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Legacy report on the 1997 Uniform Building Code™, the 2000 International Building Code® and the 2000 International Residential Code® (IRC)

DIVISION: 07—THERMAL AND MOISTURE PROTECTION
Section: 07240—Exterior Insulation and Finish Systems

DRYVIT INFINITY® EXTERIOR INSULATION AND FINISH SYSTEM

DRYVIT SYSTEMS, INC.
ONE ENERGY WAY
WEST WARWICK, RHODE ISLAND 02893

1.0 SUBJECT

Dryvit Infinity® Exterior Insulation and Finish System.

2.0 DESCRIPTION

2.1 General:

The Dryvit Infinity exterior insulation and finish system (EIFS) is permitted to be used on buildings that are required to be of combustible or noncombustible construction, as an alternative to exterior wall coverings described in Section 1401 of the 1997 Uniform Building Code™ (UBC), Section 1404 of the 2000 International Building Code® (IBC), and Section R703 of the 2000 International Residential Code® (IRC). The Infinity System consists of five components applied to exterior walls of Dens-Glass™ Gold board (recognized in ER-4305) attached to steel studs. The components are DryShield ABA Weather-Resistive Barrier and adhesive, I.S. insulation board, I.S. base coat, I.S. reinforcing mesh and Infinity finish coat. See Figure 1 for a cutaway view of system components. The system is classified as an EIFS wall covering assembly with drainage. The system is:

- a. Permitted in all occupancies, including UBC Group R, Division 1 and 3, occupancies; IBC Group R1, R2, R3 or R4 Occupancies; and one- and two-family dwellings under the IRC.
b. Permitted in combustible construction (Type V).
c. Permitted on walls required to be noncombustible construction when installed in accordance with Section 2.5 of this report (Types I-V).
d. Permitted as part of one-hour fire-rated nonbearing wall assemblies when installed in accordance with Section 2.6 of this report.

2.2 Materials:

2.2.1 Weather-resistive Barrier:

2.2.1.1 DryShield ABA: DryShield ABA is a polymer-based liquid material that is available in 5-gallon (18.9 L) pails weighing 60 pounds (27 kg). Recommended storage temperatures range from 40/F to 120/F (4.4/C to 48.9/C). The DryShield ABA material is field-mixed with Type I or Type II portland cement complying with ASTM C 150, in a one-to-one ratio by weight, and applied over Dens-Glass Gold.

2.2.1.2 Dryvit Grid Tape: Dryvit Grid Tape is an open weave fiberglass mesh tape with a pressure-sensitive adhesive. The tape is available in rolls 4 inches (100 mm) wide by 100 yards (91 m) long.

2.2.1.3 Dryvit Flashing Tape: Dryvit Flashing Tape is a 0.03-inch-thick (0.76 mm), high-density polyethylene-backed tape with a rubberized asphalt adhesive. The tape is available in rolls 4 inches (102 mm) or 6 inches (152 mm) wide by 100 feet long.

2.2.1.4 Dryvit Flashing Tape Surface Conditioner: Dryvit Flashing Tape Surface Conditioner is a water-based surface conditioner and adhesion promoter for the Dryvit Flashing Tape.

2.2.1.5 Shelf Life: The shelf life of the DryShield ABA, Grid Tape, Flashing Tape, and Flashing Tape Surface Conditioner is two years, when the products are protected from extreme cold and hot temperatures for extended periods.

2.2.2 Adhesives:

2.2.2.1 DryShield ABA: The DryShield ABA adhesive is used to attach the insulation board to the weather-resistive barrier. This polymer-based liquid is available in 5-gallon (18.9 L) pails weighing 60 pounds (27 kg). DryShield ABA has a shelf life of two years when protected from extended exposure to extreme heat or freezing. Recommended storage temperatures range from 40/F to 120/F (4.4/C to 48.9/C). The adhesive is mixed in the field with Type I or Type II portland cement complying with ASTM C 150, in a 1:1 ratio by weight. A small amount of potable water may be added to adjust workability.

2.2.2.2 Dryvit AP: Dryvit AP adhesive, a moisture-cured, urethane-based adhesive, is used to adhere the vent track to the DryShield ABA weather-resistive barrier. Shelf life is one year.

2.2.3 I.S. Insulation Board: The I.S. insulation board is a nominal 1.0 pcf density (16 kg/m³), expanded polystyrene foam plastic board complying with ASTM C 578-01 as Type I. Boards measure a maximum of 2 feet by 4 feet (610 mm by

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1219 mm), and are 2 to 4 inches (51 to 102 mm) thick. Boards have a flame-spread index of 25 or less and a smoke-developed index of less than 450 when tested in accordance with ASTM E 84 (UBC Standard 8-1). Board perimeters have a factory-cut 45-degree bevel, and the back sides have $\frac{1}{4}$ -inch-deep-by-1-inch-wide (6.4 mm by 25 mm) vertical grooves, spaced 12 inches (305 mm) on center, running parallel to the width of the board.

2.2.4 I.S. Base Coat: I.S. Base Coat, an acrylic-based liquid, is available in 5-gallon (18.9 L) pails weighing 60 pounds (27 kg), and has a shelf life of two years when protected from extended exposure to extreme heat or freezing. Recommended storage temperatures range from 40/F to 120/F (4.4/C to 48.9/C). The base coat is mixed in the field with Type I or II portland cement complying with ASTM C 150, in a 2:1 ratio by weight. A small amount of potable water may be added to adjust workability. The base coat is applied over the insulation board, and I.S. Reinforcing Mesh is embedded.

