

OUTSULATION® X SYSTEM

**An Exterior Wall Insulation and Finish System with Moisture Drainage
That Incorporates Extruded Polystyrene Continuous Insulation and An Air/Water-
Resistive Barrier**

Outsulation X System Specifications CSI Compliant



INTRODUCTION

This manufacturer's guide specification is intended for use by design and construction professionals in the development of project specifications. By referring to the manufacturer's ("**Notes to Specifier**" in parentheses and bolded), the specifier may easily select the portions of the comprehensive guide specification which are pertinent to his or her project. "Notes to Specifier" should then be deleted from the final specification document. This guide specification follows the Construction Specification Institute's MasterFormat and SectionFormat protocols.

It will be prudent to place certain parts of the Dryvit Outsulation X System Specification in other parts of the project's total specification, such as sheathing, air and water-resistive barrier membrane, accessory materials, sealants and framing. The project design professionals are responsible for verifying that the project specifications are suitable for the project. For assistance in preparing your specification, please contact your Dryvit Distributor or Dryvit Systems, Inc.

WARNING

The Outsulation X System is designed as a drainage wall EIF 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, roofs, windows, flashings, sealants, etc., are compatible with this EIF system.

The Outsulation X System is an engineered assembly of multiple compatible components: A fluid-applied air and water-resistive barrier, adhesive, rigid insulation board, base coat, reinforcing mesh, and finish coat.

DISCLAIMER

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 is responsible for all decisions pertaining to design, detail, structural capability, attachment details, shop drawings and the like. The Exterior Insulation and Finish System with Moisture Drainage Manufacturer has prepared guidelines in the form of specifications, installation details, application instructions and product data sheets to facilitate the design process only. The Manufacturer 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 the Manufacturer or otherwise, or for any changes which purchasers, specifiers, designers, or their appointed representatives may make to the Manufacturer's published comments.

Information contained in this specification conforms to standard detail and product recommendations for the installation of the Dryvit Outsulation X 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 installation of any project. To insure 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 Sections 1.04.D, 1.06.B.2, 1.06.D.2 of this guide specification indicates certain employees of the EIFS sub-contractor 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 quality. Dryvit Systems, Inc. assumes no liability for the performance of a trained contractor.

**DRYVIT SYSTEMS, INC.
 MANUFACTURER'S GUIDE SPECIFICATION
 CSI FORMAT SECTION 07 24 19
 OUTSULATION® X SYSTEM
 EXTERIOR INSULATION AND FINISH SYSTEM WITH MOISTURE DRAINAGE**

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. This document is to be used in preparing specifications for an Exterior Insulation and Finish System (EIFS) with Moisture Drainage including:
 - a. An integral fluid applied air and water-resistive membrane barrier compatible with the substrate surface and adhesive application of the EIF system.
 - b. Accessory materials required for treating sheathing joints, fasteners, penetrations, rough openings, and material transitions compatible with substrate surfaces and the adhesive application of the EIF system.
 - c. Joint sealants compatible with specified EIFS for use in all exterior envelope joint waterproofing.
 - d. A comprehensive single source limited EIF system warranty inclusive of EIFS, fluid applied air and water-resistive membrane barrier, accessory materials and sealants.

B. Related Requirements:

(Note to Specifier: Delete any sections below not relevant to this project and add others as required.)

1. 03 30 00 Cast-in-place Concrete
2. 03 40 00 Precast Concrete
3. 04 20 00 Unit Masonry
4. 05 40 00 Cold-formed Metal Framing
5. 06 11 00 Wood Framing
6. 06 11 13 Engineered Framing Systems

Note to Specifier: Engineered framing system components such as parapet cap nailer and rough opening buck framing are available from Prebuck LLC, a division of Tremco Construction Products Group (CPG). Coordinated specification of these items and can be incorporated into the overall Tremco CPG limited warranty.)

7. 06 16 00 Sheathing
8. 07 27 00 Fluid-Applied Air Barriers

(Note to Specifier: This specification contains options for EIFS Fluid-Applied Air and Water-Resistive Membrane Barrier (AWRB) and Accessory Material options. Coordinate with Section 07 27 00 as required where an EIFS AWRB option is selected for use behind other foam plastic continuous insulation (CI) and/or cladding areas as outlined herein below in Section 2.02.B.1.)

9. 07 62 00 Sheet Metal Flashing and Trim
10. 07 92 00 Joint Sealants

(Note to Specifier: This specification contains recommended joint sealant options. Coordinate with Section 07 92 00 as required where a specific joint sealant option is selected as outlined herein below in Section 2.02.C.)

11. 08 40 00 Entrances, Store Fronts, and Curtain Walls
12. 08 50 00 Windows

1.02 REFERENCES

(Note to Specifier: please delete any standards below not relevant to this project and add others as required.)

