



BUILDING PRODUCTS LISTING PROGRAM

Class:	Fire Retardant Treated Wood Products	
Customer:	Chicago Flameproof and Wood Specialties Corp.	
Location:	1200 South Lake Street, Montgomery, IL	
Website:	https://www.chicagoflameproof.com/	
Listing No.	B1093-1	
Effective Date:	July 12, 2016	
Last Revised:	March 6, 2020	
Expires:	N/A	
Products:	FlameTech™ Fire Retardant Treated Lumber FlameTech™ Fire Retardant Treated Plywood	
Standard(s):	ASTM E84	<i>“Standard Test Method for Surface Burning Characteristics of Building Materials”, extended to 30 minutes duration.</i>
	ASTM E2768	<i>“Standard Test Method for Extended Duration Surface Burning Characteristics of Building Materials (30 min Tunnel Test)”.</i>
	ASTM D5516	<i>“Standard Test Method for Evaluating the Flexural Properties of Fire-Retardant Treated Softwood Plywood Exposed to Elevated Temperatures”.</i>
	ASTM D6305	<i>“Standard Practice for Calculating Bending Strength Design Adjustment Factors for Fire-Retardant-Treated Plywood for Roof Sheathing”.</i>
	ASTM D5664	<i>“Standard Test Method for Evaluating the Effects of Fire-Retardant Treatments and Elevated Temperatures on Strength Properties of Fire-Retardant Treated Lumber”.</i>
	ASTM D6381	<i>“Standard Practice for Calculating Design Value Treatment Adjustment Factors for Fire-Retardant-Treated Lumber”.</i>
	ASTM D3201	<i>“Standard Test Method for Hygroscopic Properties of Fire-Retardant Wood and Wood-Base Products”.</i>
	ASTM E119	<i>“Standard Test Methods for Fire Tests of Building Construction and Materials”.</i>
	CAN/ULC S101	<i>Standard Methods of Fire Endurance Tests of Building Construction and Materials.</i>
Species:	Douglas-fir (DF), Spruce-Pine-Fir, Southern Yellow Pine (SYP), Other Species Lumber SYP, DF and Other Softwood Plywood	
Label(s):	Example labels found in QAI certified FlameTech™ lumber and plywood fire retardant treated wood products are found below.	

<p>FLAME TECH CLASS A RATED FIRE RETARDANT TREATED LUMBER</p> <p>SPECIES: XXXX DRYING METHOD: KDAT</p> <p>Evaluated to ASTM D5664 & D6841 Service conditions of <100° F and <150°F</p> <p>SURFACE BURNING CHARACTERISTICS ASTM E-84 (Extended) & ASTM E2768 FLAMESPREAD: < 25 SMOKE DEVELOPMENT INDEX: < 450</p> <p>QC Monitored by TPI Produced in Accordance with AWPA U1 (UCFA) Standards</p>	
	<p>Listing # B1093-1</p> <p>Chicago Flameproof 1200 S Lake Street Montgomery, IL 60538</p>

<p>FLAME TECH CLASS A RATED FIRE RETARDANT TREATED PLYWOOD</p> <p>SPECIES: XXXX DRYING METHOD: KDAT</p> <p>Evaluated to ASTM D5516 & D6305 Service conditions of ≤ 100° and ≤ 170°</p> <p>SURFACE BURNING CHARACTERISTICS ASTM E-84 (Extended) & ASTM E2768 FLAMESPREAD: < 25 SMOKE DEVELOPMENT INDEX: < 50</p> <p>QC Monitored by TPI Produced in Accordance with AWPA U1 (UCFA) Standards</p>	
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Plywood Ratings:

The following outlines FlameTech™ Pressure Treated Plywood product ratings:

Table 1: FlameTech™ Plywood Surface Burning Characteristics per ASTM E84 (Extended) / ASTM E2768

NOMINAL DIMENSIONS	SPECIES	Flame Spread Index (FSI)	Smoke Developed Index (SDI)	Flame Front*
½ inch – ¾ inch	SYP	< 25	< 450	< 10.5 feet.
½ inch – ¾ inch	DF	< 25	< 450	< 10.5 feet.

*No evidence of significant progressive combustion after extended 20 minutes duration.

