


Wood Preservation Canada

WOOD PRESERVATION SPECIFIER GUIDE – NON-RESIDENTIAL APPLICATIONS

This document has been developed by Wood Preservation Canada (WPC) to assist purchasers and users in the selection and specifications of non-residential treated wood products. Additionally, some background information is provided about wood, wood treatments, manufacturing, preservatives, quality assurance and inspection, the Canadian Standards CAN/CSA O80 – 21 Use Category System, and wood treatment standards. The specifier guides that follow, group each industrial treated wood product according to its intended end use and provide guidance to assist the specifier, purchaser, and user groups to correctly communicate to the manufacturer the specifications and treatment levels that are required to achieve the desired long-term service requirements.

1.0 INTRODUCTION

1.1 Trees are amongst the oldest living organisms on the planet and form an important part of our daily lives. Wood has been used for centuries for fuel, furniture, paper as well as a wide variety of construction materials. In exterior applications, wood is subject to deterioration from the natural elements and biological attack, but when properly protected, its service life can be extended for many years. The most effective way of protecting exposed wood is the use of wood preservatives which make the wood unappealing to organisms as a food source.

The preservation of the wood substrate is important, especially when it is specified for use in critical infrastructure applications such as railway ties, bridge timbers, utility poles and guardrail posts for highways. Pressure treated wood ensures that these critical structures remain strong and safe for the duration of their service lives. Untreated wood in these same applications would quickly decay resulting in product failure that could cause service interruptions, public safety risks, and high replacement costs.

Trees, and the wood that is derived from them are the world's only renewable building material. As our forests are being called upon to produce an ever-increasing number of products in response to our needs, we must ensure that we manage and conserve these precious resources. One of the best and most effective ways to help conserve Canadian forests is to use the wood we harvest wisely and to make sure it lasts.

1.2 To ensure that pressure treated wood meets all these goals it must be treated correctly for its intended end-use. It is therefore important that the supplier, purchaser, and end-user of treated wood products agree on all the requirements. These requirements are typically outlined in a predetermined specification. In general, a specification is a type of standard that is referenced by the purchaser in their procurement documents. For pressure treated wood products the governing standard is the Canadian Standards Association (CSA) CAN/CSA O80 Series - Wood Preservation. Correctly specifying a pressure treated product for its intended application will ensure the project is cost efficient, environmentally sustainable and will be durable for the intended service life of the product.

2.0 WOOD PRESERVATIVES AND TREATMENT

The purpose of pressure treating wood is to extend the service life of the finished wood products in exterior applications. Preservative treatments make it possible to use wood in a variety of service conditions, including fences, decks, bridges, or aquatic environments etc. By applying the appropriate

preservative, the wood can be protected from attack by decay from fungi, termites, or marine borers. The service conditions (see Use Category System) that the wood will be exposed to will determine what preservative and/or wood species is required as well as the preservative penetration and retention to achieve the desired results.

2.1 Brief History

The treatment of wood with preservatives is not new, in fact, preservative treatment of wood can be traced back to pre-Roman times. There are records of wood preservation in ancient times where bridge timbers were soaked in olive oil and ship hulls were protected with tar. Commercial pressure treated wood began in the late 19th century with the use of creosote for the protection of railroad ties. Historically, treated lumber and timbers were used for industrial applications, until the 1970's when consumer pressure treated lumber was introduced to homeowners for fencing and backyard projects. Today, more innovative preservative treatments have been introduced to the markets to address the need for wood preservatives that are effective and more environmentally friendly.

2.2 Pre-Treatment Conditioning

For lumber and timbers to be treated they must be prepared properly to be receptive to the preservative. One of the most important steps is to ensure the wood is dry. As much as half the weight of a living tree is water. To ensure proper penetration and retention of the preservative, most of this water must be removed. There are a variety of commercial techniques to achieve this result including air seasoning, kiln drying, steam conditioning and boultonizing. Air drying is the simplest method and is accomplished by stacking the wood outdoors where the water is allowed to evaporate. Drawbacks to this method are that it requires the holding of large inventories and land, the reliance on weather, and the risk of decay and/or insect attack. Kiln drying is a popular and effective method to dry wood. The wood is placed in large ‘ovens’ called kilns where heat and air circulation increase the evaporation process. Kiln drying reduces the need for inventory and land, is comparatively fast, and produces uniform drying, which in turn improves treatment results. Steam conditioning is a process in which the ‘green’ wood is put in a treating cylinder where steam is introduced to heat and dry the wood. At the same time a vacuum is applied to remove the water from the cylinder. This method is limited to species that do not experience strength loss when subjected to high temperatures and is only used with oil borne preservatives. In the Bolton process green wood is placed in a treatment cylinder, hot oil is introduced, and a vacuum is applied, which causes the water to escape from the wood. When the wood is sufficiently dry, the cylinder is drained, and the water and oil are later separated.

