

SECTION 06 1000
ROUGH CARPENTRY

PART 1 GENERAL

1.1 SUMMARY

- A. Work of this Section consists of rough carpentry, and includes but is not limited to the following:
 - 1. Concealed blocking, grounds and nailers.
 - 2. Backing panels for equipment and at built-in casework.
 - 3. Miscellaneous rough carpentry framework for built-in Work furnished to other Sections.
- B. Related Documents and Sections: Examine Contract Documents for requirements that directly affect or are affected by Work of this Section. Other Documents and Sections that directly relate to work of this Section include, but are not limited to:
 - 1. General provisions of the Contract, including General and Supplementary Conditions, and Division 01 General Requirements Specification Sections.
 - 2. Section 07 4113 - FORMED METAL ROOF PANELS.
 - 3. Section 07 5556 - FLUID-APPLIED MEMBRANE ROOFING.
 - 4. Section 07 5557 - INTENSIVE GARDEN ROOF ASSEMBLY.
 - 5. Section 09 2116 - GYPSUM BOARD ASSEMBLIES.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's printed product data, specifications, standard details, installation instructions, use limitations and recommendations for each material used. Provide certifications that materials and systems comply with specified requirements.
 - 1. Wood Treatment Data: For each type of treatment required, provide manufacturer's certification stating chemicals and process used, quantities of chemicals retained, conformance with applicable standards, and certification that moisture content after treatment was reduced to maximum specified.
- B. Quality Assurance Submittals
 - 1. Test Reports: Submit certified test results by a recognized testing laboratory in accordance with specified test methods for each product and/or system indicating physical, chemical and performance characteristics.
 - 2. Certificates: Submit with manufacturer's signature certifying that each product and/or system meets the requirements of the performance characteristics, physical criteria, and applicable standards specified.

1.3 QUALITY ASSURANCE

- A. Regulatory Requirements: Materials and workmanship shall conform to governing laws and building code.
- B. Industry Standard Requirements: Lumber and plywood shall bear the grade-trademark of the association under the rules or standards of which they were produced. Grade-trademarks shall conform to 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.

1. Grades specified are the minimum acceptable. Lumber grades shall be determined in accordance with ASTM D245.
 2. Lumber shall bear the grade mark of an American Lumber Standards Committee, Board of Review-approved agency. Lumber shall conform to USDC PS 20.
 3. Lumber shall bear a mark of mill identification.
 4. Plywood shall comply with APA Ref. 1 grading requirements, USDC PS 1, and ANSI A199.1, using adhesives containing no added urea formaldehyde.
- C. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

1.4 STORAGE AND HANDLING

- A. Materials when delivered to site shall be stacked and stored above the ground under protective coverings or indoors in such manner as to insure proper drainage, ventilation, and protection. No kiln dried materials shall be placed in the building until concrete and masonry Work have been completed, and are sufficiently dry.
- B. Rough carpentry materials shall be stored on elevated piles to allow for air circulation below and tipped in one direction to effectively drain moisture. Lumber shall be wrapped completely, including bottoms, in waterproof tarps. Tarps shall be tied down to protect against wind blow-off. Should delays in Project be anticipated, lumber shall be stored in covered storage trailers.

PART 2 PRODUCTS

2.1 LUMBER MATERIALS

- A. Provide construction grade blocking, furring, sleepers and similar items of each species complying with PS 20. Provide above ground lumber in contact with roofing, flashing, sheet metal, masonry, concrete, dampproofing and waterproofing that is pressure treated with waterborne preservatives complying with AWPB LP-2 and AWPB C2. Dry lumber to maximum moisture content of 15 percent after treatment.
1. Grades:
 - a. Lumber shall be Doug Fir, unless noted otherwise.
 - b. Lumber shall be S4S, unless noted otherwise.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

- A. Preservative Treatment by Pressure Process: AWPB U1; Use Category UC2 for interior construction not in contact with the ground, Use Category UC3b for exterior construction not in contact with the ground, and Use Category UC4a for items in contact with the ground.
1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
 2. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of

Review.

1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece or omit marking and provide certificates of treatment compliance issued by inspection agency].
- D. Application: Treat all rough carpentry items indicated on Drawings, including but not limited to the following:
1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
 2. Wood sills, sleepers, blocking, furring, and similar concealed members in contact with masonry or concrete.

2.3 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
- B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet (3.2 m) beyond the centerline of the burners at any time during the test.
1. Use treatment that does not promote corrosion of metal fasteners.
 2. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.
 3. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201 at 92 percent relative humidity. Use where exterior type is not indicated.
 4. Design Value Adjustment Factors: Treated lumber shall be tested according ASTM D 5664 and design value adjustment factors shall be calculated according to ASTM D 6841.
- C. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Kiln-dry plywood after treatment to a maximum moisture content of 15 percent.
- D. Identify fire-retardant-treated wood with appropriate classification marking of qualified testing agency.
1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece or omit marking and provide certificates of treatment compliance issued by testing agency.
- E. Application: Treat items indicated on Drawings, including but not limited to the following:
1. Concealed blocking.
 2. Roof construction.
 3. Plywood backing panels.

