



Wood Preservation Canada
Préservation du bois Canada

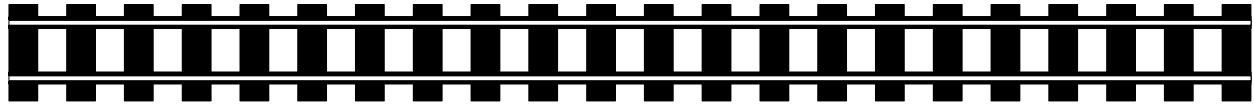
SPECIFIER GUIDE

No. WPC – 02-2023

Crossties and Switchties



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SPECIFYING CROSSTIES AND SWITCHTIES

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Product Introduction

Wood crossties and switchties play a critical role in Canada’s railway infrastructure systems. The history of wood crossties and switchties date back to mid-1800’s when Canada’s railroads were in their infancy and have long demonstrated their outstanding strength and durability. These products are typically manufactured based on specifications as provide by or indicated by the purchaser.

Allowable Wood Species and Preservative Systems

For detailed information on the physical requirements, refer to the specifications for timber crossties as defined by the Railway Tie Association (RTA) and the American Railway Engineering and Maintenance of Way Association (AREMA). The information in this guide focuses only on the requirements for pressure treating of crossties and switchties as specified in the CAN/CSA O80 Series 21 - Wood Preservation.

Preservative Systems Used in Treatment of Crossties and Switchties		
Chemical Name	Abbreviation	Allowable Use Categories
Ammoniacal Copper Zinc Arsenate	ACZA	UC4.1 & UC4.2
Creosote	CR & CR-S	UC4.1 & UC4.2
Pentachlorophenol	PCP	UC4.1 & UC4.2

Allowable Wood Species and Related Use Categories

Crossties and switchties are subject to severe service conditions and are a critically important material components in the railroad trackage system and product failure in-service could have a range of effects from service interruption to loss of life. Crossties and switchties have a use category rating of 4.1 for general use and 4.2 for important (locations) or high decay situations.

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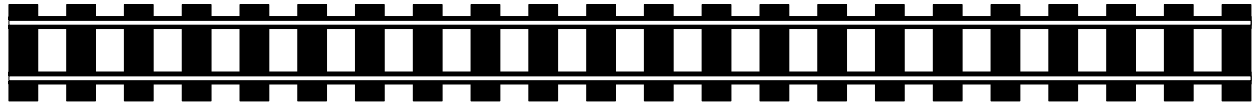
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Preservative Treatments – Crossties and Switchties UC4.1			
UC4.1 – General – Ground Contact or freshwater – Low Decay			
Species Group	Preservative System Retention – kg/m ³ *		
	ACZA	CR & CR-S	PCP- A & PCP-C
Jack pine	6.4	112	3.4
Lodgepole pine	6.4	112	3.4
Ponderosa pine	6.4	112	3.4
Red pine	6.4	112	3.4
Southern pine	6.4	112	3.4
Western hemlock	6.4	112	3.4
Coastal Douglas fir	6.4	112	3.4
Interior Douglas Fir	n/a	96	3.4
Western larch	n/a	112	3.4
Ash	n/a	112	3.4
Beech	n/a	112	3.4
Birch	6.4	112	3.4
Maple	6.4	112	3.8
Red Oak	6.4	112	3.8
White Oak	6.4	96	3.4

** Refer to CAN / CSA O80.1-21 Table15 for complete details. Source: © 2021 Canadian Standards Association*

Preservative Treatments – Crossties and Switchties UC4.2			
UC4.2 — Ground Contact or freshwater – Important and/or High decay			
Species Group	Preservative System Retention – kg/m ³ *		
	ACZA	CR & CR-S	PCP- A & PCP-C
Jack pine	8.0	128	6.4
Lodgepole pine	8.0	128	6.4
Ponderosa pine	8.0	128	6.4
Red pine	8.0	128	6.4
Southern pine	8.0	n/a	n/a
Western hemlock	8.0	160	8.0
Coastal Douglas fir	8.0	160	8.0
Interior Douglas Fir	n/a	n/a	n/a
Western larch	n/a	128	6.4
Ash	n/a	n/a	n/a
Beech	n/a	128	6.4
Birch	n/a	128	6.4
Maple	n/a	128	6.4
Red Oak	n/a	128	6.4
White Oak	n/a	n/a	6.4

** Refer to CAN / CSA O80.1-21 Table10 for complete details. Source: © 2021 Canadian Standards Association*



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Product Registration

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

Recommended Reference Standards

Railway Tie Association (RTA)

American Railway Engineering and Maintenance of Way Association (AREMA)

CAN / CSA O80 Series – 21 Wood Preservation

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