

**DIVISION: 07 00 00 - THERMAL AND MOISTURE PROTECTION**

**Section: 07 21 00 - Thermal Insulation**

**Section: 07 21 19 – Foamed-In-Place Insulation**

**REPORT HOLDER:**

**Huntsman Building Solutions (USA) LLC**

**3315 E. Division Street**

**Arlington, TX 76011**

**816-640-4900**

[www.huntsmanbuilds.com](http://www.huntsmanbuilds.com)

**REPORT SUBJECT:**

**Foam-Lok™ 500 and Foam-Lok™ 400**

**Spray-applied Polyurethane Foam Insulation**

### 1.0 SCOPE OF EVALUATION

**1.1** This Research Report addresses compliance with the following Codes:

- 2021, 2018, 2015 *International Building Code*® (IBC)
- 2021, 2018, 2015 *International Residential Code*® (IRC)
- 2021, 2018, 2015 *International Energy Conservation Code*® (IECC)
- 2020 *Florida Building Code* (excluding High Velocity Hurricane Zones) (see Section 9)

NOTE: This report references the most recent edition of the codes cited. Section numbers for earlier Code editions may differ.

**1.2** The insulations have been evaluated for the following properties (see Table 1):

- Physical properties
- Surface burning characteristics
- Air permeability
- Thermal resistance (R-value)

**1.3** The insulations have been evaluated for the following uses (see Table 1):

- Use as nonstructural thermal insulation material on or in interior and exterior walls, floors, ceilings and the underside of roof decks
- Alternatives to thermal barriers

- Alternatives to ignition barriers
- Use in fire-resistance-rated construction
- Use in Type I, II, III, and IV construction under the IBC
- Use in Type V construction under the IBC and buildings regulated under the IRC
- Use as air-impermeable insulation

### 2.0 STATEMENT OF COMPLIANCE

The insulations comply with the Codes listed in Section 1.1, for the properties stated in Section 1.2, and uses stated in Section 1.3, when installed as described in this report, including the Conditions of Use stated in Section 6.

### 3.0 DESCRIPTION

**3.1 Foam-Lok™ 500 (FL500):** Foam-Lok™ 500 (FL500) is a two-component, low-density, open-cell, spray-applied polyurethane foam insulation. The insulation is produced in the field by combining an isocyanate (A-component) with a proprietary resin (B-component), resulting in an insulation with a nominal density of 0.6 pounds per cubic foot. The insulation components are supplied in 55-gallon drums and have a shelf life of six months when stored in factory-sealed containers at temperatures between 50°F and 100°F.

**3.2 Foam-Lok™ 400 (FL400):** Foam-Lok™ 400 (FL400) is a two-component, low-density, open-cell, spray-applied polyurethane foam insulation. The insulation is produced in the field by combining an isocyanate (A-component) with a proprietary resin (B-component), resulting in an insulation with a nominal density of 0.5 pounds per cubic foot. The insulation components are supplied in 55-gallon drums and have a shelf life of six months when stored in factory-sealed containers at temperatures between 50°F and 100°F.

**3.3 DC315:** DC315 intumescent coating is a single-component, water-based, liquid-applied coating, manufactured by International Fireproof Technology Inc. The coating is supplied in 5-gallon pails and 55-gallon drums, and has a shelf life of twenty-four months when stored in factory-sealed containers at temperatures between 41°F



and 95°F. DC315 complies with ICC-ES AC456 as recognized in IAPMO UES ER-0499.

**3.4 TPR<sup>2</sup> FIRESHHELL® (F10E) Coating:** TPR<sup>2</sup> FIRESHHELL® (F10E) intumescent coating is a proprietary, water-based, one-part, nonflammable coating manufactured by ICP Construction. The coating is supplied in 5-gallon pails and 55-gallon drums, and has a shelf life of twelve months when stored in factory-sealed containers at temperatures between 45°F and 75°F. FIRESHHELL® (F10E) complies with ICC-ES AC456 as recognized in ICC-ES ESR-3997.

**3.5 No-Burn® Plus ThB:** No-Burn® Plus ThB is a one-part water-based intumescent coating manufactured by No-Burn Inc. The coating is supplied in 5-gallon pails and 55-gallon drums, and has a shelf life of 18 months when stored in unopened containers between 40°F and 90°F. No-Burn® Plus ThB complies with ICC-ES AC456 as recognized in IAPMO UES ER-0305.

