



**MATERIAL SPECIFICATION FOR
WOOD, PRESERVATIVE TREATMENT, AND SHOP FABRICATION**

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1601.01 SCOPE

This specification covers the requirements for materials, production, preservative treatment, and methods for testing and acceptance of wood and mass timber used in permanent and temporary structures, and post for signs, highway fence, and guide rail.

1601.02 REFERENCES

This specification refers to the following standards, specifications, or publications:

Ontario Provincial Standard Specifications, Construction

OPSS 906 Structural Steel
OPSS 907 Structural Wood Systems

Ontario Ministry of Transportation Publications

MTO Forms:
PH-CC-701 Request to Proceed
PH-CC-702 Notice to Proceed
PH-CC-821 Manufacturer's Certificate of Conformance

CSA Standards

O56:10 (R2020) Round Wood Piles

O80 Series:21 Wood Preservation
 O122-16 (R2021) Structural Glued-Laminated Timber
 O125:23 Mechanically Laminated Lumber – Production and Qualification Specifications
 O141:23 Softwood Lumber
 O177:23 Qualification Code for Manufacturers of Structural Glued-Laminated Timber

American National Standards Institute (ANSI)

A190.1-2022 Product Standard for Structural Glued Laminated Timber

American Wood Protection Association (AWPA)

M4-23 Standard for Handling, Storage, Field Fabrication and Field Treatment of Preservative-Treated Wood Products
 P1/P13-19 Creosote Preservative
 P3-19 Creosote Petroleum Solution
 P22-20 Standard for Ammoniacal Copper Zinc Arsenate (ACZA)
 P23-14 (R2020) Standard for Chromated Copper Arsenate Type C (CCA-C)
 P28-20 Standard for Alkaline Copper Quat Type C (ACQ-C)
 P29-20 Standard for Alkaline Copper Quat Type D (ACQ-D)
 P32-19 Standard for Copper Azole Type B (CA-B)
 P34-20 Standard for Copper Naphthenate Waterborne (CuN-W)
 P36-22 Standard for Copper Naphthenate (CuN)
 P39-18 (R2020) Standard for 4,5-Dichloro-2-N-Octyl-4-Isothiazolin-3-One (DCOI)
 P61-16 (R2022) Standard for Micronized Copper Azole (MCA)
 P62-16 (R2022) Standard for Micronized Copper Azole Type C (MCA-C)
 P63-23 Standard for Micronized Copper Quat Type D (MCQ-D)

Others

National Lumber Grades Authority (NLGA): Standard Grading Rules for Canadian Lumber, 2022

1601.03 DEFINITIONS

For the purpose of this specification, the following definitions apply:

Check means separation of the wood along the grain, the greater part of which occurs across the rings of annual growth. When the depth of a check exceeds half the thickness of the member, it shall be deemed a split.

Coating means a liquid, liquifiable, or mastic composition that is converted to a solid protective, decorative, or functional adherent film after application as a thin layer.

Decay means a disintegration of the wood substance due to the action of wood-destroying fungi that causes the wood to become unsound. Also known as dote or rot.

Dowel-Laminated Timber (DLT) means the mass timber product made up of softwood boards that are fastened together using hardwood dowels.

Dressed (Surfaced) Wood means wood that is surfaced by a planing machine to attain a standard of smoothness and uniformity of size on one or more sides/edges.

Element means a prefabricated part of a structure, defined by function and cross-sectional shape, made of DLT, GLT or NLT.

Glued-Laminated Timber (GLT or Glulam) means the engineered wood product that is made by bonding under pressure graded laminating stock whose grain is essentially parallel and that meets the requirements of CSA O122.

Grade means the designation of the size or quality of a piece of wood according to the NLGA Standard Grading Rules for Canadian Lumber.

Knot means that portion of a branch or limb with a minimum diameter of at least 9.5 mm that has been surrounded by subsequent growth of the trunk or other portion of the tree.

Mass Timber means the engineered layered wood products DLT, NLT and GLT.

Mechanically Laminated Timber (MLT) means the prefabricated engineered wood products DLT and NLT.

Nail-Laminated Timber (NLT) means an engineered wood product made from stacking and fastening together individual lumber boards using nails or screws.

New Wood means wood that is free from deterioration such as that caused by decay, chemical or insect attack, or physical damage and has not been remanufactured since the time of its original grading.

