

# ICC-ES Evaluation Report

## ESR-1232

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This report is subject to re-examination in two years.

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**DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION**
**Section: 07 24 00—Exterior Insulation and Finish Systems**
**REPORT HOLDER:**

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**EVALUATION SUBJECT:**
**DRYVIT OUTSULATION® SYSTEM**

### 1.0 EVALUATION SCOPE

**Compliance with the following codes:**

- 2009 *International Building Code*® (IBC)
- 2009 *International Residential Code*® (IRC)

**Properties evaluated:**

PROPERTY	IBC CHAPTER	IRC CHAPTER
Exterior insulation and finish systems (EIFS)	14	R7
Weather resistance	14	R7
Fire-resistance-rated construction	7	R3
Special inspection	17	N/A
Structural – transverse wind load resistance	16	R6
Types I – IV (noncombustible) construction	26	N/A
Surface burning characteristics	26	R3
Ignition resistance	26	N/A

### 2.0 USES

The Dryvit Outsulation system is an exterior insulation and finish system (EIFS) complying with IBC Section 1408 and IRC Section R703.9. The system may be used in fire-resistance-rated construction and any construction Type (IBC Types I through V), with the exception of framed walls in a Group R1, R2, R3 or R4 Occupancy Group. Under the IRC, the system is limited to use on concrete or masonry walls.

### 3.0 DESCRIPTION

#### 3.1 System Components:

See Table 1.

#### 3.2 Insulation Board:

Insulation boards must be one of the following:

- a. EPS Insulation Board, complying with ASTM C 578, Type I, and ASTM E 2430, produced by a molder with a current ICC-ES evaluation report.
- b. EPS insulation board may be produced by a molder that participates in an approved third-party quality assurance program. The board must comply with ASTM C 578, Type I, and ASTM E 2430, have a flame spread index of 75 or less and a smoke developed index of 450 or less when tested in accordance with ASTM E 84 or UL723, and be labeled in accordance with the code.
- c. Foam-Control EPS Boards, Type I - WSG, by AFM ([ESR-1006](#)).
- d. Staccato EIFS, by Falcon Foam ([ESR-1962](#)).

#### 3.3 Substrates (see table 2):

- Gypsum sheathing complying with ASTM C 1396 or ASTM C 1177
- Fiber cement panels complying with the ICC-ES Acceptance Criteria for Fiber Cement Siding Used as Exterior Wall Siding (AC90), and ASTM C 1186.
- Fiber cement panels complying with the ICC-ES Acceptance Criteria for Reinforced Cementitious Sheets Used as Wall and Ceiling Sheathing and Floor Underlayment (AC376), and ASTM C 1325.
- Concrete-masonry complying with the code
- Concrete complying with the code
- Exterior plaster complying with the code
- Exposure 1 wood structural panels complying with DOC PS-1 or PS-2
- Brick masonry complying with the code

#### 3.4 Sealants:

Sealants must comply with ASTM C 920, Type S or M, minimum Grade NS, minimum Class 25 and Use O.

## 4.0 DESIGN AND INSTALLATION

### 4.1 General:

The Dryvit Outsulation System must be installed in accordance with the manufacturer's application instructions, specifications and installation details. These are available at:

[www.dryvit.com/filesshare/doc/us/application/ds204.pdf](http://www.dryvit.com/filesshare/doc/us/application/ds204.pdf)

[www.dryvit.com/filesshare/doc/us/specification/ds118.pdf](http://www.dryvit.com/filesshare/doc/us/specification/ds118.pdf)

[www.dryvit.com/filesshare/doc/us/detail/ds107.pdf](http://www.dryvit.com/filesshare/doc/us/detail/ds107.pdf)

### 4.2 Drainage:

The Dryvit Outsulation System has not been qualified as an EIFS with drainage, as described in IBC Section 1408.4.1 and IRC Section R703.9.2.

### 4.3 Wind Design:

Table 3 describes specific assemblies for which test data has been submitted. Other assemblies may be considered for approval by local officials based on testing and/or calculations by a registered design professional.

