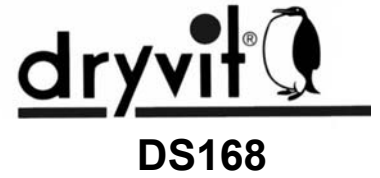


OUTSULATION MD SYSTEM[®]



A Commercial Exterior Wall Insulation
and Finish System With Moisture Drainage

Outsulation MD System Specifications

**DRYVIT SYSTEMS, INC.
MANUFACTURER'S SPECIFICATION
SECTION 07240
OUTSULATION MD SYSTEM®
EXTERIOR INSULATION AND FINISH SYSTEM CLASS PB**

PART I GENERAL

1.01 SUMMARY

A. This document is to be used in preparing specifications for projects utilizing the Dryvit Outsulation MD System. For complete product description and usage refer to:

1. Dryvit Outsulation MD System Application Instructions, DS169.
2. Dryvit Outsulation MD System Installation Details, DS167.
3. Backstop™ Product Data Sheet, DS435.

1.02 SYSTEM DESCRIPTION

A. The Dryvit Outsulation MD System is an Exterior Insulation and Finish System (EIFS), Class PB, utilizing a cavity wall concept with capability for moisture drainage. The System consists of a secondary weather resistive barrier (Dryvit Backstop), adhesive (Dryvit Primus®, Genesis® or Genesis DM™), grooved expanded polystyrene insulation board (OMD Insulation Board), internal vinyl tracks (Dryvit Track and Vent Track), Dryvit Vent, Dryvit Starter Strip, base coat (Dryvit Primus, Genesis or Genesis DM), Dryvit reinforcing mesh, and Dryvit finish.

1. Design Requirements:
 - a. Acceptable Substrates shall include:
 - 1) Exterior Grade Gypsum Sheathing meeting ASTM C 79 requirements for water resistant core or Type X core at the time of application of the Outsulation MD System.
 - 2) Silicone treated gypsum core sheathing surfaced

- with inorganic fiberglass mats meeting ASTM C 1177.
- 3) Exterior fiber reinforced cement or calcium silicate boards.
- 4) Unglazed brick, cement plaster, concrete or concrete masonry.
- b. Deflection of the substrate systems shall not exceed 1/240 times the span.
- c. The substrate shall be flat within 6.4 mm (1/4 in) in a 1.2 m (4 ft) radius.
- d. The slope of inclined surfaces shall not be less than 6:12, and the length shall not exceed 305 mm (12 in).
- e. All zones requiring an impact resistance classification higher than Level 1, as defined by EIMA Standard 101.86, shall be detailed in the drawings and described in the contract documents. Refer to Section 1.02.A.2.b.3 of this specification.
- f. Expansion Joints:
 - 1) Design and location is the responsibility of the designer. As a minimum, expansion joints are required at the following locations:
 - a) Where expansion joints occur in the substrate system
 - b) Where building expansion joints occur.
 - c) At floor lines in wood frame construction
 - d) At floor lines of other buildings where significant movement is expected
 - e) Where the Outsulation MD System abuts dissimilar materials
 - f) Where the substrate changes

- g) Where prefabricated panels abut one another.
- h) In continuous elevations at intervals not exceeding 23 m (75 ft) measured horizontally.
- i) Where significant structural movement occurs such as changes in roofline, building shape or structural system.
- g. Terminations
 - 1) The system shall be held back from adjoining materials around penetrations such as windows, doors, and mechanical equipment a minimum of 19 mm (3/4 in) for sealant application. See Dryvit's Outsulation MD System Installation Details, DS167.
 - 2) The system shall be terminated a minimum of 200 mm (8 in) above finished grade.
- h. Sealants
 - 1) Shall be manufactured and supplied by others.
 - 2) Shall be compatible with the Outsulation MD System materials. Refer to current Dryvit publication DS153 for listing of sealants tested by sealant manufacturers for compatibility.
 - 3) Sealant backer rod shall be closed cell.
- i. Vapor Retarders
 - 1) Use and location of vapor retarders within a wall assembly is the responsibility of the project designer and shall comply with local

