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This MANU-SPEC™ utilizes the Construction Specifications Institute (CSI) *Manual of Practice*, including *MasterFormat*™, *SectionFormat*™ and *PageFormat*™. A MANU-SPEC is a manufacturer-specific proprietary product specification using the proprietary method of specifying applicable to project specifications and master guide specifications. Optional text is indicated by brackets [ ]; delete optional text in final copy of specification. Specifier Notes typically precede specification text; delete notes in final copy of specification. Trade/brand names with appropriate symbols typically are used in Specifier Notes; symbols are not used in specification text. Metric conversion, where used, is soft metric conversion.

This MANU-SPEC specifies fire retardant treatment for wood components and wood construction not exposed to the weather, marketed under the “FirePRO” trade name, as manufactured by Osmose, Inc. FirePRO® Brand Fire Retardant Treated Wood (FirePRO FRTW) is a pressure impregnated material available nationwide through a network of Osmose licensed wood treatment facilities. Applications include: joists and subflooring; beams and purlins; stud-framed walls and partitions; roof decks and sheathing; roof and floor trusses; wood blocking and furring; and paneling and architectural millwork. Revise MANU-SPEC section number and title below to suit project requirements, specification practices and section content. Refer to CSI *MasterFormat* for other section numbers and titles, including 06100 Rough Carpentry, 06200 Finish Carpentry and 06400 Architectural Woodwork.

**SECTION 06073**  
**FIRE RETARDANT TREATMENT**  
**(FIRE RETARDANT TREATED WOOD)**

**PART 1 GENERAL**

Specifier Note: FirePRO FRTW is highly effective against the spread of flame and smoke, as well as termites and decay fungi. FirePRO pressure treated wood products are independently tested and classified by Underwriters Laboratories, Inc. They are noncorrosive, easy to handle and workable with common tools. In most cases, they feature a lower in-place cost than other noncombustible classified materials. FirePRO FRTW is available for interior applications where fire retardant construction materials are specified.

1.01 SUMMARY

- A. Section Includes: Fire retardant treatment for wood products specified in other Division 6 Sections, including:

Specifier Note: Edit below as applicable to project:

1. Joists and subflooring.
2. Beams and purlins.
3. Stud-framed walls and partitions.
4. Roof decks and sheathing.
5. Roof and floor trusses.
6. Wood blocking and furring.
7. Paneling and architectural millwork.

Specifier Note: Revise paragraph below to suit project requirements. Add section numbers and titles per CSI *MasterFormat* and Specifier's practice.

- B. Related Sections: Section(s) related to this section include:
1. Rough Carpentry: Division 6 Rough Carpentry Section.
  2. Finish Carpentry: Division 6 Finish Carpentry Section.
  3. Manufactured Wood Trusses: Division 6 Manufactured Wood Truss Section.
  4. Architectural Woodwork: Division 6 Architectural Woodwork Section.

Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain Reference Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract or Division 1 References Section may establish the edition date of standards. This article does not require compliance with standard, but is merely a listing of references used. Article below should list only those industry standards referenced in this section.

## 1.02 REFERENCES

- A. General: Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.
1. ASTM International:
    - a. ASTM D3201 Standard Test Method for Hygroscopic Properties of Fire-Retardant Wood and Wood-Base Products.
    - b. ASTM D3359 Standard Test Methods for Measuring Adhesion by Tape Test.
    - c. ASTM D5516 Standard Test Method for Evaluating the Flexural Properties of Fire-Retardant Treated Softwood Plywood Exposed to Elevated Temperatures.
    - d. ASTM D5664 Standard Test Method for Evaluating the Effects of Fire-Retardant Treatments and Elevated Temperatures on Strength Properties of Fire-Retardant Treated Lumber.
    - e. ASTM D6305 Standard Practice for Calculating Bending Strength Design Adjustment Factors for Fire Retardant Treated Plywood Roof Sheathing.
    - f. ASTM D905 Standard Test Method for Strength Properties of Adhesive Bonds in Shear by Compressive Loading.
    - g. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
    - h. ASTM E162 Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source.
    - i. ASTM E662 Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.
    - j. ASTM E1354 Standard Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter.
  2. American Wood-Preservers' Association (AWPA):
    - a. AWPA C20-93 Structural Lumber - Fire-Retardant Treatment by Pressure Processes.
    - b. AWPA C27-93 Plywood - Fire-Retardant Treatment by Pressure Processes.
    - c. AWPA E1 Standard Method for Laboratory Evaluation to Determine Resistance to Subterranean Termites.
    - d. AWPA E6 Standard Method for Determining the Equilibrium Moisture Content of Fire-Retardant Treated Wood.
    - e. AWPA E12 Standard Method of Determining Corrosion Resistance of Metal in Contact with Treated Wood.
  3. American National Standards Institute (ANSI):
    - a. ANSI/TPI 1-1995 National Standard for Metal Plate Connected Wood Truss Construction.
  4. Boeing Support Standard (BSS):
    - a. BSS 7239 Gas Analysis and Smoke Density Test.
  5. National Fire Protection Association (NFPA):
    - a. NFPA 255 Standard Method of Test of Surface Burning Characteristics of Building Materials.