### 4.4 Weather Protection:

The Dryvit Outsulation System complies with IBC Section 1403.2 and IRC Section R703.1.1.

### 4.5 Use in Types I through IV Construction:

Table 4 describes the assemblies qualified for use in Types I through IV construction.

### 4.6 Fire-resistance-rated Construction: See Table 5:

Table 5 describes the assemblies qualified for use in nonload-bearing-fire resistance-rated construction. In addition, in Type V construction, the Dryvit Outsulation System may be attached to the surface of combustible exterior fire-resistance-rated assemblies described in IBC Table 720.1(2) without changing the assigned hourly rating of the assembly. The exterior wall must have a minimum 10-foot (3048 mm) separation distance from adjacent construction.

### 4.7 Special Inspection:

For recognition under the IBC, special inspections must be conducted in accordance with Section 1704.14 of the IBC. Refer to the Dryvit Systems, Inc., Third Party Inspection Guidelines for Owners and General Contractors/Construction Managers:

[www.dryvit.com/filesshare/doc/us/description/ds150.pdf](http://www.dryvit.com/filesshare/doc/us/description/ds150.pdf)

## 5.0 CONDITIONS OF USE

The Dryvit Outsulation System described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 Installation must comply with this report, the manufacturer's published application instructions, installation details and the applicable code. In the event of a conflict between the manufacturers published installation instructions and this report, this report governs.
- 5.2 The insulation boards must be separated from the building interior by a thermal barrier complying with the applicable code.
- 5.3 Use in framed construction in Occupancy Groups R1, R2, R3 and R4 is not permitted. Under the IRC, construction is limited to concrete and concrete masonry construction.
- 5.4 Installation must be by a contractor listed by Dryvit Systems, Inc.
- 5.5 Termination of the system must not be less than 6 inches (152 mm) above finished grade in accordance with IBC Section 2603.8 and IRC Section R318.4.

## 6.0 EVIDENCE SUBMITTED

- 6.1 Reports of tests in accordance with ASTM E 2568.
- 6.2 Data in accordance with the ICC-ES Acceptance Criteria for Exterior Insulation and Finish Systems (AC219), dated October 2009.
- 6.3 Data in accordance with the ICC-ES Acceptance Criteria for Foam Plastic Insulation (AC12), dated June 2009.

## 7.0 IDENTIFICATION

Each container or package of the coating or reinforcing mesh used as part of the Outsulation System must be labeled with the Dryvit Systems, Inc., name and address; the product name; lot or batch number; quantity of material; storage instructions; pot life; expiration date; and the evaluation report number (ESR-1232).

Foam plastic insulation must be labeled in accordance with the current ICC-ES evaluation report in which it is recognized, or as described in Section 3.2.

TABLE 1—COATING SYSTEM COMPONENTS<sup>1</sup>

SYSTEM	WATER-RESISTIVE BARRIER	ADHESIVE	BASE COAT	REINFORCING MESH	FINISH
Dryvit Outsulation	NA	Dryvit ADEPS, or Dryvit Primus, or Dryvit Genesis, or Dryvit Genesis DM	Dryvit Primus, or Dryvit Genesis, or Dryvit Genesis DM, or NCB	Dryvit Standard Reinforcing Mesh, 4.3 oz/yd <sup>2</sup> minimum <sup>2</sup>	Dryvit DPR Finish or PMR Acrylic Finish

<sup>1</sup>See Section 3.2 for Insulation Board.  
<sup>2</sup>Higher weight meshes are allowable.

TABLE 2—SUBSTRATES

ADHESIVE	SUBSTRATES
Dryvit ADEPS	All substrates noted in Section 3.3
Dryvit Primus	All substrates noted in Section 3.3 except plywood or OSB
Dryvit Genesis	All substrates noted in Section 3.3 except plywood or OSB
Dryvit Genesis DM	All substrates noted in Section 3.3 except plywood or OSB