**3.6 Flame Seal™ IB Intumescent Coating:** Flame Seal™ IB intumescent coating, manufactured by Flame Seal Products, Inc., is a single component, water-based, liquid-applied intumescent coating. The coating is supplied in 5-gallon pails and 55-gallon drums and has a shelf-life of six months when stored in factory-sealed containers at temperatures between 40°F and 90°F.

#### 4.0 PERFORMANCE CHARACTERISTICS

**4.1 Surface Burning Characteristics:** The insulations, at a maximum thickness 4 inches, have a flame-spread index of 25 or less and a smoke-developed index of 450 or less, when tested in accordance with ASTM E84. The insulation can be installed at greater thicknesses as described in Sections 5.3 through 5.6. When the insulations are separated from the interior occupied space of the building with minimum 1/2-inch-thick gypsum board, the maximum insulation thickness is not limited. Under the IRC, a thermal barrier of minimum 23/32-inch-thick wood structural panel is also permitted, and the maximum insulation thickness is not limited.

**4.2 Thermal Resistance (R-value):** The insulations have thermal resistance (R-value), at a mean temperature of 75°F, as shown in Table 2.

**4.3 Air Permeability:** The insulations, at a minimum thickness of 3-1/2 inches, are considered air-impermeable

insulation in accordance with IBC and IRC Sections 202 and R202, respectively, based on testing in accordance with ASTM E283 and ASTM E2178.

#### 5.0 INSTALLATION

**5.1 General:** The insulations must be installed in accordance with the manufacturer's published installation instructions, the applicable Code, and this Research Report. A copy of the manufacturer's instructions must be available on the jobsite during installation. The installation requirements in Sections 5.1 through 5.4 apply to all Types of construction.

The insulation components must be stored at temperatures between 50°F and 100°F and must not be used in areas that have a maximum service temperature greater than 180°F. The foam plastic insulation must not be used in electrical outlet or junction boxes, or in contact with rain or water. The substrate must be free of moisture, frost or ice, loose scales, rust, oil, and grease. The insulation must be protected from the weather during and after application, unless approved specifically by Huntsman Building Solutions (USA) LLC.

**5.2 Application:** The insulations are spray-applied on the jobsite using spray equipment specified in Huntsman Building Solutions (USA) LLC's published installation instructions. The insulation is installed in one or more passes, up to 8 inches per pass as necessary to achieve the specified thickness, subject to the thickness limitations identified in this report.

#### 5.3 Thermal Barrier:

**5.3.1 Application with a Prescriptive Thermal Barrier:** The insulations must be separated from the interior of the building by an approved thermal barrier of 1/2-inch-thick gypsum wallboard, or an equivalent 15-minute thermal barrier complying with IBC Section 2603.4 or IRC Section R316.4, as applicable, except where installation is in an attic or crawl space as described in Section 5.4.

When the insulations are separated from the interior living space of the building with minimum 1/2-inch-thick gypsum board, the maximum thickness of insulation is not limited. Under the IRC, a thermal barrier of minimum 23/32-inch-





thick wood structural panel is also permitted, and the maximum insulation thickness of insulation is not limited.

### 5.3.2 Application without a Prescriptive Thermal Barrier:

The insulations may be installed without the 15-minute thermal barrier prescribed in the IBC Section 2603.4 and IRC Section R316.4, as described in this section and Table 3. The insulation may be spray-applied to the interior surface of walls, the underside of roof sheathing, and in crawl spaces, provided the assembly conforms to one of the assemblies described in Table 3. The insulation and coating may be left exposed as an interior finish without the prescriptive thermal or ignition barrier in assemblies as indicated in Table 3.

When an intumescent coating is used, it must be applied to all surfaces in accordance with the respective coating manufacturer's installation instructions. The coating must be applied when ambient and substrate temperatures are above 50°F, unless otherwise permitted by the coating manufacturer's installation instructions. Surfaces to be coated must be clean, dry, and free of loose dirt, loose debris, and any other substances that could interfere with the adhesion of the coating.

