

Filing Category: EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS)

OUTSULATION PLUS EXTERIOR INSULATION AND FINISH SYSTEM (EIFS)

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1.0 SUBJECT

Outsulation Plus Exterior Insulation and Finish System (EIFS).

2.0 DESCRIPTION

2.1 General:

The Outsulation Plus System is an exterior insulation and finish system (EIFS) that is permitted to be used on buildings that are required to be of combustible or noncombustible construction, including buildings classified under the UBC (1997 *Uniform Building Code*™) as having a Group R, Division 1 or Division 3 Occupancy Group; and buildings classified under the IBC (2000 *International Building Code*®) as having a Group R1, R2, R3 or R4 Occupancy Group; and buildings classified under the IRC (2000 *International Residential Code*®). The system consists of six components that are applied to approved substrates: a proprietary liquid-applied weather-resistive barrier; an adhesive; foam-plastic insulation board; a double layer of polymer-containing base coat; glass-fiber reinforcing fabric; and a finish coat. See Figure 1 for details of the Outsulation Plus System.

2.2 Materials:

2.2.1 Structural Substrate: Approved substrates must be one of the following:

1. Exterior-grade gypsum sheathing meeting the requirements of ASTM C 79-92 for water-resistant core board. Minimum thickness of the sheathing must be 1/2 inch (12.7 mm), except that when the wall is a fire-rated assembly, the minimum thickness of the gypsum sheathing (Type X) is 5/8 inch (15.9 mm).
2. Dens-Glass® Gold Gypsum Board, which is a silicone-treated glass-mat gypsum board, consisting of a noncombustible water-resistant core, surfaced with inorganic-fiberglass mat partially or completely embedded in the core. Dens-Glass Gold Board is recognized in ICBO ES evaluation report ER-4305. The board must have a minimum thickness of 1/2 inch (12.7 mm).
3. DUROCK Exterior Cement Board, which is a noncombustible portland-cement product manufactured by U.S. Gypsum Company. The boards have an

aggregated-portland-cement core with a polymer-coated glass-fiber mesh embedded in both surfaces. Minimum board thickness is nominal 1/2 inch (12.7 mm), with nominal weight of 3 pounds per square foot (14.6 kg/m²). Boards are available in sizes up to 4 feet (1219 mm) wide and 10 feet (3048 mm) long. The boards comply with ANSI A118.9.

4. Unglazed brick, cement plaster, concrete, or concrete masonry.

2.2.2 Weather-resistive Barrier: The approved weather-resistive barrier consists of the following components:

1. Dryvit Backstop, Backstop NT-Smooth, or Dryvit Backstop NT-Textured weather-resistive coating. The Dryvit Backstop is a 100 percent acrylic coating, and is field-mixed with Type I or Type II portland cement in a 1:1 ratio by weight. The Backstop NT-Smooth and Dryvit Backstop NT-Textured are a premixed, fully formulated, noncementitious, polymer-based coating. All coatings are recognized for application over the sheathing substrates described in Section 2.2.1 of this evaluation report.
2. Dryvit Grid Tape, an open-weave fiberglass mesh tape with pressure-sensitive adhesive.
3. Dryvit Flashing Tape, a high-density, polyethylene-backed tape with rubberized asphalt adhesive.
4. Dryvit Flashing Tape Surface Conditioner, a water-based surface conditioner and adhesive promoter for the Dryvit Flashing Tape.

The shelf life of the Dryvit Backstop, Backstop NT, Grid Tape, Flashing Tape Surface Conditioner, and Flashing Tape is two years.

2.2.3 Dryvit AP Adhesive™: A moisture-cured, urethane-based adhesive used to adhere the Dryvit Drainage Strip. The shelf life is one year.

2.2.4 Dryvit Starter Track™: A UV-treated polyvinyl chloride J-channel with weep holes. Tracks are manufactured from rigid exterior-grade PVC conforming to ASTM D 1784-81, and are manufactured by Plastic Components, Inc.

2.2.5 Dryvit Drainage Strip™: A corrugated plastic sheet material, which provides a drainage medium.

2.2.6 Dryvit Adhesive/Base Coat: The adhesive/base coat material is used to adhere the insulation board to the weather-resistive barrier and to embed the reinforcing mesh on the face of the insulation board. The adhesive/base coat material is field-mixed with Type I or Type II portland cement in a 1:1 ratio by weight, and is one of the following:

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(1) Genesis: a fiber-reinforced, acrylic-modified product; or
 (2) Primus: an acrylic-polymer product. Portland cement used with the adhesive/base coat material must comply with ASTM C 150. Genesis and Primus are packaged in 60-pound (27.2 kg) pails. The products have a shelf life of two years when protected from extreme heat and freezing for extended periods. Storage temperatures should generally be within the range of 40°F to 120°F (4.4°C to 48.9°C).

2.2.7 Dryvit Reinforcing Mesh: The Dryvit reinforcing fabric consists of glass fiber mesh treated for alkali resistance and for compatibility with Dryvit products. Seven grades of mesh are available:

REINFORCING MESH GRADE	WEIGHT (oz/yd ²)	ROLL WIDTH BY LENGTH
Standard	4.3	48" by 150' 72" by 150'
Standard Plus	6	48" by 150'
Intermediate	12	48" by 150'
Panzer 15	15	48" by 75'
Panzer 20	20.5	48" by 75'
Corner	7.2	9 ¹ / ₄ " by 150'
Detail	4.3	9 ¹ / ₂ " by 150'

For SI: 1 inch = 25.4 mm; 1 oz/yd² = 0.012kg/m²; 1 ft = 305 mm.

Rolls must not be stored on end or in direct sunlight.

2.2.8 Insulation Board: The foam-plastic insulation board is manufactured from expanded polystyrene and has a nominal density of 1 lb/ft³ (16.02 kg/m³), and a flame-spread rating of not more than 75 and a smoke-developed rating of not more than 450 when tested in accordance with UBC Standard 8-1. The boards comply with ASTM C 578, Type I board. Minimum insulation board thickness is 1 inch (25.4 mm), and the maximum dimensions of the insulation board are 2 feet (610 mm) by 4 feet (1219 mm). For applications to buildings that are required to be noncombustible construction, the foam plastic has a maximum thickness of 4 inches (102 mm), and a maximum flame-spread rating of 25 and a smoke-developed rating of 450 when tested in accordance with UBC Standard 8-1 (ASTM E 84).

2.2.9 Dryvit Synthetic Finishes: The Dryvit finish is composed of natural mineral aggregates and fillers, colored pigments, and an acrylic latex emulsion. The products have a shelf life of two years when protected from freezing and extreme heat for extended periods. Storage temperatures should generally be within the range of 40°F to 120°F (4.4°C to 48.9°C).

2.2.10 Joint Sealants: The sealant for perimeter seals around window and door frames and other wall penetrations must be a low-modulus sealant conforming to ASTM C 920, Grade NS. Evidence must be submitted to the building official showing that the sealant complies with ASTM C 920. Sealant backer rods used with the sealant must be closed-cell polyethylene foam.