2.2.5 Reinforcing Mesh:

2.2.5.1 I.S. Reinforcing Mesh: The I.S. reinforcing mesh is a balanced, open-weave, glass fiber fabric treated for alkali resistance and for compatibility with other Dryvit products. The mesh weighs 5 ounces per square yard (169 g/m²), has a tensile strength of 225 pounds per inch (3.88 kg/cm), and is colored grey for product identification.

2.2.5.2 Dryvit Detail Mesh: Dryvit Detail Mesh is a balanced, open-weave, glass-fiber fabric mesh weighing 4.3 ounces per square yard (146 g/m²), and is used for backwrapping edges of insulation boards, where applicable. The Dryvit Detail Mesh is colored blue for product identification.

2.2.6 Infinity Finish: The Infinity finish is packaged in 5-gallon (18.9 L) pails weighing 70 pounds (32 kg). It is an elastomeric, factory-prepared liquid mixture containing quartz aggregate, and has a shelf life of two years when protected from extended exposure to extreme heat or freezing. Recommended storage temperatures range from 40/F to 120/F (4.4/C to 48.9/C). Once the material is mixed to a homogeneous consistency, it is ready for field-application to the surface of the base coat. A small amount of potable water may be added to adjust workability.

2.2.7 Starter Strip, Vent Track and Vent Assembly: The starter strip is a minimum 2-inch-thick-by-6-inch-by-4 foot (51 mm by 152 mm by 1219 mm) piece of EPS insulation configured to receive the vent track. The vent track is a J-shaped polyvinyl chloride track containing a slot for venting, and complies with ASTM D 1784. The vent assembly is a minimum 2-inch-thick-by-6-inch-by-12-inch (51 mm by 152 mm by 305 mm) piece of EPS insulation configured to contain a formed aggregate matrix material and to receive the track. The starter strip, vent track and vent assembly are required at the base of walls and the base of horizontal compartments. Compartments are location zones that approximate areas of equal wind loads, as determined by design.

2.2.8 Coating Primers: Dryvit Demandit and Color Prime are water-based acrylic liquids packaged in 55-pound (25 kg) and 50-pound (23 kg) pails, respectively. The products have a shelf life of two years when protected from extended exposure to extreme heat and freezing. Recommended storage temperatures range from 40/F to 120/F (4.4/C to 48.9/C).

2.2.9 Sealant and Primer: The sealant is Dow Corning 790. The sealant must be compatible with the EIFS components and be recommended by Dryvit Systems, Inc. Evidence must be submitted to the building official showing that the Dow Corning 790 sealant is a Type S, minimum Grade NS,

minimum Class 25 and Use O sealant, complying with ASTM C 920. Under the use classification, the sealant shall be qualified for each material to which the sealant will be applied. The details for sealant installation, including the width and thickness of the sealant, shall be designed by the registered design professional, designer, builder or Dryvit Systems, Inc., in that order, to the satisfaction of the building official. The sealant primer is Dow 1200 Prime Coat, which is supplied in 1-pint and 1-gallon (473 ml and 3.8 L) containers. The primer has a shelf of one year when protected from extreme heat and freezing for extended periods. Recommended storage temperatures range from 40/F to 90/F (4.49/C to 32/C).

2.3 Application:

Half-inch-thick (12.7 mm) Dens-Glass Gold or $\frac{5}{8}$ -inch-thick (15.9 mm) Dens-Glass Gold Fireguard Type X gypsum sheathing board must be fastened to minimum No. 18 gage [0.0478-inch (1.2 mm) uncoated base-metal thickness] steel studs spaced a maximum of 16 inches (406 mm) on center, with the long dimension of the board parallel to framing, attached with minimum No. 6 by $1\frac{5}{8}$ -inch-long (41.3 mm), Type S drywall screws. Fastener spacing is required to be 8 inches (203 mm) maximum on center around board perimeter and intermediate studs. The sheathing must be clean and free of loose material, grease, oil, paints, voids, projections, etc., and must be installed with the gold side facing outward. All joints in the sheathing, inside and outside corners and any exposed edges need to be covered with Dryvit Grid tape.

Ambient temperature during application of adhesive, base coat and finish coats must be at least 40/F (4/C) and rising. DryShield ABA Weather-Resistive Barrier is mixed as described in Section 2.2.1.1, and is first applied in areas where the Grid Tape has been applied; it is then allowed to cure for about two hours or until firm. The DryShield ABA mixture is then applied uniformly with a flat-edge stainless steel trowel over the entire surface of the Dens-Glass Gold sheathing to an approximate thickness of $\frac{1}{16}$ inch (1.6 mm), and is allowed to cure 24 hours before applying Dryvit Flashing Tape and adhering the insulation board and vent assembly. Dryvit flashing tape must be installed over DryShield ABA onto the framing edges at discontinuities and terminations such as openings and expansion joints. The tape must cover the DryShield ABA 2 inches (50 mm). The tape must be pressed into place as soon as possible to ensure contact. End laps must be a minimum of 2 inches (50 mm).

