

**SECTION 06 10 00**  
**ROUGH CARPENTRY**

**PART 1 - GENERAL**

**1.1 DESCRIPTION:**

Section specifies wood blocking, framing, sheathing, furring, nailers, sub-flooring, rough hardware, plywood panels and light wood construction as needed.

**1.2 RELATED WORK:**

A. Painted finishes: 09 91 00, PAINTING.

**1.3 SUBMITTALS:**

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Shop Drawings showing framing connection details, fasteners, connections and dimensions.

**1.4 PRODUCT DELIVERY, STORAGE AND HANDLING:**

- A. Protect lumber and other products from dampness both during and after delivery at site.
- B. Pile lumber in stacks in such manner as to provide air circulation around surfaces of each piece.
- C. Stack plywood and other board products so as to prevent warping.
- D. Locate stacks on well drained areas, supported at least 150 mm (6 inches) above grade and cover with well ventilated sheds having firmly constructed over hanging roof with sufficient end wall to protect lumber from driving rain.

**1.5 APPLICABLE PUBLICATIONS:**

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in the text by basic designation only.
- B. American Forest and Paper Association (AFPA):  
National Design Specification for Wood Construction  
NDS-05.....Conventional Wood Frame Construction
- C. American Institute of Timber Construction (AITC):  
A190.1-07.....Structural Glued Laminated Timber
- D. American Society of Mechanical Engineers (ASME):  
B18.2.1-96(R2005).....Square and Hex Bolts and Screws  
B18.2.2-87.....Square and Hex Nuts  
B18.6.1-97.....Wood Screws

- B18.6.4-98(R2005).....Thread Forming and Thread Cutting Tapping Screws  
and Metallic Drive Screws
- E. American Plywood Association (APA):  
E30-07.....Engineered Wood Construction Guide
- F. American Society for Testing And Materials (ASTM):  
A47-99(R2009).....Ferritic Malleable Iron Castings  
A48-03(R2008).....Gray Iron Castings  
A653/A653M-10.....Steel Sheet Zinc-Coated (Galvanized) or Zinc-  
Iron Alloy Coated (Galvannealed) by the Hot Dip  
Process  
C954-10.....Steel Drill Screws for the Application of Gypsum  
Board or Metal Plaster Bases to Steel Studs from  
0.033 inch (2.24 mm) to 0.112-inch (2.84 mm) in  
thickness  
C1002-07.....Steel Self-Piercing Tapping Screws for the  
Application of Gypsum Panel Products or Metal  
Plaster Bases to Wood Studs or Metal Studs  
D143-09.....Small Clear Specimens of Timber, Method of  
Testing  
D1760-01.....Pressure Treatment of Timber Products  
D2559-10.....Adhesives for Structural Laminated Wood Products  
for Use Under Exterior (Wet Use) Exposure  
Conditions  
D3498-11.....Adhesives for Field-Gluing Plywood to Lumber  
Framing for Floor Systems  
F844-07.....Washers, Steel, Plan (Flat) Unhardened for  
General Use  
F1667-08.....Nails, Spikes, and Staples
- G. Federal Specifications (Fed. Spec.):  
MM-L-736C.....Lumber; Hardwood
- H. Commercial Item Description (CID):  
A-A-55615.....Shield, Expansion (Wood Screw and Lag Bolt Self  
Threading Anchors)
- I. Military Specification (Mil. Spec.):  
MIL-L-19140E.....Lumber and Plywood, Fire-Retardant Treated
- J. Truss Plate Institute (TPI):  
TPI-85.....Metal Plate Connected Wood Trusses
- K. U.S. Department of Commerce Product Standard (PS)  
PS 1-95.....Construction and Industrial Plywood

PS 20-05.....American Softwood Lumber Standard

**PART 2 - PRODUCTS**

**2.1 LUMBER:**

- A. Unless otherwise specified, each piece of lumber bear grade mark, stamp, or other identifying marks indicating grades of material, and rules or standards under which produced.
  - 1. Identifying marks in accordance with rule or standard under which material is produced, including requirements for qualifications and authority of the inspection organization, usage of authorized identification, and information included in the identification.
  - 2. Inspection agency for lumber approved by the Board of Review, American Lumber Standards Committee, to grade species used.
- B. Lumber Other Than Structural:
  - 1. Unless otherwise specified, species graded under the grading rules of an inspection agency approved by Board of Review, American Lumber Standards Committee.
  - 2. Framing lumber: Minimum extreme fiber stress in bending of 1100.
  - 3. Furring, blocking, nailers and similar items 100 mm (4 inches) and narrower Standard Grade; and, members 150 mm (6 inches) and wider, Number 2 Grade.
- C. Sizes:
  - 1. Conforming to Prod. Std., PS20.
  - 2. Size references are nominal sizes, unless otherwise specified, actual sizes within manufacturing tolerances allowed by standard under which produced.
- D. Moisture Content:
  - 1. At time of delivery and maintained at the site.
  - 2. Boards and lumber 50 mm (2 inches) and less in thickness: 19 percent or less.
  - 3. Lumber over 50 mm (2 inches) thick: 25 percent or less.
- E. Preservative Treatment:
  - 1. Do not treat Heart Redwood and Western Red Cedar.
  - 2. Treat wood members and plywood exposed to weather or in contact with plaster, masonry or concrete, including framing of open roofed structures; sills, sole plates, furring, and sleepers that are less than 600 mm (24 inches) from ground; nailers, edge strips, blocking, crickets, curbs, cant, vent strips and other members used in connection with roofing and flashing materials.