Paint Coating means a liquid or mastic composition that upon drying or curing is converted to a solid protective, decorative, or functional adherent opaque film after application as a thin layer.

Preservative Treatment means a pressure process that impregnates wood with registered wood preservatives to prevent decay and insect attack.

Shake means a lengthwise separation of the wood that occurs between or through the rings of annual growth.

Short Crook means a localized deviation from straightness that is more than half the mean diameter of the crooked section within any section 5 feet or less in length.

Sound, tight knot means a knot that is free from decay, solid across its face, firmly embedded in the piece, and at least as hard as the surrounding wood.

Species means the tree source from which the wood was taken.

Split means a lengthwise separation of the wood due to the tearing apart of the wood cells that usually extends from surface to surface of a wooden pile.

Stain Coating means a paint coating that results in an opaque, transparent, or semi-transparent film.

Structural Adhesive means an exterior exposure adhesive that provides stiffness and strength to the structural element according to CSA O122 and shall meet the qualification requirements of CSA O177.

Structure means any bridge, culvert, building, tunnel, retaining wall, wharf, dock, or guideway, or any part thereof, designed to carry loads.

Sweep means the deviation of a post from straightness.

Used Wood means wood other than that defined as new wood.

Wane means bark or lack of wood from any cause on the edge or corner of a piece of lumber.

Wood means that generic term covering all wood including glued-laminated members.

1601.04 DESIGN AND SUBMISSION REQUIREMENTS

1601.04.01 Design Requirements

1601.04.01.01 General

The design shall be according to OPSS 907 and the requirements of this specification.

1601.04.01.02 Preservative Treatment

Preserved wood components shall be treated according to CSA O80 and the Contract Documents. The wood component use category shall be according to Table 1.

1601.04.02 Submissions

1601.04.02.01 Shop Drawings

Shop drawings shall be submitted to the Contract Administrator at least 7 Days prior to commencement of the fabrication of elements. Prior to making a submission, an Engineer's seal and signature shall be affixed to the shop drawings verifying that they are consistent with the requirements of the Contract Documents.

The fabricator shall have a sealed and signed copy of the shop drawings at the fabrication facility during fabrication. The shop drawings shall include at least the following:

- a) The grade and species of all wood components.
- b) Full detail dimensions and sizes of all component parts of the structure including fabrication tolerances. These dimensions shall make allowance for changes in shape due wood species, moisture content, temperature, lumber grain orientation, camber, and any other effects that cause finished dimensions to differ from initial dimensions.
- c) Identification marking of each member for erection.
- d) Lifting point details and locations.
- e) All necessary specifications and standards for the material to be used.
- f) Fastener installation requirements, including number of fitting up fasteners required at each connection, torquing values and methods, and oversize and slotted holes.
- g) Identification of areas requiring special surface treatment and details of surface finish of faying surfaces.
- h) Preservative treatment requirements for all components, including the type, penetration and retention.
- i) All permitted field machining, including drilling, cutting and notching.

1601.04.02.02 Fabrication

1601.04.02.02.01 Notification of Fabrication

The fabrication schedule shall be submitted to the Contract Administrator at least 7 Days prior to commencement of fabrication of elements. Any changes in the fabrication schedule shall be provided to the Contract Administrator in writing.

1601.04.02.02.02 Pre-Assembly

The Contract Administrator shall be notified in writing at least 7 Days prior to the shop trial assembly of fabricated elements.

1601.04.02.03 Manufacturer's Certificate of Conformance and Fabrication Report

A fabrication report shall be submitted to the Contract Administrator for each shipment of elements, at least 5 Business Days prior to shipping the elements from the fabrication plant.

The fabrication report shall contain the following information:

- a) List of elements including their identification number and description.

- b) Material certification according to the Material Certificates of Compliance clause.
- c) Summary of all measurements and inspections carried out to verify elements are according to the Contract Documents including drilling, cutting, notching, and dimensional verification.
- d) Summary of material test results for wood and structural adhesives used. If test results are not available at the time of shipping, they may be submitted within four Business Days following completion of testing.
- e) Documentation, including colour photographs (labelled and dated), confirming that elements were pre-assembled and any defects repairable by standard methods have been identified, evaluated, and repaired.
- f) A MTO form PH-CC-821, Manufacturer's Certificate of Conformance.
- g) Analysis of elements and calculation of forces for shipping, handling, and lifting; maintenance of stability of elements; and modification of lifting and handling methods and/or the addition of supplemental reinforcement to resist shipping and handling forces if they cannot be resisted by the as-designed element.