6. Underwriters Laboratories, Inc. (UL):
  - a. UL 723 Standard for Safety for Surface Burning Characteristics of Building Materials.
7. National Evaluation Service, Inc.

Specifier Note: Article below should be restricted to statements describing design or performance requirements and functional, not dimensional, tolerances of a complete system. Limit descriptions to composite and operational properties to extent necessary to link multiple components of a system together and to interface with other systems.

### 1.03 SYSTEM DESCRIPTION

- A. Performance Requirements: Provide fire retardant treatment which will [Performance criteria] perform in accordance with manufacturer's stated performance criteria without defects, damage or failure and shall not contain phosphate based compounds.

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 1 Submittal Procedures Section.

### 1.04 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
- B. Product Data: Submit product data, including manufacturer's SPEC-DATA™ product sheet, for specified products.
- C. Quality Assurance Submittals: Submit the following:
  1. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties. Include in test report certification that fire retardant solution does not contain phosphate.
  2. Evaluation Report: National Evaluation Report NER-577 indicating flamespread, smoke development, strength durability, corrosion and hygroscopicity properties.
  3. Certificates:
    - a. Certification from treating plant certifying wood treatment applied complies with the criteria and physical requirements for fire retardant treated wood as herein specified.
    - b. Certification that fire retardant chemicals do not contain phosphorus based compounds.
  4. Closeout Submittals: Submit the following:
    - a. Warranty: Warranty documents specified herein providing a minimum 50 year warranty on FRTW products.

Specifier Note: Article below should include prerequisites, standards, limitations and criteria that establish an overall level of quality for products and workmanship for this section. Coordinate below article with Division 1 Quality Assurance Section.

### 1.05 QUALITY ASSURANCE

- A. Source Quality: Obtain fire retardant treated wood from a single licensed manufacturer.
- B. Wood Treatment Plant Qualifications: Wood treatment plant experienced in performing work of this section which has specialized in the treatment of wood similar to that required for this project, licensed by the manufacturer, with ongoing third party inspection program covering FRTW produced.

Specifier Note: Paragraph below should list obligations for compliance with specific code requirements particular to this section. General statements to comply with a particular code are typically addressed in Conditions of the Contract and Division 1 Regulatory Requirements Section. Repetitive statements should be avoided. Edit paragraph below to suit project requirements.

- C. Regulatory Requirements: Provide fire retardant treatment which complies with the following regulatory requirements:
  1. National Evaluation Report for FRTW - NER-577 indicating flamespread, smoke development, strength durability, corrosion and hygroscopic properties.
  2. New York City Materials and Equipment Acceptance Numbers MEA 137-00-M (Lumber) and MEA 136-00-M (Douglas fir plywood).
  3. City of Los Angeles Research Report Number RR 25442.

Specifier Note: Article below should include special and unique requirements. Coordinate article below with Division 1 Product Requirements Section.

#### 1.06 DELIVERY, STORAGE & HANDLING

- A. General: Comply with Division 1 Product Requirements Sections.
- B. Exposure: Prevent exposure to precipitation during shipping, storage or installation. Replace fire retardant treated wood that has become wet during shipping, storage or installation.

Specifier Note: Coordinate article below with Conditions of the Contract and with Division 1 Closeout Submittals (Warranty) Section.

#### 1.07 WARRANTY

- A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.

Specifier Note: Coordinate paragraph below with manufacturer's warranty requirements. Osmose, Inc., offers the "Osmose FirePRO 50-year Limited Warranty Agreement against structural failure due to heat or humidity." Consult manufacturer for complete details.

- B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

Specifier Note: Coordinate paragraph below with manufacturer's warranty requirements.

- 1. Warranty Period: Fifty (50) years.

### **PART 2 PRODUCTS**

#### 2.01 FIRE RETARDANT TREATED WOOD

Specifier Note: Retain first three paragraphs below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

- A. Manufacturer: Osmose, Inc. - Wood Preserving Group.

Specifier Note: Paragraph below is an addition to CSI *SectionFormat* and a supplement to MANU-SPEC. Retain or delete paragraph below per project requirements and Specifier's practice.

- 1. Contact: PO Drawer O, 1016 Everee Inn Road, Griffin, GA 30224-0249; Telephone: (800) 241-0240, (770) 233-4200; Fax: (770) 229-5225; E-mail: [treatedwood@osmose.com](mailto:treatedwood@osmose.com); Web site: [www.osmose.com](http://www.osmose.com), [www.timberspecialties.com](http://www.timberspecialties.com).

Specifier Note: FirePRO FRTW is intended for weather protected applications only. It is not to be used in areas subject to precipitation, wetting, dampness or condensation. All wood products must be kiln dried after treatment (KDAT) to a maximum moisture content of 19% for lumber and 15% for plywood. Fire retardant chemicals shall be free of phosphate compounds. Lower moisture contents may be preferred for cabinetry and millwork. Wood treated with FirePRO fire retardant is paintable, stainable and easy to work with common tools. The product is colorless and nonblooming.

