



## EVALUATION SUBJECT: WOOD STRUCTURAL PANELS WITH FLAMEDXX™ FACTORY APPLIED COATING

### REPORT HOLDER:

Flamedxx  
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CSI Division: 06- WOOD AND PLASTICS  
CSI Section: 06080—Factory-Applied Wood Coatings  
CSI Section: 06160—Sheathing

## 1.0 SCOPE OF EVALUATION

### 1.1 Compliance to the following codes & regulations:

- 2012 and 2009 International Building Code® (IBC)
- 2012 and 2009 International Residential Code® (IRC)

### 1.2 Evaluated in accordance with:

- ASTM E84-09
- ASTM E119-08a

### 1.3 Properties assessed:

- Surface-burning characteristics
- Ignition Barrier
- Interior Finish Classification
- Component of a two hour Fire-Resistance Rated Assembly

## 2.0 PRODUCT USE

OSB coated with Flamedxx has the following attributes:

- 1) Surface-burning characteristics and use as interior finish in accordance with IBC Section 803.1, and IRC Sections R302.9 and R702.1.
- 2) Ignition barrier in accordance with IBC Section 2603.4.1.6 and IRC Sections R316.5.3 and R316.5.4.
- 3) Fire-Resistance-rated wall assembly, in accordance with IBC Sections 703.2 and IRC Section R302.

## 3.0 PRODUCT DESCRIPTION

**3.1 Product information:** FLAMEDXX™ is a proprietary intumescent coating recognized for application to  $\frac{7}{16}$  inch (11 mm),  $\frac{19}{32}$  inch (15 mm), and  $\frac{23}{32}$  inch (18 mm) thick Oriented Strand Boards (OSB) as noted in this report. The

OSB panels shall comply with US DOC PS2 as specified in Section 2303.1.4 of the IBC or Section R604 of the IRC.

**3.1.1 0.010" FLAMEDXX™ Coating:** FLAMEDXX™ at a nominal 0.010 inch (0.25 mm) (minimum 0.006 inch [0.15 mm]) dry coating thickness applied to oriented strand board (OSB) is used as roof sheathing, wall sheathing, an interior finish or an ignition barrier.

**3.1.2 0.040" FLAMEDXX™ Coating:** FLAMEDXX™ at a nominal 0.040 inch (1 mm) ( $0.039 \pm 0.005$ -inch [0.99 mm  $\pm$  0.13 mm]) dry coating thickness applied to both sides of  $\frac{7}{16}$ -inch thick oriented strand board (OSB) is recognized as a component in a two hour non-symmetrical, load bearing wall assembly as detailed in Section 3.6 of this report.

### 3.2 Direct Application Method of Coating Panels

The coating is applied at the factory by a spray applicator or by other means (e.g. roll coating or curtain coating) upon the surface of the OSB panels. The coating shall completely cure prior to stacking.

### 3.3 Surface Burning Characteristics

FLAMEDXX™ coated OSB with a nominal dry film FLAMEDXX coating thickness of 0.010 inch (0.25 mm) when tested in accordance with ASTM E84 (with the coated side exposed to the flame, exhibited a flame spread rating 25 or less and a smoke development rating of 100 or less .

### 3.4 Ignition Barrier

When exposed in attics and crawl spaces nominal, 0.010 inch (0.25 mm) dry film thickness of FLAMEDXX™ factory applied to  $\frac{7}{16}$  inch,  $\frac{19}{32}$  inch, or  $\frac{23}{32}$  inch (11, 15, or 18 mm) thick OSB, may serve as an ignition barrier in accordance with Section 2603.4.1.6 of the IBC for Type V construction.

### 3.5 Interior Finish Classification

When tested as noted in Section 3.3 of this report, 0.010 inch (0.25 mm) dry film thickness of FLAMEDXX™ factory applied to  $\frac{7}{16}$  inch,  $\frac{19}{32}$  inch, or  $\frac{23}{32}$  inch (11, 15, or 18 mm) thick OSB qualifies as a "Class A" interior finish in accordance with Section 803.1.1 of the IBC for Type V construction.

**3.6 FLAMEDXX™ applied to OSB as a component of a Two-Hour Fire-Resistance-rated Non-Symmetrical Wall Assembly (Restricted Load Bearing maximum allowable load is 750 lb (3336 N)/stud):** When tested in accordance with ASTM E119, a wall constructed as noted in Section 3.6.1 of this report with a 0.040 inch (1 mm) Nominal



(0.039 ± 0.005-inch [0.99 mm ± 0.13 mm]) dry film thickness of FLAMEDXX applied on both sides of nominal 7/16-inch thick OSB serves as a component of a two-hour fire-resistance-rated assembly. The assembly is depicted in Figure 1 of this report.

**3.6.1 Assembly Details:** The non-symmetrical, restricted load bearing, assembly described as follows (beginning on the side exposed to the flame to the unexposed side):

**(1) Exposed Surface:** two layers of 5/8-inch (16 mm) thick Type X gypsum wallboard (GWB) fastened as follows: face layer with 2-3/8 inches (60 mm) long 8d nails at 8 inches (203 mm) on center at edge and in the field, the base layer fastened with 1-7/8 inch (48 mm) 6d nails at 6 inches (152 mm) on center at the edge and in the field. The face layer joints and nail locations shall be treated in accordance with IBC Section 2508.4, ASTM C840, or GA216.

