OUTSULATION® MD SYSTEM®
An Exterior Wall Insulation and Finish System with
Engineered Moisture Drainage That Incorporates
Continuous Insulation and An Air-Water-Resistive Barrier

Outsulation MD System
Specifications
INTRODUCTION
This document contains the Manufacturer’s Standard Specification for the Outsulation MD System. These specifications follow the Construction Specification Institute’s MasterFormat.

TAILORING THE DRYVIT MANUFACTURER’S SPECIFICATIONS TO YOUR PROJECT
These specifications cover all the common ways of using the Outsulation MD System. Most projects use only a few of the possible combinations of these materials and methods. To tailor the specifications to your project, simply use those sections which apply. Also, it may be prudent to place certain parts of the Dryvit Outsulation MD Specification in other parts of the project’s total specification, such as sealants and framing. The project design professionals are responsible for ensuring that the project specifications are suitable for the project. For assistance in preparing your specification, contact your Dryvit Distributor or Dryvit Systems, Inc.

UNITS
Standard International Units (SI) are included in parentheses after the English equivalents thus:
1/2 in (12.7 mm)     1.0 pcf (16 Kg/m³)

Please note that the conversions may not be exact but rather represent commonly used equivalents.

WARNING
The Outsulation MD System is designed as a drainage wall system and is detailed to discharge incidental moisture from within the System. Specifications should be followed and proper details adhered to, in order to prevent water intrusion, resulting in possible damage to the System or other building elements. Care should be taken to ensure that all building envelope elements, including without limitations, roof designs, windows, flashings, sealants, etc., are compatible with this system.

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 ensure that you are using the latest, most complete information, visit our website at www.dryvit.com or contact Dryvit Systems, Inc., at

One Energy Way
West Warwick, RI 02893
(401) 822-4100
www.dryvit.com

* The Trained Contractor Certificate referenced in Section 1.06.A.2 and 1.06.A.4 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 Systems, Inc. assumes no liability for the workmanship of a trained contractor.
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 Product Data Sheet, DS443
2. Dryvit Outsulation MD System Application Instructions, DS169
3. Dryvit Outsulation MD System Installation Details, DS167

B. Related Sections
1. Unit Masonry – Section 04 20 00
2. Concrete – Sections 03 00 00
3. Cold-Formed Metal Framing – Section 05 40 00
4. Wood Framing – Section 06 11 00
5. Joint Protection – Section 07 90 00
6. Flashing – Section 07 60 00
7. Water-Resistant Barriers – Section 07 25 00
8. Vapor Retarders – 07 26 13
9. Air Barriers – 07 27 26

1.02 REFERENCES
A. Section Includes
2. ASTM C 150 Standard Specification for Portland Cement
3. ASTM C 297 Standard Test Method for Flatwise Tensile Strength of Sandwich Constructions
5. ASTM C 1177 Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing
15. ASTM E 96 Standard Test Methods for Water Vapor Transmission of Materials
17. ASTM E 283 Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen
19. ASTM E 331 Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference
Outsulation MD System Specifications

31. Mil Std E5272 Environmental Testing
32. Mil Std 810B Environmental Test Methods
34. NFPA 285 Standard Method of Test for the Evaluation of Flammability Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components Using the Intermediate-Scale, Multistory Test Apparatus

1.03 DEFINITIONS
A. Base Coat: Material used to encapsulate one or more layers of reinforcing mesh fully embedded that is applied to the outside surface of the EPS.
B. Building Expansion Joint: A joint through the entire building structure designed to accommodate structural movement.
C. Contractor: The contractor that installs the Outsulation MD System to the substrate.
D. Dryvit: Dryvit Systems, Inc., the manufacturer of the Outsulation MD System, a Rhode Island corporation.
E. Expansion Joint: A structural discontinuity in the Outsulation MD System.
F. Finish: An acrylic-based coating, available in a variety of textures and colors that is applied over the base coat.
G. Insulation Board: Expanded polystyrene (EPS) insulation board, which is affixed to the substrate and creates a layer of continuous insulation.
H. Panel Erector: The contractor who installs the panelized Outsulation MD System.
I. Panel Fabricator: The contractor who fabricates the panelized Outsulation MD System.
J. Reinforcing Mesh: Glass fiber mesh(es) used to reinforce the base coat and to provide impact resistance.
L. Substrate: The material to which the Outsulation MD System is affixed.
M. Substrate System: The total wall assembly including the attached substrate to which the Outsulation MD System is affixed.