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- building code requirements. The type and location shall be noted on the project drawings and specifications. Vapor retarders may be inappropriate in certain areas and can result in condensation within the wall assembly.
- j. The use of dark colors must be considered in relation to wall surface temperature as a function of local climatic conditions. Use of dark colors in high temperature climates can affect the performance of the system.
2. Performance Requirements
- a. The Outsulation MD System shall have been tested for durability as follows:
- 1) Abrasion Resistance: ASTM D 968; no deleterious effects after 500 liters (132 gal).
 - 2) Absorption, Freeze-Thaw: 60 cycles, soak at 20 °C (68 °F) for four days, then -10 °C (14 °F) for two hours, then 20 °C (68 °F) for two hours; no checking, cracking, or splitting.
 - 3) Accelerated Weathering: ASTM G 23 (Federal Test Standard 141A Method 6151); 2000 hours. No deterioration.
 - 4) Mildew Resistance: Mil Standard 810B; passes.
 - 5) Moisture Resistance: ASTM D 2247 (Federal Test

- Standard 141A Method 6201); no deleterious effects after 14 days.
- 6) Salt Spray Resistance: ASTM B 117 Federal Test Standard 141A Method 6061); 5% concentration for 300 hours. No deleterious effects.
 - 7) Air Leakage: ASTM E 283; less than 0.301 l/min/m² (.001 cfm/ft²) classified as a Type III air barrier as defined by the National Research Council of Canada.
 - 8) Water Penetration: ASTM E 331; no water penetration to the inner most surface of the test specimen.
 - 9) Moisture Drainage Efficiency: Modified ASTM E 331, 95% efficiency.
 - 10) Water Vapor Transmission: ASTM E 96 Procedure B; Standard lamina: 10 g/hr•m² (14 gr/hr•ft²).
- b. The Outsulation MD System shall have been tested for structural performance as follows:
- 1) Tensile Bond Strength: ASTM C 297
 - a) Backstop to exterior grade gypsum sheathing: 67.7 kPa (9.1 psi), sheathing facer failure.
 - b) Backstop to Dens Glass Gold: 198.6 kPa (28.8 psi), sheathing facer failure.
 - c) Primus to Backstop: Minimum 86.9 kPa (12.6 psi).
 - d) Genesis to Backstop: Minimum 104 kPa (15.1 psi).

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- 2) Full Scale Structural Tests: ASTM E 330; minimum failure load under positive or negative load of 4.3 kPa (90 psf) unless otherwise specified; substrate failure.
 - 3) Impact Resistance: In accordance with EIMA Standard 101.86. Refer to table below:
- c. The Outsulation MD System shall have been tested for fire performance as follows:
- 1) Flame Spread - ASTM E 84:
 - a) The EPS insulation board shall have a Flame Spread index not exceeding 25 and a Smoke Developed index not exceeding 450.
 - b) The adhesives and coatings shall have a Flame Spread index not exceeding 20 and a Smoke Developed index not exceeding 10.
 - 2) ASTM E 108 (Modified) Full Scale Fire Test; passed.
 - 3) UBC 26-9 Intermediate Scale Multi-Story Test (ISMA); passed.
 - 4) Ignitability Characteristics: BOCA National Building Code Radiant Heat Exposure Test of Exterior Wall Assemblies; passed.

Reinforcing Mesh/Weight g/m ² (oz/yd ²)	EIMA Impact Class.	EIMA Impact Range		Impact Test Results	
		Joules	(in-lbs)	Joules	(in-lbs)
Standard™ - 146 (4.3)	Level 1	3-6	(25-49)	4	(36)
Standard Plus™ - 203 (6)	Level 2	6-10	(50-89)	6	(56)
Intermediate® - 407 (12)	Level 3	10-17	(90-150)	12	(108)
Panzer® 15 * - 509 (15)	Level 4	>17	(>150)	18	(162)
Panzer 20 * - 695 (20.5)	Level 4	>17	(>150)	40	(352)
Detail® Short Rolls - 146	n/a	n/a	n/a	n/a	n/a
Corner Mesh - 244 (7.2)	n/a	n/a	n/a	n/a	n/a

* Shall be used in conjunction with Standard Mesh

1.03 SUBMITTALS

- A. Product Data: The contractor shall submit to the owner/architect the Manufacturer’s product data describing the products, which will be used on the project.
- B. Shop Drawings for Panelized Construction: The Panel Fabricator shall prepare and submit to the owner/architect complete drawings showing: wall layout, connections, details, expansion joints, and installation sequence.
- C. Samples: The Contractor shall submit to the owner/architect two (2) samples of the Outsulation MD System for each finish, texture and color to be used on the project. Samples shall be of sufficient size to accurately represent each color and texture being utilized on the project.
- D. Test Reports: When requested, the Contractor shall submit to the owner/architect copies of selected test reports verifying the performance of the Outsulation MD System.

