Table 3-1 Guide to commodity specifications for treated wood end uses, arranged by use. (cont.)

Commodity	Use	Exposure	Use Category	Commodity Specification	
				Section	Special Reqs.
Gazebo Material	Painted/Coated	Above Ground, Exterior	3A	A	
	Unpainted	Above Ground, Exterior	3B	A	
Glued Laminated and Mechanically Fastened Timber	Above Ground, Interior	Protected, Insect Only	1	F	
	Above Ground, Interior	Protected, Damp	2	F	
	Above Ground Structural (Painted/Unpainted)	Exterior	3B	F	
	General Structural, Highway Structural Non-Critical	Ground Contact or Fresh Water, Low Decay	4A	F	
	Important Structural, Highway Important Structural or Saltwater Splash	Ground Contact or Fresh Water, High Decay	4B	F	
	Critical Structural or Highway Critical Structural	Ground Contact or Fresh Water, Severe Decay	4C	F	
Handrails/Guardrails	Highway Construction	Above Ground, Exterior	3B	A	4.3
Joists	Above Ground, Interior	Insect Only	1	A	4.1
	Above Ground, Interior	Above Ground, Damp	2	A	4.1
	Building Construction[1]	Above Ground, Exterior	3B, 4A	A	
	Building Construction	Ground Contact/Fresh Water	4A	A	
Laminated Veneer Lumber (LVL)	See Composite Lumber				
Landscape Ties	General	Ground Contact or Fresh Water	4A	A	
Lattice	Painted/Unpainted	Above Ground, Exterior	3B	A	
Lumber/Timbers	Above Ground, Interior	Insect Only	1	A	4.1
	Above Ground, Interior	Wood Exposed to Dampness	2	A	4.1
	Above Ground, Exterior, Coated/Painted	All Applications	3A		
	Above Ground, Exterior Joists and Beams[1]	Above Ground, Exterior	3B, 4A	A	
	General, Including Agriculture/Farms	Above Ground, Exterior, Uncoated	3B	A	
	Docks, freshwater, joists and beams[1]	Above Ground, Exterior		A	
	Food Harvest and Storage	Above Ground, Exterior		A	
	Roof Decking, Flooring/Subflooring	Above Ground, Exterior		A	4.1
	Food Contact	Above Ground, Exterior		A	
	General, Including Retaining Walls, Edging, Agri-/Mariculture, Boats, Furniture, Gazebos, Compost/ Plant/Mushroom Boxes, Flumes	Ground Contact or Fresh Water	4A	A	
	Fire Escapes, Exterior Exposed	Above Ground and Ground Contact		A	
	Wet Industrial Processing Areas	Above Ground and Ground Contact		A	
	Docks, freshwater, joists and beams[1]	Above Ground or Fresh Water		A	
	Cooling Towers	Fresh Water Contact		A	4.4
	Brine Storage, Highway Construction Materials	Ground Contact or Fresh Water		B	4.1
	Playground Equipment	Ground Contact or Fresh Water		B	4.3
	Permanent Wood Foundation	Ground Contact and Above Ground	4B	A	4.2
	Highway Construction, Residential/Business Structural Support	Ground Contact or Fresh Water		A	4.3
	Crib Walls, Retaining Walls, Important Structural, Greenhouse	Ground Contact or Fresh Water		A	
	Marine Out of Water and Above Ground	Salt Water Splash		A	G-2.9

COMMODITY SPECIFICATION F: PRESSURE-TREATED WOOD COMPOSITES (NORMATIVE/MANDATORY)

Jurisdiction: AWPA Technical Committee T-8

This Commodity Specification is promulgated pursuant to a consensus procedure.

1. Introduction: Commodity Specification F covers preservative pressure treatment of composite wood products. It includes general requirements, and minimum retention requirements for each Use Category More detailed specifications for retention assay zones and preservative penetration are found in Standard T1 – Processing and Treatment Standard. Composite wood products covered under Commodity Specification F include, but are not limited to, plywood, structural glued laminated timber, mechanically fastened timber, parallel strand lumber (PSL) and laminated veneer lumber (LVL). Glued laminated utility poles are included in Commodity Specification D.

