

INTRODUCING THE WORLDS FIRST FIRE RETARDANT OSB



FLAMEDXX OSB

Save money today, save lives tomorrow

“Flamedxx has the capacity to save lives by slowing the spread of fire...and is produced at a lower cost of other fire retardant materials.”

FLAMEDXX®– FIRE RETARDANT OSB

FLAMEDXX® is the first fire retardant Oriented Strand Board (OSB) on the market, protecting families and businesses by slowing the spread of fire and providing a safe and economical alternative to fire retardant plywood.

The FLAMEDXX® patented process uses a complex chemical formula applied to OSB to help slow the spread of a fire. FLAMEDXX® utilizes advanced manufacturing equipment and a patented process to treat OSB that is less expensive and stronger than most fire retardant products, therefore saving our customer money now and lives tomorrow.

FLAMEDXX® is recommended for enclosed structural applications such as:

- Roof Sheathing
- Wall Sheathing
- SIPS
- Flooring

There are many advantages for using FLAMEDXX® such as:

- It is multi-functional as it can be used in homes, schools, hospitals, and other multi-use structures.
- Easy to use as it requires no special tools or skills.
- Can often be used to substitute for non-combustible materials and fire retardant plywoods without affecting building classifications.
- It is less expensive to produce, therefore lowering the cost for customers.
- It is engineered to be environmentally safe.
- Has undergone rigorous strength and safety tests by independently certified laboratories.
- Very low toxicity and will not harm those involved in use and handling of product.
- Reduces insurance rates.

PERFORMANCE

FIRE PERFORMANCE

When FLAMEDXX® is exposed to flames, the intumescent coating on FLAMEDXX® OSB foams and creates a dense layer of protective char on the panel surface protecting the underlying material. The charred area shields the wood from additional damage and delays more extensive burning. Flame spread is slowed or stopped and less smoke is generated than from uncoated OSB. When the fuel source is removed or depleted, fire does not spread.

Because of the fire-resistant action, FLAMEDXX® OSB retards the release of fuel and heat which preserves structural soundness and reduces repair costs.



TESTING SUMMARY

	Property	Results
ASTM E-84 (10 min. test)	Flame Spread	Flame Spread = 10 Smoke Developed = 110
CAN/ULC S102	Flame Spread PS2	Flame Spread = 20 Smoke Developed = 120
UL1715	Room Fire Test	Met the requirements when tested in a wall configuration.
ASTM E-108 (2004) & UL 790	Fire Exposure Rating	Class "A" Exposure
ASTM E-119	60 Minute Full Scale Vertical Fire Endurance	FLAMEDXX met the requirements for substitution into the UL design No. U356 as component #5.
ASTM D 5516	Flexural Properties	At the point of maximum heat exposure (20 weeks) treated panels demonstrated insignificant loss of strength.
ASTM D6305-02	Flexural Properties	Insignificant strength losses due to the elevated temperature and humidity.
UPITT Test for Combustion	Smoke Toxicity	FLAMEDXX morbidity rate demonstrated that the product is less toxic than wood.
BSS7239-88 (Boeing) Test	Toxic Gas Generation	FLAMEDXX smoke generated gas emissions were well below the allowable limits for HCl, HCN, HF, NOx, CO, and SO2
AWPA E12	Corrosion	Corrosion rates near or below untreated controls. Did not adversely effect these metals when exposed to extreme conditions
APA PS2-04 Qualification testing and concentrated Load Testing	Performance Standard for Wood-Based Structural Use panels	Met all PS02-4 Structural Test Standard Requirements.
ASTM D 3359-8	Adhesion	Passed met Class 3A or better
ASTM D 968-05	Abrasion	Passed Free of any coating wear.

Flame Spread

FLAMEDXX® upholds the flame spread requirement of a Class A rating (Flame-spread index value of 10). This rating is established during ASTM E 84 (Standard Test Method for Surface Burning Characteristics of Building Materials); for 10 minutes, then extended to a 30 minute duration. Each panel of FLAMEDXX® OSB bears a Class A mark identifying it as being certified to use in lieu of similar materials.

Smoke Development

FLAMEDXX® OSB has effectively passed smoke development tests with a Smoke Development Index value of 110.

Smoke Toxicity

FLAMEDXX® OSB smoke toxicity test results, for morbidity rates under the parameters of the UPITT Test for Combustion Product Toxicity and gas emissions by the BSS7239-88 (Boeing) Test for Toxic Gas Generation by Materials on Combustion, are well below allowable toxicity limits.

