

SECTION 061000 – ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Framing with dimension lumber.
2. Framing with engineered wood products.
3. Rooftop equipment bases and support curbs.
4. Wood blocking, cants, and nailers.
5. Wood furring and grounds.
6. Wood sleepers.
7. Plywood backing panels.

B. Related Sections:

1. Section 033000 – Cast-in-Place Concrete
2. Section 066100 – Sheathing.
3. Section 085113 – Aluminum Windows.
4. Section 092216 – Non-Structural Metal Framing.
5. Section 102800 – Toilet, Bath and Laundry Accessories.
6. Section 123623.13 – Plastic-Laminate-Clad Countertops.

C. Reference and Industry Standards

1. The following reference standards shall be applicable to this Section:
 - a. New York City Building Code, **current** edition, as amended, inclusive of
 - Chapter 16 Structural Design
 - Chapter 23 Wood
 - b. The current Enterprise Green Communities (EGC) Criteria, and the current New York City Overlay.
2. Industry Standards
 - AF&PA (American Forest & Paper Association).
 - ALSC (American Lumber Standard Committee).
 - APA (The Engineered Wood Association).
 - ASTM (American Society for Testing and Materials).
 - AWWA (American Wood Protection Association).
 - CARB (California Air Resources Board)
 - EPA (Environmental Protection Agency).
 - FSC (Forest Stewardship Council).
 - TSCA (Toxic Substances Control Act)
 - WCLIB (West Coast Lumber Inspection Bureau).

- WWPA (Western Wood Products Association).

D. The current NYC Overlay of the current Enterprise Green Communities Criteria:

1. Mandatory Requirements: See the NYC Overlay of the EGC reference standard for full specifications.
 - a. All projects must achieve compliance with the mandatory criteria measures that are applicable:
 - Criterion 6.4 Healthier Material Selection.
 - Criterion 6.9 Managing Moisture: Roofing and Wall Systems.
 - Criterion 6.10: Construction Waste Management
 2. Optional Project Requirements for Certification Points
 - a. Additionally, rehab projects are required to achieve **55** optional points. Criteria with optional points related to this Specification Section include, but may not be limited to:
 - Criterion 6.1 Ingredient Transparency of Material Health
 - Criterion 6.2 Recycled Content and Ingredient Transparency
 - Criterion 6.3 Chemical Hazard Optimization
 - Criterion 6.5 Environmentally Responsible Material Selection
 - Criterion 6.7 Regional Materials
 - Criterion 6.10: Construction Waste Management

1.2 ACTION SUBMITTALS

- A. Environmental Product Declaration (EPD) for each type of process and factory-fabricated product.

1.3 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.
- B. Evaluation Reports: For the following, from ICC-ES:
 1. Wood-preservative-treated wood.
 2. Engineered wood products.
- C. Documentation for compliance with Enterprise Green Communities criteria.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

2.2 Certified Wood: Materials shall be produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC-STD-20-001, General Requirements for FSC Accredited Certification Bodies for the following:

1. Dimensional lumber framing.
 2. Laminated-veneer lumber.
 3. Parallel-strand lumber.
 4. Prefabricated wood I-joists
 5. Rim boards.
 6. Miscellaneous lumber.
- B. Floor and roof joists and other structural lumber shall be the equivalent in strength, size, and spacing [**to the existing**] [**as shown on Drawings**] [**as directed by Design-Professional-of-Record**] [**as directed by HPD**]. Refer to the current edition of the New York City Building Code for required sizes and allowable stresses.
- C. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
1. Factory mark each piece of lumber with grade stamp of grading agency.
 2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece.
 3. Dress lumber, S4S, unless otherwise indicated.
- D. Maximum Moisture Content of Lumber: 15 percent for 2-inch nominal thickness or less; 19 percent for more than 2-inch nominal thickness unless otherwise indicated.
- E. Engineered Wood Products:
1. Prefabricated wood I-joists: Structural capacities and design provisions for prefabricated wood I-joists shall be established and monitored in accordance with ASTM D 5055.
Note: The use of prefabricated wood I-joists structurally shall be subject to the special inspection requirements of the New York City Buildings Department.
 2. Structural composite lumber: Structural capacities for structural composite lumber shall be established and monitored in accordance with ASTM D 5456.
- F. All adhesives must comply with Rule 1168 of the South Coast Air Quality Management District (www.AQMD.gov). All caulks and sealants must comply with Regulation 8, Rule 51, of the Bay Area Air Quality Management District.
1. Volatile Organic Compounds (VOC) Limits:
 - a. Multi-purpose construction adhesive: 70g/L.
 - b. Structural wood member adhesive: 140g/L.

