

PART 1 - GENERAL

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| 1.1 | <u>Related Sections</u> | .1 | Section 01 33 00 - Submittal Procedures |
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| 1.2 | <u>Reference Standards</u> | .1 | ASTM A307-14, Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile. |
| | | .2 | CAN/CSA-080 Series 2008 (R2012), Wood Preservation (including CSA preliminary standard O80.31-M1989). |
| | | .3 | ASTM A123/A123M-15, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products. |
| | | .4 | CSA B111-1974(R2003), Wire Nails, Spikes and Staples. |
| | | .5 | Copper naphthenate containing 2% copper for Brush or Spray Treatment for Field Cuts. |
| | | .6 | CSA 086-14, Engineering Design in Wood (Limit States Design). |
| | | .7 | NLGA Standard grading rules for Canadian Lumber 1980 edition or most recent at time of tendering. |
| | | .8 | ASTM D4637-15, EPDM Sheet used in Single-Ply Roof Membrane. |
| | | .9 | ASTM B111-1974 (R2001) Wire Nails, Spikes and Staples. |
| | | .10 | CAN/CSA-G164-M92 (or latest edition) – Hot Dip Galvanizing of Irregularly Shaped Articles. |
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| 1.3 | <u>Submittals</u> | .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.
- 1.4 Measurement for Payment .1 Measurement for payment will be in accordance with Section 01 29 00 – Project Particulars and Measurement.

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 Timber Treatment:
.1 Preservative treatment to CAN/CSA-080 Series-08 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:
.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 and submitting a pre-printed form, agreed to by the Departmental Representative, containing the above information.

- .4 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 Spikes: to CSA B111.
 - .3 Hot dip galvanized hardware, bolts, nuts, washers and spikes to CSA G164, with minimum zinc coating of 600 g/m².
 - .4 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, off loading 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.

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- .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 In addition, field cuts and underwater damaged areas will receive a coating of plastic compound, capped with lead flashing secured with galvanized roofing nails. Plastic compound not to be water soluble and is subject to approval.
- .7 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 to the environment.
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- .8 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.

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