1.04 SYSTEM DESCRIPTION
A. General: The Dryvit Outsulation MD System is an Exterior Insulation and Finish System (EIFS), Class PB, consisting of an air/water-resistive barrier, an adhesive, grooved expanded polystyrene insulation board, internal vinyl tracks (Dryvit Track™ and Vent Track™), Dryvit Vent Assembly™, Dryvit Starter Strip™, base coat, reinforcing mesh(es) and finish.
B. Methods of Installation
1. Field Applied: The Outsulation MD System is applied to the substrate system in place.
2. Panelized: The Outsulation MD System is shop-applied to the prefabricated wall panels.
C. Design Requirements:
1. Acceptable substrates for the Outsulation MD System shall be:
   a. Exterior grade gypsum sheathing meeting ASTM C 1396 (formerly C 79) requirements for water resistant core or Type X core at the time of application of the Outsulation MD System.
   b. Exterior sheathing having a water-resistant core with fiberglass mat facers meeting ASTM C 1177.
   c. Exterior fiber reinforced cement or calcium silicate boards.
d. APA Exterior or Exposure 1 Rated Plywood, Grade C-D or better, nominal 1/2 in (12.7 mm), minimum, installed with the C face out.

e. APA Exterior or Exposure 1 Fire Retardant Treated (FRT) Plywood, Grade C-D or better, nominal 1/2 in (12.7 mm), minimum, installed with the C face out.

f. APA Exposure 1 Rated Oriented Strand Board (OSB) nominal 1/2 in (12.7 mm), minimum. **NOTE:** Applications over OSB sheathing requires a minimum of 2 coats of Backstop NT – Smooth or Spray. Backstop NT – Texture is not recommended for the field of wall application over OSB.

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

2. Deflection of the substrate systems shall not exceed 1/240 times the span.

3. The substrate shall be flat within 1/4 in (6.4 mm) in a 4 ft (1.2 m) radius.

4. The slope of inclined surfaces shall not be less than 6:12 (27°) and the length shall not exceed 12 in (305 mm).

5. All areas requiring an impact resistance classification higher than "standard", as defined by ASTM E 2486 (formerly EIMA Standard 101.86), shall be as detailed in the drawings and described in the contract documents. Refer to Section 1.04.D.1.d of this specification.

6. Expansion Joints:
   a. Design and location of expansion joints in the Outsulation MD System is the responsibility of the project designer and shall be noted on the project drawings. As a minimum, expansion joints shall be placed at the following locations:
      1) Where expansion joints occur in the substrate system
      2) Where building expansion joints occur
      3) At floor lines in wood frame construction
      4) At floor lines of non-wood framed buildings where significant movement is expected
      5) Where the Outsulation MD System abuts dissimilar materials
      6) Where the substrate type changes
      7) Where prefabricated panels abut one another
      8) In continuous elevations at intervals not exceeding 75 ft (23 m)
      9) Where significant structural movement occurs, such as changes in roof line, building shape or structural system

7. Terminations
   a. Prior to applying the Dryvit Outsulation MD System, wall openings shall be treated with Dryvit AquaFlash System or Flashing Tape. Refer to Dryvit Outsulation MD Installation Details, DS167.
   b. The Outsulation MD System shall be held back from adjoining materials around openings and penetrations such as windows, doors, and mechanical equipment a minimum of 3/4 in (19 mm) for sealant application. See Dryvit’s Outsulation MD System Installation Details, DS167.
   c. The system shall be terminated a minimum of 8 in (203 mm) above finished grade.
   d. 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 manufacturer for compatibility.
      3) The sealant backer rod shall be closed cell.

8. Vapor Retarders: The use and location of vapor retarders within a wall assembly is the responsibility of the project designer and shall comply with local building code requirements. The type and location shall be noted on the project drawings and specifications. Vapor retarders may be inappropriate in certain climates and can result in condensation within the wall assembly. Refer to Dryvit Publication DS159 for additional information.

9. Dark Colors: 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.

10. Flashing: Shall be provided at all roof-wall intersections, windows, doors, chimneys, decks, balconies and other areas as necessary to prevent water from entering behind the Outsulation MD System.

11. Site Coated EPS Shapes and Starter Boards: Shall be coated on site utilizing the same materials (EPS, base material mixture, reinforcing mesh, and finish) as specified for the project.