Corrosion

Did not adversely effect the metals when exposed to extreme conditions in accordance with AWPA E12, ICC-ES Acceptance Criteria for Proprietary Wood Preservation Systems—Common requirements for treatment process, test methods and performance.

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Strength and Flexural Properties

FLAMEDXX® OSB testing yielded insignificant strength loss after 20 weeks exposure, according to ASTM D 5516.

The results of the ASTM D 5516 Flexural properties test were used to determine the design values in accordance with ASTM D 6305-02. The engineer’s calculations indicated that the FLAMEDXX® treatment factors produced “insignificant strength losses” due to the elevated temperature and humidity during the ASTM D 5516 testing.

COMPLIANCE

Safety and Handling

The chemicals in FLAMEDXX® OSB are very low toxicity and will not harm those involved in use and handling of the product. Normal safety and hygiene practices for working with untreated OSB should be followed: wear gloves to avoid splinters, use a dust mask and eye protection when using power tools, and wash hands after working with the product. Ingestion tests have demonstrated that extreme amounts of fire retardant treated OSB must be ingested before the chemical exposure becomes significant. Tests have shown smoke from FLAMEDXX® OSB to be no more toxic than untreated OSB (UPITT).

Quality Control

Comprehensive Quality Control programs, conducted by third-party agencies, provide assurance that both FLAMEDXX® fire retardant chemical and FLAMEDXX® OSB are consistently produced to meet performance standards. These checks cover formulation composition, and manufacturing procedures. These independent agencies supplement the daily activities of the manufacturer. FLAMEDXX works to achieve the highest certification for satisfactory product performance, not allowing anything to endanger the integrity of the product.

Limitations

FLAMEDXX® OSB is for use in interior applications and may only be used in above ground locations, protected from precipitation, regular condensation, extreme humidity, or other wetting. Exposure of FLAMEDXX® OSB to these conditions will, over a period of time, reduce its fire retardant properties and effectiveness.

FLAMEDXX® should **NOT** be used in damp crawl spaces, other damp areas or in direct contact with concrete floors, damp concrete walls or masonry walls.

Warranty

FLAMEDXX warrants its fire retardant OSB against defects in manufacturing where the product is properly installed up to a maximum of 20 years. This warranty entitles the holder to repair or replacement of a defective material.

Installation

FLAMEDXX® OSB should always be installed with the coated side facing the interior.

RECOMMENDED UNIFORM LIVE LOADS FOR SHEATHING

Panel Span Rating	Minimum Panel Thick- ness	Maximum Span		Allowable Live Loads (psf)						
		With Edge Support ²	Without Edge Support	Spacing of supports center-to-center						
				12	16	20	24	32	40	48
24/16	7/16	24	24	190	100	65	30			
32/16	15/32, 1/2	32	28	325	180	120	70	30		
40/20	19/32, 5/8	40	32		305	205	130	60	30	
48/24	23/32	48	36			280	175	95	45	35

1 The allowable loads were determined using a dead load of 10 psf. If the dead load exceeds 10 psf, the live load should be reduced accordingly. 2 Panel edge clips (one between each support, two between supports at 48" o.c.), lumber blocking or other support.

RECOMMENDED USES FOR FLAMEDXX

Application	Structural Use	Recommended Thickness (in.)	U.S. Applications (Max Support Spacing) (in.)
Subflooring	Rated Sheathing - Square Edge	7/16	16
		15/32	16
		19/32	20
		23/32	24
Roof Sheathing (not for roofs used as walking decks)	Rated Sheathing - Square Edge	7/16	24
		15/32	32
		19/32	40
		23/32	48
Wall Sheathing	Rated Sheathing - Square Edge	7/16	24
		15/32	24
Ceilings and Soffits	Rated Sheathing - Square Edge	7/16	24
		15/32	24

PREPARATORY INSTALLATION WORK

Ensure that the product is stored on a dry and level surface, with adequate blocking to avoid warping and adequate air circulation around the OSB. Ensure that the product is separated from ground moisture during storage. Prevent the product from being dropped or dragged. Always handle the product in a way to prevent damage to its surface or edges. As with untreated OSB, FLAMEDXX® OSB must be dry and clean before finishing and should only be finished after the structure has been enclosed. Coating systems should be tested on sample material and exposed to actual use conditions to determine if the desired effect can be obtained. To prevent moisture buildup in OSB roof systems, adequate air flow must be provided. It is the responsibility of the building owner or agent (builder, architect, engineer, etc.) to insure that ventilation is provided to the level required by applicable building codes. Verify that site conditions are acceptable for installation and do not proceed with installation until unacceptable conditions are corrected.