**5.4 Attics and Crawl Spaces:** The insulations may be applied in attics and crawl spaces as described in either Section 5.4.1 or 5.4.2. When foam insulation is installed in an attic or crawl space in accordance with this section, a thermal barrier, as described in Section 5.3.1, is not required between the foam plastic insulation and the attic or crawl space but is required between the insulation and the interior occupied space. Attics and crawl spaces must be vented in accordance with the applicable Code, except as permitted in Sections 5.4.1 and 5.4.2.

### 5.4.1 Application with a Prescriptive Ignition Barrier:

Where the insulations are installed within attics or crawl spaces, and where entry is made only for service of utilities, an ignition barrier must be installed in accordance with IBC Section 2603.4.1.6 or IRC Sections R316.5.3 and R316.5.4, as applicable. The ignition barrier must be consistent with the requirements for the type of construction required by the applicable Code and must be installed in a manner so that the foam plastic insulation is not exposed. The insulations, as specified in this section, may be installed in unvented attics and unvented enclosed rafter assemblies in accordance with IBC Section 1202.3 or IRC Section R806.5.

### 5.4.2 Application without a Prescriptive Ignition Barrier:

The insulations may be installed in attics and crawl spaces, as described in this section and Table 4, without the ignition barrier prescribed in IBC Section 2603.4.1.6, and IRC Sections R316.5.3 and R316.5.4, subject to the following conditions:

- Entry to the attic or crawlspace is only to service utilities and no storage is permitted.
- There are no interconnected attic or crawl space areas.
- Air in the attic is not circulated to other parts of the building.
- Attic ventilation is provided when required by IBC Section 1203.2 or IRC Section R806.1, as applicable, except when insulation is permitted in unvented attics in accordance with IBC Section 1202.3, or IRC Section R806.5.
- Under-floor (crawl space) ventilation is provided in accordance with IBC Section 1202.4 or IRC Section R408.1, as applicable.
- Combustion air is provided in accordance with IMC (International Mechanical Code®) Section 701.

In attics, the insulations may be spray-applied to the underside of roof sheathing or roof rafters, and/or vertical surfaces, provided the assembly conforms to one of the assemblies described in Table 4. In crawl spaces, the insulations may be spray-applied to the underside of floors and/or vertical surfaces provided the assembly conforms to one of the assemblies described in Table 4.

When an intumescent coating is used, it must be applied to all surfaces in accordance with the respective coating manufacturer's installation instructions. The coating must be applied when ambient and substrate temperatures are above 50°F, unless otherwise permitted by the coating manufacturer's installation instructions. Surfaces to be coated must be clean, dry, and free of loose dirt, loose debris, and any other substances that could interfere with the adhesion of the coating.

The insulation may be installed in unvented attics as described in this section and in accordance with IBC Section 1202.3 or IRC Section R806.5.

**5.4.2.1 Use on Attic Floors:** The insulations may be installed between and over joists in attic floors in accordance with this section, conditions a. through f. of Section 5.4.2, and Table 4 based on testing in accordance





with AC377, Appendix X. The insulation must be separated from the interior of the building by an approved thermal barrier. The ignition barrier required in IBC Section 2604.4 and IRC R316.5.3 may be omitted.

**Exception:** If installed in the attic floor only, the ignition barrier required in IBC Section 2604.4 and IRC R316.5.3 may be omitted and the insulation may be left fully exposed with no covering at a maximum thickness of 11-1/4 inches, based on testing in accordance with ASTM E970. The insulation must be separated from the interior occupied space of the building by an approved thermal barrier.