12. Pre Base Coated EPS Shapes and Starter Boards: Shall be supplied by Acrocore or other approved shape manufacturer.
### Outsulation MD System Specifications

#### D. Performance Requirements:
1. The Outsulation MD System shall have been tested as follows:
   a. Air/Water-Resistive Barrier Coating

<table>
<thead>
<tr>
<th>TEST</th>
<th>TEST METHOD</th>
<th>CRITERIA</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tensile Bond</strong></td>
<td>ASTM C 297/E 2134*</td>
<td>Minimum 15 psi (104 kPa)</td>
<td>Substrate: Minimum (19 psi (131 kPa) (Backstop NT)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Minimum 24.1 psi (166 kPa) (Backstop DMS)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Flashing: Minimum 431 psi (2970 kPa) (Backstop NT)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Minimum 140 psi (967 kPa) (Backstop DMS)</td>
</tr>
<tr>
<td><strong>Freeze-thaw</strong></td>
<td>ASTM E 2485 Method B*</td>
<td>No deleterious effects</td>
<td>Passed - No deleterious effects after 10 cycles</td>
</tr>
<tr>
<td></td>
<td></td>
<td>after 10 cycles</td>
<td></td>
</tr>
<tr>
<td><strong>Water Resistance</strong></td>
<td>ASTM D 2247*</td>
<td>No deleterious effects</td>
<td>No deleterious effects after 14 days exposure1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>after 14 days exposure1</td>
<td></td>
</tr>
<tr>
<td><strong>Water Vapor Transmission</strong></td>
<td>ASTM E 96 Proc. B*</td>
<td>Vapor Permeable</td>
<td>Vapor Permeable</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Backstop DMS: 30 Perms</td>
</tr>
<tr>
<td><strong>Air Leakage</strong></td>
<td>ASTM E 283</td>
<td>No ICC or ANSI/EIMA</td>
<td>0.002 cfm/ft² (0.01 l/sec/m²) (Backstop NT)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Criteria</td>
<td></td>
</tr>
<tr>
<td><strong>Air Permeance</strong></td>
<td>ASTM E 2178</td>
<td>No ICC or ANSI/EIMA</td>
<td>1.2x10^-7 cfm/ft² @ 1.6 psf (0.0006 l/s/m² @ 75Pa) (Backstop NT)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Criteria</td>
<td></td>
</tr>
<tr>
<td><strong>Air Barrier Assembly</strong></td>
<td>ASTM E 2357</td>
<td>No ICC or ANSI/EIMA</td>
<td>&lt;0.001 cfm/ft² @ 6.24 psf (0.05 l/sec m² @300 Pa) (Backstop NT)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Criteria</td>
<td></td>
</tr>
<tr>
<td><strong>Nail Sealability</strong></td>
<td>ASTM D 1970</td>
<td>No ICC or ANSI/EIMA</td>
<td>Passed ABAA Criteria</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Criteria</td>
<td></td>
</tr>
<tr>
<td><strong>Structural Performance</strong></td>
<td>ASTM E 1233 Proc. A*</td>
<td>Minimum 10 positive cycles</td>
<td>Passed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>at 1/240 deflection; No cracking in field, at joints or interface with flashing</td>
<td></td>
</tr>
<tr>
<td><strong>Racking</strong></td>
<td>ASTM E 72*</td>
<td>No cracking in field, at</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>joints or interface with flash</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>at net deflection of 1/8 in (3.2 mm)</td>
<td></td>
</tr>
<tr>
<td><strong>Restrained Environmental</strong></td>
<td>ICC-ES Procedure*</td>
<td>5 cycles; No cracking in field, at joints or interface with flashing</td>
<td>Passed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Water Penetration</strong></td>
<td>ASTM E 331*</td>
<td>No water penetration</td>
<td>Passed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>beyond the inner-most plane of the wall after 15 minutes at 2.86 psf (137 Pa)</td>
<td></td>
</tr>
<tr>
<td><strong>Weathering UV Exposure</strong></td>
<td>ASTM D 2898 Method B*</td>
<td>210 hours of exposure</td>
<td>Passed</td>
</tr>
<tr>
<td><strong>Accelerated Aging</strong></td>
<td>ICC-ES Procedure*</td>
<td>25 cycles of wetting and drying</td>
<td>Passed</td>
</tr>
<tr>
<td><strong>Hydrostatic Pressure Test</strong></td>
<td>AATCC 127*</td>
<td>ICC: 21.6 in (549 mm) water column for 5 hours</td>
<td>Passed</td>
</tr>
<tr>
<td><strong>Surface Burning Characteristics</strong></td>
<td>ASTM E 84</td>
<td>Flame Spread &lt; 25 Smoke Developed &lt; 450</td>
<td>Passed</td>
</tr>
</tbody>
</table>


1. No cracking, checking, rusting, crazing, erosion, blistering, peeling, or delamination when viewed under 5x magnification
### b. Durability

