



# TECHNICAL DATA SHEET

## Outsulation Mineral Wool System®

An Exterior Insulation and Finish System that Incorporates Moisture Drainage, an Air/Water Resistant Barrier, and Non-Combustible Mineral Wool Continuous Insulation. DS980

### SYSTEM DESCRIPTION

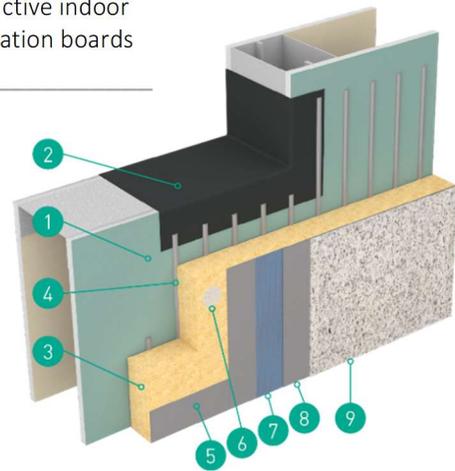
Outsulation® Mineral Wool System is an Exterior Insulation and Finish System (EIFS) that incorporates moisture drainage, an air/water-resistive barrier, and non-combustible ROCKWOOL Frontrock® mineral wool continuous insulation with an R-Value of 4.0 per inch.

### FEATURES & BENEFITS

- Tested & compliant with Building Codes & ASTM E136 as a Non-Combustible Mineral Wool Insulation Material
- R-Value of 4.0 per inch provides excellent energy efficiency
- Compliant with New York City Building Code
- Outsulation® Mineral Wool System with ROCKWOOL Frontrock has been evaluated for complete fire performance in accordance with NFPA 285 and NFPA 268
- Evaluated for use over any fire-rated base wall assembly without adding to or detracting from the base wall's fire rating
- Single-source wall solution providing protection against the effects of uncontrolled air, water, and moisture vapor as well as providing improved thermal performance
- Improved STC and OITC sound dampening for a quieter and more productive indoor environment in comparison to traditional EIFS that utilize EPS or XPS insulation boards

### SYSTEM COMPONENTS

1. Dryvit/Tremco air/water-resistive barrier (Backstop NTX & ExoAir 230)
2. Dryvit/Tremco flashing system
3. ROCKWOOL Frontrock™ mineral wool insulation boards
4. Dryvit Genesis adhesive in vertical notched trowel configuration
5. Pre-Coated, field-fabricated starter board with drainage
6. Mechanical fasteners (flush-mounted or countersunk)
7. Dryvit Standard Plus reinforcing mesh
8. Dryvit Genesis base coat
9. Dryvit textured finishes



### SYSTEM OVERVIEW

The Dryvit Outsulation® Mineral Wool System expands upon the proven weatherability and insulating qualities of the other Dryvit Outsulation® Systems through the incorporation of non-combustible ROCKWOOL Frontrock mineral wool insulation and includes traditional procedures and components that provide additional defense against air intrusion, moisture intrusion, and weather protection. This is accomplished with a Dryvit/Tremco air/water-resistive barrier system and accessory flashing components. The use of Dryvit Genesis adhesive, applied in a vertical notched trowel configuration, provides moisture drainage that will evacuate incidental moisture that may find its way behind the insulation board.

FRONTROCK MD (MONO DENSITY) <sup>1</sup>		FRONTROCK DD (DUAL DENSITY) <sup>1</sup>	
THICKNESS	R-VALUE	THICKNESS	R-VALUE
1.5"	R6	2.5"	R10
2"	R8	3"	R12
2.5"	R10	3.5"	R14
3"	R12	4"	R16
4"	R16		