2.3 Installation:

2.3.1 General: The Dryvit Outsulation Plus drainage system is installed as an exterior wall cladding on buildings that are required to be of combustible or noncombustible construction. For combustible construction, the framing members are permitted to be either solid-sawn lumber or C-shaped steel studs having a minimum thickness and maximum spacing as specified in Section 2.6 of this evaluation report. For noncombustible construction, the framing members must be C-shaped steel studs as

described in Section 2.4 of this evaluation report. Framing members must be designed to resist all positive and negative transverse loads with a maximum allowable deflection of $1/240$ of the span.

When the system is applied to buildings required to be of combustible construction, the sheathing material is permitted to be one of the sheathings specified in Section 2.2.1 of this report. Sheathing substrates must be fastened to the wood or steel studs using minimum No. 6, 1³/₈-inch-long (41.3 mm), self-drilling buglehead Type W screws (for wood framing) and Type S screws (for steel framing), having 18 threads per inch. The screws must be installed a maximum of 6 inches (152 mm) on center along all framing members. When the system is applied to buildings required to be of noncombustible construction, the sheathing must be gypsum sheathing board as described in Section 2.2.1 of this report.

No additives, such as sand, aggregates, rapid binders, antifreeze or accelerators, are permitted to be added to any Dryvit material recognized in this evaluation report.

For installations regulated by the IBC, the following requirements must be met:

1. Flashing shall be installed in accordance with IBC Section 1405.3.
2. Protection against condensation in the exterior wall assembly shall be provided in accordance with the 2000 *International Energy Conservation Code*[®].
3. An approved interior noncorrodible vapor retarder shall be provided in accordance with IBC Section 1403.3.

For installations regulated by the IRC, flashing must be installed in accordance with Section R703.9.2, and a vapor retarder must be installed in accordance with Section R322.

Refer to Figures 2 through 9 for typical details of the Outsulation Plus System.

2.3.2 Installation of the Weather-resistive Barrier:

2.3.2.1 Dryvit Backstop: The Dryvit Backstop weather-resistive barrier must be installed over all substrates. Before the Backstop material is split and mixed with portland cement, it must be thoroughly premixed using a Wind-Lock B-M1 or B-M8, or equivalent, mixing blade powered by a 1/2-inch (12.7 mm) drill, at 700-1000 rpm. If the Backstop material is not premixed, air entrapment and product damage may occur when the material is mixed with the portland cement, resulting in workability and performance problems. The premixed Backstop material is field-mixed in a 1:1 ratio, by weight, with portland cement. Clean, potable water may be added to the mixture to adjust the workability. The Backstop material should be mixed in batches as can be used during a work period.

Before application of the Backstop weather barrier, the substrate must be checked to ensure that it is structurally sound and free of loose material, voids, projections, or other conditions that may interfere with the installation of the Dryvit materials. The substrate surface must have no planar irregularities greater than 1/4 inch (6.4 mm) within any 48-inch (1219 mm) radius. Additionally, if there are gaps or damage in the sheathing substrate exceeding 3/8 inch (9.5 mm) in any direction, the substrate must be replaced. The wall surface and ambient temperatures must be above 40°F (4°C), and rising, at time of application of Dryvit materials.

Installation of the Backstop weather barrier includes the following three components:

1. Dryvit Grid Tape (not required with concrete and masonry substrates): The tape is applied along all joints in the sheathing, inside corners, and edges of terminations that will not be covered with Dryvit Flashing Tape. The Grid Tape must be centered at joints and pressed into position with hand pressure until adhesion is achieved.
2. Dryvit Backstop: The Backstop material, which is mixed with the portland cement in accordance with the manufacturer's installation instructions and this evaluation report, is applied in two steps. First, the Backstop mixture is applied using a stainless steel trowel over the Grid Tape at all joints, corners and other locations where the tape is located. It is smoothed and feathered to completely cover the Grid Tape, and allowed to set for a minimum of two hours before the second step of the installation occurs. Second, a continuous layer of Backstop mixture is applied over the entire wall surface to a uniform thickness of (approximately) $\frac{1}{16}$ inch (1.6 mm). The installed Backstop material must be completely dry before the installation of the Dryvit Flashing Tape occurs.
3. Dryvit Flashing Tape: Flashing Tape must be installed onto framing edges at discontinuities and terminations, such as openings, expansion joints, and the top of parapets. The surface to receive the Flashing Tape must be clean, dry, smooth, and free of conditions that hinder adhesion. If adhesion cannot be achieved, the surface must be primed with Dryvit Flashing Tape Surface Conditioner. The wall surface is prepared and the Conditioner installed in accordance with the manufacturer's installation instructions (refer to Dryvit publication DS218—Outsulation Plus Installation Instructions). After the installed Conditioner is dry and slightly tacky, the Dryvit Flashing Tape is applied. The release paper on the back side of the tape is removed to expose the rubberized-asphalt adhesive. The tape is aligned into position such that it covers the Backstop coating a minimum of 2 inches (51 mm), and the remainder is turned into the opening. If wrinkles develop during installation, the tape must be removed and replaced. The tape is installed with constant pressure to ensure continuous contact with the surface. End laps that occur must maintain a minimum overlap of 2 inches (51 mm). The Flashing Tape must be applied so that it completely covers the stud edges to the inside edge of the opening.

2.3.2.2 Dryvit Backstop NT-Smooth: The Backstop NT-Smooth is shipped in 5-gallon (19 L) pails and is ready to use without additives.

Before application of the Backstop NT-Smooth weather-resistive barrier, the substrate must be checked to ensure that it is structurally sound and free of loose material, voids, projections, or other conditions that may interfere with the installation of the Dryvit materials. The substrate surface must have no planar irregularities greater than $\frac{1}{4}$ inch (6.4 mm) within any 48-inch (1219 mm) radius. Additionally, if there are gaps or damage in the sheathing substrate exceeding $\frac{1}{4}$ inch (6.4 mm) in any direction, the substrate must be replaced. The wall surface and ambient temperatures must be above 40°F (4°C), and rising, at time of application of Dryvit materials.

