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ICC-ES Evaluation Report

ESR-3997

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DIVISION: 09 00 00—FINISHES

SECTION: 09 96 43—FIRE-RETARDANT COATINGS

REPORT HOLDER:

TPR² CORPORATION

**POST OFFICE BOX 825
SAUNDERSTOWN, RHODE ISLAND 02874**

EVALUATION SUBJECT:

**FIRESHELL COATINGS: FIOE, TB, JM-TC AND BMS-TC
BLAZELOK COATING: TBX**



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DIVISION: 09 00 00—FINISHES

Section: 09 96 43—Fire-Retardant Coatings

REPORT HOLDER:

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EVALUATION SUBJECT:

FIRESHELL COATINGS: F10E, TB, JM-TC AND BMS-TC
BLAZELOK COATING: TBX

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2015 *International Building Code*® (IBC)
- 2015 *International Residential Code*® (IRC)

Property evaluated:

- Application without a prescriptive thermal barrier
- Physical properties

2.0 USES

Fireshell Coatings, designated as F10E, TB, JM-TC and BMS-TC, and Blazelok TBX Coating are liquid-applied coatings intended to be applied over the surface of spray-applied foam plastic insulation complying with ICC-ES Acceptance Criteria for Spray-applied Foam Plastic Insulation (AC377). The coated assembly is intended for use without the application of a code-prescribed 15-minute thermal barrier when installed as described in this report.

3.0 DESCRIPTION

Fireshell Coatings and Blazelok TBX Coating are single-component, water-based, liquid-applied intumescent coatings. The coating is supplied in 5-gallon (19 L) pails and 55-gallon (208 L) drums and has a shelf life of one (1) year when stored in factory-sealed containers at temperatures between 45° and 95°F (7.2 and 35°C).

4.0 DESIGN AND INSTALLATION

4.1 Installation – General:

Fireshell Coatings and Blazelok TBX Coating must be applied in accordance with the manufacturer's published application instructions and this report. A copy of the instructions must be available on the job site at all times.

Fireshell Coatings and Blazelok TBX Coating must be mechanically mixed prior to application. The coating is applied to the required thickness using spray equipment, a brush or a roller having a medium nap. Surfaces to be coated must be inspected in accordance with the manufacturer's published installation instructions and must be dry, clean, and free of dirt, loose debris and other substances that could interfere with the adhesion of the coating. The coating must not be applied when the ambient or surface temperature is below 55°F (12.7°C) or above 95°F (35°C), and relative humidity of not more than 65%. The manufacturer must be consulted for specific application conditions.

The Fireshell Coatings and Blazelok TBX Coating may be applied over spray-applied foam plastic insulation without covering the coated assembly with the 15-minute thermal barrier prescribed in IBC Section 2603.4 and IRC Section R316.4.

5.0 CONDITIONS OF USE

The Fireshell Coatings (F10E, TB, JM-TC and BMS-TC) and Blazelok TBX Coating described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1** Application must comply with this report, the manufacturer's published installation instructions, and the applicable code. A copy of the installation instructions must be on the job site during application of the coating. In the event of a conflict, this report and the code govern.
- 5.2** The application of additional interior finishes over the Fireshell coatings is limited to interior satin latex paint applied at an average dry film thickness of 3.0 mils (0.08 mm). The use of this interior finish in conjunction with the vapor retardant coating in Item 5.3 is outside the scope of this report.
- 5.3** Application of a vapor retardant coating under the Fireshell coatings is limited to use of moisture vapor barrier interior latex primer/finish coating consisting of Vinyl Acrylic/Styrene Butadiene having a VOC (less exempt solvents) of no more than 72 g/L (0.60 lb/gal) and a volume solids content of 29 ± 3% applied at an average dry film thickness of 2.25 mils (0.06 mm). The use of this vapor retardant coating in conjunction with the interior finish in Item 5.2 is outside the scope of this report.
- 5.4** Recognition in this report is for the specific assemblies and spray-applied foam plastic insulations described in Table 1. The spray-applied foam plastic

insulation must be installed in accordance with the requirements set forth in the specific ICC-ES evaluation report spray foam manufacturer's report noted in Table 1. For spray-applied foam plastic insulation that is not covered in an ICC-ES evaluation report, the evaluation is limited as noted in Table 1, Footnote 3.

