



# Technical Evaluation Report

FIRE-RETARDANT-TREATED WOOD LISTED, LABELED, & PRESSURE-IMPREGNATED

2020/2021



## Summary

This technical guide should always be supplemented with separate product, fact sheets

## Holder

Woodsafe Timber Protection AB  
SWEDEN.



This is a technical guide based on available data, both internally and externally independent inspection

DIVISION: FRTW WOOD

Section: Fireretardant Treated Wood

TECHNICAL REPORT HOLDER:

Woodsafe Timber Protection AB

EVALUATION SUBJECT:

WOODSAFE PRO® Fireretardant treated lumber.



## → 1.0 EVALUATION SCOPE

Compliance with the following codes:

- Sweden | 8 chap, 4 § 2 and 3 PBL (SFS 2010:900)
- BBR | 2:2, 5:231, 5:551, 6:21

### Property evaluated:

- Reaction to Fire (SS-EN 13501-1)
- Structural
- Corrosion
- Hygroscopicity

## → 2.0 USES

Woodsafe PRO® fire-retardant-treated wood is used in areas that are not exposed to the weather or wetting, but may be exposed to dampness where the code permits the use of wood or fire-retardant-treated wood.

## → 3.0 DESCRIPTION



### 3.1 General:

Woodsafe PRO® fire-retardant-treated wood is lumber and plywood impregnated with Woodsafe PRO® fire-retardant chemicals by a pressure process. Woodsafe PRO® treatment of lumber of the following species is recognized as being fire retardant:

Southern Pine	Maple
Douglas Fir	Ponderosa Pine
White Spruce	Aspen
Red Spruce	Black Spruce
Siberian Larch	Thermowood Pine
Ash	White Oak
Poplar	Birch
Spruce	Scotch Pine
Douglas Pine	More species available..



### 3.2 Reaction to Fire:

Woodsafe PRO® is classified according to reacton against fire B-s1, d0, -or B-s2, d0 and registered DoP according to the European Construction Product Regulation 350/2011.



### Structural Strength and Durability:

The effects of Woodsafe PRO® fire-retardant treatment on the strength of the treated lumber and plywood must be accounted for in the design of the wood members and their connections. Load duration factors greater than 1.6 are not permitted to be used in the design.

The strength properties of lumber when treated with FirePro® fire-retardant chemicals and used in applications at ambient temperatures up to 180°F (82°C), are subject to the design factors shown in Table 1 of this report.

The strength properties of plywood, when treated with FirePro® fire-retardant chemicals and used in applications at temperatures up to 170°F (77°C), are subject to the span limitations shown in Table 2 of this report.



### Corrosion:

The corrosion rate of aluminum, carbon steel, galvanized steel, stainless steel, copper or red brass in contact with wood is not increased by Woodsafe PRO® fire-retardant treatment when the product is used as recommended by the manufacture.



### Hygroscopicity:

Woodsafe PRO® treated wood qualifies as an humidity resistance (HR) fire-retardant wood in accordance with the American Wood-Preservers' Association (AWPA) Standard U1, and Wood Protection Association (WPA) UK. Woodsafe PRO® treated wood is typeapproved according to SS-EN 16755 INT1, INT2, EXT.

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## → 4.0 DESIGN AND INSTALLATION



### 4.1 General:

Structural systems that include Woodsafe PRO® fire-retardant treated lumber or plywood must be designed and installed in accordance with the applicable code using the appropriate lumber design value adjustment factors and plywood spans from Tables 1 and 2 of this report. Ventilation must be provided in accordance with the applicable codes.

The design value adjustment factors and plywood load and spans in Tables 1 and 2 of this report are applicable under elevated temperatures resulting from cyclic climatic conditions. They are not applicable under continuous elevated temperatures resulting from manufacturing or other processes that require special consideration in design.

The treated lumber and plywood must only be used in areas (including attic spaces) where the lumber is exposed to temperatures of 180°F (82°C) or less and the plywood is exposed to temperatures of 170°F (76.5°C) or less.

Exposure to precipitation during storage or installation must be avoided. If material does become wet, it must be replaced or permitted to dry (maximum 19 percent moisture content for lumber and 8-10 percent moisture content for plywood) prior to covering or enclosure by wallboard or other construction materials (except for protection during construction).



### 4.2 Fasteners:

Fasteners used in Woodsafe PRO® fire-retardant-treated wood must be galvanized steel, stainless steel, silicon bronze or copper, in accordance with Section 2304.9.5 of the 2012, 2009 and 2006 IBC, Section 317.3 of the 2012 and 2009 IRC, and Section R319.3 of the 2006 IRC, and must be subject to the design value adjustments indicated in Table 1 of this report.

## → 5.0 CONDITIONS OF USE

5.1 Woodsafe PRO® fire-retardant-treated wood described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.2 Strength calculations must be subject to the design factors or span ratings shown in Tables 1 and 2 of this report.

5.3 The design value adjustment factors and span ratings given in this report must only be used for unincised dimensional lumber and plywood of the species noted in this report.