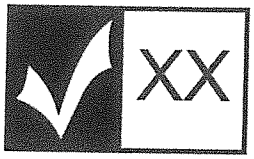
1.1 The preservative retentions assigned to the Use Category levels in Commodity Specification F are minimum retentions for the commodity, preservative, and species treated. They have been found to be satisfactory for service in their Use Category.

1.2 The requirements for preservative penetration and retention assigned to any Use Category for any combination of preservative or species are equally important and for any product to be acceptable under this standard, all listed requirements including preservative penetration and retention must be met.

2.0 General Requirements: Commodity Specification F is to be used in conjunction with AWPA Standard T1, "Use Category System: Processing and Treatment Standard". This standard is applicable for plywood composed of only softwood veneers, without lumber cores and with or without overlays, meeting U.S. NBS Voluntary Product Standards PS-1, (Industrial Plywood), glued only with waterproof adhesives except as specifically noted below. Plywood meeting PS-1 shall be marked Exterior or Exposure-1. Hardwood plywood and softwood plywood containing a hardwood veneer core are not covered under this standard.

2.1 Preservatives. Refer to Section 4 of Standard U1 for the preservatives in this commodity specification.

2.2 Marking. Each piece of composite wood material conforming to this standard shall have a mark including AWPA U1, the producer, year of treatment, preservative, retention and Use Category when the size of the material permits such identification. Major model building codes require material used in residential/commercial construction to include the identification of an accredited independent inspection agency. Composite wood material, in an active production category per standard M22, shall use the inspection agency logo (shown as XX) in conjunction with the WWPI quality check trademark as shown below. The box shall be a minimum 0.20 inches (5 mm) high, placed on the front of the label and formatted in the following manner:



Where branding is required, brands shall be in accordance with AWPA Standard M6.

2.3 Product Quality. Composite wood pieces shall conform to physical requirements of the specification under which they have been purchased. Material shall be processed in such a manner as to prevent damage and degrade.

2.4 Cleanliness. Composite wood material treated with creosote, creosote solutions, or oil-borne preservatives shall be supplied reasonably free of exudates and surface deposits. Refer to AWPA Standard M20 for treatment and handling procedures to enhance surface cleanliness with oil-type preservatives. Composite wood material treated with waterborne preservatives shall be supplied free of visible surface deposits.

2.5 Conditioning. Newly manufactured composite wood material is of a moisture content suitable for treatment and no conditioning is necessary. Composite wood that has been exposed to the elements for a period of time shall be suitably seasoned or conditioned prior to treatment.

2.6 Drying After Treatment. Where drying after treatment is specified for plywood or structural composite lumber, each piece shall not exceed 19% or that allowed by national grading rules for the species and size when dried.

2.7 Machining. Wherever practicable, composite wood material to be treated should be manufactured in its final form prior to treatment to eliminate the necessity for subsequent cutting or boring of the treated wood.

2.8 Incising. Incising is not required for structural composite lumber or panel products. Incising is required for all listed species of glued laminated timbers except Southern Pine.

NOTE: Plywood treated for **Marine application (salt water)** is shown in Commodity Specification G. Plywood treated for **Permanent Wood Foundation (PWF)** is shown in Commodity Specification A, Special Requirements 4.2.

2.9 Adhesive Bonding. The adhesive bond quality for structural glued laminated timber manufactured from treated laminates may not have been considered in the AWPA standardization process. Qualification of adhesives for structural glued laminated timber is described in ANSI A190.1. Specifiers and end-users of treated composite wood products should consult with the treater and/or composite wood product manufacturer regarding the compatibility of preservative treatment with their product.

