

**SECTION 06 20 00
FINISH CARPENTRY**

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section specifies exterior and interior millwork.
- B. Items specified.
 - Plastic laminate counter tops and shelves.
 - Wall and base cabinets
 - Tack panel
 - Millwork Hardware
 - Window sills

1.2 RELATED WORK

- A. Framing, furring and blocking: Section 06 10 00, ROUGH CARPENTRY.
- B. Solid Surface countertops: Section 06 65 10 SOLID SURFACE FABRICATION.
- C. Color and texture of finish: Section 09 06 00, SCHEDULE FOR FINISHES.
Fabric for tack panels: Section 09
- D. Electrical duplex and data outlets: Division 26, ELECTRICAL.

1.3 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Shop Drawings:
 - 1. Millwork items - Half full size scale for sections and details 1:50 (1/4-inch) for elevations and plans.
 - 2. Show construction and installation.
- C. Samples:
 - 1. Plastic laminate finished MDF or particleboard, 150 mm by 300 mm (six by twelve inches).
- D. Certificates: Indicating moisture content of materials meet the requirements specified.
- F. Manufacturer's literature and data:
 - 1. Finish hardware

1.4 DELIVERY, STORAGE AND HANDLING

- A. Protect lumber and millwork from dampness, maintaining moisture content specified both during and after delivery at site.
- B. Store finishing lumber and millwork in weather tight well ventilated structures or in space in existing buildings designated by Resident Engineer. Store at a minimum temperature of 21°C (70°F) for not less than 10 days before installation.

- C. Pile lumber in stacks in such manner as to provide air circulation around surfaces of each piece.

1.5 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. American Society of Testing and Materials (ASTM):
- A36/A36M-08.....Structural Steel
- A53-07.....Pipe, Steel, Black and Hot-Dipped Zinc Coated,
Welded and Seamless
- B221-08.....Aluminum and Aluminum-Alloy Extruded Bars, Rods,
Wire, Profiles, and Tubes
- ASTM D 1037.....Test Methods of Evaluating Properties of Wood-
Base Fiber and Particle Panel Materials.
- E84-09.....Surface Burning Characteristics of Building
Materials.
- C. American Hardboard Association (AHA):
- A135.4-04.....Basic Hardboard
- D. Builders Hardware Manufacturers Association (BHMA):
- A156.9-03.....Cabinet Hardware
- A156.11-04.....Cabinet Locks
- A156.16-02.....Auxiliary Hardware
- E. National Particleboard Association (NPA):
- A208.1-99.....Wood Particleboard
- F. American Wood-Preservers' Association (AWPA):
- AWPA C1-03.....All Timber Products - Preservative Treatment by
Pressure Processes
- G. Architectural Woodwork Institute (AWI):
- AWI-99.....Architectural Woodwork Quality Standards and
Quality Certification Program
- H. National Electrical Manufacturers Association (NEMA):
- LD 3-05.....High-Pressure Decorative Laminates
- I. U.S. Department of Commerce, Product Standard (PS):
- PS20-05.....American Softwood Lumber Standard
- J. Military Specification (Mil. Spec.):
- MIL-L-19140E.....Lumber and Plywood, Fire-Retardant Treated
- K. Federal Specifications (Fed. Spec.):
- A-A-1922A.....Shield Expansion
- A-A-1936.....Contact Adhesive
- FF-N-836D.....Nut, Square, Hexagon Cap, Slotted, Castle

FF-S-111D(1).....Screw, Wood

MM-L-736(C).....Lumber, Hardwood

PART 2 - PRODUCTS

2.1 LUMBER

A. Grading and Marking:

1. Lumber shall bear the grade mark, stamp, or other identifying marks indicating grades of material.
2. Such identifying marks on a material shall be in accordance with the rule or standard under which the material is produced, including requirements for qualifications and authority of the inspection organization, usage of authorized identification, and information included in the identification.
3. The inspection agency for lumber shall be approved by the Board of Review, American Lumber Standards Committee, to grade species used.

B. Sizes:

1. Lumber Size references, unless otherwise specified, are nominal sizes, and actual sizes shall be within manufacturing tolerances allowed by the standard under which product is produced.
2. Millwork, standing and running trim, and rails: Actual size as shown or specified.

C. Hardwood Lumber Trim for Transparent Finish (Stain or Clear Finish):

1. Species and Grade: Rotary cut white birch; NHLA
2. Maximum Moisture Content: 9 percent.
3. Finger Jointing: Not allowed.
4. Gluing for Width: Not allowed.
5. Veneered Material: Not allowed.
6. Face Surface: Surfaced (smooth)
7. Matching: Selected for compatible grain and color.

D. Hardwood Moldings for Transparent Finish (Stain or Clear Finish):

WMMPA HWM 2, N-grade wood moldings made to patterns included in WMMPA HWM 1.

1. Species: Rotary cut white birch
2. Maximum Moisture Content: 9 percent.
3. Finger Jointing: Not allowed.
4. Matching: Selected for compatible grain and color.