**(2) Frame:** The GWB shall be attached to nominal 2 by 4 inch Douglas Fir No. 2 wood studs spaced 16-inches (406 mm) on center. Blocking shall be installed across the entire width of the assembly at a maximum interval of 8-feet (2440 mm). The allowable stress design axial compressive loads and stresses for the wood stud shall be calculated in accordance with Sections 3.6 and 3.7 of ANSI/AF&PA NDS and shall be limited to the least of the following:

- a. 750 pounds (3336 N) per 2 by 4 stud.
- b.  $0.31 F'_c$ .
- c. For studs with a slenderness ratio  $l/d$  not exceeding 33,  $0.31 F'_c$ , where  $F'_c$  is calculated assuming a slenderness ratio of 33.

**(3) Cavity:** Each cavity shall be filled with 3-1/2 inch (89 mm) thick R-13 un-faced fiberglass insulation.

**(4) Unexposed Surface:** Attached to the frame on the unexposed side, shall be a layer of nominal 7/16 inch (11 mm), thick Oriented Strand Board (OSB) coated with FLAMEDXX™ on both surfaces at a nominal thickness of 0.040 inches (1mm). The OSB shall be fastened to the studs with 1-7/8 inch (48 mm) long, 6d nails at 6-inches (152 mm) on center at the edges and at 12-inches (305 mm) in the field.

## 4.0 DESIGN AND INSTALLATION

The manufacturer's published installation instructions and this report shall be strictly adhered to. A copy of the instructions and this report shall be available at all times on the jobsite during installation. Where conflicts between this report and the instructions occur, the more restrictive shall govern.

## 5.0 LIMITATIONS

The FLAMEDXX™ Coated OSB described in this report complies with, or is a suitable alternate to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1** FLAMEDXX™ Coated OSB is manufactured by FLAMEDXX in Nashville, Tennessee, under a quality control program that meets the minimum requirements for IAPMO UES Listee's Quality Assurance System, with quarterly inspections conducted by Quality Control Consultants.
- 5.2** The two hour fire-resistance-rated assembly described in Section 3.6 of this report requires the use of FLAMEDXX™ coated OSB having a nominal dry coating thickness of 40 mils or 0.040-inches (1 mm) on both faces.
- 5.3** The structural system design is outside the scope of this report and shall be in accordance with the IBC or the IRC as required by the jurisdiction. The OSB panels receiving the coating shall comply with US DOC PS2 as specified in Section 2303.1.4 of the IBC or Section R604 of the IRC.
- 5.4** FLAMEDXX™ Coated OSB shall not be used in exterior or other applications where it is exposed to water and shall be protected by wall coverings or roof coverings complying with the IBC or IRC.
- 5.5** FLAMEDXX™ Coated OSB shall not be sanded or otherwise abraded.
- 5.6** FLAMEDXX™ Coated OSB shall be kept dry during storage and installation.
- 5.7** FLAMEDXX Coated OSB shall not be installed in damp locations.
- 5.8** FLAMEDXX™ Coated OSB panel joints in a roof may be spaced 0.125 inch (3.175 mm) to allow for swelling and shrinkage of the panel due to moisture.
- 5.9** Roof covering materials installed above the intumescent temperature of 500°F (260°C) shall not be in contact with the FLAMEDXX™ Coating.
- 5.10** Exposure to precipitation during storage or installation shall be avoided. If the FLAMEDXX™ Coated OSB becomes wet, it shall be replaced or permitted to dry to a maximum moisture content of 15 percent or less prior to covering or enclosure by wallboard or other construction materials (except for protection during construction). Panels that have been damaged by exposure to precipitation or by other means or that have been repaired in the field require special inspection. The special inspector shall be approved by the manufacturer.



## 6.0 SUBSTANTIATING DATA

Data in accordance with ASTM E84 and ASTM E119, and manufacturer's descriptive literature. Test results are from laboratories in compliance with ISO/IEC 17025.

- 6.1 Manufacturer's descriptive literature and installation instructions.
- 6.2 Report of Testing in accordance with ASTM E84 by Intertek of Elmendorf, Texas; Report Number 100095639SAT-001 issued April 21, 2010, signed by P. So and S Romo.
- 6.3 Report of Fire Performance ASTM E119 load-bearing assembly by Western Fire Center, Inc Kelso Washington; Dated September 14, 2012 WFCI Report #1208er1 Issued October 2, 2012; Revised march 4, 2013 signed by M. White and B. M. Pickett.

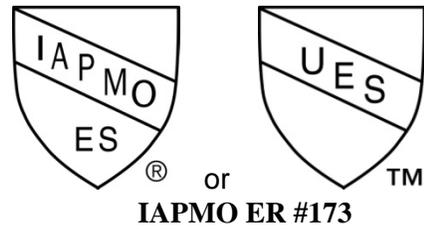
## 7.0 IDENTIFICATION

Each panel covered by this report shall be identified by a stamp or label visible for field identification after coating specifying:

- 7.1 The identification of the accredited inspection agency, Quality Control Consultants.
- 7.2 The manufacturer's name (FLAMEDXX™), product name (FLAMEDXX™ Coated OSB), Minimum Dry Coating Thickness, address, and identification number.

- 7.3 The name FLAMEDXX™ intumescent coating.
- 7.4 A panel coated on one side shall have the coated side of the panel identified by the statement "this side faces the interior of the building". A panel coated on both sides shall have one coated side of the panel identified by the statement "this side faces the interior of the building" and the opposite coated side identified by the statement "FLAMEDXX™".
- 7.5 The IAPMO UES Mark of conformity and this Evaluation Report number (173).

The grade, thickness and span rating for the OSB shall be visible after coating. Panels with nominal 0.040 inch (1 mm) coatings on each face shall be accompanied by a certification by FLAMEDXX.



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