Installation of the Backstop NT-Smooth weather-resistive barrier includes the following three components:

1. Dryvit Grid Tape and Backstop NT-Textured (not required with concrete and masonry substrates): The Grid Tape is applied along all joints in the sheathing, inside corners, and edges of terminations that will not be covered with Dryvit Flashing Tape. The Grid Tape must be centered at joints and pressed into position with hand pressure. The Backstop NT-Textured material is applied over all installed Grid Tape and all fastener heads. The material must cure until dry to the touch.
2. Dryvit Backstop NT-Smooth: The Backstop NT-Smooth material is ready to use; however, the material must be mixed to a smooth homogeneous consistency in accordance with the manufacturer's installation instructions (refer to Dryvit publication DS181). The Backstop NT-Smooth material is applied using a $\frac{3}{4}$ -inch (19 mm) nap roller over the entire wall face, including previously treated fastener heads and all joints, corners and other locations where the Grid Tape is located, at a coverage rate of 500 square feet per 5-gallon (2.43 m²/L) pail. Alternatively, the Backstop NT-Smooth material is permitted to be applied to the wall surface using spray equipment, and back-rolled using a $\frac{3}{4}$ -inch (19 mm) nap roller. The Backstop NT-Smooth material is allowed to set for a minimum of four hours before installation of the Flashing Tape and adhesively applied EPS insulations boards. In all cases, the Backstop NT-Smooth material must form a continuous film.
3. Dryvit Flashing Tape: Flashing Tape must be installed onto framing edges at discontinuities and terminations, such as openings, expansion joints, and the tops of parapets. The surface to receive the Flashing Tape must be clean, dry, smooth, and free of conditions that hinder adhesion. If adhesion cannot be achieved, the surface must be primed with Dryvit Flashing Tape Surface Conditioner. The wall surface is prepared and the Conditioner installed in accordance with the manufacturer's installation instructions (refer to Dryvit publication DS218—Outsulation Plus Installation Instructions). After the installed Conditioner is dry and slightly tacky, the Dryvit Flashing Tape is applied. The release paper on the back side of the tape is removed to expose the rubberized-asphalt adhesive. The tape is aligned into position such that it covers the Backstop NT-Smooth coating a minimum of 2 inches (51 mm), and the remainder is turned into the opening. If wrinkles develop during installation, the tape must be removed and replaced. The tape is installed with constant pressure to ensure continuous contact with the surface. End laps that occur must maintain a minimum overlap of 2 inches (51 mm). The Flashing Tape must be applied so that it completely covers the stud edges to the inside edge of the opening.

2.3.2.3 Dryvit Backstop NT-Textured: The Backstop NT-Textured is shipped in 5-gallon (19 L) pails and is ready to use without additives.

Before application of the Backstop NT-Textured weather-resistive barrier, the substrate must be checked to ensure that it is structurally sound and free of loose material, voids, projections, or other conditions that may interfere with the installation of the Dryvit materials. The substrate surface must have no planar irregularities greater than $\frac{1}{4}$ inch (6.4 mm) within any 48-inch (1219 mm) radius. Additionally, if

there are gaps or damage in the sheathing substrate exceeding $\frac{1}{4}$ inch (6.4 mm) in any direction, the substrate must be replaced. The wall surface and ambient temperatures must be above 40°F (4°C), and rising, at time of application of Dryvit materials.

Installation of the Backstop NT-Textured weather-resistive barrier includes the following three components:

1. Dryvit Grid Tape and Backstop NT-Textured (not required with concrete and masonry substrates): The Grid Tape is applied along all joints in the sheathing, inside corners, and edges of terminations that will not be covered with Dryvit Flashing Tape. The Grid Tape must be centered at joints and pressed into position with hand pressure. The Backstop NT-Textured material is applied over all installed Grid Tape and all fastener heads. The materials must cure until dry to the touch.
2. Dryvit Backstop NT-Textured: The Backstop NT-Textured material is ready to use; however, the material must be mixed to a smooth homogeneous consistency in accordance with the manufacturer's installation instructions (refer to Dryvit publication DS177). The Backstop NT-Textured material is applied with either a roller, trowel, or spray equipment.

Roller applications must use a coarse, open-cell foam roller, with a $\frac{3}{8}$ -inch (10 mm) nap. The Backstop NT-Textured material is applied as a uniform, continuous film over the entire wall face, including all joints, corners and other locations where the Grid Tape is located, at a coverage rate of 250 to 300 square feet per 5-gallon (6.1 to 7.3 m²/L) pail. While the Backstop NT-Textured material is still wet, it is smoothed out using a stainless-steel, flat-edge trowel around all window and door perimeters and other areas that will receive Dryvit Flashing Tape. The Backstop NT-Textured material is allowed to set for a minimum of four hours before installation of Flashing Tape and adhesively applied EPS insulation board.

Trowel applications must use a stainless-steel, flat-edge trowel. The Backstop NT-Textured material is applied at a rate needed to form a uniform, continuous film equal to the thickness of the aggregate over the entire wall face, including all joints, corners and other locations where the Grid Tape is located. The Backstop NT-Textured material is allowed to set for a minimum of four hours.

Spray applications must use a hand-held hopper gun, or other suitable equipment approved by Dryvit Systems, Inc. The Backstop NT-Textured material is sprayed onto the entire wall surface at a coverage rate of 250 to 300 square feet per 5-gallon pail. While the Backstop NT-Textured material is still wet, it is rolled out to form a smooth continuous film using a coarse, open-cell foam roller, with a $\frac{3}{8}$ -inch (10 mm) nap. Immediately after the Backstop NT-Textured material is rolled out, it is smoothed out using a stainless-steel, flat-edge trowel around all window and door perimeters and other areas that will receive Dryvit Flashing Tape. The Backstop NT-Textured material is allowed to set for a minimum of four hours before installation of Flashing Tape and adhesively applied EPS insulation board.

In all cases, the Backstop NT-Textured material must form a continuous film.

3. Dryvit Flashing Tape: Flashing Tape must be installed onto framing edges at discontinuities and terminations, such as openings, expansion joints, and the tops of parapets. The surface to receive the Flashing Tape must be clean, dry, smooth, and free of conditions that hinder adhesion. If adhesion cannot be achieved, the surface must be primed with Dryvit Flashing Tape Surface Conditioner. The wall surface is prepared and the Conditioner installed in accordance with the manufacturer's installation instructions (refer to Dryvit publication DS218—Outsulation Plus Installation Instructions). After the installed Conditioner is dry and slightly tacky, the Dryvit Flashing Tape is applied. The release paper on the back side of the tape is removed to expose the rubberized-asphalt adhesive. The tape is aligned into position such that it covers the Backstop NT-Textured coating a minimum of 2 inches (51 mm), and the remainder is turned into the opening. If wrinkles develop during installation, the tape must be removed and replaced. The tape is installed with constant pressure to ensure continuous contact with the surface. End laps that occur must maintain a minimum overlap of 2 inches (51 mm). The Flashing Tape must be applied so that it completely covers the stud edges to the inside edge of the opening.

2.3.3 Installation of the Dryvit Starter Track and Drainage Strip:

The Dryvit Starter Track or the Dryvit Drainage Strip must be installed at the base of the wall. It is attached to the wall surface by applying a continuous bead of Dryvit's AP Adhesive on the wall side of the track's nailing flange. The track with adhesive is pressed firmly against the wall substrate. It must be installed such that there is continuous contact between the track and the wall. A continuous bead of the AP Adhesive is applied along the top edge of the track and where tracks abut each other, to provide a continuous seal. The Dryvit Drainage Strip must be installed at the heads of all penetrations and at expansion/control joints. Dabs of AP Adhesive are applied 12 inches (305 mm) on center on the installed Backstop weather barrier surface, and the Strip is pressed firmly against the substrate to ensure contact between the strip/adhesive/wall surface.

