



ICC-ES Evaluation Report

Reissued January 2023

ESR-3500

This report is subject to renewal January 2024.

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION

Section: 07 21 00—Thermal Insulation

REPORT HOLDER:

HUNTSMAN BUILDING SOLUTIONS, LLC

EVALUATION SUBJECT:

HUNTSMAN BUILDING SOLUTIONS PROSEAL, HUNTSMAN BUILDING SOLUTIONS PROSEAL LE, HUNTSMAN BUILDING SOLUTIONS PROSEAL H5 AND HUNTSMAN BUILDING SOLUTIONS PROSEAL H5-O

1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2021, 2018, 2015, 2012 and 2009 *International Building Code*® (IBC)
- 2021, 2018, 2015, 2012 and 2009 *International Residential Code*® (IRC)
- 2021, 2018, 2015, 2012 and 2009 *International Energy Conservation Code*® (IECC)

Properties evaluated:

- Surface-burning characteristics
- Physical properties
- Thermal resistance (*R*-values)
- Attic and crawl-space installation
- Air permeability
- Vapor permeability
- Fire-resistance-rated construction
- Water-resistive barrier
- Exterior walls of Types I–IV construction

1.2 Evaluation to the following green standard:

2022 California Green Building Standards Code (CALGreen), Title 24, Part 11

2020, 2015, 2012 and 2008 ICC 700 *National Green Building Standard*™ (ICC 700-2020, ICC 700-2015, ICC 700-2012 and ICC 700-2008)

Attributes verified:

See Section 3.1

2.0 USES

Huntsman Building Solutions ProSeal, Huntsman Building Solutions ProSeal LE, Huntsman Building Solutions ProSeal H5 and Huntsman Building Solutions ProSeal H5-O spray foam is used as a nonstructural thermal insulating material. The insulation is for use in wall cavities, floor assemblies, ceiling assemblies, on the underside of slabs, or attics and crawl spaces when installed in accordance with Section 4.4. Under the IRC and the 2021, 2018 and 2015 IBC, the insulation may be used as air-impermeable insulation when installed in accordance with Section 3.4, and as a vapor retarder when installed in accordance with Section 3.5. The insulation may be used as an alternative to the water-resistive barrier required in IBC Section 1404.2 and IRC Section R703.2 when installed as described in Section 4.7.

Huntsman Building Solutions Proseal and Huntsman Building Solutions ProSeal LE is for use in all construction under the IBC, except exterior walls in Types I through IV construction under the 2021 IBC; and dwellings under the IRC. Huntsman Building Solutions Proseal and Huntsman Building Solutions ProSeal LE may be used in exterior walls of Types I through IV construction under the 2018, 2015, 2012 and 2009 IBC when installed in accordance with Section 4.6.

Huntsman Building Solutions ProSeal H5 and Huntsman Building Solutions ProSeal H5-O is for use in all construction under the IBC, except exterior walls; and dwellings under the IRC.

Huntsman Building Solutions ProSeal and Huntsman Building Solutions ProSeal LE spray foam may be used in fire-resistance-rated construction when installed in accordance with Section 4.5

3.0 DESCRIPTION

3.1 ProSeal Insulation:

Huntsman Building Solutions ProSeal and Huntsman Building Solutions ProSeal LE foam plastic insulation is a two-component, medium-density, closed-cell, spray-applied foam plastic with a nominal density of 2.4 pcf. Huntsman Building Solutions ProSeal H5 and Huntsman

ICC-ES Evaluation Reports are not to be construed as representing aesthetics or any other attributes not specifically addressed, nor are they to be construed as an endorsement of the subject of the report or a recommendation for its use. There is no warranty by ICC Evaluation Service, LLC, express or implied, as to any finding or other matter in this report, or as to any product covered by the report.