A MTO form PH-CC-701, Request to Proceed shall be submitted to the Contract Administrator before the delivery of each shipment of elements to the site.

The elements shall not be delivered to the site until the Contract Administrator has received the Manufacturer's Certificate of Conformance, the fabrication report, Request to Proceed, and the Contractor has received a MTO form PH-CC-702, Notice to Proceed.

1601.04.02.04 Preservative Treatment

1601.04.02.04.01 Wood Preservation Facility Certification

The certificate, verifying that the wood preservation facility is certified according to the Canadian Wood Preservation Certification Authority (CWPCA) shall be submitted to the Contract Administrator.

1601.04.02.04.02 Preservative Treatment Certificate

A certificate from the wood preservation facility shall be submitted to the Contract Administrator, identifying the preservative, use category and retention for each type of preservative treated product, and verifying that the material was treated according to CSA O80.

1601.04.02.05 Material Certificates of Compliance

1601.04.02.05.01 Identification of Wood

When the grade stamp is obscured or is nonexistent, a verification of compliance with grade and species by an agency approved by the Canadian Lumber Standards Accreditation Board (CLSAB) shall be submitted to the Contract Administrator:

1601.04.02.05.02 Glued-Laminated Timber

Verification that all structural glued-laminated timber has been manufactured according to CSA O122 or ANSI A190.1 by a plant certified according to CSA O177 or ANSI A190.1 shall be submitted as part of the fabrication report.

1601.04.02.05.03 Mechanically Laminated Timber

Verification that all mechanically laminated timber has been manufactured according to CSA O125 shall be submitted as part of the fabrication report.

1601.04.02.05.04 Structural Steel Mill Certificates

Structural steel mill certificates shall be according to OPSS 906 except that the mill certificates shall be submitted as part of the fabrication report.

1601.05 MATERIALS

1601.05.01 General

All wood in permanent structures shall be new and shall be according to the grade, species, size, preservative treatment, and surface finish as specified in the Contract Documents.

1601.05.02 Coating of Preservative Treated Wood

Only waterborne preservatives CCA, ACQ, CA-B and MCA shall be permitted for use on wood that is to be coated following preservative treatment.

Coatings that exceed 29% solids shall not be applied to wood surfaces unless the minimum nominal dimension of the wood is less than 51 millimetres. Coatings shall be as specified in the Contract Documents.

1601.05.03 Preservatives

Preservatives shall be according to CSA O80 Series and shall be selected from the following:

- a) Creosote shall be according to AWPA P1/P13.
- b) Creosote petroleum solution shall be according to AWPA P3.
- c) Ammoniacal copper zinc arsenate (ACZA) shall be according to AWPA P22.
- d) Chromated copper arsenate (CCA) shall be according to AWPA P23, Type C.
- e) Alkaline copper quaternary (ACQ-C) shall be according to AWPA P28.
- f) Alkaline copper quaternary (ACQ-D) shall be according to AWPA P29.
- g) Copper azole type B (CA-B) shall be according to AWPA P32.
- h) Waterborne copper naphthenate (CuN-W) shall be according to AWPA P34.
- i) Copper naphthenate (CuN) shall be according to AWPA P36.
- j) 4,5-dichloro-2-N-octyl-4-isothiazolin-3-one (DCOI) shall be according to AWPA P39.
- k) Micronized copper azole (MCA) shall be according to CSA O80.3 or AWPA P61. MCA type C shall be according to AWPA P62
- l) Micronized copper quat (MCQ-D) shall be according to AWPA P63

1601.05.04 Round Wooden Piles

Wooden piles shall be according to CSA O56, cleaned and peeled, and treated with an oil-borne preservative according to CSA O80 Series.

1601.05.05 Structural Glued-Laminated Wood

Structural glued-laminated wood shall be according to CSA O122 or ANSI A190.1 and shall be produced by a manufacturer certified according to CSA O177 or ANSI A190.1.

Unless otherwise specified in the Contract Documents, the appearance grade of glulam shall be industrial. Edges of glulam that shall remain exposed shall be eased. Glulam shall be incised as required by the species specified in the Contract Documents.

1601.05.06 Used Wood

Used wood shall not be used as posts for delineator, steel beam guide rail, or cable guide rail installations.