2.3.4 Installation of the Insulation Board: Before the insulation boards are installed, the perimeters of all openings, penetrations, and other system terminations must be prepared for the backwrapping of the insulation boards by stapling the Dryvit Detail mesh around the openings and other terminations. The mesh is attached through the Drainage Strip and into the substrate using corrosion-resistant staples. The mesh should be fastened approximately every 12 inches (305 mm), to maintain position during foam plastic insulation board installation.

Foam-plastic insulation board must have a minimum thickness of 1 inch (25.4 mm) when installed on combustible construction; and must have a minimum thickness of 1 inch (25.4 mm) and a maximum thickness of 4 inches (102 mm) when installed on noncombustible construction. The insulation boards are adhered to the substrate using either Genesis or Primus material described in Section 2.2.6 of this evaluation report. Before the Genesis or Primus material is split and mixed with portland cement, it must be thoroughly premixed using a Wind-Lock B-M1 or B-M8, or equivalent, mixing blade powered by a $\frac{1}{2}$ -inch (12.7 mm) drill, at 700-1000 rpm. If the material is not premixed, air entrapment and product damage may occur.

when the material is mixed with the portland cement, resulting in workability and performance problems. The premixed Genesis or Primus material is field-mixed in a 1:1 ratio, by weight, with portland cement. Clean, potable water may be added to the mixture to adjust workability. The material should be mixed in batches as can be used during a work period.

Through use of a notched trowel, having $\frac{3}{8}$ -inch-wide-by- $\frac{1}{2}$ -inch-deep (9.5 mm by 12.7 mm) notches spaced $1\frac{1}{2}$ inches (38 mm) on center, the adhesive/base-coat material is applied as straight ribbons to the back side of each insulation board. The insulation boards must be installed such that the adhesive/base-coat material ribbons run vertically when the insulation boards are placed on the wall. Uniform pressure is applied over the entire insulation board surface to ensure uniform contact. Beginning at the base of the wall, the insulation boards are applied over the Backstop weather-resistive barrier in a running bond pattern, with the long edge horizontal. Vertical insulation board joints must be staggered a minimum of 12 inches (305 mm), with all insulation board joints offset a minimum of 8 inches (203 mm) from sheathing board joints. At wall corners, the edges of the EPS boards must be interlocked. All board joints must be tightly butted. Any gaps $\frac{1}{16}$ inch (1.6 mm) or more in width must be filled with insulation pieces. The base-coat material adhering the installed insulation boards must cure at least 24 hours before installation of the reinforcing mesh occurs.

2.3.5 Installation of the Reinforcing Mesh: The Dryflex base-coat material is optional and is used to install reinforcing mesh at high-exposure areas such as sloped surfaces and window and door openings. The Dryflex material is prepared in accordance with the manufacturer's installation instructions (refer to Dryvit publication DS218—Outsulation Plus Installation Instructions). A stainless steel trowel is used to apply the Dryflex base-coat mixture on the surface of the insulation board in a uniform thickness of approximately $\frac{3}{32}$ inch (2.4 mm). It is applied continuously over sloped surfaces and continued a minimum of 6 inches (151 mm) onto vertical areas. The reinforcing mesh is placed immediately against and troweled into the wet Dryflex mixture. The overall minimum base coat thickness must be sufficient to fully embed the reinforcing mesh. The Dryflex mixture with reinforcing mesh installed at sloped surfaces and window and door openings must cure a minimum of 24 hours before the Genesis or Primus base-coat material and Standard reinforcing mesh are applied in the field of the wall.

The Genesis or Primus base-coat material is used to install the reinforcing mesh fabric on the remainder of the wall. The Genesis or Primus mixture is prepared in accordance with the manufacturer's installation instructions (refer to Dryvit publication DS218—Outsulation Plus Installation Instructions). A stainless steel trowel is used to apply the Genesis or Primus base-coat mixture on the surface of the insulation board in a uniform thickness of approximately $\frac{1}{16}$ inch (1.6 mm). The reinforcing mesh is placed with the curve of the mesh against the wall and troweled into the wet Genesis or Primus mixture until the mesh is fully embedded and not visible. Application of the fabric must be continuous across corners and must be lapped a minimum of $2\frac{1}{2}$ inches (63.5 mm) at seams. A second layer of Genesis or Primus base-coat material should be troweled over the first coat to fully cover the reinforcing mesh. The base coat must be cured at least 24 hours before application of the finish coat.

2.3.6 Installation of the Finish Coat: The finish coat material must be prepared and mixed in accordance with Dryvit's installation instructions (refer to Dryvit publication DS218—Outsulation Plus Installation Instructions). Dryvit finish is applied with the desired finish pattern being no thicker than the size of the largest aggregate of the material. The finish coat must be allowed to cure at least three days before the sealant coat is applied.

2.4 Noncombustible Construction:

When the Dryvit Outsulation Plus EIFS system is installed as an exterior wall cladding on buildings required to be of noncombustible construction, the wall assembly must comply with the following:

1. Interior Wall Finish: One layer of $\frac{5}{8}$ -inch-thick (15.9 mm) Type X gypsum wallboard, complying with ASTM C 36, is installed vertically, attached with minimum No. 6, $1\frac{1}{4}$ -inch-long (31.7 mm), buglehead, self-drilling Type S screws at maximum 8 inches (203 mm) on center at board joints and 12 inches (305 mm) on center at intermediate framing. All joints are taped and treated with joint compound. Intermediate fastener heads are treated with compound.
2. Steel Stud Framing: Minimum $3\frac{5}{8}$ -inch-deep (92 mm), minimum 0.033-inch-thick (0.84 mm) (No. 20 gage) steel studs, spaced a maximum of 16 inches (406 mm) on center.
3. Stud Cavities: At floor levels, Thermafiber insulation (Evaluation Report ER-2331) is fitted between studs. Insulation density must be nominal 4 pounds per cubic foot (64 kg/m³). Batts are approximately 6 to 8 inches (152 to 203 mm) wide. The insulation may be either friction-fitted or supported.
4. Openings: Wall openings are framed with minimum 0.0428-inch-thick (1.09 mm) aluminum or steel framing.
5. Exterior Sheathing: One layer of minimum $\frac{1}{2}$ -inch-thick (12.7 mm), water-resistant core gypsum sheathing applied horizontally to framing and attached using minimum No. 8, $1\frac{1}{4}$ -inch-long (31.7 mm), self-drilling Type S screws spaced maximum 8 inches (203 mm) on center along all studs.
6. Exterior Wall Cladding: Outsulation Plus EIFS as described in this evaluation report is installed over the gypsum sheathing in accordance with Section 2.3 of this report. The maximum thickness of foam plastic insulation is 4 inches (102 mm).

2.5 One-hour Fire-resistive Construction:

2.5.1 Combustible Fire-rated Construction: Outsulation Plus is permitted to be adhered to the surface of a load-bearing or nonload-bearing, fire-resistive wall in a building classified as combustible construction without affecting the assigned hourly rating of the wall, provided it is constructed as described in Table 7-B of the code, and Section 2.4 of this report.