Building Solutions ProSeal H5-O foam plastic insulation is a two-component, medium-density, closed-cell, spray-applied foam plastic with a nominal density of 1.5 pcf. The polyurethane foam is produced by combining Huntsman Building Solutions MDI isocyanate (the A component) and Huntsman Building Solutions ProSeal resin (the B component). The products have a shelf life of 12 months when stored in factory-sealed containers at temperatures between 60°F and 85°F (16°C and 29°C). The Huntsman Building Solutions ProSeal is supplied in one formula for all climates.

The attributes of the insulation have been verified as conforming to the provisions of (i) CALGreen Section 5.407.1 for water-resistive barriers; (ii) ICC 700-2020 Sections 602.1.8, 11.602.1.8, 1202.6 and 13.104.1.4; (iii) ICC 700-2015 and ICC 700-2012 Sections 602.1.8, 11.602.1.8 and 12.6.602.1.8; (iv) ICC 700-2008 Section 602.9 for water-resistive barriers; and (v) ICC 700-2008 Section 703.1.2.1 as an air impermeable insulation. 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.

3.2 Surface Burning Characteristics:

The Huntsman Building Solutions ProSeal and Huntsman Building Solutions ProSeal LE insulation, at a maximum thickness of 4 inches (102 mm) and a nominal density of 2.4 pcf and Huntsman Building Solutions ProSeal H5 and Huntsman Building Solutions ProSeal H5-O at a maximum thickness of 4 inches (102 mm) and a nominal density of 1.5 pcf, have a flame-spread index of 25 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E84 (UL 723).

3.3 Thermal Resistance:

Huntsman Building Solutions ProSeal and Huntsman Building Solutions ProSeal LE insulation has a thermal resistance, *R*-value, at a mean temperature of 75°F (24°C) as shown in Table 1.

Huntsman Building Solutions ProSeal H5 and Huntsman Building Solutions ProSeal H5-O insulation has a thermal resistance, *R*-value, at a mean temperature of 75°F (24°C) as shown in Tables 2 and 3, respectively.

3.4 Air Permeability:

Huntsman Building Solutions ProSeal and Huntsman Building Solutions ProSeal LE insulation, at a minimum 1.4-inch (35.6 mm) thickness, is considered air-impermeable insulation in accordance with 2021 and 2018 IBC Section 1202.3 (2015 IBC Section 1203.3) and 2021, 2018, 2015 and 2012 IRC Section R806.5 (2009 IRC Section R806.4), based on testing in accordance with ASTM E2178.

Huntsman Building Solutions ProSeal H5 and Huntsman Building Solutions ProSeal H5-O insulation, at a minimum 1.0-inch (25.4 mm) thickness, is considered air-impermeable insulation in accordance with 2021 and 2018 IBC Section 1202.3 (2015 IBC Section 1203.3) and 2021, 2018, 2015 and 2012 IRC Section R806.5 (2009 IRC Section R806.4), based on testing in accordance with ASTM E2178.

3.5 Vapor Permeability:

Huntsman Building Solutions ProSeal and Huntsman Building Solutions ProSeal LE insulation has a vapor permeance of less than 1 perm (5.7×10^{-11} kg/

Pa-s-m²) at a minimum thickness of 1.5 inches (38.1 mm) and may be used where a Class II vapor retarder is required by the applicable code.

Huntsman Building Solutions ProSeal H5 insulation has a vapor permeance of less than 1 perm (5.7×10^{-11} kg/Pa-s-m²) at a minimum thickness of 2.25 inches (57.2 mm) and may be used where a Class II vapor retarder is required by the applicable code.

Huntsman Building Solutions ProSeal H5-O insulation has a vapor permeance of less than 1 perm (5.7×10^{-11} kg/Pa-s-m²) at a minimum thickness of 2 inches (25.4 mm) and may be used where a Class II vapor retarder is required by the applicable code.

3.6 Coatings:

3.6.1 DC 315: DC 315 Coating ([ESR-3702](#)), manufactured by International Fireproof Technology, Inc., is a water-based coating supplied in 5-gallon (19 L) pails and 55 gallon (208 L) drums. The coating material has a shelf life of one (1) year when stored in factory-sealed containers at temperatures between 50°F (10°C) and 80°F (27°C).

