D-BLAZE® FIRE RETARDANT TREATED WOOD, THE NEW GENERATION BUILDING MATERIAL

D-Blaze® Fire Retardant Treated (FRT) wood is a new generation construction material for weather-protected applications. Its extremely low hygroscopic and corrosive properties make it a superior choice for use whenever FRT wood is required.

D-Blaze FRT wood is non-blooming and colorless. It qualifies for use in accordance with major building codes and insurance rating bureaus.

Wood treated with D-Blaze is paintable, stainable, easy to handle and workable with common tools. In most cases, FRT wood systems have lower in-place costs than other noncombustible-classified materials.

UL-CLASSIFIED

D-Blaze FRT wood has been tested by Underwriters Laboratories, Inc. (UL) of Northbrook, Illinois, and has been awarded the UL classification of "FRS" which signifies a 25 or accelerating for flame spread and smoke development. When tested for 30 minutes' duration, there was no evidence of significant progressive combustion. Each piece of treated material bears an easily identifiable UL stamp.

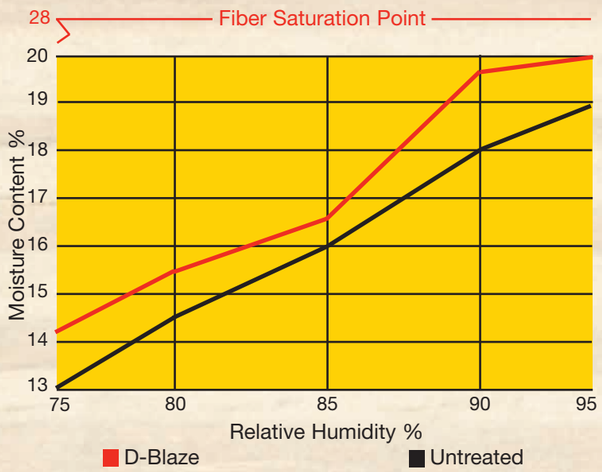
HYGROSCOPICITY

Wood treated with this new, scientific formulation solves many of the problems encountered with earlier-generation fire retardant formulas, notably hygroscopicity. D-Blaze FRT wood shows very low hygroscopicity under conditions of high humidity.

It meets or exceeds the hygroscopicity requirements of AWPA C-20/C-27, UC1, T1 for Type A use. In tests conducted in accordance with ASTM D-3201 at relative humidity up to 95%, it has virtually the same moisture content as untreated wood.

Table 1

D-BLAZE® HYGROSCOPIC TEST DATA



50-Year Warranty

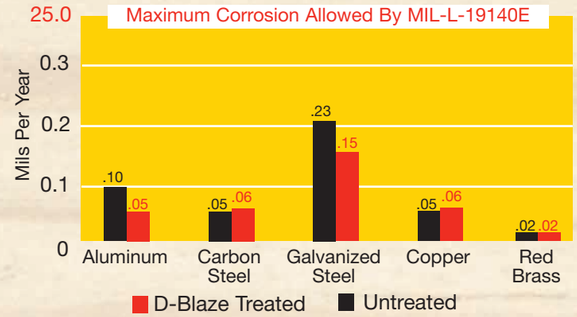
D-Blaze FRT wood products are protected by an industry leading 50-Year Limited Warranty. Refer to the D-Blaze 50-Year Limited Warranty brochure for complete details.

CORROSION PROTECTION

D-Blaze FRT wood protects against corrosion on galvanized steel truss plates as well as other metal fasteners. Extensive testing has shown that with respect to metal corrosion, D-Blaze FRT wood maintains metal finish and metal integrity virtually as well as untreated wood exposed to the same conditions.

Table 2

D-BLAZE® CORROSION TEST RESULTS



NOTE: Data are mean averages of Southern Yellow Pine test samples.

The results shown are of tests conducted in accordance with MIL-L-19140E. Metal coupons were sandwiched between blocks of D-Blaze FRT wood, then placed in a humidity chamber for ten days at 120ºF and 90% RH. The copper and galvanized steel samples were cleaned per ASTM-G1-72.

The metal coupons in contact with D-Blaze FRT wood showed very low levels of corrosion, less than 1% of what the specifications allow – and approximately the same levels recorded for untreated wood.

