

**SECTION 06 20 00**  
**FINISH CARPENTRY**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

- A. This section specifies interior millwork.
- B. Items specified.
  - Counter Shelf
  - Counter or Work Tops
  - Counter with Base and Upper Cabinets
  - Tackable Surfaces
  - Quartz Counters
  - Solid Surface Wall Finish
  - Mounting Strips and Shelves

**1.2 RELATED WORK**

- A. Fabricated Metal brackets, bench supports and countertop legs: Section 05 50 00, METAL FABRICATIONS.
- B. Framing, furring and blocking: Section 06 10 00, ROUGH CARPENTRY.
- C. Wood doors: Section 08 14 00, WOOD DOORS.
- D. Other Countertops: Division 11, EQUIPMENT.
- E. Electrical light fixtures and duplex 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. Thermoplastic 3D Laminate finished MDF, 150 mm by 300 mm (six by twelve inches).
  - 2. Quartz Solid Surface Samples.
  - 3. Solid Surface Samples.
  - 4. Tackable Surface
- D. Certificates:
  - 1. Indicating fire retardant treatment of materials meet the requirements specified.
  - 2. Indicating moisture content of materials meet the requirements specified.

E. List of acceptable sealers for fire retardant and preservative treated materials.

F. Manufacturer's literature and data:

1. Finish hardware
2. Sinks with fittings
3. Electrical components

#### **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 weathertight 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
  - A167-99 (R2009).....Stainless and Heat-Resisting Chromium-Nickel  
Steel Plate, Sheet, and Strip
  - B26/B26M-09.....Aluminum-Alloy Sand Castings
  - B221-08.....Aluminum and Aluminum-Alloy Extruded Bars, Rods,  
Wire, Profiles, and Tubes
  - 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. Hardwood Plywood and Veneer Association (HPVA):
- HP1-09.....Hardwood and Decorative Plywood
- F. National Particleboard Association (NPA):
- A208.1-99.....Wood Particleboard

- G. American Wood-Preservers' Association (AWPA):  
AWPA C1-03.....All Timber Products - Preservative Treatment by  
Pressure Processes
- H. Architectural Woodwork Institute (AWI):  
AWI-99.....Architectural Woodwork Quality Standards and  
Quality Certification Program
- I. National Electrical Manufacturers Association (NEMA):  
LD 3-05.....High-Pressure Decorative Laminates
- J. U.S. Department of Commerce, Product Standard (PS):  
PS20-05.....American Softwood Lumber Standard
- K. Military Specification (Mil. Spec.):  
MIL-L-19140E.....Lumber and Plywood, Fire-Retardant Treated
- L. 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: MM-L-736, species as specified for each item.
- D. Softwood: PS-20, exposed to view appearance grades:
1. Use C select or D select, vertical grain for transparent finish including stain transparent finish.

2. Use Prime for painted or opaque finish.

E. Use edge grain Wood members exposed to weather.

## **2.2 PLYWOOD**

A. Softwood Plywood:

1. Prod. Std.

2. Grading and Marking:

a. Each sheet of plywood shall bear the mark of a recognized association or independent inspection agency that maintains continuing control over the quality of the plywood.

b. The mark shall identify the plywood by species group or identification index, and shall show glue type, grade, and compliance with PS1.

3. Plywood, 13 mm (1/2 inch) and thicker; not less than five ply construction, except 32 mm (1-1/4 inch) thick plywood not less than seven ply.

4. Other: As specified for item.

## **2.3 MEDIUM-DENSITY FIBERBOARD (MDF)**

A. ANSI A208.2, Grade MD, made with binder containing no urea formaldehyde.

## **2.4 THERMOPLASTIC 3D LAMINATE (TPL)**

A. NEMA LD-3.

B. Exposed decorative surfaces including both sides of cabinet doors, and for items having thermoplastic 3D laminate finish.