Another way to improve the penetration and retention of preservatives is a process known as incising. Incising wood is often used for railroad ties, thin sapwood, and refractory species (wood species whose cellular structure is such that they resist treatment). Incising is a pre-treatment process were small incisions or slits are put into the wood. This process increases the number of exposed surfaces, which results in a more uniform preservative penetration and reduced checking of the wood. Some industrial wood products such as utility poles, cross and switch ties, and bridge timbers, undergo mechanical preparation such as pre-boring, surfacing, and cutting prior to preservative treatment. Pre-treatment fabrication minimizes treated wood sawdust and chips in the field because there is no untreated wood exposure, which helps to increase the service life of the finished product.

2.3 Wood Preservatives

There are several wood preservatives used to treat wood, many of which are wood species and/or end-use specific. Chemicals and their uses are regulated by government authorities. Health Canada's Pest Management Regulatory Agency should be consulted for further information. The following is a list of the preservatives currently registered by Health Canada's Pest Management Regulatory Agency:

TABLE 1

Characteristics of permitted preservatives for pressure-treatment processes*

PRESERVATIVE	RETENTION (ACTIVE BASIS)	PRESERVATIVE CARRIER
Organic and organometallic		
Creosote (CR)	Creosote	-
Creosote-petroleum solution (CR-PS)	Creosote solution	Hydrocarbon solvent
Creosote solution (CR-S)	Creosote solution	-
Pentachlorophenol (Penta) solvent A (PCP-A)	PCP	Hydrocarbon solvent
Pentachlorophenol (Penta) solvent C (PCP-C)	PCP	Light Hydrocarbon solvent
Water-borne, acid based		
Chromated Copper Arsenate Type C (CCA)	Metal oxides	Water
Chromated Copper Arsenate Type C – Oil emulsion system (CCA-oil)	Metal oxides	Water
Chromated Copper Arsenate Type C – Polyethylene glycol Di methacrylate (CCA-PA)	Metal oxides	Water
Chromated Copper Arsenate Type C – Polyethylene glycol (CCA-PEG)	Metal oxides	Water
Chromated Copper Arsenate Type C –	Metal oxides	Water
Water-borne, alkali-based (amine/ammonia)		
Alkaline copper quat, Type A (ACQ-A)	CuO + Quat	Water
Alkaline copper quat, Type A (ACQ-C)	CuO + Quat	Water
Alkaline copper quat, Type A (ACQ-D)	CuO + Quat	Water
Ammoniacal copper zinc arsenate (ACZA)	Metal oxides	Water
Copper azole, Type B (CA-B)	Cu + Azole	Water
Water-borne, other		
Inorganic boron (SBX)	B_2O_3	Water
Water-borne, particulate		
Micronized copper azole (MCA)	Cu + Azole	Water
Micronized copper quat (MCQ)	CuO + Quat	Water