1. Standard board sizes are 24-inches by 48-inches. Thicknesses greater than 4" are available from ROCKWOOL.

## PERFORMANCE CRITERIA

### AIR/WATER-RESISTIVE BARRIER MEMBRANE

PROPERTY	TEST METHOD	CRITERIA	RESULTS
Tensile Bond	ASTM C297/E2134 <sup>a</sup>	Minimum 15 psi (104 kPa)	Passed
Freeze-thaw	ASTM E2485 Method B <sup>a</sup>	No deleterious effects after 10 cycles	Passed
Water Resistance	ASTM D2247 <sup>a</sup>	No deleterious effects after 14 days exposure <sup>b</sup>	Passed
Water Vapor Transmission	ASTM E96 (Water Method)	Vapor Permeable	Backstop NTX: 17 Perms ExoAir 230: 11.71 Perms
Air Permeance	ASTM E2178	Not greater than 0.004 cfm/ft <sup>2</sup> (0.02 L/s-m <sup>2</sup> )	Backstop NTX : 0.0005 cfm/ft <sup>2</sup> @ 1.57 psf (0.002 L/s-m <sup>2</sup> @ 75 Pa)  ExoAir 230: 0.00158 cfm/ft <sup>2</sup> @ 1.57 psf (0.00805 L/s-m <sup>2</sup> @ 75 Pa)
Air Barrier Assembly	ASTM E283/E2357	Not greater than 0.04 cfm/ft <sup>2</sup> (0.2 L/s-m <sup>2</sup> )	Backstop NTX: 0.0016 cfm/ft <sup>2</sup> @ 1.57 psf (0.0079 L/s-m <sup>2</sup> @ 75 Pa)  ExoAir 230: 0.003 cfm/ft <sup>2</sup> @ 1.57 psf (0.013 L/s-m <sup>2</sup> @ 75 Pa)
Nail Sealability	ASTM D1970	No ICC or ANSI/EIMA Criteria	Passed ABAA Criteria
Structural Performance	ASTM E1233 Proc. A <sup>a</sup>	Minimum 10 positive cycles at 1/240 deflection; No cracking in field, at joints or interface with flashing	Passed
Racking	ASTM E72 <sup>a</sup>	No cracking in field, at joints or interface with flashing at net deflection of 1/8 in (3.2 mm)	Passed
Restrained Environmental	ICC-ES Procedure <sup>a</sup>	5 cycles; No cracking in field, at joints or interface with flashing	Passed
Water Penetration	ASTM E331 <sup>a</sup>	No water penetration beyond the inner-most plane of the wall after 15 minutes at 2.86 psf (137 Pa)	Passed
Weathering			
UV Exposure	ASTM D2898 Method B <sup>a</sup>	210 hours of exposure	Passed
Accelerated Aging	ICC-ES Procedure <sup>a</sup>	25 cycles of wetting and drying	Passed
Hydrostatic Pressure Test	AATCC 127 <sup>a</sup>	ICC: 21.6 in (549 mm) water column for 5 hours	Passed
Surface Burning Characteristics	ASTM E84	Flame Spread < 25 Smoke Developed < 450	Passed – Class A
<p>a. ASTM E2570 Standard Test Method for Evaluating Water-Resistive Barrier (WRB) Coatings Used Under Exterior Insulation and Finish Systems (EIFS) or EIFS with Drainage, also referred to as AC212 – Acceptance Criteria for Water-Resistive Coatings Used as Water-Resistive Barriers over Exterior Sheathing.</p> <p>b. No cracking, checking, rusting, crazing, erosion, blistering, peeling, or delamination when viewed under 5x magnification.</p>			

### SYSTEM STRUCTURAL PERFORMANCE

PROPERTY	TEST METHOD	CRITERIA	RESULTS
Tensile Bond	ASTM C297/E2134 <sup>a</sup>	Minimum 15 psi (104 kPa) – substrate or insulation failure	Passed
Transverse Wind Load	ASTM E330 <sup>a</sup>	Withstand positive and negative wind loads as specified by the building code	Ultimate uniform negative pressure of 180 psf (8.6 kPa), allowable negative design pressure of 60 psf (2.87 kPa) <sup>b</sup> . 16 in o.c. framing, 5/8 in. sheathing screw attached at 8 in. (203 mm) o.c.

- a. ASTM E2568 Standard Specification for PB Exterior Insulation and Finish Systems.  
b. Refer to DS983 for illustration of fastener configurations.