1. Thermoplastic laminate **.71 mm (0.028") gauge** on MDF, substrate to be fully encapsulated.

C. Cabinet Interiors including Shelving: Both of following options to comply with NEMA, CLS as a minimum.

1. Thermoplastic laminate **.71 mm (0.028") gauge** on MDF, substrate to be fully encapsulated.

D. Membrane Pressing Fabrication: Forming type.

**E. Basis of Design Product: Kydex XD 3D Laminate, as specified in the MILLWORK FINISH LEGEND (sheet A-602). Substitute Products submitted from other manufacturers must meet minimum performance attributes of specified product.**

## **2.5 QUARTZ SOLID SURFACE MATERIAL (SS)**

**A. Quartz Solid surfaces material**

**B. Material shall have minimum physical and performance properties specified.**

**1. Thickness 20 mm (.7874") at worksurface and counter locations, top caps, backsplash and sidesplash locations.**

**2. Seam width: <1/8"**

**3. Class A (Class 1)**

**C. Basis of Design Product: Cambria Quartz, as specified in the MILLWORK FINISH LEGEND (sheet A-602). Substitute Products submitted from other manufacturers must meet minimum performance attributes of specified product.**

## **2.6 SOLID SURFACE MATERIAL (S)**

**A. Solid surfaces material**

**B. Material shall have minimum physical and performance properties specified.**

**1. Thickness 6mm (1/4") at wall surfaces.**

**2. Seam width: <1/8"**

**3. Class A (Class 1)**

**C. Basis of Design Product: Corian Solid Surface Material, as specified in the WALL FINISHES LEGEND (sheet A-602). Substitute Products submitted from other manufacturers must meet minimum performance attributes of specified product.**

## **2.7 TACKABLE SURFACE MATERIAL (TS)**

**A. Tackable surfaces material**

**B. Material shall have minimum physical and performance properties specified.**

**1. Thickness 6mm (1/4") at wall surfaces.**

**2. Width 1220mm (48")**

**2. Backing: Jute**

**3. Class B (Class II)**

**C. Basis of Design Product: Forbo Bulletin Board, as specified in the WALL FINISHES LEGEND (sheet A-602). Substitute Products submitted from other manufacturers must meet minimum performance attributes of specified product.**

## **2.8 ADHESIVE**

- A. For Thermoplastic 3D Laminate: Bostik 7132R/Boscodur or equal product approved by manufacturer of thermoplastic laminate.
- B. For Tackable Surface L910 Adhesive or equal product approved by manufacturer.

## **2.9 STAINLESS STEEL**

ASTM A167, Type 302 or 304.

## **2.10 ALUMINUM CAST**

ASTM B26

## **2.11 ALUMINUM EXTRUDED**

ASTM B221

## **2.12 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.
  - b. 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.
  - c. Sliding Door Tracks: B07063.
  - d. Adjustable Shelf Standards: B4061 with shelf rest B04083.
  - e. Concealed Hinges: B1601, 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.
- 2. Cabinet Locks: ANSI A156.11.
  - a. Drawers and Hinged Door: E07262.

- b. Sliding Door: E07162.
- 3. Auxiliary Hardware: ANSI A156.16.
  - a. Shelf Bracket: B04041, japanned or enameled finish.
  - b. Combination Garment rod and Shelf Support: B04051 japanned or enamel finish.
  - c. Closet Bar: L03131 chrome finish of required length.
  - d. Handrail Brackets: L03081 or L03101.
    - 1) Cast Aluminum, satin polished finish.
    - 2) Cast Malleable Iron, japanned or enamel finish.
  - e. Grommets: 2 3/8-inch OD minimum, black, molded-plastic grommets and matching plastic caps with slot for wire passage. Coordinate size of grommets to accommodate size and quantity of wires passing through grommet.
- 4. Steel Channel Frame and Leg supports for Counter top. Fabricated under Section 05 50 00, METAL FABRICATIONS.
- 5. Thru-Wall Counter Brackets:
  - a. Steel angles drilled for fasteners on 100 mm (4 inches) centers.
  - b. Baked enamel prime coat finish.
- 6. Flush Mounted Counter Bracket: Fabricated from horizontal aluminum "T" section and vertical aluminum "L" section. Vertical leg designed to attach to side of supporting stud and concealed by wall finish.
  - a. Size: Coordinate with depth and height of counter.
  - b. Load Capacity: 195 kg (430 lbs).
  - c. Faceplates: Provide 102mm by 102mm (4-inch by 4-inch) aluminum faceplates with adhesive backing and notch to fit around vertical flange of flush mounted counter support bracket.
  - d. Finish: Powder coat complying with AAMA 605.2. Color to match Architects sample.
- 7. Primers: Manufacturer's standard primer for steel providing baked enamel finish.