- G. Composite Wood: All composite wood products must be certified compliant for formaldehyde emissions provided by California Air Resources Board (CARB) Phase 2 and/or TSCA Title IV for plywood, particleboard, MDF, and these materials within other products like cabinets and doors.
 - 1. For any other composite wood products not covered by CARB/TSCA requirements, but used in interior spaces, these must be NAUF (have no added urea formaldehyde).
 - 2. If using a composite wood product that does not comply with California 93120, all exposed edges and sides must be sealed with low-VOC sealants.
- H. Marine Grade Plywood is made entirely of Douglas-Fir or Western Larch. The grade of all piles of veneer is grade B or better. B-grade veneer may have knots but no knot holes. Both A and B grades may contain wood or synthetic patches. Panels are sanded on both faces or overlaid with a Medium Density Overlay (MOD) or a High-Density Overlay. The maximum core gap size permitted is $\frac{1}{8}$ inch. Its exposure durability rating is EXTERIOR and the glue is fully waterproof structural adhesive.
- I. Avoid epoxy-based caulks and epoxy-based sealants, as these contain Bisphenol A. Bisphenol A was listed on March 29, 2010 by the EPA as a “chemical of concern.”

2.3 WOOD-PRESERVATIVE-TREATED LUMBER

- A. Preservative Treatment by Pressure Process: AWWA U1; Use Category UC2 for interior construction not in contact with ground.
 - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium. Do not use inorganic boron (SBX) for sill plates.
- 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.
- D. Each piece of lumber shall have a treatment stamp or tag applied that provides information on the type and amount of preservative chemical contained in the lumber.
- E. Application: Treat all rough carpentry unless otherwise indicated.
 - 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, stripping, and similar concealed members in contact with masonry or concrete.
 - 3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
 - 4. Wood framing members that are less than 18 inches above the ground in crawlspaces or unexcavated areas.
 - 5. Wood floor plates that are installed over concrete slabs-on-grade.

2.4 DIMENSION LUMBER FRAMING

- A. Non-Load-Bearing Interior Partitions: Construction grade or better.
 - a. Species: Western woods; WCLIB or WWPA.
- B. Load-Bearing Interior Partitions: Construction grade or better.
 - 1. Species: Douglas fir-larch; Grading by WCLIB or WWPA rules.
 - 2. Decay-resistant lumber; Special Flood hazard Areas and below the base flood elevation: Heart wood of Red Wood, Cedar, Black Locust and Douglas Fir.
- C. Framing for Floor and Roof: Construction grade or better.
 - 1. Species: Douglas Fir-Larch: Grading by WCLIB or WWPA rules.
 - 2. Decay-resistant lumber; Special Flood Hazard Areas and below the base flood elevation: Heart wood of Red wood, Cedar, black locust and Douglas fir

