



CERTIFICATION



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Technical Evaluation Report

TER 1908-01

Barricade® Building Wrap Products

Barricade® Building Products

Product:

**Barricade® Wrap Plus™
Drainage**

Issue Date:

November 8, 2019

Revision Date:

November 22, 2019

Subject to Renewal:

January 1, 2021

For the most recent version or a sealed copy of this Technical Evaluation Report (TER), visit drjcertification.org.



COMPANY
INFORMATION:

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DIVISION: 07 00 00 - THERMAL AND MOISTURE PROTECTION

SECTION: 07 24 19 - Water-Drainage Exterior Insulation and Finish System

SECTION: 07 25 00 - Water-Resistive Barriers/Weather Barriers

SECTION: 07 27 00 - Air Barriers

1 PRODUCT EVALUATED¹

1.1 Barricade® Wrap Plus™ Drainage

2 APPLICABLE CODES AND STANDARDS^{2,3}

2.1 Codes

2.1.1 *IBC—12, 15, 18: International Building Code®*

2.1.2 *IRC—12, 15, 18: International Residential Code®*

2.2 Standards and Referenced Documents

2.2.1 *ASTM D5034: Standard Test Method for Breaking Strength and Elongation of Textile Fabrics (Grab Test)*

2.2.2 *ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials*

2.2.3 *ASTM E96: Standard Test Methods for Water Vapor Transmission of Materials*

2.2.4 *ASTM E2178: Standard Test Method for Air Permeance of Building Materials*

2.2.5 *ASTM E2273: Standard Test Method for Determining the Drainage Efficiency of Exterior Insulation and Finish Systems (EIFS) Clad Wall Assemblies*

¹ Building codes require data from valid [research reports](#) be obtained from [approved sources](#). Agencies who are accredited through ISO/IEC 17065 have met the [code requirements](#) for approval by the [building official](#). DrJ is an ISO/IEC 17065 ANSI-Accredited Product Certification Body – Accreditation #1131.

Through ANSI accreditation and the [IAF MLA](#), DrJ certification can be used to obtain product approval in any [jurisdiction](#) or country that has [IAF MLA Members & Signatories](#) to meet the Purpose of the MLA – “certified once, accepted everywhere.”

Building official approval of a licensed [registered design professional](#) (RDP) is performed by verifying the RDP and/or their business entity complies with all professional engineering laws of the relevant [jurisdiction](#). Therefore, the work of licensed RDPs is accepted by [building officials](#), except when plan (i.e. peer) review finds an error with respect to a specific section of the code. Where this TER is not approved, the [building official](#) responds in writing stating the reasons for [disapproval](#).

For more information on any of these topics or our mission, product evaluation policies, product approval process, and engineering law, visit drjcertification.org or call us at 608-310-6748.

² Unless otherwise noted, all references in this TER are from the 2018 version of the codes and the standards referenced therein (e.g., *ASCE 7*, *NDS*, *ASTM*). This material, design, or method of construction also complies with the 2000-2015 versions of the referenced codes and the standards referenced therein.

³ All terms defined in the applicable building codes are italicized.

- 2.2.6 *ASTM E2556: Standard Specification for Vapor Permeable Flexible Sheet Water-Resistive Barriers Intended for Mechanical Attachment*

3 PERFORMANCE EVALUATION

- 3.1 The product listed in Section 1.1 was evaluated for use in exterior walls for the following:
- 3.1.1 Water-resistive barrier in accordance with IBC Section 1403.2⁴ and IRC Section R703.2
 - 3.1.2 Air barrier in accordance with I/ECC Section C402.5 and Section R402.4
 - 3.1.3 EIFS drainage plane in accordance with IBC Section 1407.4 and IRC Section R703.9
 - 3.1.4 Flame spread and smoke developed in accordance with IBC Section 1402.5⁵
- 3.2 Use in Types I-IV construction are outside the scope of this TER.
- 3.3 Any code compliance issues not specifically addressed in this section are outside the scope of this TER.
- 3.4 Any engineering evaluation conducted for this TER was performed on the dates provided in this TER and within DrJ's professional scope of work.

4 PRODUCT DESCRIPTION AND MATERIALS

- 4.1 The products evaluated in this TER is shown in Figure 1.



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Doswell, VA
TER No. 1908-01
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FIGURE 1. BARRICADE® WRAP PLUS™ DRAINAGE LABEL

- 4.2 Barricade® Wrap Plus™ Drainage is made of a non-perforated, non-woven polyolefin that is coated and has channels for water drainage.
- 4.3 *Material Availability*
- 4.3.1 Standard Sizes: 108" x 100', 108" x 150', 120" x 100', 120" x 150', 60" x 200', 36" x 200'
 - 4.3.2 Custom sizes available upon request.