The starter strip, vent track and vent assembly are required at the bases of all walls and horizontal compartments, with the vent assembly spaced a maximum of 20 feet (6096 mm) on center. A ribbon of DryShield ABA mixture is applied at the bottom of the sheathing to a height of $2\frac{1}{2}$ inches (63.5 mm), and a strip of $9\frac{1}{2}$ -inch-wide (241 mm) Detail Mesh is positioned on it, allowing a $2\frac{1}{2}$ -inch (63.5 mm) overlap onto the face of the starter strip and vent assembly. DryShield ABA mixture is applied to the backside of the starter strip and vent assembly using a ribbon and dab pattern, and the starter strip and vent assembly are positioned on the wall and pushed into position. The Detail Mesh is then used to backwrap the starter strip. The vent track is then installed by applying a continuous bead of Dryvit AP adhesive on the wall side of track's vertical nailing flange, and the track is then positioned over the vent assembly with the slots located directly above the vent material. The track is then attached to the framing through the sheathing with minimum No. 6 by $1\frac{5}{8}$ -inch-long (41.3 mm), Type S drywall screws at 12 inches (305 mm) on center. See Figure 2 for further details.

The DryShield ABA mixture is applied to the backside of the insulation board using a stainless steel trowel having $\frac{3}{8}$ -inch-wide-by- $\frac{1}{2}$ -inch-deep (9.5 mm by 12.7 mm) notches every $1\frac{1}{2}$ inches (38 mm), with care being taken not to allow the adhesive into the board grooves. Beginning at the base of the

wall above the starter strip, the insulation boards are installed with their long edges oriented horizontally and in such a way that board joints are offset from the sheathing board joints a minimum of 6 inches (152 mm), both horizontally and vertically. One of the grooves in the insulation boards must be centered over the vent assembly. Firm pressure is applied over the entire surface of the insulation board so that full contact with the adhesive takes place. Any adhesive occurring in the grooves must be removed. Once the insulation boards are in place, a curing time of at least 24 hours must be allowed prior to application of reinforcing mesh and base coat.

Initially with use of a stainless steel trowel, the base coat is applied over the surface of the insulation board in such a manner that a uniform approximate thickness of $\frac{1}{16}$ inch (1.6 mm) is achieved. The reinforcing mesh is immediately placed against the wet base coat and embedded. The mesh must be continuous at corners, and edges must be lapped not less than $2\frac{1}{2}$ inches (63.5 mm). Laps must not be within 8 inches (203 mm) of a corner. The base coat is then allowed to cure until firm to the touch. A second coat of the base coat material, about $\frac{1}{16}$ inch (1.6 mm) thick, is then applied to completely cover the mesh. The base coat must be allowed to cure for a minimum of 24 hours prior to application of the finish coat. The finish coat is troweled in a manner similar to the application of the base coat, at a thickness no greater than the largest aggregate of the finish material. All exposed joints must be primed with Dryvit's Demandit or Color Prime and, after the primer cures for 48 hours, sealant, as described in Section 2.2.9, is applied. See Figure 3 for typical installation details.

2.4 Wind Design:

Where the Dryvit Infinity system is applied to minimum $\frac{1}{2}$ -inch-thick (12.7 mm) Dens-Glass Gold sheathing fastened to minimum No. 18 gage, C-shaped steel studs spaced a maximum of 16 inches (406 mm) on center, as noted in Section 2.3, allowable positive and negative wind loads are 36 and 40 psf (1724 and 1915 Pa), respectively. Adequacy of steel framing for the imposed loads must be considered. Maximum allowable deflection of the wall is $\frac{1}{240}$ of span.

2.5 Noncombustible Construction:

2.5.1 Interior Finish: One layer of $\frac{5}{8}$ -inch-thick (15.9 mm), Type X gypsum wallboard, complying with ASTM C 36, is attached horizontally to steel studs with $1\frac{5}{8}$ -inch-long (41.3 mm), Type S drywall screws spaced a maximum of 8 inches (203 mm) center. Joints in the board are taped and treated with joint compound.

2.5.2 Steel Studs: Minimum No. 18 gage [0.0478-inch (1.2 mm) base-metal thickness], $3\frac{5}{8}$ -inch-deep (92 mm) steel studs must be spaced a maximum of 16 inches (406 mm) on center. Four-inch-thick (102 mm), 4 pcf density (64 kg/m³), Thermafiber mineral wool safin insulation (ER-2331) is placed at floor/wall interfaces.

2.5.3 Exterior Finish: Minimum $\frac{1}{2}$ -inch-thick (12.7 mm) Dens-Glass Gold sheathing is attached in accordance with Section 2.3. The Infinity EIF system is applied as described in Section 2.3. The maximum thickness of the Infinity System insulation board is 4 inches (102 mm).

2.5.4 Openings: Openings must be backwrapped with reinforced base coat as illustrated in Figure 3. Openings must also be enclosed at wall framing with minimum No. 18 gage steel.

2.6 One-hour Fire-rated Resistive Nonbearing Wall Assembly:

2.6.1 Interior Face: One layer of $\frac{5}{8}$ -inch-thick (15.9 mm),

Type X gypsum wallboard, complying with ASTM C 36, must be mounted horizontally to the interior face of steel studs with 1-inch-long (25.4 mm), Type S drywall screws spaced a maximum of 8 inches (203 mm) on center along vertical edges, along top and bottom tracks, and at intermediate studs. All joints must be taped and, along with screw heads, treated with joint compound.

2.6.2 Steel Studs: Minimum No. 18 gage [0.0478-inch (1.2 mm) base-metal thickness], minimum $3\frac{5}{8}$ -inch-deep (92 mm) steel studs spaced 16 inches (406 mm) on center, maximum.