**5.4.3 Unvented Attics:** Huntsman Building Solutions (USA) LLC has conducted end-use configuration testing (per IBC Section 2603.9 and IRC Section R316.6) and analysis to qualify the use of FL500 and FL400 insulation without a prescriptive ignition barrier or intumescent coating in unvented attics conforming with IBC Section 1202.3 or IRC Section R806.5. The testing and analysis is described in Priest & Associates EEV 10435B, dated April 06, 2017. The conclusions of that evaluation (and associated Engineering Letters) are as follows: When FL500 or FL400 is applied in unvented attics conforming to IBC Section 1202.3 or IRC Section R806.5 the insulation may be applied to the underside of roof sheathing and/or rafters, and to vertical surfaces to a minimum thickness of 3 inches. Rafters may be left without insulation coverage or may be covered with the insulation up to the maximum thickness permitted. The maximum thickness on the underside of roof sheathing or on vertical wall surfaces is 15 inches. The insulation may be left exposed to the attic without a prescriptive ignition barrier or an intumescent coating. The attic must have attic access complying with IRC Section R807, horizontally placed in the attic floor and opening outward toward the living space. For items penetrating the roof deck or walls, such as skylight wells or vents, the annular space and penetrating item must be covered with a minimum of 3 inches of FL500 or FL400 insulation.

**5.5 Use in Fire-resistance-rated Construction:** The insulations may be used in fire-resistance-rated construction as described in Section 5.5.1 and 5.5.2.

### **5.5.1 One-hour, Wood-framed, Non-load-bearing Wall Assembly:**

**5.5.1.1 Interior Face:** One-layer of 5/8 inch thick Type X gypsum board, complying with ASTM C1396, installed with the long edge parallel to the studs, secured to the framing members with 1-1/4-inch-long Type W screws spaced 8 inches on center around the perimeter and in the field. Joints and fastener heads must receive a Level 2 finish in accordance with ASTM C840 of GA-216.

**5.5.1.2 Wood Framing and Stud Cavity Insulation:** Nominal 2x6-dimensional lumber framing, No. 2 Grade Southern Yellow Pine, spaced 16 inches on center. All stud cavities are filled with FL500 or FL400 to a nominal insulation thickness of 5-1/2 inches.

**5.5.1.3 Exterior Face:** One-layer of 5/8 inch thick Type X gypsum board, complying with ASTM C1396, installed with the long edge parallel to the studs, secured to the framing members with 1-1/4-inch-long Type W screws spaced 8 inches on center around the perimeter and in the field. Joints and fastener heads must receive a Level 2 finish in accordance with ASTM C840 of GA-216.

### **5.5.2 One-hour, Steel-framed, Non-load-bearing, Wall Assembly:**

**5.5.2.1 Interior Face:** Two layers of 5/8 inch thick Type X gypsum board, complying with ASTM C1396. The base layer is installed with the long edge parallel to the studs, secured to the framing members with No. 6 x 1-1/4-inch-long self-drilling screws spaced 8 inches on center around the perimeter and 12 inches on center in the field. Joints and fastener heads must receive a Level 2 finish in accordance with ASTM C840 of GA-216. The face layer is secured with No. 6 x 1-7/8-inch-long self-drilling screws spaced 8 inches on center around the perimeter and in the field. Joints and fastener heads must receive a Level 2 finish in accordance with ASTM C840 of GA-216. Gypsum board joints of the base layer and face layer shall be staggered.

**5.5.2.2 Steel Framing and Stud Cavity Insulation:** Nominal 3-5/8-inch-deep No. 20 gauge galvanized steel studs, spaced 24 inches on center. All stud cavities are filled with FL500 or FL400 to a nominal insulation thickness of 3-5/8 inches.





**5.5.2.3 Exterior Face:** Two layers of 5/8-inch-thick Type X gypsum board, complying with ASTM C1396. The base layer is installed with the long edge parallel to the studs, secured to the framing members with No. 6 × 1-1/4-inch-long self-drilling screws spaced 8 inches on center around the perimeter and 12 inches on center in the field. Joints and fastener heads must receive a Level 2 finish in accordance with ASTM C840 of GA-216. The face layer is secured with No. 6 × 1-7/8-inch-long self-drilling screws spaced 8 inches on center around the perimeter and in the field. Joints and insulation fastener heads must receive a Level 2 finish in accordance with ASTM C840 of GA-216. Gypsum board joints of the base layer and face layer shall be staggered. Gypsum board joints of the exterior face of the wall shall also be staggered from gypsum board joints of the interior face described in Section 5.5.2.1.

