

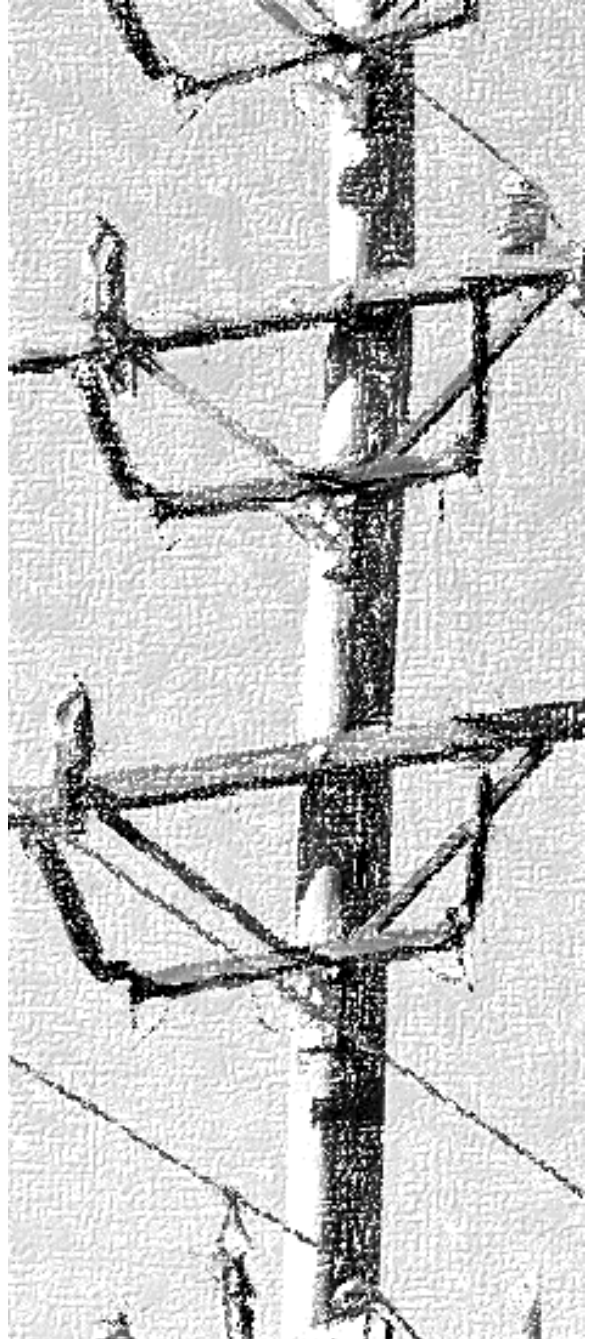


**Wood Preservation Canada**  
**Préservation du bois Canada**

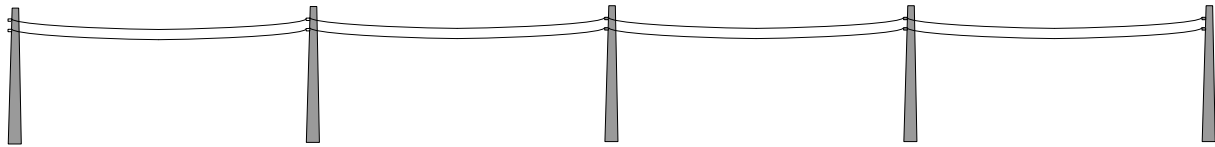
# SPECIFIER GUIDE

No. WPC – 05-2023

## Utility Poles



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## SPECIFYING WOOD UTILITY POLES

WPC – 05-2023

### Product Introduction

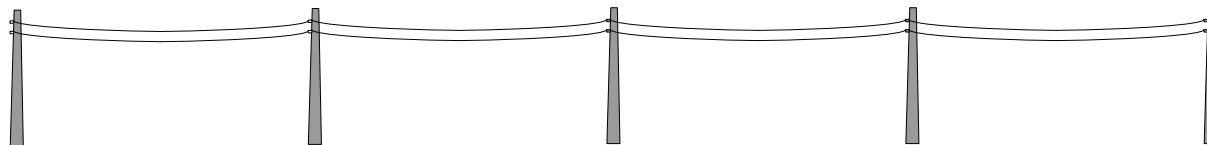
Pressure treated wood utility poles are an essential part of Canada's electrical and communication infrastructure. Wood poles are typically used to support communication and electrical overhead power lines as well as other utilities including telephone cables, fiber optic cables, coaxial cables, transformers and streetlights. Even in the technology dominated era, wood poles remain the top choice for utilities. Wood poles can withstand a wider range of forces than concrete, steel and composites in extreme conditions. Alternative materials have a narrower strength range and once that range is extended, the materials often fail. Wood's wider range of strength allows for a greater chance of survivability under nature's demanding forces. With a long record of performance, competitive, cost-effective pricing and far greater environmental benefits compared to alternatives, wood poles continue to bring power to Canadian homes and businesses and are expected to do so for many more years.

### Allowable Wood Species and Preservative Systems

Specifications for wood utility poles including manufacturing, class dimensions, quality of work and finishing, marking, handling, storage and inspection are published in the Canadian Standards Association CAN/CSA O15-15 Wood Utility Poles and Reinforcing Stubs. The information in this guide is based on the requirements for Preservative Treatment of Wood Utility Poles found in the CAN/CSA O80-21 Wood Preservation.