2.6.3 Exterior Face: One layer of $\frac{5}{8}$ -inch-thick, Type X Dens Glass Gold Sheathing is mounted horizontally to the exterior face of the studs with 1-inch-long (25 mm), Type S drywall screws spaced a maximum of 8 inches (203 mm) on center along vertical edges, top and bottom track, and intermediate studs. The balance of the Infinity System is applied in accordance with Section 2.3. The maximum insulation thickness is 4 inches (102 mm).

2.7 Special Inspection:

In jurisdictions enforcing the IBC, special inspections in accordance with IBC Sections 1704.1 and 1704.12 are required for the application of the DryShield ABA Weather-Resistive Barrier. Duties of the special inspector include verifying field preparation of materials, expiration dates, installation and curing.

2.8 Identification:

Material containers are identified by the manufacturer's name (Dryvit Systems, Inc.) and address, the product name, the expiration date and the evaluation report number (ER-5532). Insulation boards are delivered in sealed polyethylene bags bearing the designation "I.S." Additionally, one edge of each board will bear the designation "I.S.", the evaluation report number (ER-5532), and the name of the inspection agency (RADCO). Also, one board in each package is labeled on both faces with the same information.

3.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Interim Criteria for Exterior Insulation and Finish Systems (AC24), dated June 2003; the ICC-ES Interim Criteria for Foam Plastic Insulation (AC12), dated July 2002; and the ICC-ES Interim Criteria for Trowel-, Spray- or Roller-applied Water-resistive Coatings Used as Weather-resistive Barriers Over Exterior Sheathing (AC212), dated June 2003; and quality control manuals in accordance with the ICC-ES Acceptance Criteria for Quality Control Manuals (AC10), dated July 2003.

4.0 FINDINGS

That the Dryvit Infinity System described in this report complies with the 1997 Uniform Building Code™ (UBC), the 2000 International Building Code® (IBC) and the 2000 International Residential Code® (IRC), subject to the following conditions:

- 4.1 Construction is as set forth in this report and the manufacturer's instructions.**
- 4.2 The insulation board is separated from the building interior with a thermal barrier complying with the applicable code, such as $\frac{1}{2}$ -inch-thick (12.7 mm) gypsum wallboard applied and mechanically fastened in accordance with the applicable code.**
- 4.3 The systems may be installed on any wall that is permitted to be combustible construction.**
- 4.4 The system may be installed on walls of nonrated noncombustible construction, provided installation is as described in Section 2.5 of this report.**

- 4.5 The system may be installed on nonbearing, one-hour fire-rated walls of noncombustible construction, provided installation is as described in Sections 2.5 and 2.6 of this report.
- 4.6 Installation must be by a contractor recognized by Dryvit Systems, Inc., as being trained to perform installation of Dryvit's Infinity System. An installation card, such as that shown in Figure 4, must be completed and submitted to the building

official at the end of each project. A sealant application card such as that shown in Figure 5 must be completed and submitted to the building official after sealant application.

- 4.7 I.S. insulation boards are manufactured under a quality control program with inspections by RADCO, Inc. (AA-650).

This report is subject to re-examination in one year.