Recommended Reference Standards

CAN / CSA – 056-10, Round Timber Piles

CAN / CSA – O80 Series – 21 Wood Preservation

**Source © 2021 Canadian Standards Association*

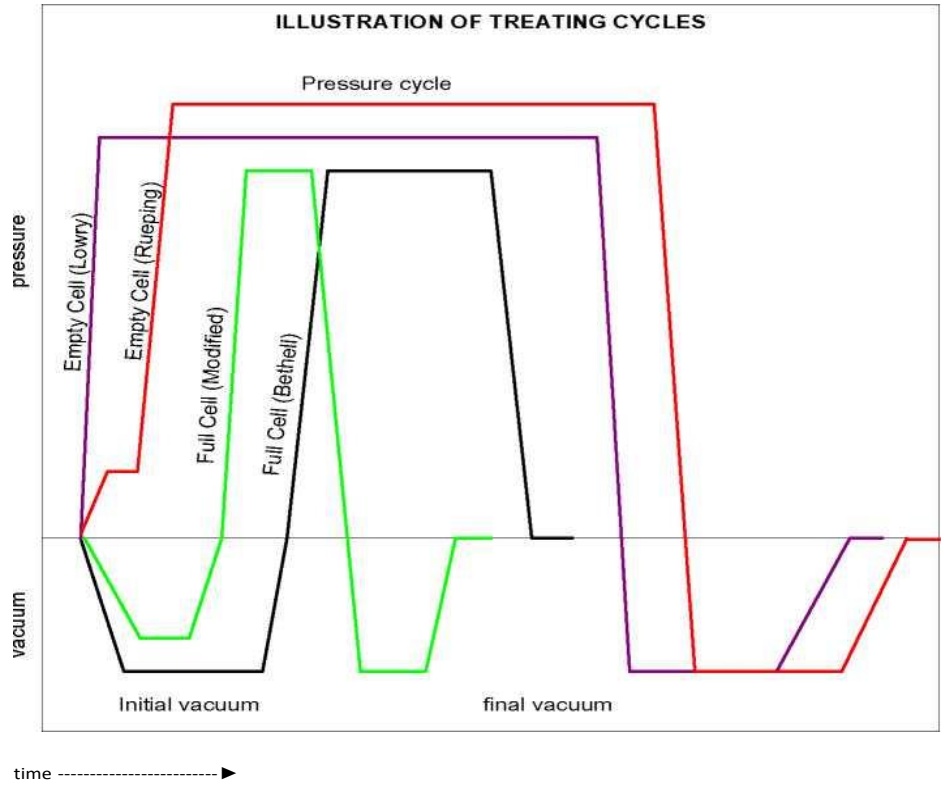
2.4 Treatment Processes

In a typical pressure treatment process, wood is placed in large horizontal cylinders ranging in size from 18 to 62 metres (60’ to 200’) in length and 1.8 to 2.4 metres (6’ to 8’) in diameter. The preservative solution is introduced to the cylinder and the various cycles of vacuum and pressure inject the preservative to form a protective zone around the wood. The treatment processes are classified into two basic groups, the full cell and empty cell methods.

2.4.1 Full Cell Processes

The full cell or “Bethall” process was one of the first pressure processes used to treat wood and is primarily used for waterborne preservatives (see Figure 1).

Figure 1



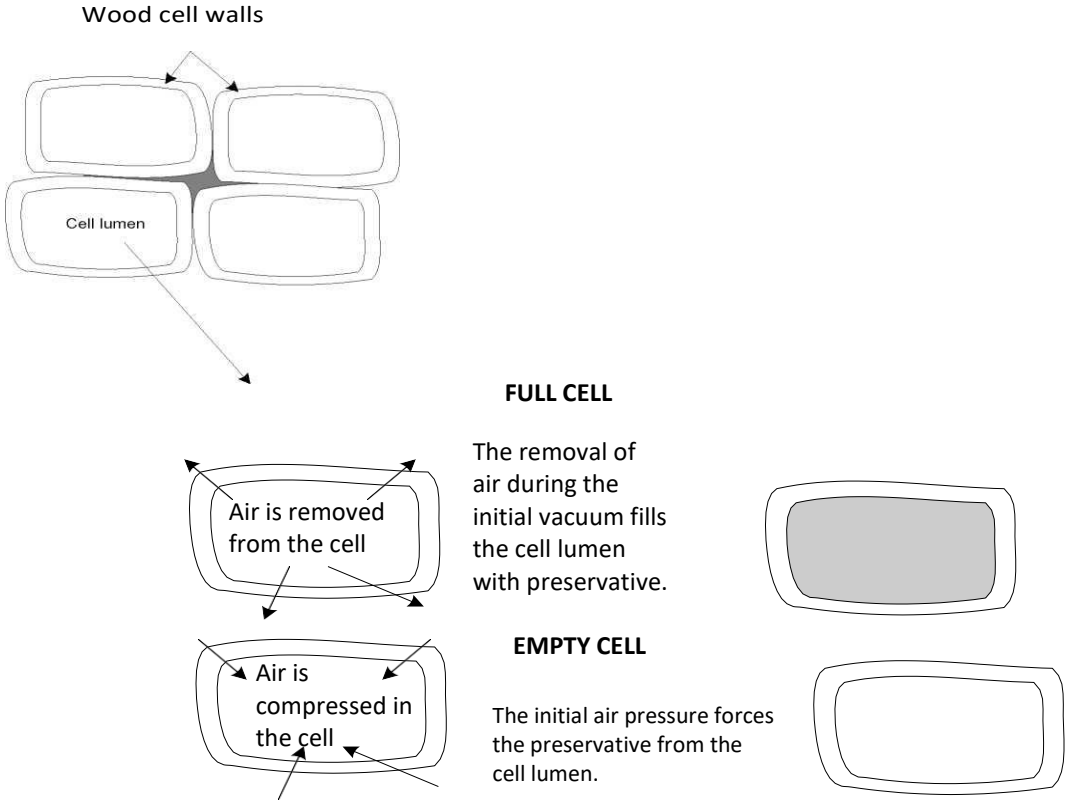
The wood is placed into the cylinder and a vacuum is introduced (70 kPa / 20 inHg) removing air and water from the cell lumens. While under vacuum the preservative solution is introduced, and the cylinder is filled. Pressure is applied (maximum of 1040 kPa / 150 psi) to force the preservative into the wood. After a pre-determined time or a measured amount of preservative uptake, the pressure is released, and the remaining solution is returned to a storage work tank. This cycle maximizes the amount of preservative uptake into the wood. The modified full cell process (MFC) is a modern enhancement to the original process. A shorter and lower initial vacuum (50 kPa / 15 inHg) followed by

