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**Part 1 GENERAL**

**1.1 Related Work**

- .1 Refer to other Specification Sections for related information.
- .2 Refer to Section 01 33 00 for Shop Drawing and Submission requirements.

**1.2 Reference Standards**

- .1 ASTM A307-21, Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60,000 psi Tensile Strength.
- .2 CSA O80 Series:21, Wood Preservation.
- .3 ASTM A123/A123M-17, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
- .4 Copper Naphthenate containing 2% Copper for Brush or Spray Treatment for Field Cuts.
- .5 CSA O86:19, Engineering Design in Wood.
- .6 NLGA Standard Grading Rules for Canadian Lumber 2017 edition or most recent at time of tendering.
- .7 ASTM D4637/D4637M-15 (2021), EPDM Sheet Used in Single-Ply Roof Membrane.

**1.3 Submissions**

- .1 At least two (2) weeks prior to finalizing timber order, submit drawings, clearly indicating installation details.
- .2 Submit methodology for field treatment.
- .3 Provide submissions in accordance with Section 01 33 00 – Submissions and Shop Drawings.

**1.4 Measurement for Payment**

- .1 Timber will be measured in accordance with Section 01 29 00.

**Part 2 PRODUCTS**

**2.1 Materials**

- .1 Softwood Timber: Graded and stamped to National Lumber Grading Authority (NLGA) No. 1 Structural, Eastern Hemlock, Western Hemlock or Douglas Fir Species only will be used.
  - .2 Hardwood Timber: Sound merchantable grade yellow birch, hard maple, red or white oak conforming to grading rules approved by the National Hardwood Lumber Association.
  - .3 Provide treated hardwood shims as required to ensure full contact between sheathing, wales, and fender piles.
  - .4 Timber Treatment:
    - .1 Preservative treatment to CSA O80 Series-15 for Marine Construction Coastal Waters. Where assay retentions are not indicated, they are to be taken as 1.5 times the indicated gauge retention.
    - .2 Make arrangements for testing of timber by:
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- .1 Plant Inspection: Provide treatment plant identification, date of treatment, list of various pieces in the charge, charge number, plant assay testing results, concentration and type of preservative used, duration of treatment, gauge retention, species of wood; and make arrangements with the treatment plant to locate bundles, move bundles, break open bundles and carry out other measures to facilitate the inspection.
- .2 Filling in and submitting a preprinted form, agreed to by the *Departmental Representative*, containing the above information.
- .5 Miscellaneous Hardware: Hardware must meet the following specifications:
  - .1 Machine bolts, lag bolts, drift bolts, anchor bolts, nuts, round plate washers: to ASTM A307.
  - .2 Hot dip galvanized hardware, bolts, nuts, washers and spikes to ASTM A123, with minimum zinc coating of 600 g/m<sup>2</sup>.
  - .3 All hardware will be galvanized unless otherwise shown on plans.

### **Part 3 EXECUTION**

#### **3.1 General**

- .1 Supply and install dimension timbers to details shown on drawings or as specified. Treated timber to be supplied in pre-cut lengths to suit. Install lag bolts in sound existing timber
- .2 Boreholes for drift bolts to be 1.5mm smaller in diameter than bolt and for full length of bolt. Boreholes for machine bolts to be same diameter as bolts. Boreholes for lag bolts to be same diameter as shank for unthreaded portion and 0.70 times the shank diameter for the threaded portion. Threaded portion of lag bolts will be installed using a wrench, not by driving.
- .3 All countersunk holes to be recessed 25 mm and shall receive two coats of Copper naphthenate, allowing sufficient time between applications to permit total absorption. The cost of supply and application of Copper naphthenate will not be measured for payment but will be considered incidental to the work.

#### **3.2 Handling Timber**

- .1 Timber will be protected during handling, shipping, offloading and field handling, by use of suitable equipment and procedures. Use rope or fabric strap slings on site for moving bundles or individual timbers, rather than metal grabs, chains or cables.
- .2 Tops of vertical untreated timber to be field treated with minimum two liberal coats of Copper naphthenate.

#### **3.3 Handling Treated Timber**

- .1 Handle treated material to avoid damage causing alteration in original treatment.
- .2 Treat in field, spike holes, boreholes, plugged holes, cuts and any damage to treated material, using Copper naphthenate, as specified herein, regardless of plant treatment type. Fill all unused bored holes and any other holes with tight fitting treated wooden plugs prior to any exposure to water containing marine borers.
- .3 Provide methodology pertaining to heating and application. Apply to dry surfaces wherever possible.
- .4 Treat boreholes, using a pressurized container with an extension rod, to produce a fine spray in the holes with one application. Alternately a cylindrical brush may be used.

- .5 Treat field cuts and any abrasions with minimum of two (2) liberal applications of approved preservative, using either spray or brush.
- .6 Environmental Concern: Ensure no spillage or excess application of field preservative. Provide workmen with sufficient training and protective gear to properly and safely handle the treated materials and to apply field treatment, so as to prevent undue hazard to themselves, others, or the environment.
- .7 Contain all debris and leachates (films on water surface) within the area of the work by using containment facilities such as floating booms or screens.

**END OF SECTION**