Preservative Systems Used in Treatment of Utility Poles		
Chemical Name	Abbreviation	Allowable Use Categories
Alkaline Copper Quat Type C	ACQ – C	UC4.1, UC4.2
Alkaline Copper Quat Type D	ACQ - D	UC4.1, UC4.2
Ammoniacal Copper Zinc Arsenate	ACZA	UC4.1, UC4.2
Copper Azole Type B	CA-B	UC4.1, UC4.2
Chromated Copper Arsenate	CCA	UC4.1, UC4.2
Creosote	CR	UC4.1, UC4.2
Copper Naphthenate	CuN	UC4.1, UC4.2
Pentachlorophenol	PCP	UC4.1, UC4.2

Pressure treated wooden utility poles are classified as critical structural (or safety) components. Since these components may be used in contact with the ground and/or freshwater, which are favourable to deterioration, the following Use Category rating of UC4.1 (low decay) and UC 4.2 (high decay) apply.



## SPECIFYING WOOD UTILITY POLES

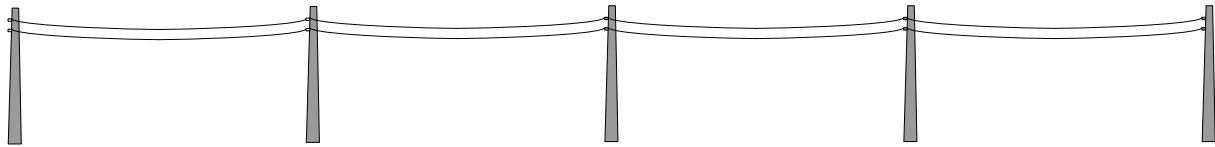
WPC – 05-2023

<b>Preservative Treatments – Utility Poles UC4.1</b>								
UC4.1 – Distribution, Transmission and Laminated – Ground Contact or freshwater – Low Decay								
Species Group	Preservative System Retention – kg/m <sup>3</sup> *							
	ACQ-C	ACQ-D	ACZA	CA-B	CCA	CR	CuN	PCP
Eastern and Western White pine	NR	NR	9.6	NR	9.6	145	1.5	7.2
Jack pine	NR	NR	9.6	NR	9.6	145	1.5	7.2
Lodgepole pine	NR	NR	9.6	NR	9.6	192	1.5	9.6
Ponderosa pine	9.6	9.6	9.6	5.0	9.6	120	1.3	4.8
Red pine	9.6	9.6	9.6	5.0	9.6	160	1.2	6.4
Southern pine	9.6	9.6	9.6	5.0	9.6	120	1.3	4.8
Western hemlock	NR	NR	9.6	NR	9.6	145	NR	7.2
Coastal Douglas fir	NR	NR	9.6	NR	9.6	145	1.5	7.2
Interior Douglas Fir	NR	NR	9.6	NR	9.6	240	NR	12.2
Western larch	NR	NR	9.6	NR	9.6	240	NR	12.2
Western red cedar	NR	NR	9.6†	5.0	9.6†	256	1.9	12.8
Yellow cypress	NR	NR	9.6	NR	9.6	256	1.9	12.8

† If the pole is incised in the groundline zone, the retention shall be 16 kg/m<sup>3</sup> in the groundline zone and 4.8 kg/m<sup>3</sup> in the midpoint area. \* Refer to CAN / CSA O80.1-21 Table16 for complete details. Source: © 2021 Canadian Standards Association

<b>Preservative Treatments – Utility Poles UC4.2</b>								
UC4.2 – Distribution, Transmission and Laminated – Ground Contact or freshwater – High Decay								
Species Group	Preservative System Retention – kg/m <sup>3</sup> *							
	ACQ-C	ACQ-D	ACZA	CA-B	CCA	CR	CuN	PCP
Eastern and Western White pine	NR	NR	9.6	NR	9.6	192	1.9	9.6
Jack pine	NR	NR	9.6	NR	9.6	192	1.9	9.6
Lodgepole pine	NR	NR	9.6	NR	9.6	260	1.9	12.8
Ponderosa pine	9.6	9.6	9.6	5.0	9.6	145	2.1	6.1
Red pine	9.6	9.6	9.6	5.0	9.6	192	1.5	8.0
Southern pine	9.6	9.6	9.6	5.0	9.6	145	2.1	6.1
Western hemlock	NR	NR	9.6	NR	9.6	192	NR	9.6
Coastal Douglas fir	NR	NR	9.6	NR	9.6	192	2.4	9.6
Interior Douglas Fir	NR	NR	9.6	NR	9.6	240	NR	12.2
Western larch	NR	NR	9.6	NR	9.6	240	NR	12.2
Western red cedar	NR	NR	9.6†	5.0	9.6†	256	1.9	12.8
Yellow cypress	NR	NR	9.6	NR	9.6	256	1.9	12.8

† If the pole is incised in the groundline zone, the retention shall be 16 kg/m<sup>3</sup> in the groundline zone and 4.8 kg/m<sup>3</sup> in the midpoint area. \* Refer to CAN / CSA O80.1-21 Table16 for complete details. Source: © 2021 Canadian Standards Association



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WPC – 05-2023

### Thermal Butt Treatment of Utility Poles

Thermal Butt is a process where the lower ends of poles (butt) are impregnated with preservative in upright, open-top tanks. In this process, Butt-treated poles have treatment in the section that will be buried, extending just above the ground line, and may be used on, Western Red Cedar and Yellow Cypress incised pole butts.

Thermal Butt Treatment of Utility Poles - Preservative usage by Species			
UC4 – Distribution and Transmission - General			
Species Group	Preservative System Retention – kg/m <sup>3</sup> *		
	CR	CuN	PCP-A / PCP-C
Western Red Cedar	320	2.4	16
Yellow Cypress	320	2.4	16
* Refer to CAN / CSA O80.1-21 Table 17 for complete details. Source: © 2021 Canadian Standards Association			

### Product registration

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

### Recommended Reference Standards

CAN/CSA O15-15 Wood Utility Poles and Reinforcing Stubs©\*

CAN / CSA – O80 Series – 21 Wood Preservation©

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