FlameTech™ Treated Plywood Maximum Loads and Spans determined per ASTM D6305 based on testing to ASTM D5516 are outlined in Table 2:

Table 2. FlameTech™ Plywood Maximum Loads and Spans

PLYWOOD THICKNESS (inches)	UNTREATED SPAN RATINGS (Roof / Subfloor)	TREATED SHEATHING SPAN (in)	MAXIMUM LIVE LOAD		
			ZONE 1A	ZONE 1B	ZONE 2
			(psf)	(psf)	(psf)
15/32 (0.469)	32/16	24	29	42	61
19/32 (0.594)	40/20	24	49	72	103
		32	28	41	58
23/32 (0.719)	48/24	32	40	59	84
		48	18	26	37

Lumber Ratings: The following outlines FlameTech™ Pressure Treated Lumber product ratings:

Table 3: Surface Burning Characteristics per ASTM E84 (Extended) / ASTM E2768

NOMINAL DIMENSIONS	SPECIES	Flame Spread Index (FSI)	Smoke Developed Index (SDI)	Flame Front*
2x4, 2x6, 2x8, 2x10, 2x12	SPF, DF, SYP	< 25	< 450	< 10.5 feet.

*No evidence of significant progressive combustion after extended 20 minutes duration.

FlameTech™ Treated Lumber Allowable Design Properties Determined per ASTM D6841 based on testing to ASTM D5664 are outlined in Table 4:

Table 4: FlameTech™ Fire Retardant Treated Lumber Allowable Design Properties

Allowable Design Properties Service Temperature Service ≤ 100°F

PROPERTY	DF	SPF	SYP	OTHER
Extreme fiber stress in bending, F _b	1.00	0.96	0.82	0.82
Tension parallel to grain, F _t	1.00*	0.99	0.98	0.98
Compression parallel to grain, F _c	0.96	0.95	0.96	0.95
Horizontal shear, F _u	1.00*	1.00	0.95	0.95
Modulus of elasticity, E	0.99	0.93	0.87	0.87
Compression perpendicular to grain, F _{c⊥}	0.95	0.95	0.95	0.95
Fastener Connections	0.90	0.90	0.90	0.90

Allowable Design Properties Service Temperature Service > 100°F ≤ 150°F

PROPERTY	DF			SPF			SYP			OTHER		
	1A	1B	2	1A	1B	2	1A	1B	2	1A	1B	2
Extreme fiber stress in bending, F _b	1.00	1.00	1.00	0.91	0.93	0.95	0.81	0.81	0.81	0.81	0.81	0.81
Tension parallel to grain, F _t	0.91	0.95	0.99	0.93	0.96	0.99	0.84	0.90	0.96	0.84	0.90	0.96
Compression parallel to grain, F _{cII}	0.87	0.91	0.95	0.88	0.91	0.94	0.82	0.88	0.94	0.82	0.88	0.94
Horizontal shear, F _u	0.91	0.95	0.99	0.93	0.96	0.99	0.81	0.87	0.93	0.81	0.87	0.93
Modulus of elasticity, E	0.99	0.99	0.99	0.96	0.96	0.96	0.87	0.87	0.87	0.87	0.87	0.87
Compression perpendicular to grain, F _{cI}	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Fastener Connections	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90

ASTM E119 / CAN/ULC S101 Fire-resistance Rated Assemblies are outlined in Table 5:

Table 5: FlameTech™ Fire Retardant Treated Lumber and Plywood Fire-Resistance Rated Assemblies per ASTM E119 / CAN/ULC S101:

QAI DESIGN LISTING	RATING	DESCRIPTION
B1093-1a	1-hour Load Bearing F _c Allowable Design Properties applied following ASD*	1-hour FlameTech™ fire retardant treated wood stud and plywood load bearing assembly.
B1093-1b	2- hour Load Bearing F _c Allowable Design Properties applied following ASD*	2-hour FlameTech™ fire retardant treated wood stud and plywood load bearing assembly

***Allowable stress design method determined in accordance with National Design Specification for Wood Construction. Allowable stress for FlameTech™ FRTW products are to be calculated with allowable design properties per QAI listing B1093 as detailed in tables above.**

Note: FlameTech™ lumber products found in Table 6 were found to have a less than 28% moisture content when tested in accordance with ASTM D3201 at a 92 percent-relative humidity.

Final acceptance of the product in the intended application is to be determined by the authority having jurisdiction.

These results do not apply to engineered wood products.

FlameTech™ Pressure Treated Lumber and Plywood products are not for use in conditions exposing the product to weathering.

The materials, products or systems listed herein have been qualified to bear the QAI Listing Mark under the conditions stated with each Listing. Only those products bearing the QAI Listing Mark are considered to be listed by QAI.

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