A. Reference Standards:

1. ASTM Standards:

- a. ASTM B 117 Standard Practice for Operating Salt Spray (Fog) Apparatus
- b. ASTM C 67 Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile
- c. ASTM C 150 Standard Specification for Portland Cement
- d. ASTM D 203 Standard Test Method for Breaking Load and Flexural Properties of Block-Type thermal Insulation
- e. ASTM C 272 Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions
- f. ASTM C 273 Standard Test Method for Shear Properties of Sandwich Core Materials
- g. ASTM C 297 Standard Test Method for Flatwise Tensile Strength of Sandwich Constructions
- h. ASTM C 510 Standard Test Method for Staining and Color Change of Single- or Multicomponent Joint Sealants
- i. ASTM C 518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- j. ASTM C 639 Standard Test Method for Rheological (Flow) Properties of Elastomeric Sealants
- k. ASTM C 661 Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer
- l. ASTM C 679 Standard Test Method for Tack-Free Time of Elastomeric Sealants
- m. ASTM C 719 Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle)^{1, 2}
- n. ASTM C 793 Standard Test Method for Effects of Laboratory Accelerated Weathering on Elastomeric Joint Sealants
- o. ASTM C 794 Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants
- p. ASTM C 920 Standard Specification for Elastomeric Joint Sealants
- q. ASTM C 1177 Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing
- r. ASTM C 1184 Standard Specification for Elastomeric Joint Sealants
- s. ASTM C 1246 Standard Test Method for Effects of Heat Aging on Weight Loss, Cracking, and Chalking of Elastomeric Sealants After Cure
- t. ASTM C 1248 Standard Test Method for Staining of Porous Substrate by Joint Sealants
- u. ASTM C 1305 Standard Test Method for Crack Bridging Ability of Liquid-Applied Waterproofing Membrane
- v. ASTM C 1382 Standard Test Method for Determining Tensile Adhesion Properties of Sealants When Used in Exterior Insulation and Finish Systems (EIFS) Joints
- w. ASTM C 1396 Standard Specification for Gypsum Board
- x. ASTM C 1397 Standard Practice for Application of Class PB Exterior Insulation and Finish System (EIFS) and EIFS with Drainage
- y. ASTM D 412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension
- z. ASTM D 624 Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers
- aa. ASTM D 968 Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive
- bb. ASTM D 1621 Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- cc. ASTM D 1622 Standard Test Method for Apparent Density of Rigid Cellular Plastics
- dd. ASTM D 1623 Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics
- ee. ASTM D 1784 Standard Specification for Rigid PVC and CPVC Compounds
- ff. ASTM D 1970 Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
- gg. ASTM D 2247 Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity
- hh. ASTM D 2863 Standard Test Method for Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics (Oxygen Index)
- ii. ASTM D 2898 Standard Test Method for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing
- jj. ASTM D 3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber
- kk. ASTM D 3330 Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape

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|------|-------------|--|
| ii. | ASTM D 4060 | Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser |
| mm. | | ASTM D 4541 Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers |
| nn. | ASTM E 72 | Standard Methods of Conducting Strength Tests Of Panels For Building Construction |
| oo. | ASTM E 84 | Standard Test Method for Surface Burning Characteristics of Building Materials |
| pp. | ASTM E 96 | Standard Test Methods for Water Vapor Transmission of Materials |
| qq. | ASTM E 119 | Standard Method for Fire Tests of Building Construction and Materials |
| rr. | 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 |
| ss. | ASTM E 330 | Test Method for Structural Performance of Exterior Windows, Doors and Curtain Walls by Uniform Static Air Pressure Difference |
| tt. | ASTM E 331 | Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference |
| uu. | ASTM E 831 | Standard Test Method for Linear Thermal Expansion of Solid Materials by Thermomechanical Analysis |
| vv. | ASTM E1233 | Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls by Cyclic Air Pressure Differential |
| ww. | ASTM E 2098 | Test Method for Determining the Tensile Breaking Strength of Glass Fiber Reinforcing Mesh for use in Class PB Exterior Insulation and Finish Systems (EIFS), after Exposure to Sodium Hydroxide Solution |
| xx. | ASTM E 2134 | Test Method for Evaluating the Tensile-Adhesion Performance of Exterior Insulation and Finish Systems (EIFS) |
| yy. | ASTM E 2178 | Standard Test Method for Air Permeance of Building Materials |
| zz. | ASTM E 2273 | Test Method for Determining the Drainage Efficiency of Exterior Insulation and Finish Systems (EIFS) Clad Wall Assemblies |
| aaa. | ASTM E 2357 | Standard Test Method for Determining Air Leakage of Air Barrier Assemblies |
| bbb. | ASTM E 2485 | Standard Test Method for Freeze-Thaw Resistance of Exterior Insulation and Finish Systems (EIFS) and Water-Resistive Barrier Coatings |
| ccc. | ASTM E 2486 | Standard Test Method for Impact Resistance of Class PB and PI Exterior Insulation and Finish Systems (EIFS) |
| ddd. | ASTM E 2568 | Standard Specification for PB Exterior Insulation and Finish Systems |
| eee. | ASTM E 2570 | Standard Test Method for Evaluating Water-Resistive Barrier (WRB) Coatings Used Under Exterior Insulation and Finish Systems (EIFS) or EIFS with Drainage |
| fff. | ASTM G 154 | Standard Practice for Operating Fluorescent Light Apparatus for UV Exposure of Nonmetallic Materials |
| ggg. | | ASTM G 155 Standard Practice for Operating-Xenon Arc Light Apparatus for Exposure of Nonmetallic Materials |
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2. National Fire Protection Association (NFPA) Standards:
 - a. NFPA 268 Standard Test Method for Determining Ignitability of Exterior Wall Assemblies Using a Radiant Heat Source
 - b. NFPA 285 Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load Bearing Wall Assemblies Containing Combustible Components

