

Backstop[®] NT-VB[™]

A Liquid Applied Water-Resistive Membrane, Air Barrier
and Class I Vapor Retarder



DS830

Backstop NT-VB Specifications

DRYVIT SYSTEMS, INC.
MANUFACTURER'S SPECIFICATION
SECTION 07240
DRYVIT BACKSTOP NT-VB AIR/VAPOR/WATER-RESISTIVE BARRIER

PART I - GENERAL**1.01 SUMMARY**

This document contains all the manufacturer's requirements for the proper design, use, and installation of the Dryvit Backstop NT-VB air/vapor/water-resistive membrane. It is available in two versions: Backstop NT-VB is designed to be trowel or roller applied, and Backstop NT-VB Spray is intended for application with airless spray equipment. This document is intended to be used in conjunction with:

- A. DS831 - Backstop NT-VB Application Instructions
- B. DS829 - Backstop NT-VB Product Data Sheet

1.02 REFERENCES

A. Section Includes

1. ASTM C 297 Standard Test Method for Flatwise Tensile Strength of Sandwich Constructions
2. ASTM C 1177 Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing
3. ASTM C 1396 (formerly C 79) Standard Specification for Gypsum Board
4. ASTM D 522 Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings
5. ASTM D 1970 Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
6. ASTM D 2370 Standard Test Method for Tensile Properties of Organic Coatings
7. ASTM D 2247 (Federal Test Standard 141A Method 6201) Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity
8. ASTM D 2898 Standard Test Method for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing
9. ASTM E 72 Standard Methods for Conducting Strength Tests of Panels for Building Construction
10. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials
11. ASTM E 96 Proc A Standard Test Methods for Water Vapor Transmission of Materials
12. 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
13. ASTM E 331 Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference
14. ASTM E 1233 Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls and Doors by Cyclic Air Pressure Differential
15. ASTM E 2178 Standard Test Method for Air Permeance of Building Materials
16. ASTM E 2357 Standard Test Method for Determining Air Leakage of Air Barrier Assemblies
17. ASTM E 2134 Test Method for Evaluating the Tensile-Adhesion Performance of Exterior Insulation and Finish Systems (EIFS)
18. ASTM E 2485 (formerly EIMA Std. 101.01) Standard Test Method for Freeze-Thaw Resistance of Exterior Insulation and Finish Systems (EIFS) and Water-Resistive Barrier Coatings
19. ASTM E 2570 Standard Test Methods for Evaluating Water-Resistive Barrier (WRB) Coatings Used under Exterior Insulation and Finish Systems (EIFS) or EIFS with Drainage
20. AATCC Test Method 127-2008 Water Resistance: Hydrostatic Pressure Test
21. Federal Specification TT-C-555B Resistance to Wind-Driven Rain

1.03 DEFINITIONS

- A. Contractor: The contractor that applies the Backstop NT-VB to the substrate.
- B. Sheathing: A substrate in sheet form.
- C. Substrate: The material to which the Backstop NT-VB is applied.
- D. Substrate System: The total wall assembly including the attached substrate to which the Backstop NT-VB is applied.
- E. Air/Vapor/Water-Resistive Barrier Materials: A combination of Backstop NT-VB or Backstop NT-VB Spray and Dryvit Grid Tape with AquaFlash® Liquid and AquaFlash® Mesh or Dryvit Flashing Tape™ and Flashing Tape Conditioner™.

1.04 DESCRIPTION

- A. General: Dryvit Backstop NT-VB is a flexible polymer based, noncementitious, protective coating used as an air/vapor/water-resistive barrier when applied over acceptable substrates.
- B. 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 12.7 mm (1/2 in), minimum, installed with the C face out.
 - e. APA Exterior or Exposure 1 Fire Retardant Treated (FRT) Plywood, Grade C-D or better, nominal 12.7 mm (1/2 in), minimum, installed with the C face out.
 - f. APA Exposure 1 Rated Oriented Strand Board (OSB) nominal 12.7 mm (1/2 in), 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. Backstop NT-VB is not intended to be used as waterproofing for exterior horizontal surfaces or below grade applications.
 3. Backstop NT-VB shall not be exposed to weather for longer than 30 days prior to being covered.
 4. Deflections of the substrate systems shall not exceed 1/240 times the span.