<table>
<thead>
<tr>
<th>TEST</th>
<th>TEST METHOD</th>
<th>CRITERIA</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrasion Resistance</td>
<td>ASTM D 968</td>
<td>No deleterious effects after 528 quarts (500 liters)</td>
<td>No deleterious effects after 1056 quarts (1000 liters)</td>
</tr>
<tr>
<td>Accelerated Weathering</td>
<td>ASTM G 155 Cycle 1*</td>
<td>No deleterious effects after 2000 hours</td>
<td>No deleterious effects after 5000 hours</td>
</tr>
<tr>
<td></td>
<td>ASTM G 154 Cycle 1* (QUV)</td>
<td></td>
<td>No deleterious effects after 5000 hours</td>
</tr>
<tr>
<td>Freeze-Thaw</td>
<td>ASTM E 2485 Method A*</td>
<td>No deleterious effects after 60 cycles</td>
<td>Passed - No deleterious effects after 90 cycles</td>
</tr>
<tr>
<td></td>
<td>ASTM C 67 modified</td>
<td>No deleterious effects after 60 cycles</td>
<td>Passed - No deleterious effects after 60 cycles</td>
</tr>
<tr>
<td></td>
<td>ASTM E 2485 Method B*</td>
<td>No deleterious effects after 10 cycles</td>
<td>Passed - No deleterious effects after 10 cycles</td>
</tr>
<tr>
<td>Mildew Resistance</td>
<td>ASTM D 3273</td>
<td>No growth during 28 day exposure period</td>
<td>No growth during 60 day exposure period</td>
</tr>
<tr>
<td>Water Resistance</td>
<td>ASTM D 2247*</td>
<td>No deleterious effects after 14 days exposure</td>
<td>No deleterious effects after 42 days exposure</td>
</tr>
<tr>
<td>Taber Abrasion</td>
<td>ASTM D 4060</td>
<td>N/A</td>
<td>Passed 1000 cycles</td>
</tr>
<tr>
<td>Salt Spray Resistance</td>
<td>ASTM B 117*</td>
<td>No deleterious effects after 300 hours exposure</td>
<td>No deleterious effects after 1000 hours exposure</td>
</tr>
<tr>
<td>Water Penetration</td>
<td>ASTM E 331*</td>
<td>No water penetration beyond the inner-most plane of the wall after 15 minutes at 2.86 psf (137 Pa)</td>
<td>Passed</td>
</tr>
<tr>
<td>Water Vapor Transmission</td>
<td>ASTM E 96 Procedure B*</td>
<td>Vapor permeable</td>
<td>EPS 5 perm-inch</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Base Coat¹ 40 Perms</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Finish² 40 Perms</td>
</tr>
<tr>
<td>Drainage Efficiency</td>
<td>ASTM E 2273</td>
<td>Minimum Drainage Efficiency of 90%</td>
<td>Passed</td>
</tr>
</tbody>
</table>

1. Base Coat perm value based on Dryvit Genesis.
2. Finish perm value based on Dryvit Quarzputz.

### c. Structural

<table>
<thead>
<tr>
<th>TEST</th>
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<th>CRITERIA</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Bond</td>
<td>ASTM C 297/E 2134*</td>
<td>Minimum 15 psi (104 kPa) – substrate or insulation failure</td>
<td>Minimum 31 psi (213.6 kPa)</td>
</tr>
<tr>
<td>Transverse Wind Load</td>
<td>ASTM E 330*</td>
<td>Withstand positive and negative wind loads as specified by the building code</td>
<td>Minimum 90 psf (4.3 kPa)¹ 16 in o.c. framing, ½ in sheathing screw attached at 8 in (203 mm) o.c.</td>
</tr>
</tbody>
</table>