 3. The American Association of Textile Chemists and Colorists:
 - a. AATCC 127-08 Water Resistance: Hydrostatic Pressure Test

 4. US Federal Specifications
 - a. TT-S-001543A Sealing Compound: Silicone Rubber Base (for Calking, Sealing, and Glazing in Buildings and Other Structures)
 - b. TT-S-00230 Sealing Compound: Elastomeric Type, Single Component (for Calking, Sealing, and Glazing in Buildings and Other Structures)

1.03 ADMINISTRATIVE REQUIREMENTS

A. Pre-Construction Meetings

(Note to Specifier: The warranty shall require a pre-construction meeting including representatives of the Manufacturer, the Applicator, the Owner, and the Consultant (if applicable) prior to installation of the Products. Work in this section requires coordination with related sections and trades.)

1. The EIFS installer shall coordinate with the General Contractor to schedule, invite and administer a pre-construction meeting including but not limited to the architect of record, consultant(s), EIFS, sheathing board, accessory materials and sealant manufacturer's representatives and the owner to assure required integration of products selected as specified herein and for proper sequencing and installation detailing.

B. Coordinate for related specification and integration of Selected Materials as referenced in Section 2.02.B.1, 2.02.B.2 and 2.02.C herein below.

C. Sequencing

1. Provide jobsite grading prior to installation of Exterior Insulation and Finish System with Moisture Drainage so that the system may be terminated at 8 in above grade or as required by code.
2. Coordinate installation of sheathing board and accessory materials, flashing, foundation waterproofing, roofing membrane, windows, doors, and other penetrations of the exterior walls to provide a continuous air and water-resistive membrane barrier.
3. Provide protection of rough openings before installing windows, doors, and other penetrations of the exterior walls.
4. Coordinate installation of windows and doors so air and water-resistive membrane barrier accessory materials, transitions, flashings, etc. are connected to them to provide a continuous barrier.
5. Install window and door head flashings immediately after windows and doors are installed.
6. Install diverter flashings wherever water can enter the wall assembly to direct water to the exterior.
7. Install copings and sealants immediately after installation of the Exterior Insulation and Finish System with Moisture Drainage and when EIFS coatings are dry.
8. Attach penetrations through Exterior Insulation and Finish System to structural support and provide water-tight seals at penetrations.

1.04 ACTION SUBMITTALS / INFORMATIONAL SUBMITTALS

- A. Submit product data as required by Section 01 33 00, Administrative Requirements.
- B. Submit shop drawings for panelized EIFS with Moisture Drainage showing wall layout, connections, details, expansion joints, and installation sequence.
- C. Submit two (2) samples of the Exterior Insulation and Finish System with Moisture Drainage for each finish, texture, and color to be used on the project. Use the same tools and techniques proposed for the actual installation. Make the samples of sufficient size to accurately represent each color and texture being utilized on the project.
- D. Submit a current copy of the manufacturer's Trained Contractor Certificate for the EIF system specified. Submit Owner/Architect-requested test results verifying the performance of the Exterior Insulation and Finish System with Moisture Drainage.
- E. Submit a copy of the manufacturer's installation details and application instructions.

1.05 CLOSEOUT SUBMITTALS

- A. Submit a copy of the manufacturer’s recommended maintenance and repair manual.
- B. Submit a copy of the Exterior Insulation and Finish System with Moisture Drainage manufacturer’s comprehensive single source limited warranty.

1.06 QUALITY ASSURANCE

(Note to Specifier: Please delete any qualification below not relevant to this project and add others as required.)

A. Manufacturer’s Qualifications:

(Note to Specifier: Coordinate with section 01 43 00, Quality Requirements.)

- 1. A member in good standing of the EIFS Industry Members Association (EIMA).
- 2. Manufacture Exterior Insulation and Finish System with Moisture Drainage materials at a facility covered by a current ISO 9001:2015 and ISO 14001:2015 certification. Certification of the facility is done by a registrar accredited by the American National Standards Institute, Registrar Accreditation Board (ANSI-RAB).

B. Contractor Qualifications:

- 1. Knowledgeable in the proper installation of the Exterior Insulation and Finish System with Moisture Drainage.
- 2. Possess a current copy of the manufacturer’s Trained Contractor Certificate for the EIF system specified.
- 3. Successfully complete a minimum of three (3) projects of similar scope and scale to the specified project.

C. Insulation Board Manufacturer Qualifications:

- 1. Listed by EIFS Manufacturer, and capable of producing the Extruded Polystyrene (XPS) in accordance with the current EIFS Manufacturer’s Specification for Insulation Board.
- 2. Subscribe to the Dryvit Third Party Certification and Quality Assurance Program.

D. Panel Fabricator Qualifications:

- 1. Experienced and competent in the fabrication of architectural wall panels.
- 2. Possess a current Outsulation X System Trained Contractor Certificate* issued by Dryvit Systems, Inc.

E. Panel Erector Qualifications:

- 1. Experienced and competent in the installation of architectural wall panel EIF systems.
- 2. 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.