**5.6 Exterior Walls of Type I, II, III, and IV Construction:** The insulations may be installed in exterior walls of buildings of Type I, II, III, and IV construction complying with IBC Section 2603.5 and as described in this section. The maximum potential heat of insulation in the wall assembly shall be 2653 Btu/ft<sup>2</sup> and the maximum thickness of insulation shall be 3-5/8 inches in interior wall cavities. The tested wall assembly was extended through engineering analysis to include additional wall constructions described in Table 5. Additional information is available in [Intertek Design Listing HBS/FI 30-02](#)

## 6.0 CONDITIONS OF USE

**6.1** Installation must comply with this Research Report, the manufacturer's published installation instructions, and the applicable Code. In the event of a conflict, this report governs.

**6.2** The insulation must be separated from the interior occupied space of the building by an approved 15-minute thermal barrier, as described in Section 5.3.1, except as described in Section 5.3.2 and Section 5.4.

**6.3** The insulation thickness must not exceed that noted in Sections 4.1, 5.3, 5.4, 5.5, and 5.6.

**6.4** The insulations must be applied by professional spray polyurethane foam installers approved by Huntsman Building Solutions (USA) LLC or certified by the Spray

Polyurethane Foam Alliance (SPFA) for the installation of spray polyurethane foam insulation.

**6.5** The insulation must be protected from the weather during and after installation as specified in the manufacturer's instructions.

**6.6** A vapor barrier must be installed when required by the applicable Code.

**6.7** When FL500 or FL400 are installed under the conditions of Section 5.4.3 of this report, the following conditions apply:

**6.7.1** Since the performance of FL500 and FL400, when installed in unvented attics without a Code-prescribed ignition barrier or an intumescent coating, is based on fire performance of an unvented attic, the installation must be approved by the Code Official. The installation must conform with the provisions of Section 5.4.3, and conditions a. through f. of Section 5.4.2. A copy of the Priest & Associates Consulting LLC Engineering Evaluation (referenced in Section 7.5) must be provided to the Code Official upon request.

**6.7.2** Signage shall be permanently affixed in the attic and shall be visible from all points within the attic. The signage shall state, "*Caution, this is an unvented attic by design. No modification may be made to this unvented condition. The attic shall not be vented. Holes into the unvented attic shall be immediately repaired and sealed. Penetrations of the ceiling or wall membrane between the unvented attic and living space, other than the horizontal access hatch, must be protected in an approved manner. This unvented attic shall not be used for storage. See Intertek Code Compliance Research Report CCRR-1091 on the [Intertek website.](#)*"

**6.8** Use of the insulation in areas where the probability of termite infestation is "very heavy" must be in accordance with IBC Section 2603.8 or IRC Section R318.4, as applicable.

**6.9** Jobsite certification and labeling of the insulation must comply with IRC Section N1101.10, N1101.14 and IECC Section C303.1 or R303.1 and R401.3, as applicable.

**6.10** FL500 and FL400 are manufactured under a quality control program with inspections by Intertek Testing Services NA, Inc.







## 7.0 SUPPORTING EVIDENCE

**7.1** Reports of tests in accordance tests in accordance with ASTM C518, ASTM E84, ASTM E119, ASTM E283, ASTM E970, ASTM E2178, NFPA 259, NFPA 285, NFPA 286 and UL 1715.

**7.2** Data in accordance with the ICC-ES Acceptance Criteria for Spray-applied Foam Plastic Insulation (AC377), dated February 2020; including reports of tests in accordance with Appendix X.

**7.3** Data in accordance with ICC 1100 (2019).

**7.4** Research Reports for evaluation of data 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.

**7.5** Priest & Associates Consulting, LLC, Engineering Evaluation, Project No. 10435B, dated 06 April 2017.

**7.6** Intertek Listing Reports "[Huntsman Building Solutions \(USA\) LLC FL 500 Foam-Lok Spray Foam Wall Insulation](#)" and "[Huntsman Building Solutions \(USA\) LLC FL 400 Foam-Lok Spray Foam Wall Insulation](#)", on the [Intertek Directory of Building Products](#).

## 8.0 IDENTIFICATION

The insulations are identified with the manufacturer's name (Huntsman Building Solutions (USA) LLC), address and telephone number, the product name (Foam-Lok™ 500 or Foam-Lok™ 400), use instructions, flame-spread index, smoke-developed index, lot number, the Intertek Mark as shown below, and the Code Compliance Research Report number (CCRR-1091).



