

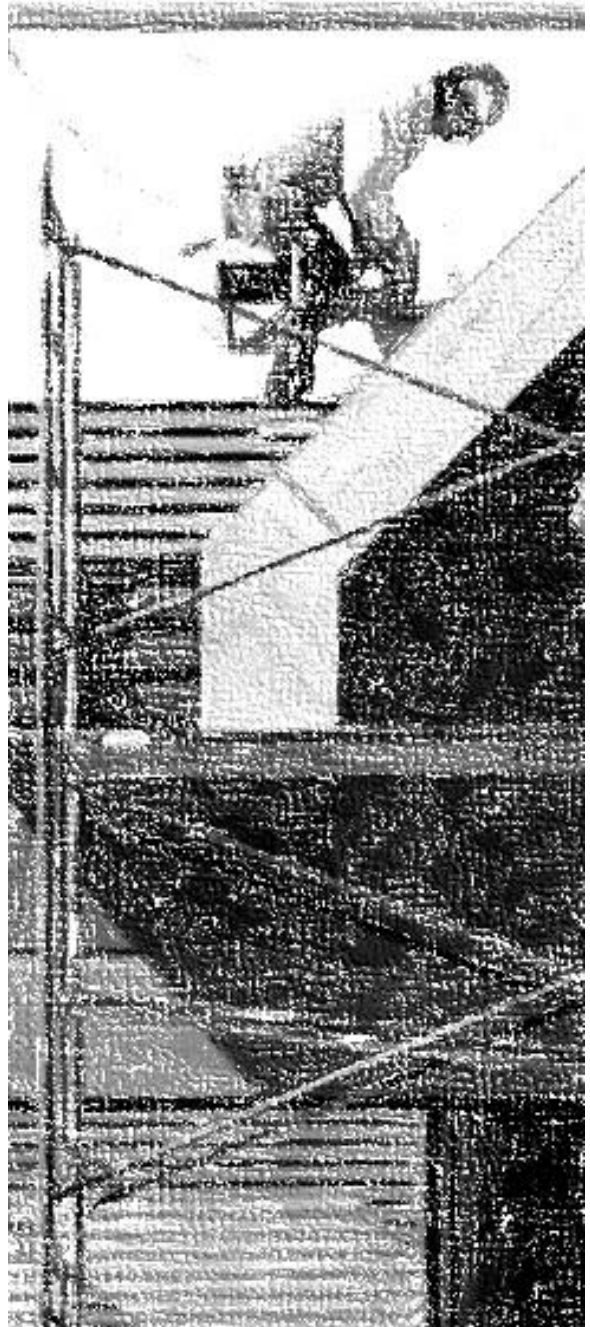


Wood Preservation Canada
Préservation du bois Canada

SPECIFIER GUIDE

No. WPC – 10-2023

Plywood



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SPECIFYING PLYWOOD

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Product Introduction

Plywood is one of the most widely used wood products and is typically manufactured from thin layers or “plies” of wood veneer that are alternately rotated at 90 degrees and glued to one another. The addition of a preservative treatment is an inexpensive way to add durability that allows the product to be used in a wide variety of exposure applications. The information in this guide focuses on the requirements for pressure treatment of plywood as specified in the CAN / CSA – O80 Series – 15 Wood Preservation®.

Plywood End Uses and Related Use Categories

Plywood can be manufactured in a variety of sizes, thickness and grades using different species and the addition of a preservative treatment allows these products to be used in a variety of interior and exterior exposure conditions. In above ground interior conditions pressure treated plywood requires a Use Category rating of 1 and 2 (UC1 or UC2), in structural above ground applications a Use Category rating of 3.2 (UC3.2) and in ground contact conditions a Use Category rating of 4.1 (UC4.1) is required. Some products may require a higher retention for a specific application due to the critical nature of their use. Below is a guide showing a variety of end uses of plywood along with the type of exposure and the related Use Category.

Use Categories – Examples of Plywood Uses and Exposures		
Plywood End Use(s)	Exposure(s)	Use Category
All (including agriculture or farms)	Above Ground - exterior	UC3.2
Battens – plywood – Rain screening	Above Ground - exterior	UC3.2
Building construction - Interior	Above Ground – Interior - Insect	UC1
Building construction or subflooring	Above Ground – interior - damp	UC 2
Fire escapes – exterior exposed	Above Ground or Ground Contact	UC4.1
Food harvest, storage, or contact	Above Ground - exterior	UC3.2
General - agriculture, boats, furniture, gazebos, compost, plant and mushroom boxes, or flumes	Ground contact, or freshwater	UC4.1
Marine and highway construction or boat building	Brackish water or saltwater	UC5A
Permanent Wood Foundations	Ground contact	UC4.2
Road salt storage or highway construction materials	Ground contact, or freshwater	UC4.1
Roof decking, flooring, or subflooring	Above ground but critical use	UC4.1
Wet industrial processing areas	Ground contact or freshwater	UC4.1