F. Mock-Up:

- 1. Provide the owner/architect with a mock-up for approval.
 - a. 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.
 - b. Prepared with the same products, tools, equipment and techniques required for the actual applications. Use finish from the same batch that is being used on the project.

- c. Available and maintained at the jobsite.

G. Regulatory Requirements:

1. Separate the XPS insulation board from the interior of the building by a minimum 15-minute thermal barrier.
2. Comply with local building codes for the use and maximum thickness of XPS insulation board.

H. Inspections:

1. Cooperate with independent, third-party inspectors when required by code or by contract documents.

1.07 DELIVERY, STORAGE AND HANDLING

1. Deliver all Exterior Insulation and Finish System with Moisture Drainage components and materials to the job site in the original, unopened packages with labels intact.
2. Inspect all Exterior Insulation and Finish System with Moisture Drainage components and materials upon arrival for physical damage, freezing or overheating. Do not use questionable materials.
3. Store all Exterior Insulation and Finish System with Moisture Drainage components and materials at the jobsite in a cool, dry location, out of direct sunlight, protected from weather and other sources of damage. Maintain minimum and maximum storage temperature as stated in the product data sheets or specifications for the materials selected. **NOTE: Minimize exposure of materials to temperatures over 90 °F (32 °C). Finishes exposed to temperatures over the published maximum storage temperature for even short periods may exhibit skinning and increased viscosity and should be inspected prior to use.**
4. Protect all products from inclement weather and direct sunlight.

1.08 SITE CONDITIONS

A. Ambient Conditions

1. Do not apply wet materials during inclement weather unless appropriate protection is provided. Protect materials from inclement weather until they are completely dry.
2. Verify the minimum air and wall surface temperatures at the time of application as stated in the product data sheets or specifications for the materials selected.
3. Maintain these temperatures with adequate air ventilation and circulation for a minimum of 24 hours (48 hours for specific Specialty Finishes) thereafter, or until the products are completely dry.
(Note to Specifier: 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 EIF system.)

1.09 WARRANTY

A. Manufacturers' Limited EIF System Warranty

1. Manufacturer shall offer a limited material defect and labor to repair or replace defective material warranty stating the Products will be free from manufacturing defect and will perform as warranted in the manner specified for the stated term measured from the Date of Project Substantial Completion.
 - a. A pre-construction meeting, including representatives of the Manufacturer, the Applicator, the Owner, and the Consultant (if applicable), shall be required prior to installation of the Products.
 - b. The term of this warranty may be extended for an additional 2 years with involvement on the project of a Manufacturer-approved, third-party consultant ("Consultant") engaged by the Owner or its authorized representative, at the Owner's sole expense. Inspection reports generated by the Consultant shall be made available to the Manufacturer and the Owner.

- c. The warranty is available upon written request.
- 2. The EIF system warranty shall additionally include the following for the term of the warranty or as specifically noted hereunder.

(Note to Specifier: An additional 2-year EIF system warranty extension is available where Tremco (Company) Joinery and Sealants referenced in Section 2.02.C are integrated. Amend warranty term below to 12-years.)

(Note to Specifier: An 18-year EIF system warranty is available when the Tremco ExoAir 230 Air and Water-Resistive Membrane Barrier and Dymonic 100 Accessory Material are selected as referenced in Section 2.02.B.1 and 2.02.B.2 below. Delete those AWRB's and Accessory Materials that do not apply. Amend warranty term below to 18-years. Where Tremco (Company) Joinery and Sealants referenced in Section 2.02.C are also integrated. Amend warranty term below to 20-years.)

- a. The EIF system warranty term shall be 10 years **[12-years] [18-years] [20-years]**.
- b. The EIFS will remain in a watertight condition when the EIFS is used in conjunction with approved Company Joinery and Sealants.
- c. The EIFS will drain incidental moisture between the air/water-resistive barrier and the insulation board.
 - 1) Remedy includes repair or replacement of any sheathing or framing member that is damaged as a result of the EIF system failing to drain incidental moisture between the secondary weather barrier and the insulation board.
- d. Finish will be UV fade resistant for 10 years, except for specially produced colors.
 - 1) Specially produced colors will be UV fade resistant for 5 years when high-performance colorants are used to formulate.
- e. The EIFS shall be eligible to receive a renewal of the original warranty if the Owner satisfactorily completes the specific renovation requirements published by the Manufacturer.

B. Installer Warranty

- 1. EIF system Installer shall provide a separate minimum 1-year warranty for all workmanship related to the proper installation and drainage performance of the EIFS application. Manufacturer shall not be responsible for workmanship associated with the installation of Exterior Insulation and Finish System with Moisture Drainage.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers List:

- 1. Dryvit Systems, Inc., One Energy Way, West Warwick, RI 02893, 800-556-7752, www.dryvit.com.
- 2. Tremco, Inc., 3735 Green Road Beachwood, OH 44122 [800.321.7906](tel:800.321.7906), www.tremco.com.

B. Substitution Limitations:

- 1. All components of the Outsulation® X System® including XPS Insulation Board shall be supplied or obtained from Dryvit Systems, Inc., Tremco, Inc. or their authorized distributors. Substitutions or additions of materials manufactured or supplied by others will void the EIF system warranty.
- 2. Alternate EIFS manufacturers must demonstrate equivalency for all elements of EIF system such as but not limited to:
 - a. Material components, compatibility and testing
 - b. Standard and specialty finishes;
 - c. Color and texture matching; and,
 - d. Warranty criteria as specified herein.
- 3. Submit alternate EIFS manufacturer's complete data highlighting equivalency for review through Substitution Requirements as defined in Division 1.