3. Treat other members specified as preservative treated (PT).
4. Preservative treat by the pressure method complying with ASTM D1760, except any process involving the use of Chromated Copper arsenate (CCA) for pressure treating wood is not permitted.

## 2.2 PLYWOOD

- A. Comply with Prod. Std., PS 1.
- B. Bear the mark of a recognized association or independent inspection agency that maintains continuing control over quality of plywood which identifies compliance by veneer grade, group number, span rating where applicable, and glue type.
- C. Sheathing:
  1. APA rated Exposure 1 or Exterior; panel grade CD or better.
  2. Wall sheathing:
    - a. Minimum 9 mm (11/32 inch) thick with supports 400 mm (16 inches) on center and 12 mm (15/32 inch) thick with supports 600 mm (24 inches) on center unless specified otherwise.
    - b. Minimum 1200 mm (48 inches) wide at corners without corner bracing of framing.

## 2.3 ROUGH HARDWARE AND ADHESIVES:

- A. Anchor Bolts:
  1. ASME B18.2.1 and ANSI B18.2.2 galvanized, 13 mm (1/2 inch) unless shown otherwise.
  2. Extend at least 200 mm (8 inches) into masonry or concrete with ends bent 50 mm (2 inches).
- B. Miscellaneous Bolts: Expansion Bolts: C1D, A-A-55615; lag bolt, long enough to extend at least 65 mm (2-1/2 inches) into masonry or concrete. Use 13 mm (1/2 inch) bolt unless shown otherwise.
- C. Washers
  1. ASTM F844.
  2. Use zinc or cadmium coated steel or cast iron for washers exposed to weather.
- D. Screws:
  1. Wood to Wood: ANSI B18.6.1 or ASTM C1002.
  2. Wood to Steel: ASTM C954, or ASTM C1002.
- E. Nails:
  1. Size and type best suited for purpose unless noted otherwise. Use aluminum-alloy nails, plated nails, or zinc-coated nails, for nailing wood work exposed to weather and on roof blocking.

2. ASTM F1667:
  - a. Common: Type I, Style 10.
  - b. Concrete: Type I, Style 11.
  - c. Barbed: Type I, Style 26.
  - d. Underlayment: Type I, Style 25.
  - e. Masonry: Type I, Style 27.
  - f. Use special nails designed for use with ties, strap anchors, framing connectors, joists hangers, and similar items. Nails not less than 32 mm (1-1/4 inches) long, 8d and deformed or annular ring shank.

F. Adhesives:

1. For field-gluing plywood to lumber framing floor or roof systems:  
ASTM D3498.

**PART 3 - EXECUTION**

**3.1 INSTALLATION OF FRAMING AND MISCELLANEOUS WOOD MEMBERS:**

- A. Conform to applicable requirements of the following:
  1. AFPA National Design Specification for Wood Construction for timber connectors.
  2. AITC Timber Construction Manual for heavy timber construction.
  3. AFPA WCD-number 1, Manual for House Framing for nailing and framing unless specified otherwise.
  4. APA for installation of plywood or structural use panels.
  5. ASTM F 499 for wood underlayment.
  6. TPI for metal plate connected wood trusses.
- B. Fasteners:
  1. Bolts:
    - a. Fit bolt heads and nuts bearing on wood with washers.
    - b. Countersink bolt heads flush with the surface of nailers.
    - c. Embed in concrete and solid masonry or use expansion bolts. Special bolts or screws designed for anchor to solid masonry or concrete in drilled holes may be used.
    - d. Use toggle bolts to hollow masonry or sheet metal.
    - e. Use bolts to steel over 2.84 mm (0.112 inch, 11 gage) in thickness. Secure wood nailers to vertical structural steel members with bolts, placed one at ends of nailer and 600 mm (24 inch) intervals between end bolts. Use clips to beam flanges.
  2. Drill Screws to steel less than 2.84 mm (0.112 inch) thick.
    - a. ASTM C1002 for steel less than 0.84 mm (0.033 inch) thick.

- b. ASTM C 954 for steel over 0.84 mm (0.033 inch) thick.
- 3. Power actuated drive pins may be used where practical to anchor to solid masonry, concrete, or steel.
- 4. Screws to Join Wood:
  - a. Where shown or option to nails.
  - b. ASTM C1002, sized to provide not less than 25 mm (1 inch) penetration into anchorage member.
  - c. Spaced same as nails.

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