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

REPORT HOLDER:

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EVALUATION SUBJECT:

DRYVIT OUTSULATION® RMD SYSTEM™ AND
OUTSULATION® SMD SYSTEM™ EXTERIOR INSULATION
AND FINISH SYSTEMS (EIFS)

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2006 *International Building Code*® (IBC)
- 2006 *International Residential Code*® (IRC)
- Other Codes (see Section 8.0)

Properties evaluated:

- Surface burning characteristics
- Structural—transverse wind load resistance
- Weather resistance
- Water drainage

2.0 USES

Dryvit Outsulation® RMD System™ and Outsulation® SMD System™ are used as an exterior insulation and exterior wall finish on buildings of Type V construction under the IBC and dwellings under the IRC, and to provide water drainage from behind the insulation board.

3.0 DESCRIPTION

3.1 General:

The Dryvit Outsulation® RMD System™ and Outsulation® SMD System™ are exterior insulation and finish systems (EIFS) that are applied to wood- or steel-framed exterior walls covered with either plywood or oriented strand board (OSB) sheathing, or to exterior walls constructed of unglazed brick, concrete, or masonry. The systems are EIFS clad drainage wall assemblies.

3.2 Dryvit Outsulation® RMD System™:

The EIFS consists of a water-resistive barrier; a drainage medium; expanded polystyrene insulation boards; a drainage

strip or a vinyl drainage track; a glass fiber reinforcing mesh; fasteners or adhesive; a base coat; and a finish coat.

3.2.1 Materials:

3.2.1.1 Wood-based Sheathing Substrates: Wood-based sheathing must be Exterior or Exposure 1 grade structural plywood, complying with PS 1 or PS 2, or Exposure 1 OSB complying with PS 2. The wood-based sheathing must have a 1/2-inch (12.7 mm) nominal thickness.

3.2.1.2 Unglazed Brick, Concrete, or Masonry Substrates: Substrates consisting of unglazed bricks, concrete, or masonry must comply with the applicable code.

3.2.1.3 Water-resistive Barrier: The approved water-resistive barrier must consist of one of the following components:

- a. Sheet materials: The water-resistive barrier must be a minimum of one layer of No. 15 asphalt felt, complying with ASTM D 226, Type I, or Grade D kraft building paper complying with UBC Standard 14-1. Two layers of Grade D kraft building paper or one layer of Grade D building paper with a 60-minute water-resistance rating are required over wood-based sheathing. In lieu of the building paper or asphalt felt, one layer of Tyvek Stucco Wrap (E.I. Du Pont de Nemours & Co., Inc., as referenced in a current ICC-ES evaluation report) is permitted. Other code approved water-resistive barriers are permitted, provided they have a current ICC-ES evaluation report.
- b. Dryvit Backstop NT-Smooth, or Dryvit Backstop NT-Texture water-resistive coating: The Backstop NT-Smooth and Dryvit Backstop NT-Texture are premixed, fully formulated, noncementitious, polymer-based coatings. All coatings are recognized for application over the substrates described in this evaluation report:
 1. Dryvit Grid Tape, an open-weave fiberglass mesh tape with pressure-sensitive adhesive.
 2. Flashing materials used to protect substrate edges and terminations:
 - a. Dryvit Flashing Tape, a high-density, polyethylene-backed tape with rubberized asphalt adhesive.
 - b. Dryvit Flashing Tape Surface Conditioner, a water-based surface conditioner and adhesive promoter for the Dryvit Flashing Tape.
 - c. Dryvit AquaFlash and AquaFlash Mesh, a flexible, waterproof, water-based polymer material used in conjunction with AquaFlash Mesh to seal substrates around windows, doors, and other openings.

The Backstop NT-Smooth and NT-Texture coatings are packaged in 5-gallon (19 L) pails and are ready to use without additives. The shelf life of the Dryvit Backstop NT-

Smooth and NT-Texture coatings, Grid Tape, Flashing Tape Surface Conditioner, Flashing Tape and AquaFlash is two years.

3.2.1.4 Dryvit AP Adhesive: This is a moisture-cured, urethane-based adhesive used to adhere the Dryvit Drainage Strip or Drainage Track. The adhesive is packaged in 29-ounce cartridges that have a shelf life of one year.

3.2.1.5 Dryvit Drainage Strip™: The drainage strip is 0.024-inch-thick-by-2 7/8-inch-wide (0.6 mm by 73 mm), high-impact polystyrene material formed with 1/8-inch-deep (3 mm) corrugations with channels running vertically when installed on the wall to provide drainage.

3.2.1.6 Drainage Track: The drainage track is manufactured from rigid, exterior-grade PVC, conforming to ASTM D 1784. The base of the track has 0.25-inch-diameter (6.4 mm) drain holes spaced 3 inches (76 mm) on center.

3.2.1.7 Drainage Medium: There are four options available, as follows:

- Dryvit Drainage Mat, which is a blue-colored, 1/8-inch-thick (3.2 mm) mat composed of open-weave polymer threads used to separate the insulation board from the water-resistive barrier.
- Notched-trowel adhesive application, which is achieved by applying the Dryvit adhesive in a vertical orientation on the backside of the flat stock EPS insulation board with a trowel having 3/8-inch-wide-by-1/2-inch-deep (9.5 mm by 12.7 mm) notches spaced 1 1/2 inches (38 mm) on center.
- Grooved insulation board as described in Section 3.2.1.9.
- Tyvek StuccoWrap, (E.I. Du Pont de Nemours & Co., Inc., as referenced in a current ICC-ES evaluation report), and which is supplied in rolls 39 inches (991 mm) wide by 250 feet (76 200 mm) long. When Tyvek StuccoWrap is used as a drainage medium, the Tyvek StuccoWrap is also the water-resistive barrier.

3.2.1.8 Dryvit Adhesive/Base Coat: The adhesive/base-coat material must be used to adhere the insulation board to the water-resistive barrier coating (where applicable) and to embed the reinforcing mesh on the face of the insulation board. There are two types of material available, wet mix and dry mix. The wet mix is Genesis, a fiber-reinforced, acrylic-modified product, packaged in 60-pound (27.2 kg) pails and mixed with Type I or Type II Portland cement complying with ASTM C 150 in a 1:1 ratio by weight. The dry mix is Genesis DM, a high-performance, fiber-reinforced dry blend, packaged in 50-pound (22.66 kg) bags and mixed with clean potable water.

The wet product has a shelf life of two years and the dry product has a shelf life of one year when protected from extreme heat and freezing for extended periods. Storage temperatures must be within the range of 40°F to 120°F (4.4°C to 48.9°C).

3.2.1.9 Dryvit Reinforcing Mesh: The reinforcing fabric consists of glass-fiber mesh that has been treated for alkali resistance and compatibility with other Dryvit products. The fabric is balanced, open-weave, glass-fiber fabric, and is available in the dimensions and weights indicated in Table 1. Rolls must not be stored on end or in direct sunlight.