2.02 DESCRIPTION

A. System Description:

1. The Dryvit Outsulation X System is an Exterior Insulation and Finish System (EIFS) with Moisture Drainage, consisting of:
 - a. An Air and Water-Resistive Membrane Barrier
 - b. Accessory Materials
 - c. Adhesive – installed in vertical ribbons to facilitate egress of incidental moisture
 - d. Extruded Polystyrene (XPS) insulation board
 - e. Base Coat
 - f. Reinforcing Mesh
 - g. Finish Coat
 - h. Joint Sealants as specified herein below

B. Materials:

1. Fluid-Applied Air and Water-Resistive Barrier:

(Note to Specifier: Options for air and water-resistive barrier (AWRB) are outlined below for integration into the EIF system. Evaluate AWRB options for film thickness, permeability, and desired EIF system warranty term specific to project requirements. Consult with manufacturer(s) as necessary and delete those that are not applicable.)

(Note to Specifier: Air and water-resistive barriers (AWRB) are evaluated and code compliant for use behind other foam plastic insulation / cladding assembly wall areas. There are opportunities for coordination, sequencing, reduced trade, elimination of transitions between dissimilar barriers and warranty implications, etc. through the design and specification for the EIF system AWRB to be integrated as a single use AWRB for the entire project where applicable. Select the AWRB that best applies to the project conditions for EIFS and where applicable indicate for use behind other foam plastic continuous insulation (CI) / cladding assemblies that may apply. Coordinate this integration with related specification sections 07 27 00 accordingly.)

 - a. Permeable:
 - 1) Dryvit Backstop® NTX: A standard film vapor permeable, low-temperature, flexible, polymer-based non-cementitious water-resistive and air barrier coating available in Texture and Smooth versions. Backstop NTX can be installed in ambient air and substrate surface temperatures of 25 °F (3.88 °C) and rising for a minimum 24 hours and exposed for up to 6 months during the construction process.
 - 2) Tremco ExoAir® 230: A thick film synthetic, permeable, elastomeric air/water-resistive membrane barrier designed to be roller or spray applied. ExoAir 230 can be installed in ambient air and substrate surface temperatures of 40 °F (5 °C) and rising, shall be protected from rain and washout prior to drying and can be exposed for up to 12 months during the construction process. ExoAir is specialty formulated for design options requiring assemblies that have been evaluated for NFPA 285.

(Note to Specifier: Coordinate item above for 18-year EIF system warranty as referenced in Section 1.09.A.2. Delete section 2.02.B.1.a.1 above and section 2.02.B.1.b below. Retain only section 2.02.B.a.2) above.)
 - b. Non-Permeable – Vapor Retarder / Barrier:

(Note to Specifier: Specification and use of an exterior vapor barrier within a wall assembly is the responsibility of the project designer. Consult with the EIF system manufacturer for appropriate use and consider a water vapor transmission analysis.)

 - 1) Dryvit Backstop® NT-VB (Vapor Barrier): A standard film non-permeable, Class I, low-temperature, flexible, polymer-based non-cementitious water-resistive and air barrier coating available in Texture and Smooth versions. Backstop NT-VB can be installed in ambient air and substrate surface temperatures of 40 °F (5 °C) and rising for a minimum 24 hours and exposed

for up to 6 months during the construction process. Backstop NT-VB Texture is additionally used for treatment of sheathing board joints, inside / outside corners and spotting of fastener heads.

2. Accessory Materials for Fluid Applied Air and Water-Resistive Barrier (AWRB):

(Note to Specifier: Options for AWRB Accessory Materials are outlined below for integration into the EIF system. Review products below, consult with manufacturer(s) as necessary and select those that apply and delete those that are not applicable; or leave list intact allowing the EIF system installer to select as their preference and/or what is most appropriate for the project conditions. See note to specifier below where the 18-year ExoAir warranty is required.)