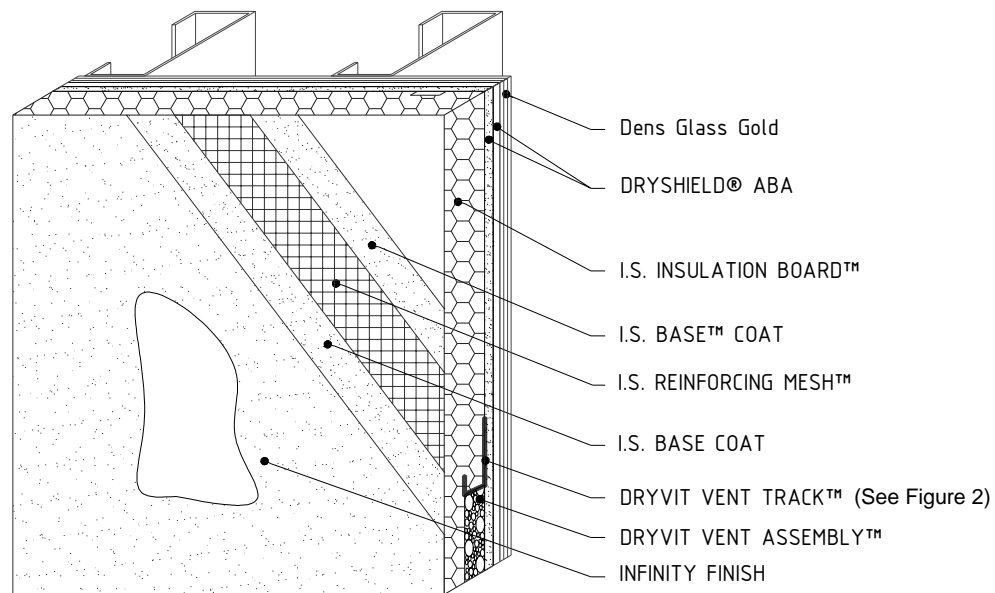


FIGURE 1—CUTAWAY VIEW OF INFINITY SYSTEM COMPONENTS

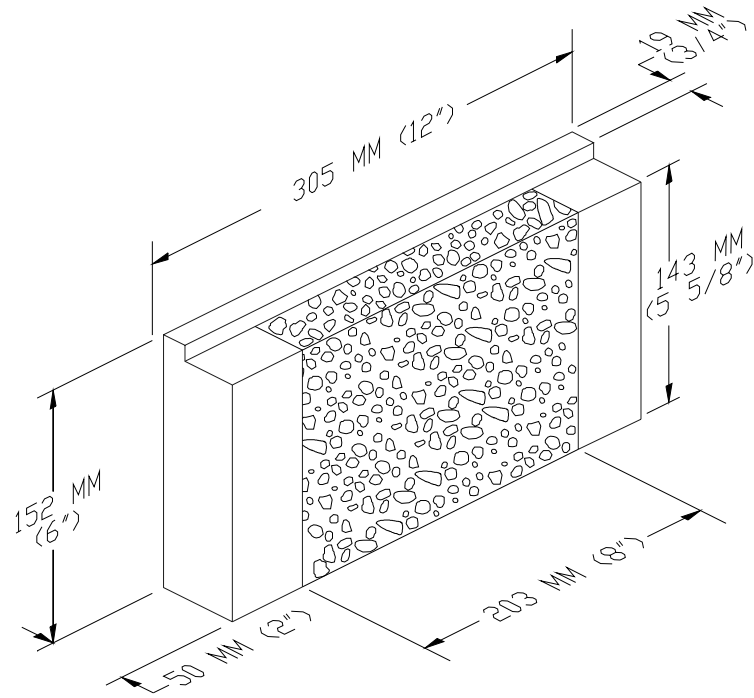
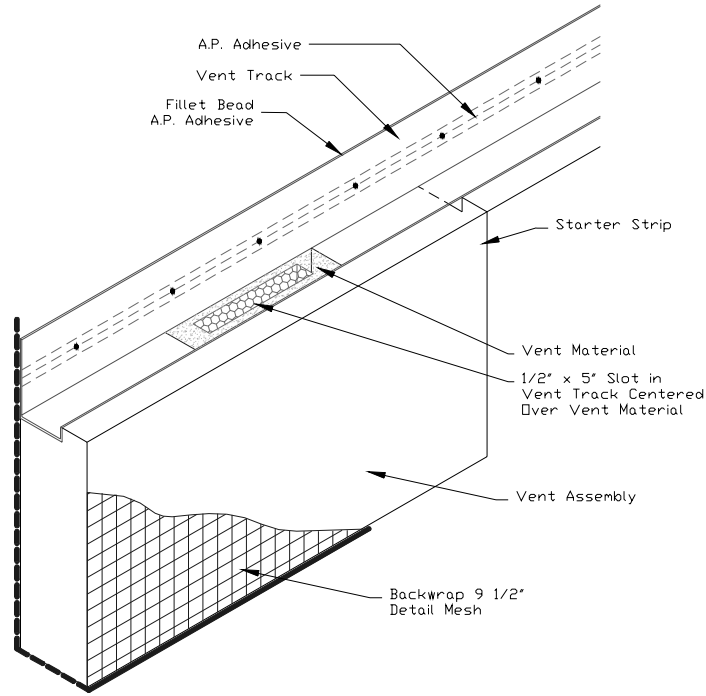


FIGURE 2—VENT TRACK AND VENT ASSEMBLY INSTALLATION DETAILS

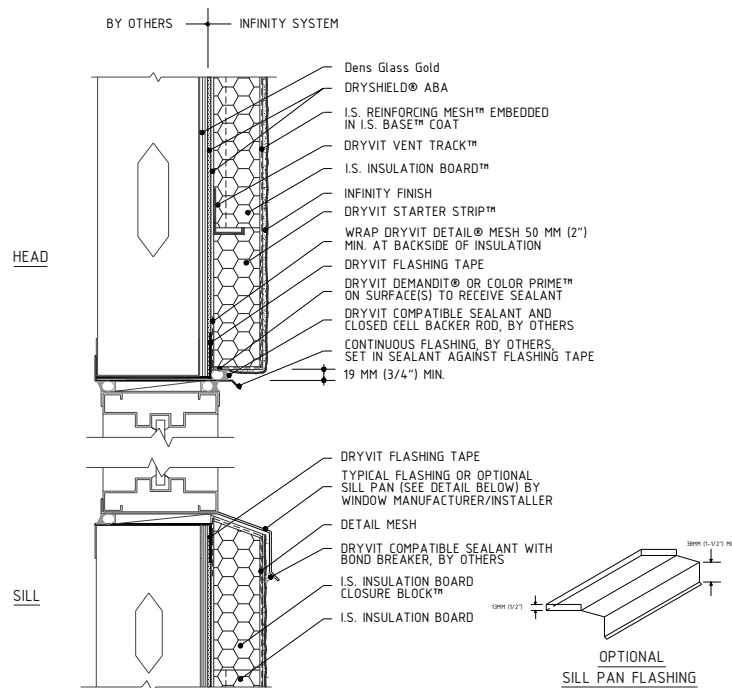
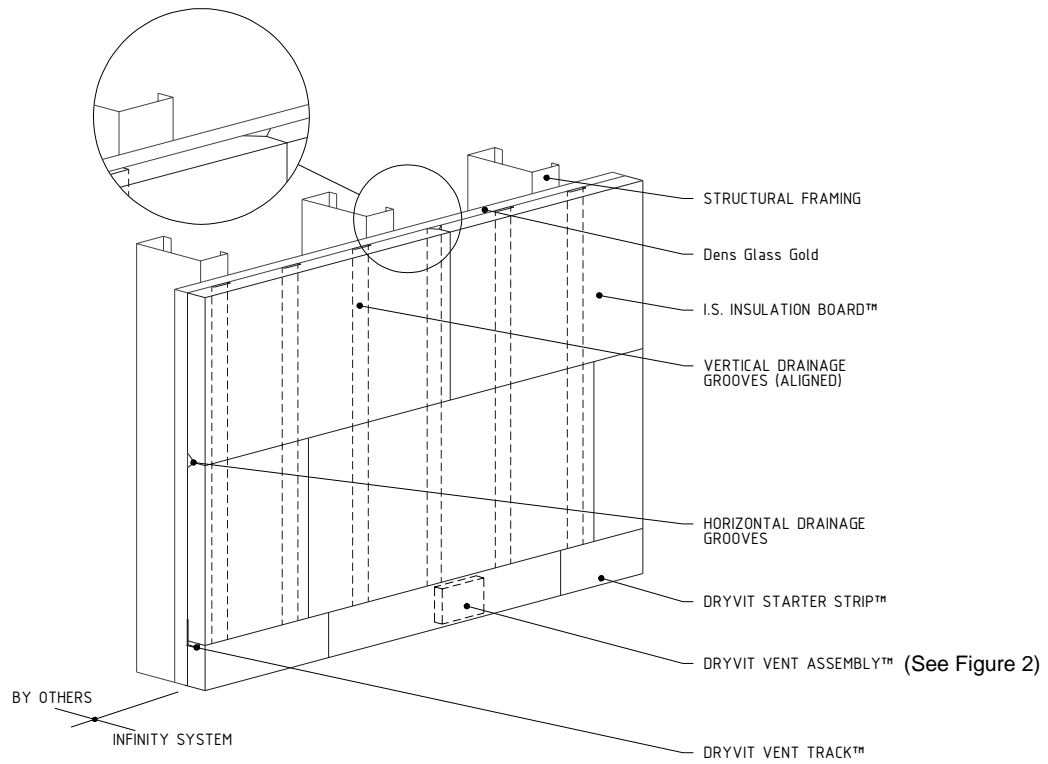