1. All Dryvit components remain intact – for higher wind loads contact Dryvit Systems, Inc.

### d. Impact Resistance: In accordance with ASTM E 2486* (formerly EIMA Standard 101.86):

<table>
<thead>
<tr>
<th>Reinforcing Mesh¹/Weight oz/yd² (g/m²)</th>
<th>Minimum Tensile Strengths</th>
<th>EIMA Impact Classification</th>
<th>EIMA Impact Range in-lbs (Joules)</th>
<th>Impact Test Results in-lbs (Joules)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard - 4.3 (146)</td>
<td>150 lbs/in (27 g/cm)</td>
<td>Standard</td>
<td>25-49 (3-6)</td>
<td>36 (4)</td>
</tr>
<tr>
<td>Standard Plus - 6 (203)</td>
<td>200 lbs/in (36 g/cm)</td>
<td>Medium</td>
<td>50-89 (6-10)</td>
<td>56 (6)</td>
</tr>
<tr>
<td>Intermediate™ - 12 (407)</td>
<td>300 lbs/in (54 g/cm)</td>
<td>High</td>
<td>90-150 (10-17)</td>
<td>108 (12)</td>
</tr>
<tr>
<td>Panzer® 15¹ - 15 (509)</td>
<td>400 lbs/in (71 g/cm)</td>
<td>Ultra High</td>
<td>&gt;150 (&gt;17)</td>
<td>162 (18)</td>
</tr>
<tr>
<td>Panzer 20¹ - 20.5 (695)</td>
<td>550 lbs/in (98 g/cm)</td>
<td>Ultra High</td>
<td>&gt;150 (&gt;17)</td>
<td>352 (40)</td>
</tr>
<tr>
<td>Detail Mesh™ Short Rolls - 4.3 (146)</td>
<td>150 lbs/in (27 g/cm)</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a n/a n/a</td>
</tr>
<tr>
<td>Corner Mesh™ - 7.2 (244)</td>
<td>274 lbs/in (49 g/cm)</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a n/a n/a</td>
</tr>
</tbody>
</table>

* It shall be colored blue and bear the Dryvit logo for product identification
1. Shall be used in conjunction with Standard Mesh (recommended for areas exposed to high traffic)
e. Fire performance

<table>
<thead>
<tr>
<th>TEST</th>
<th>TEST METHOD</th>
<th>CRITERIA</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Resistance</td>
<td>ASTM E 119</td>
<td>No effect on the fire resistance of a rated wall assembly</td>
<td>Passed 1 hour</td>
</tr>
<tr>
<td>Ignitability</td>
<td>NFPA 268*</td>
<td>No ignition at 12.5 kw/m² at 20 minutes</td>
<td>Passed</td>
</tr>
<tr>
<td>Intermediate Multi-Story Fire Test</td>
<td>NFPA 285* (UBC 26-9)</td>
<td>1. Resist flame propagation over the exterior surface &lt;br&gt;2. Resist vertical spread of flame within combustible core/component of panel from one story to the next &lt;br&gt;3. Resist vertical spread of flame over the interior surface from one story to the next &lt;br&gt;4. Resist lateral spread of flame from the compartment of fire origin to adjacent spaces</td>
<td>Passed</td>
</tr>
</tbody>
</table>


2. The Outsulation MD components shall be tested for:
   a. Fire

<table>
<thead>
<tr>
<th>TEST</th>
<th>TEST METHOD</th>
<th>CRITERIA</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Burning Characteristics</td>
<td>ASTM E 84*</td>
<td>All components shall have a: &lt;br&gt;Flame Spread ≤ 25 &lt;br&gt;Smoke Developed ≤ 450</td>
<td>Passed</td>
</tr>
</tbody>
</table>


b. Durability

<table>
<thead>
<tr>
<th>TEST</th>
<th>TEST METHOD</th>
<th>CRITERIA</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reinforcing Mesh Alkali Resistance of Reinforcing Mesh</td>
<td>ASTM E 2098*</td>
<td>&gt; 120 pli (21dN/cm) retained tensile strength after exposure</td>
<td>Passed</td>
</tr>
<tr>
<td>EPS (Physical Properties) Density</td>
<td>ASTM C 303, D 1622</td>
<td>Density 0.95-1.25 lb/ft³ (15.2-20.0 kg/m³)</td>
<td>Passed</td>
</tr>
<tr>
<td>Thermal Resistance</td>
<td>ASTM C 177, C 518</td>
<td>4.0 @ 40 °F (4.4 °C) &lt;br&gt;3.6 @ 75 °F (23.9 °C)</td>
<td>Passed</td>
</tr>
<tr>
<td>Water Absorption</td>
<td>ASTM C 272</td>
<td>2.5 % max. by volume</td>
<td>Passed</td>
</tr>
<tr>
<td>Oxygen Index</td>
<td>ASTM D 2863</td>
<td>24% min. by volume</td>
<td>Passed</td>
</tr>
<tr>
<td>Compressive Strength</td>
<td>ASTM D 1621 Proc. A</td>
<td>10 psi (69 kPa) min.</td>
<td>Passed</td>
</tr>
<tr>
<td>Flexural Strength</td>
<td>ASTM C 203</td>
<td>25 psi (172 kPa) min.</td>
<td>Passed</td>
</tr>
<tr>
<td>Flame Spread Tobacco Developed</td>
<td>ASTM E 84*</td>
<td>25 max.</td>
<td>Passed</td>
</tr>
<tr>
<td>Flame Spread Smoke Developed</td>
<td>ASTM E 84*</td>
<td>450 max.</td>
<td>Passed</td>
</tr>
</tbody>
</table>


