

**GENERAL SPECIFICATION 06071 - TREATED TIMBER AND LUMBER**

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**Specification  
for  
TREATED TIMBER AND LUMBER**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. The Contractor shall furnish and install all treated timber and lumber as shown on the Contract Drawings, specified in the Detailed Specifications or required for the work.
- B. The following index of this Specification is included for convenience:

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**1.02 RELATED SPECIFICATIONS**

- A. General Specification 05081 - Galvanizing.
- B. General Specification 06061 - Untreated Timber and Lumber.

**1.03 PAYMENT**

- A. Payment for treated timber and lumber will be made as provided for in the Detailed Specifications.

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### 1.04 REFERENCES

- A. ASTM D245 - Standard Practice for Establishing Structural Grades and Related Allowable Properties for Visually Graded Lumber.
- B. ASTM D390 - Coal-Tar Creosote for the Preservative Treatment of Piles, Poles and Timbers of Marine, Land and Fresh Water Use.
- C. ASTM D391 - Creosote-Coal Tar Solution.
- D. ASTM D1272 - Pentachlorophenol.
- E. AWPA C1 - All Timber Products, Preservative Treatment by Pressure Process.
- F. AWPA C2 - Lumber, Timbers, Bridge Ties and Mine Ties; Preservative Treatment by Pressure Process.
- G. AWPA C28 - Standard for Preservative Treatment of Structural Glued Laminated Members and Laminations Before Gluing of Southern Pine, Pacific Coast Douglas Fir, Hem Fir and Western Hemlock by Pressure Processes.
- H. AWPA M4 - Standard for the Care of Preservative Treated Wood Products.
- I. AWPA P1/P13 - Standard for Coal Tar Cresosote for Land and Freshwater and Marine (Coastal) Water Use.
- J. APWA P2 - Standard for Creosote Solutions.
- K. AWPA P5 - Standards for Waterborne Preservatives.
- L. AWPA P8 - Standards for Oil-Borne Preservatives.
- M. NY Spec 24-L-8 - Lumber, Western Softwoods.
- N. NY Spec 24-P-74 - Lumber, Pine, Southern Yellow.
- O. FS TT-W-550G - Wood Preservative, Chromated Copper Arsenate Mixture.
- P. FS TT-W-551F - Wood Preservative, Chromated Zinc Chloride Mixture.
- Q. FS TT-W-571I - Wood Preservation, Treating Practices.
- R. American Wood Preservers Association (AWPA)

## GENERAL SPECIFICATION 06071 - TREATED TIMBER AND LUMBER

### 1.05 SUBMITTALS

- A. The Contractor shall submit Working Drawings, shop drawings and material specifications for the approval of the Engineer in accordance with the requirements of the General Conditions, Article 4 - Contractor's Working Drawings, Design and Shop Drawings.
- B. Tests of pressure treated timber and lumber for retention of preservatives shall conform to the requirements of AWPA C1, Paragraph 3, Results of Treatment.
- C. Prior to shipping any materials to the Site, the Contractor shall submit to the Engineer copies of manufacturer's certificates showing compliance with the specified material and treatment requirements.

### PART 2 PRODUCTS

#### 2.01 TIMBER AND LUMBER

- A. Timber and lumber for pressure preservative treatment shall be:
  - 1. Southern yellow pine conforming with NY Spec. 24-P-74 or
  - 2. Douglas fir conforming to NY Spec 24-L-8.
- B. Timber and lumber shall be of the form, structural grade and dressing as shown on the Contract Drawings, specified in the Detailed Specifications or required for the work.
- C. All timber and lumber shall be graded in accordance with ASTM D245.

#### 2.02 CONDITIONING OF TIMBER AND LUMBER

- A. Timber and lumber shall be conditioned for treatment by either air-seasoning, kiln drying, steaming, heating in the preservative at atmospheric pressure or under vacuum or by a combination of the methods, in such a manner as will not cause damage to the timber for the use intended.
- B. Conditioning of timber and lumber for pressure treatment shall conform to the requirements of AWPA C1.

#### 2.03 TREATMENT OF TIMBER AND LUMBER

- A. All timber and lumber shall be pressure treated with wood preservative in accordance with these specifications for the service conditions to which the treated timber and lumber will be exposed. Pressure treatments shall conform to the AWPA standards.
- B. Timber and lumber used in tidal water structures such as sheet piles, low water braces and other members existing in the tidal zone shall be pressure treated by the full cell process of impregnation.