FIGURE 3—TYPICAL INSTALLATION DETAILS

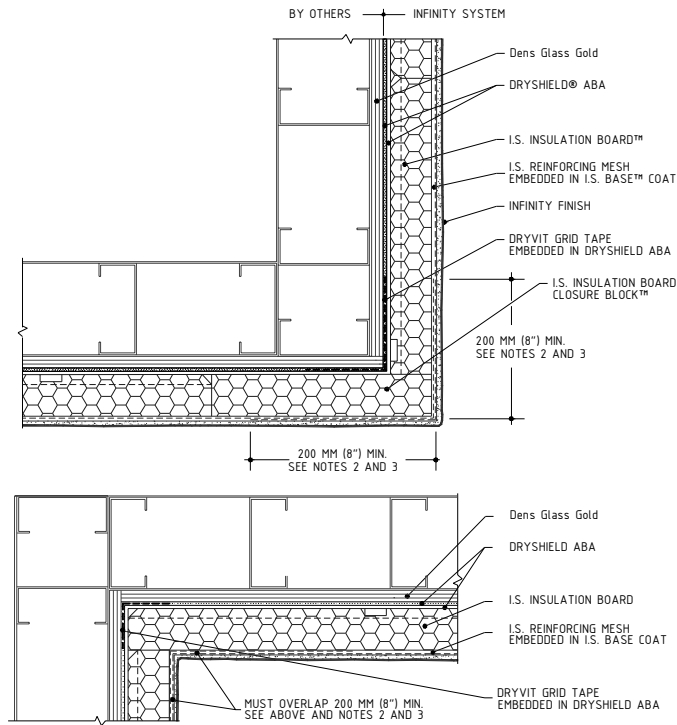
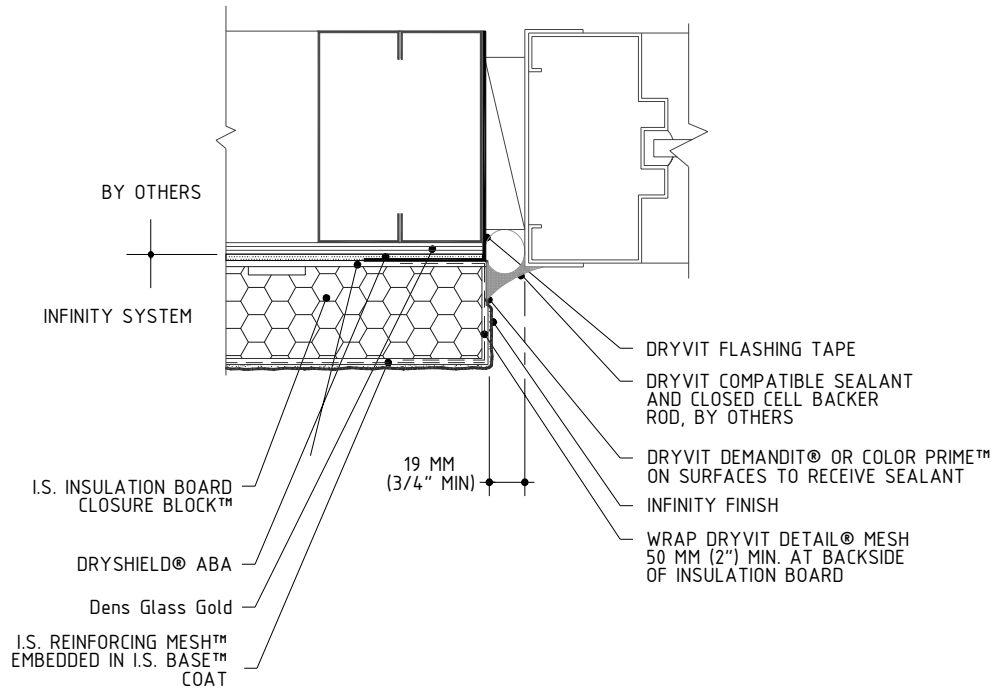