2.5 ENGINEERED WOOD PRODUCTS

- A. Engineered Wood Products, General: All products shall not contain any urea Formaldehyde.
- B. Laminated-Veneer Lumber: Structural composite lumber made from wood veneers with grain primarily parallel to member lengths, evaluated and monitored according to ASTM D5456 and manufactured with an exterior-type adhesive complying with ASTM D2559.
 - 1. Extreme Fiber Stress in Bending, Edgewise: **[3100 psi] [2900 psi] [2600 psi] [2250 psi]** <Insert value> for 12-inch nominal- depth members.
 - 2. Modulus of Elasticity, Edgewise: **[2,000,000 psi] [1,800,000 psi] [1,500,000 psi]** <Insert value>.
- C. Wood I-Joists: Prefabricated units, I-shaped in cross section, made with solid or structural composite lumber flanges and wood-based structural panel webs, let into and bonded to flanges. Comply with material requirements of and with structural capacities established and monitored according to ASTM D 5055.
 - 1. Web Material: Plywood, complying with DOC PS 1 or DOC PS 2, Exposure 1.
 - 2. Structural Properties: Depths and design values not less than those indicated.
 - 3. Comply with APA PRI-400. Factory mark I-joists with APA-EWS trademark indicating nominal joist depth, joist class, span ratings, mill identification, and compliance with APA-EWS standard.
- D. Rim Boards: Product designed to be used as a load-bearing member and to brace wood I-joists at bearing ends, complying with research or evaluation report for I-joists.
 - 1. Manufacturer: Provide products by same manufacturer as I-joists.
 - 2. Material: **[All-veneer product] [glued-laminated wood] [or] [product made from any combination solid lumber, wood strands, and veneers]**.
 - 3. Thickness: **[1 inch] [1-1/8 inches] [1-1/4 inches]**.

4. Comply with APA PRR-401, [**rim board**] [**rim board plus**] grade. Factory mark rim boards with APA-EWS trademark indicating thickness, grade, and compliance with APA-EWS standard.

2.6 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 1. Blocking.
 2. Nailers.
 3. Rooftop equipment bases and support curbs.
 4. Cants.
 5. Furring.
 6. Grounds.
- B. Dimension Lumber Items: Provide standard grade lumber of same species grade lumber of any species.

2.7 PLYWOOD BACKING PANELS

- A. Equipment Backing Panels: Plywood, DOC PS 1, Exterior, - C-C Plugged, not less than 3/4-inch nominal thickness, [**or as indicated on Drawings**] [**or as directed by Design-Professional-of-Record**] [**or as directed by HPD**].

2.8 FASTENER

- A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.
 1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A153.
- B. Power-Driven Fasteners: Fastener systems compliant with ASTM F 1667.
- C. Post-Installed Anchors: Acceptable screw anchoring systems shall have an evaluation report issued in accordance with Annex 1 of ACI 193 "Acceptance Criteria for Mechanical Anchors in Concrete Elements", and shall comply with Buildings Bulletin 2014-019 issued by the New York City Department of Buildings, unless superseded by another bulletin.

2.9 METAL FRAMING ANCHORS

- A. Allowable design loads, as published by manufacturer, shall meet or exceed those required by local building codes. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency. Framing anchors shall be punched for fasteners adequate to withstand same loads as framing anchors.

- B. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A653, G60 coating designation.
 - 1. Use for interior locations unless otherwise indicated.
- C. Hot-Dip, Heavy-Galvanized Steel Sheet: ASTM A653 structural steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 coating designation; and not less than 0.036 inch thick.
 - 1. Use for wood-preservative-treated lumber and where indicated.

2.10 MISCELLANEOUS MATERIALS

- A. Sill-Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch thick, selected from manufacturer's standard widths to suit width of sill members indicated.
- B. Adhesives for Gluing Furring and Sleepers to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Framing Standard: Comply with AF&PA's 2015 National Design Specification for Wood Construction and 2015 Supplement.
- B. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.
- C. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.
- D. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.
- E. Do not splice structural members between supports unless otherwise indicated.
- F. Comply with current edition of AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
- G. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- H. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. Table 10-4 Nailing Schedule of Chapter 10 (Structural Wood) of the New York City 1968 Building Code.

3.2 PROTECTION

- I. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes **[wet] [wet enough that moisture content exceeds that specified]**, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061000