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- C. Treatment of timber and lumber with creosote or its mixtures or oil-borne preservatives shall conform to Table 1, appended hereto.
- D. Timber and lumber used for handrailings, nailing strips, walkway plank or timber and lumber which must be painted shall be treated with water-borne preservatives conforming to Table 2, appended hereto.

### 2.04 RETENTION

- A. The minimum net final retention of preservative in pounds per cubic foot of timber and lumber shall comply with the requirements of Table 1 and Table 2, appended hereto.

### 2.05 FASTENERS

- A. Timber and lumber shall be fastened with nails, spikes, bolts, rods, plates, washers and all other hardware shall be of the type, size and spacing to meet the conditions encountered.
- B. Fasteners in marine installation or exposed to the weather shall be hot dip galvanized in accordance with General Specification, Section 05081, unless other materials are indicated on the Contract Drawings or specified in the Detailed Specifications.

## PART 3 EXECUTION

### 3.01 STORAGE AND HANDLING

- A. Treated timber and lumber shall be stored on raised platforms and shall be stacked and supported to prevent warp.
- B. Treated timber and lumber having a specified moisture content shall be set on raised platforms and covered with suitable weatherproof protective coverings, such as tarpaulins or heavy polyethylene film. Covers shall be battened down to prevent the covers from blowing off.
- C. All treated timber and lumber shall be carefully handled to avoid splitting or damage to the surface and edges.

**GENERAL SPECIFICATION 06071 - TREATED TIMBER AND LUMBER**

**Table 1  
PRESSURE TREATMENT OF TIMBER AND LUMBER WITH CREOSOTE  
AND CREOSOTE-COAL TAR SOLUTIONS AND PENTACHLOROPHENOL**

FORM OF PRODUCT AND SERVICE CONDITIONS	MINIMUM NET RETENTION RECOMMENDED			PRESERVATIVE
	Coal-Tar Creosote ASTM D390 AWPA P1 (lbs./cu.ft.)	Creosote-Coal-Tar Solutions ASTM D391 AWPA P2 (lbs./cu.ft.)	Pentachlorophenol in 4.5 to 5.5 Percent Solution in Heavy Petroleum Solvent ASTM D1272 AWWA P8 (lbs./cu.ft.)	
1. Lumber and Structural Timber in coastal waters: a. Pacific Coast Douglas Fir b. Southern Yellow Pine	14	14	---	Treating Specifications (AWPA C1 and others listed below)
	22	22	---	
2. For freshwater and ground contact or important structural members not in contact with ground or waters	10	10	0.50	C2, C28

Note: These requirements have been excerpted from Federal Specification TT-W-571i, Wood Preservation: Treating Practices, dated October 28, 1968.

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**Table 2  
PRESSURE TREATMENT OF TIMBER AND LUMBER WITH WATER-BORNE PRESERVATIVES**

FORM OF PRODUCT AND SERVICE CONDITIONS	MINIMUM NET RETENTION RECOMMENDED				PRESERVATIVE	
	Acid Copper Chromate AWWA P5 (lbs./cu.ft.)	Ammoniacal Copper Arsenite AWWA P5 (lbs./cu.ft.)	Chromated Copper Arsenate (Fed Spec TT-W-550G) AWWA P5 (lbs./cu.ft.)	Chromated Zinc Chloride (Fed Spec TT-W-551F) AWWA P5 (lbs./cu.ft.)		Fluorchrome Arsenate Phenol Mixture AWWA P5 (lbs./cu.ft.)
1. Lumber and Structural Timber: a. For use under moderate weathering conditions b. For use in protected locations not in ground contact nor in water	0.50	0.40	0.40	0.61	0.31	C2, C28
	0.25	0.25	0.25	0.46	0.22	

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Note: These requirements have been excerpted from Federal Specification TT-W-571i, Wood Preservation: Treating Practices, Amendment 2, dated October 3, 1972.