2.5.2 Noncombustible Fire-rated Construction: Outsulation Plus is permitted to be adhered to the surface of a nonload-bearing, one-hour fire-rated wall in a building classified as noncombustible construction without affecting the fire resistance of the wall. As a minimum, the wall shall be constructed as described in assembly WP-1200 of the Gypsum Association's Fire Resistance Design Manual, 14th edition.

2.6 Allowable Loads:

The following Dryvit Outsulation Plus EIFS assemblies are assigned allowable negative and positive transverse (wind) loads:

1. Structural framing consists of minimum 2-by-4 wood studs, spaced a maximum of 16 inches (406 mm) on center. Sheathing material referenced in Section 2.2.1 of this evaluation report is mechanically fastened to the studs with minimum $1\frac{5}{8}$ -inch-long (41.3 mm), No. 6, self-drilling screws spaced a maximum of 6 inches (152 mm) on center at all studs and top and bottom plates. Outsulation Plus EIFS is adhered to the sheathing substrate in accordance with this evaluation report. Maximum positive and negative transverse loads for this assembly are 50 psf and 40 psf (2.39 and 1.92 kN/m²), respectively.
2. Structural framing consists of minimum $3\frac{5}{8}$ -inch-deep (92 mm), No. 18 gage [0.044 inch base-metal thickness (1.12 mm)], C-shaped metal studs, spaced a maximum of 16 inches (406 mm) on center. Sheathing material referenced in Section 2.2.1 of this evaluation report is mechanically fastened to the studs with minimum $1\frac{5}{8}$ -inch-long (41.3 mm), No. 6, self-drilling screws spaced a maximum of 6 inches (152 mm) on center at all studs and top and bottom plates. Outsulation Plus EIFS is adhered to the sheathing substrate in accordance with this evaluation report. Maximum positive and negative transverse loads for this assembly are 60 psf and 40 psf (2.87 and 1.92 kN/m²), respectively.
3. Substrate is either unglazed brick, cement plaster, concrete, or concrete masonry. The Outsulation Plus EIFS is adhered to the substrate in accordance with this evaluation report. Maximum positive transverse load is governed by the structural capacity of the substrates, and the negative transverse load is 70 psf (3.4 kN/m²).

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 Dryvit Outsulation Plus EIFS Wall System applied over framed walls. Duties of the special inspector include verifying field preparation of materials, expiration dates, installation of components, curing of components, installation of joints and sealants.

2.8 Identification:

Containers or packaging bear labels noting the following information: manufacturer's name and address (Dryvit Systems, Inc.; One Energy Way; West Warwick, Rhode Island); evaluation report number (ICBO ES ER-5567); lot or batch number; quantity of material in packaged mix; storage instructions; specific mixing instructions; curing instructions; and expiration date (when applicable).

The EPS board is shipped in a polyethylene bag bearing the Dryvit name and the lot number. One edge of each board bears the words "Dryvit Outsulation System," the plant identification number of the block molder, the evaluation report number (ICBO ES ER-5567), and the name of the quality control agency (RADCO). In addition, one board in each bag bears the same markings on the board face.

3.0 EVIDENCE SUBMITTED

Data in accordance with the ICBO ES Acceptance Criteria for Exterior Insulation and Finish Systems (AC24), dated

April 2001; the ICBO ES Acceptance Criteria for Foam Plastic Insulation (AC12), dated July 2001; and a quality control manual in accordance with the ICBO ES Acceptance Criteria for Quality Control Manuals (AC10), dated November 2001.

4.0 FINDINGS

That the Outsulation Plus Exterior Insulation and Finish System described in this report complies with the 1997 Uniform Building Code™, the 2000 International Building Code® and the 2000 International Residential Code®, 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 by a thermal barrier complying with the code, such as minimum $\frac{1}{2}$ -inch-thick (12.7 mm), regular gypsum wallboard fastened in accordance with the code.
- 4.3 Installation is by applicators recognized by Dryvit Systems, Inc., as being trained to perform installation of the Outsulation Plus System. Installation cards, such as those shown in Figures 10 and 11, must be completed by the applicators and presented to the building official at the completion of each project.
- 4.4 The Outsulation Plus system is permitted to be an exterior wall cladding for buildings that are required to be of either combustible or noncombustible construction, including buildings classified as:
 - Group R, Division 1 or Division 3, Occupancies (UBC).
 - Group R1, R2, R3 and R4 Occupancies (IBC).
 - Dwellings (IRC).

When the building is classified as noncombustible, the wall must be constructed as described in Section 2.4 of this evaluation report.

- 4.5 The Outsulation Plus system is permitted to be attached to the surface of exterior fire-resistive assemblies when the fire-rated wall complies with Section 2.5 of this evaluation report.
- 4.6 In jurisdictions enforcing the IBC, special inspections are required in accordance with Section 2.7 of this evaluation report.
- 4.7 Insulation boards are identified as indicated in Section 2.8 of this evaluation report. The insulation boards comply with Section 2.2.8 of this evaluation report with quality control conducted by RADCO (AA-650).
- 4.8 Dryvit components are manufactured by Dryvit Systems, Inc., at their facilities located in West Warwick, Rhode Island; Columbus, Georgia; Tulsa, Oklahoma; and Woodlake, California.