the introduction of the preservative and the appropriate pressure cycle, then of a final vacuum (70 kPa / 20 inHg). The final vacuum cycle in this process lowers the amount of preservative uptake and drippage or 'kick-back' at the end of the cycle. The Modified Full Cell (MFC) process is used to treat most wood products with waterborne preservatives in Canada. The MFC process helps to control the preservative uptake so that target retention and penetration are reached at the same time and the product is not over treated.

2.4.2 Empty Cell Processes

The two typical empty cell processes in use are the Rueping and Lowry processes. The empty cell processes are generally used when treating with oil borne preservatives. The Rueping processes starts with the application of an initial air pressure, then the preservative solution is introduced, and the pressure is raised. The pressure is maintained until the desired gross (or gauge) retention is reached. The pressure is then released, and the solution is returned to the work storage tank. When the pressure in the cylinder drops below the initial air pressure, the pressure inside the wood cell lumen becomes higher than the surrounding atmosphere forcing the excess preservative from the wood (see Figure 2). The Lowry process is based on the same principle with the exception that the preservative solution is introduced, and the process begins at atmospheric pressure. The result is that the gross retentions are higher when compared to the Rueping process. The advantage of the Rueping process is that final (or net) retentions can be better controlled, minimizing over-treatment and delivering a clean product.

Figure 2



Post Treatment Processes

Post treatment conditioning is an important step to minimize the environmental impacts of treated wood in-service. Following treatment with waterborne preservatives, the active ingredients in the preservative and the wood chemically react together making them less resistant to leaching. The reaction process or stabilization is time/temperature dependent and can be effectively achieved in several ways. For example, the wood can be placed in a chamber where heat (70-75°C) with high humidity (100%) is applied, or it can be placed in covered storage at ambient temperature. Oil borne preservatives leave the wood a light to dark brown colour and are only used to treat many industrial products. Following pressure treatment, the wood remains in the treatment cylinder and undergoes a steam/vacuum cycle. These processes generally use low steam temperatures (115°C) with an applied vacuum of 70 kPa (20 in/Hg) for many hours. The final product has a dry surface and is free of excess oil.

An important aspect of post treatment processes and handling is adherence to the Best Management Practices (BMPs). BMPs are a set of environmental guidelines established by Wood Preservation Canada, Western Wood Preservers Institute, Southern Pressure Treaters Association, and the Southern Forest Products Association for products used in aquatic or wetland applications. They are known as the *Best Management Practices for the Use of Treated Wood in Aquatic and Wetlands Environments.* The BMPs are a guide to the selection, specification, production, quality assurance inspection, and installation and maintenance of all the various pressure treated wood products. The core philosophy of the BMPs is chemical minimization. Environmental and ecological concerns support this goal of:

a) placing enough preservative chemical into the wood to provide protection for its intended application and at the same time,

b) minimizing the amount of preservative above the required minimum to reduce the amount of preservative available for movement into the environment.

3. CANADIAN STANDARDS ASSOCIATION CAN / 080 SERIES – 21 WOOD PRESERVATION*

The CAN / CSA O80-Series Wood Preservation Standards are developed by the Technical Committee which operates under the authority of the Canadian Standards Association's, Strategic Steering Committee on Construction and Civil Infrastructure. The Committee is responsible for developing and maintaining standards for the preservative treatment of wood, including:

a) requirements for wood preservation,
b) requirements for analyses of materials,
c) manufacturing practices for pressure and thermal impregnation of chemicals for the preservation of wood,
d) requirements for impregnation results,
e) good utilization practices, and
f) quality assurance and, when appropriate, conformity assessment.

CAN / CSA O80 Series – 21 Wood Preservation Standard describes and specifies the requirements for the treatment of wood with preservative chemicals. The standard describes all aspects from pre-treatment handling through treatment, and final testing and analysis.

