

SECTION 06100

ROUGH CARPENTRY

PART 1 - GENERAL

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1.01 RELATED DOCUMENTS

- A. General provisions of the Contract, including General and Supplementary Conditions, Division 1 Specification Sections and Drawings, apply to this Section.

1.02 SUMMARY

- A. Work Included:
  1. Wood grounds, nailers and blocking.
  2. Plywood backing panels for equipment and for indicated applications.
  3. Plywood sheathing at all applications.

1.03 DEFINITIONS

- A. Rough carpentry includes carpentry work not specified as part of other sections and which is generally not exposed, except as otherwise indicated.

1.04 PERFORMANCE REQUIREMENTS

- A. All lumber shall be Fire-Retardant Treated as specified.

1.05 SUBMITTALS

- A. Material Certificates: Submit listing of species and grade selected for each use, and submit evidence of compliance with specified requirements. Compliance may be in form of a signed copy of applicable portion of lumber producer's grading rules showing design values for selected species and grade. Design values shall be as approved by the Board of Review of American Lumber Standards Committee.
- B. Wood Treatment Data: Submit chemical treatment manufacturer's instructions for handling, storing, installation and finishing of treated material.
  1. Preservative Treatment: For each type specified, include certification by treating plant stating type of preservative solution and pressure process used, net amount of preservative retained and conformance with applicable standards.
  2. For waterborne treatment include statement that moisture content of treated materials was reduced to levels indicated prior to shipment to project site.
  3. Fire-Retardant Treatment: Include certification by treating plant that treated material complies with specified standard and other requirements.
  4. Documentation for wood panel products indicating that no urea formaldehyde has been added to the product.
  5. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements.
    - a. Indicate type of preservative used, net amount of preservative retained, and chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.
  6. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements.
    - a. Include physical properties of treated materials, both before and after exposure to elevated temperatures when tested according to ASTM D 5516 and ASTM D 5664.
  7. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

- a. Include copies of warranties from chemical treatment manufacturers for each type of treatment.
8. Documentation for each applicable Product, indicating maximum volatile organic compound (VOC).
9. Documentation of wood veneer and lumber product/material qualifications:
  - a. Documentation of country of origin for each species of wood veneer and lumber.
  - b. Documentation of source of wood veneers and lumber (chain of custody), indicating each point of purchase from forest from which the material was harvested to incorporation into the Project
  - c. Documentation of each country of origin's membership status in International Tropical Timber Organization (ITTO).
  - d. Certification of compliance with the Forest Stewardship Council "Principles and Criteria, Document 1.2" for forest management.
  - e. Documentation of status of each specified wood species related to Convention on International Trade in Endangered Species (CITES) Appendices I, II, or III.

#### 1.06 QUALITY ASSURANCE

- A. Provide each type of fire-retardant treated wood products from one source for both treatment and fire-retardant formulation.

#### 1.07 DELIVERY, STORAGE AND HANDLING

- A. Keep materials under cover and dry. Protect against exposure to weather and contact with damp or wet surfaces. Stack lumber as well as plywood and other panels; provide for air circulation within and around stacks and under temporary coverings including polyethylene and similar materials.
  1. For lumber and plywood pressure treated with waterborne chemicals, place spacers between each bundle to provide air circulation.

#### 1.08 PROJECT CONDITIONS

- A. Fit carpentry work to other work; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds and similar supports to allow attachment of other work.

### PART 2 - PRODUCTS

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#### 2.01 LUMBER

- A. Manufacture lumber to comply with PS 20 "American Softwood Lumber Standard" and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee's (ALSC) Board of Review.
- B. Inspection agencies and the abbreviations used to reference with lumber grades and species include the following:
  1. SPIB - Southern Pine Inspection Bureau.
  2. WCLIB - West Coast Lumber Inspection Bureau.
  3. WWPA - Western Wood Products Association.
- C. Factory-mark each piece of lumber with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade, species, moisture content at time of surfacing, and mill.
- D. Nominal sizes are indicated, except as shown by detail dimensions. Provide actual sizes as required by PS 20, for moisture content specified for each use.

1. Provide dressed lumber, S4S, unless otherwise indicated.
2. Provide seasoned lumber with 19 percent maximum moisture content at time of dressing and shipment for sizes 2 inches or less in nominal thickness, unless otherwise indicated.

## 2.02 MISCELLANEOUS LUMBER

- A. Provide fire retardant treated wood for support or attachment of other work including cant strips, bucks, nailers, blocking, grounds, and similar members. Provide lumber of sizes indicated, worked into shapes shown, and as follows:
  1. Grade: Standard Grade light framing size lumber of any species or board size lumber as required. No. 3 Common or Standard grade boards per WCLIB or WWPA rules or No. 3 boards per SPIB rules.
  2. Nominal Size Lumber: 2 inches by 4 inches or board size.

## 2.03 PLYWOOD

- A. Comply with PS 1 "U.S. Product Standard for Construction and Industrial Plywood" for plywood panels.
- B. Factory-mark each plywood panel with APA trademark evidencing compliance with grade requirements.
  1. Exterior Plywood - Marine Grade:
    - a. Product: APA RATED SHEATHING.
    - b. Exposure Durability Classification: EXTERIOR.
    - c. Span Rating: As required to suit framing spacing indicated.
    - d. Provide fire retardant treatment.
  2. Plywood Backing Panels:
    - a. For mounting electrical or telephone equipment, provide fire-retardant treated plywood panels with grade designation, APA C-D PLUGGED INT with exterior glue, in thickness indicated, or, if not otherwise indicated, not less than 3/4-inch.