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

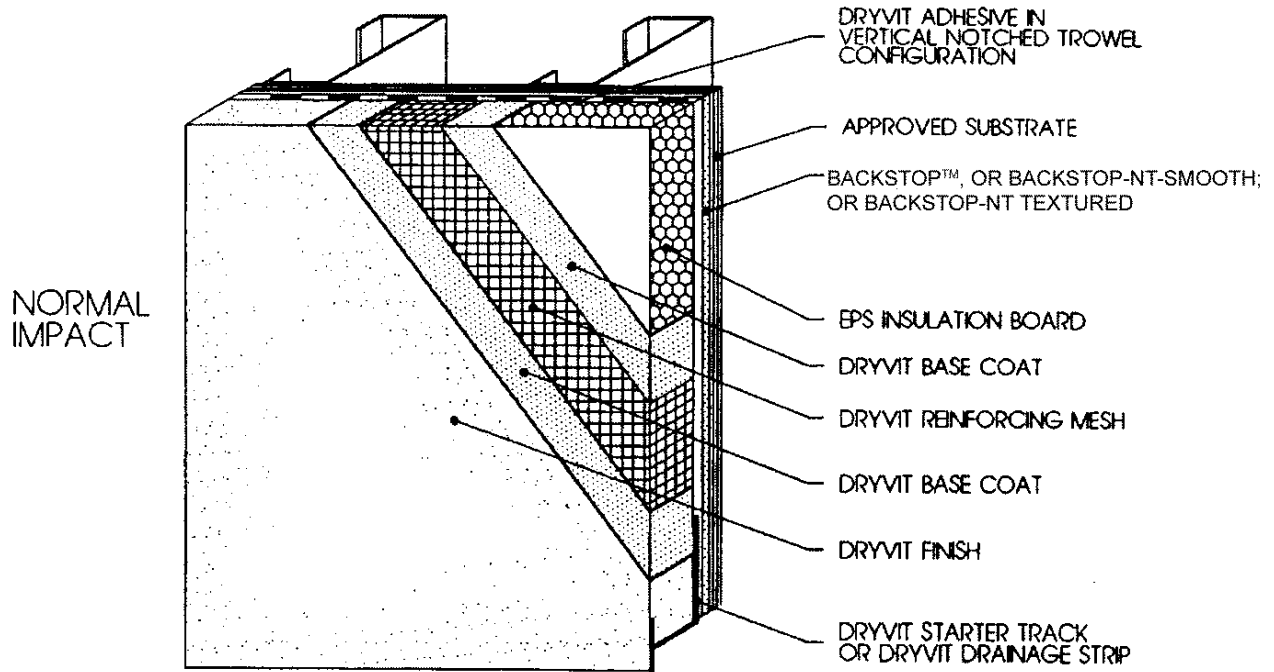


FIGURE 1—DRYVIT OUTSULATION PLUS SYSTEM

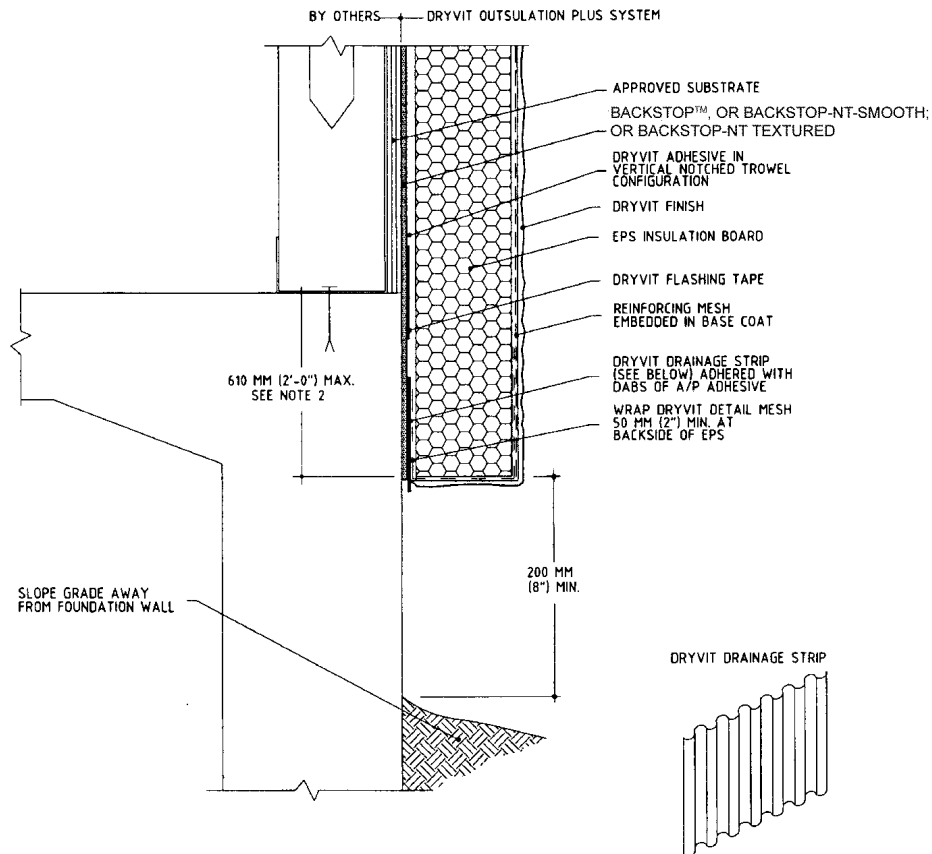


FIGURE 2—FOUNDATION WITH DRAINAGE STRIP

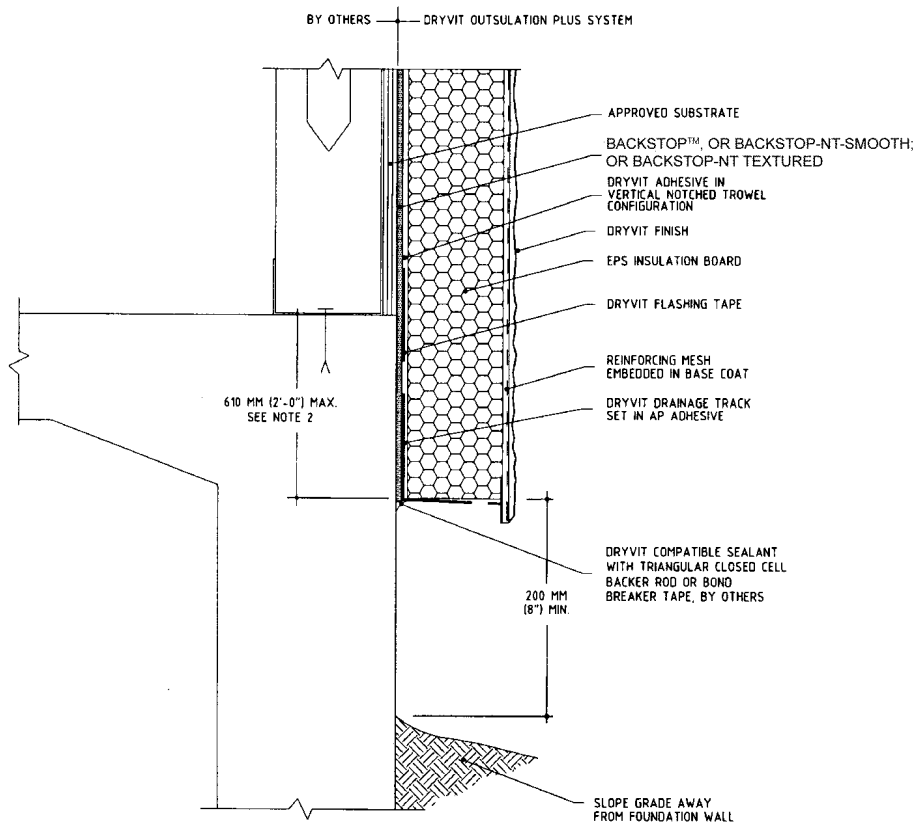


FIGURE 3—FOUNDATION WITH STARTER TRACK

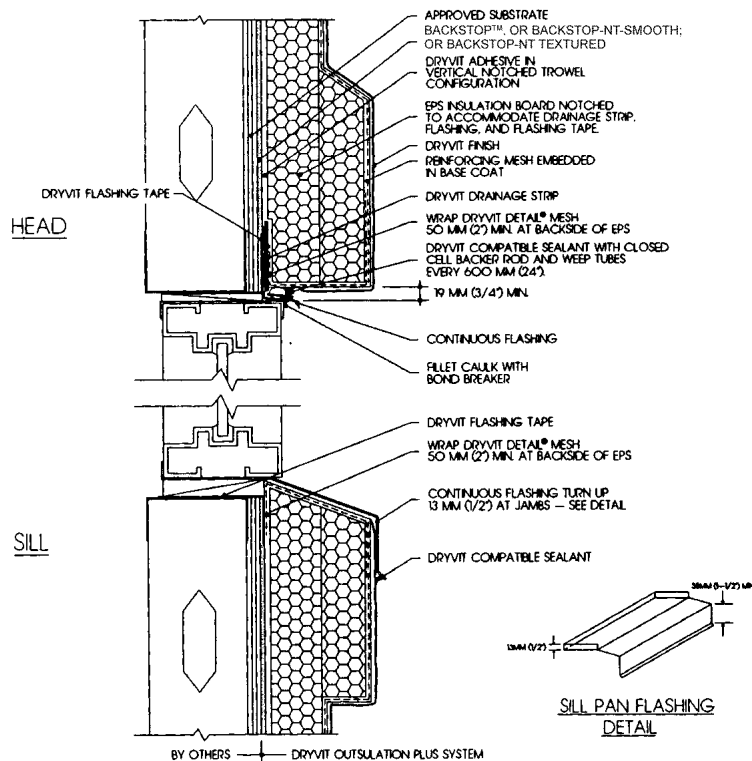


FIGURE 4—HEAD AND SILL DETAIL

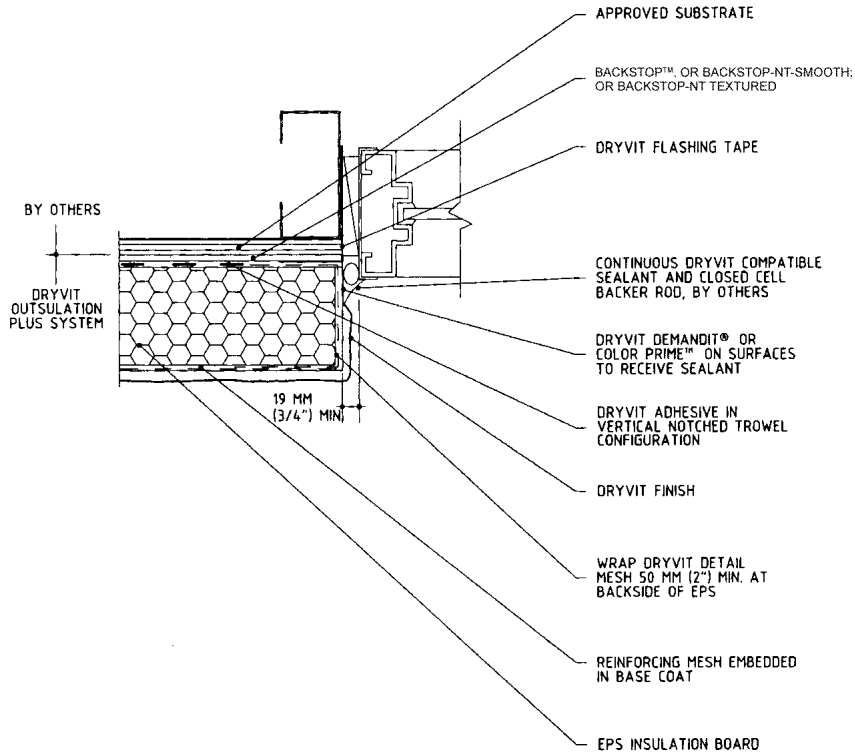


FIGURE 5—JAMB DETAIL

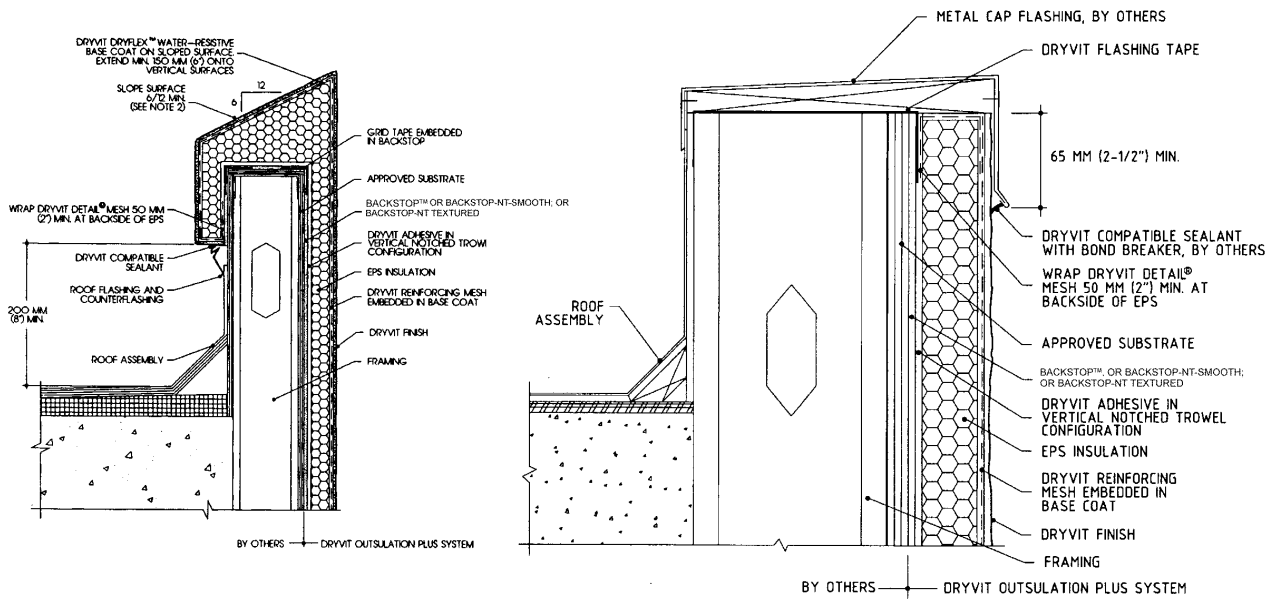


FIGURE 6—PARAPETS

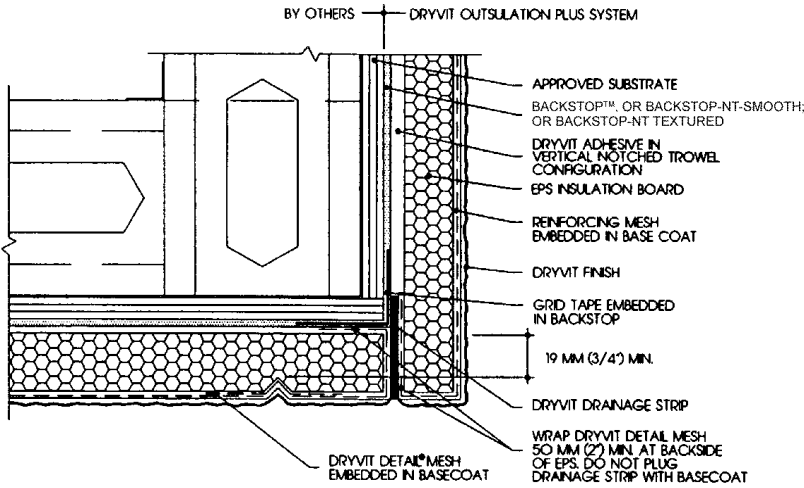


FIGURE 7—SOFFIT/FACIA INTERSECTION