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**GENERAL SPECIFICATION 06100 - ROUGH CARPENTRY**

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**Specification  
for  
ROUGH CARPENTRY**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Rough carpentry as specified herein shall include, but not be limited to, wood centers, furring, grounds, blocking, temporary protection of all kinds, and all accessories and appurtenances.
- B. Rough carpentry shall be provided where shown on the Contract Drawings, specified in the Detailed Specifications, or as required for a complete installation.
- C. The following index of this Specification is included for convenience:

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**1.02 RELATED SPECIFICATIONS**

- A. General Specification 05081 - Galvanizing

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1.03 PAYMENT

- A. No direct payment will be made for rough carpentry, accessories, or appurtenances; the cost shall be included in the prices for the Work, except as provided for in the Detailed Specifications

1.04 REFERENCES

- A. ASTM E84 - Test Method for Surface Burning Characteristics of Building Materials
- B. FS TT-W-571 - Wood Preservation Treating Practices
- C. AWPA - American Wood Preservers Association - Type A, Interior Fire Retardant Treated Lumber and Plywood
- D. NFPA - National Forest Products Association, National Design Specification for Wood Construction

1.05 SUBMITTALS

- A. The Contractor shall prepare and submit for approval catalog cuts and reference materials in accordance with the General Conditions, Article 4 – Contractor’s Working Drawings, Design and Shop Drawings.
- B. Rough Wood Carpentry; the following shall be submitted:
  - 1. Copies of the chemical treatment manufacturer’s instructions for proper use of each type of treated material.
  - 2. For water-borne preservatives, the submittal shall include the statement that moisture content of treated materials was reduced to a maximum of 19 percent prior to shipment to project site.
  - 3. Submittal shall indicate compliance with specified standards and other specified requirements for materials and workmanship.
- C. Wood Preservative; the following shall be submitted:
  - 1. For each type specified, certification shall be submitted by treating plant stating chemicals, and processes used, net amount of salts retained, and conformance with applicable standards.
  - 2. Submittal shall include certification by treating plant that treatment material complies with governing ordinances and that treatment will not bleed through finished surfaces.
- D. Copies of a certificate, signed by producer, certifying that the softwood lumber producer complies with quality grades and other requirements specified. The certificate shall be submitted in a form recommended by applicable standards, written by the certifying organization.

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### 1.06 DELIVERY, STORAGE AND HANDLING

#### A. Delivery of Materials:

1. Rough carpentry materials shall not be delivered to the project site before the time of installation.
2. Materials shall, however, be delivered in sufficient quantities to allow continuity of the Work.

#### B. Storage of Materials:

1. Materials shall be stored with manufacturers' labels and seals intact.
2. Lumber shall be stored indoors at the site on raised platforms. If outdoor storage is temporarily incorporated, material shall be set on raised platforms and covered with suitable weatherproof protective coverings, such as tarpaulins or heavy polyethylene film. Covers shall be battened down with sufficient weights, ties or anchors to prevent blowoffs.
3. Damage to materials shall be prevented during storage primarily by minimizing the amount of time they are stored at the site before being incorporated into construction systems.

#### C. Handling of Materials:

1. Materials shall be handled carefully in order to avoid damage or breakage.
2. Materials shall be handled in a manner which prevents inclusion of foreign materials.
3. Materials shall not be exposed to detrimental conditions or physical damage. Materials which are so exposed shall be removed from the site and shall not be incorporated into the Work.
4. Do not open packages or containers until all preparatory Work is complete and installation will begin immediately. Do not allow materials to become wet or soiled or covered with ice or snow.

## PART 2 PRODUCTS

### 2.01 MATERIALS

- A. General: All natural wood lumber used in the Work shall be verified as obtained from a certified sustainable natural wood lumber source using sustainable forest management practices.
- B. Rough Carpentry: Lumber for rough carpentry such as nailers, grounds, blocking and framing shall be of Sustainably Managed Construction Grade, thoroughly seasoned dry No. 1 white fir, ponderosa pine, spruce or hem-fir.