FIGURE 3—TYPICAL INSTALLATION DETAILS—(Continued)

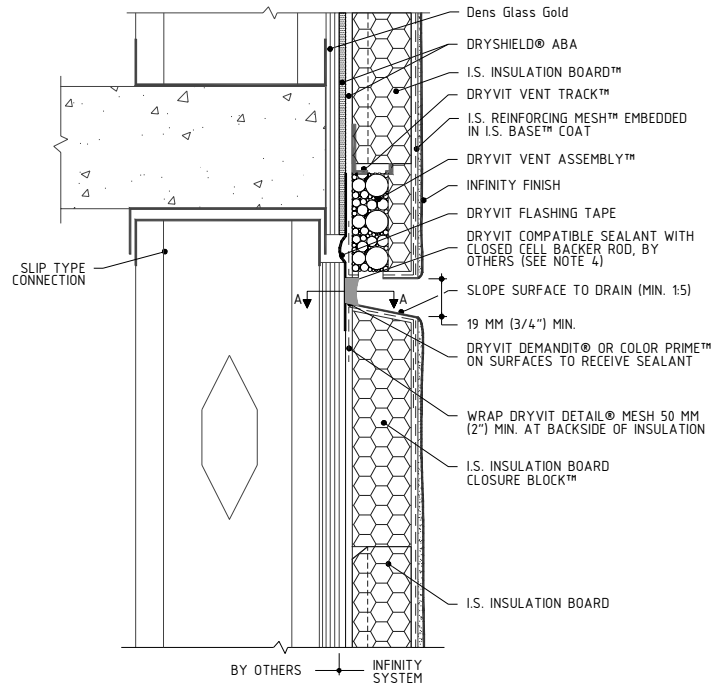
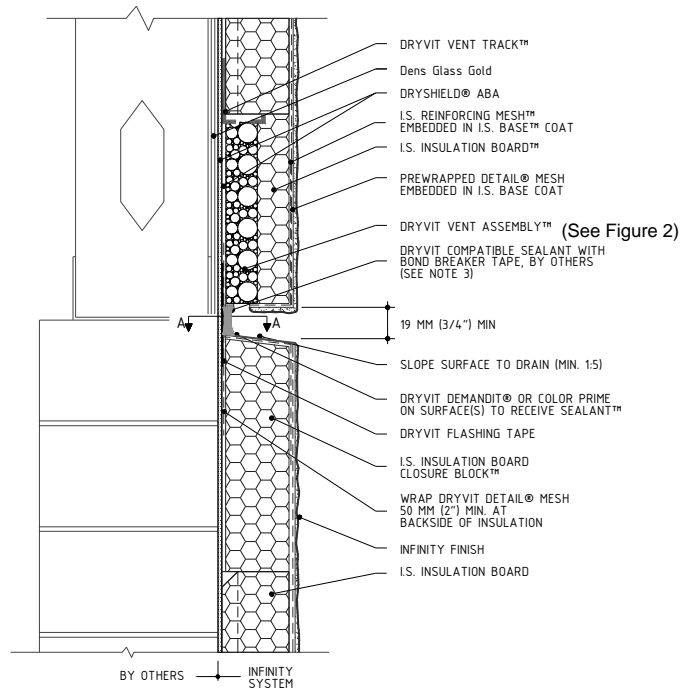


FIGURE 3—TYPICAL INSTALLATION DETAILS—(Continued)

