

# FRX® Fire Retardant Treated Wood for Exterior Applications

Invented to reduce flame spread and smoke development, FRX® wood provides tested fire protection for applications directly exposed to weather; it may be substituted for materials classified as non-combustible in certain building types designated by the model building codes and requiring ASTM D 2898 conformance. FRX® wood combines the beauty and versatility of wood with the fire safety of non-combustible materials.

- Complies with major model building codes
- Tested, proven fire performance
- Effective for lumber, plywood, logs, siding, LVL
- Free of halogens
- Kiln dried after treatment
- Paper wrapped, military dye available
- Issued ESR-1159

## FLAME SPREAD AND SMOKE DEVELOPMENT

Model building codes require a flame spread rating of 25 or less and a smoke developed rating of 450 or less, when the standard surface burning test is extended to 30 minutes to qualify as a Class A material. FRX® fire retardant treated wood maintains ratings less than both those levels for all species listed. See accompanying table for specific ratings by species.

For exterior use, FRT wood must undergo further ASTM E 84 testing, which is conducted on material that has been through the ASTM D 2898 accelerated weathering test, also referred to as the “800-inch rain test.” This testing protocol has been passed by FRX® wood.

Fire Performance Ratings		
<i>As determined in the ASTM E 84 tunnel test</i>		
Species	Flame Spread	Smoke Development
<b>LUMBER</b>		
Southern Pine	15	20
Douglas Fir	15	0
Hem-Fir	20	25
Western Red Cedar	20	45
Spruce	20	0
<b>PLYWOOD</b>		
Southern Pine	20	0
Douglas Fir	15	0
Spruce	20	10

## COMMON APPLICATIONS

FRX® fire retardant treated wood may be used in exterior applications permitted by the codes where public safety is critical, other materials would transfer heat or allow fires to spread, sprinkler systems cannot easily be installed, corrosive atmospheres necessitate excessive maintenance of other materials, and where fire protection is inadequate or not readily available.

## TYPICAL EXTERIOR USES

- Wall coverings
- Roof coverings
- Balconies
- Stairways
- Decks
- Open-air roof systems
- Canopies and awnings
- Storefronts and facades
- Eaves, soffits and fascia
- Construction staging
- Agricultural buildings and horse stalls
- Scaffolding and scaffold planks
- Various other residential and commercial uses

For details on performance and specification, visit [www.frxwood.com](http://www.frxwood.com) or call 1.866.USE.FRTW



## STRENGTH

FRX® wood has been tested in accordance with ASTM D 143 and MIL-L-19140E. Following are the design value adjustments.

### Strength Design Factors for FRX® Fire Retardant Treated Lumber Compared to Untreated Lumber

Applicable at Ambient Temperatures Up to 80° F\*

	Tested Species	
	Southern Pine	Douglas Fir
Compression Parallel	1.00	1.00
Horizontal Shear	0.91	1.00
Tension Parallel	0.78	0.88
Bending: Modulus of Elasticity, E	1.00	0.96
Extreme Fiber Stress, Fb	1.00	1.00

### Allowance Total Sheathing Load (psf) for FRX® Plywood

Plywood Thickness (inch)	Plywood Rating	Span (inches)								
		12	16	19.2	24	30	32	36	40	48
5/16	20/0	185	104	67	47					
3/8	24/0	280	161	103	71	28				
15/32, 1/2	32/16	409	231	145	102	65	57			
19/32, 5/8	40/20	641	361	231	160	103	88	57	46	
23/32, 3/4	48/24	805	453	290	202	128	114	71	61	41

\*Lonza Wood Protection does not recommend the use of FRX® wood in high temperature interior applications. Dricon® FRT wood should be used in these situations. Contact Lonza Wood Protection or visit us online at [www.dricon.com](http://www.dricon.com) for more information.

Table based on Structural 1, exterior-grade plywood. Fastener size and spacing must be as required in the code for untreated plywood of the same thickness.

## APPEARANCE

The treatment has little effect on the color of lumber. Deposits of FRX® fire retardant solution may appear on the surface of wood or exude from the edges of plywood during drying. This is a result of injection of adequate chemical to achieve desired fire protection, and is considered normal. On most species, discoloration is barely noticeable.

Marks made by stickers, used to separate the layers of lumber during the kiln drying following treatment, will be noticeable on lumber. For structural use, this is not usually objectionable. FRX® exterior FRT wood can be special ordered with one face free of sticker marks. Slight irregular water marks may show on such material.

The pressure treatment and subsequent drying may result in a slight waviness in plywood; for normal applications this is not a problem as the plywood can be straightened when nailing.

## TIPS ON USE

- FRX® wood should not be installed where it will be exposed to high interior temperatures, or in contact with the ground.
- When painting or staining, the paint or stain manufacturer's recommendations should be followed. As with untreated lumber, the surface should be clean and dry. See [www.frxwood.com](http://www.frxwood.com) for more details.
- The same common sense precautions should be taken when handling FRX® wood as with untreated wood or other building materials. Dust masks and eye protection devices are recommended to avoid possible irritation from sawdust and wood chips. Gloves will help avoid splinters. Hands should be washed after doing construction work.

## FREQUENTLY ASKED QUESTIONS

**Does it meet building codes?** Yes. FRX® wood meets the performance requirements of the model building codes.

**What species can be treated?** At the present time, southern yellow pine, hem-fir, Douglas fir, western red cedar, and spruce are appropriate for treatment.

**Can FRX® wood be used in ground contact?** No. FRX® wood can be used outdoors, but is intended only for above ground uses.

**Is there a reduction in strength compared to untreated wood?** Yes. The treating and drying processes cause a reduction in strength that varies with treatment, species of wood, applications and specific properties. Adjustment factors for FRX® wood are shown above.

**What types of fasteners should be used with FRX® wood?** Stainless or hot-dipped galvanized steel hardware is recommended. This hardware provides an extra margin of safety.

**Can I cut FRX® wood?** Yes. Cutting lengths, drilling holes, and light sanding are permissible. It is not necessary to field-treat cut ends to maintain the flame spread rating. FRX® lumber should not be ripped or milled. FRX® plywood can be ripped or cross-cut.