## **2.13 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.

#### **2.14 FIRE RETARDANT TREATMENT**

- A. Where wood members and plywood are specified to be fire retardant treated, the treatment shall be in accordance with Mil. Spec. MIL-L19140.
- B. Treatment and performance inspection shall be by an independent and qualified testing agency that establishes performance ratings.
- C. Each piece of treated material shall bear identification of the testing agency and shall indicate performance in accordance with such rating of flame spread and smoke developed.
- D. Treat wood for maximum flame spread of 25 and smoke developed of 25.
- E. Fire Resistant Softwood Plywood:
  - 1. Use Grade A, Exterior, plywood for treatment.
  - 2. Meet the following requirements when tested in accordance with ASTM E84.
    - a. Flame spread: 0 to 25.
    - b. Smoke developed: 100 maximum
- F. Fire Resistant Hardwood Plywood:
  - 1. Core: Fire retardant treated softwood plywood.
  - 2. Hardwood face and back veneers untreated,
  - 3. Factory seal panel edges, to prevent loss of fire retardant salts.

#### **2.15 PRESERVATIVE TREATMENT**

Wood members and plywood exposed to weather or in contact with plaster, masonry or concrete, including wood members used for rough framing of millwork items except heart-wood Redwood and Western Red Cedar shall be preservative treated in accordance with AWP Standards.

- B. Use Grade A, exterior plywood for treatment.

#### **2.16 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. Plywood shall be not less than 13 mm (1/2 inch), unless otherwise shown or specified.
  - 5. Edges of members in contact with concrete or masonry shall have a square corner caulking rebate.
  - 6. Fabricate members less than 4 m (14 feet) in length from one piece of lumber, back channeled and molded as shown.



7. Interior trim and items of millwork to be painted may be fabricated from jointed, built-up, or laminated members, unless otherwise shown on drawings or specified.
8. Thermoplastic Laminate Work:
  - a. Factory glued to a MDF core, thickness as shown or specified.
  - b. Fully encapsulate MDF or HDF substrate with thermoplastic laminate.
- B. Thermoplastic Laminate Base and Upper Cabinets:
  1. Fabricate to AWI premium grade construction in conformance with AWI Section 400, CASEWORK.
  2. Use softwood for structural framing member's standard sizes, space not over 400 mm (16 inches) on center.
  5. Use pulls and concealed hinges on doors.
  6. Use adjustable shelf standards with shelf rests.
  7. Use thermoplastic 3D plastic laminate on exposed surfaces including interior of cupboard cabinet.
  8. Overlay frame of apron with drawer and door face.
  9. Provide cut outs for electrical devices and outlets.
  10. All cabinets to be lockable.
- C. Quartz Solid Surface Counter & Top Caps:
  1. Fabricate with solid surface material 20 mm (.7874").
  2. Assemble back splash and end splash to counter top w/ 20mm (.7874") solid surface material.
  3. Use one piece counters for straight runs.
  4. Provide cut outs for electrical devices and outlets w/ grommets.

### **PART 3 - EXECUTION**

#### **3.1 ENVIRONMENTAL REQUIREMENTS**

- A. Maintain work areas and storage areas to a minimum temperature of 21<sup>0</sup>C (70<sup>0</sup>F) 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.
8. Exterior Work: Joints shall be close fitted, metered, tongue and grooved, rebated, or lapped to exclude water and made up in thick white lead paste in oil.

F. Shelves:

1. Install mounting strip at back wall and end wall for shelves in closets where shown secured with toggle bolts at each end and not over 600 mm (24 inch) centers between ends.
  - a. Nail Shelf to mounting strip at ends and to back wall strip at not over 900 mm (36 inches) on center.
  - b. Install metal bracket, ANSI A156.16, B04041, not over 1200 mm (4 feet) centers when shelves exceed 1800 mm (6 feet) in length.
  - c. Install metal bracket, ANSI A156.16, B04051, not over 1200 mm (4 feet) on centers where shelf length exceeds 1800 mm (6 feet) in length with metal rods, clothes hanger bars ANSI A156.16, L03131, of required length, full length of shelf.
2. 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.

I. Install with butt joints in straight runs and miter at corners.

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