3.2.1.10 Thermal Insulation Board:

3.2.1.10.1 Dryvit EPS: The Dryvit EPS thermal insulation board is a molded, rigid, expanded-polystyrene (EPS) foam insulation identified as “Dryvit,” and is recognized in this evaluation report as being in compliance with Section 2603 of the IBC and Section R318 of the IRC. The board has a nominal density of 1 lb./ft.³ (16 kg/m³), a flame-spread index

of not more than 25, and a smoke-density index of not more than 450, when tested in accordance with ASTM E 84 (UBC Standard 8-1). The EPS complies as Type I in accordance with ASTM C 578.

Two variations of Dryvit EPS board are acceptable for use with the Outsulation® RMD System™:

- Flat stock insulation measuring 4 feet (1219 mm) long by 2 feet (610 mm) wide, with a thickness from 1 to 4 inches (25.4 to 102 mm).
- Grooved insulation board measuring 4 feet (1219 mm) long by 2 feet (610 mm) wide, with a thickness from 1 1/2 to 4 inches (38 to 102 mm). The back side of the EPS boards has grooves that run the width of the insulation board.

The grooves measure 1/8 inch (3.2 mm) deep by 1 inch (25.4 mm) wide and are spaced 4 inches (102 mm) on center. See Figure 2 for grooved insulation board details.

3.2.1.10.2 Alternative Sources: In lieu of the Dryvit EPS flat stock insulation board, Type I-WSG board (specified in [ESR-1006](#)) or EWG board (specified in [ESR-1962](#)) is permitted to be used with the Residential MD System.

3.2.1.11 Mechanical Fasteners: Sheet-type water-resistive barriers must be attached to the wood-based sheathing with corrosion-resistant metal staples having minimum 0.375-inch-long (9.5 mm) legs and 0.475-inch-wide (12.1 mm) crowns.

The Dryvit Drainage Track must be attached to the sheathing with minimum 1.25-inch-long (31.8 mm), No. 8, bugle-head screws having 20 threads per inch.

When sheet-type water-resistive barriers are used, fasteners used to attach the insulation board to wood-based sheathing substrates must be minimum No. 8, corrosion-resistant, Type W, bugle-head screws having nine threads per inch (nine threads per 25.4 mm).

Each fastener used to attach the Insulation boards must have a minimum 2-inch-diameter (51 mm) polypropylene plate washer to hold the board in place. The washer must be the Wind Devil 2 manufactured by Wind-lock Corporation.

Insulation board may be adhesively applied to brick, concrete, or masonry that has been coated with Backstop NT with Dryvit's Genesis or Genesis DM. If fasteners are specified, the fasteners must be approved by Dryvit and the code official. Typically, No. 10, corrosion-resistant concrete anchors, such as the Tapcon anchors manufactured by ITW Buildex, are used. See evaluation report [ESR-1671](#) for currently recognized fasteners. See Section 4.2.2.2.4 for required fastener testing requirements.

3.2.1.12 Synthetic Finish Coat: The Dryvit finish coat is composed of natural mineral aggregates and fillers, color pigments, and an acrylic latex emulsion. It is packaged in 70-pound (26.1 kg) plastic pails and has a shelf life of two years when protected from extended periods of freezing and extreme heat. Storage temperatures must be within the range of 40°F to 120°F (4.4°C to 48.9°C).

3.2.1.13 Sealants: Sealant must be compatible with the EIFS components and be recommended by Dryvit Systems, Inc. Evidence must be submitted to the code official showing that the EIFS manufacturer-recommended sealant is Type S or M, minimum grade NS, minimum Class 25 and use O sealant complying with ASTM C 920. Under the use O Classification, the sealant must be qualified for each material to which sealant is applied. The details of sealant installation, including the width and thickness of the sealant, must be designed by the registered design professional, designer, builder or Dryvit Systems, Inc., in that order, to the satisfaction of the code official.

3.3 Dryvit Outsulation® SMD System™:

The system consists of a water-resistive barrier; polyethylene spacers or a drainage mat that separates the insulation board from the water-resistive barrier; polyisocyanurate insulation boards; a vinyl drainage track or drainage strip; fasteners; a glass fiber reinforcing mesh; a base coat; and a finish coat.

3.3.1 Materials:

3.3.1.1 Wood-based Sheathing Substrates: See Section 3.2.1.1.

3.3.1.2 Unglazed Brick, Concrete, or Masonry Substrates: See Section 3.2.1.2.

3.3.1.3 Water-resistive Barrier: See Section 3.2.1.3.

3.3.1.4 Dryvit Drainage Strip: See Section 3.2.1.4.

3.3.1.5 Dryvit Drainage Track: See Section 3.2.1.5.

3.3.1.6 Drainage Medium: There are three options available:

- Dryvit Drainage Mat, which is a blue-colored, $\frac{1}{8}$ -inch-thick (3.2 mm) mat composed of open-weave polymer threads that is used to separate the insulation board from the water-resistive barrier.
- Outsulation® SMD System™ Drainage spacer, which is a polyethylene spacer, $\frac{1}{8}$ inch thick by 3 inches wide (3.2 mm by 76 mm), used to separate the insulation board from the water-resistive barrier.
- Tyvek StuccoWrap, (E.I. Du Pont de Nemours & Co., Inc., as referenced in a current ICC-ES evaluation report), which is supplied in rolls 39 inches wide by 250 feet long (991 mm by 76 200 mm). When Tyvek StuccoWrap is used as the drainage medium, the Tyvek StuccoWrap must also be used for the water-resistive barrier.

3.3.1.7 Thermal Insulation Board: Thermal insulation board used with the Sprint MD System must be a rigid polyisocyanurate foam core insulation board, complying with ASTM C 1289 as Type II, with coated glass-fiber facings. Thermal insulation board approved for use with the Outsulation® SMD System™ must be Thermax Quik-R Wall Insulation, manufactured by Dow Chemical Company as referenced in a current ICC-ES evaluation report, or Atlas Stucco Shield, manufactured by Atlas Roofing Corporation as referenced in a current ICC-ES evaluation report. The board has a nominal density of 2 lb/ft³ (32 kg/m³), and is available in $\frac{5}{8}$ -, $\frac{3}{4}$ -, 1- and $1\frac{1}{2}$ -inch (15.9, 19.1, 25.4 and 38 mm) thicknesses. The board is available in a 48-inch (1219 mm) width and in lengths of 96, 108, 120 or 144 inches (2438, 2743, 3658 or 3658 mm).

3.3.1.8 Fasteners: The water-resistive barrier or Tyvek StuccoWrap must be attached to the wood-based sheathing with corrosion-resistant metal staples having minimum 0.375-inch-long (9.5 mm) legs and 0.475-inch-wide (12.1 mm) crowns.

The Dryvit Drainage Track must be attached to the sheathing with minimum 1.25-inch-long (31.8 mm), No. 8, bugle-head screws having 20 threads per inch (20 threads per 25.4 mm).

Fasteners used to attach the insulation board to wood-based sheathing substrates must be minimum No. 8, corrosion-resistant, Type W, bugle-head screws having nine threads per inch (nine threads per 25.4 mm).

Each fastener used to attach the polyisocyanurate insulation board must have a minimum $1\frac{3}{4}$ -inch-diameter (44.4 mm) polypropylene plate washer to hold the insulation board in

place. The washer plates must be ULP 302 or ULP 402 by Wind-Lock Corporation.

