize how workers protect themselves from hazards associated with material handling
- 1.4 Recognize how workers protect themselves from hazards associated with construction crane operations
- 1.5 Recognize how workers protect themselves from hazards associated with excavations
- 1.6 Recognize how workers protect themselves from common health hazards found in construction industry workplaces
- 1.7 Select appropriate personal protective equipment for common construction industry hazards
- 1.8 Recognize how workers protect themselves from hazards associated with scaffolds
- 1.9 Recognize how workers protect themselves from hazards associated with the use of tools (i.e., hand and power)

### STANDARD 2.0 OPERATE HAND AND POWER TOOLS AND EQUIPMENT ACCORDING TO OSHA STANDARDS

- 2.1 Inspect, use, and maintain hand tools, portable power tools, powder-actuated tools, and pneumatic tools
- 2.2 Inspect, use, and maintain extension cords, cartridges, and hoses
- 2.3 Recognize use and maintenance of power equipment (i.e., compressors, generators, engine-driven, etc.)

### STANDARD 3.0 USE PLANS, SPECIFICATIONS, AND CODES

- 3.1 Identify blueprint terms, components, and symbols
- 3.2 Identify a set of drawings, symbols, scales, and legends
- 3.3 Interpret material schedules on blueprints
- 3.4 Relate information on blueprints to actual locations
- 3.5 Identify and use drawing dimensions
- 3.6 Estimate the amount of material for carpentry
- 3.7 Determine elevations using levels (i.e., builders, transit, laser, etc.)

### STANDARD 4.0 LAY OUT BUILDING LINES

- 4.1 Identify methods used to ensure precision horizontal measurements (e.g., mathematical formulas such as 3.4.5 rule, Pythagorean Theorem, and diagonal method for solving square)
- 4.2 Recognize building lines
- 4.3 Determine elevations using levels (i.e., builders/transit, laser, etc.)

### STANDARD 5.0 DEMONSTRATE BASIC FLOOR FRAMING

- 5.1 Differentiate lumber type and material (e.g., OSB, plywood, and pressure-treated lumber)
- 5.2 Install sill plates
- 5.3 Install floor joists

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- 5.4 Identify the purpose of fasteners used in floor framing according to national, state, and local building codes
- 5.5 Install a subfloor (e.g., tongue and groove and OSB panels)
- 5.6 Identify different floor systems (e.g., cantilever, TGI truss, and conventional)

#### **STANDARD 6.0 DEMONSTRATE WALL AND CEILING FRAMING**

- 6.1 Lay out and snap wall lines, including plates, corner posts, door and window openings, partition Ts, and bracing, and plan for installation of fire stops
- 6.2 Lay out and assemble exterior stud walls (e.g., wood and metal)
- 6.3 Erect and brace exterior walls
- 6.4 Cut and install ceiling joists

#### **STANDARD 7.0 DEMONSTRATE FRAMING AND FINISHING A ROOF**

- 7.1 Set truss systems
- 7.2 Install roof sheathing
- 7.3 Frame a roof opening

#### **STANDARD 8.0 RECOGNIZE PURPOSE OF THERMAL AND MOISTURE PROTECTION**

- 8.1 Identify purpose and use of vapor barrier
- 8.2 Identify purpose and use of insulation

#### **STANDARD 9.0 DEMONSTRATE EXTERIOR FINISHES**

- 9.1 Install frieze boards or soffit
- 9.2 Install exterior moldings and trim
- 9.3 Install siding

#### **STANDARD 10.0 DEMONSTRATE DOOR AND WINDOW INSTALLATION**

- 10.1 Install doors
- 10.2 Install door hardware
- 10.3 Install windows

#### **STANDARD 11.0 DEMONSTRATE INTERIOR WALL AND CEILING FINISH**

- 11.1 Cut and install drywall
- 11.2 Mud, tape, and texture drywall

#### **STANDARD 12.0 DEMONSTRATE THRESHOLD AND CASING INSTALLATIONS**

- 12.1 Install threshold
- 12.2 Install window casing
- 12.3 Install door casing

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