3.2A Preservative Retentions (kg/m³) — Structural Glued Laminated Timber (treated after gluing)

Note: Manufacturer of the bonded timber is responsible for complying with the requirements of Standards AITC 109 and ANSI A190.1

USE CATEGORY Species	Preservative Systems							
	CR[a] (Creosote)	CR-S[a]	CR-PS[a]	PCP-A[a] PCP-C[a]	Cu8[a]	CuN[a]	IPBC/PER[c]	ACZA
UC1, UC2, UC3A, UC3B								
Southern Pine	128	128	128	4.8	0.32	0.64	0.88	#
Coastal Douglas-fir	128	128	128	4.8	#	0.64	0.88	4.8
Western Hemlock, Hem-Fir	128	128	128	4.8	0.32	0.64	0.88	#
Red Oak	112	112	112	#	#	#	#	#
Red Maple, Yellow Poplar	128	128	128	#	#	#	#	#
UC4A								
Coastal Douglas-fir	160	160	160	9.6	#	0.96	#	9.6
Southern Pine	160	160	160	9.6	#	0.96	#	#
Western Hemlock, Hem-Fir	160	160	160	9.6	#	0.96	#	#
Red Oak	136	136	136	#	#	#	#	#
Red Maple, Yellow Poplar	160	160	160	#	#	#	#	#
UC4B, UC4C[b]								
Southern Pine	192	192	#	9.6	#	1.2	#	#
Coastal Douglas-fir	192	192	192	9.6	#	1.2	#	9.6

= Either no proposal for standardization and/or data demonstrating efficacy of a preservative/species combination has been submitted to AWPA; or the use of the preservative/species combination has been proven ineffective.

a) Not recommended for UC1, UC2 interior residential uses.

b) For glued laminated Poles, see Commodity Specification D, Poles, Section 6.

c) Retention values are only for UC1, UC2, and UC3A, but not UC3B.

3.2B Preservative Retentions (pcf) — Structural Glued Laminated Timber (treated after gluing)

Note: Manufacturer of the bonded timber is responsible for complying with the requirements of Standards AITC 109 and ANSI A190.1

USE CATEGORY Species	Preservative Systems							
	CR[a] (Creosote)	CR-S[a]	CR-PS[a]	PCP-A[a] PCP-C[a]	Cu8[a]	CuN[a]	IPBC/PER[c]	ACZA
UC1, UC2, UC3A, UC3B								
Southern Pine	8.0	8.0	8.0	0.30	0.020	0.040	0.055	#
Coastal Douglas-fir	8.0	8.0	8.0	0.30	#	0.040	0.055	0.30
Western Hemlock, Hem-Fir	8.0	8.0	8.0	0.30	0.020	0.040	0.055	#
Red Oak	7.0	7.0	7.0	#	#	#	#	#
Red Maple, Yellow Poplar	8.0	8.0	8.0	#	#	#	#	#
UC4A								
Coastal Douglas-fir	10.0	10.0	10.0	0.60	#	0.060	#	0.60
Southern Pine	10.0	10.0	10.0	0.60	#	0.060	#	#
Western Hemlock, Hem-Fir	10.0	10.0	10.0	0.60	#	0.060	#	#
Red Oak	8.5	8.5	8.5	#	#	#	#	#
Red Maple, Yellow Poplar	10.0	10.0	10.0	#	#	#	#	#
UC4B, UC4C[b]								
Southern Pine	12.0	12.0	#	0.60	#	0.075	#	#
Coastal Douglas-fir	12.0	12.0	12.0	0.60	#	0.075	#	0.60

= Either no proposal for standardization and/or data demonstrating efficacy of a preservative/species combination has been submitted to AWPA; or the use of the preservative/species combination has been proven ineffective.

a) Not recommended for UC1, UC2 interior residential uses.

b) For glued laminated Poles, see Commodity Specification D, Poles, Section 6.

c) Retention values are only for UC1, UC2, and UC3A, but not UC3B.