## SYSTEM DURABILITY

PROPERTY	TEST METHOD	CRITERIA	RESULTS
Water Resistance of Base Coat & Finish	ASTM D2247 <sup>a</sup>	No deleterious effects after 14 days exposure	No deleterious effects after 42 days exposure
Water Penetration of Base Coat	ASTM E331 <sup>a</sup>	No water penetration beyond the inner-most plane of the wall 2 hours at 6.24 psf (299 Pa)	Passed
Water Vapor Transmission	ASTM E96 (Water Method)	Vapor permeable	Mineral Wool Base Coat <sup>b</sup> 38 perm-inch Finish <sup>c</sup> 40 Perms
Drainage Efficiency	ASTM E2273	Minimum Drainage Efficiency of 90%	Passed
Alkali Resistance of Reinforcing Mesh	ASTM E2098 <sup>a</sup>	120 pli (>21 dN/cm) retained tensile strength after exposure	Passed
Mineral Wool (Physical Properties) Density	ASTM C303	0.95-1.25 lb/ft <sup>3</sup> (15.2-20.0 kg/m <sup>3</sup> )	Mono-density: 8.5 lb/ft <sup>3</sup> (136 kg/m <sup>3</sup> )  Dual-density: 9.3 lb/ft <sup>3</sup> (150 kg/m <sup>3</sup> ) outer layer, 5.9 lb/ft <sup>3</sup> (95 kg/m <sup>3</sup> ) inner layer
Thermal Resistance (R-value)	ASTM C177, C518	Report value	4.0 per inch @ 75 °F (4.4 °C)
Moisture Sorption	ASTM C1104	No ICC or ANSI/EIMA Criteria	Mono-density: 0.28% by weight, 0.04% by volume  Dual-density: 0.25% by weight, 0.04% by volume
Compressive Strength	ASTM C165	No ICC or ANSI/EIMA Criteria	Mono Density: 940 psf (45 kPa) @ 10% compression  Dual Density: 522 psf (25 kPa) @ 10% compression
Salt Spray Resistance	ASTM B117 <sup>a</sup>	No deleterious effects after 300 hours exposure	No deleterious effects after 1000 hours exposure
Taber Abrasion	ASTM D4060	N/A	Passed 1000 cycles
Abrasion Resistance	ASTM D968	No deleterious effects after 528 quarts (500 liters)	No deleterious effects after 1056 quarts (1000 liters)
Accelerated Weathering	ASTM G155 Cycle 1 <sup>a</sup>  ASTM G154 Cycle 1 <sup>a</sup> (QUV)	No deleterious effects after 2000 hours	No deleterious effects after 5000 hours
Freeze-Thaw	ASTM E2485 Method A <sup>a</sup>	No deleterious effects after 60 cycles	Passed
	ASTM C67 (modified)	No deleterious effects after 60 cycles	Passed
	ASTM E2485 Method B <sup>a</sup>	No deleterious effects after 10 cycles	Passed
Mildew Resistance	ASTM D3273	No growth during 28-day exposure period	No growth during 60-day exposure period

a. ASTM E2568 Standard Specification for PB Exterior Insulation and Finish Systems.

b. Base Coat perm value based on Dryvit Genesis®.

c. Finish perm value based on Dryvit Quarzputz®.

## IMPACT RESISTANCE (ASTM E2486)

REINFORCING MESH <sup>a</sup> WEIGHT: OZ/YD <sup>2</sup> (G/M <sup>2</sup> )	MINIMUM TENSILE STRENGTH	IMPACT CLASSIFICATION	EIMA IMPACT RANGE		TEST RESULTS	
			IN-LBS	(JOULES)	IN-LBS	(JOULES)
Standard <sup>b</sup> - 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 <sup>b</sup> - 15 (509)	400 lbs/in (71 g/cm)	Ultra-High	>150	(>17)	162	(18)
Panzer 20 <sup>b</sup> - 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™ - 9.0 (305)	274 lbs/in (49 g/cm)	n/a	n/a	n/a	n/a	n/a

a. It shall be colored blue and bear the Dryvit logo for product identification.

b. The use of Standard Mesh is not permitted unless Panzer Mesh is used in conjunction with Standard Mesh (recommended for areas exposed to high traffic).

## SYSTEM FIRE PERFORMANCE

TEST	TEST METHOD	CRITERIA	RESULTS
Fire Resistance	ASTM E119	No effect on the fire resistance of a rated wall assembly	Passes for any fire-rated base wall assembly
Ignitability	NFPA 268 <sup>a</sup>	No ignition at 12.5 kw/m <sup>2</sup> at 20 minutes	Passed
Intermediate Multi-Story Fire Test	NFPA 285	<ol style="list-style-type: none"> <li>1. Resist flame propagation over the exterior surface</li> <li>2. Resist vertical spread of flame within combustible core/component of panel from one story to the next</li> <li>3. Resist vertical spread of flame over the interior surface from one story to the next</li> <li>4. Resist lateral spread of flame from the compartment of fire origin to adjacent spaces</li> </ol>	Passed over steel framing
Surface Burning Characteristics	ASTM E84 <sup>a</sup>	All components shall have a: Flame Spread ≤ 25 Smoke Developed ≤ 450	Dryvit components Flame Spread ≤ 25 Smoke Developed ≤ 450  Frontrock mineral wool Flame Spread = 0 Smoke Developed ≤ 15
Combustibility (ROCKWOOL Frontrock Mineral Wool <sup>b</sup> )	ASTM E136	Various	Non-combustible as defined by code

a. ASTM E2568 Standard Specification for PB Exterior Insulation and Finish Systems.

b. Refer to applicable ROCKWOOL Frontrock literature for additional information related to material performance.