1.05 SUBMITTALS
A. Product Data: The contractor shall submit to the owner/architect the manufacturer’s product data sheets describing products, which will be used on this 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. The same tools and techniques proposed for the actual installation shall be used. 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.
E. Environmental Product Declaration: When requested, the contractor shall submit to the owner/architect copies of the Environmental Product Declaration (EPD) describing the estimated environmental impacts of the Outsulation MD System.
1.06 QUALITY ASSURANCE

A. Qualifications
1. System Manufacturer: Shall be Dryvit Systems, Inc. All materials shall be manufactured or sold by Dryvit and shall be purchased from Dryvit or its authorized distributors.
2. 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.
3. Insulation Board Manufacturer: Shall be listed 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.
4. Panel Fabricator: Shall be a contractor experienced and competent in the fabrication of architectural wall panels and shall possess a current Outsulation MD System Trained Contractor Certificate* issued by Dryvit Systems, Inc.
5. Panel Erector: Shall be experienced and competent in the installation of architectural wall panel systems and shall be:
   a. The panel fabricator or
   b. An erector approved by the panel fabricator or
   c. An erector under the direct supervision of the panel fabricator
6. Machine Coated Dryvit EPS Shapes and Starter Boards: Shall be supplied by Acrocore or other manufacturer that subscribes to the Dryvit third party certification and quality assurance program.

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 code(s).

C. Certification
1. The Outsulation MD System shall be recognized for the intended use by the applicable building code(s).

D. 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 the products being installed, as well as 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 that is being used on the project.
4. The approved mock-up shall be available and maintained at the jobsite.
5. For panelized construction, the mock-up shall be available and maintained at the panel fabrication location.

1.07 DELIVERY, STORAGE AND HANDLING

A. All Dryvit materials shall be delivered to the job site in the original, unopened packages with labels intact.
B. Upon arrival, materials shall be inspected for physical damage, freezing or overheating. Questionable materials shall not be used.
1. Materials shall be stored at the job site, and at all times, in a cool, dry location, out of direct sunlight, protected from weather and other sources of damage. Minimum storage temperature shall be as follows:
   a. DPR, PMR™, HDP™, Weatherlastic® and E™ Finishes, Color Prime™, Primus®, Genesis® and NCB™: (40 °F (4 °C).
   b. For other products, refer to specific product data sheets.
2. Maximum storage temperature shall not exceed 100 °F (38 °C). NOTE: Minimize exposure of materials to temperatures over 90 °F (32 °C). Finishes exposed to temperatures over 110 °F (43 °C) for even short periods may exhibit skinning, increased viscosity and should be inspected prior to use.
C. Protect all products from inclement weather and direct sunlight.

1.08 PROJECT CONDITIONS

A. Environmental Requirements
1. 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.
2. At the time of Dryvit product application, the air and wall surface temperatures shall be from 4 °C (40 °F) minimum to 100 °F (38 °C) maximum for the following products:
   a. DPR, PMR, HDP, Weatherlastic and E Finishes, Color Prime, Primus, Genesis and NCB.
   b. For other products, refer to specific product data sheets.
3. These temperatures shall be maintained with adequate air ventilation and circulation for a minimum of 24 hours (48 hours for Weatherlastic Finishes, Ameristone, TerraNeo and Lymestone) thereafter, or until the products are completely dry. Refer to published product data sheets for more specific information.

B. Existing Conditions: The contractor shall have access to electric power, clean water and a clean work area at the location where the Dryvit materials are to be applied.

1.09 SEQUENCING AND SCHEDULING
A. Installation of the Outsulation MD System shall be coordinated with other construction trades.
B. Sufficient manpower and equipment shall be employed to ensure a continuous operation, free of cold joints, scaffold lines, texture variations, etc.

1.10 WARRANTY
A. Dryvit Systems, Inc. shall provide a written moisture drainage and limited materials warranty against 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.

1.11 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, installation details, and product data 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.

1.12 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 require minimal 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 supplied or obtained from Dryvit or its authorized distributors. Substitutions or additions of materials other than specified will void the warranty.

2.02 MATERIALS
A. Portland Cement: Shall be Type I or II, meeting ASTM C 150, white or gray in color, fresh and free of lumps.
B. Water: Shall be clean and free of foreign matter.