Note: *The scope of the Committee does not include those standards which cover the criteria for wood products.*

3.1 CSA Technical Committee Matrix

The matrix of the Committee is defined to ensure that the actual number of voting members in any one category shall not be more than the combined actual numbers of the voting members in the two smallest categories. The Committee is represented by the following interest categories and assigned based on the individual's predominant interest in the products or services:

a) **Producer Interest** – this category includes those who are predominately involved with production (manufacturing goods), promotion, retailing, or distribution of the products, materials, or services:
b) **User Interest** – includes those who predominately represent consumer interests or end users of the products, materials, or services and are not involved in the production or distribution of these goods:
c) **Regulatory and General Interest** – includes those involved with regulating the use of the product(s); and those who are not associated with the production, distribution, or direct use of the products, materials, or services. This interest category may include representatives of government, academic, and scientific interests.
**Source © 2021 Canadian Standards Association File No. A366-23, A350-13.*

3.2 USE CATERGORY SYSTEM (UCS)*

The Use Category System (UCS) employed in the CAN / CSA O80 Series Standard is based on the UCS developed by the American Wood Protection Association (AWPA). Minor changes have been made to the AWPA system to account for treated wood production and use patterns in Canada and to align with ISO 21887 more closely. When a requirement of the CAN / CSA O80 Series Standards conflicts with a requirement of an AWPA Standard, the requirement of the CSA O80 Series Standards shall take precedence. **Source © 2021 Canadian Standards Association.*

The CSA O80-15 Use Category System* (UCS) places wood uses into one of five primary use categories that clearly describe the exposure conditions that specific wood products can be subjected to in service. The primary use categories are further broken down into subcategories based on the degree of biodeterioration hazard and the product service life expectations associated with specific products and exposure conditions. In addition to the five use categories for biodeterioration, there is a sixth use category for fire retardant applications.

**Source © 2021 Canadian Standards Association – CSA O80.1-21 Specification of treated wood.*

3.3 Determining the Use Category for the Expected Service Condition

The specifier or user should first identify the appropriate Use Category (Table 2) for the intended or expected service condition.



Table 2

Use Category for the Expected Service Condition*

USE CATEGORY	SERVICE CONDITIONS	USE ENVIRONMENT	COMMON AGENT(S) OF DETERIORATION	TYPICAL APPLICATIONS
UC1	Interior construction – Above ground - dry	Protected against weather and other sources of moisture	Insects	Interior construction and furnishings
UC2	Interior construction – Above ground - damp	Protected against weather, but can be exposed to	Decay fungi and insects	Interior construction
UC3.1	Exterior construction – Above ground – coated and rapid water run off	Protected against weather by coating or cladding and not subject to prolonged wetting	Decay fungi, disfiguring fungi, and insects	Coated millwork, siding, and trim
UC3.2	Exterior construction – Above ground- uncoated or poor water run off	Exposed to all weather cycles, including prolonged wetting	Decay fungi, disfiguring fungi, soft rot fungi, and insects	Decking, deck joists, railings, fence pickets, and uncoated millwork
UC4.1	Ground contact or freshwater. Above ground – critical, or potential soil or freshwater contact	Exposed to all weather cycles; normal exposure conditions, including saltwater splash**	Decay fungi, disfiguring fungi, soft rot fungi, and insects	Guardrail posts, bridge beams, crossties, and utility poles (low-decay areas)
UC4.2	Ground contact or freshwater – high decay hazard or critical structural components or difficult replacement	Exposed to all weather cycles: high potential for decay	Decay fungi, disfiguring fungi, soft rot fungi, and insects (with increased potential for biodeterioration)	Land, freshwater, and foundation pile, permanent wood foundations, building poles, horticultural posts, crossties, and utility poles (high-decay areas)
UC5A	Coastal water – brackish water or salt water and adjacent mud zone	Continuous saltwater exposure	Saltwater organisms	Piles, bulkheads, and bracing
UCF.1	Fire protection as required by codes – interior construction – above ground	Protected against weather and other sources of moisture	Fire	Roof sheathing, roof trusses, studs, joists, and paneling

****In AWPA Standards, saltwater splash is included in UC4.2**

**Source © 2021 Canadian Standards Association CSA O80-21 Wood Preservation*

Once the product and application have been defined, the appropriate Specification Sheet can be selected. The smaller the Use category number (ie.UC1 or UC2) the less preservative protection is required. Conversely, the higher the Use Category number (ie. UC4.1 or UC5A) the more severe the service condition will be. Therefore, as the Use Category numbers increase the more protection the wood product needs from decay and insect attack. This generally means that preservative retention and penetration requirements are higher to achieve effective long-term protection (Table 3). Preservative retention levels for each Use Category by wood species and preservative chemical are identified in the CAN/CSA O80.1-21 Wood Preservation.