2.4 CONSTRUCTION PANELS / PLYWOOD

A. General:

1. Provide treatment that yields a flame spread rating of not more than 25 when tested according to ASTM E84. Kiln dry after treatment to maximum moisture content of 19 percent. Do not use fire-retardant treatments containing ammonium phosphates or salts.
2. Comply with USDC PS 1 and APA Ref. 1 as applicable. Factory mark each panel with APA trademark showing compliance with requirements.
3. Plywood: Manufacture in accordance with American Plywood Association (APA) standards, marking each sheet grade.

B. Backing Panels:

1. Provide APA trademarked, UL labeled, fire-retardant treated, C-D Plugged Exposure 2 panels 3/4 inch thick unless noted otherwise, and complying with PS 1.

2.5 MISCELLANEOUS MATERIALS

- A. Sill-Sealer Gaskets: Glass-fiber-resilient insulation, fabricated in strip form, for use as a sill sealer; 1-inch nominal thickness, compressible to 1/32 inch; selected from manufacturer's standard widths to suit width of sill members indicated.

2.6 CONNECTING HARDWARE

- A. Use hot dip galvanized or stainless steel hardware when exposed to the exterior, or in preservative-treated wood.

1. Nails: All nails shall be standard steel common wire nails with a full head meeting FS FF-N-101. Screws may be used as acceptable to wood manufacturer.

B. Screws and Bolts:

1. Machine Bolts, anchor bolts, and nuts shall be as per ASTM A307, Grade A.
2. Lag Bolts shall be FS FF-B-561.

- C. Adhesive: 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 manufacturers of both adhesives and panels.

1. Adhesives shall have a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

- D. Inserts, Anchors, and Fasteners: Provide inserts, anchors, anchor bolts, lag bolts, screws, washers, nuts, nails, and other rough hardware. Assist other trades as necessary in the placement of inserts and anchor bolts in concrete and masonry.

1. Furnish full instructions regarding locations, sizes, and other requirements to ensure proper preparation.
2. Provide rough hardware that complies with requirements of the governing laws and codes.

- E. Rough Hardware: Provide rough hardware items for use at roof and other exterior uses hot-dip galvanized in accordance with ASTM A153. Provide other concealed items cadmium plated.

- F. Fasteners for Non-Structural Wood Members to Concrete-filled access floor panels: 1/4 inch diameter x 3-1/4 inch with phillips flat head.

1. Tapcon Masonry Anchors, by ITW Buildex.
 2. Kwik-Con II fastener, by Hilti.
- G. Provide hammer drive anchors and fasteners for securing wood framing, blocking or plywood into masonry of sufficient length to penetrate the receiving member a minimum of 1-1/2 inch.

PART 3 EXECUTION

3.1 COORDINATION

- A. Work under this section shall be properly coordinated with the Work of other sections to assure the steady progress of all the Work of the Contract.

3.2 PREPARATION

- A. Climatic Placement Requirements: If required, provide conditioned environment recommended by manufacturers necessary to install and cure products, including but not limited to:
1. Set conditioned temperature and humidity
 2. Provide temporary heating
 3. Provide ventilation to exhaust chemical fumes, particulates and excess humidity.
- B. Handle products in accordance with manufacturer's instructions and warranty requirement including, but not limited to:
1. Strictly adhering to manufacturer's handling and installation safety requirements.

3.3 INSTALLATION, GENERAL

- A. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.
- B. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- C. Comply with AWPAC M4 for applying field treatment to cut surfaces of preservative-treated lumber.
- D. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
1. NES NER-272 for power-driven fasteners.
 2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
- E. Use common wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; do not countersink nail heads, unless otherwise indicated.
- F. For exposed work, arrange fasteners in straight rows parallel with edges of members, with fasteners evenly spaced, and with adjacent rows staggered.

3.4 FASTENERS

A. Nails:

1. Use only common wire nails or spikes of the sizes and quantities shown on the Drawings.
2. Do all nailing without splitting wood, preboring as required to a diameter smaller than that of the nails. Replace all split members.

B. Bolts: Drill holes 1/16-inch larger in diameter than the bolts.

C. Screws:

1. Lag-Screws and Wood-Screws: Prebore holes same diameter as root of thread; enlarge holes to shank diameter for length of shank.
 - a. Screw, do not drive, any lag and wood screws.
 - b. Use washers under head of lag-screws where they bear on wood.

3.5 CLEANING

- A. Upon completion of rough carpentry Work in any given area, remove all rubbish and debris from the Work area and leave in broom clean condition.

END OF SECTION