2.03 COMPONENTS
A. Air/Water-Resistive Barrier Components
   2. Dryvit Backstop NT-VB: A Class 1 vapor retarder, available in trowel and spray versions. When specified, consider having a WVT analysis performed. See DS830 and DS831.
   3. Dryvit Grid Tape™: An open weave fiberglass mesh tape with pressure sensitive adhesive available in rolls 4 in (102 mm) wide by 100 yds (91 m) long.
   4. Dryvit Backstop DMS: A sprayable, single step air/water-resistive barrier and adhesive. **NOTE: Backstop DMS is not approved for use over wood based substrates.**
B. Flashing Materials: Used to protect substrate edges at terminations.
      a. Shall be AquaFlash and AquaFlash Mesh
   2. Sheet Type:
      a. Shall be Flashing Tape and Surface Conditioner
         1) Dryvit Flashing Tape™: A high density, polyethylene film backed with a rubberized asphalt adhesive available in rolls 4 in (102 mm), 6 in (152 mm) and 9 in (229 mm) wide by 75 ft (23 m) long.
         2) Dryvit Flashing Tape Surface Conditioner™: A water-based surface conditioner and adhesion promoter for the Dryvit Flashing Tape.

C. Adhesives: Used to adhere the EPS to the air/water-resistive barrier, shall be compatible with the air/water-resistive barrier and the EPS.
   1. Cementitious: A liquid polymer-based material, which is field mixed with Portland cement.
      a. Shall be Primus or Genesis
   2. Ready mixed: A dry blend cementitious, copolymer-based product, field mixed with water.
      a. Shall be Primus® DM, Genesis® DM, Genesis® DMS, Rapidry DM 35-50 or Rapidry DM 50-75

D. Insulation Board: Expanded Polystyrene meeting Dryvit Specification for Insulation Board, DS131
   1. Thickness of insulation board shall be minimum 2 in (51 mm).
   2. The back side of the insulation board shall have 1/4 in x 1 in (6.4 mm x 25 mm) grooves running vertically and spaced 12 in (305 mm) on center (see Detail OMD 0.0.04).
   3. The insulation board shall be manufactured by a board supplier listed by Dryvit Systems, Inc.

E. Insulation Board Closure Blocks: Expanded Polystyrene meeting Dryvit Specification for Insulation Board, DS131. The Closure Blocks shall measure a minimum of 6 in (152 mm) in height.

F. Machine Coated Dryvit EPS Shapes and Starter Boards: Shall be supplied by Acrocore or other manufacturer that subscribes to the Dryvit third party certification and quality assurance program.

G. Dryvit Starter Strip
   1. A 2 in x 6 in x 4 ft (51 mm x 152 mm x 1.2 m) piece of aged expanded polystyrene configured to receive the Dryvit Track™ and Vent Track™. It is required at the base of all walls, at base of horizontal terminations, and heads of windows and other openings.

H. Dryvit Vent Assembly:
   1. A 2 in x 6 in x 12 in (51 mm x 152 mm x 305 mm) piece of aged expanded polystyrene, which is configured to contain a formed aggregate matrix material and receive the Dryvit Vent Track. It is required at the base of walls and the base of horizontal terminations and is capable of draining water.

I. Dryvit AP Adhesive™: A moisture cure urethane-based adhesive used to attach the Dryvit Track and Vent Track to the Backstop NT.

J. Dryvit Track:
   1. A “J” shaped track complying with ASTM D 1784 and ASTM C 1063 located above the Dryvit Starter Strip.

K. Dryvit Vent Track:
   1. 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 and horizontal terminations.

L. Base Coat: Shall be compatible with the EPS insulation board and reinforcing mesh(es).
   1. Cementitious: A liquid polymer-based material, which is field mixed with Portland cement.
      a. Shall be Primus or Genesis
      a. Shall be NCB
   3. Ready mixed: A dry blend cementitious, copolymer-based product, field mixed with water.

M. Reinforcing Mesh: 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 1.04.D.1.d.**
   2. Shall be colored blue for product identification bearing the Dryvit logo.

N. Finish: Shall be the type, color and texture as selected by the architect/owner and shall be one or more of the following:
   1. Standard DPR (Dirt Pickup Resistance): Water-based, acrylic finish with integral color and texture, and formulated with DPR chemistry:
      a. Quarzputz® DPR: Open-texture
      b. Sandblast® DPR: Medium texture
c. Freestyle® DPR: Fine texture
d. Sandpebble® DPR: Pebble texture
e. Sandpebble® Fine DPR: Fine pebble texture

2. Hydrophobic (HDP™) Finishes: 100% acrylic coating with integral color and texture and formulated with hydrophobic properties:
   a. Quarzputz® HDP
   b. Sandblast® HDP
c. Sandpebble® HDP
d. Sandpebble® Fine HDP
e. Lymestone® HDP
f. Finesse™ HDP