- Registrar Accreditation Board (ANSI-RAB).
- 3. Contractor: Shall be knowledgeable in the proper installation of the Dryvit Outsulation MD System and shall be experienced and competent in the installation of Exterior Insulation and Finish Systems. Additionally, the contractor shall possess a current Outsulation MD System Trained Contractor Certificate** issued by Dryvit Systems, Inc.
- 4. Insulation Board Manufacturer: Shall be licensed by Dryvit Systems, Inc., shall be capable of producing the Expanded Polystyrene (EPS) in accordance with the current Dryvit Specification for Insulation Board, DS131, and shall subscribe to the Dryvit Third Party Certification and Quality Assurance Program.
- 5. Panel Fabricator: Shall be a contractor experienced and competent in the fabrication of architectural wall panels.
- 6. Panel Erector: Shall be experienced and competent in the installation of architectural wall panel systems and shall be:
 - a. The Panel Fabricator
 - b. An Erector approved by the Panel Fabricator

- c. An Erector under the direct supervision of the Panel Fabricator
- B. Regulatory Requirements:
 - 1. The EPS shall be separated from the interior of the building by a minimum 15-minute thermal barrier.
 - 2. The use, and maximum thickness, of EPS shall be in accordance with the applicable building codes.
- C. Mock-Up
 - 1. The contractor shall, before the project commences, provide the owner/architect with a mock-up for approval.
 - 2. The mock-up shall be of suitable size as required to accurately represent each color and texture to be utilized on the project.
 - 3. The mock-up shall be prepared with the same products, tools, equipment and techniques required for the actual applications. The finish used shall be from the same batch as that being used for the project.
 - 4. The approved mock-up shall be available and maintained at the jobsite.

1.04 QUALITY ASSURANCE

- A. Qualifications
 - 1. System Manufacturer: Shall be Dryvit Systems, Inc.
 - 2. Material shall be manufactured at a facility covered by a current ISO 9001 certification. Certification of the facility shall be done by a registrar accredited by the American National Standards Institute,

1.05 DELIVERY, STORAGE AND HANDLING

- A. All materials shall be delivered to the job site in the original, unopened packages with labels intact. Questionable materials shall not be used.
- B. Minimum storage temperature shall be 7 °C (45 °F) for

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Demandit[®], Revyvit[®], and Color Prime[™]; 10 °C (50 °F) for Ameristone and 4 °C (40 °F) for other wet products. For Custom Brick[™] Finish, refer to Custom Brick Specification, DS151.

- C. Protect all products from weather and direct sunlight.

1.06 PROJECT CONDITIONS

- A. Application of wet materials shall not take place during inclement weather unless appropriate protection is provided. Protect materials from inclement weather until they are completely dry.
- B. Application of wet materials shall be at a minimum ambient temperature of 4 °C (40 °F), 10 °C (50 °F) or 7 °C (45 °F) depending on product, and rising. For Custom Brick Finish, refer to Custom Brick Specification, DS151. These temperatures shall be maintained for a minimum of 24 hours (for Ameristone 48 hours) thereafter, or until completely dry.

1.07 SEQUENCING AND SCHEDULING

- A. Installation of the Dryvit Outsulation MD System shall be coordinated with other construction trades.

1.08 WARRANTY

- A. Dryvit Systems, Inc. shall provide a limited warranty against defective material and moisture drainage from defective material upon written request. Dryvit shall make no other warranties, expressed or implied. Dryvit does not warrant workmanship. Full details are available from Dryvit Systems, Inc.
- B. The applicator shall warrant workmanship separately. Dryvit shall not be responsible for workmanship associated with installation of the Outsulation MD System.

