

CABINETMAKING, 46.0400.40

These standards were validated by a Technical Standards Validation Committee on March 20, 2014. First testing date using the new standards will be Fall 2014.

STANDARD 1.0 DEMONSTRATE BUSINESS OPERATIONS IN A SHOP

- 1.1 Estimate the cost of a job (supplies, materials, labor, overhead)
- 1.2 Develop a materials order from a cut list and plan
- 1.3 Develop a materials order from a cut list and plan
- 1.4 Use customer service skills to be successful

STANDARD 2.0 DEMONSTRATE GENERAL SHOP SAFETY

- 2.1 Explain the importance of shop safety
- 2.2 Maintain appropriate appearance and safe work attire
- 2.3 Wear appropriate PPE equipment (personal protective equipment) when needed (e.g. eye protection, ear protection, impact hat)
- 2.4 Use equipment safety features according to manufacturer's recommendations
- 2.5 Use proper lifting techniques
- 2.6 Examine health-related problems related to exposure to hazardous materials
- 2.7 Examine the benefits of using dust collection
- 2.8 Comply with government regulations regarding health and safety in the shop [e.g. OSHA (Occupation Safety and Health Administration), EPA (Environmental Protection Agency), and DNR (Department of Natural Resources)]
- 2.9 Comply with lockout/tagout rules and procedures
- 2.10 Handle, use, and store chemicals according to MSDS/SDS sheets
- 2.11 Apply fire safety rules and procedures

STANDARD 3.0 DEMONSTRATE BASIC CABINETMAKING SKILLS

- 3.1 Apply math skills to solve problems related to cabinetmaking, including written instructions to complete a task
- 3.2 Calculate linear feet, square feet, and board feet
- 3.3 Tally lumber products
- 3.4 Measure accurately and convert to standard and/or metric measurement systems as required
- 3.5 Lay out straight and angled cuts
- 3.6 Determine plumb, level, and square
- 3.7 Handle and store wood products
- 3.8 Specify wood stock for species, grade, grain patterns, and color compatibility

STANDARD 4.0 PRACTICE SAFE AND APPROPRIATE USE OF HAND AND PORTABLE POWER TOOLS

- 4.1 Use steel rules/tapes, squares, T-bevels, and calipers
- 4.2 Use planes and cabinet scrapers to smooth surfaces
- 4.3 Use wood chisels to notch or mortise stock
- 4.4 Drive and set nails and screws
- 4.5 Fasten materials using a pneumatic stapler or nailer
- 4.6 Use a circular saw to make straight, beveled, and compound angle cuts
- 4.7 Use a saber/jig saw to plunge/cut curves
- 4.8 Drill holes with a portable power drill
- 4.9 Use a power drill to bore holes to specified depth
- 4.10 Create pocket screw joints using a drill and jig
- 4.11 Use a router to shape edges; cut a groove, dado, and rabbet
- 4.12 Use a router with a dovetail jig
- 4.13 Use plate/biscuit joiners for square and angled joints
- 4.14 Use sanders for roughing and finishing

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

- 4.15 Use a belt sander and grinder to scribe cut a product
- 4.16 Clean and maintain hand and portable power tools

STANDARD 5.0 PRACTICE SAFE AND APPROPRIATE USE OF STATIONARY MACHINES

- 5.1 Use a table saw to make rip, cross, miter, bevel, and groove cuts
- 5.2 Select, change, and set up blades on a table saw
- 5.3 Use a radial arm saw to make cross, miter, and compound angle cuts
- 5.4 Select, change blades, and adjust for squaring on a radial arm saw
- 5.5 Use a miter/sliding miter saw to make cross, bevel, miter, and compound miter cuts
- 5.6 Select and change blades on a miter saw
- 5.7 Use a band saw to cut irregular shapes and re-saw materials
- 5.8 Select, change, or replace band saw blades
- 5.9 Set up and use a drill press
- 5.10 Use a jointer to square, bevel, and flatten stock
- 5.11 Use a router in a router table
- 5.12 Use a surface planer to smooth surfaces
- 5.13 Utilize a hollow chisel mortiser
- 5.14 Set up and use a line boring machine
- 5.15 Set up and use a lathe for woodturning