## 2.04 MISCELLANEOUS MATERIALS

- A. Fasteners and Anchorages: Provide size, type, material and finish as indicated and as recommended by applicable standards, complying with applicable Federal Specifications for nails, staples, screws, bolts, nuts, washers and anchoring devices. Provide metal hangers and framing anchors of the size and type recommended by the manufacturer for each use including recommended nails.
  1. Provide fasteners and anchorages with a hot-dip zinc coating (ASTM A153).
- B. Adhesives for Field Gluing Panels to Framing: Formulation complying with APA AFG-01 that is approved for use with type of construction panel indicated by both adhesive and panel manufacturer.
- C. Water Repellent Preservative: NWWDA-tested and -accepted formulation containing 3-iodo-2-propynyl butyl carbonate (IPBC) as its active ingredient.

## 2.05 WOOD TREATMENT

- A. Comply with applicable requirements of AWWPA Standards C2 (Lumber and C9 (Plywood) and of AWPB Standards listed below. Mark each treated item with the AWPB Quality Mark Requirements.
  1. Pressure treat wood nailers, cants, blocking, stripping and similar concealed members in roofing assemblies or in contact with masonry or concrete with waterborne preservatives to comply with AWPB LP-2.
  2. Pressure treat above ground items with water borne preservatives to a minimum retention of 0.25 pcf. For interior uses, after treatment, kiln-dry lumber and plywood to a maximum moisture content, respectively, of 19 percent and 15 percent.

3. Complete fabrication of treated items prior to treatment, where possible. If cut after treatment, coat cut surfaces to comply with AWPA M4. Inspect each piece of lumber or plywood after drying and discard damaged or defective pieces.
  4. Exclude wood treatments manufactured with arsenic and/or chromium.
- B. Pressure impregnate all lumber and plywood with fire retardant chemicals to comply with AWPA C2 and C31, respectively. Identify lumber with appropriate classification marking of Underwriters Laboratories, Inc., U.S. Testing, Timber Products Inspection or other testing and inspecting agency acceptable to authorities having jurisdiction.
1. Inspect each piece of treated lumber or plywood after drying and discard damaged or defective pieces.
  2. Provide fire retardant treated wood for which a current ICC-ES model code Research Report exists and that evidences compliance of fire retardant treated wood for application indicated.
  3. For interior locations use fire retardant chemical formulation that produces treated lumber and plywood with the following properties under conditions present after installation:
    - a. No reduction takes place in bending strength, stiffness, and fastener holding capacities below values published by manufacturer of chemical formulation that are based on tests by a qualified independent testing laboratory of treated wood products identical to those indicated for this Project under elevated temperature and humidity conditions simulating installed conditions.
    - b. No other form of degradation occurs due to acid hydrolysis or other causes related to manufacture and treatment.
    - c. No corrosion of metal fasteners results from their contact with treated wood.
  4. Exterior Type: Use for exterior locations, in contact with masonry and concrete, in unconditioned spaces and where indicated.
  5. Subject to compliance with requirements, fire retardant treated wood products that may be incorporated in the Work include, but are not limited to, the following:
    - a. Interior Type A Fire Retardant Treated Wood:
      1. Dricon; Hickson Corporation.
      2. Pyro-Guard; Hoover Treated Wood Products.
      3. Flameproof LHC-HTT; Osmose Wood Preserving Co, Inc.
    - b. Exterior Type Fire Retardant Treated Wood:
      1. Exterior Fire-X; Hoover Treated Wood Products.

### PART 3 - EXECUTION

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#### 3.01 EXAMINATION

- A. Examine substrates, adjoining construction and conditions under which the Work is to be installed. Do not proceed with the Work until unsatisfactory conditions have been corrected.

#### 3.02 INSTALLATION

- A. Discard units of material with defects which might impair quality of work, and units which are too small to use in fabricating work with minimum joints or optimum joint arrangement.
- B. Set carpentry work to required levels and lines, with members plumb and true to line and cut and fitted.
- C. Securely attach carpentry work to substrate by anchoring and fastening as shown and as required by recognized standards.

- D. Select fasteners of size that will not penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting of wood; predrill as required.

### 3.03 WOOD GROUNDS, NAILERS AND BLOCKING

- A. Provide wherever shown and where required for attachment of other work. Form to shapes as shown and cut as required for true line and level of work to be attached. Coordinate location with other work involved. Provide wood grounds and blocking for all wall-hung items.
- B. Attach to substrates as required to support applied loading. Countersink bolts and nuts flush with surfaces, unless otherwise indicated.

### 3.04 EQUIPMENT BACKERBOARDS

- A. Provide fire-retardant plywood equipment backer boards in telephone, electrical and communication closets and elsewhere as indicated or required to mount equipment. Comply with local utility company requirements and the Owner's requirements.
- B. Secure to wall using proper fastening devices for substrates encountered, spaced 12 inches on center maximum at perimeter. Locate fasteners 1/2 inch from edges and corners of panel. Provide a minimum of 3 rows of fasteners in the field of each backerboard.
- C. Butt adjacent panels, do not overlap. Install backerboards from tight to the floor to 8 feet above finished floor, all walls within telephone, electrical and communications closets.
- D. Countersink fasteners flush with panel surface.

END OF SECTION