APPROVALS AND TESTING

D-Blaze FRT wood meets or exceeds the guidelines for testing construction materials as set forth and/or established by the:

- ICC-ES-Legacy Report 562
- IBC (International Building Code)
- City of Los Angeles RR 24502
- New York City Building Code (MEA Numbers 406-87 and 407-87)
- ASTM D5516
- ASTM D5664-95
- ASTM E-84
- American Wood-Preservers' Association (U1, T1, UCFA Type A)
- Insurance Rating Bureaus
- Military Specifications (MIL-L-19140E)
- National Fire Protection Association (255)
- National Forest Products Association's "Policy on Design Values for Fire Retardant Treated Lumber"
- Underwriters Laboratories, Inc. 723
- All other major building codes
- US Bureau of Ships (QPL)
- CSA 080.20-97
- CSA 080.27-97
- ULC Standard CAN/ULC-S102
- ULC Standard CAN/ULC-S102.2
- National Building Code of Canada (NBCC)

STRENGTH

D-Blaze FRT wood has been tested by an independent laboratory in accordance with industry standards to develop strength reduction factors for various use conditions including roof temperatures of up to 150ºF and 170ºF. Consult Table 3 (D-Blaze Lumber Strength Design Factors) and Table 4 (D-Blaze Plywood Span Ratings Adjustments) for specific adjustment factors.

Table 3

STRENGTH DESIGN FACTORS OF D-BLAZE FIRE RETARDANT TREATED LUMBER AS COMPARED TO UNTREATED LUMBER

	Applicable At Up To:					
	80ºF				150ºF	
Strength Design Factors	Southern Pine**	Douglas Fir**	Spruce**	Other Species*	Southern Pine	Other Species*
Compression Parallel, Fc	0.93	0.91	0.94	0.91	0.85	0.85
Horizontal Shear	1.00	0.97	1.00	0.97	0.86	0.86
Tension Parallel	0.77	0.91	0.96	0.77	0.65	0.65
Modulus of Elasticity, E	0.88	0.96	0.97	0.88	0.89	0.89
Extreme Fiber Stress, Fb	0.85	0.87	0.90	0.85	0.79	0.79

ASTM D143

*Species awarded "FRS" classification by Underwriters Laboratories, Inc. when treated with D-BLAZE FRT chemicals are found in Table 5. NOTE: Strength Design Factor of untreated lumber is 1.0.

**These design value adjustments were determined during a testing program conducted at the Mississippi State University Forest Products Utilization Laboratory. Tests were conducted in accordance with the American Forest and Paper Association Policy on design values for fire retardant treated lumber protocol.

The test materials were treated before testing in accordance with the Underwriters Laboratories, Inc. procedures for D-Blaze FRT wood. The treated materials were kiln dried after treatment per AWPA Standard C-20.

These design value factors are to be applied to those shown for untreated wood in the National Design Specification of Wood Construction published by the National Forest Products Association and apply only to lumber bearing an ALS approved grade mark. Use the design values for surfaced dry material at a 19% moisture content.

Placement of insulation and air flow should be designed to maintain acceptable wood temperatures.

Good ventilation is essential in fire retardant wood construction to minimize excessive relative humidity and condensation. At relative humidity conditions when FRTW moisture content levels are expected to exceed 19%, appropriate design value adjustments for high moisture content should be made.

FINISHING MADE SIMPLE

D-Blaze is a clear treatment that will not darken or discolor most woods. During the treating process, D-Blaze is impregnated deeply into the wood, thus leaving wood surfaces unharmed and ready for finishing. Light sanding or brushing may be all that is necessary to assure proper surface condition for optimum paint or stain adhesion. Surfaces must be dry and clean before applying. For best results, finish application should follow manufacturer's recommendations.

USE & HANDLING PRECAUTIONS

Avoid frequent or prolonged inhalation of sawdust from treated wood. When sawing and machining treated wood, wear a dust mask. When powersawing or machining, wear goggles to protect eyes from flying particles.

SPAN RATING ADJUSTMENTS

D-Blaze® interior FRT plywood has been tested and shown to meet the following roof sheathing and subfloor spans when used with span rated plywood and/or plywood bearing the trademark of an approved inspection agency.