The insulation board must be attached to unglazed bricks, concrete or masonry with fasteners approved by Dryvit and the code official. Typically, minimum No. 10, corrosion-resistant concrete anchors, such as the Tapcon anchors manufactured by ITW Buildex, are used. See evaluation report [ESR-1671](#) for currently recognized fasteners. Also, see Section 4.2.2.2.4 for required fastener testing.

3.3.1.9 Base Coat: The base coat used with the Outsulation® SMD System is available in a dry or wet mix. The wet mix is Genesis, a fiber-reinforced, acrylic-modified product, packaged in 60-pound (27.2 kg) pails and mixed with Type I or Type II Portland cement complying with ASTM C 150 in a 1:1 ratio by weight. The dry mix is Genesis DM, a high-performance, fiber-reinforced dry blend, packaged in 50-pound (22.66 kg) bags and mixed with clean potable water.

The wet product has a shelf life of two years and the dry product has a shelf life of one year when protected from extreme heat and freezing for extended periods. Storage temperatures must be within the range of 40°F to 120°F (4.4°C to 48.9°C).

3.3.1.10 Dryvit Reinforcing Mesh: See Section 3.2.1.8 and Table 2.

3.3.1.11 Synthetic Finish Coat: See Section 3.2.1.11.

3.3.1.12 Sealants: See Section 3.2.1.12.

4.0 INSTALLATION

4.1 General:

The Dryvit Outsulation® RMD System™ and Outsulation® SMD System™ must be installed by contractors recognized by Dryvit Systems, Inc. All exposed edges of the insulation board must be wrapped with the reinforcing fabric and embedded in the base coat. The substrates must be structurally sound, clean, dry and smooth, with all dust and deleterious materials removed. There must be no planar irregularities exceeding $\frac{1}{4}$ inch (6 mm) in a 4-foot (1.2 m) radius.

The manufacturer's published installation instructions and this report must be strictly adhered to, and a copy of these instructions must be available at all times on the jobsite during installation. The instructions within this report govern if there are any conflicts between the manufacturer's instructions and this report.

4.2 Application:

4.2.1 Application to Wood or Steel Framing:

4.2.1.1 Studs and Sheathing: Wood framing must comply with the applicable code and must be minimum nominally 2-by-4 wood studs, having a minimum specific gravity of 0.50, spaced a maximum of 16 inches (406 mm) on center. Steel framing must be limited to minimum No. 18 gage [0.0475 inch (1.119 mm) base-metal thickness] galvanized steel studs recognized in a current ICC-ES evaluation report. Maximum steel stud spacing is 16 inches (406 mm) on center. The framing members must be designed to resist all positive and negative transverse loads, with a maximum allowable deflection of $\frac{1}{240}$ of the span. Nominal $\frac{1}{2}$ -inch-thick (12.7 mm), structural wood-based sheathing panels must be fastened to wood or steel framing members with fasteners approved to resist minimum loading conditions prescribed by the applicable code.

4.2.1.2 Drainage Strip or Drainage Track: The Drainage Strip must be attached to the water-resistive barrier coating by applying dabs of Dryvit's AP Adhesive at approximately 300

mm (12 inch) on center. When sheet-type water-resistive barriers are specified, the Drainage Strip must be stapled through the barrier and when the Drainage Track is specified it must be attached directly to the sheathing with minimum No. 8 bugle-head screws spaced a maximum of 10 inches (254 mm) on center and the sheet water-resistive barrier is lapped over the flange of the Drainage Track.

4.2.1.3 Water-resistive Barrier:

4.2.1.3.1 Sheet Materials: The water-resistive barrier must be attached to the wood-based sheathing with staples spaced at a maximum of 12 inches (305 mm) on center along the 4-foot (1219 mm) width of the sheathing and approximately 0.5 inch (12.7 mm) from the top edge of the water-resistive barrier. Horizontal joints of the water-resistive barrier must be overlapped, shingle-fashion, a minimum of 2 inches (51 mm). Vertical joints of the water-resistive barrier must be overlapped a minimum of 6 inches (152 mm). The vertical joints in successive courses of the water-resistive barrier must be offset a minimum of 6 inches (152 mm). When Drainage Track is used, the water-resistive barrier must extend over the flange of the drainage track a minimum of 2 inches (51 mm).

4.2.1.3.2 Water-resistive Barrier Coatings: Before application of Backstop NT-Smooth or NT-Texture water-resistive barriers, 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 the time of application of Dryvit materials.

The following components are necessary to complete the water-resistive barrier coating:

- a. Dryvit Grid Tape
- b. Dryvit Backstop NT-Smooth and/or NT-Texture
- c. Dryvit Flashing Tape and Dryvit Flashing Tape Surface Conditioner or Dryvit AquaFlash, and AquaFlash Mesh

The Dryvit Grid Tape must be applied along all joints in sheathing, inside corners, and edges of terminations that will not be covered with Dryvit Flashing Tape or Dryvit AquaFlash. The grid tape must be centered at joints and pressed into position with hand pressure. The Backstop NT-Texture material must be applied over the installed grid tape and all fastener heads. The material must cure until dry to the touch.

Backstop NT-Smooth or NT-Texture must be applied over the surface of the substrate to form a continuous film. Backstop NT-Smooth and NT-Texture are ready to use; however, the material must be mixed to a smooth homogeneous consistency in accordance with the manufacturer's application instructions (Dryvit publication DS 181).

Dryvit Flashing Tape or AquaFlash must be installed onto framing edges at discontinuities and terminations, such as openings, expansion joints, and top of parapets. The surface to receive the Flashing Tape or AquaFlash must be clean, dry, smooth, and free of conditions that hinder adhesion.

- a. Dryvit Flashing Tape: When Flashing Tape is used, if adhesion cannot be achieved, the surface must be primed with Dryvit Flashing Tape Surface conditioner. The wall surface must be prepared and the conditioner applied in accordance with the manufacturer's application

instructions, Dryvit publication DS143. After the conditioner is dry and slightly tacky, the Dryvit Flashing Tape must be applied. The release paper on the backside of the tape must be removed to expose the rubberized asphalt adhesive. The tape must be aligned into position such that it covers the Backstop NT 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.

- b. Dryvit AquaFlash: Using a brush or $\frac{3}{4}$ -inch-wide (19.1 mm) nap roller, a liberal coat of AquaFlash material is applied to the substrate surface, and the AquaFlash Mesh is immediately embedded into the wet material. Additional AquaFlash material is added and smoothed out to remove any wrinkles and embed the material fully into the mesh. A minimum of 15 minutes is allowed for setting, then a second liberal coat of AquaFlash material is added and smoothed out to ensure a uniform continuous film free of voids, pinholes or other discontinuities.

4.2.1.4 Drainage Medium:

4.2.1.4.1 Dryvit Outsulation® RMD System™:

- a. Drainage Mat option: The Dryvit Drainage Mat must be installed over the water-resistive barrier with the corrugated "V" pattern, which runs parallel to the length of the roll, oriented vertically. The mat must be attached to the substrate with a sufficient number of staples or nails to hold the mat in place during the system installation.
- b. Notched trowel adhesive application option: The adhesive is applied to the backside of the insulation in a vertical orientation to create drainage paths.
- c. Grooved insulation board option: Insulation is cut with grooves spaced at 4 inches (100 mm) on center.
- d. Tyvek StuccoWrap Option: Tyvek StuccoWrap must be installed as described in Section 4.2.1.3.1.

