

ICC-ES Evaluation Report

ESR-4132

Reissued August 2024

This report also contains:


Revised September 2024

- CBC Supplement

Subject to renewal August 2026

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<p>DIVISION: 07 00 00— THERMAL AND MOISTURE PROTECTION</p> <p>Section: 07 25 00— Water-Resistive Barriers/Weather Barriers</p> <p>Section: 07 27 00— Air Barriers</p>	<p>REPORT HOLDER:</p> <p>ALPHA PROTECH ENGINEERED PRODUCTS INC.</p> <p>ADDITIONAL LISTEE:</p> <p>NORANDEX</p>	<p>EVALUATION SUBJECT:</p> <p>REX™ WRAP FORTIS HIGH-P HOUSE WRAP, REX™ WRAP FORTIS COMMERCIAL WRAP, AND REX™ WRAP FORTIS LOW-P HOUSE WRAP</p>	
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1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2024, 2021, 2018, 2015, 2012, 2009 and 2006 [International Building Code® \(IBC\)](#)
- 2024, 2021, 2018, 2015, 2012, 2009 and 2006 [International Residential Code® \(IRC\)](#)
- 2024, 2021, 2018, 2015, 2012, 2009 and 2006 [International Energy Conservation Code® \(IECC\)](#)

For evaluation for compliance with codes adopted by [California Office of Statewide Health Planning and Development \(OSHPD\) AKA: California Department of Health Care Access and Information \(HCAI\) and the Division of State Architects \(DSA\)](#), see [ESR-4132 CBC and CRC Supplement](#).

Properties evaluated:

- Water resistance
- Surface-burning characteristics
- Air leakage
- Drainage

1.2 Evaluation to the following green code(s) and/or standards:

- 2022 [California Green Building Standards Code \(CALGreen\)](#), Title 24, Part 11
- 2021, 2018, 2015 and 2012 [International Green Construction Code® \(IgCC\)](#)
- 2020, 2017, 2014 and 2011 [ANSI/ASHRAE/USGBC/IES Standard 189.1](#)—Standard for the Design of High-Performance Green Buildings, Except Low-Rise Residential Buildings
- 2020, 2015, 2012 and 2008 ICC 700 [National Green Building Standard™](#) (ICC 700-2020, ICC 700-2015, ICC 700-2012, and ICC 700-2008)

Attribute verified:

- See Section 2.0

2.0 USES

REX™ Wrap Fortis High-P House Wrap, REX™ Wrap Fortis Commercial Wrap, and REX™ Wrap Fortis Low-P House Wrap wraps are used as water-resistive barriers on the exterior side of exterior walls of buildings of any construction type under the IBC and construction permitted under the IRC. Under the 2024, 2021, 2018, 2015 and 2012 IBC, the water-resistive barrier may be used on buildings of Type I, II, III and IV construction that are not greater than 40 feet (12.2 m) in height above grade in accordance with 2024 IBC Section 1402.6, 2021 and 2018 IBC Section 1402.5, or 2015 and 2012 IBC Section 1403.5, except as permitted in Exceptions 1 and 2 of the 2024 IBC Section 1402.6, 2021 and 2018 IBC Section 1402.5 and 2015 IBC Section 1403.5. The water-resistive barriers are equivalent to Grade D paper as described in 2012, 2009 and 2006 IBC Section 2510.6 and 2015 IRC R703.7.3 [2012, 2009 and 2006 Section R703.6.3]. The REX™ Wrap Fortis High-P House Wrap and the REX™ Wrap Fortis Commercial Wrap comply as an ASTM E2556, Type I water-resistive barrier in accordance with 2024, 2021, 2018 and 2015 IBC Section 2510.6. The REX™ Wrap Fortis Low-P House Wrap comply as an ASTM E2556, Type II water-resistive barrier in accordance with 2024, 2021, 2018 and 2015 IBC Section 2510.6.

The water-resistive barriers may be used as an air barrier material under 2024 IRC Section N1102.5.1 (IRC Section N1102.4.1) and 2024 IECC Sections C402.6 and R402.5, 2021, 2018 and 2015 IECC Sections C402.5 and R402.4 [2012 IECC Section C402.4 and R402.4 (2009 and 2006 IECC Sections 402.4 and 502.4)].

In addition, the water-resistive barriers may be used as components of an EIFS drainage system as described in Section 4.2.