4.0 DESIGN AND INSTALLATION

4.1 General:

Huntsman Building Solutions ProSeal, Huntsman Building Solutions ProSeal LE, Huntsman Building Solutions ProSeal H5 and Huntsman Building Solutions ProSeal H5-O must be installed in accordance with the manufacturer's published installation instructions, this report and the applicable code. The manufacturer's published installation instructions and this report must be strictly adhered to, and a copy of the instructions and this evaluation report must be available on the jobsite at all times during installation.

4.2 Application:

Huntsman Building Solutions ProSeal, Huntsman Building Solutions ProSeal LE, Huntsman Building Solutions ProSeal H5 and Huntsman Building Solutions ProSeal H5-O must be applied using spray equipment specified by Huntsman Building Solutions. The insulation must not be used in areas having a maximum service temperature greater than 180°F (82°C), must not be used in electrical outlet or junction boxes or in contact with rain or water, and must be protected from the weather during and after application. Where Huntsman Building Solutions ProSeal and Huntsman Building Solutions ProSeal LE is used as an air-impermeable barrier, such as in unventilated attic spaces regulated by 2021, 2018, 2015 and 2012 IRC Section R806.5 (2009 IRC Section R806.4) or 2021 and 2018 IBC Section 1202.3 (2015 IBC Section 1203.3), the insulation must be installed at a minimum thickness of 1.4 inches (35.6 mm). Where Huntsman Building Solutions ProSeal H5 and Huntsman Building Solutions ProSeal H5-O is used as an air-impermeable barrier, such as in unventilated attic spaces regulated by 2021, 2018, 2015 and 2012 IRC Section R806.5 (2009 IRC Section R806.4) or 2021 and 2018 IBC Section 1202.3 (2015 IBC Section 1203.5), the insulation must be installed at a minimum thickness of 1 inch (25.4 mm). The insulation is applied to the intended thickness, with the first pass being at the maximum thickness set forth in the manufacturer's published installation instructions. Where multiple passes are required, the cure time between each pass is in accordance with the manufacturer's instructions.

4.3 Thermal Barrier:

4.3.1 Application with a Prescriptive Thermal Barrier: Huntsman Building Solutions ProSeal, Huntsman Building Solutions ProSeal LE, Huntsman Building Solutions

ProSeal H5 and Huntsman Building Solutions ProSeal H5-O spray foam insulation must be separated from the interior of the building by an approved thermal barrier. When installation is within an attic or crawl space as described in Section 4.4, a thermal barrier is not required between the foam plastic and the attic or crawl space, but is required between the insulation and the interior of the building. There is no thickness limit when installation is behind a code-prescribed thermal barrier except as noted in Sections 4.4.2.1, 4.4.2.2 and 4.4.3.

4.3.2 Application without a Prescriptive Thermal Barrier with DC 315 Coating: Huntsman Building Solutions ProSeal and Huntsman Building Solutions ProSeal LE may be installed without the approved thermal barrier prescribed in IBC Section 2603.4 and IRC Section R316.4, when the installation is in accordance with this section. The Huntsman Building Solutions ProSeal insulation and the DC 315 Coating may be spray-applied to the interior facing of walls, the underside of roof sheathing or roof rafters, and in crawl spaces, and may be left exposed as an interior finish without a 15-minute thermal barrier or ignition barrier. The thickness of the insulation applied to the underside of the roof sheathing must not exceed 14 inches (356 mm). The thickness of the insulation applied to vertical wall surfaces must not exceed 8 inches (203 mm). The insulation must be covered on all surfaces with DC 315 Coating at a minimum wet film thickness of 24 mils wet (0.61 mm) [16 mils dry (0.41 mm)] at an application rate of 1 gallon (3.8 L) per 66.8 square feet (6.15 M²). The coating must be applied over the Huntsman Building Solutions ProSeal insulation in accordance with the coating manufacturer's instructions, [ESR-3702](#) and this report. Surfaces to be coated must be dry, clean, and free of dirt, loose debris and other substances that could interfere with adhesion of the coating. The coating is applied in one coat with low-pressure airless spray equipment.