4.2.1.4.2 Dryvit Outsulation® SMD System™:

- a. Polyethylene drainage spacer option: The polyethylene drainage spacers are used between the insulation board and the water-resistive barrier. The spacer must be attached to the substrate with a sufficient number of staples or nails to hold the spacer in place during the Outsulation® SMD System™ installation. The drainage spacers must be installed in continuous vertical strips at 16 inches (406 mm) on center. Additionally, the drainage spacers must be placed flush with vertical edges of all system terminations and changes in wall direction.
- b. Dryvit Drainage Mat option: See Section 4.2.1.4.1.
- c. Tyvek StuccoWrap Option: See Section 4.2.1.4.1.

4.2.1.5 Insulation Board:

4.2.1.5.1 General: At wall corners, the edges of the insulation boards must be interlocked. All board joints must be tightly butted. Any gaps $\frac{1}{16}$ inch (1.6 mm) wide or wider must be filled with insulation pieces.

4.2.1.5.2 Dryvit Outsulation® RMD System™: The insulation boards used with the Outsulation® RMD System™ must be applied in a running bond pattern, with the long edge horizontal. Vertical insulation board joints must be

staggered a minimum of 12 inches (305 mm), and all insulation board joints must be offset a minimum of 8 inches (203 mm) from sheathing board joints. For those applications using grooved insulation boards, the grooved side of the insulation board is placed facing the water-resistive barrier, and aligned with the grooves in the insulation boards above and below. The grooves act as channels, permitting the drainage of incidental moisture behind the installed EIFS System.

4.2.1.5.3 Dryvit Outsulation® SMD System™: The polyisocyanurate foam insulation boards used with the Outsulation® SMD System™ must be applied over the water-resistive barrier, with the long edge vertical. For those applications using the drainage spacers, the spacers must be installed so that the vertical edge of the insulation board is centered over the spacer. Vertical insulation board joints must be staggered a minimum of 16 inches (406 mm), and all insulation board joints must be offset a minimum of 8 inches (203 mm) from sheathing board joints.

4.2.1.5.4 Attachment of Insulation Boards to Substrate:

- a. Sheet-type water-resistive barriers: When sheet-type water-resistive barriers are used, the EPS and polyisocyanurate insulation boards must be attached to wood structural panels, supported by steel or wood studs, with corrosion-resistant fasteners described in Sections 3.2.1.11 and 3.3.1.8, having sufficient length to penetrate through the sheathing a minimum of $\frac{1}{4}$ inch (6.4 mm). The fastening schedules required to attach the boards for the Outsulation® RMD System™ and the Outsulation® SMD System™ are shown in Figures 3 and 6, respectively.
- b. Water-resistive barrier coatings: Insulation boards must be installed as noted above, except when water-resistive barrier coatings are used the flat stock EPS boards may be adhered to the coating using the Dryvit Genesis or Genesis DM adhesive described in Section 3.2.1.7. A notched trowel with $\frac{3}{8}$ -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 must be used to apply the adhesive material in straight ribbons to the backside of each thermal insulation board. The insulation board must be installed such that the adhesive material ribbons run vertical when the insulation board is placed on the wall. The adhesive must cure a minimum of 24 hours before installation of the reinforcing mesh.

4.2.1.6 Application of Base Coat and Mesh: Dryvit base coat must be applied over dry surfaces and out of direct sunlight. Temperature during application and curing must be between 40°F and 110°F (4.4°C to 48.9°C). Supplementary heat and moisture may be provided as needed. The surface of the insulation boards must be sound, clean, dry, and free from any residue that may affect bond. Any surface contaminants such as dirt or dust must be removed without damaging the substrate surface. The face of the Insulation boards must be lightly rasped before application of the base coat.

The Genesis or Genesis DM base coat used with the Outsulation® RMD System™ and the Outsulation® SMD System™, must be mixed as described in Section 3.2.1.8. The mixtures must be re-blended to a uniform consistency by the addition of small amounts of water, as necessary, for workability.

The base coat must be applied to the insulation board surface at a uniform thickness of approximately $\frac{1}{16}$ to $\frac{3}{32}$ inch (1.6 to 2.4 mm), using a stainless steel trowel. The reinforcing mesh must be embedded in the wet base coat and smoothed with the trowel until fully embedded. Additional base-coat

material may be necessary to ensure that the reinforcing fabric pattern is not visible. Application of the fabric must be continuous across corners, and the fabric must be lapped a minimum of $2\frac{1}{2}$ inches (63.5 mm) at seams, except that Panzer mesh used in the Outsulation® RMD System™ must be butted tightly, but must not be lapped. Corners, terminations, and penetrations must be reinforced with Dryvit Detail Mesh. See Figure 4 for typical penetration details, and Figure 5 for typical window details. The base coat must be cured at least 24 hours before the finish coat is applied.

4.2.1.7 Application of Finish Coat: One of the Dryvit finishes must be applied after the base coat has dried, with the desired finish pattern no thicker than the largest aggregate size in the material. The finish coat must be allowed to cure at least three days before sealants are applied. Dryvit Finish material must not be installed in sealant joints.

4.2.1.8 Application of Sealants: Only joint sealant material, as described in Sections 3.2.1.13 and 3.3.1.12, are permitted to be used in joints. Sealants must be applied at system terminations, exposed joints, floor lines of wood frame construction, changes in building shape or roof line, substrate changes, and expansion joints.

Horizontal control joints are required at each floor line in wood-framed construction. Control joints must be installed as specified by the architect, designer, builder or exterior coating manufacturer, in that order.

4.2.2 Application to Unglazed Brick, Concrete or Masonry:

4.2.2.1 General: Application to brick, concrete or masonry substrates must not require installation of drainage strip or drainage track, water-resistive barrier, or drainage medium.

4.2.2.2 Insulation Boards:

4.2.2.2.1 General: At wall corners, the edges of the insulation boards must be interlocked. All board joints must be tightly butted. Any gaps $\frac{1}{16}$ inch (1.6 mm) wide or larger must be filled with insulation pieces.

4.2.2.2.2 Dryvit Outsulation® RMD System™: See Section 4.2.1.5.2.

4.2.2.2.3 Dryvit Outsulation® SMD System™: See Section 4.2.1.5.3.

4.2.2.2.4 Attachment of Boards: Insulation boards supported by brick, concrete or masonry substrates require pilot holes drilled at 12 inches (305 mm) on center around the board perimeter and vertically, and at 16 inches (406 mm) on center horizontally. The boards must be fastened to the substrate with minimum No. 10, corrosion-resistant concrete or masonry anchors having sufficient length to penetrate the substrate a minimum of 1 inch (25.4 mm). It is necessary to predrill a pilot hole $\frac{1}{2}$ inch (12.7 mm) deeper than the anchor length. The masonry anchors must be provided with plastic washers as described in Sections 3.2.1.11 and 3.3.1.8.