The attributes of the water-resistive barriers have been verified as conforming to the requirements of (i) CALGreen Section 5.407.1 for water-resistive barriers and air barriers; (ii) 2021 IgCC Section 701.3.1.2, 2018 IgCC Section 701.3.1.1 and 2015 and 2012 IgCC Section 605.1.2.1 for air barriers; (iii) 2020 ASHRAE 189.1 Section 7.3.1.2, 2017 and 2014 ASHRAE 189.1 Section 7.3.1.1 and 2011 ASHRAE 189.1 Section 7.4.2.9 for air barriers; (iv) ICC 700-2020 Sections 602.1.8, 11.602.1.8, 1202.6 and 13.104.1.4; (v) ICC 700-2020 Sections 602.1.8, 11.602.1.8, 1202.6 and 13.104.1.4; (vi) ICC 700-2015 Section 602.1.8, 11.602.1.8 and 12.6.602.1.8; (vii) ICC 700-2012 Section 602.1.8, 11.602.1.8 and 12.5.602.1.8; and (viii) ICC 700-2008 Section 602.9 for water-resistive barriers. Note that decisions on compliance for those areas rest with the user of this report. The user is advised of the project-specific provisions that may be contingent upon meeting specific conditions, and the verification of those conditions is outside the scope of this report. These codes or standards often provide supplemental information as guidance.

3.0 DESCRIPTION

3.1 General:

REX™ Wrap Fortis High-P House Wrap, REX™ Wrap Fortis Commercial Wrap and REX™ Wrap Fortis Low-P House Wrap have a flame spread index of less than 25 and a smoke-developed index of less than 450, when tested in accordance with ASTM E84.

REX™ Wrap Fortis High-P House Wrap, REX™ Wrap Fortis Commercial Wrap and REX™ Wrap Fortis Low-P House Wrap have a peak heat release rate of less than 150 kW/m², a total heat release rate of less than 20 MJ/m², and an effective heat of combustion of less than 18 MJ/kg as determined in accordance with ASTM E1354.

The products have an air leakage rate not exceeding 0.02 L/s-m² at 75 Pa [0.004 cfm/ft² at 0.3 inch w.g. (1.57 psf)] when used as an air barrier material under 2024 IRC Section N1102.5.1 (2021, 2018, 2015, 2012, 2009 and 2006 IRC Section N1102.4.1) and 2024 IECC Sections C402.6 and R402.5, 2021, 2018 and 2015 IECC Section C402.5 and R402.4 [2012 IECC Section C402.4 and R402.4 (2009 and 2006 IECC Sections 402.4 and 502.4)].

The water-resistive barriers are manufactured with ultraviolet stabilizing additives and are supplied in rolls and sheets of varying sizes.

3.2 REX™ Wrap Fortis High-P House Wrap:

REX™ Wrap Fortis High-P House Wrap consists of a 1.25 oz./yd² (42.4 g/m²) polyethylene nonwoven CLAF® fabric laminated to a 0.9 oz./yd² (30 g/m²) polyethylene microporous film.

3.3 REX™ Wrap Fortis Commercial Wrap:

REX™ Wrap Fortis Commercial Wrap consists of a 1.25 oz./yd² (42.4 g/m²) nonwoven CLAF® fabric laminated to a 1.18 oz./yd² (40 g/m²) polyethylene film.

3.4 REX™ Wrap Fortis Low-P House Wrap:

REX™ Wrap Fortis Low-P House Wrap consists of a 1.25 oz./yd² (42.4 g/m²) polyethylene nonwoven fabric laminated to a 0.9 oz./yd² (30 g/m²) polyethylene microporous film.

4.0 INSTALLATION

The water-resistive barriers described in this report are installed after wall framing is completed and before or after windows and doors are installed. The roll is placed approximately 12 inches (305 mm) from the starting corner and fastened to the sheathing with corrosion-resistance staples or nails having minimum 1-inch-diameter (25.4 mm) plastic washer heads or cap heads, spaced at a maximum of 32 inches (812 mm) on center; and is then unrolled around the building and fastened, as set forth in the manufacturer's published installation instructions, at top and bottom sill plates and at framing members. A minimum of 6 inches (152 mm) of overlap is required for vertical seams and 2 inches (51 mm) for horizontal seams, except where the report holder's installation instructions specify a greater overlap dimension.

When use is over wood-based sheathing in exterior plaster applications, two layers of REX™ Wrap Fortis High-P House Wrap or REX™ Wrap Fortis Commercial Wrap must be applied over sheathing in accordance with 2018, 2015, 2012, 2009 and 2006 IBC Section 2510.6 or 2018 and 2015 IRC Section R703.7 [2012, 2009 and 2006 IRC Section R703.6.3].