STANDARD 6.0 EXAMINE COMPUTER NUMERICAL CONTROL EQUIPMENT (CNC)

- 6.1 Explore various CAM (Computer Aided Manufacturing) software for programming CNC (Computer Numerical Control) manufacturing equipment
- 6.2 Explore various CNC equipment and equipment operations, including 3-dimensional technology
- 6.3 Demonstrate CNC equipment operation (actual or simulated)
- 6.4 Program CNC machines to produce a part

STANDARD 7.0 INTERPRET PLANS AND BLUEPRINTS TO CREATE A PRODUCT

- 7.1 Read and interpret blueprints
- 7.2 Extract information from plans for design and specifications
- 7.3 Verify design plans with field measurements
- 7.4 Create a cut list
- 7.5 Create a bill of materials

STANDARD 8.0 CUT AND SHAPE PRODUCTS

- 8.1 Mill rough lumber to create S4S (surfaced on four sides) stock
- 8.2 Cut sheet goods to size and shape
- 8.3 Create basic woodturnings
- 8.4 Create basic mouldings

STANDARD 9.0 DEMONSTRATE COMMON JOINERY APPLICATIONS

- 9.1 Layout and cut butt joints
- 9.2 Reinforce butt joints using dowels, screws, biscuits, and pocket screws
- 9.3 Layout and cut a dado joint
- 9.4 Layout and cut a rabbet joint
- 9.5 Layout and cut a lap joint
- 9.6 Layout and cut a miter joint
- 9.7 Layout and cut a tongue and groove joint
- 9.8 Layout and cut a mortise and tenon joint
- 9.9 Layout and cut a dovetail joint
- 9.10 Layout and cut a box joint

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STANDARD 10.0 ASSEMBLE PRODUCTS USING FASTENERS, ADHESIVES, AND HARDWARE

- 10.1 Explain the purpose and applications of common fasteners
- 10.2 Explore various fasteners and RTA (Ready to Assemble) connectors
- 10.3 Explain the purpose, types, and applications of common adhesives
- 10.4 Use adhesives appropriate to the application
- 10.5 Use various clamping devices
- 10.6 Demonstrate various ways to remove excess glue
- 10.7 Assemble drawer components
- 10.8 Explore cabinet installation using fasteners and levelers
- 10.9 Fasten stock with metal fasteners (e.g. nails, screws, and staples)
- 10.10 Construct case/box
- 10.11 Assemble panel doors
- 10.12 Attach moulding and trim
- 10.13 Explore common uses and applications of jigs and fixtures
- 10.14 Fasten a top to the casework
- 10.15 Install cabinet hardware
- 10.16 Reinforce joints with block

STANDARD 11.0 APPLY WOOD VENEERS AND LAMINATES

- 11.1 Cut veneers and laminates with appropriate saw blades and router bits
- 11.2 Seam two pieces of veneers and/or laminates
- 11.3 Apply adhesive
- 11.4 Apply edge banding
- 11.5 Apply veneers and/or laminates to core
- 11.6 Apply wood edges
- 11.7 Cut veneers and/or laminates to size
- 11.8 Fit veneers and/or laminate joints
- 11.9 Trim edges

STANDARD 12.0 DEMONSTRATE FINISHING MATERIALS AND PROCESSES

- 12.1 Explain the purpose and applications of various types of finishes and finishing processes
- 12.2 Select finishing materials for compatibility
- 12.3 Follow a finish schedule
- 12.4 Apply filler to a wood surface
- 12.5 Apply a seal coat to a wood surface
- 12.6 Select and use appropriate abrasive types and grit sizes
- 12.7 Stain a wood surface
- 12.8 Apply clear coat finishes to wood surfaces
- 12.9 Apply pigmented finishes to wood surfaces
- 12.10 Use cleanup methods according to safe and approved methods (OSHA, EPA, DNR)
- 12.11 Repair blemishes/touch up finishes

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