3.3A Preservative Retentions (kg/m³) — Structural Glued Laminated or Mechanically Fastened Timber (laminations treated prior to assembly)

Note: Manufacturers of glued laminated timber are responsible for complying with the requirements of Standards AITC 109 and ANSI A190.1. Manufacturers of mechanically fastened timber are responsible for ensuring that they are engineered and constructed to ensure compatibility of fasteners with the treated wood and structural capacity for the intended application.

USE CATEGORY	Preservative System														
	Creosote[a]			PCP-A[a]											
Species	CR	CR-S	CR-PS	PCP-C[a]	Cu8[a]	CuN[a]	ACQ-A	ACQ-C	ACZA	CCA-C	CA-C	KDS	KDS-B	PTI	MCA-C
UC1, UC2															
Southern Pine	128	128	#	4.8	0.32	0.64	4.0	4.0	4.0	4.0	1.0	3.0	2.2	0.21	0.80
Coastal Douglas-fir, Western Hemlock, Hem-fir	128	#	128	4.8	0.32	0.64	4.0	4.0	4.0	4.0	1.0	3.0	2.2	0.21	#
UC3A, UC3B															
Southern Pine	128	128	#	4.8	0.32	0.64	4.0	4.0	4.0	4.0	1.0	3.0	2.2	0.29	1.0
Coastal Douglas-fir, Western Hemlock, Hem-fir	128	#	128	4.8	0.32	0.64	4.0	4.0	4.0	4.0	1.0	3.0	2.2	0.29	#
UC4A															
Southern Pine	160	160	#	9.6	#	0.96	6.4	6.4	6.4	6.4	2.4	#	#	#	2.4
Coastal Douglas-fir, Western Hemlock, Hem-fir	160	#	160	9.6	#	0.96	6.4	6.4	6.4	6.4	2.4	#	#	#	#

= Either no proposal for standardization and/or data demonstrating efficacy of a preservative/species combination has been submitted to AWPA; or the use of the preservative/species combination has been proven ineffective.

a) Not recommended for UC1, UC2 interior residential uses.

3.3B Preservative Retentions (pcf) — Structural Glued Laminated or Mechanically Fastened Timber (laminations treated prior to assembly)

Note: Manufacturers of glued laminated timber are responsible for complying with the requirements of Standards AITC 109 and ANSI A190.1. Manufacturers of mechanically fastened timber are responsible for ensuring that they are engineered and constructed to ensure compatibility of fasteners with the treated wood and structural capacity for the intended application.

USE CATEGORY	Preservative System														
	Creosote[a]			PCP-A[a]											
Species	CR	CR-S	CR-PS	PCP-C[a]	Cu8[a]	CuN[a]	ACQ-A	ACQ-C	ACZA	CCA-C	CA-C	KDS	KDS-B	PTI	MCA-C
UC1, UC2															
Southern Pine	8.0	8.0	#	0.30	0.020	0.040	0.15	0.25	0.25	0.25	0.060	0.19	0.14	0.013	0.050
Coastal Douglas-fir, Western Hemlock, Hem-fir	8.0	#	8.0	0.30	0.020	0.040	0.15	0.25	0.25	0.25	0.060	0.19	0.14	0.013	#
UC3A, UC3B															
Southern Pine	8.0	8.0	#	0.30	0.020	0.040	0.15	0.25	0.25	0.25	0.060	0.19	0.14	0.018	0.060
Coastal Douglas-fir, Western Hemlock, Hem-fir	8.0	#	8.0	0.30	0.020	0.040	0.15	0.25	0.25	0.25	0.060	0.19	0.14	0.018	#
UC4A															
Southern Pine	10	10	#	0.60	#	0.060	0.40	0.40	0.40	0.40	0.15	#	#	#	0.15
Coastal Douglas-fir, Western Hemlock, Hem-fir	10	#	10	0.60	#	0.060	0.40	0.40	0.40	0.40	0.15	#	#	#	#

= Either no proposal for standardization and/or data demonstrating efficacy of a preservative/species combination has been submitted to AWPA; or the use of the preservative/species combination has been proven ineffective.

a) Not recommended for UC1, UC2 interior residential uses.