## APPROVED SUBSTRATES

1. Exterior grade gypsum sheathing meeting ASTM C1396 (formerly C79) requirements for water resistant core or Type X core at the time of application.
2. Exterior sheathing having a water-resistant core with fiberglass mat facers meeting ASTM C1177.
3. Exterior fiber reinforced cement or calcium silicate boards.
4. 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.
5. 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.
6. APA Exposure 1 Rated Oriented Strand Board (OSB) nominal 1/2 in (12.7 mm), minimum. Note: Backstop NTX - Texture is not recommended for the field of wall application over OSB.
7. Unpainted, unsealed concrete and CMU.

Refer to [DS156](#) for additional information and recommendations related to substrate preparation.

## WHY DRYVIT/TREMCO AIR and WATER-RESISTIVE BARRIERS?

Dryvit/Tremco air and water-resistive barriers prevent incidental moisture from coming into contact with the substrate. Developed specifically for this purpose, they are specially formulated, flexible, polymer-based, noncementitious coatings that provide a watertight membrane. Always used in conjunction with Dryvit/Tremco accessory components and flashing systems. Dryvit/Tremco air/water resistive barriers are an essential element of the Outsulation Mineral Wool System. Full reference details regarding the design of the system are available at <https://www.dryvit.com/>.

## DRYVIT...PROVEN FOR OVER 50 YEARS

Dryvit, a brand of Tremco CPG Inc., is ISO 9001:2015 and ISO 14001:2015 certified. ISO standards have been established worldwide as a common denominator for product excellence. Dryvit/Tremco is the recognized leader in construction technology. With leadership comes an obligation and commitment to research and development. The Outsulation Mineral Wool System is an example of our determination to continuously evaluate market demands and develop new and exciting products.

## WARRANTY

Dryvit /Tremco shall provide a written moisture drainage and limited materials warranty against defective material upon written request. Warranty term will range between 10 and 20 years depending on assembly configuration. Dryvit/Tremco shall make no other warranties, expressed or implied. Dryvit/ Tremco does not warrant workmanship. Full details are available from Dryvit/ Tremco.

---

## CAUTIONS AND LIMITATIONS

- Avoid applying wet goods in direct sunlight. Always work on the shady side of the wall or protect the area with appropriate shading material, such as tarps or nursery shade cloth.
- Use in above grade applications only.
- Adhesive applied in a vertical notch trowel pattern shall be allowed to dry in advance of Mechanical Fastener installation. Refer to DS981.
- Multiple coats of base coat may be required to achieve a flat surface.
- Cladding surface may exhibit shadowing or ghosting of mechanical fasteners due to varying exterior surface temperatures during periods of extreme and rapid temperature change.
- Critical light may exaggerate construction irregularities with the use of Mineral Wool insulation boards.
- Number of required fasteners may vary depending on substrate, type of fastener/washer, and targeted negative wind load resistance per ASTM E330.

Please refer to our website at [www.dryvit.com](http://www.dryvit.com) for the most up-to-date Product Data Sheets.

**NOTE: All Dryvit Safety Data Sheets (SDS) are in alignment with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) requirements and are available on the Dryvit website at [www.dryvit.com](http://www.dryvit.com).**

Frontrock® is a registered trademark of the ROCKWOOL Group in USA and ROXUL Inc. in Canada. ROCKWOOL™ is a trademark of the ROCKWOOL Group in USA and ROXUL Inc. in Canada

DS980

Issued: 04/23/2024

Tremco Construction Products Group (CPG) brings together Tremco CPG Inc. and its Dryvit and Nudura brands; Willseal; Prebuck LLC; Tremco Barrier Solutions, Inc.; Weatherproofing Technologies, Inc. and its Pure Air Control Services and Canam Building Envelope Specialists offerings; and Weatherproofing Technologies Canada, Inc.



[dryvit.com](http://dryvit.com) | 800.556.7752



Construction Products Group

3735 Green Rd. | Beachwood, OH 44122  
800.321.7906 | [tremcocpg.com](http://tremcocpg.com)