When REX™ Wrap Fortis High-P House Wrap or REX™ Wrap Fortis Commercial Wrap are used over wood based sheathing in exterior plaster applications in accordance with 2024 and 2021 IBC Section 2510.6 and 2024 and 2021 IRC Section R703.7.3 installations must be as follows:

- For dry climate zones (B) in accordance with 2024 and 2021 IBC Section 2510.6.1 or 2024 and 2021 IRC Section R703.7.3.1, for the product must be applied in accordance with 2024 and 2021 IBC Section 2510.6.1 Item 1 and 2024 and 2021 IRC Section R703.7.3.1 Item 1, as applicable.
- For moist climate zones (A) or marine climate zones (C) in accordance with 2024 and 2021 IBC Section 2510.6.2 or 2021 IRC Section R703.7.3.2, the product must be applied in accordance the dry climate zone (B) provisions noted above and with the additional requirements noted in 2024 and 2021 IBC Section 2510.6.2 Item 1 or 2024 and 2021 IRC Section R703.7.3.2 Item 1, as applicable.

When REX™ Wrap Fortis Low-P House Wrap is used over wood-based sheathing in exterior plaster applications, the product must be applied over the sheathing in accordance with 2018, 2015, 2012 and 2009 IBC Section 2510.6 or 2018 and 2015 IRC Section R703.7.3 [2012 and 2009 IRC Section R703.6.3], using two layers of the product or using one layer together with an intervening, substantially non-water-absorbing layer, or drainage space.

When REX™ Wrap Fortis Low-P House Wrap is used over wood based sheathing in exterior plaster applications in accordance with 2024 and 2021 IBC Section 2510.6 and 2024 and 2021 IRC Section R703.7.3 installations must be as follows:

- For dry climate zones (B) in accordance with 2024 and 2021 IBC Section 2510.6.1 or 2024 and 2021 IRC Section R703.7.3.1, for the product must be applied in accordance with 2024 and 2021 IBC Section 2510.6.1 Item 1 or 2 and 2024 and 2021 IRC Section R703.7.3.1 Item 1 or 2, as applicable.
- For moist climate zones (A) or marine climate zones (C) in accordance with 2024 and 2021 IBC Section 2510.6.2 or 2024 and 2021 IRC Section R703.7.3.2, the product must be applied in accordance the dry climate zone (B) provisions noted above and with the additional requirements noted in 2024 and 2021 IBC Section 2510.6.2 Item 1 or 2024 and 2021 IRC Section R703.7.3.2 Item 1, as applicable.

For cementitious coatings or exterior insulation and finish systems, application is to be in accordance with the evaluation report on the exterior coating.

4.1 Air Barrier Material: When used as an air barrier, the materials must be installed in accordance with the report holder's installation instructions and this report.

4.2 Wall Covering Assembly with Drainage: The assembly described in this section complies with Section 4.5 of the ICC-ES Acceptance Criteria for EIFS Clad Drainage Wall Assemblies (AC235). The assembly is limited to Type V construction, and may be used in Group R, Division 1 and 3, Occupancies. The system consists of minimum $7/16$ -inch-thick (11.1 mm) Exterior or Exposure 1 plywood or Exposure 1 oriented strand board applied to wood studs spaced a maximum of 16 inches (406 mm) on center and fastened in accordance with the requirements of Chapter 23 of the IBC or Chapter 6 of the IRC. Vertical board edges must butt over studs. The water-resistive barriers must be applied as described in Section 4.0. For EIFS, minimum 1-inch-thick (25.4 mm) flat Type I expanded polystyrene (EPS) foam plastic boards, recognized in a current ICC-ES evaluation report as complying with ASTM C578, are placed over the REX™ Wrap Fortis High-P House Wrap, REX™ Wrap Fortis Commercial Wrap and REX™ Wrap Fortis Low-P House Wrap, which are fastened to the sheathing. The EPS boards are fastened through the sheathing with wood screws sized to meet wind resistance requirements, with minimum 2-inch-diameter (51 mm) plates or washers and penetrating a minimum of $1/4$ -inch through the sheathing. The fastener spacing must not exceed 12 inches (305 mm). Weep screeds, as set forth in IBC 2512.1.2 or 2024, 2021, 2018 and 2015 IBC Section R703.7.2, IRC Section R703.6.2 (2012, 2009 and 2006 IRC Section R703.6.2.1), must be installed. The EIFS base coat, reinforcing mesh and finish coat must be installed over the EPS in accordance with the EIFS manufacturer's ICC-ES evaluation report.

5.0 CONDITIONS OF USE:

The REX™ Wrap Fortis High-P House Wrap, REX™ Wrap Fortis Commercial Wrap and REX™ Wrap Fortis Low-P House Wrap described in this report complies with, or are a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 The products must be installed in accordance with the report holder's published installation instructions, the requirements of the applicable code and this report. In the event of a conflict between this report and the published installation instructions, this report governs.
- 5.2 The products must be covered by an exterior wall finish complying with the requirements of the applicable code.
- 5.3 This report is based on air leakage rates for the products as an air barrier material only. The design and evaluation of the air barrier assembly, of which the products are a component, is outside the scope of this report.
- 5.4 The products are manufactured under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

- 6.1 Data in accordance with the [ICC-ES Acceptance Criteria for Water-resistive Barriers \(AC38\)](#), dated August 2016 (editorially revised June 2024).
- 6.2 Report of flame spread characteristics testing in accordance with ASTM E84.
- 6.3 Reports of air leakage testing in accordance with ASTM E2178.
- 6.4 Report of drainage testing in accordance with ASTM E2273.
- 6.5 Report of testing in accordance with ASTM E1354.