Table 4

A Comparison, By Panel Thickness And At Temperatures Up to 170°F, Of Span Ratings For D-Blaze® Plywood, Sturd-I-Floor, and Sheathing With Similar APA Ratings

APA Rating	Panel Thickness*	D-Blaze 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	7/16", 1/2"	24/0
24/16	7/16", 1/2"	24/16
32/16	15/32", 1/2"	24/16
32/16	5/8"	32/16
40/20	5/8", 19/32"	32/20
40/20	3/4", 7/8"	40/20
48/24	23/32", 3/4"	40/24
48/24	7/8"	48/24

* The 5/16" or 3/8" plywood panel thickness are not permitted for roof applications.

NOTE: Plywood shall be manufactured in accordance with PS 1-95 Specification, Group 1 species, stress level 2, with exterior gluelines and used in dry service conditions. Allowable uniformly distributed loads for floors is 50 PSF live load and 5 PSF dead load or a 200 pound concentrated load. Roof loads are 30 PSF live load and 8.5 PSF dead load or a 200 pound concentrated load. Deflection based on 1/180 of the span.

Proper roof system ventilation shall be used to provide a uniform flow of air over all interior surfaces of the plywood to prevent heat build-up and sufficient to effectively remove moisture where the roof is warmed by solar radiation.

A VARIETY OF APPLICATIONS

D-Blaze FRT wood is highly versatile. It can be used in a variety of interior environments where humidity is not expected to exceed 95% for prolonged periods and where the wood is not exposed directly to weather.

Recommended and typical uses:

- Roof Trusses
- Roof Decks and Sheathing
- Beams and Purlins
- Floor Trusses
- Subflooring
- Joists
- Interior Nonload-bearing Partitions
- Exterior Load-bearing Walls
- Studs
- Architectural Millwork and Trim
- Blocking and Furring
- Paneling

Note: Consult local building codes to determine the specific uses allowed.

Table 5

Species Awarded Underwriters Laboratories, Inc. "FRS" Classification When Treated With D-Blaze Fire Retardant Treatment Chemicals

Softwood Lumber		
Jack Pine	Red Pine	Hem-Fir
Black Spruce	Lodgepole Pine	Alpine Fir
Spruce-Pine-Fir (SPF)	Englemann Spruce	Ponderosa Pine
Balsam Fir	White Fir	Red Spruce
Southern Yellow Pine	Douglas Fir	Western Hemlock
White Spruce		

Plywood	Hardwood Lumber
Douglas Fir	Basswood
Red Pine	Red Oak
Southern Yellow Pine	
Lauan	

Note: From time to time, additional species will be tested. Check with your supplier if the species desired are not shown.

HOW TO SPECIFY AND BUY

To assure structural integrity in roof areas of high temperature and humidity, D-Blaze span and strength design adjustment factors have been determined by independent third parties in accordance with ASTM D5516 for plywood and ASTM D5664 for lumber. Extended specifications can be found in "Sweet's Catalog," "Sweet's CD," Sweet's Directory," "Architects' First Source," "Spec-Data,®" and "ARCAT."

All FRT lumber and plywood:

- Shall be pressure-treated with D-Blaze fire retardant chemicals to meet the Underwriters Laboratories FRS rating denoting a surface-burning characteristic rating of 25 or less for flame spread and smoke developed in a test of 30 minutes' duration.
- Shall bear the Underwriters Laboratories label or stamp attesting to the FRS rating and to the fact that it also meets the AWPA Standard C20/C27, UC1, T1, UCFA for Type A use.
- All structural design calculations shall be based on the D-Blaze Strength Design Factor Tables.
- Shall be kiln-dried to a maximum of moisture content of 19% for lumber and 15% for plywood, or less.* The fire retardant chemicals used shall be halogen and sulfate-free.
- Shall be kept dry at all times during transit, job site storage, and erection. If material does become wet, it shall be replaced or permitted to dry (maximum 19% MC for lumber and 15% MC for plywood) prior to covering or enclosure by wallboard or other construction materials.

*Note: The designer may wish to specify a lower moisture content for cabinet and millwork.

For more information contact your local supplier or call CSI toll-free 1-800-421-8661.

treatedwood.com

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