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- C. **Preservative Treatment:** All lumber for rough carpentry which is incorporated into the finished structures shall be pressure-treated lumber complying with the requirements established in the latest AWWA P5 and FS TT-W-571 standards. All lumber shall be seasoned lumber with a maximum moisture content of 19 percent at time of dressing. Water-borne preservative with 0.25 percent retainage shall generally be used, however water-borne preservative with 0.40 percent retainage shall be used for all lumber in direct contact with ground or water. All lumber shall be branded accordingly.
- D. **Fire Retardant Treatment:** All wood designated to be fire-retardant treated shall be pressure-impregnated with a flameproofing complying with the requirements of AWWA Type A, and with U.L., Inc. requirements for flame spread of 25 or less, with no evidence of significant progressive combustion when tested in accordance with ASTM E 84. Each piece of wood shall bear the U.L., Inc. FRS Label or the U.L., Inc. label indicating complete compliance with the fire hazard classification.
- E. **Code Conformance:** Materials shall conform to the requirements of the National Design Specification for Stress Grade Lumber as recommended by the National Forest Products Association, unless otherwise indicated.
- F. **Plywood Standards:** Plywood shall conform to the requirements of the American Plywood Association.
- G. **Grading:** Each panel of plywood shall be identified with the appropriate DFPA grade mark of the American Plywood Association.
- H. **Exterior Plywood Uses:** Exterior type plywood shall be installed where plywood is used for roof sheathing or decking, or in areas where it may be exposed to moisture.
- I. **Temporary Protection:** Exterior type southern yellow pine plywood, APA Grade C, plugged fir shall be used for temporary protection.

### **2.02 ACCESSORIES**

- A. **Anchors, connectors, and fastenings, not indicated or specified otherwise, shall be provided and installed and shall be of the type, size and spacing necessary to suit the conditions encountered and as recommended by National Forest Products Association. Sizes, types, and spacing of nails, screws, or bolts for installation of manufactured building materials shall be as recommended by the product manufacturer, unless indicated or specified otherwise.**
  - 1. **Steel rough hardware exposed to the weather shall be zinc-electroplated unless indicated otherwise. Zinc-electroplated steel bolts, nuts, washers, hangers, and straps, and all other rough hardware embedded in, or in contact with exterior walls or slabs, and located in humid areas, shall be provided and installed, except as indicated otherwise.**
  - 2. **Rough hardware shall be formed and punched before coating. Common steel wire nails, bright finish, shall be used, unless specified otherwise.**

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3. Bolt heads and nuts bearing on wood shall be provided with standard steel washers.
4. Galvanized fasteners for treated wood shall be in accordance with the requirements contained in General Specification 05081.

### PART 3 EXECUTION

#### 3.01 EXAMINATION

- A. The Contractor shall verify that areas to receive rough carpentry which is to be incorporated into the finished Work are properly prepared and completed to final elevations.

#### 3.02 INSTALLATION

- A. General: Rough carpentry shall be installed in accordance with the manufacturer's recommendations and approved shop drawings.
- B. Erection: All carpentry shall be correctly laid out. All items of woodwork, hardware, and any other work in connection with carpentry shall be carefully fit and erected, accurately located, and shall be plumb, level, and properly aligned, and rigidly secured in place.
- C. Blocking: Blocking shall be furnished and installed where required for the attachment of copings, roof ventilators, ducts and other sheet metal work. Wood grounds for other work shall be provided and installed and as shown and required.
- D. Securing Finished Work: Wood blocks, strips, plugs and similar items shall be provided and installed as required to secure finished work to concrete and masonry.
- E. Centers: Centers shall be provided, where required, for brick and other masonry at the exterior and interior openings.
- F. Protection of other Work: Jambs of finished door frames and finished masonry openings shall be protected to a height of 6 feet above the floor. Protection shall be erected in a manner to facilitate cleaning, painting and similar work without damage to finished work.
- G. Preservative Coating: All field-cut edges and surfaces of treated lumber shall be liberally coated with a concentrated solution of preservative.

#### 3.03 PROTECTION

- A. All components of the work shall be protected from detrimental weather and damage until construction operations are completed.
- B. Work which cannot be covered with complete construction systems before the onset of weather detrimental to the work shall be completely covered and protected in such a manner as to deflect water and weather from the installation without damaging adjacent work.

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- C. Rough carpentry shall be protected from all damage and abuse until Final Acceptance by the City.

3.04 ADJUSTMENT

- A. System components which are dislodged, damaged, expanded, broken, penetrated or crushed by subsequent installation operations or by detrimental weather shall be immediately replaced with undamaged material in compliance with the Specifications and properly protected as specified.

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