Used wood shall be permitted for use in temporary structures, provided that the wood is of known history, the grade and species are identifiable, and has been subject to structural assessment for reuse where required. The wood shall be the stress level for new wood of the same grade and species, provided that the previous use has not damaged the wood in such a way that the grade requirements are no longer met.

Used wood shall not be used where the wood has been damaged, has deteriorated due to decay or to chemical or insect attack, or its planned use is in a structure to which the public has access, unless it is regraded by a grading agency approved by CLSAB.

1601.05.07 Wood for Highway Fence, Cable Guide Rail, and Delineator Posts

Round wooden posts for highway fence, cable guide rail, and delineators shall be Eastern White Cedar, Eastern Hemlock, Western Hemlock, Jack Pine, Red Pine, Lodgepole Pine, Coastal Douglas Fir, or Southern Yellow Pine. Allowable defects shall be according to CSA O56, except that the posts shall be free from loose or unsound knots, short crooks, reverse sweep, shakes, decay, and checks that exceed 6 mm in width. Posts having a sweep exceeding 2% of the length of the post shall be rejected.

1601.05.08 Wood for Steel Beam Guide Rail and Sign Posts

Wooden posts and wooden offset blocks for steel beam guide rail shall be Jack Pine, Red Pine, Lodgepole Pine, Coastal Douglas Fir, Eastern Hemlock, Western Hemlock, or Southern Yellow Pine.

Wooden posts for signs shall be Coastal Douglas Fir, Western Hemlock, Amabilis Fir, Lodgepole Pine, Jack Pine, Ponderosa Pine, Red Pine, or Western Red Cedar.

Except for maximum allowable wane, posts and blocks for steel beam guide rail and posts for signs shall be No. 1 Grade – Post and Timber, graded according to the NLGA Standard Grading Rules for Canadian Lumber.

Wane on blocks and on the portion of posts to be set above ground shall not exceed a total width of 25 mm on any one face. Wane on the lower 1.2 m or on the portion of posts to be set below ground shall not exceed a total width of 60 mm on any one face. The total width of wane on any face shall be determined by deducting the portion of the face that is entirely free from wane from the minimum permissible dimension as specified in the Contract Documents.

1601.07 PRODUCTION

1601.07.01 General

All cutting and machining shall be performed prior to preservative treatment for mass timber elements and non-replaceable primary structural bridge elements. Cutting and machining after preservative treatment shall not be done unless permission is received from the Contract Administrator.

The Contract Administrator shall be notified in writing at least 7 Days prior to commencement of fabrication of elements.

1601.07.02 Fabricator Certification

Glulam shall be fabricated by a plant certified according to CSA O177 or ANSI A190.1.

1601.07.03 Markings

1601.07.03.01 Wood Grade Stamp

All wood shall be marked using a grade stamp of an association or independent grading agency according to CSA O141.

Where wood is not identified by a grade stamp, a certificate of compliance shall be submitted to the Contract Administrator according to the Identification of Wood subclause.

1601.07.03.02 Identification of Preservative Treatment

All wood with preservative treatment shall be marked by a stamp, indicating the producer, CSA use category, preservative and retention.

Where a stamp is not available, a certificate from the wood preservation facility shall be submitted to the Contract Administrator according to the Preservative Treatment Certificate subclause.

1601.07.03.03 Prefabricated Elements

1601.07.03.03.01 General

All prefabricated elements shall be identified by indelible marking, readily visible for inspection, with the following information:

- a) Identification number.
- b) Orientation marking identifying the tops of elements.
- b) Name or trademark of the fabricator.
- c) Identification of the plant if the fabricator has more than one plant.
- d) Date of manufacture (yyyy-mm-dd).
- e) Product marking as applicable.
- f) Certification marking as applicable.

Permanent marking shall be affixed in an area not exposed to view in the finished structure.

1601.07.03.03.02 Mechanically Laminated Timber

MLT products shall have the product and certification markings according to CSA O125.

1601.07.04 Fabrication

1601.07.04.01 General

Fabricated elements shall be GLT, DLT or NLT.

1601.07.04.02 Shop Trial Assembly

Girders and other main components specified in the Contract Documents shall be pre-machined and pre-assembled in the shop to prepare or verify the field connections. Components shall be supported in a manner consistent with the finished geometry of the structure, as specified in the Contract Documents, with allowance for any camber required to offset the effects of dead load deflection.