⁴ 2015 IBC Section 1404.2

⁵ 2015 IBC Section 1403.5

5 APPLICATIONS

5.1 Water-Resistive Barrier

- 5.1.1 Barricade® Wrap Plus™ Drainage is an approved WRB in accordance with IBC Section 1403.2⁶ and IRC Section R703.2 when installed with flashing in accordance with IBC Section 1404.4⁷ and IRC Section R703.4.
- 5.1.2 Barricade® Wrap Plus™ Drainage is a vapor permeable material with a water vapor permeance greater than 5 perms.

5.2 Air Barrier

- 5.2.1 Wall assemblies constructed with Barricade® Wrap Plus™ Drainage are used to meet air barrier requirements in accordance with IECC Section C402 and Section R402.
- 5.2.2 All penetrations shall be flashed and sealed in accordance with the flashing manufacturer's installation instructions.
- 5.2.3 Barricade® Wrap Plus™ Drainage is defined as an air barrier material having an air permeance shown in Table 1 in accordance with IECC Section C402.5 per IBC Chapter 13, IRC Section N1102.4, and IECC Section R402.4.

TABLE 1. AIR BARRIER PROPERTIES

Product	Air Permeance (cfm/ft ²)
Barricade® Wrap Plus™ Drainage	< 0.004
1. Tested in accordance with <i>ASTM E2178</i> 2. 0.004 cfm/ft ² = 0.02 L/s*m ²	

5.3 EIFS Drainage Plane

- 5.3.1 Barricade® Wrap Plus™ Drainage meets the requirements of IBC Section 1403.11 and Section 1407.4.1 and IRC Section R703.9.2 for exterior insulation and finish systems (EIFS) (Table 2).
- 5.3.2 Barricade® Wrap Plus™ Drainage shall be installed with flashing installed in accordance with IRC Section R703.4 and shall terminate not less than 6 inches (152 mm) above the finished ground level.

TABLE 2. EIFS WITH DRAINAGE EFFICIENCY

Product	Drainage Efficiency
Barricade® Wrap Plus™ Drainage	> 90%
1. Tested in accordance with <i>ASTM E2273</i>	

5.4 Flame Spread and Smoke Developed

- 5.4.1 Barricade® Wrap Plus™ Drainage has the flame spread and smoke developed characteristics shown in Table 3 in accordance with IBC Section 1402.5⁸.

TABLE 3. FLAME SPREAD & SMOKE DEVELOPED INDEXES

Product	Flame Spread	Smoke Developed
Barricade® Wrap Plus™ Drainage	≤ 25	≤ 450
1. Tested in accordance with <i>ASTM E84</i>		

⁶ 2015 IBC Section 1404.2

⁷ 2015 IBC Section 1405.4

⁸ 2015 IBC Section 1403.5

- 5.5 Where the application exceeds the limitations set forth herein, design shall be permitted in accordance with accepted engineering procedures, experience, and technical judgment.

6 INSTALLATION

- 6.1 Barricade® Wrap Plus™ Drainage shall be installed on exterior walls over exterior sheathing or insulation materials. Barricade® Wrap Plus™ Drainage shall be installed with the printed surface facing the exterior of the building.
- 6.2 Installation shall comply with the manufacturer's installation instructions and this TER. In the event of a conflict between the manufacturer's installation instructions and this TER, the more restrictive shall govern.
- 6.3 A copy of the installation instructions must be available at the jobsite at all times during installation.
- 6.4 *Installation Procedure*
- 6.4.1 Barricade® Wrap Plus™ Drainage shall be installed after wall framing is completed. The start of the roll shall be placed a minimum of 2 ft (0.6 m) from the corner and fastened using staples, 1" cap nails, Wind-lock® fasteners, or roofing nails spaced a maximum of 18 inches (457 mm) on center.
- 6.4.2 Unroll the wrap around the building and fasten with nails or staples spaced a maximum of 32 inches (813 mm) on center, vertical and horizontal. The following minimum amount of overlap is required at membrane edges:
- 6.4.2.1 Horizontal dimension: 2 inches (51 mm)
- 6.4.2.2 Vertical dimension: 6 inches (152 mm)
- 6.4.3 When installed over foam plastic insulating sheathing, the membrane must be fastened with staples, 1" cap nails, Wind-lock® fasteners, or roofing nails long enough to penetrate through the insulation and into the sheathing panels or framing members.
- 6.4.4 When installed over wood-based sheathing in exterior plaster applications, the membrane must be installed in accordance with IBC Section 2510.6 and IRC Section R703.7.3.⁹
- 6.4.5 For cementitious coatings or exterior insulation and finish systems (EIFS), the application must be in accordance with the exterior coating manufacturer's installation instructions.
- 6.4.6 Barricade® Wrap Plus™ Drainage must be installed with flashing in accordance with IBC Section 1404.4¹⁰ and IRC Section R703.4.
- 6.4.7 When used as an air barrier, the materials must be installed in accordance with the manufacturer's installation instructions and this TER.