1.09 DESIGN RESPONSIBILITY

- A. It is the responsibility of both the specifier and the purchaser to determine if a product is suitable for its intended use. The designer selected by the purchaser shall be responsible for all decisions pertaining to design, detail, structural capability, attachment details, shop drawings and the like. Dryvit has prepared guidelines in the form of specifications, application details, and product sheets to facilitate the design process only. Dryvit is not liable for any errors or omissions in design, detail, structural capability, attachment details, shop drawings, or the like, whether based upon the information prepared by Dryvit or otherwise, or for any changes which purchasers, specifiers, designers, or their appointed representatives may make to Dryvit's published comments.

1.10 MAINTENANCE

- A. Maintenance and repair shall follow the procedures noted in the Dryvit Outsulation MD System Application Instructions, DS169.
- B. All Dryvit products are designed to minimize maintenance. However, as with all building products, depending on location, some cleaning may be required. See Dryvit publication DS152 on Cleaning and Recoating.
- C. Sealants and Flashings shall be inspected on a regular basis and repairs made as necessary.

PART II PRODUCTS

2.01 MANUFACTURER

- A. All components of the Outsulation MD System shall be obtained from Dryvit or its authorized distributors.

2.02 MATERIALS

- A. Air/Weather Barrier: Shall provide an air and secondary weather barrier for the substrates listed in Section

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1.02.1.a, and include the following components:

1. Dryvit Backstop: A 100% acrylic product, which is field mixed with Portland cement in a 1:1 ratio by weight.
 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 a rubberized asphalt adhesive.
 4. Dryvit Flashing Tape Surface Conditioner: A water-based surface conditioner and adhesion promoter for the Dryvit Flashing Tape.
- B. Adhesives/Base Coats: Used to adhere the insulation board to the air barrier and to embed the reinforcing mesh on the face of the insulation board, shall be one of the following:
1. Genesis: A fiber-reinforced, acrylic modified product, which is field mixed with Portland cement in a 1:1 ratio.
 2. Genesis DM: A dry mix, polymer-based, fiber-reinforced product, which is field mixed with water.
 3. Primus: An acrylic polymer-based product, which is field mixed with Portland cement in a 1:1 ratio.
- C. OMD Insulation Board: Expanded Polystyrene meeting the Dryvit Specification for Insulation Board, DS131, with the following conditions:
1. Thickness of insulation board shall be minimum 50 mm (2 in).
 2. The back side of the insulation board shall have 6 mm x 25 mm (1/4 in x 1 in) grooves running vertically and spaced 305 mm (12 in) on center.
 3. The insulation board shall be manufactured by a board supplier licensed by Dryvit Systems, Inc.
- D. OMD Insulation Board Closure Blocks: Expanded

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- Polystyrene meeting the Dryvit Specification for Insulation Board, DS131. The OMD Closure Blocks shall measure a minimum of 0.15 m (6 in) in height.
- E. Dryvit Starter Strip: Expanded Polystyrene meeting the Dryvit Specification for Insulation Board, DS131. The Dryvit Starter Strip shall measure 0.15 m (6 in) in height and configured to receive the Dryvit Track
- F. Dryvit Vent Assembly: A formed aggregate matrix material encased in a piece of insulation board, which provides drainage capability.
- G. Dryvit Track: A "J" shaped track complying with ASTM D 1784 and ASTM C 1063 located above the Dryvit Starter Strip, at the heads of all penetrations.
- H. Dryvit Vent Track: A "J" shaped track complying with ASTM D 1784 and ASTM C 1063 containing a slot for drainage and located above the Dryvit Vent Assembly, along the base of walls.
- I. Dryvit AP Adhesive: A moisture cure urethane-based adhesive used to attach the Dryvit Track and Vent Track to the Backstop.
- J. Dryvit Reinforcing Mesh: Shall be a balanced, open weave, glass fiber fabric treated for compatibility with other system materials. **Note: Reinforcing meshes are classified by impact resistance and specified by weight and tensile strength as listed in Section 1.02.A.2.b.3.**
- K. Dryvit Finish: Shall be the type, color and texture as selected by the owner/architect and shall be one or more of the following:
1. Standard DPR (Dirt Pickup Resistance): Water-based, acrylic coatings with integral color and texture, and formulated with DPR chemistry:
 - a. Quarzputz®: Coarse texture.