TABLE 3—WIND LOAD DESIGN

FRAMING <sup>3</sup>		SUBSTRATE	EPS			
Type	Max spacing		EPS Minimum Thickness (inch)	Coating	Allowable Wind Load <sup>2,3</sup> (psf)	
					Neg	Pos
2x4 wood <sup>1</sup>	16" o.c.	<sup>1</sup> / <sub>2</sub> -inch-thick gypsum sheathing complying with ASTM C 1396 or ASTM C 1177 or <sup>1</sup> / <sub>2</sub> -inch-thick wood structural panel; attached to framing with No. 6 self-drilling bugle-head S-12 drywall screws at 6 inches on center along studs. Fasteners must penetrate at least 1 inch into wood framing or through steel framing.	1	Dryvit Outsulation System as described in Table 1	40	55
3 <sup>5</sup> / <sub>8</sub> -inch by No. 18 gage-steel Minimum f <sub>y</sub> = 33ksi						
2x4 wood <sup>1</sup>	16" o.c.	<sup>1</sup> / <sub>2</sub> -inch-thick water-resistant core gypsum sheathing complying with ASTM C 1396 or ASTM C 1177 or <sup>1</sup> / <sub>2</sub> -inch-thick wood structural panel; attached to framing with No. 6 self-drilling bugle-head drywall screws at 4 inches on center along studs. Fasteners must penetrate at least 1 inch into wood framing or through steel framing.	1	Dryvit Outsulation System as described in Table 1	70	55
6-inch by No. 16 gage-steel Minimum f <sub>y</sub> = 33ksi						
6-inch by No. 16 gage-steel Minimum f <sub>y</sub> = 33ksi	16	Min. 2.5-pound-per-square-yard, diamond mesh metal lath over min. <sup>1</sup> / <sub>2</sub> -inch-thick, water-resistant core gypsum sheathing; attached to framing with No. 6 self-drilling bugle head drywall screws with <sup>3</sup> / <sub>16</sub> -inch-diameter metal washers at 6 inches on center around the perimeter and a maximum of 10 inches on center in the field of the sheathing; fasteners must penetrate through steel framing	1	Dryvit Outsulation System as described in Table 1	60	60
6-inch by No. 18 gage-steel Minimum f <sub>y</sub> = 33ksi	16	Min. 3.4-pound-per-square-yard, diamond mesh metal lath over min. <sup>1</sup> / <sub>2</sub> -inch-thick, water-resistant core gypsum sheathing; attached to framing with min. 0.16-inch-diameter self-tapping panhead screws at a max. of 6 inches on center; must penetrate through steel framing	1	Dryvit Outsulation System as described in Table 1	50	50
N/A	N/A	Concrete, concrete-masonry, or brick masonry	1	Dryvit Outsulation System as described in Table 1	70	See Note 2

For SI: 1 inch = 25.4 mm; 1 psf = 0.0479 kPa.

<sup>1</sup>Minimum 2x4 wood framing, minimum specific gravity 0.42

<sup>2</sup>Maximum positive pressure is limited to the capacity in Table 3, the capacity of the framing and structural sheathing, or concrete, masonry or portland cement plaster substrate, determined in accordance with the applicable code, whichever is lower.

<sup>3</sup>The framing members must be designed to resist all positive and negative transverse design loads with a maximum allowable deflection of 1/240 of the span.