- a. Provide compatible accessory materials as required by project conditions for substrate, rough opening and penetration preparation, bridge expansion joints in substrate, material transitions and flashing integration to produce a complete air and water-resistant assembly.
 - 1) Dryvit Grid Tape™: An open weave fiberglass mesh tape with pressure sensitive adhesive. Used in combination with Backstop NTX Texture for treating sheathing board joints and inside / outside corners and preparing rough openings and penetrations. Backstop NTX Texture is used alone for spotting fastener heads.
 - 2) Dryvit AquaFlash®: Fluid-applied, water-based polymer transition membrane. Used in preparing rough openings and penetrations, bridging expansion joints in substrate, material transitions and flashing integration. AquaFlash can be installed in ambient air and substrate surface temperatures of 40 °F (5 °C) and rising for 24 hours.
 - i. Dryvit AquaFlash Mesh and Corners: Polyester reinforcing mesh for use with AquaFlash.
 - 3) Dryvit Backstop Flash and Fill: A flexible, waterproof, low temperature gun applied material. Used in substrate preparation, treating sheathing board joints, inside/outside corners and fastener heads, preparing rough openings and penetrations, bridging expansion joints in substrate material transitions and flashing integration. Backstop Flash and Fill can be installed in ambient air and substrate surface temperatures of 32 °F (0 °C) and rising for 24 hours. **Note: Dryvit Backstop Flash and Fill may only be used with Dryvit Backstop NTX air/water-resistive barrier.**
 - 4) Tremco Dymonic 100: A high-performance, high-movement, single-component, medium-modulus, low-VOC, UV-stable, non-sag, gun applied polyurethane sealant. Used in substrate preparation, treating sheathing board joints and inside/outside corners and fastener heads, preparing rough openings and penetrations, bridging expansion joints in substrate, material transitions and flashing integration. Dymonic 100 can be installed in ambient air and substrate surface temperatures of 40 °F (5 °C) and rising. Where Dymonic 100 must be applied in temperatures below 40 °F, (5 °C), please refer to the Tremco Technical Bulletin for Applying Sealants in Cold Conditions (No. S-08-44 rev 1) that can be found at www.tremcosealants.com. **(Note to Specifier: Coordinate item above for 18-year EIF system warranty as referenced in Section 1.09.A.2. Delete sections 2.02.B.2.a.1) thru 2.02.B.2.a.3) above. Retain section 2.02.B.2.a.4) above.)**
 - 5) Tremco ExoAir 110AT: A 22-mil composite impermeable membrane that is comprised of 16 mils of butyl and 6 mils of HDPP facer. Used in limited applications as a membrane flashing that will not interfere with the adhesive application of EIFS.

3. Drainage Components:

- a. Dryvit Drainage Strip™ corrugated plastic strip.
- b. Dryvit TREMGrip™ urethane-based adhesive used to attach Drainage Track and Dryvit Drainage Strip to the sheathing.

4. Adhesives:

(Note to Specifier: Edit list below to reference specific product(s) of choice for this project or leave list intact allowing the EIFS installer to select as their preference and/or what is most appropriate for the project and project conditions.)

- a. Liquid polymer-based adhesive field mixed with Portland cement.
 - 1) Dryvit Genesis® – only

5. Insulation Board:

- a. Shall be Extruded Polystyrene (XPS) Rigid Insulation Board approved by Dryvit Systems, Inc.
- b. Minimum thickness shall be 1 in (25 mm) and maximum thickness shall be 4 in (102 mm)
- c. Install in board size of 2 ft x 4 ft (600 mm x 120 mm) maximum.
- d. All insulation board faces shall be factory planed.

6. Pre-Coated Insulation Starter Boards, Corners and Shapes:

(Note to Specifier: Pre-Base Coated Insulation Starter Boards, Corners and Shapes provide for properly back wrapped and encapsulated EIF system termination edges typically scheduled to receive primers and sealants and are recommended. Machine or Non-Machine coated starter boards and shapes must be produced with Dryvit materials to be covered under the EIF system warranty. Retain one or both items below as desired or delete those item(s) not desired.)

- a. Machine Coated Starter Boards, Corners and Shapes: Shall be produced with materials approved by Dryvit Systems, Inc. and be supplied by a fabricator approved by Dryvit Systems, Inc.
- b. Non-Machine Coated Starter Boards, Corners and Shapes: Shall be produced with materials approved by Dryvit Systems, Inc.

7. Mechanical Fasteners:

- a. Mechanical Fasteners shall be required and installed into insulation board - 3 fasteners per 2 ft x 4 ft [600 mm x 1200 mm] – while the adhesive is still wet. Fasteners consist of a 2 in (51mm) diameter polypropylene washer with key openings for base coat penetration used in conjunction with a corrosion resistant fastener as outlined below.
 - 1) Washer
 - i. Shall be Wind-lock Wind Devil 2 Plate.
 - 2) Screws
 - i. Wood Based Substrates and Light Gauge Metal (20 – 26 ga).
 - a) Shall be minimum No. 6, bugle head Type S, corrosion resistant screws.
 - b) The screws shall be of sufficient length to penetrate wood substrates a minimum of 3/4 in (19 mm), and metal framing a minimum of 3/8 in (9 mm).
 - ii. Steel Framing (12 – 20 ga)
 - a) Shall be minimum No. 6 bugle head corrosion resistant screws, drill point.
 - b) The screws shall be of sufficient length to penetrate the steel framing a minimum of 3/8 in (9 mm).
 - iii. Brick, CMU and Concrete
 - a) Anchors shall be a minimum 3/16 in (4.8 mm) diameter and corrosion resistant.
 - b) Anchors shall be of sufficient length to penetrate the substrate a minimum of 1 in (25 mm).
 - 3) Pullout values shall be substantiated for the particular substrate and fastener used.

8. Base Coat:

- a. Liquid polymer-based base coat field mixed with Portland cement.
 - 1) Dryvit Genesis - only
 - 2) Dryvit Dryflex - optional for high moisture areas. Coordinate use with Dryvit Systems, Inc.
- b. Liquid polymer-based base coat field mixed with Portland cement when specified.
 - 1) ShieldIt™

(Note to Specifier: This is a 2-pass base coat used over existing EIFS or a Dryvit reinforced base coat to improve impact resistance against woodpeckers when specified.)