- b. Sandblast®: Medium texture.
 - c. Freestyle®: Fine texture.
 - d. Sandpebble®: Pebble stucco texture.
 - e. Sandpebble Fine™: Fine pebble texture.
2. Specialty Finishes
- a. Ameristone™: Multi-colored quartz aggregate.
 - b. Stone Mist®: Ceramically colored quartz aggregate.
 - c. Custom Brick Polymer Finish: Acrylic polymer-based finishes used in conjunction with a proprietary template system to create the look of stone, brick, slate or tile.
3. Elastomeric DPR (Dirt Pickup Resistance) Finishes: Water- based, elastomeric acrylic finishes with integral color and texture, and formulated with DPR chemistry:
- a. Weatherlastic™ Quarzputz, Weatherlastic Sandpebble, Weatherlastic Sandpebble Fine, and Weatherlastic Adobe™.
4. Medallion Series PMR™ (Proven Mildew Resistance) Finishes: Water-based, acrylic finishes with integral color and texture:
- a. Quarzputz, Sandblast, Freestyle, Sandpebble, and Sandpebble Fine.
5. Coatings, Primers and Sealers:
- a. Demandit, Weatherlastic Smooth™, Revyvit, Color Prime, Prymit®, and SealClear™.

PART III EXECUTION

3.01 EXAMINATION

- A. Prior to installation of the Outsulation MD System, the Contractor shall verify that the substrate:

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1. Is of a type listed in section 1.02 A.1.a.
2. Is flat within 6.4 mm (1/4 in) in a 1.2 m (4 ft) radius.
3. Is sound, connections are tight, there are no surface voids, projections, or other conditions that may interfere with the Outsulation MD System installation.
4. The Contractor shall notify the General Contractor, and/or Architect and/or owner of all discrepancies.
5. Prior to the installation of the Outsulation MD System, the Architect, or General Contractor shall insure that all needed flashings and other waterproofing details have been completed, if such completion is required prior to the Outsulation MD application.

3.02 PREPARATION

- A. Protection
1. The Outsulation MD materials shall be protected by permanent or temporary means from weather and other damage prior to, during, and following application until dry.
 2. Protect adjoining work and property during Outsulation MD installation.
 3. The substrate shall be prepared as to be free of foreign materials such as oil, dust, dirt, form-release agents, efflorescence, paint, wax, water repellants, moisture, frost, and any other condition that may inhibit adhesion.

3.03 INSTALLATION

- A. The System shall be installed in accordance with the Dryvit Outsulation MD System Application Instructions, DS169.
- B. The overall minimum base coat thickness shall be sufficient to fully embed the mesh. The recommended method is to apply the base coat in two (2) passes.

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C. Dryvit Outsulation MD System surfaces in contact with sealant shall be coated with Demandit or Color Prime. Sealant shall not be applied directly to textured finishes or base coat surfaces.

3.04 FIELD QUALITY CONTROL

A. The Contractor shall be responsible for the proper application of the Outsulation MD materials.

B. Dryvit assumes no responsibility for on-site inspections or application of its products.

3.05 CLEANING

- A. All excess Outsulation MD System materials shall be removed from the job site by the contractor in accordance with contract provisions and as required by applicable law.
- B. All surrounding areas, where the Dryvit Outsulation MD

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System has been applied, shall be left free of debris and foreign substances resulting from the Contractor's work.

3.06 PROTECTION

A. The Outsulation MD System shall be protected from weather and other damage until permanent protection in the form of flashings, sealants, etc. are installed.

DISCLAIMER

Information contained in this specification conforms to standard detail and product recommendations for the installation of the Dryvit Outsulation MD System products as of the date of publication of this document and is presented in good faith. Dryvit Systems, Inc. assumes no liability, expressed or implied, as to the architecture, engineering or workmanship of any project. To insure that you are using the latest, most complete information, contact:

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** The Trained Contractor Certificate indicates certain employees of the company have been instructed in the proper application of Dryvit products and have received copies of Dryvit's Application Instructions and Specifications. The Trained Contractor Program is not an apprenticeship or endorsement. Each trained contractor is an independent company experienced in the trade and bears responsibility for its own workmanship. Dryvit System's, Inc. assumes no liability for the workmanship of a trained contractor.

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