2.2 PARTICLEBOARD

A. NPA A208.1

B. Plastic Laminate Particleboard Cores:

1. Use Type 1, Grade 1-M-3, or Type 2, Grade 2-M-2, unless otherwise specified.
2. Use Type 2, Grade 2-M-2, exterior bond, for tops with sinks.
- C. Melamine-Faced Particleboard: Particleboard complying with ANSI A208.1, Grade M-2, finished on both faces with thermally fused, melamine-impregnated decorative paper complying with LMA SAT-1.
- D. General Use: Type 1, Grade 1-M-3 or Type 2, Grade 2-M-2.

2.3 Moderate Density Fiberboard: ANSI A208.2, Grade 130 made with binder containing no urea-formaldehyde resin.

2.4 FIBER BOARD: Class C fire-rated. Molded, recycled post-consumer paper, cellulose fiber structural panel. Physical properties as follows.

- A. Thickness: 1/2 inch (13 mm).
- B. Density: 26-28 pcf (416-448 kg/cu. m) tested in accordance with ASTM C 209.
- C. Tensile Strength: When tested in accordance with ASTM C 209:
 2. Parallel: 450-700 psi (3,100-4,830 kPa).
 3. Transverse: 750-1000 psi (5.1171-6.894 kPa).
- D. Hardness (Janka Ball): 230 lbs (104 kg) tested in accordance with ASTM D 1037.
- E. Water Absorption by Volume: When tested in accordance with ASTM D 1037:
 1. 2 hour immersion: 5 percent maximum.
 2. 24 hour immersion: 15 percent maximum.
- F. Expansion: 50 to 90 percent relative humidity, 0.25 percent in accordance with ASTM C 209.
- G. Flame Spread: 76 to 200 tested in accordance with ASTM E 84, Class III or C.

2.5 PLASTIC LAMINATE

- A. NEMA LD-3.
- B. Exposed decorative surfaces including countertops, both sides of cabinet doors, and for items having plastic laminate finish. General Purpose, Type HGL.
- C. Cabinet Interiors including Shelving: Both of following options to comply with NEMA, CLS as a minimum.
 1. Plastic laminate clad plywood or particle board.
 2. Resin impregnated decorative paper thermally fused to particle board.
- D. Backing sheet on bottom of plastic laminate covered wood tops: Backer, Type HGP.
- E. Post Forming Fabrication, Decorative Surfaces: Post forming, Type HGP.

2.6 ADHESIVE

- A. For Plastic Laminate: Fed. Spec. A-A-1936.
- B. For Interior Millwork: Unextended urea resin, unextended melamine resin, phenol resin, or resorcinol resin.
- C. For Exterior Millwork: Unextended melamine resin, phenol resin, or resorcinol resin.

2.7 HARDWARE

- A. Rough Hardware:
 - 1. Furnish rough hardware with a standard plating, applied after punching, forming and assembly of parts; galvanized, cadmium plated, or zinc-coated by electric-galvanizing process. Galvanized where specified.
 - 2. Use galvanized coating on ferrous metal for exterior work unless non-ferrous metals or stainless is used.
 - 3. Fasteners:
 - a. Bolts with Nuts: FF-N-836.
 - b. Expansion Bolts: A-A-1922A.
 - c. Screws: Fed. Spec. FF-S-111.
- B. Finish Hardware
 - 1. Cabinet Hardware: ANSI A156.9.
 - a. Door/Drawer Pulls: B02011. Wire pulls, metal, 100mm (4 inches) long by 8mm (5/16 inch) diameter. Back mounted.
 - b. Full Length Cabinet Pull: Recessed extruded aluminum pull. One piece full height of door. 1.6 mm (1/16") wall thickness.
 - c. Drawer Slides: B05051 for drawers over 150 mm (6 inches) deep, B05052 for drawers 75 mm to 150 mm (3 to 6 inches) deep, and B05053 for drawers less than 75 mm (3 inches) deep.
 - d. Adjustable Shelf Standards: B4061 with shelf rest B04083.
 - e. Concealed Hinges: B01602, minimum 110 degree opening.
 - f. Butt Hinges: B01361, for flush doors, B01381 for inset lipped doors, and B01521 for overlay doors.
 - g. Cabinet Door Catch: B0371 or B03172.
 - h. Vertical Slotted Shelf Standard: B04103 with shelf brackets B04113, sized for shelf depth.
 - i. Crutch Hook, wall mounted. Stainless Steel, satin finish (size: 9"w x 2"h 9 3/4"d.
 - 2. Cabinet Locks: ANSI A156.11.
 - a. Drawers and Hinged Door: E07262.
 - 3. Auxiliary Hardware: ANSI A156.16.
 - a. Shelf Bracket: B04041, japanned or enameled finish.

