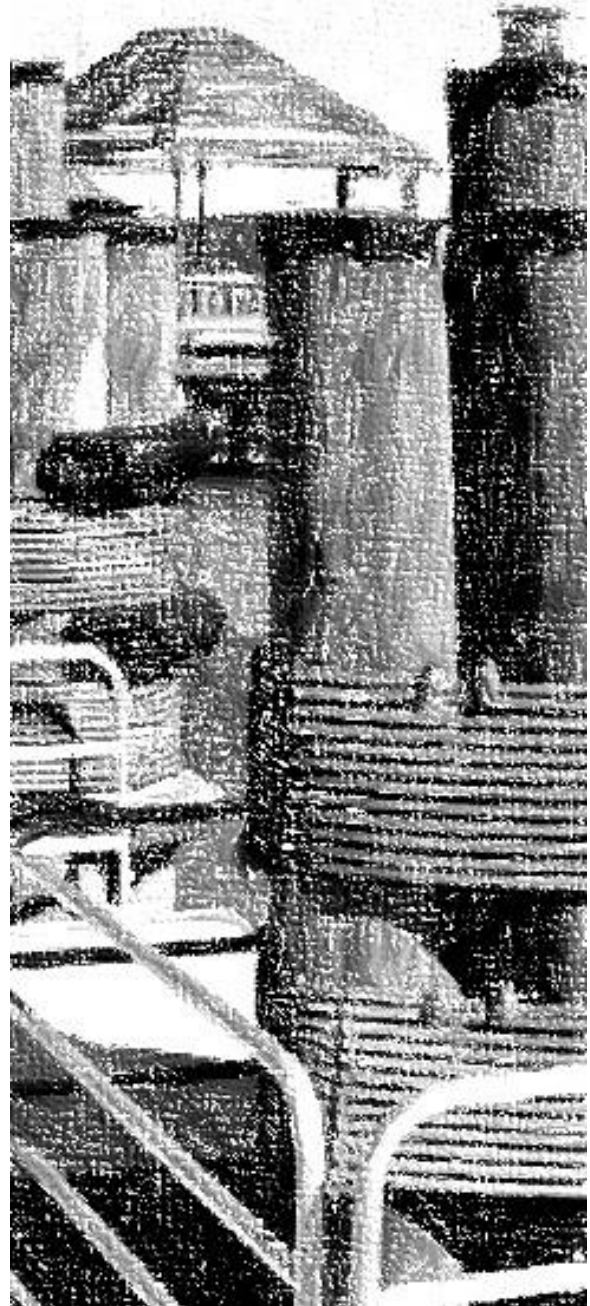


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SPECIFIER GUIDE

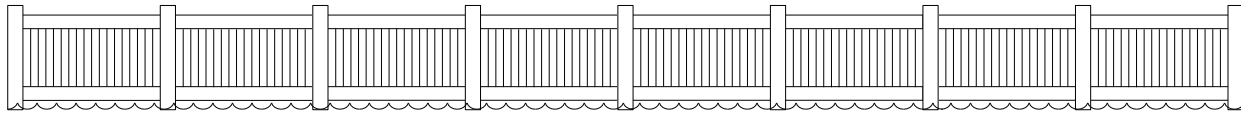
No. WPC – 06-2023

Lumber and Timber in Marine Applications



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Product Introduction

Pressure treated lumber and timber products are widely used in marine applications but require higher concentrations of preservative to enable them to withstand the harsh exposures and destructive organisms commonly found in marine environments. Products used in marine applications cover a wide range including products for cribbing of docks, jetties, bulkhead sheathing, bridge timbers and piles and the preservative treatments play an important role in protecting the substrate in harsh marine applications.

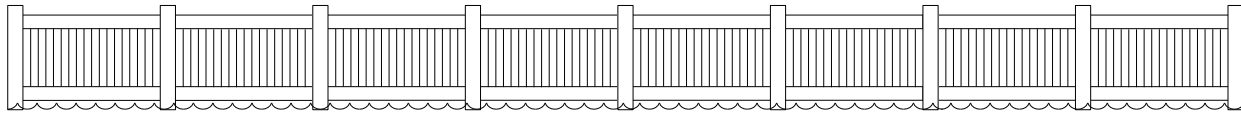
For details on the manufacturing and dimensional and physical requirements of untreated lumber and timber used in marine applications refer to the National Lumber Grades Authority (NLGA), Standard Grading Rules for Canadian Lumber. The information in this guide focuses on the requirements for pressure treated wood and timber products used in marine applications as specified in the CAN / CSA – O80 Series – 21 Wood Preservation®.

Allowable Treatment Preservatives Used in Marine Applications

Preservative Systems Used in Treatment of Marine Applications		
Chemical Name	Abbreviation	Allowable Use Categories
Ammoniacal Copper Zinc Arsenate	ACZA	UC4.1, UC4.2 & UC5A
Chromated Copper Arsenate	CCA	UC4.1, UC4.2 & UC5A
Creosote	CR	UC4.1, UC4.2 & UC5A

Lumber and timber in marine applications can subject to a wide variety of environmental conditions that are subject to decay threats and attacks from marine borers. Applications include; above ground, ground contact (such as mud) or in direct or indirect contact with saltwater or saltwater splash. This wide variety of decay threats requires a Use Category rating from UC4.1, UC4.2 or UC5A.