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Table 3

Specification Sheet Guide to Pressure Treated End Uses†

PRODUCTS AND END USES	EXPOSURE CONDITIONS	USE CATEGORY	SPECIFICATION SHEETS
Crossarms			
Critical or hard to replace	Above ground – exterior	4.1	WPC-01-2024
General	Above ground – exterior	3.2	WPC-01-2024
Crossties and Switchties			
General	Ground contact or freshwater	4.1	WPC-02-2024
Important and/or high decay	Ground contact or freshwater	4.2	WPC-02-2024
Glued-laminated timber (Beams)			
Above ground – Interior	Protected – insect only	1	WPC-03-2024
Above ground – Interior	Protected – damp	2	WPC-03-2024
Above ground – structural (Painted or unpainted)	Above ground – exterior	3.2	WPC-03-2024
General structural or highway structural	Ground contact or freshwater – low decay	4.1	WPC-03-2024
Highway – critical structural	Above ground – exterior	4.1	WPC-03-2024
Highway – critical structural or saltwater splash	Ground contact or freshwater – high decay	4.2	WPC-03-2024
Lumber and Timbers in Building Construction			
Aquaculture	Freshwater	4.2	WPC-04-2024
Brine Storage or highway construction materials	Ground contact or freshwater	4.1	WPC-04-2024
Building Construction	Above ground – interior, insect only	1	WPC-04-2024
Building Construction	Above ground – interior – wood exposed to dampness	2	WPC-04-2024
Cooling towers	Freshwater contact	4.1	WPC-04-2024
Crib walls, retaining walls, important structural, or greenhouse	Ground contact or freshwater	4.2	WPC-04-2024
Fire escapes – exterior exposed or wet industrial processing areas	Above ground or ground contact	4.1	WPC-04-2024
Food harvest, transport, and storage	Above ground – exterior	3.2	WPC-04-2024
Highway structural	Above ground – exterior	3.2	WPC-04-2024
Highway structural (critical member)	Above ground – exterior	4.1	WPC-04-2024
Highway construction or supporting residential and business structures	Ground contact or freshwater	4.2	WPC-04-2024
Non-residential – coated or painted	Above ground – exterior	3.1	WPC-04-2024
Non – residential – retaining walls, edging, agriculture, mariculture, boats, compost, plant and mushroom boxes, or flumes	Ground contact or freshwater	4.1	WPC-04-2024




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PRODUCTS AND END USES		EXPOSURE CONDITIONS	USE CATEGORY	SPECIFICATION SHEETS
Lumber and Timbers in Building Construction – continued				
	Non-residential – uncoated (including agriculture and farms)	Above ground – exterior	3.2	WPC-04-2024
	Permanent wood foundations	Above ground or ground contact	4.2	WPC-04-2024
	Roof decking, flooring, or subflooring	Above ground – exterior	3.2	WPC-04-2024
	Supporting residential and business structures	Ground contact or freshwater	4.2	WPC-04-2024
Lumber and Timbers in Marine Applications				
	Marine – out of water and above ground	Significant saltwater splash	4.1	WPC-06-2024
	Marine – out of water and above ground (critical)	Significant saltwater splash	4.2	WPC-06-2024
	Marine, mariculture, highway, or boats	Brackish water or saltwater	5A	WPC-06-2024
Piles - Round				
	Highway construction	Ground contact or freshwater	4.2	WPC-07-2024
	Marine or highway construction	Brackish water or saltwater	5A	WPC-07-2024
	Foundation piles – Building or highway construction (completely embedded in soil)	Ground contact	4.2	WPC-07-2024
Piles – Sawn				
	Supporting residential and building structures	Ground contact or freshwater	4.2	WPC-07-2024
Plywood				
	All (including agricultural or farms)	Above ground – exterior	3.2	WPC-10-2024
	Building construction or subflooring	Above ground – interior – damp	2	WPC-10-2024
	Fire escapes – exterior exposed	Above ground or ground contact	4.1	WPC-10-2024
	Food harvest, storage, or contact	Above ground – exterior	3.2	WPC-10-2024
	General (including edging, agriculture, mariculture, boats, furniture, gazebos, compost, plant and mushroom boxes, or flumes)	Ground contact or freshwater	4.1	WPC-10-2024
	Marine and highway construction or boat building	Brackish water or saltwater	5A	WPC-10-2024
	Permanent wood foundations	Ground contact	4.2	WPC-10-2024
	Road salt storage or highway construction	Ground contact or freshwater	4.1	WPC-10-2024
	Roof decking, flooring, or subflooring	Above ground but critical use	4.1	WPC-10-2024
	Wet industrial processing areas	Ground contact or freshwater	4.1	WPC-10-2024