4.4 Attics and Crawl Spaces:

4.4.1 Application with a Prescriptive Ignition Barrier: When Huntsman Building Solutions ProSeal, Huntsman Building Solutions ProSeal LE, Huntsman Building Solutions ProSeal H5 and Huntsman Building Solutions ProSeal H5-O insulation is installed within attics or crawl spaces where entry is made only for service of utilities, an ignition barrier must be installed in accordance with IBC Section 2603.4.1.6 or IRC Sections R316.5.3 and R316.5.4, as applicable. The ignition barrier must be consistent with the requirements for the type of construction required by the applicable code, and must be installed in a manner so that the foam plastic insulation is not exposed. Huntsman Building Solutions ProSeal and Huntsman Building Solutions ProSeal LE insulation may be installed in unvented attics in accordance with 2021 and 2018 IBC Section 1202.3 (2015 IBC Section 1203.3) or 2021, 2018, 2015 and 2012 IRC Section R806.5 (2009 IRC Section R806.4).

4.4.2 Application without a Prescriptive Ignition Barrier: Where Huntsman Building Solutions ProSeal spray foam is installed in an attic or crawl space without a prescriptive ignition barrier, in accordance with Sections 4.4.2.1 and 4.4.2.2, the following conditions apply:

1. Entry to the attic or crawl space is only for the service of utilities and no storage is permitted.
2. There are no interconnected attic, crawl space or basement areas.
3. Air in the attic or crawl space is not circulated to other parts of the building.

4. Combustion air is provided in accordance with IMC (*International Mechanical Code*[®]) Section 701.
5. Attic ventilation is provided when required by 2021 and 2018 IBC Section 1202.2 (2015, 2012 and 2009 IBC Section 1203.2) or IRC Section R806, except when air-impermeable insulation is permitted in unvented attics in accordance with 2021 and 2018 IBC Section 1202.3 (2015 IBC Section 1203.3) or 2021, 2018, 2015 and 2012 IRC Section R806.5 (2009 IRC Section R806.4).
6. Under-floor (crawl space) ventilation is provided when required by 2021 and 2018 IBC Section 1202.4 [2015 IBC Section 1203.4 (2012 and 2009 IBC Section 1203.3)] or IRC Section R408.1, as applicable.

4.4.2.1 Attics and Crawl Spaces – Uncoated: The thickness of the Huntsman Building Solutions ProSeal and Huntsman Building Solutions ProSeal LE foam plastic applied to the underside of the roof sheathing and/or rafters, or the underside of floors, must not exceed 8 inches (203 mm). The thickness of the spray foam insulation applied to vertical wall surfaces must not exceed 6 inches (152 mm). The insulation does not require a code-prescribed ignition barrier or coating.

The thickness of the Huntsman Building Solutions ProSeal H5 and Huntsman Building Solutions ProSeal H5-O foam plastic applied to the underside of the roof sheathing and/or rafters, or the underside of floors, must not exceed 6 inches (152 mm). The thickness of the spray foam insulation applied to vertical wall surfaces must not exceed 6 inches (152 mm). The insulation does not require a code-prescribed ignition barrier or coating.

4.4.2.2 Attic and Crawl Spaces – Coated: The thickness of the Huntsman Building Solutions ProSeal and Huntsman Building Solutions ProSeal LE foam plastic applied to the underside of the roof sheathing and/or rafters, or the underside of floors, must not exceed 14 inches (356 mm). The thickness of the spray foam insulation applied to vertical wall surfaces must not exceed 8 inches (203 mm).

The Huntsman Building Solutions ProSeal and Huntsman Building Solutions ProSeal LE insulation must be covered on all surfaces with DC 315 Coating at a minimum dry film thickness of 3 mils (0.08 mm) [wet film thickness of 4 mils (0.10 mm)] at a rate of 401 square feet (37 m²) per gallon (3.8 L).