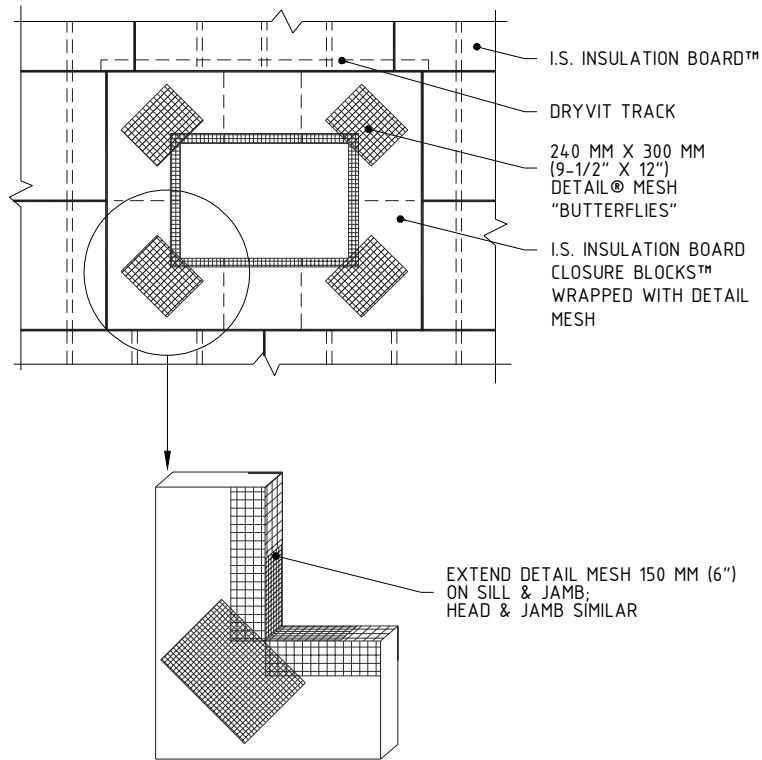
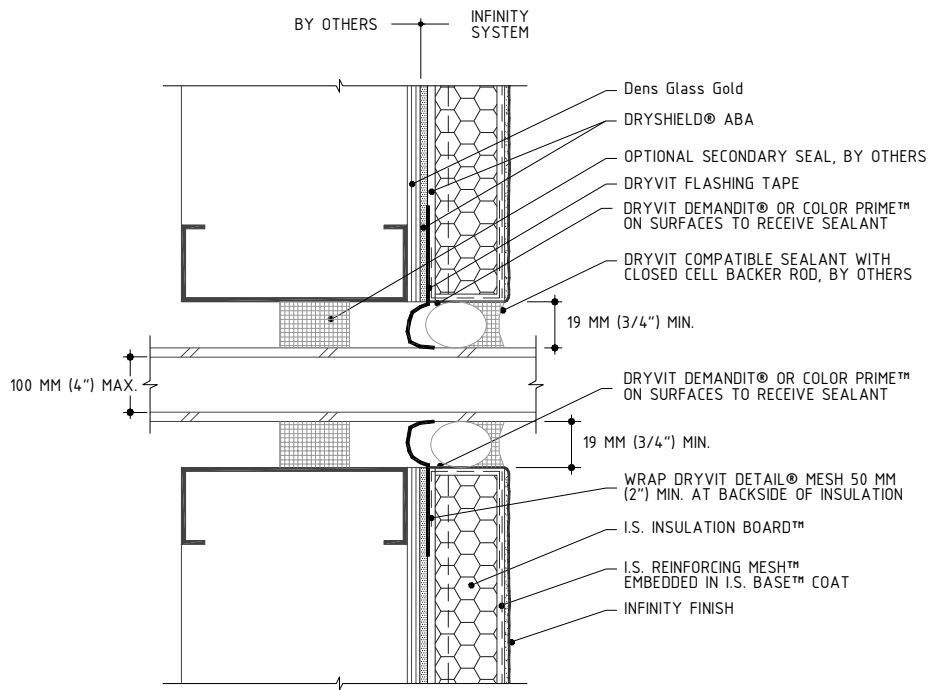


FIGURE 3—TYPICAL INSTALLATION DETAILS—(Continued)

(EIFS CONTRACTOR NAME)

Completion Date: _____

THE EXTERIOR INSULATION AND FINISH SYSTEM (EIFS) INSTALLED ON THE STRUCTURE LOCATED AT THE ADDRESS INDICATED BELOW:

_____ CONFORMS

TO DRYVIT SYSTEMS, INC., RECOMMENDED INSTALLATION PRACTICES AND SECTION (S) _____ OF EVALUATION REPORT _____.

Address of Structure:

Product Component Names:

Adhesive(s) _____
Fasteners (mech) _____
Base Coat _____
Reinforcing Fabric _____
Finish Coat (s) _____

INSTALLATION

CONFORMS

A. Substrate Type and Tolerance

B. Weather Resistive Barrier
(Type V Construction Only)

C. EIFS

- 1. Adhesive and/or Fasteners
- 2. Insulation
- 3. Reinforcing Fabric
- 4. Base Coat
- 5. Finish

D. The information entered above is offered in testimony that the EIFS installation conforms with the EIFS manufacturer's installation methods and procedures, and the EIFS manufacturer's ES report.

NOTE: An installation card shall be received from the Sealant Installer indicating that the sealant installation conforms with the EIFS evaluation report and sealant manufacturer's installation methods and procedures must accompany this declaration.

EIFS Contractor Company Name and Address:

Signature of Responsible Officer: _____

Type Name and Title of Officer: _____

Telephone Number: () _____

cc: Original: Building Department
Copy: Dryvit Systems, Inc.

(Must be submitted with sealant installer declaration.)

FIGURE 4

(SEALANT INSTALLER NAME)

Completion Date: _____

THE SEALANT INSTALLED IN CONJUNCTION WITH AN EXTERIOR INSULATION AND FINISH SYSTEM (EIFS) INSTALLED ON THE STRUCTURE LOCATED AT THE ADDRESS INDICATED BELOW:

_____ CONFORMS

TO (EIFS MANUFACTURER NAME) AND (SEALANT MANUFACTURER'S NAME) RECOMMENDED INSTALLATION PRACTICES AND SECTION(S) _____ OF EVALUATION REPORT ER-_____.

Address of Structure:

Product Component Names:

Primer(s) _____
Sealers _____
Bond Breakers _____
Sealant Materials _____

INSTALLATION

CONFORMS

- A. Designer's requirements, details and instructions _____
- B. Sealant manufacturer's details and requirements _____
- C. Exterior insulation manufacturer's requirements _____

D. The information entered above is offered in testimony that the Sealant installation conforms with the sealant manufacturer's installation methods and procedures, and the EIFS manufacturer's evaluation report.

Sealant Installer Company Name and Address:

Signature of Responsible Officer: _____

Type Name and Title of Officer: _____

Telephone Number: (_____) _____

cc: Original:
Copies:
EIFS Contractor
Sealant Manufacturer

Building Department
EIFS Manufacturer

(Must be submitted with EIFS contractor declaration.)

FIGURE 5