Adequacy of fasteners in the brick, concrete, or masonry substrates must be determined by a proof-load test program, at the jobsite, involving fastener withdrawal from the substrate. Testing must be conducted by an accredited testing laboratory approved by the code official. The average withdrawal strength, in pounds per square foot (kN/m²), must be six times the design wind pressure for the location in question. In no case is the system permitted in locations requiring a design wind pressure greater than 26 psf (1.25 kN/m²).

A minimum of five tests per program are required, with results for each test anchor permitted to vary by no more than 15 percent from the average. If a minimum of ten tests per program is provided, variation from the average may be

disregarded. For masonry or unglazed brick substrates, 40 percent of the tests must be run in masonry joints.

The applicator must provide to the code official a certificate verifying compliance of test results with load requirements in this report.

4.2.2.3 Application of Base Coat and Mesh: See Section 4.2.1.6.

4.2.2.4 Application of Finish Coat: See Section 4.2.1.7.

4.2.2.5 Application of Sealants: See Section 4.2.1.8.

4.3 Wind-resistant Assemblies:

4.3.1 Wood Framing:

4.3.1.1 Mechanically Fastened: When the systems are applied to wood structural panels supported by wood framing members as described in Section 4.2.1.1, and the fastener schedule used to attach the foam insulation complies with Figure 3 or 6, the maximum allowable positive wind pressure must be limited to the capacity of the wood studs, sheathing and fasteners, and the maximum negative pressure must be 26 psf (1.25 kN/m²). Maximum allowable deflection of structural wall components must be limited to $1/240$ of the span.

4.3.1.2 Adhesively Attached EPS (Outsulation® RMD System™ Only): When the system is adhesively applied, the maximum allowable positive wind pressure must be limited to the capacity of the wood studs, sheathing and fasteners, and the maximum negative pressure must be 40 psf (1.92 kN/m²).

4.3.2 Steel Framing:

4.3.2.1 Mechanically Fastened: When the systems are applied to wood structural panels supported by steel-framing members as described in Section 4.2.1.1, and the fastener schedule used to attach the foam insulation complies with Figure 3 or 6, the maximum allowable positive wind pressure must be 51 psf (2.45 kN/m²), and the maximum negative pressure must be 26 psf (1.25 kN/m²). Maximum allowable deflection of structural wall components must be limited to $1/240$ of the span.

4.3.2.2 Adhesively Attached EPS (Outsulation® RMD System™ Only): When the system is adhesively applied, the maximum allowable positive wind pressure must be limited to the capacity of the steel studs, sheathing and fasteners, and the maximum negative pressure must be 40 psf (1.92 kN/m²).

4.3.3 Brick, Concrete or Concrete Masonry: Allowable wind pressure for the system applied to brick, concrete, or masonry walls as described in Sections 3.2.1.2 and 3.3.1.2 must be 26 psf (1.25 kN/m²), positive or negative.

4.4 Special Inspection:

In jurisdictions adopting the IBC and IRC, special inspections are required at the jobsite in accordance with IBC Sections 1704.1 and 1704.12, which also apply to the IRC, for the water-resistive barrier applied over framed walls and where the drainage medium is notched trowel adhesive application. Duties of the special inspector must include verifying field preparation of materials, expiration dates, installation of components, curing of components, installation of joints and sealant, applied dry-film thickness and interface of coating material with flashing.

5.0 CONDITIONS OF USE

The Dryvit Outsulation® RMD System™ and Outsulation® SMD System™ as described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 This evaluation report and the installation instructions, when required by the code official, must be submitted at the time of permit application.
- 5.2 Dryvit Outsulation® RMD System™ and Outsulation® SMD System™ must be installed only by contractors recognized by Dryvit Systems, Inc., as being trained to perform installation of the systems.
- 5.3 The insulation board used in the finish systems must be separated from the building interior with a thermal barrier complying with Section 2603.4 of the IBC or Section R314.1.2 of the IRC.
- 5.4 The transverse wind load pressures must not exceed the capacities shown in Section 4.3 of this report.
- 5.5 The finish systems must not be used as exterior stud wall bracing. Wall bracing must be provided in accordance with Section 2308.9.3 of the IBC and Section R602.10 of the IRC.
- 5.6 Dryvit Outsulation® RMD System™ and Outsulation® SMD System™ must be limited to installation on buildings of Type V Construction under the IBC (Type V under the UBC; Type 5 under the BNBC; and Type VI under the SBC) and dwellings under the IRC.
- 5.7 The systems may be attached to the exterior surface of combustible exterior fire-resistance-rated wall assemblies described in Table 720.1(2) of the IBC in accordance with the applicable code, without changing the assembly's assigned rating.
- 5.8 Termination of the systems must not be less than 6 inches (152 mm) above finished grade in accordance with Section R320.4 of the IRC.
- 5.9 Installation cards, such as those shown in Figures 8, 9 and 10, must be completed by the EIFS applicator (Figure 9), the sealant installer (Figure 8) and the water-resistive coating contractor (Figure 10), and must be presented to the code official at the completion of each project.
- 5.10 When the systems are installed on framed walls, the drainage mediums described in this report must be used.

6.0 EVIDENCE SUBMITTED

- 6.1 Data in accordance with ICC-ES Acceptance Criteria for EIFS Clad Drainage Assemblies (AC235), dated October 2004, (Editorially revised December 2007 and April 2008).
- 6.2 Data in accordance with ICC-ES Acceptance Criteria for Water-resistive Coatings Used as Water-resistive Barriers over Exterior Sheathing (AC212), dated February 2005.
- 6.3 Data in accordance with ICC-ES Acceptance Criteria for Flexible Flashing Materials (AC148), dated June 2006 (editorially revised December 2007).

7.0 IDENTIFICATION

Each container or package of material used as a part of the Dryvit Outsulation® RMD System™ and Outsulation® SMD System™ covered by this report must be labeled with the manufacturer's name (Dryvit Systems, Inc.), address and telephone number; the product trade name; and the evaluation report number (ESR-1547).

EPS insulation boards are delivered in sealed polyethylene bags bearing the name "Dryvit," the plant identification number of the block molder, and the name of the inspection agency [RADCO (AA-650)]. The label must bear the evaluation report

number (ESR-1547). In addition, one board in each bag must bear the same information on each face. As alternates to the Dryvit EPS boards, EPS insulation may bear the required markings for Type I-WSG board, specified in [ESR-1006](#), or the required markings for EWG board, specified in [ESR-1962](#).

Thermax Quik-R Insulation boards are identified with the product name, the Dow Chemical Company name, and the name of the inspection agency [Underwriters Laboratories Inc. (AA-668)].

Stucco Shield Insulation boards are identified with the product name; the Atlas Roofing Corp. name; and the name of the inspection agency, FM Approvals, LLC.

8.0 OTHER CODES

In addition to the codes referenced in Section 1.0, the products described in this report were evaluated for compliance with the requirements of the following legacy codes and earlier editions of the International codes:

- 2003 *International Building Code*® (2003 IBC)
- 2003 *International Residential Code*® (2003 IRC)
- 2000 *International Building Code*® (2000 IBC)
- 2000 *International Residential Code*® (2000 IRC)
- 1997 *Uniform Building Code*™ (UBC)
- BOCA® *National Building Code*/1999 (BNBC)
- 1999 *Standard Building Code*® (SBC)

The Outsulation® RMD System™ and Outsulation® SMD System™ described in this report complies with, or are suitable alternatives to what is specified in, the codes listed above, subject to the provisions of Sections 8.1 through 8.6.