STANDARD DIMENSIONS

It is possible to produce the panels in various standard sizes and thickness of OSB. Our standard range of thicknesses is 7/16", 15/32", 19/32", 23/32" Square Edge and T&G.

Identification

All FLAMEDXX OSB will be identified with the quality mark of the approved quality assurance agency. It will also bear the mark of IAPMO 0173 and New York City Building Code MEA628-06M in addition to the flame-spread and smoke development, mill number, the date and FLAMEDXX batch number, span rating and dimension and installation instruction.

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Availability and cost

FLAMEDXX® is readily available in most areas and can be delivered to adhere to specific construction schedules. Contact FLAMEDXX or it's distributors for questions about product costs.

Maintenance

Properly installed product requires no special maintenance.

Approvals

IAPMO 0173

New York City Building Code MEA628-06M

FSC Chain of Custody

Warrington Fire Certification

QAI (Quality Auditing Institute) B1032

Metropolitan Nashville Davidson County Building Codes

Product Name

FLAMEDXX® Fire Retardant OSB

Manufacturer

FLAMEDXX

P.O. Box 280448

Nashville, TN 37228

(615) 297-2000

(615) 297-2001

Product Description

FLAMEDXX® OSB is comprised of a proprietary formulation of fire retardant water-based coating applied to PS2-04 rated OSB.

These multi-purposes fire retardant OSB panels have low rates of fuel contribution and heat release and maintain their structural integrity longer than other building materials, including steel. Safe and environmentally friendly, FLAMEDXX® fire retardant OSB can be used in homes, schools, hospitals and multiuse structures.

Building Codes

Installation must comply with the requirements of all applicable local, state and federal code jurisdiction.

Technical Services

Technical assistance, including more detailed information, product, literature, test results and assistance preparing product specification, is available by contacting FLAMEDXX.

Technical Properties

(See Testing Summary Table)

Physical Properties

(See recommended Uniform Live Loads Table)

MSDS

See www.flamedxx.com

Visit us at www.flamedxx.com,
www.arndtandherman.com or www.arcacat.com.

RATED SHEATHING DESIGN CAPABILITIES Stress Parallel to Strength Axis

Property	24/16	32/16	40/20	48/24
Panel Bending Stiffness	78,000	115,000	225,000	400,000
Panel Bending Strength	385	445	750	1,000
Panel Axial Tension	2,600	2,800	2,900	4,000
Panel Axial Compression	3,250	3,550	4,200	5,000
Panel Axial Stiffness	3,800,000	4,150,000	5,000,000	5,850,000
Panel Shear (Plane)	150	165	205	250
Panel Rigidity	83,500	83,500	88,500	96,000
Panel Shear (Thickness)	165	180	195	220

RATED PANELS DESIGN CAPABILITIES

Stress Perpendicular to Strength Axis

Property	24/16	32/16	40/20	48/24
Panel Bending	16,000	25,000	56,000	91,500
Panel Bending	115	165	270	405
Panel Axial Ten-	1,300	1,650	2,100	2,550
Panel Axial Com-	2,500	3,100	4,000	4,300
Panel Axial Stiff-	2,900,000	3,600,000	4,500,000	4,500,000
Panel Sheer	150	165	205	250
Panel Rigidity	83,500	83,500	88,500	96,000
Panel Shear	165	180	195	220

- FLAMEDXX® Fire Retardant OSB** is for use in interior applications and may only be used in above-ground locations. Protect the panels from precipitation, regular condensation, extreme humidity and other wetting situations.
- FLAMEDXX® Fire Retardant OSB should not be used in damp areas such as crawl spaces.
 - Do not use FLAMEDXX® Fire Retardant OSB in direct contact with damp concrete structures or masonry walls.

“Insurers, Fire Services, Architects, Engineers, Main Contractors and Specialist Sub Contractors have been anxiously awaiting the development of a safe, strong, fire retardant OSB. Flamedxx is a versatile and environmentally friendly product that will meet their needs.”

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