The DC 315 Coating must be applied over the Huntsman Building Solutions ProSeal and Huntsman Building Solutions ProSeal LE insulation in accordance with the coating manufacturer's instructions and this report. Surfaces to be coated must be dry, clean, and free of dirt, loose debris and other substances that could interfere with adhesion of the coating. The coating is applied in one coat with low-pressure airless spray equipment.

4.4.3 Use on Attic Floors: Huntsman Building Solutions ProSeal and Huntsman Building Solutions ProSeal LE insulation may be installed exposed at a maximum thickness of 14 inches (356 mm) between and over the joists in attic floors. The insulation must be separated from the interior of the building by an approved thermal barrier. An ignition barrier in accordance with the IBC Section 2603.4 and IRC Section R316.5.3 may be omitted.

4.5 One-hour Non-load-bearing Fire-resistance-rated Wall Assembly:

4.5.1 Exterior Face: Nominally 6-inch-deep (152 mm), No. 18 gage galvanized steel studs, spaced 16 inches (406 mm) on center, are fastened to No. 18 gage

galvanized steel floor and ceiling tracks. One layer of 1/2-inch-thick (12.7 mm) Georgia Pacific DensGlass® Gold Exterior Sheathing is installed parallel to the steel studs with vertical joints offset a minimum of 16 inches (406 mm) from the vertical joints of the interior Type X gypsum board, and the horizontal joints offset a minimum of 24 inches (610 mm) from the horizontal joints of the gypsum board. The sheathing is attached using 1 1/4-inch long (31.7 mm), self-drilling drywall screws spaced 8 inches (203 mm) on center around the perimeter and in the field. Hohmann & Barnard DW-10 brick ties, 6 inches (152 mm) long by 1 1/2 inches (38 mm) wide, are spaced 16 inches (406.4 mm) on center vertically on each steel stud, and secured using two 1 5/8-inch-long (41.3) self-drilling screws, through 4-inch (102 mm) red clay brick [3 1/2 inches (89 mm) by 2 1/4 inches (57 mm) by 7 3/4 inches (197 mm)], laid in a running bond pattern with Type S mortar, leaving a nominally 1-inch (25.4 mm) air gap between the brick and the exterior sheathing. The stud cavity is filled with Huntsman Building Solutions ProSeal insulation and Huntsman Building Solutions ProSeal LE to a maximum nominal thickness of 6 inches.

4.5.2 Interior Face: Type X gypsum board, 5/8 inch (15.9 mm) thick and complying with ASTM C1396, is applied to the interior side with the long edge parallel to steel studs, and is secured using 1 1/4-inch-long (32 mm), self-drilling drywall screws spaced 8 inches (203 mm) on center around the perimeter and 12 inches (305 mm) on center in the field. The gypsum board joints must be treated with vinyl or casein, dry or premixed joint compound applied in two coats to cover all exposed screw heads and gypsum board butt joints. A minimum 2-inch-wide (51 mm) paper, plastic, or fiberglass tape is embedded in the first layer of compound over butt joints of the gypsum board.

4.6 Exterior Walls in Type I, II, III and IV Construction (2018, 2015, 2012 and 2009 IBC):

4.6.1 General: When used on exterior walls of Types I, II, III or IV construction, the assembly must comply with 2018, 2015, 2012 and 2009 IBC Section 2603.5 and this section, and the Huntsman Building Solutions ProSeal and Huntsman Building Solutions ProSeal LE insulation must be installed at a maximum thickness as described in Table 4. The potential heat of Huntsman Building Solutions ProSeal insulation is 2288 Btu/ft² (25995 kJ/m²) per inch of thickness, when tested in accordance with NFPA 259.