Cuts, holes, bores and grooves shall be manufactured to final size while in assembly and prior to preservative treatment. The components shall be pinned and firmly drawn together before reaming or drilling.

When a number of sequential assemblies are necessary because of the length of the bridge, the second and subsequent assemblies shall include at least one section from the preceding assembly to provide continuity of alignment.

Each assembly shall be checked for accuracy of cuts, holes and grooving, camber, alignment, and fit-up.

1601.07.04.03 Shaping Using Numerically Controlled Machines

As an alternative to the shop trial assembly requirements when numerically controlled machines have machined wood components, a check assembly consisting of the first components of each type of congruent shape to be made shall be undertaken to adequately demonstrate the accuracy of the machining equipment. If the check assembly is satisfactory, further assemblies of like components are not required. If the check assembly is not satisfactory, the work shall be redone or repaired in a manner acceptable to the Contract Administrator.

1601.07.04.04 Inspection

Inspection shall be as specified in the Contract Documents.

1601.07.04.05 Dimensional and Workmanship Tolerances

Dimensional and workmanship tolerances shall be according to the Contract Documents, and the following:

- a) CSA O122 or ANSI A190.1 for glulam; and
- b) CSA O125 for MLT.

1601.07.05 Preservative Treatment

Wood preparation including seasoning, conditioning, incising and preservative treatment shall be according to CSA O80 Series or AWWA standards. Wood to be treated shall be free of excess saw dust and wood chips.

All products shall meet the minimum penetration and retention levels specified for each preservative and species according to CSA O80 or AWWA standards. Products requiring incising to meet penetration and retention standards shall be incised prior to treatment to the minimum depth specified for that species and preservative combination.

All wood for permanent applications shall be treated with preservative, except eastern white cedar for cable guide rail posts, guide posts, delineator posts, and highway fence posts and western red cedar for sign posts. Wood treated using oil borne preservatives shall be free of excessive surface oil and surface deposits.

All wood, except cedar posts, in temporary structures with an intended service life exceeding 1 year shall be treated with preservative.

Treated wood shall have a moisture content not exceeding the requirements of CSA O80 or the Contract Documents. Wood treated using water borne preservatives shall have an average moisture content not exceeding 25% at 25 mm depth below the surface prior to preservative treatment.

1601.07.05.02 Treatment of Glued Laminated Timber

Glued laminated timber beam elements shall be treated with an oil-based preservative. Water-based preservatives shall not be used.

1601.07.05.03 Quality Control - Wood Preservation

The wood preserving plant shall use quality control procedures according to CSA O80 Series or AWWA standards.

1601.07.06 Repair of Preservative Treatment

Repair of injuries in the surface of treated material, including cuts, abrasions, and holes, shall be with a field treatment preservative according to CSA O80 or AWPA M4 and compatible with the pressure preservative treatment. At least three coats shall be applied. Each coat shall be dry before the next coat is applied. End grain shall be coated with clear anchorseal paraffin sealant following treatment.

1601.07.07 Post-Treatment Trial Assembly

After preservative treatment, girders and other main structure components shall be preassembled to verify the field connections and accuracy of cuts, holes and grooving, camber, alignment, and fit-up. Components shall be supported in a manner consistent with the finished geometry of the structure, as specified in the Contract Documents, with allowance for any camber required to offset the effects of dead load deflection.

When a number of sequential assemblies are necessary because of the length of the structure, the second and subsequent assemblies shall include at least one section from the preceding assembly to provide continuity of alignment.

1601.07.08 Delivery, Handling and Storage

1601.07.08.01 General

Handling and storage of wood shall be according to CSA O80 Series.

Wood shall be kept free of dirt and stored in a location that will not create an excessive increase in temperature through the green house effect resulting in rapid drying of the material. Wood shall be stored in a manner that will prevent ponding or trapping of excess moisture between surfaces where it cannot dry readily.

1601.07.08.02 Handling

1601.07.08.02.01 General

Store and handle wood in the manner necessary to avoid damage. Dropping, brushing, breaking of fibres, and penetrating the treated surface shall be avoided. Sharp or pointed tools that might damage the integrity of the preservative treated surface shall not be used for lifting, turning, or handling the wood.