8.1 Uses:

Dryvit Outsulation® RMD System™ and Outsulation® SMD System™ are used as exterior insulation and exterior wall finishes on buildings of Type V construction under the IBC; Type V under the UBC; Type 5 under the BNBC; Type VI under the SBC and dwellings under the IRC, and to provide water drainage from behind the insulation board.

8.2 Description:

See Section 3.0, except for the following modifications.

Section 3.2.1.9.1: The Dryvit EPS thermal insulation board references to code sections are: Section 2603 of the IBC, Section R318 of the IRC, Section 2602 of the UBC, Section 2603.0 of the BNBC and Section 2603 of the SBC.

8.3 Installation:

See Section 4.0, except for the following modifications:

Section 4.4 Special Inspection: In jurisdictions adopting the IBC, IRC and BNBC, special inspections are required at the jobsite in accordance with IBC Sections 1704.1 and 1704.12, which also apply to the IRC, or Sections 1705.1 and 1705.13 of the BNBC, for the water-resistive barrier applied over framed walls and where the drainage medium is notched trowel adhesive application. Duties of the special inspector must include verifying field preparation of materials, expiration dates, installation of components, curing of components, installation of joints and sealant, applied dry-film thickness and interface of coating material with flashing.

8.4 Conditions of Use:

See Section 5.0, except for the following modifications:

Section 5.3: The finish systems must not be used as exterior stud wall bracing. Wall bracing must be provided in accordance with Section 2308.9.3 of the IBC, Section R602.10 of the IRC, Section 2305.8.1 of the BNBC, Section 2320.11.3 of the UBC, Section 2308.2.2 of the SBC.

Section 5.5: The finish systems must not be used as exterior stud wall bracing. Wall bracing must be provided in accordance with Section 2308.9.3 of the IBC, Section R602.10 of the IRC, Section 2305.8.1 of the BNBC, Section 2320.11.3 of the UBC, Section 2308.2.2 of the SBC.

Section 5.6: Dryvit Outsulation® RMD System™ and Outsulation® SMD System™ must be limited to installation on buildings of Type V Construction under the IBC, Type V under the UBC, Type 5 under the BNBC, Type VI under the SBC and dwellings under the IRC.

Section 5.7: The systems may be attached to the exterior surface of combustible exterior fire-resistance-rated wall assemblies described in Table 720.1(2) of the IBC and Table 7-B of the UBC in accordance with the applicable code, without changing the assembly's assigned rating.

Section 5.8: Termination of the systems must not be less than 6 inches (152 mm) above finished grade in accordance with Section 2304.1.4 of the SBC and Section R320.4 of the IRC.

8.5 Evidence Submitted:

See Section 6.0

8.6 Identification:

See Section 7.0.

TABLE 1—DIMENSIONS AND WEIGHTS OF REINFORCEMENT MESHES FOR DRYVIT OUTSULATION® RMD SYSTEM™

MESH MODEL NAME	DIMENSIONS (width × length)	WEIGHT (oz./yd ²)
Standard	48 inches × 50 yards 72 inches × 50 yards	4.3
Standard Plus	48 inches × 50 yards	6.0
Intermediate	48 inches × 25 yards	12.0
Panzer 15	48 inches × 25 yards	15.0
Panzer 20	48 inches × 25 yards	20.0
Corner	9 ¹ / ₄ inches × 50 yards	7.2
Detail	9 ¹ / ₂ inches × 50 yards	4.3

For SI: 1 inch = 25.4 mm, 1 yard = 914.4 mm, 1 oz./yd.² = 33.9 g/m².

TABLE 2—DIMENSIONS AND WEIGHTS OF DRYVIT REINFORCEMENT MESHES FOR DRYVIT OUTSULATION® SMD SYSTEM™

MESH MODEL NAME	DIMENSIONS (width × length)	WEIGHT (oz./yd ²)
Standard	48 inches × 50 yards 72 inches × 50 yards	4.3
Standard Plus	48 inches × 50 yards	6.0
Intermediate	48 inches × 25 yards	12.0
Corner	9 ¹ / ₄ inches × 50 yards	7.2
Detail Short Rolls	9 ¹ / ₂ inches × 50 yards	4.3

For SI: 1 inch = 25.4 mm, 1 yard = 914.4 mm, 1 oz./yd.² = 33.9 g/m².

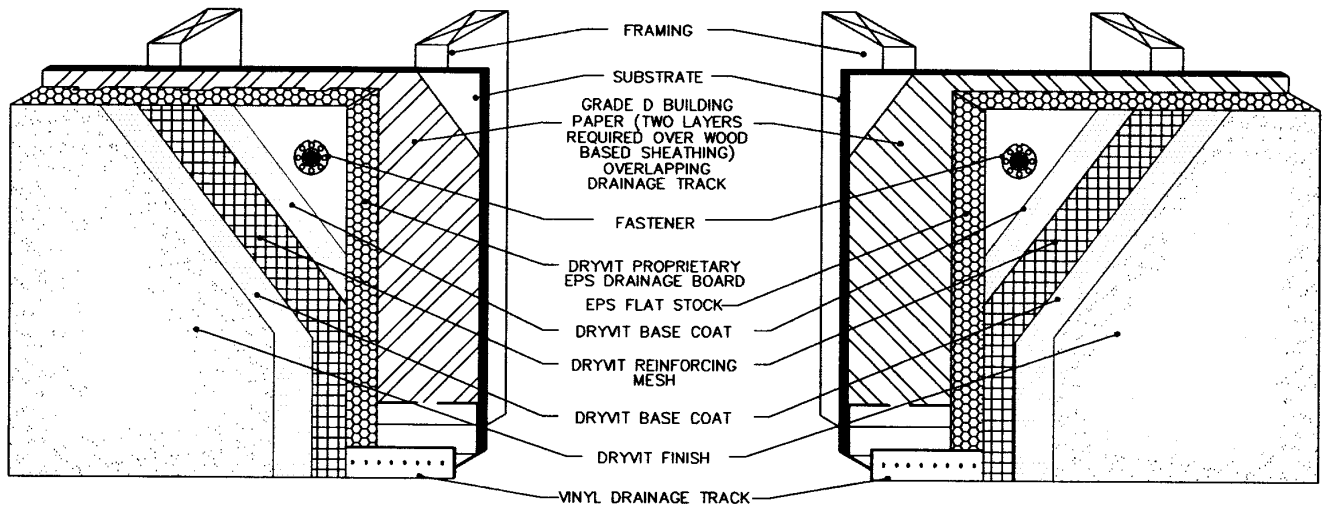


FIGURE 1—CUTAWAY VIEW OF THE DRYVIT OUTSULATION® RMD SYSTEM

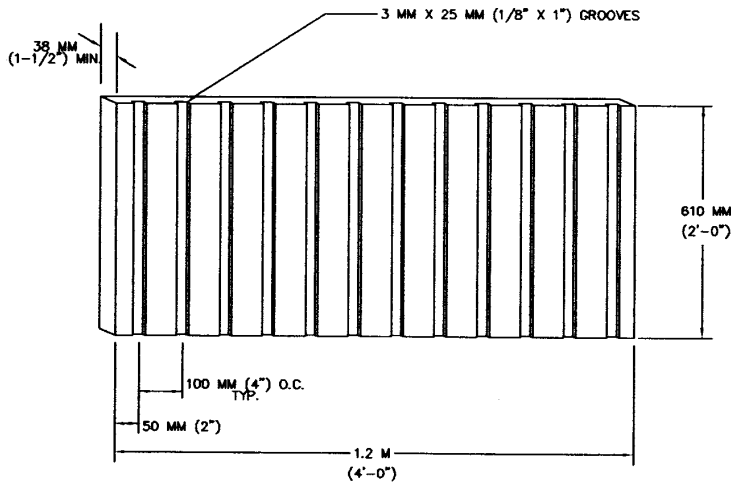


FIGURE 2—EPS DRAINAGE BOARD (OPTIONAL)