5.5 The coating is manufactured in Essex, Connecticut, under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

Reports of testing in accordance with ICC-ES Acceptance Criteria for Fire-protective Coatings Applied to Spray-applied Foam Plastic Insulation Installed without a Code-

prescribed Thermal Barrier (AC456), dated October 2015, including room corner fire testing in accordance with NFPA 286.

7.0 IDENTIFICATION

7.1 All containers of Fireshell and Blazelok Coatings must be labeled with the manufacturer's name (TPR² Corporation) and address; the product name; the date of manufacture, the shelf life or expiration date; the manufacturer's instructions for application, and the evaluation report number (ESR-3997).

7.2 The spray-applied foam plastic insulations must be labeled in accordance with the applicable spray foam manufacturer's evaluation report (see Table 1).

TABLE 1—USE OF INSULATION WITHOUT A PRESCRIPTIVE THERMAL BARRIER (TESTED IN ACCORDANCE WITH NFPA 286)

INSULATION TYPE	MAXIMUM THICKNESS (in.) (Vertical Surfaces)	MAXIMUM THICKNESS (in.) (Overhead Surfaces)	COATING TYPE & THICKNESS ¹ (Applied to all Foam Surfaces)	MINIMUM THEORETICAL APPLICATION RATE OF COATING ²
BASF WALLTITE [®] (ESR-2642)	5 ¹ / ₂	7 ¹ / ₂	Fireshell [®] F10E or TB 15 mils DFT / 23 mils WFT	1.23 gal / 100 ft ²
BASF WALLTITE [®] 178 (ESR-2642)	5 ¹ / ₂	7 ¹ / ₂	Fireshell [®] F10E or TB 15 mils DFT / 23 mils WFT	1.23 gal / 100 ft ²
BASF SPRAYTITE [®] 158 (ESR-2642)	5 ¹ / ₂	9 ¹ / ₂	Fireshell [®] F10E or TB 14 mils DFT / 21 mils WFT	1.16 gal / 100 ft ²
BASF ENERTITE [®] NM (ESR-3102)	9 ¹ / ₂	11 ¹ / ₂	Fireshell [®] F10E or TB 11 mils DFT / 18 mils WFT	1.18 gal / 100 ft ²
CertainTeed CertaSpray Open-Cell (ESR-2668)	9 ¹ / ₄	11 ¹ / ₄	Fireshell [®] F10E or TB 12 mils DFT / 18 mils WFT	1.15 gal/100 ft ²
CertainTeed CertaSpray [®] Closed-Cell (ESR-3758)	5 ¹ / ₂	9 ¹ / ₂	Fireshell [®] F10E or TB 11 mils DFT / 17 mils WFT	1.10 gal / 100 ft ²
CertainTeed CertaSpray [®] X Open Cell (See Note 3)	9 ¹ / ₂	11 ¹ / ₂	Fireshell [®] F10E or TB 11 mils DFT / 18 mils WFT	1.12 gal / 100 ft ²
Chemical Brothers Quadfoam 500 (See Note 3)	11	13 ¹ / ₂	Fireshell [®] Primer 5 mils DFT / 9 mils WFT Fireshell [®] F10E or TB 9 mils DFT / 15 mils WFT	0.53 gal / 100 ft ² 1 gal / 100 ft ²
Chemical Brothers Quadfoam NatureSeal OCX (See Note 3)	6 ¹ / ₂	10	Fireshell [®] F10E or TB 12 mils DFT / 18 mils WFT	1.15 gal / 100 ft ²
Chemical Brothers Quadfoam 2.0 (See Note 3)	8 ¹ / ₂	12 ¹ / ₂	Fireshell [®] F10E or TB 12 mils DFT / 18 mils WFT	1.08 gal / 100 ft ²
Covestro EocBay [™] Closed Cell (ESR-3076)	7 ¹ / ₄	9 ¹ / ₄	Fireshell [®] F10E, TB or Fireshell [®] BMS-TC 12 mils DFT / 20 mils WFT	1.24 gal / 100 ft ²
Covestro Bayseal [™] OC (See Note 3)	7 ¹ / ₂	9 ¹ / ₂	Fireshell [®] F10E, TB or Fireshell [®] BMS-TC 12 mils DFT / 20 mils WFT	1.24 gal / 100 ft ²
Covestro Bayseal [™] Closed Cell (ESR-2072)	7 ¹ / ₄	9 ¹ / ₄	Fireshell [®] F10E, TB or Fireshell [®] BMS-TC 12 mils DFT / 20 mils WFT	1.24 gal / 100 ft ²
Demilec SEALECTION [®] 500 (ESR-1172)	7 ¹ / ₂	11 ¹ / ₂	Fireshell [®] F10E, TB or Blazelok TBX 11 mils DFT / 17 mils WFT	1.2 gal / 100 ft ²
Demilec Agribalance [®] (ESR-2600)	5 ¹ / ₂	11 ¹ / ₂	Fireshell [®] F10E, TB or Blazelok TBX 15 mils DFT / 23 mils WFT	1.23 gal / 100 ft ²
Demilec HEATLOK SOY [®] 200 PLUS (ESR-3210)	9 ¹ / ₄	11 ¹ / ₄	Fireshell [®] F10E, TB or Blazelok TBX 11 mils DFT / 17 mils WFT	1.2 gal / 100 ft ²