TABLE 4—ASSEMBLIES FOR USE IN TYPES I THROUGH IV CONSTRUCTION

FRAMING MEMBERS			INTERIOR SHEATHING <sup>5,6</sup>			EXTERIOR SHEATHING <sup>5</sup>			MAXIMUM INSULATION BOARD THICKNESS (INCHES)	ASSEMBLY
Metal		Max Spacing	Type	Min. Thickness (inch)	Max. Fastener Spacing (inches o.c.)	Type	Min. Thickness (inch)	Max. Fastener Spacing (inches o.c.)		
Min. Depth (in.)	Min. Gage									
3 <sup>5</sup> / <sub>8</sub>	No. 18 (0.0428 inch)	16" o.c.	ASTM C36 or ASTM C1396 Type X	1/2	12 <sup>1</sup>	ASTM C 1396	1/2	12 <sup>1</sup>	13	Adhesive: Primus Base Coat; Primus Finish Coat; any noted in Table 1
3 <sup>5</sup> / <sub>8</sub>	No. 18 (0.0428 inch)	16" o.c.	ASTM C36 or ASTM C1396 Type X	5/8	8 along the panel edge, 12 in the field <sup>2</sup>	ASTM C 1396	1/2	8 along the panel edge, 12 in the field	13	Adhesive: ADEPS Base Coat; NCB Base Finish Coat; any noted in Table 1
3 <sup>5</sup> / <sub>8</sub>	No. 18 (0.0428 inch)	16" o.c.	ASTM C36 or ASTM C1396 Type X	5/8	8 <sup>3</sup>	ASTM C 1396	1/2	8	13	Adhesive: Genesis Base Coat; Genesis Finish Coat; any noted in Table 1
3 <sup>5</sup> / <sub>8</sub>	No. 20 (0.0320 inch)	16" o.c.	ASTM C36 or ASTM C1396 Type X	1/2	8 <sup>4</sup>	ASTM C 1396	1/2	8	13	Adhesive: Genesis DM Base Coat; Genesis DM Finish Coat; any noted in Table 1

For SI: 1 inch = 25.4 mm.

<sup>1</sup>Fasteners are minimum No. 6, corrosion-resistant steel, self-drilling drywall screws.

<sup>2</sup>Fasteners are minimum No. 6, corrosion-resistant steel, Type S, self-drilling drywall screws.

<sup>3</sup>Fasteners are minimum No. 6, 1<sup>5</sup>/<sub>8</sub>-inch-long, corrosion-resistant steel, Type S-12, self-drilling drywall screws.

<sup>4</sup>Fasteners are minimum No. 6, 1<sup>1</sup>/<sub>4</sub>-inch-long, corrosion-resistant steel, Type S drywall screws.

<sup>5</sup>Where the sheathing exceeds 1/2 inch in thickness, the screw length must be increased by the additional sheathing thickness.

<sup>6</sup>All joints must be taped and treated with joint compound and intermediate fastener heads are treated in accordance with ASTM C840 or GA216.

TABLE 5—FIRE-RESISTANCE-RATED ASSEMBLIES<sup>2,3</sup>

FRAMING MEMBERS			SHEATHING (INTERIOR EXTERIOR)				MAXIMUM INSULATION BOARD THICKNESS (inches)	RATING
METAL		MAX SPACING	TYPE	MIN. THICKNESS (inch)	MAX. FASTENER SPACING	FASTENER		
Min. Depth	Min. Gage							
3 <sup>5</sup> / <sub>8</sub> "	25	16" o.c.	Type X FR Gypsum Wallboard <sup>1</sup>	5/8"	8 inches (203 mm) on center along the perimeter and 12 inches (305 mm) on center on all intermediate studs	No. 6 by 1 <sup>1</sup> / <sub>4</sub> -inch-long (32 mm), self-drilling, bugle head drywall screws	4	1 hour
3 <sup>5</sup> / <sub>8</sub> "	25	16" o.c.	Two layers of Type X FR Gypsum Wallboard <sup>1</sup>	5/8"	Layer 1: 16 inches (406 mm) on center at the stud locations Layer 2 (interior): 12 inches (305 mm) on center Layer 2 (exterior): 8 inches (203 mm) on center	Layer 1: No. 6 by 1 <sup>1</sup> / <sub>4</sub> -inch-long (32 mm), self-drilling, bugle head drywall screws Layer 2 (interior): No. 6 by 1 <sup>7</sup> / <sub>8</sub> -inch-long (48 mm), self-drilling, bugle head drywall screws Layer 2 (exterior): No. 6 by 1 <sup>7</sup> / <sub>8</sub> -inch-long (48 mm), self-drilling, bugle head drywall screws	4	2 hour

<sup>1</sup>All joint are taped and treated with joint compound in accordance with ASTM C 840 or GA216 and intermediate fastener heads are treated with joint compound in accordance with ASTM C 840 or GA216.

<sup>2</sup>EIFS Assembly: Adhesive: Any, except Genesis DM; Base Coat: Any, except Genesis DM; Finish Coat: Any.

<sup>3</sup>Rated from both sides.