3. E: Water-based, lightweight acrylic finish with integral color and texture, and formulated with DPR chemistry:
   a. Quarzputz® E
   b. Sandpebble® E
c. Sandpebble® Fine E

4. Specialty Finishes and Veneers:
   a. Ameristone: Multi-colored quartz aggregate with a flamed granite appearance.
   b. Stone Mist®: Ceramically colored quartz aggregate.
c. Custom Brick: Acrylic polymer-based finish used in conjunction with a proprietary template system to create the look of stone, brick, slate or tile.
d. TerraNeo: 100% acrylic-based finish with large mica chips and multi-colored quartz aggregates.
e. Lymestone: A premixed, 100% acrylic-based finish designed to replicate the appearance of limestone blocks.
f. Reflectit: 100% acrylic coating providing a pearlescent appearance.
g. Finesse™: A Smooth 100% acrylic-based dirt pickup resistance finish.
h. Tibur Stone™: 100% acrylic-based finish with the appearance of Travertine Stone.
i. NewBrick™: A lightweight insulated brick veneer for use on exterior walls.
j. Ferros™ Finish: - a water based finish properties that replicates the look of rusting metal.

5. Elastomeric DPR (Dirt Pickup Resistance): Water-based, elastomeric acrylic finish with integral color and texture, and formulated with DPR chemistry:
   a. Weatherlastic® Quarzputz
   b. Weatherlastic® Sandpebble
c. Weatherlastic® Sandpebble Fine
d. Weatherlastic® Adobe

6. Medallion Series PMR™ (Proven Mildew Resistance): Water-based, acrylic finish with integral color and texture and formulated with PMR chemistry:
   a. Quarzputz® PMR
   b. Sandblast® PMR
c. Freestyle® PMR
d. Sandpebble® PMR
e. Sandpebble® Fine PMR

7. Coatings, Primers and Sealers:
   a. Demandit® Smooth
   b. Demandit® Sanded
c. Demandit® Advantage™
d. HDP™ Water-Repellent Coating
e. Weatherlastic® Smooth
f. Tuscan Glaze™
g. Color Prime
h. Prymit®
i. SealClear™

PART III EXECUTION

3.01 EXAMINATION
A. Prior to installation of the Outsulation MD System, the contractor shall verify that the substrate:
   1. Is of a type listed in Section 1.04.C.1.
   2. Is flat within 1/4 in (6.4 mm) in a 4 ft (1.2 m) radius.
3. Is sound, dry, connections are tight; has no surface voids, projections, or other conditions that may interfere with the Outsulation MD System installation or performance.

B. Prior to 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. Additionally, the contractor shall ensure that:
   1. Metal roof flashing has been installed in accordance with the manufacturer’s requirements, Asphalt Roofing Manufacturers Association (ARMA) Standards and Dryvit OMD Installation Details, DS167, or as otherwise necessary to maintain a watertight envelope.
   2. Openings are flashed in accordance with the Outsulation MD System Installation Details, DS167, or as otherwise necessary to prevent water penetration.
   3. Chimneys, balconies and decks have been properly flashed.
   4. Windows, doors, etc. are installed and flashed per manufacturer’s requirements and the Outsulation MD System Installation Details, DS167.

C. Prior to the installation of the Outsulation MD System, the contractor shall notify the general contractor, and/or architect, and/or owner of all discrepancies.

3.02 PREPARATION
A. The Outsulation MD materials shall be protected by permanent or temporary means from inclement weather and other sources of damage prior to, during, and following application until completely dry.
B. Protect adjoining work and property during Outsulation MD installation.
C. 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.
C. Sealant shall not be applied directly to textured finishes or base coat surfaces. Dryvit Outsulation MD System surfaces in contact with sealant shall be coated with Demandit Smooth or Color Prime.
D. High impact meshes shall be installed as specified at ground level, high traffic areas and other areas exposed to or susceptible to impact damage.
E. The installation of Machine Coated Dryvit EPS Shapes and Starter Boards shall be in accordance with Dryvit Publication DS854.

3.04 FIELD QUALITY CONTROL
A. The contractor shall be responsible for the proper storage and application of the Outsulation MD materials.
B. Dryvit assumes no responsibility for on-site inspections or application of its products.
C. If required, the contractor shall certify in writing the quality of work performed relative to the substrate system, details, installation procedures, workmanship and as to the specific products used.
D. If required, the EPS supplier shall certify in writing that the EPS meets Dryvit's specifications.
E. If required, the sealant contractor shall certify in writing that the sealant application is in accordance with the sealant manufacturer's and Dryvit's recommendations.

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 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 inclement weather and other sources of damage until dry and permanent protection in the form of flashings, sealants, etc. are installed.