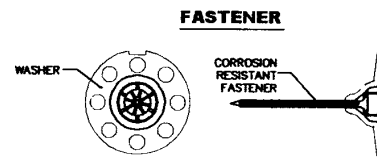
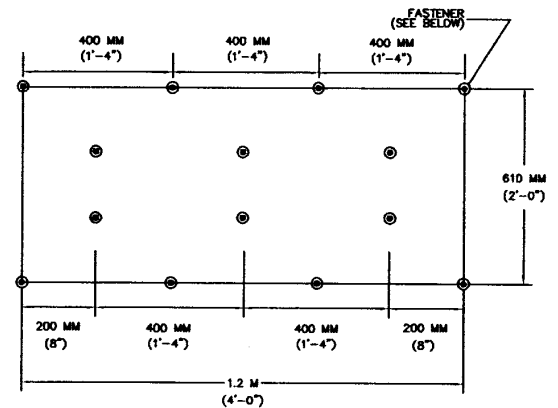


FIGURE 3—FASTENER SCHEDULE

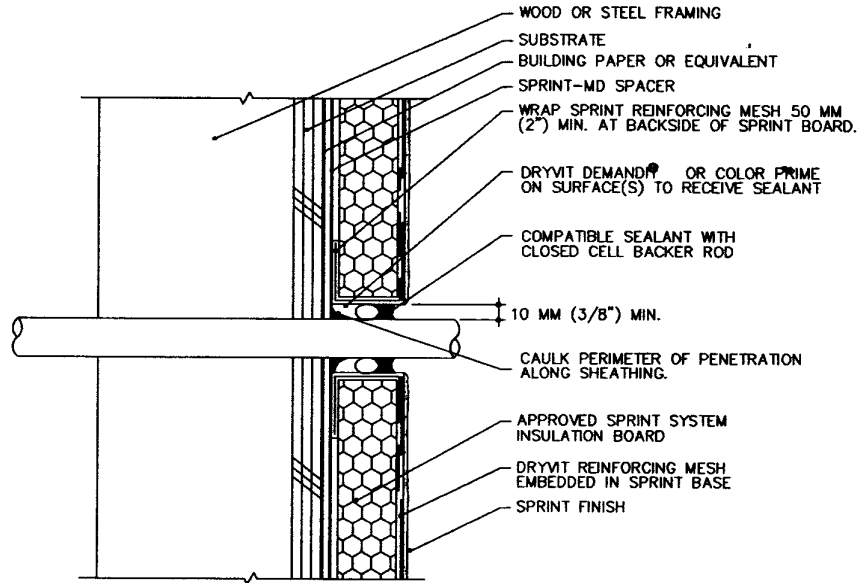


FIGURE 4—TYPICAL PENETRATION THROUGH EIFS SYSTEM
 DRYVIT OUTSULATION® SMD SYSTEM SHOWN)

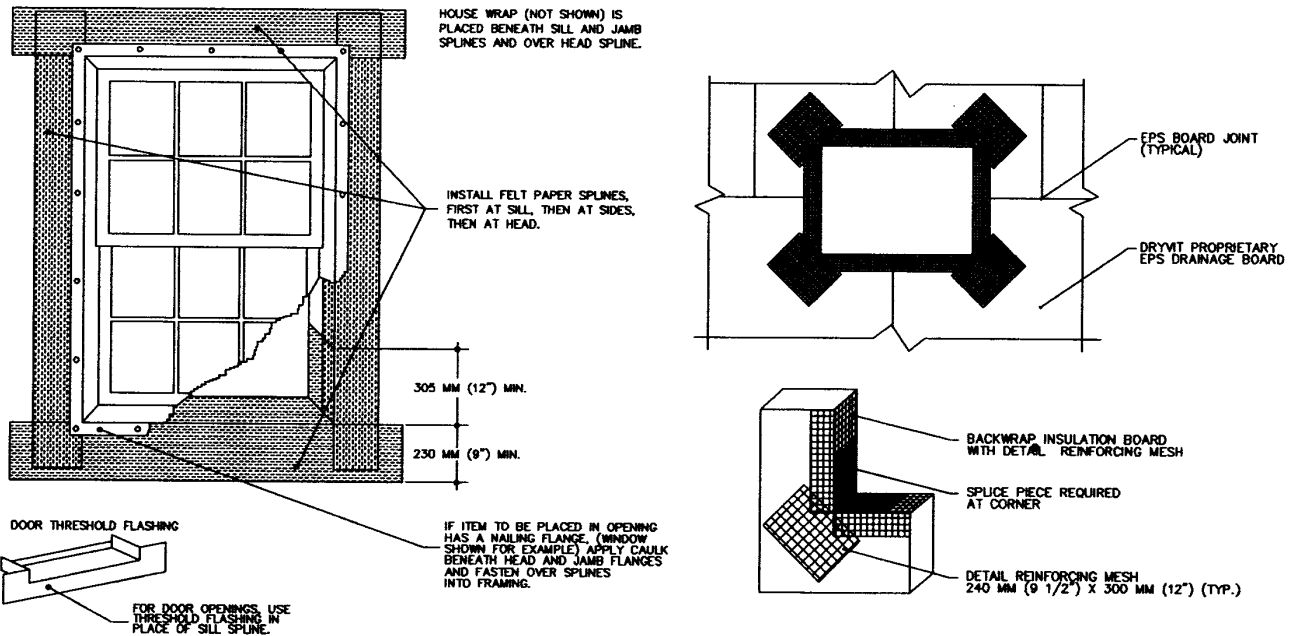


FIGURE 5—TYPICAL WINDOW REINFORCEMENT AND FLASHING DETAILS
 FOR THE DRYVIT OUTSULATION® RMD SYSTEM AND DRYVIT OUTSULATION® SMD SYSTEM