9. Reinforcing Mesh:

(Note to Specifier: Reinforcing meshes are classified by impact resistance and specified by weight and tensile strength. Please refer to the table below and/or confer with your manufacturer’s representative to assure specification of mesh appropriate for the anticipated use of your project.)

- a. Open-weave, glass fiber fabric treated for compatibility with other EIF system materials.
- b. Standard Plus Mesh shall be required for all EIFS field wall areas throughout. Additionally, incorporate as second layer over Dryvit Panzer Mesh for all Ultra High Impact Mesh Assemblies where indicated or shown on contract drawings.

(Note to Specifier: It is imperative to specify for impact resistance level and location within the EIF system and within the contract documents. The paragraph below represents Dryvit and EIFS industry recommended minimums. Retain or modify the paragraph below as necessary to address project conditions. Select Panzer 15 oz. or Panzer 20 oz. based on impact resistance required.)

- c. Provide for ultra high impact mesh assembly including **[Panzer 15 mesh] [Panzer 20 mesh]** for all EIFS clad wall areas within 8'-0" of grade and where additionally indicated on contract drawings.

Reinforcing Mesh ¹ /Weight oz/yd ² (g/m ²)	Minimum Tensile Strengths	EIMA Impact Classification	EIMA Impact Range		Impact Test Results	
			in-lbs	(Joules)	in-lbs	(Joules)
Standard - 4.3 (146)	150 lbs/in (27 g/cm)	Standard	25-49	(3-6)	36	(4)
Standard Plus - 6 (203)	200 lbs/in (36 g/cm)	Medium	50-89	(6-10)	56	(6)
Intermediate™ - 12 (407)	300 lbs/in (54 g/cm)	High	90-150	(10-17)	108	(12)
Panzer® 15 ¹ - 15 (509)	400 lbs/in (71 g/cm)	Ultra High	>150	(>17)	162	(18)
Panzer 20 ¹ - 20.5 (695)	550 lbs/in (98 g/cm)	Ultra High	>150	(>17)	352	(40)
Detail Mesh® Short Rolls - 4.3 (146)	150 lbs/in (27 g/cm)	n/a	n/a	n/a	n/a	n/a
Corner Mesh™ - 7.2 (244)	274 lbs/in (49 g/cm)	n/a	n/a	n/a	n/a	n/a

* 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)

10. Finish:

(Note to Specifier: Numerous finish, specialty finish, performance enhancements, textures and coatings are available. Select those that apply and delete those that do not.)

- a. Water-based, acrylic coating with integral color and texture; formulated with Dirt Pickup Resistance (DPR) chemistry.
 - 1) Available textures:
 - a) Quarzputz® DPR – open texture
 - b) Sandblast® DPR – medium texture
 - c) Freestyle® DPR – fine texture
 - d) Sandpebble® DPR – pebble texture
 - e) Sandpebble® Fine – fine pebble texture
- b. Hydrophobic (HDP™) Finishes: 100% acrylic coating with integral color and texture and formulated with hydrophobic properties:
 - 1) Available textures:
 - a) Quarzputz® HDP
 - b) Sandblast® HDP
 - c) Sandpebble® HDP
 - d) Sandpebble® Fine HDP
 - e) Limestone™ HDP
- c. Lightweight, water-based acrylic coating with integral color and texture; formulated with Dirt Pickup Resistance (DPR) chemistry.
 - 1) Available textures:
 - a) Quarzputz® E
 - b) Sandpebble® E
 - c) Sandpebble Fine® E

11. 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 – acrylic-based finish with large mica chips and multi-colored quartz aggregates.
- e. Limestone – premixed, acrylic-based finish designed to replicate the appearance of limestone blocks.

- f. Reflectit™ – 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.
 - 1) For fire resistance rated assembly, CI insulation thickness is limited to 2 1/4 in (57 mm)
 - 2) For Type I – IV Construction, CI insulation thickness is limited to 4 in (101.6 mm)
- j. Ferros™ Finish: - a water based finish that replicates the look of rusting metal.
- k. Wood Grain: A 100% acrylic-based finish created with a textured finish, a coating, a graining tool and a sealer providing an authentic woodgrain appearance.

12. Elastomeric, water-based acrylic coating with integral color and texture; formulated with Dirt Pickup Resistance (DPR) chemistry:

- a. Weatherlastic® Quarzputz
- b. Weatherlastic® Sandpebble
- c. Weatherlastic® Sandpebble Fine
- d. Weatherlastic® Adobe

13. Medallion Series water-based, acrylic coating with integral color and texture; formulated with Proven Mildew Resistance (PMR™) chemistry:

- a. Quarzputz® PMR
- b. Sandblast® PMR
- c. Freestyle® PMR
- d. Sandpebble® PMR
- e. Sandpebble® Fine PMR

14. Coatings, Primers, and Sealants:

- 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™

C. Joint Sealants:

(Note to Specifier: Where the additional 2-year EIF system warranty extension for use of Tremco (Company) Joinery and Sealants is desired, retain [Required] below in section 2.03.C.1. and delete section 2.03.C.2)

1. Silicone Sealant: **[Required]**

- a. Tremco Spectrem 1: An ultra low modulus, high-performance, one-part, moisture-curing silicone joint sealant with physical properties making it an ideal sealant for sealing dynamic joints.
- b. Tremco Spectrem 3: A general-purpose, low-modulus, high performance, one-part, neutral-cure, non-staining, low dirt pickup, construction-grade silicone sealant.
- c. Tremco Spectrem 4-TS: A multi-component, neutral-curing, non-staining, low dirt pick up, low-modulus silicone sealant specially formulated for use in dynamically moving building joints. Spectrem 4-TS offers color flexibility with the opportunity to tint the material on site.
 - a. Coordination for custom sealant colors are required.
- d. Where deemed necessary, use of TREMprime Silicone Porous Primer.