## 9.0 FLORIDA BUILDING CODE

**9.1 Scope of Evaluation:** The FL500 and FL400 insulations were evaluated for compliance with the 2020 *Florida Building Code – Building*, *Florida Building Code – Residential* and *Florida Building Code – Energy Conservation*.

**9.2 Conclusion:** The FL500 and FL400 insulations, described in Sections 2.0 through 7.0 of this Research Report, comply with the 2020 *Florida Building Code – Building*, *Florida Building Code – Residential* and *Florida Building Code – Energy*, subject to the following conditions:

- Use of the FL500 and FL400 insulations for compliance with the High-Velocity Hurricane Zone provisions of the 2020 *Florida Building Code – Building* and the *Florida Building Code – Residential* has not been evaluated and is outside the scope of this Research Report.
- Installation is as described in Sections 2.0 through 7.0 of this Research Report.
- Intertek is an approved evaluation entity and quality assurance entity pursuant to Florida Statute 553.842 – *Product Evaluation and Approval*

## 10.0 CODE COMPLIANCE RESEARCH REPORT USE

**10.1** Approval of building products and/or materials can only be granted by a building official having legal authority in the specific jurisdiction where approval is sought.

**10.2** Code Compliance Research Reports shall not be used in any manner that implies an endorsement of the product by Intertek.

**10.3** Reference to the <https://bpdirectory.intertek.com> is recommended to ascertain the current version and status of this report.





TABLE 1 – PROPERTIES EVALUATED

PROPERTY	2021 IBC SECTION <sup>1</sup>	2021 IRC SECTION <sup>1</sup>	2021 IECC SECTION <sup>1</sup>	2020 FBC - Building	2020 FBC - Residential	2020 FBC - Energy
Physical properties	2603.1.1	Not Required	Not Required	Not Required	Not Required	Not Required
Surface-burning characteristics	2603.3	R316.3	Not Applicable	2603.3	R316.3	Not Applicable
Alternatives to thermal / ignition barrier	2603.4	R316.4 R316.5	Not Applicable	2603.4	R316.4 R316.5	Not Applicable
Thermal resistance	1301	N1101.10 N1102	C303.1 R303.1	1301	N1101	C303.1 R303.1
Air permeability / air barrier	1202.3	R806.5	C402.5 R402.4	1203.3	R806.5	C402.5 R402.4
Exterior walls of Type I - IV Construction	2603.5	Not Applicable	Not Applicable	2603.5	Not Applicable	Not Applicable

<sup>1</sup> Section numbers may be different for earlier versions of the International Codes.

This Code Compliance Research Report ("Report") is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Report. Only the Client is authorized to permit copying or distribution of this Report and then only in its entirety, and the Client shall not use the Report in a misleading manner. Client further agrees and understands that reliance upon the Report is limited to the representations made therein. The Report is not an endorsement or recommendation for use of the subject and/or product described herein. This Report is not the Intertek Listing Report covering the subject product and utilized for Intertek Certification and this Report does not represent authorization for the use of any Intertek certification marks. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.



545 E. Algonquin Road • Arlington Heights • Illinois • 60005  
[intertek.com/building](http://intertek.com/building)



TABLE 2—THERMAL RESISTANCE (R-value)<sup>1, 2, 3</sup>

THICKNESS (inches)	Foam-Lok™ 500	Foam-Lok™ 400
	R-VALUE (°F.ft <sup>2</sup> .h/Btu)	R-VALUE (°F.ft <sup>2</sup> .h/Btu)
1.0	3.9	3.7
2.0	7.5	7.1
3.0	11	11
3.5	13	12
4.0	15	14
5.0	18	18
5.5	20	19
6.0	22	21
7.0	26	25
7.25	26	25
8.0	29	28
9.0	33	32
9.25	34	32
10.0	36	35
11.0	40	39
11.25	41	39
12.0	44	42
13.0	47	46
14.0	51	49
15.0	55	53

<sup>1</sup> R-values are calculated based on tested k-factors at 1 inch and 4 inches thicknesses.

<sup>2</sup> R-values less than 10 are rounded to the nearest 0.1 unit; greater than 10 are rounded to the nearest whole unit.