C. Performance Requirements: Backstop NT-VB products shall meet the following performance criteria:

Backstop NT-VB Testing			
Test	Test Method	Criteria	Results
Tensile Bond	ASTM C 297/E 2134*	Minimum 104 kPa (15 psi)	Substrates: Minimum 131 kPa (19 psi) Flashing: Minimum 2970 kPa (431 psi)
Tensile Strength and Elongation	ASTM D 2370	No ICC or ANSI/EIMA Criteria	Tensile strength:160 psi Elongation: 16.8%
Flexibility	ASTM D 522 Method B	No ICC or ANSI/EIMA Criteria	No cracking at 2 mm diameter
Freeze-Thaw Resistance	ASTM E 2485 Method B	No deleterious effects after 10 cycles ¹	Passed - No deleterious effects after 10 cycles
Water Resistance	ASTM D 2247*	No deleterious effects after 14 days exposure ¹	No deleterious effects after 14 days exposure
Water Vapor Transmission	ASTM E 96 Procedure A (Dessicant Method)	Class I Vapor Retarder Less than 0.1 Perms	Backstop NT- VB: 0.088 Perms ² Backstop NT-VB Spray: 0.07 Perms ²
Wind Driven Rain	Fed TT-C-555	No ICC or ANSI/EIMA Criteria	No water penetration
Air Leakage	ASTM E 283	No ICC or ANSI/EIMA Criteria	0.01 l/sec/m ² (0.002 cfm/ft ²)
Air Permeance	ASTM E 2178	No ICC or ANSI/EIMA Criteria	0.0006 l/s/m ² @ 75Pa (1.2x10 ⁻⁴ cfm/ft ² @ 1.6 psf)
Air Barrier Assembly	ASTM E 2357	No ICC or ANSI/EIMA Criteria	0.05 l/sec m ² @300 Pa (<0.001 cfm/ft ² @ 6.24 psf)
Nail Sealability	ASTM D1970	No ICC or ANSI/EIMA Criteria	Passed ABAA Criteria
Structural Performance	ASTM E 1233 Procedure A*	Minimum 10 positive cycles at 1/240 deflection; No cracking in field, at joints or interface with flashing.	Passed
Racking	ASTM E 72*	No cracking in field, at joints or interface with flashing at net deflection of 3.2 mm (1/8 in)	Passed
Restrained Environmental	ICC-ES Procedure*	5 cycles; No cracking in field; at joints or interface with flashing	Passed
Water Penetration	ASTM E 331*	No water penetration beyond the inner-most plane of the wall after 15 minutes at 137 kPa (2.86 psf)	Passed 75 minutes at 299 Pa (6.24 psf)
Weathering UV Exposure	ASTM D2898 Method B*	210 hours of exposure	Passed
Accelerated Aging	ICC ES Procedure*	25 cycles of wetting and drying	Passed
Hydrostatic Pressure Test	AATCC 127*	549 mm (21.6 in) water column for 5 hours	Passed
Surface Burning Characteristics	ASTM E 84	ICC and ANSI/EIMA 99-A-2001 Flame Spread <25 Smoke Developed <450	Passed

* 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, also referred to as AC212 – Acceptance Criteria for Water-Resistive Coatings Used as Water-Resistive Barriers over Exterior Sheathing

1. No cracking, checking, rusting, crazing, erosion, blistering, peeling, or delamination when viewed under 5x magnification
2. Defined as a Class I vapor retarder per the 2009 IBC and IRC

1.05 SUBMITTALS

- A. Product Data – The contractor shall submit to the owner/architect manufacturer's product data sheets describing products that will be used on this project.
- B. Samples – As required for the specific Dryvit Exterior Insulation and Finish System specified.

1.06 QUALITY ASSURANCE

A. Qualifications

- 1. Product Manufacturer: Shall be Dryvit Systems, Inc. All materials shall be manufactured or sold by Dryvit and shall be purchased from Dryvit or its authorized distributor.
 - a. Materials shall be manufactured at a facility covered by a current ISO 9001:2008 and ISO 14001:2004 certification. Certification of the facility shall be done by a registrar accredited by the American National Standards Institute, Registrar Accreditation Board (ANSI-RAB).
- 2. Contractor: Shall be experienced and competent in the waterproofing trade and application of liquid air, vapor and water-resistive barriers.

B. Certification

- 1. Backstop NT-VB shall be recognized for the intended use by the applicable building code(s).

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.
- C. Materials shall be stored at the job site and at all times in a cool, dry location, out of direct sunlight, protected from inclement weather and other sources of damage. Storage temperature shall be from 4 °C (40 °F) minimum to 38 °C (100 °F) maximum.

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 application of Backstop NT-VB products, the minimum air and wall surface temperatures shall be from 4 °C (40 °F) minimum to 38 °C (100 °F) maximum. These temperatures shall be maintained, with adequate air ventilation and circulation, for a minimum of 12 hours thereafter, or until the products are dry.

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

1.09 SEQUENCING AND SCHEDULING

- A. Installation of the Dryvit Backstop NT-VB shall be coordinated with other construction trades.

1.10 LIMITED MATERIALS WARRANTY

- A. When used with a Dryvit EIFS, Backstop NT-VB is covered by and subject to the terms and conditions of Dryvit's written limited materials warranty applicable to the specific Dryvit system or products used. When used with other claddings, Backstop NT-VB is covered by and subject to the terms and conditions of Dryvit's written limited materials warranty for Backstop NT-VB. Dryvit makes no other warranties expressed or implied, including implied warranties of merchantability or fitness for a particular purpose.

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 and product sheets to facilitate the design process only. Dryvit is not liable for any errors or omissions in design, detail, structural capability, attachment details, shop drawings, or the like, whether based upon the information prepared by Dryvit or otherwise, or for any changes which purchasers, specifiers, designers, or their appointed representatives may make to Dryvit's published comments.