7.0 IDENTIFICATION

- 7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-4132) along with the name, registered trademark, or registered logo of the report holder must be included in the product label.
- 7.2 In addition, the REX™ Wrap Fortis High-P House Wrap, REX™ Wrap Fortis Commercial Wrap and REX™ Wrap Fortis Low-P House Wrap are identified by a roll label that consists of the report holder's name (Alpha ProTech Engineered Products), the product name, the date of manufacture, installation instructions, roll dimensions and the evaluation report number (ESR-4132). The product name and ESR-4132 are printed at regular intervals on the outside face of the product.

Alternatively, each roll of the product described in this report is marked by a label bearing the additional listee's brand name (NORANDEX), the product name (See [Table 1](#) of this report), the date of manufacture, and the evaluation report number (ESR-4132). The product name (See [Table 1](#) of this report), and the evaluation report number (ESR-4132) are printed, at regular intervals, on the outside face of the product.

7.3 The report holder’s contact information is the following:

ALPHA PROTECH ENGINEERED PRODUCTS INC.
301 SOUTH BLANCHARD STREET
VALDOSTA, GEORGIA 31601
(229) 242-1931
www.alphaprotech.com

7.4 The Additional Listee’s contact information is the following:

NORANDEX
1 ABC PARKWAY
BELOIT, WISCONSIN 53511
(800) 528-0942
www.norandex.com

TABLE 1—COMPANY NAME, BRAND NAME AND PRODUCT NAME CORRELATION

COMPANY	Alpha ProTech Engineered Building Products	NORANDEX
BRAND NAME	REX™	NORANDEX
PRODUCT NAME	REX™ Wrap Fortis Low-P House Wrap	X Wrap Low Perm
	REX™ Wrap Fortis High-P House Wrap	X Wrap High Perm
	REX™ Wrap Fortis Commercial Wrap	X Wrap Commercial

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION

Section: 07 25 00—Water-Resistive Barriers/Weather Barriers

Section: 07 27 00—Air Barriers

REPORT HOLDER:

ALPHA PROTECH ENGINEERED PRODUCTS, INC.

EVALUATION SUBJECT:

REX™ WRAP FORTIS HIGH-P HOUSE WRAP, REX™ WRAP FORTIS COMMERCIAL WRAP, AND REX™ WRAP FORTIS LOW-P HOUSE WRAP

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the REX™ Wrap Fortis High-P House Wrap, REX™ Wrap Fortis Commercial Wrap and REX™ Wrap Fortis Low-P House Wrap water-resistive barriers, describes in ICC-ES evaluation report ESR-4132, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2022 California Building Code® (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and the Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2022 California Residential Code® (CRC)

2.0 CONCLUSIONS

2.1 CBC:

The REX™ Wrap Fortis High-P House Wrap, REX™ Wrap Fortis Commercial Wrap and REX™ Wrap Fortis Low-P House Wrap water-resistive barriers, described in Sections 2.0 through 7.0 of the evaluation report ESR-4132, comply with CBC Chapter 14, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report and the applicable provisions of the CBC.

2.1.1 OSHPD:

The REX™ Wrap Fortis High-P House Wrap, REX™ Wrap Fortis Commercial Wrap and REX™ Wrap Fortis Low-P House Wrap water-resistive barriers, described in Sections 2.0 through 7.0 of the evaluation report ESR-4132, comply with CBC Chapter 14 [OSHPD 2] and CBC Chapter 14 with amendments [OSHPD 1 and 4].

2.1.2 DSA:

The REX™ Wrap Fortis High-P House Wrap, REX™ Wrap Fortis Commercial Wrap and REX™ Wrap Fortis Low-P House Wrap water-resistive barriers, described in Sections 2.0 through 7.0 of the evaluation report ESR-4132, comply with CBC Chapter 14 with amendments [DSA SS and DSA SS/CC].

2.2 CRC:

The REX™ Wrap Fortis High-P House Wrap, REX™ Wrap Fortis Commercial Wrap and REX™ Wrap Fortis Low-P House Wrap water-resistive barriers, described in Sections 2.0 through 7.0 of the evaluation report ESR-4132, comply with CRC Chapter 7, provided the design and installation are in accordance with the 2021 *International Residential Code*® (IRC) provisions noted in the evaluation report and the applicable provisions of the CRC.

This supplement expires concurrently with the evaluation report, reissued August 2024 and revised September 2024.