PRODUCTS AND END USES		EXPOSURE CONDITIONS	USE CATEGORY	SPECIFICATION SHEETS
Poles – Round				
	Agriculture	Ground contact or freshwater – low decay	4.1	WPC-09-2024
	Agriculture, highway construction, building structural, or lighting –	Ground contact or freshwater – high decay	4.2	WPC-09-2024
Poles - Utility				
	Distribution, Transmission, or Laminated	Ground contact or freshwater – low decay	4.1	WPC-05-2024
	Distribution, Transmission, or Laminated	Ground contact or freshwater – high decay	4.2	WPC-05-2024
Poles – Sawn on four sides				
	Agricultural or farm	Ground contact or freshwater	4.2	WPC-04-2024
	Structural building	Ground contact or freshwater – moderate decay	4.2	WPC-04-2024
	Building construction or highway construction (guardrail posts,	Ground contact or freshwater – moderate decay	4.2	WPC-08-2024
	General, farm, fence, or highway construction (including guide, sign,	Ground contact or freshwater	4.1	WPC-08-2024
	Road salt storage	Ground contact or freshwater – moderate decay	4.2	WPC-08-2024
Posts – sawn on four sides				
	General – fence or deck support, highway construction or playground equipment	Ground contact or freshwater	4.1	WPC-04-2024
	Highway construction	Above ground – exterior	4.1	WPC-04-2024
	Important building structural, agricultural, or spacer blocks	Ground contact or freshwater – high decay	4.2	WPC-04-2024
†*For complete information refer to Canadian Standards Association CSA O80.1-15 Specification of treated wood©*				

4.0 QUALITY ASSURANCE - CONTROL AND INSPECTION

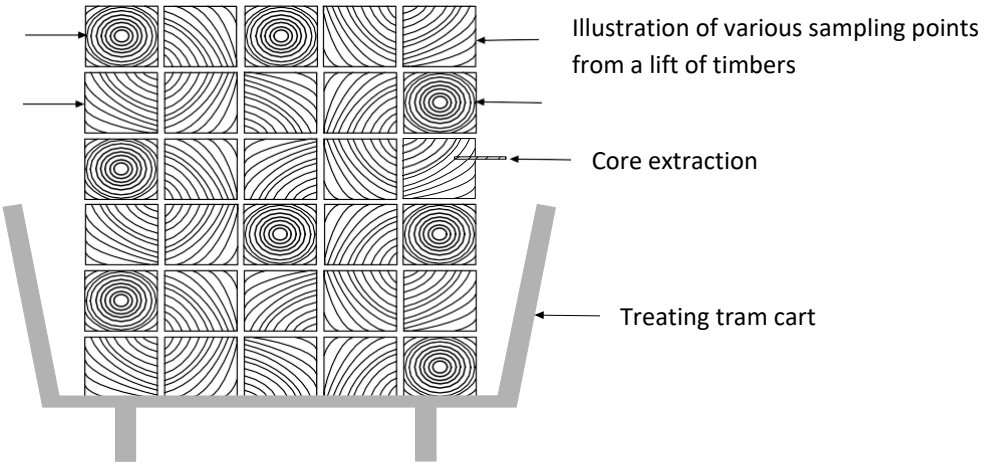
Third party inspection agencies conduct on-site visits to test and verify that the products to be delivered meet the Canadian Standards Association, CAN / CSA O80 Wood Preservation Standards and/or the Best Management Practices (BMPs), as specified. The inspection agency will mark the product with a unique "stamp" or provide the purchaser with a certificate of compliance. To obtain a list of inspection agencies contact Wood Preservation Canada info@woodpreservation.ca .

4.1 Quality Control and Inspection

The quality control and inspection of treated wood products is set out by product type in the CAN /CSA O80 Wood Preservation Standards. These requirements are results based tests that are measured by sampling the wood after treatment. The CAN/CSA O80 Wood Preservation Standards provide instructions to the treater for sampling (quantity), analysis (methodology), and minimum depth of penetration and chemical retention (amount of preservative injected into the wood).