<sup>3</sup> To determine R-values for thicknesses not listed: between 1 inch and 4 inches can be determined through linear interpolation or greater than 4 inches can be calculated at R = 3.64/inch For Foam-Lok 500 and 3.55 for Foam-Lok 400.







TABLE 3 – USE OF INSULATION WITHOUT A PRESCRIPTIVE THERMAL BARRIER

INSULATION TYPE	MAXIMUM THICKNESS (in) (Wall Cavities)	MAXIMUM THICKNESS (in) (Underside of Roof Sheathing / Rafters and Floors)	INTUMESCENT COATING, MINIMUM THICKNESS & TYPE (Applied to all Exposed Foam Surfaces)	MINIMUM APPLICATION RATE OF INTUMESCENT COATING	MAY BE LEFT EXPOSED AS AN INTERIOR FINISH	TEST SUBMITTED (AC377)
FL500 FL400	8-1/2	14	DC315 14 wet mils (9 dry mils)	0.9 gal / 100 ft <sup>2</sup>	Yes	NFPA 286
	7-1/2	11-1/4	F10E 18 wet mils (12 dry mils)	1.1 gal / 100 ft <sup>2</sup>	Yes	NFPA 286
	8-1/2	14	No Burn Plus ThB 14 wet mils (9 dry mils)	0.9 gal / 100 ft <sup>2</sup>	Yes	UL 1715

TABLE 4 – USE OF INSULATION IN ATTICS AND CRAWL SPACES WITHOUT A PRESCRIPTIVE IGNITION BARRIER

INSULATION TYPE	MAXIMUM THICKNESS (in) (Wall Cavities and Attic Floors)	MAXIMUM THICKNESS (in) (Underside of Roof Sheathing / Rafters and Floors)	INTUMESCENT COATING, MINIMUM THICKNESS & TYPE (Applied to all Exposed Foam Surfaces)	MINIMUM APPLICATION RATE OF INTUMESCENT COATING	TEST SUBMITTED (AC377)
FL500 FL400	5-1/2	11-1/2	DC315 4 wet mils (3 dry mils)	0.3 gal / 100 ft <sup>2</sup>	Appendix X
	9-1/2	15	Flame Seal IB 6 wet mils (3 dry mils)	0.43 gal / 100 ft <sup>2</sup>	Appendix X



TABLE 5 – NFPA 285 COMPLYING WALLS – Foam-Lok™ 500 and Foam-Lok™ 400 IN INTERIOR WALL CAVITY

Wall Component	Materials
Base wall system	1-layer of 5/8 inch-thick Type X gypsum wallboard installed on the interior side of minimum 6-inch-deep, minimum 20-gauge thick steel studs spaced a maximum of 16 inches on center with 16-gauge thick lateral bracing installed 4 ft. on center. Openings must be framed with minimum 20-gauge steel.
Perimeter Fire Barrier System	Perimeter fire barrier system complying with Section 715.4 of the 2015 IBC shall be installed, as applicable, to fill the void between the edge of the concrete floor slab and the interior surface of the exterior wall assembly. Minimum 4 pcf mineral wool insulation.
Interior Insulation	Maximum nominal thickness of 3-5/8 inches of FL500 or FL400 applied using the Base Wall System as the substrate and covering the width of the cavity and the inside of the steel wall stud framing flange. (See Note1)
Exterior sheathing	Minimum 5/8-inch-thick DensGlass Gold exterior sheathing
Exterior Wall Covering (See Note 3)	Details of the exterior wall covering must be provided to the Code official by the report holder, designer or specifier, with an engineering analysis demonstrating that (1) the exterior wall covering conforms to ASTM E136 and (2) the addition of the wall covering to the assembly described in this Table does not negatively affect conformance of the assembly with the requirements of IBC Section 2603.5.

Note 1: Fireblocking per Section 718 of the IBC and thermal barrier material requirements must be met for Base Wall Systems 1 and 2, as required by specific wall construction details when combustible concealed space is created on interior side of exterior wall assembly.

Note 2: Building code section references may change in different editions of the IBC

Note 3: Exterior wall coverings shall be installed in accordance with manufacturer’s installation requirements and must comply with the applicable provisions of IBC Chapter 14 and IRC Chapter 7.