When large volumes of treated wood are used in poorly circulating bodies of water the Best Management Practices (BMP’S) for the Use of Treated Wood in Aquatic and Other Sensitive Environments should be consulted.



Allowable Wood Species and Related Use Categories

Preservative Treatments – Lumber and Timber for Marine Applications UC4.1			
UC4.1 – Ground contact or freshwater, Above ground – critical, or potential for freshwater contact			
Species Group	Preservative System Retention – kg/m ³ *		
	ACZA	CCA	CR
Jack pine	6.4	6.4	128
Lodgepole pine	6.4	6.4	128
Ponderosa pine	6.4	6.4	128
Red pine	6.4	6.4	128
Southern pine	6.4	6.4	128
Eastern hemlock	6.4	6.4	160§§ 120##
Western hemlock	6.4	6.4	160§§ 120##
Coastal Douglas fir	6.4	6.4	160§§ 120##
Western larch	6.4	6.4	128
Oak	6.4	6.4	120

** Refer to CAN / CSA O80.1-21 Table 10 for complete details. Source: © 2021 Canadian Standards Association*

§§ - Material thickness ≥ 114 mm (timber)

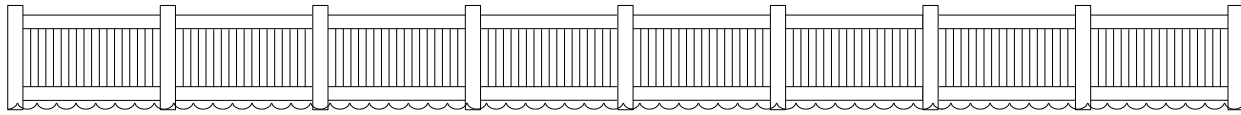
- Material thickness ≤ 114 mm (lumber)

Preservative Treatments – Lumber and Timber for Marine Applications UC4.2			
UC4.2 – Ground contact or freshwater, high decay hazard – critical structural components or difficult replacement			
Species Group	Preservative System Retention – kg/m ³ *		
	ACZA	CCA	CR
Jack pine	8.0	8.0	128
Lodgepole pine	8.0	8.0	128
Ponderosa pine	8.0	8.0	128
Red pine	8.0	8.0	128
Southern pine	8.0	8.0	n/a
Eastern hemlock	8.0	8.0	160
Western hemlock	8.0	8.0	160
Coastal Douglas fir	8.0	8.0	160
Western larch	n/a	n/a	128
Red Oak	n/a	n/a	128

** Refer to CAN / CSA O80.1-21 Table 10 for complete details. Source: © 2021 Canadian Standards Association*

§§ - Material thickness ≥ 114 mm (timber)

- Material thickness ≤ 114 mm (lumber)



Preservative Treatments – Lumber and Timber for Marine Applications UC5A			
UC5A – Coastal waters – brackish water or saltwater and adjacent mud zone			
Species Group	Preservative System Retention – kg/m ³ *		
	ACZA	CCA	CR
Jack pine	30.0	24.0	290
Lodgepole pine	30.0	24.0	290
Ponderosa pine	30.0	24.0	290
Red pine	30.0	24.0	290
Southern pine	30.0	24.0	290
Eastern hemlock	30.0	24.0	290
Western hemlock	30.0	24.0	290
Coastal Douglas fir	30.0	24.0	290
Red Oak	30.0	24.0	290

** Refer to CAN / CSA O80.1-21 Table22 for complete details. Source: © 2021 Canadian Standards Association*

Preservative Treatments – Round Timber Piles for Marine Applications UC5A			
UC5A – Coastal waters – brackish water or saltwater and adjacent mud zone			
Species Group	Preservative System Retention – kg/m ³ *		
	ACZA	CCA	CR
Jack pine	30.0	24.0	290
Red pine	30.0	24.0	290
Southern pine	30.0	24.0	290
Coastal Douglas fir	30.0	24.0	290

** Refer to CAN / CSA O80.1-15 Table23 for complete details. Source: © 2015 Canadian Standards Association*

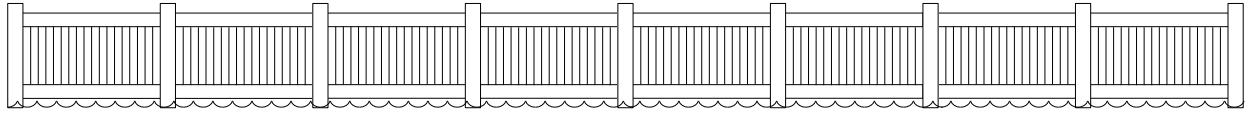
Product Registration

Wood preservatives and their uses are regulated by Health Canada’s Pest Management Regulatory Agency (PMRA).

Recommended Reference Standards

Best Management Practices (BMP’S) Use of Treated Wood in Aquatic and Other Sensitive Environments
 National Lumber Grades Authority (NLGA), Standard Grading Rules for Canadian Lumber (2014)
 CAN / CSA – O80 Series – 21 Wood Preservation
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