4.6.2 Specific Wall Assemblies: Wall assemblies complying with Section 4.6 must be as described in Table 4.

4.7 Water-resistive Barrier:

Huntsman Building Solutions ProSeal and Huntsman Building Solutions ProSeal LE insulation may be used as an alternative to the water-resistive barrier prescribed in IBC Section 1404.2 and IRC Section R703.2, when installed on exterior walls as described in this section the insulation must be spray-applied to the exterior side of sheathing, masonry or other suitable exterior wall substrates to form a continuous layer of 1 inch (25.4 mm) minimum thickness. All construction joints and penetrations are to be completely sealed with Huntsman Building Solutions ProSeal or Huntsman Building Solutions ProSeal LE insulation.

5.0 CONDITIONS OF USE

The Huntsman Building Solutions ProSeal, Huntsman Building Solutions ProSeal LE, Huntsman Building

Solutions ProSeal H5 and Huntsman Building Solutions ProSeal H5-O spray foam insulation described in this report complies with, or is 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 product must be installed in accordance with the manufacturer's published installation instructions, this evaluation report and the applicable code. In the event of a conflict between the manufacturer's published installation instructions and this report, this report governs.
- 5.2** The insulation must be separated from the interior of the building by an approved thermal barrier in accordance with IBC Section 2603.4, except when installation is as described in Section 4.3.2 or in attics and crawl spaces as described in Section 4.4.2.
- 5.3** The insulation must not exceed the thickness and density noted in Sections 3.2, 4.3, 4.4, 4.5 and 4.6 of this report.
- 5.4** The insulation must be protected from the weather during and after application.
- 5.5** The insulation must be applied by installers authorized by Huntsman Building Solutions.
- 5.6** Use of the product on exterior walls of Types I, II, III or IV construction under the 2021 IBC is outside the scope of this report.
- 5.7** Use of the insulation in areas where the probability of termite infestation is "very heavy" must be in accordance with IRC Section R318.4 or 2021 IBC Section 2603.8 (2018, 2015 and 2012 IBC Section 2603.9; 2009 IBC Section 2603.8), as applicable.
- 5.8** Jobsite certification and labeling of the insulation must comply with 2021, 2018 or 2015 IRC Sections N1101.10.1 and N1101.10.1.1 (2012 IRC Sections N1101.12.1 and N1101.12.1.1 or 2009 IRC Sections N1101.4 and N1101.4.1) and 2021, 2018, 2015 and 2012 IECC Sections C303.1.1, C303.1.1.1, R303.1.1 and R303.1.1.1 (2009 IECC Sections 303.1.1 and 303.1.1.1), as applicable.
- 5.9** The A and B components of the insulation are produced 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 Spray-applied Foam Plastic Insulation, (AC377), dated April 2020 (editorially revised July 2020), including reports of tests in accordance with Appendix X of AC377.
- 6.2** Report of air permeance test in accordance with ASTM E2178.
- 6.3** Report of vapor permeance test in accordance with ASTM E96.
- 6.4** Engineering analysis of a fire-resistance test in accordance with ASTM E119.
- 6.5** Engineering analysis of a fire test in accordance with NFPA 285.
- 6.6** Report of a room corner fire test in accordance with NFPA 286.
- 6.7** Report of a potential heat test in accordance with NFPA 259.
- 6.8** Report of a critical radiant flux test in accordance with ASTM E970.

7.0 IDENTIFICATION

- 7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-3500) along with the name, registered trademark, or registered logo of the report holder must be included in the product label.
- 7.2 In addition, containers of Huntsman Building Solutions ProSeal, Huntsman Building Solutions ProSeal LE, Huntsman Building Solutions ProSeal H5 and Huntsman Building Solutions ProSeal H5-O components are identified with a label bearing the Huntsman Building Solutions address; the product trade name [Huntsman Building Solutions ProSeal]; the lot number; the flame spread and smoke developed indices; mixing instructions; density; the shelf life and the expiration date.

The International Fireproof Technology Inc., DC 315 intumescent coating is identified with the

manufacturer's name, the product trade name and address, use date of manufacture, shelf life or expiration date, manufacturer's instructions and evaluation report number (ESR-3702).