PART II PRODUCT**2.01 MANUFACTURER**

A. All materials shall be obtained from Dryvit or its authorized distributors. Substitutions or additions of materials other than specified will void the warranty.

2.02 COMPONENTS

A. Air/Vapor/Water-Resistive Barrier Components:

1. Dryvit Backstop NT-VB: A flexible, polymer-based, noncementitious, liquid applied barrier coating, available as Backstop NT-VB and Backstop NT-VB Spray.
2. Dryvit Grid Tape™: An open weave fiberglass mesh tape with pressure sensitive adhesive available in rolls 102 mm (4 in) wide by 91 m (100 yds) long.

B. Flashing Materials: Used to protect substrate edges at terminations.

1. Liquid Applied: An extremely flexible water-based polymer material, ready for use.

a. Shall be AquaFlash® Liquid 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 102 mm (4 in), 152 mm (6 in) and 229 mm (9 in) wide by 23 m (75 ft) long.

2) Dryvit Flashing Tape Surface Conditioner™: A water-based surface conditioner and adhesion promoter for the Dryvit Flashing Tape.

PART III EXECUTION**3.01 EXAMINATION**

A. Prior to application of Backstop NT-VB the contractor shall verify that the substrate:

1. Is of a type listed in Section 1.04.B.1.
2. Is flat within 6.4 mm (1/4 in) in a 1.2 m (4 ft) radius.
3. Gaps do not exceed 6.4 mm (1/4 in). Larger gaps shall be corrected by replacing sheathing material.
4. Is sound, dry, connections are tight; has no surface voids, projections, or other conditions that may interfere with the application of Backstop NT-VB.
5. Is otherwise in conformance with Dryvit's Product Data Sheet DS829 and Application Instructions DS831.

B. Ambient and surface temperatures are from 4 °C (40 °F) minimum to 38 °C (100 °F) maximum.

C. The contractor shall notify the general contractor and/or architect and/or owner of all discrepancies. Work shall not proceed until discrepancies have been corrected.

D. All roof/wall intersections, decks, balconies and other attachments, as well as eaves, chimneys, mechanical equipment, signage etc. are properly flashed to divert water to the outside of the specified cladding.

E. All openings and penetrations are properly flashed and wrapped with the air/water-resistive barrier to prevent water intrusion damage.

3.02 SURFACE PREPARATION

A. The Backstop NT-VB 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 application of Backstop NT-VB.

C. The substrate shall be prepared as to be free of foreign materials such as oil, efflorescence, dust, dirt, paint, wax, water repellents, moisture, frost and any other materials that inhibit adhesion.

3.03 INSTALLATION

A. Backstop NT-VB

1. General: Backstop NT-VB shall be applied in accordance with current published Dryvit Backstop NT-VB Application Instructions, DS831.
2. Backstop NT-VB is ready to use after an initial spin-up using a "Twister" paddle or equivalent mixing blade, powered by a 12.7 mm (1/2 in) drill, at 450 – 500 rpm. Do not add cement or any other additive.
3. Apply a strip of Dryvit Grid Tape over all sheathing joints, including inside and outside corners and trowel apply a layer of Backstop NT-VB over the Dryvit Grid Tape.
4. Depending on the substrate, Backstop NT-VB may be applied using a trowel, roller, or texture spray equipment and backrolled. Refer to Backstop NT-VB Application Instructions, DS831 for complete details.
5. Apply Backstop NT-VB over the entire wall surface, including previously treated joints. Refer to the chart on the Backstop NT-VB Product Data Sheet, DS829, or Application Instructions, DS831, for proper tools and respective coverage. A minimum 2 coats of Backstop NT-VB are required.

6. Allow to dry a minimum of 4 hours prior to application of Dryvit AquaFlash or Dryvit Flashing Tape and adhesively applied EPS insulation board or specified cladding. Cool damp weather will require longer drying times. During cool damp weather, Flashing Tape Surface Conditioner may be necessary for proper Flashing Tape adhesion.
7. Install the specified cladding or Dryvit Exterior Insulation and Finish System per published installation instructions for the specific system or cladding being used.

3.04 FIELD QUALITY CONTROL

- A. The contractor shall be responsible for the proper storage and application of the Dryvit materials.
- B. Dryvit assumes no responsibility for on-site inspections or application of its products.

3.05 CLEANING

- A. All excess Dryvit materials shall be removed from the job site by the Contractor in accordance with contract provisions.
- B. All surrounding areas, where Dryvit materials have been installed, shall be left free of debris and foreign substances resulting from the Contractor's work.

3.06 PROTECTION

- A. The Dryvit materials and the project shall be protected from damage and inclement weather until dry.
 1. The Dryvit Backstop NT-VB shall not be exposed for longer than 30 days prior to being covered with the Dryvit Exterior Insulation and Finish System or specified cladding.

DISCLAIMER

Information contained in this specification conforms to standard detail and product recommendations for the installation of the Dryvit Backstop NT-VB 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, contact:

Dryvit Systems, Inc.
One Energy Way
West Warwick, RI 02893
401-822-4100
www.dryvit.com

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