7 TEST ENGINEERING SUBSTANTIATING DATA

- 7.1 Breaking strength and elongation tests conducted by IAPMO in accordance with *ASTM D5034*.
- 7.2 Water resistance ponding testing conducted by IAPMO in accordance with *ASTM E2556*.
- 7.3 Water vapor transmission testing conducted by IAPMO in accordance with *ASTM E96*.
- 7.4 Pliability testing conducted by IAPMO in accordance with *ASTM E2556*.
- 7.5 Air permeance testing conducted by Architectural Testing in accordance with *ASTM E2178*.
- 7.6 Drainage efficiency testing conducted by Intertek in accordance with *ASTM E2273*.
- 7.7 Surface burning testing conducted by Intertek in accordance with *ASTM E84*.

⁹ 2012 IRC Section R703.6.3

¹⁰ 2015 IBC Section 1405.4

- 7.8 Some information contained herein is the result of testing and/or data analysis by other sources which conform to IBC Section 1703 and relevant professional engineering law. DrJ relies on accurate data from these sources to perform engineering analysis. DrJ has reviewed and found the data provided by other professional sources to be credible.
- 7.9 Where appropriate, DrJ's analysis is based on design values that have been codified into law through codes and standards (e.g., *IBC*, *IRC*, *NDS*®, and *SDPWS*). This includes review of code provisions and any related test data that aids in comparative analysis or provides support for equivalency to an intended end-use application. Where the accuracy of design values provided herein is reliant upon the published properties of commodity materials (e.g., lumber, steel, and concrete), DrJ relies upon the grade mark, stamp, and/or design values provided by raw material suppliers to be accurate and conforming to the mechanical properties defined in the relevant material standard.

8 FINDINGS

- 8.1 When used and installed in accordance with this TER and the manufacturer's installation instructions, the product(s) listed in Section 1.1 are approved for the following:

- 8.1.1 Use as a WRB in accordance with IBC Section 1403.2¹¹ and IRC Section R703.2
- 8.1.2 Use as an air barrier in accordance with IECC Section C402.5 and Section R402.4
- 8.1.3 Use as an EIFS drainage plane in accordance with IBC Section 1407.4 and IRC Section R703.9.

- 8.2 IBC Section 104.11 (IRC Section R104.11 and IFC Section 104.9 are similar) states:

104.11 Alternative materials, design and methods of construction and equipment. The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been *approved*. An alternative material, design or method of construction shall be *approved* where the *building official* finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, not less than the equivalent of that prescribed in this code...Where the alternative material, design or method of construction is not *approved*, the *building official* shall respond in writing, stating the reasons the alternative was not *approved*.

- 8.3 This product has been evaluated in the context of the codes listed in Section 2 and is compliant with all known state and local building codes. Where there are known variations in state or local codes applicable to this evaluation, they are listed here.
- 8.3.1 No known variations

9 CONDITIONS OF USE

- 9.1 Flashing must be installed in accordance with IBC Section 1404.4¹² and IRC Section R703.4 and the manufacturer's installation instructions.
- 9.2 Where required by the building official, also known as the authority having jurisdiction (AHJ) in which the project is to be constructed, this TER and the installation instructions shall be submitted at the time of permit application.
- 9.3 Any generally accepted engineering calculations needed to show compliance with this TER shall be submitted to the AHJ for review and approval.
- 9.4 Design loads shall be determined in accordance with the building code adopted by the jurisdiction in which the project is to be constructed and/or by the Building Designer (e.g., owner or registered design professional).
- 9.5 At a minimum, this product shall be installed per Section 6 of this TER.
- 9.6 This product is manufactured under a third-party quality control program in accordance with IBC Section 104.4 and 110.4 and IRC Section R104.4 and R109.2.

¹¹ 2015 IBC Section 1404.2

¹² 2015 IBC Section 1405.4

- 9.7 The actual design, suitability, and use of this TER, for any particular building, is the responsibility of the *owner* or the owner's authorized agent. Therefore, the TER shall be reviewed for code compliance by the *building official* for acceptance.
- 9.8 The use of this TER is dependent on the manufacturer's in-plant QC, the ISO/IEC 17020 third-party quality assurance program and procedures, proper installation per the manufacturer's instructions, the *building official's* inspection, and any other code requirements that may apply to demonstrate and verify compliance with the applicable building code.

10 IDENTIFICATION

- 10.1 The product(s) listed in Section 1.1 are identified by a label on the board or packaging material bearing the manufacturer's name, product name, TER number, and other information to confirm code compliance.
- 10.2 Additional technical information can be found at www.barricadebp.com.

11 REVIEW SCHEDULE

- 11.1 This TER is subject to periodic review and revision. For the most recent version of this TER, visit drjcertification.org.
- 11.2 For information on the current status of this TER, contact [DrJ Certification](#).