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Preservative Systems Used in Treatment of Plywood		
Chemical Name	Abbreviation	Allowable Use Categories
Alkaline Copper Quat Type A	ACQ – A	UC1, UC2, UC3.2, UC4.1
Alkaline Copper Quat Type C	ACQ - C	UC1, UC2, UC3.2, UC4.1
Alkaline Copper Quat Type D	ACQ - D	UC1, UC2, UC3.2, UC4.1
Ammonical Copper Zinc Arsenate	ACZA	UC1, UC2, UC3.2, UC4.1, UC4.2, UC5A
Copper Azole Type B	CA-B	UC1, UC2, UC3.2, UC4.1
Chromated Copper Arsenate	CCA	UC1, UC2, UC3.2, UC4.1, UC4.2, UC5A
Creosote	CR	UC3.2, UC4.1, UC4.2, UC5A
Micronized Copper Azole	MCA	UC1, UC2, UC3.2, UC4.1
Micronized Copper Quat	MCQ	UC1, UC2, UC3.2, UC4.1
Pentachlorophenol	PCP-A / PCP-C	UC3.2, UC4.1
Inorganic Boron	SBX	UC1, UC2

Allowable Preservatives, Use Categories and Recommended Retention Levels

Preservative Retention Levels of Plywood, kg/m ³ *									
Use Category	ACQ†	CA-B	MCA	MCQ	CCA	ACZA	CR	PCP ^{††}	SBX
UC1	4.0	1.7	1.7	4.0	4.0	4.0	NR	NR	2.7
UC2	4.0	1.7	1.7	4.0	4.0	4.0	NR	NR	2.7
UC3.2	4.0	1.7	1.7	4.0	4.0	4.0	96	4.8	NP
UC4.1	6.4	3.3	3.3	4.0	6.4	6.4	160	8.0	NP
UC4.2	NR	NR	NR	NR	9.6	9.6	NR	NR	NP
UC5A§	NR	NR	NR	NR	24.0	30.0	290	NR	NP

*†ACQ – Type A, C, & D
†† PCP Type A & C
NR – Not Recommended
NP – Not Permitted
*Refer to CAN / CSA O80.1-21 Table19 for complete details
§Refer to CAN / CSA O80.1-21 Table24 for complete details
Source - CAN/CSA-O80 Series-21
Wood preservation. © 2021
Canadian Standards Association

Permanent Wood Foundations – Plywood

Plywood used in Permanent Wood Foundations (PWF) requires more stringent processing controls, including a Use Category rating of 4.2. All PWF plywood is required to meet the requirements specified in CAN/CSA O80 Series-21 Wood Preservation, CAN / CSA – O322 – 02 (R2012) – Procedure for certification of pressure-treated wood materials for use in preserved wood foundations and CAN / CSA – S406 - 16 - Specification of permanent wood foundations for housing and small buildings.

The plywood used in this application requires it to be unsanded exterior type plywood having at least four plies and is limited to the following species: western hemlock, amabilis fir, grand fir, and coast douglas fir. Plywood used in PWF applications can be identified by one of the following unique markings; “Hem-Fir” - “EXTERIOR DFP-Hem-Fir” or “EXTERIOR CSP-Hem-fir”.

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Certification Mark – PWF Plywood

Each piece of lumber and plywood for permanent wood foundation use shall be identified as such. Note: In Canada, an acceptable method of identification is the provision of a certification mark stamped on the material that confirms it has been treated in accordance with CSA O322. (Source: Clause 9.1.10.1, CAN/CSA-O80 Series-21 Wood preservation. © 2021 Canadian Standards Association)

Pressure Treated Plywood – Permanent Wood Foundations		
Use Category – UC4.2 – Ground Contact		
Plywood Species	Allowable Preservatives - Retention	
	ACZA	CCA
Hem-Fir	9.6 kg/m ³	9.6 kg/m ³
EXTERIOR DFP-Hem-Fir	9.6 kg/m ³	9.6 kg/m ³
EXTERIOR CSP-Hem-Fir	9.6 kg/m ³	9.6 kg/m ³

Product registration

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

Recommended Reference Standards

CAN / CSA – O80 Series – 21 Wood Preservation

CAN / CSA – O121 – 08 (R2013) Douglas fir plywood*

CAN / CSA – O151 – 09 (R2014) Canadian softwood plywood*

CAN / CSA – O153 – 13 Poplar Plywood*

CAN / CSA – O322 – 02 (R2012) – Procedure for certification of pressure-treated wood materials for use in preserved wood foundations*

CAN / CSA – S406 - 16 - Specification of permanent wood foundations for housing and small buildings*

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