**TABLE 1—USE OF INSULATION WITHOUT A PRESCRIPTIVE THERMAL BARRIER (TESTED IN ACCORDANCE WITH NFPA 286)
(Continued)**

Demilec APX™ (ESR-3470)	7 ¹ / ₂	11 ¹ / ₂	Fireshell® F10E, TB or Blazelok TBX 11 mils DFT / 17 mils WFT	1.2 gal / 100 ft ²
Demilec Heatlok® XT-s (ESR-3824)	7 ¹ / ₂	11 ¹ / ₂	Fireshell® F10E, TB or Blazelok TBX 12 mils DFT / 18 mils WFT	1.2 gal / 100 ft ²
Demilec Heatlok® XT-w (ESR-3883)	7 ¹ / ₂	11 ¹ / ₂	Fireshell® F10E, TB or Blazelok TBX 12 mils DFT / 18 mils WFT	1.2 gal / 100 ft ²
Demilec Heatlok® HFO (See Note 3)	7 ¹ / ₂	11 ¹ / ₂	Fireshell® F10E, TB or Blazelok TBX 12 mils DFT / 18 mils WFT	1.2 gal / 100 ft ²
Elastochem Proline Plus (ESR-3541)	7 ¹ / ₄	9 ¹ / ₄	Fireshell® F10E, TB or Fireshell® BMS-TC 12 mils DFT / 20 mils WFT	1.24 gal / 100 ft ²
EnergyOne America EOA500 (ESR-3686)	11 ¹ / ₂	11 ¹ / ₂	Fireshell® F10E or TB 14 mils DFT / 20 mils WFT	1.25 gal / 100 ft ²
Gaco Western GacoGreen 052 and GacoGreen 052N (See Note 3)	5 ¹ / ₄	9 ¹ / ₄	Fireshell® F10E or TB 14 mils DFT / 26 mils WFT	1.6 gal / 100 ft ²
Gaco Western GacoOnePass F1850 (See Note 3)	7 ¹ / ₂	11 ¹ / ₄	Fireshell® F10E or TB 12 mils DFT / 18 mils WFT	1.2 gal / 100 ft ²
Henry Company Permax 2.0X and Permax 2.0X Fast (ESR-3647)	7 ¹ / ₄	9 ¹ / ₄	Fireshell® F10E, TB or Fireshell® BMS-TC 12 mils DFT / 20 mils WFT	1.24 gal / 100 ft ²
Icynene Classic Max (ESR-1826)	7 ¹ / ₂	11 ¹ / ₂	Fireshell® F10E or TB 14 mils DFT / 21 mils WFT	1.1 gal / 100 ft ²
Icynene ProSeal (ESR-3500)	7 ¹ / ₂	11 ¹ / ₄	Fireshell® F10E or TB 12 mils DFT / 18 mils WFT	1.2 gal / 100 ft ²
Johns Manville JM Corbond MCS™ (ESR-3159)	6	9 ¹ / ₂	Fireshell® JMTC, Fireshell® F10E or TB 12 mils DFT / 20 mils WFT	1.1 gal / 100 ft ²
Johns Manville JM Corbond® oc (ESR-3776)	7 ¹ / ₂	9 ¹ / ₂	Fireshell® JMTC, Fireshell® F10E or TB 12 mils DFT / 18 mils WFT	1.23 gal / 100 ft ²