- 7.3 The report holder's contact information is the following:

HUNTSMAN BUILDING SOLUTIONS, LLC
3315 E. DIVISION STREET
ARLINGTON, TEXAS 76011
(817) 640-4900
www.huntsmanbuilds.com
tsauceda@huntsmanbuilds.com

TABLE 1—THERMAL RESISTANCE (R-VALUES) PROSEAL AND PROSEAL LE

THICKNESS (inches)	R-VALUE (°F.ft².h/Btu)
1.0	7.1
3.5	24
4.0	28
5.5	38
6.0	42
7.5	52
8.5	59
9.5	66
10.0	69
11.25	78

For **SI**: 1 inch= 25.4 mm; 1°F.ft².h/Btu = 0.176110°K.m².h/W.

¹R-values are calculated based on tested K-values at 1- and 3.5-inch thicknesses.

TABLE 2—THERMAL RESISTANCE (R-VALUES) PROSEAL H5

THICKNESS (inches)	R-VALUE (°F.ft².h/Btu)
1.0	6.7
3.5	24
4.0	27
5.5	37
6.0	41
7.5	51
8.5	58
9.5	65
10.0	68
11.25	76

For **SI**: 1 inch= 25.4 mm; 1°F.ft².h/Btu = 0.176110°K.m².h/W.

¹R-values are calculated based on tested K-values at 1- and 3.5-inch thicknesses.

TABLE 3—THERMAL RESISTANCE (R-VALUES) PROSEAL H5-0

THICKNESS (inches)	R-VALUE (°F.ft².h/Btu)
1.0	7.2
3.5	25
4.0	29
5.5	39
6.0	43
7.5	54
8.5	61
9.5	68
10.0	72
11.25	81

For SI: 1 inch= 25.4 mm; 1°F.ft².h/Btu = 0.176110°K.m².h/W.

¹R-values are calculated based on tested K-values at 1- and 3.5-inch thicknesses.

TABLE 4—NFPA 285 COMPLYING EXTERIOR WALL ASSEMBLIES (2018, 2015, 2012 and 2009 IBC)

WALL COMPONENT	MATERIALS
Base Wall System – Use either 1, 2 or 3	1 – Concrete wall. 2 – Concrete masonry wall. 3 –Minimum 3 ⁵ / ₈ -inch-deep (92 mm), No. 20 gage, C-shaped steel studs, spaced a maximum of 24 inches on center with lateral bracing every 4 feet (1219 mm) as required by code. Sheathing shall be a described in Exterior Sheathing below.
Floorline Firestopping	Minimum 4 pcf mineral wool in each stud cavity at each floorline, attached with Z-clips. Thickness must match stud cavity depth.
Cavity Insulation – Use either 1, 2, 3, 4 or 5	1 – None. 2 – Partial cavity fill with a maximum air space of 2 inches (51 mm) or full cavity depth not exceeding 7 ⁵ / ₈ inches (194 mm) of Classic, Classic Plus or Classic Max (ESR-1826); Proseal Eco (MD-R-210) (ESR-3493); or Proseal/ProSeal LE (ESR-3500). 3 – Any insulation qualified as noncombustible in accordance with ASTM E136. 4 – Glass fiber batt insulation ^a . 5 – Mineral fiber insulation ^a . ^a Insulation must comply with the applicable requirements of 2018, 2015 or 2012 IBC Section 720.2 (2009 IBC Section 719.2).
Exterior Sheathing – Only for Base Wall System No.3 – Use either 1 or 2	1 – Minimum 1/2-inch-thick (12.7 mm), glass mat gypsum sheathing complying with ASTM C1177. 2 – Sheathing shall be attached with No. 6, 1 1/4- inch-long (32 mm)self-tapping screws located 8 inches (203 mm) on center along the perimeter and 12 inches (302 mm) on center in the field of wallboard. Joints must be taped and treated with joint compound in accordance with ASTM C840 or GA-216.
Exterior Insulation	Maximum thickness of 5 1/2 inches (140 mm) of Proseal Eco (MD-R-210) (ESR-3493) or Proseal/ProSeal LE (ESR-3500).
Exterior Wall Covering – Use either 1, 2, 3, 4, 5, 6 or 7	1 – Brick - standard nominally 4-inch-thick (102 mm) clay brick; brick veneer anchors – standard types installed a maximum of 24 inches OC vertically on each stud ^b . 2 – Stucco - minimum 3/4-inch-thick (19.1 mm), exterior cement plaster and lath with a secondary water-resistive barrier may be installed between the exterior insulation and the lath. 3 – Natural stone (limestone, granite, marble, sandstone), minimum 2-inch-thick (51 mm) ^c . 4 – Cast artificial stone, minimum 1 1/2-inch-thick (38 mm), complying with AC51 and subject of a current ICC-ES evaluation report ^c . 5 – Terracotta cladding, minimum of 1 1/4-inch-thick (32 mm) ^c . 6 – Precast concrete panels, minimum of 1 1/2-inch-thick (32 mm) ^c . 7 – Concrete masonry units (CMU), minimum of 1 1/2-inch-thick (38 mm) ^c . ^b . The maximum air gap between exterior insulation and cladding shall be 2 inches (51 mm). ^c . Any standard non-open-jointed installation technique such as shiplap, etc., may be used.