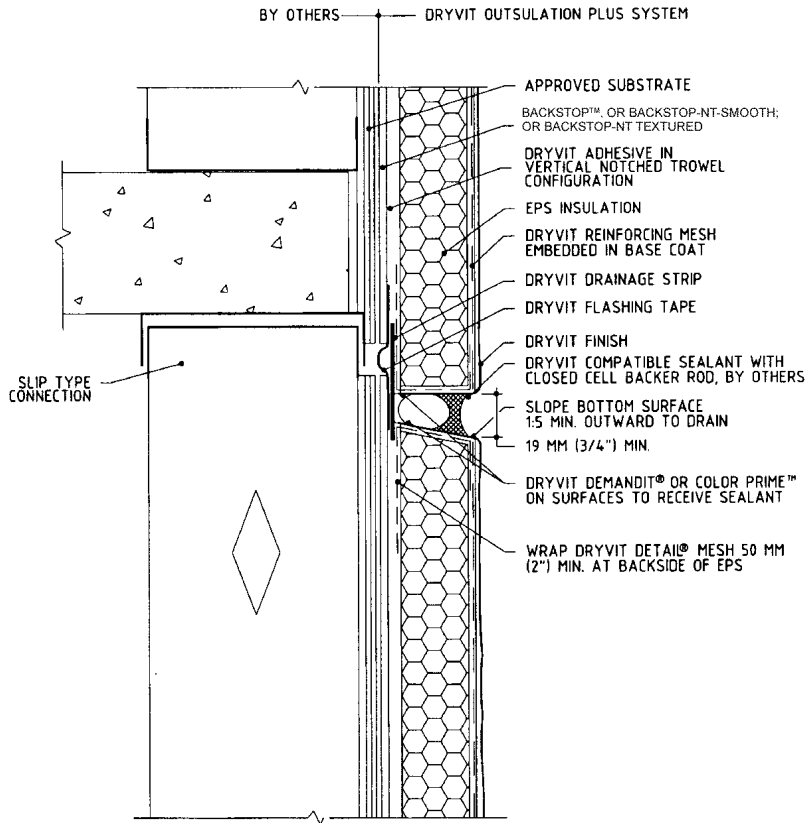


FIGURE 8—EXPANSION JOINT AT FLOOR LINE

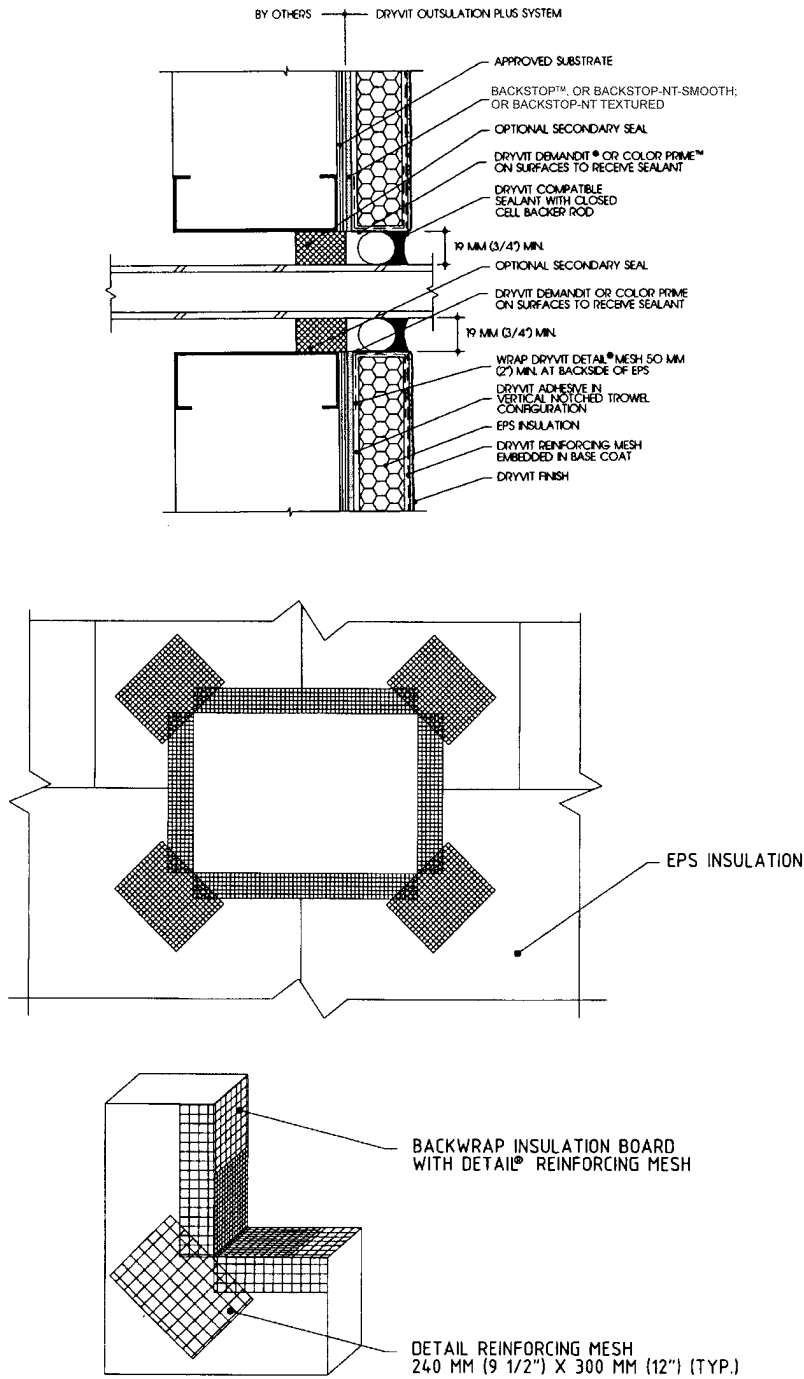


FIGURE 9—WALL PENETRATION

(EIFS CONTRACTOR NAME)

Completion Date: _____

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

_____ CONFORMS

TO (EIFS MANUFACTURER NAME) RECOMMENDED INSTALLATION PRACTICES AND SECTION(S) _____ OF ICBO ES, INC., EVALUATION REPORT ER-_____.

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 _____
- 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: _____

Typed Name and Title of Officer: _____

Telephone Number: (____) _____

Transmittal: Original: Building Department (Must be submitted with sealant installer declaration.)
Copy: EIFS Manufacturer

FIGURE 10—INSTALLATION CARD

(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 ICBO ES, INC., 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: _____

Typed Name and Title of Officer: _____

Telephone Number: (____) _____

Transmittal: Original: Building Department (Must be submitted with EIFS contractor declaration.)
Copies: EIFS Manufacturer, EIFS Contractor, and Sealant Manufacturer.

FIGURE 11—INSTALLATION CARD