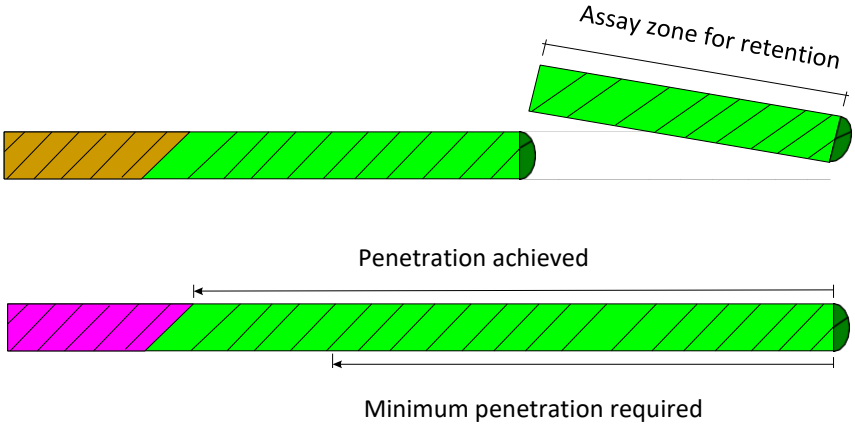
Following treatment, the "charge" of wood is removed from the cylinder and a random sample of borings (typically 20) are removed from the different pieces of wood in the charge. This is achieved by core drilling into the centre of the wood product and removing a cylindrical sample 5mm in diameter and to a typical depth of 15 to 75 mm depending on the product being sampled.

Figure 3



The “core borings” are then taken to an on-site laboratory for analysis. Typically, the borings are split in half lengthwise with half being used to measure the depth of penetration and the other half is used to measure the preservative retention level.

Figure 4



CORE SAMPLE SPLIT IN HALF FOR ANALYSIS

The penetration samples are sprayed with a reagent that colours the wood making measurement easier. Each of the 20 samples are measured and recorded, and typically 90% of the samples must pass. The assay zone is cut from the other half of the borings. The assay zone samples are dried, ground, pelletized and analyzed to determine the minimum amount of preservative has been achieved and the charge meets the specified target retention for the specified Use Category.

5.0 WOOD COMMODITY DEFINITIONS

Commercially, wood products are rarely referred to simply as "wood". Other words are used which tell us the product, shape or form that a wood-based material takes. Their most common terminologies are:

Boards - Boards refer to lumber which is usually 6' or longer (in 2' increments); thicknesses up to, but not including 2", and are usually at least 3" wide. After being sawn to rough sizes, boards may be smoothed or "dressed" by milling the surface.

Dimensional Lumber - Dimensional lumber is a classification of lumber that is nominally two inches up to, but not including, five inches in thickness. The most common thickness of dimension lumber is 2" nominal size. Nominal dimensions are marketing sizes or "name" sizes of thicknesses and widths in contrast with actual dimensions which are true sizes. For example, the actual dimensions of a nominal 2 x 4 is 1 1/2" x 3 1/2". For lengths, nominal dimensions and actual dimensions are the same. Common nominal sizes of dimension lumber are 2" x 4", 2" x 6", 2" x 8", 2" x 10", and 2" x 12". Like boards, dimension lumber is typically dressed.

Timbers - Timbers are any square or rectangular item of solid wood 5” or more in nominal thickness in the least dimension. Common cross-sections are 6" x 6"and 8" x 8", but they may be 4" x 8", 6" x 8", 12" x 12" or larger. Crossarms, crossties and cribbing are typical examples of timbers. Timbers are sold for use in their rough-sawn or dressed condition for heavy construction.

Millwork or Trim - This describes the large variety of specialty wooden items produced in a factory making door and window frames, mouldings, siding, dowels, and other items used in the internal or external finishing of buildings.

Posts - Posts are round, part-round, square or rectangular wooden items designed to give structural support when inserted in the ground. They typically range in length from 8 to 18 feet.

Poles - Poles are round, select de-limbed trees used to support overhead utility lines. Poles, by definition, are at least 25' long. Before treatment and use, poles nearly always have the bark removed, and a certain amount of surface dressing to produce a smooth, circular cross-section.

Piles or Pilings - Piles are like poles, but their purpose is for marine structures and to support buildings and bridges. The piles are driven into the ground to form a good base on which to build.

Plywood - Plywood is a manufactured wood product made from thin sheets of veneer glued together under pressure. Thicknesses range from 5 to 25 mm and are usually in sheet sizes of 4’ x 8’.



Wood Preservation Canada

SPECIFICATION SHEETS

The following Specification Sheets have been designed to assist specifiers, purchasers, and/or user groups more accurately communicate to the manufacturer their treated wood requirements.

These Specification Sheets are not intended to replace the CSA O80 Wood Preservation Standard, but serve as a guide to specifiers, purchasers, and/or user groups in navigating the standard and identifying the correct section(s) for each product or product group required. For complete specifications, refer to CSA O80 Wood Preservation Standards, and check with local suppliers for product availability in your area.

TABLE OF CONTENTS