

**SECTION 06 20 00****FINISH CARPENTRY****PART 1 - GENERAL****1.1 DESCRIPTION**

- A. This section specifies exterior and interior millwork.
- B. Items specified.
  - 1. Door trim
  - 2. Door frames
  - 3. Window trim
  - 4. Interior base
  - 5. Repairs to existing interior trim and stair railing
  - 6. Repair or replacement of exterior trim including, but not limited to, eaves, fascia and decorative trim
  - 7. Mounting Strips, Shelves, and Rods
  - 8. Chair Rail
  - 9. Moldings

**1.2 RELATED WORK**

- A. Framing, furring and blocking: Section 06 10 00, ROUGH CARPENTRY.
- B. Wood doors: Section 08 14 33, STILE AND RAIL WOOD DOORS.
- C. Color and texture of finish: Section 09 06 00, SCHEDULE FOR FINISHES.
- D. Casework: Section 12 32 00, MANUFACTURED WOOD CASEWORK.
- E. Countertops: Section 012 36 00: COUNTERTOPS.
- F. 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. Cellular PVC Trim: Submit three material samples of each type and profile of trim type required, 300 mm ( 12 inch) long.

## D. Certificates:

1. Indicating preservative 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. Cellular PVC Trim and accessories.

**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 VA. Store at a minimum temperature of 21<sup>0</sup> C (70<sup>0</sup> 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):
  1. A36/A36M-05 Structural Steel
  2. F436-07 Hardened Steel Washers
- C. American Hardboard Association (AHA):
  1. A135.4-04 Basic Hardboard
- D. Builders Hardware Manufacturers Association (BHMA):
  1. A156.9-03 Cabinet Hardware
  2. A156.11-04 Cabinet Locks
  3. A156.16-02 Auxiliary Hardware

E. Hardwood Plywood and Veneer Association (HPVA):

1. HP1-04 Hardwood and Decorative Plywood

F. National Particleboard Association (NPA):

1. A208.1-99 Wood Particleboard

G. American Society of Mechanical Engineers (ASME):

1. B18.2.1-96(R2005) Square and Hex Bolts and Screws(Inch Series)

H. American Wood-Preservers' Association (AWPA):

1. AWPA C1-03 All Timber Products - Preservative Treatment by Pressure Processes

I. Architectural Woodwork Institute (AWI):

1. AWI-99 Architectural Woodwork Quality Standards and Quality Certification Program

J. National Electrical Manufacturers Association (NEMA):

1. LD 3-05 High-Pressure Decorative Laminates
2. LD 3.1-95 Application, Fabrication and Installation of High-Pressure Decorative Laminates

K. U.S. Department of Commerce, Product Standard (PS):

1. PS1-95 Construction and Industrial Plywood
2. PS20-05 American Softwood Lumber Standard

L. Federal Specifications (Fed. Spec.):

1. A-A-1922A Shield Expansion
2. A-A-1936 Contact Adhesive
3. FF-N-836D Nut, Square, Hexagon Cap, Slotted, Castle
4. FF-S-111D(1) Screw, Wood
5. 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 CELLULAR PVC TRIM

A. Trim boards for exterior trim including, but not limited to, fascias, soffits, eaves, frieze and rake boards and door/window trim.

1. Material: Free foam cellular pvc wit small-cell microstructure and density at .55 grams/cm3 free of voids, cracks and other defects.
  - a. Flame Spread: 25 - ASTM E84 40.
  - b. Impact Resistance: MFE less than 100 ft.lbs. - ASTM D4495.
  - c. Tensile Strength: 2256 psi - ASTM D638.
  - d. Water Absorption: 0.15% - ASTM D570.
2. Fasteners: Stainless steel or hot dipped galvanised designed for use with wood trim and wood siding.
3. Adhesives: Glue all butt joints between trim pieces such as window surrounds, long fascia runs, etc with cellular pvc cement to prevent joint separation.
  - a. Adhesive as specified by trim product manufacturer to insure compatibility with trim material.

## 2.3 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. Shelving Plywood:
  - a. Interior Type, any species group.
  - b. Veneer Grade: A-B or B-C.
5. Other: As specified for item.