5.4 Woodsafe PRO® treated wood must not be installed where it will be exposed to precipitation, direct wetting or regular condensation. For exterior application and / or risk of moisture absorption e.g. facade cladding, surface treatment must always be carried out according to fact sheets.

5.5 Woodsafe PRO® treated wood must not be used in contact with the ground.

5.6 Woodsafe PRO® lumber must not be ripped or milled as this will alter the surface-burning characteristics and invalidate the reaction to fire classification. Framing, end cuts, holes, joints such as tongue and groove, bevel scarf and lap may be used.

5.7 Treatment is at the facilities of the listees noted in this report under

## → 6.0 EVIDENCE SUBMITTED

Data in accordance with the RISE (0402) Criteria for fire retardant-treated Wood (210-09-0082), dated June 2008. (editorially revised 2014).

## → 7.0 IDENTIFICATION

7.1 Lumber and plywood treated with Woodsafe PRO® fire retardant chemicals is identified by labels. Refer to Figure 1.

7.2 The holder's contact information is the following:

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**TABLE 1—DESIGN VALUE ADJUSTMENT FACTORS FOR  
WOODSAFE PRO® FIRE RETARDANT TREATED LUMBER COMPARED TO UNTREATED LUMBER  
APPLICABLE AT SERVICE TEMPERATURES UP TO 180°F (82°C)**

ADJUSTMENT FACTORS	SOUTHERN PINE	DOUGLAS FIR	SPRUCE	OTHER SPECIES
Compression Parallel, Fc	0.99	0.77	0.92	0.77
Horizontal Shear, Fv	1.00	0.94	0.84	0.84
Tension Parallel, Ft	0.83	0.85	0.94	0.83
Bending: Modulus of Elasticity, E	0.93	1.00	0.99	0.93
Bending: Extreme Fiber Stress, Fb	0.87	0.98	0.86	0.86
Fasteners/Connectors	0.90	0.77	0.90	0.77

**TABLE 2—WOODSAFE PRO™ FIRE RETARDANT TREATED PLYWOOD SPAN RATINGS FOR  
RATED SHEATHING APPLICABLE AT TEMPERATURES UP TO 170° F (76° C)**

APA RATING	PANEL THICKNESS (INCHES)	FIREPRO™ RATING
12/0	5/16	12/0
16/0	5/16, 3/8	16/0
20/0	5/16, 3/8	20/0
24/0	3/8, 7/16, 1/2	24/0
24/16	7/16, 1/2	24/16
32/16	15/32, 1/2	32/16
32/16	5/8	32/16
40/20	19/32, 5/8	40/20
40/20	3/4, 7/8	40/20
48/24	23/32, 3/4	48/24
48/24	5/16	48/24

**Table 2 Notes:**

1. SI Units conversion: 1 inch = 25.4 mm.
2. Glue lines shall be exterior and face plies shall be Douglas Fir.
3. Allowable uniformly distributed roof load at maximum span for rated sheathing is 30 psf (1426 Pa) for live loads plus 8.5 psf (407 Pa) dead load, and allowable distributed floor load at maximum span is 50 psf (2394 Pa) live load plus 5 psf (239 Pa) dead load, or 200 pounds (890 N) concentrated load in each case.
4. Deflection criteria for treated plywood is 1/180 of span due to total load (live load plus dead load).
5. The 5/16-inc and 3/8-inch-thick (7.9 mm or 9.5 mm) panels are not permitted for roofing applications.
6. Spans provided for Woodsafe Pro® treated plywood are based on environmental temperature and relative humidity as expected from cyclic climatic conditions in the continental United States for roof sheathing applications. Other conditions, such as industrial processing, which would expose the sheathing treated with Woodsafe Pro® to elevated temperatures and or humidity, are beyond the scope of this report.
7. For roof sheathing applications in the geographic area located inside a line represented by Las Vegas, Yuma, Phoenix and Tucson, the designated roof sheathing spans shall be reduced by 2 inches (51 mm).

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<p>2 WOODSAFE PRO®</p> <p>3 WOODSAFE WOODSAFE TIMBER PROTECTION AB.</p> <p>CONTINUOUS MONITORING MANUFACTURING CONTROL (210-09-0082)</p> <p>SS-EN13823    SP-FIRE 105 SS-EN13501-1    SS-EN13501-2 7</p> <p>72 6 KDAT 65</p>	 <p>1</p> <p>FR -TREATED LUMBER</p> <p><b>TABLE OF CONTENTS</b> 4</p> <p>WOODSAFE PRO® WOOD SPEICES, 2020</p> <p><b>DURABILITY</b> 5</p> <p>SS-EN 16755 INT1, INT2, EXT</p>
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**1.** Mark of an approved agency

**2.** Name of treatment

**3.** ID of the treating manufacturer

**4.** Wood species

**5.** Durability of Fire Performance

**6.** Method of drying after treatment

**7.** Conformance with standards in model code

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