2. Polyurethane Sealant: Coordinate for primer use as indicated.

- a. Tremco Dymonic FC: A one component hybrid polyurethane sealant. Where deemed necessary, use TREMprime Silicone Porous Primer for porous surfaces and TREMprime Silicone Metal Primer for metals or plastics.

D. Jobsite-Mixed Materials:

1. Portland cement: verify is Type I or II, meeting ASTM C 150, white or gray in color, fresh and free of lumps.
2. Water: verify is clean and free of foreign matter.

E. Reference Documentation for Outsulation X System:

1. Data Sheet – DS932
2. Details – DS947
3. Application Instructions – DS937

PART 3 EXECUTION

3.01 EXAMINATION

A. Verification of Conditions:

1. Verify access to electric power, clean water and a clean work area at the location where the Dryvit materials are to be applied.
2. Verify the deflection of the substrate does not exceed 1/240 times the span. Verify substrate is flat within 1/4 in (6.4 mm) in a 4 ft (1.2 m) radius.
3. Verify substrate is sound, dry, connections are tight; has no surface voids, projections, or other conditions that may interfere with the Exterior Insulation and Finish System with moisture drainage installation or performance.
4. Verify the slope of inclined surfaces are not less than 6:12 (27 °) were the length of the slope does not exceed 12 in (305 mm) or 3:12 (14 °) were the length of the slope does not exceed 4 in (102 mm).
5. Verify metal roof flashings have been installed in accordance with Sheet Metal and Air Conditioning Contractors National Association (SMACNA) standards.
6. Verify all rough openings are flashed in accordance with the Exterior Insulation and Finish System with Moisture Drainage manufacturer's installation details, or as otherwise necessary to prevent water penetration. Verify chimneys, balconies and decks have been properly flashed as necessary to prevent water penetration.
7. Verify windows and doors are installed and flashed per manufacturer's requirements and installation details.
8. Notify general contractor of all discrepancies prior to the installation of the Exterior Insulation and Finish System with moisture drainage.
(Note to Specifier: Design and location of expansion joints in the Exterior Insulation and Finish System with Moisture Drainage is the responsibility of the project designer and as designated on contract drawings.)
9. Verify that expansion joints are installed:
 - 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 non-wood framed buildings where significant movement is expected.
 - e. Where the Exterior Insulation and Finish System with moisture drainage abuts dissimilar materials.
 - f. Where the substrate type changes.
 - g. Where prefabricated panels abut one another.
 - h. In continuous elevations at intervals not exceeding 50 ft (15.2 m).
 - i. Where significant structural movement occurs, such as changes in roof line, building shape or structural system.

10. 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.

3.02 PREPARATION

- A. Protect the Exterior Insulation and Finish System with Moisture Drainage materials 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 installation of the Exterior Insulation and Finish System with Moisture Drainage.
- C. Prepare the substrate 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. Install the EIF system in accordance with ASTM C1397 and the Dryvit Outsulation X System Application Instructions, DS937. Apply base coat sufficient to fully embed the reinforcing mesh. The recommended method is to apply the base coat in two (2) passes.
- B. Apply sealant to base coat surface prepared in accordance with [DS153](#).
- C. Install high impact reinforcing mesh as specified at ground level, high traffic areas and other areas exposed to or susceptible to impact damage as designated on contract drawings.
- D. Install Machine Coated Dryvit EPS Shapes in accordance with Dryvit Publication [DS854](#).

3.04 SITE QUALITY CONTROL

- A. Exterior Insulation and Finish System with Moisture Drainage manufacturer assumes no responsibility for on-site inspections or application of its products.
- B. EIFS sub-contractor to certify in writing the quality of work performed relative to the substrate system, details, installation procedures, and as to the specific products used.
- C. XPS supplier, if requested, to certify in writing that the XPS meets the Exterior Insulation and Finish System with Moisture Drainage manufacturer's specifications.
- C. The sealant contractor, if requested, to certify in writing that the sealant application is in accordance with the sealant manufacturer's and the Exterior Insulation and Finish System with Moisture Drainage manufacturer's recommendations.

3.05 CLEANING

- A. Remove all excess Exterior Insulation and Finish System materials from the job site by the contractor in accordance with contract provisions and as required by applicable law.
- B. Leave all surrounding areas, where the Exterior Insulation and Finish System with Moisture Drainage has been applied, free of debris and foreign substances resulting from the EIFS sub-contractor's work.

Dryvit Systems, Inc.
One Energy Way
West Warwick, RI 02893
800-556-7752
www.dryvit.com

For more information on [Dryvit Systems](#) or [Continuous Insulation](#) visit these links.