1601.07.08.02.02 Laminated Members

Laminated members shall not be dragged or dropped. Care shall be taken in handling to prevent damage to the finished surface. Cable slings or chokers shall not be used to handle laminated materials unless adequate blocking is provided between the cable and the wood member to prevent surface damage. Padded or non-marring slings shall be used. Protection cleats or blocking shall be applied at pickup points to protect corners.

Spreader bars of suitable length shall be used when lifting long members. The method of erection and handling shall not overstress the member.

Members shall be lifted on edge whenever possible.

Care shall be taken to minimize impact forces during lifting.

1601.07.08.03 Wrapping

1601.07.08.03.01 General

Members shall be protected during transit with water-resistant wrapping. Elements may be individually wrapped, bundle wrapped, or load wrapped.

Wrapping shall be secured to the element by staples, tape or other suitable fastenings that do not penetrate through the preservative treatment to bright wood. Seams of wrapping shall inhibit the passage of moisture.

1601.07.08.03.02 Individual Wrapping

Individually wrapped members shall cover all surfaces with water-resistant wrapping. Wrapping left in place on individually wrapped members during storage and erection shall be slit or punctured on the lowest side to prevent moisture accumulation inside the wrapping.

1601.07.08.03.03 Bundle Wrapping

Bundle wrapped members shall totally enclose all elements with water-resistant wrapping. Wrapping left in place on bundle-wrapped elements during storage and construction shall be slit or punctured on the lowest side to prevent moisture accumulation inside the wrapping.

1601.07.08.03.04 Load Wrapping

Load wrapped members shall be enclosed on the top, sides and ends with water-resistant wrapping. Wrapping shall extend to the bottom of the members included in the load.

1601.07.08.04 Delivery and Storage

If DLT and GLT elements are stored away from the Working Area, the lease according to OPSS 907 shall be submitted to the Contract Administrator prior to delivery.

The Contract Administrator shall be notified in writing a minimum of 3 Business Days prior to delivery of members.

Lifting, storing and transporting shall be as specified in the Working Drawings.

Delivery shall include transportation, loading, unloading, and storage of the members.

Storage includes, but is not limited to, storage while awaiting delivery in temporary locations or, at the job site.

Members shall be stored in a level area, supported on blocking spaced to provide uniform and adequate support. If covered storage is not available, material shall be blocked well off the ground at a well-drained location. If a paved surface is unavailable, the ground under the material shall be covered with opaque, polyethylene film.

Stored members shall be separated with stickers arranged vertically over the supports so that air can circulate around all four sides of each member. The top and all sides of elements shall be covered with moisture-resistant covering.

Advertising by means of removable signing shall be permitted on elements only while in transit to the site. Any permanent markings on a surface that would be visible after installation shall not be permitted.

1601.07.09 Tolerances

1601.07.09.01 Dimensions

The tolerances in Table 2 shall apply.

1601.07.09.02 Splits and Checks

Splits and checks in all cedar and treated posts shall not exceed:

- a) In width, 10 mm at the surface, regardless of their length or depth.
- b) In depth, 40% of the post diameter or thickness, regardless of their length or width.

Other treated wood shall be according to the NLGA Standard Grading Rules for Canadian Lumber and the Contract Documents.

1601.08 **QUALITY ASSURANCE**

1601.08.01 **General**

The acceptance of wood shall be according to the requirements of this specification. Wood which does not meet one or more requirements of this specification is deemed rejectable and shall not be incorporated into the work.

1601.08.02 **Inspection**

The quality of all materials and finished products shall be subject to inspection and approval by the Owner. The manufacturer shall afford the Owner all reasonable facilities and access to ensure that the wood products furnished are according to the Contract Documents.

**Table 1
Wood Component Use Category**

| Component | CSA O80 Use Category |
|-------------------------------------|-----------------------------|
| Foundation Elements | UC-4.2 |
| Structure Elements (except barrier) | UC-4.2 |
| Structure Barrier | UC-4.1 |
| Guide Rail Posts | UC-4.1 |
| Guide Rail Blocks | UC-4.1 |
| Ground Mounted Sign Posts | UC-4.1 |
| Fence Posts | UC-4.1 |

**Table 2
Dimension Tolerances**

| Dimension | Tolerance |
|--|------------------|
| Diameter of round wooden posts for highway fence, cable guide rail, and delineator posts | ± 10 mm |
| Diameter of other round wooden posts | ± 6 mm |
| Dressed cross-sectional dimensions | ± 2 mm |
| Length | ± 10 mm |