- b. Grommets for Cable Passage through Countertops: 51-mm (2-inch) molded-plastic grommets and matching plastic caps with slot for wire passage.
- c. Crutch hangers: Two rods spaced to support crutches welded to flat plate. All welds ground smooth.
 - 1) Type 304 stainless steel with satin finish
 - 2) Size; Plate 230 mm (9 inches) by 50 mm (2 inches) with four countersunk predrilled screw holes. Rods: 250 mm (10 inches) projection.
- d. Label Holders: Plastic C-channel adhesive label holders: 12mm (1/2 inch) wide by 152mm (6 inch) long.
- 4. Fabricated Counter Supports:
 - a. Steel angle with flanges both sides.
 - b. 3 mm (1/8 inch) steel bracket capable of supporting 1,000 pounds.
 - c. Finish - powder coat.
 - d. Size: 24 inches by 24 inches with
 - e. Twelve (12) predrilled ¼ inch mounting holes each flange.

2.8 MOISTURE CONTENT

- A. Moisture content of lumber and millwork at time of delivery to site.
 - 1. Interior finish lumber, trim, and millwork 32 mm (1-1/4 inches) or less in nominal thickness: 12 percent on 85 percent of the pieces and 15 percent on the remainder.
 - 2. Exterior treated or untreated finish lumber and trim 100 mm (4 inches) or less in nominal thickness: 15 percent.
 - 3. Moisture content of other materials shall be in accordance with the standards under which the products are produced.

2.9 FABRICATION

- A. General:
 - 1. Except as otherwise specified, use AWI Custom Grade for architectural woodwork and interior millwork.
 - 2. Finish woodwork shall be free from pitch pockets.
 - 3. Except where special profiles are shown, trim shall be standard stock molding and members of the same species.
 - 4. Edges of members in contact with concrete or masonry shall have a square corner caulking rebate.
 - 5. Fabricate members less than 4 m (14 feet) in length from one piece of lumber, back channeled and molded as shown.
 - 6. Plastic Laminate Work:
 - a. Factory glued to either a plywood or a particle board core, thickness as shown or specified.

- b. Cover exposed edges with plastic laminate, except where aluminum, stainless steel, or plastic molded edge strips are shown or specified. Use plastic molded edge strips on 19 mm (3/4-inch) molded thick or thinner core material.
 - c. Provide plastic backing sheet on underside of countertops, including back splashes and end splashes of countertops.
 - d. Use backing sheet on concealed large panel surface when decorative face does not occur
 - e. Provide one grommet above each electrical outlet in wall below.
7. Tack Panel
- a. Fabric-Wrapped Panels: Panel construction consisting of facing material adhered or attached to face, edges and back border of dimensionally stable core; with rigid edges to reinforce panel perimeter against warping and damage.
 - b. Fabric Facing: Stretched straight, on the grain, tight, square, and free from puckers, ripples, wrinkles, sags, blisters, seams, adhesive, or other foreign matter. Applied with visible surfaces fully covered.
 - 1) Where square corners are indicated, tailor corners.
 - 2) Where radius or other non-square corners are indicated, attach facing material so there are no seams or gathering of material.
 - 3) Where fabrics with directional or repeating patterns or directional weave are indicated, mark fabric top and attach fabric in same direction so pattern or weave matches in adjacent panels.

PART 3 - EXECUTION

3.1 ENVIRONMENTAL REQUIREMENTS

- A. Maintain work areas and storage areas to a minimum temperature of 21⁰C (70⁰F) for not less than 10 days before and during installation of interior millwork.
- B. Do not install finish lumber or millwork in any room or space where wet process systems such as concrete, masonry, or plaster work is not complete and dry.

3.2 INSTALLATION

- A. General:
 - 1. Millwork receiving transparent finish shall be primed and back-painted on concealed surfaces. Set no millwork until primed and back-painted.

2. Secure trim with fine finishing nails, screws, or glue as required.
 3. Set nails for putty stopping. Use washers under bolt heads where no other bearing plate occurs.
 4. Seal cut edges of preservative and fire retardant treated wood materials with a certified acceptable sealer.
 5. Coordinate with plumbing and electrical work for installation of fixtures and service connections in millwork items.
 6. Plumb and level items unless shown otherwise.
 7. Nail finish at each blocking, lookout, or other nailer and intermediate points; toggle or expansion bolt in place where nails are not suitable.
- B. Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation.
1. Fasten wall cabinets through back, near top and bottom, at ends and not more than 400mm (16 inches) o.c. with No. 10 wafer-head sheet metal screws through metal backing or metal framing behind wall finish.
- C. Countertops: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop. Calk space between backsplash and wall with sealant specified in Division 07 Section "Joint Sealants."
- D. Fabric Wrapped Tack Panels
1. Match and level fabric pattern and grain among adjacent panels.
 2. Clip loose threads; remove pills and extraneous materials.
 3. Clean panels with fabric facing, on completion of installation, to remove dust and other foreign materials according to manufacturer's written instructions.
- F. Shelves:
1. Install vertical slotted shelf standards, ANSI A156.9, B04103 to studs with toggle bolts through each fastener opening. Double slotted shelf standards may be used where adjacent shelves terminate.
 - a. Install brackets ANSI A156.9, B04113, providing supports for shelf not over 900 mm (36 inches) on center and within 13 mm (1/2 inch) of shelf end unless shown otherwise.
 - b. Install shelves on brackets so front edge is restrained by bracket.

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