B. Hardwood Plywood:

1. HPVA: HP.1
2. Species of face veneer shall be as shown or as specified in connection with each particular item.
3. Inside of Building:
  - a. Use Type II (interior) A grade veneer for transparent finish.
  - b. Use Type II (interior) Sound Grade veneer for paint finish.
4. On Outside of Building:
  - a. Use Type I, (exterior) A Grade veneer for natural or stained and varnish finish.
  - b. Use Type I, (exterior) Sound Grade veneer for paint finish.

**2.4 PARTICLEBOARD**

- A. NPA A208.1
- B. Plastic Laminate Particleboard Cores:
  1. Use Type 2, Grade 2-M-2, exterior bond, for tops with sinks.

**2.5 ADHESIVE**

- A. For Interior Millwork: Unextended urea resin, unextended melamine resin, phenol resin, or resorcinol resin.
- B. For Exterior Millwork: Unextended melamine resin, phenol resin, or resorcinol resin.

**2.6 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 nonferrous 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. Door in seismic zones: B03182.
  - 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. Adjustable Shelf Standards: B4061 with shelf rest B04083.
  - d. Concealed Hinges: B1601, minimum 110 degree opening.
  - e. Vertical Slotted Shelf Standard: B04103 with shelf brackets B04113, sized for shelf depth.
- 2. 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.
- 3. Primers: Manufacturer's standard primer for steel providing baked enamel finish.

**2.7 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.

**2.8 PRESERVATIVE TREATMENT**

- A. 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.

**2.9 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. 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 or sealing 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.

B. Mounting Strips, Shelves and Rods:

1. Cut mounting strips from 25 mm by 100 mm (1 by 4 inches) softwood stock, with exposed edge slightly rounded.
2. Cut wood shelf from softwood 1 inch stock, of width shown, exposed edge slightly rounded. Option: Use 19 mm (3/4 inch) thick plywood with 19 mm (3/4 inch) softwood edge nosing on exposed edge, slightly rounded.
3. Plastic laminate covered, 19 mm (3/4 inch) thick plywood or particle board core with edges and ends having plastic molded edge strips. Size, finish and number as shown.
4. Rod or Closet Bar: L03131. Combination Garment and Shelf Support, intermediate support for closet bar: B04051 for rods over 1800 mm (6 feet) long.

C. Counter or Work Tops:

1. Fabrication with plastic laminate over 32 mm (1-1/4 inch) thick core unless shown otherwise.
  - a. Use decorative laminate for exposed edges of tops and on back splash and end splash.
  - b. Assemble back splash and end splash to counter top.
  - c. Use one piece counters for straight runs.
  - d. Miter corners for field joints with overlapping blocking on underside of joint.

D. Wood Handrails:

1. Fabricate from Maple or Birch.
2. AWI Premium Grade.
3. Fabricate in one piece and one length when practical.
4. Fabricate curved sections for ends of rails to return to wall and where rails change slope or direction.
5. Joints are permitted only where rail changes direction or slope, or

where necessary for field erection or shipping.

6. Scarf or dowel all joints to provide a smooth and rigid connection. Glue all joints.
7. Fit joints, to produce a hair-line crack.
8. Completely shop fabricated in accordance with approved shop drawings.

### **PART 3 - EXECUTION**

#### **3.1 ENVIRONMENTAL REQUIREMENTS**

- A. Maintain work areas and storage areas to a minimum temperature of 21° C (70° 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 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.
9. Exterior Cellular PVC Trim: Comply with manufacturer's product catalog installation instructions and product technical bulletin instructions.

##### **B. 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.
- C. Handrails:
- 1. Install in one piece and one length when practical.
  - 2. Where rails change slope or direction, install special curved sections and ends of rails to return to wall, glue all field joints.
  - 3. Secure rails with wood screws at 450 mm (18 inches) on centers to metal balustrades top rail.
  - 4. Install brackets within 300 mm (12 inches) of ends of handrails and at every spaced intervals between not exceeding 1500 mm (5 feet) on centers at intervals between as shown. Anchor brackets as detailed and rails to brackets with screws.
- D. Install with butt joints in straight runs and miter at corners.

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