- B. Proprietary Product(s)/System(s): FirePRO FRTW.
- C. Fire Retardant Treatment: Manufacturer's proprietary solution for fire retardant treatment of wood as produced by manufacturer's licensed treatment plants, producing material meeting the following minimum standards:

Specifier Note: FirePRO FRTW has been tested by the U.S. Department of Agriculture Forest Products Laboratory in accordance with industry standards to develop strength reduction factors for various use conditions, including roof temperatures up to 150 - 170 degrees F (66 - 77 degrees C).

- 1. Flamespread, Smoke Developed and Strength Durability:
  - a. Treated wood shall have both flamespread, smoke developed, ratings of less than 25 when tested in an extended 30 minute tunnel test in accordance with ASTM E84, NFPA 255 or UL 723.

- b. Each piece of treated material shall bear a UL FR-S classification stamp.
- 2. Structural Lumber Treatment Standard: Comply with AWWA C20-93. Independent testing demonstrates, and published lumber design factors reflect, the superior strength durability properties of FirePRO FRTW.
- 3. Plywood Treatment Standard: Comply with AWWA C27-93. FirePRO fire retardant treated Douglas fir plywood exhibits no significant reduction in strength and utilizes essentially the same span table values published for untreated structural plywood panels by the APA.

Specifier Note: FirePRO FRTW products protect against corrosion on galvanized steel truss plates as well as other metal fasteners. Testing has shown that with respect to metal corrosion, FirePRO pressure treated wood products maintain metal finish and metal integrity virtually as well as untreated wood exposed to the same conditions.

- 4. Corrosivity: Provide fire retardant treated lumber and plywood evaluated in accordance with AWWA E12 for use with fastening materials specified. FirePRO FRTW shows very low hygroscopicity under relative humidity conditions as high as 90%. Test reports are available to design professionals upon request.
- 5. Hygroscopicity: Provide fire retardant treated wood and plywood rated as Interior Type A High Temperature (HT) in accordance with Sections 2.2.2.1 of AWWA C20/C27 when tested at 92% relative humidity.

Specifier Note: Edit article below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Division 1 Project Requirements (Product Substitutions Procedures) Section.

**2.02 PRODUCT SUBSTITUTIONS**

- A. Substitutions: No substitutions permitted.

**2.03 RELATED MATERIALS**

Specifier Note: Wood species qualifying under UL FR-S classification include a variety of softwood lumber and plywood. Softwood lumber types include: alpine fir, balsam fir, black spruce, Englemann spruce, Douglas fir, hem-fir, jack pine, lodgepole pine, ponderosa pine, red pine, red spruce, Southern pine, spruce-pine-fir, western hemlock, white fir and white spruce. Plywood types include Douglas fir.

- A. Wood Materials: Refer to Division 6 Sections for related wood materials required to be treated as specified herein.
- B. Fasteners: Provide metal fasteners for FirePRO FRTW of the following materials: aluminum 2024-T3; steel, SAE 1010; hot dipped galvanized steel; stainless steel; copper; or red brass.

**2.04 SOURCE QUALITY**

Specifier Note: Coordinate paragraph below with Division 1 Quality Control Section.

- A. Tests, Inspections: [Specify tests, inspections and other source quality requirements.].

**PART 3 EXECUTION**

Specifier Note: Article below is an addition to the CSI *SectionFormat* and a supplement to MANU-SPEC. Revise article below to suit project requirements and Specifier's practice.

**3.01 MANUFACTURER'S INSTRUCTIONS**

- A. Compliance: Comply with manufacturer's product data, including product literature, technical bulletins, wraps, product catalog and installation instructions.

**3.02 INSTALLATION**

- A. Select fire retardant treated wood members in accordance with manufacturer's published lumber design adjustment factors and plywood spans. Provide ventilation of building cavities as required by code.
- B. Install fire retardant treated wood in accordance with requirements of applicable codes and related Division 6 Sections. Avoid milling operations that could adversely affect surface burning characteristics of fire retardant treated wood.
- C. Install using manufacturer's recommended fasteners.

**3.03 FINISHING**

Specifier Note: For painting or staining of FirePRO FRTW, a light sanding or brushing is all that is necessary to ensure proper coating

adhesion. Complete application recommendations are available from the manufacturer. Avoid frequent or prolonged inhalation of sawdust from treated wood. When sawing and machining treated wood, wear a dust mask. When power sawing or machining, wear goggles to protect eyes from flying particles. Surfaces must be clean and dry before application.

- A. Prepare fire retardant treated wood for application of finishes in accordance with manufacturer's recommendations. Sand surfaces lightly, clean and check for moisture prior to finishing.
- B. Apply paint or stain in accordance with Division 9 Section "Painting."

#### 3.04 PROTECTION

- A. Protection: Protect fire retardant treated wood from damage during construction. Protect from moisture prior to installation of finishes. Replace fire retardant treated wood that has become wet.

**END OF SECTION**

FirePRO® is a trademark and Osmose® is a registered trademark of S-T-N Holdings, Inc.  
FirePRO brand wood products are produced by independently owned and operated wood preserving companies.  
FirePRO MANU-SPEC 20-220-FPR-1000000