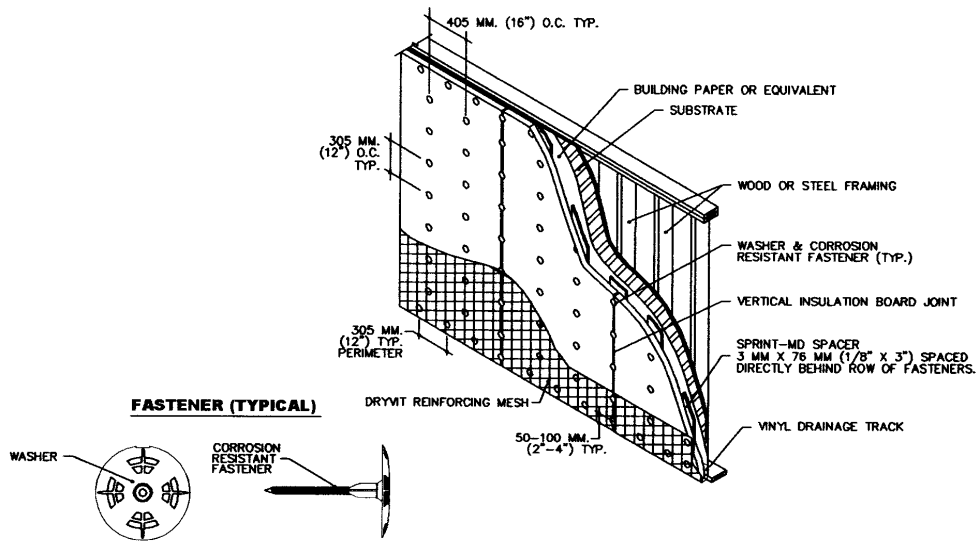


FIGURE 6—FASTENER SPACING REQUIREMENTS FOR OUTSULATION® SMD SYSTEM

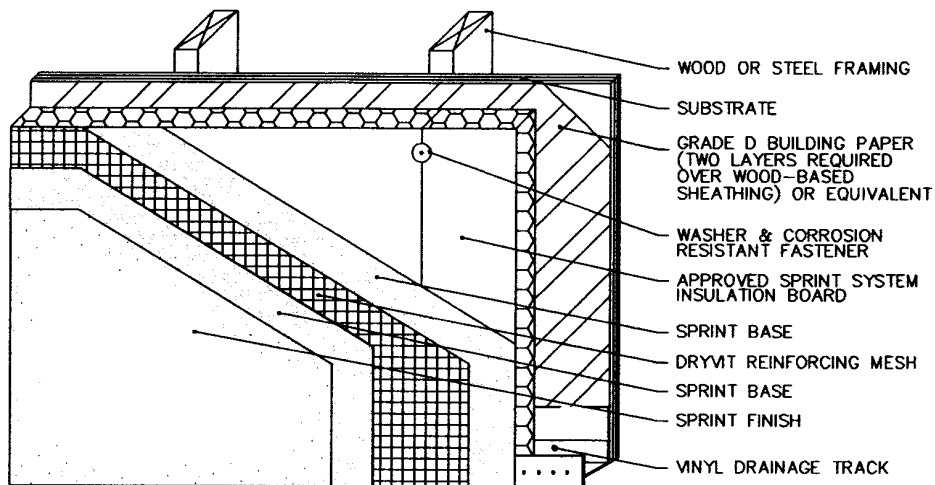
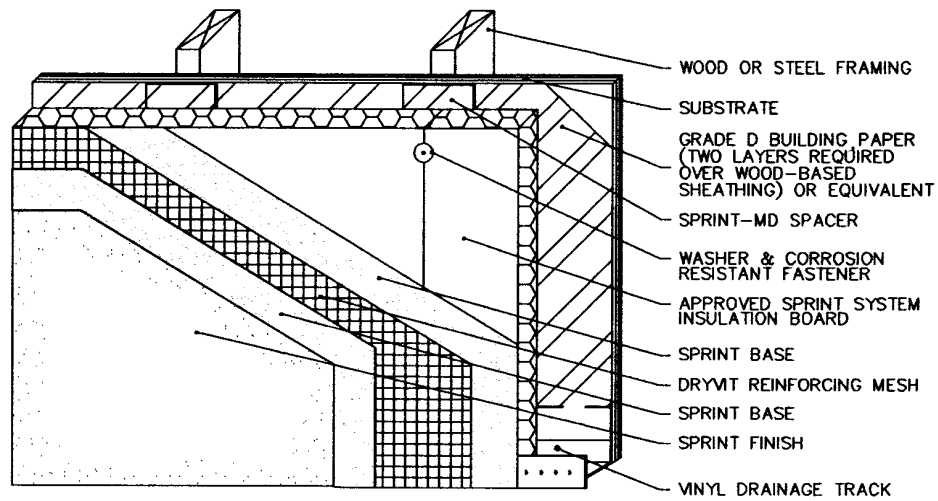


FIGURE 7—CUTAWAY VIEW OF OUTSULATION® SMD SYSTEM

EXHIBIT A

[SEALANT INSTALLER NAME]

Completion Date: _____

THE SEALANT INSTALLED IN CONJUNCTION WITH AN EXTERIOR INSULATION AND FINISH SYSTEM (EIFS clad drainage wall assembly) 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 ICC-ES, INC., EVALUATION REPORT ESR-_____.

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: (____) _____

cc:	Original:	Building Department	(shall be submitted with EIFS
	Copies:	EIFS Manufacturer	contractor declaration.)
		EIFS Contractor	
		Sealant Manufacturer	

FIGURE 8—SEALANT INSTALLER CARD

EXHIBIT B

[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 ICC-ES, INC., EVALUATION REPORT ESR-_____.

Address of Structure:

Product Component Names:

Adhesive(s) _____
Fasteners (mech) _____
Base Coat _____
Reinforcing Mesh _____
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 Mesh _____
 - 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 shall accompany this declaration.

EIFS

Contractor Company Name and Address:

Signature of Responsible Officer: _____

Typed Name and Title of Officer: _____

Telephone Number: (____) _____

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

FIGURE 9—EIFS CONTRACTOR CARD

EXHIBIT C

(WATER-RESISTIVE COATING CONTRACTOR NAME)

Completion Date: _____

THE WATER-RESISTIVE COATING INSTALLED ON THE STRUCTURE LOCATED AT THE ADDRESS INDICATED BELOW:

_____ CONFORMS

TO (WATER-RESISTIVE COATING MANUFACTURER NAME) RECOMMENDED INSTALLATION PRACTICES AND SECTION (S) _____ OF ICC-ES EVALUATION REPORT ESR-_____.

Address of Structure:

Product Component Names:

Reinforcing Fabric _____
Coating _____

INSTALLATION

CONFORMS

A. Substrate Type and Tolerance _____

B. Water-resistive Coating _____

C. The information entered above is offered in testimony that the water-resistive coating application conforms with the manufacturer's installation methods and procedures, and the water-resistive coating manufacturer's evaluation report.

NOTE: An installation card shall be received from the water-resistive coating installer indicating that the water-resistive coating application conforms with the water-resistive coating evaluation report and water-resistive coating manufacturer's installation methods and procedures must accompany this declaration.

Water-resistive Coating Contractor Company Name and Address:

Signature of responsible Officer: _____

Typed Name and Title of Officer: _____

Telephone Number: (_____) _____

cc: Original: Building Department
Copy: Water-resistive Coating Manufacturer

FIGURE 10—WATER-RESISTIVE COATING CONTRACTOR CARD