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 21 00—Thermal Insulation

REPORT HOLDER:

HUNTSMAN BUILDING SOLUTIONS, LLC

EVALUATION SUBJECT:

HUNTSMAN BUILDING SOLUTIONS PROSEAL, HUNTSMAN BUILDING SOLUTIONS PROSEAL LE, HUNTSMAN BUILDING SOLUTIONS PROSEAL H5 AND HUNTSMAN BUILDING SOLUTIONS PROSEAL H5-0

1.0 REPORT PURPOSE AND SCOPE**Purpose:**

The purpose of this evaluation report supplement is to indicate that the Huntsman Building Solutions ProSeal, Huntsman Building Solutions ProSeal LE, Huntsman Building Solutions ProSeal H5 and Huntsman Building Solutions ProSeal H5-0, described in ICC-ES evaluation report ESR-3500, have also been evaluated for the codes noted below.

Applicable code editions:

- 2019 *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 Division of the State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2019 *California Residential Code* (CRC)
- 2019 *California Energy Code* (CEC)

2.0 CONCLUSIONS**2.1 CBC and CRC:**

The Huntsman Building Solutions ProSeal, Huntsman Building Solutions ProSeal LE, Huntsman Building Solutions ProSeal H5 and Huntsman Building Solutions ProSeal H5-0, described in Sections 2.0 through 7.0 of the evaluation report ESR-3500, comply with the 2019 CBC and CRC, provided the design and installation are in accordance with the 2018 *International Building Code*® (IBC) and *International Residential Code*® (IRC) provisions noted in the evaluation report.

2.1.1 OSHPD:

The applicable OSHPD Sections and Chapters of the CBC are beyond the scope of this supplement.

2.1.2 DSA:

The applicable DSA Sections and Chapters of the CBC are beyond the scope of this supplement.

2.2 CEC:

The Huntsman Building Solutions ProSeal, Huntsman Building Solutions ProSeal LE, Huntsman Building Solutions ProSeal H5 and Huntsman Building Solutions ProSeal H5-0, described in Sections 2.0 through 7.0 of the evaluation report ESR-3500, comply with the 2019 CEC, provided the design and installation are in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report.

2.2.1 Conditions of Use:

In accordance with Section 110.8 of the 2019 California Energy Code, verification of certification by the Department of Consumer Affairs, Bureau of Household Goods and Services, must be provided to the code official, demonstrating that the insulation conductive thermal performance is approved pursuant to the California Code of Regulations, Title 24, Part 12, Chapters 12-13, Article 3, "Standards for Insulating Material." Certification can be verified with the DCA Bureau of Household Goods and Services using the following link to the bureau's Directory of Certified Insulation Materials: https://bhgs.dca.ca.gov/consumers/ti_directory.pdf

This supplement expires concurrently with the evaluation report, reissued January 2023.