Johns Manville JM Corbond® ocx (See Note 3)	7 ¹ / ₂	9 ¹ / ₂	Fireshell® JMTC, Fireshell® F10E or TB 12 mils DFT / 18 mils WFT	1.23 gal / 100 ft ²
Johns Manville JM Corbond® III (See Note 3)	7 ¹ / ₂	11 ¹ / ₂	Fireshell® JMTC, Fireshell® F10E or TB 12 mils DFT / 18 mils WFT	1.23 gal / 100 ft ²
LaPolla Industries Foam-Lok open cell foam (See Note 3)	7 ¹ / ₂	11 ¹ / ₄	Fireshell® F10E or TB 13 mils DFT / 20 mils WFT	1.24 gal / 100 ft ²
LaPolla Industries FL-2000-4G closed cell foam (See Note 3)	7 ¹ / ₂	11 ¹ / ₄	Fireshell® F10E or TB 12 mils DFT / 18 mils WFT	1.23 gal / 100 ft ²
Rhino Linings ThermalGuard OC.5R (ESR-2100)	7 ¹ / ₂	11 ¹ / ₂	Fireshell® F10E or TB 11 mils DFT / 17 mils WFT	1.16 gal / 100 ft ²
Rhino Linings ThermalGuard OC.5 (ESR-2100)	7 ¹ / ₂	11 ¹ / ₂	Fireshell® F10E or TB 11 mils DFT / 17 mils WFT	1.16 gal / 100 ft ²
Rhino Linings ThermalGuard CC2 (ESR-2100)	7 ¹ / ₂	9 ¹ / ₂	Fireshell® F10E or TB 12 mils DFT / 18 mils WFT	1.23 gal / 100 ft ²
SES Foam Sucraseal™ 0.5 (ESR-3375)	11 ¹ / ₂	11 ¹ / ₂	Fireshell® F10E or TB 14 mils DFT / 20 mils WFT	1.25 gal / 100 ft ²

For SI: 1 inch = 25.4 mm; 1 mil = 0.0254 mm; 1 gallon = 3.38 L; 1 ft² = 0.93 m².

Notes:

¹DFT = Dry Film Thickness; WFT = Wet Film Thickness

²As reported in the coating manufacturer’s application instructions. Actual application rate, based upon specific project conditions, must be in accordance with the coating manufacturer’s application instructions.

³Recognition is limited to the NFPA 286 test data for the coated assembly described. Evaluation for compliance of the spray foam insulation with the other applicable requirements of ICC-ES AC377 and the IBC and IRC are outside the scope of the report.