ICC-ES Evaluation Report

ESR-3174

Reissued December 2023

Revised December 2024

Subject to renewal December 2025

This report also contains:

- **CA Supplement**

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DIVISION: 07 00 00 — THERMAL AND MOISTURE PROTECTION **Section: 07 21 00 — Thermal Insulation** **Section: 07 22 00 — Roof and Deck Insulation**	**REPORT HOLDER: HUNTER PANELS A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC**	**EVALUATION SUBJECT: ROOF INSULATION: H-SHIELD, H-SHIELD CG, H-SHIELD HD COMPOSITE CG, H-SHIELD HD, H-SHIELD F, H-SHIELD NB, H-SHIELD WF, AND COOL-VENT**	

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2024, 2021, 2018, 2015, 2012 and 2009 *International Building Code*® (IBC)
- 2024, 2021, 2018, 2015, 2012 and 2009 *International Residential Code*® (IRC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)†

†The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

Properties evaluated:

- Surface-burning characteristics
- Physical properties
- Elimination of the thermal barrier when application is directly to steel roof decks

2.0 USES

Hunter Panels H-Shield, H-Shield CG, H-Shield HD Composite CG, H-Shield HD, H-Shield F, H-Shield NB, H-Shield WF, and Cool-Vent roofing insulation panels are used as above-deck roof insulation, as a component of a Class A, B, or C roof covering.

3.0 DESCRIPTION

3.1 General:

H-Shield, H-Shield CG, H-Shield HD Composite CG, H-Shield HD, H-Shield F, H-Shield NB, H-Shield WF, and Cool-Vent, insulation panels are rigid insulation panels with a closed-cell polyisocyanurate foam core. The foam core has a flame-spread index of 75 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E84 or UL 723 at a maximum thickness of 4.5 inches (115 mm) and a maximum density of 2 pounds per cubic foot (32 kg/m^3).

3.2 Materials:

3.2.1 H-Shield: The foam plastic core is faced on each side with a fiber-reinforced facer. It is produced in panels measuring 4 feet by 4 feet (1220 mm by 1220 mm) and 4 feet by 8 feet (1220 mm by 2440 mm) and having thicknesses from 1 inch (25 mm) to 4.5 inches (115 mm). H-Shield is classified as Type II Class 1 in accordance with ASTM C1289.

3.2.2 H-Shield CG: The foam plastic core is faced with a coated glass facer on each side. It is produced in panels measuring 4 feet by 4 feet (1220 mm by 1220 mm) and 4 feet by 8 feet (1220 mm by 2440 mm) and having thicknesses from 1 inch (25 mm) to 4.5 inches (115mm). H-Shield CG is classified as Type II Class 2 in accordance with ASTM C1289.

3.2.3 H-Shield HD Composite CG: H-Shield HD Composite CG is comprised of $^1/_2$-inch thick (13 mm) H-Shield HD and H-Shield CG forming a monolithic composite panel. It is produced in panels measuring 3.96 feet by 3.96 feet (1207 mm by 1207 mm) and 3.96 feet by 7.96 feet (1207 mm by 2426 mm) and having thicknesses from 2 inches (51 mm) to 4 inches (102 mm). H-Shield HD Composite CG is classified as Type II Class 2 in accordance with ASTM C1289.

3.2.4 H-Shield HD: The foam plastic core is faced with a coated facer on each side. It is produced in panels measuring a nominal 4 feet by 8 feet (1220 mm by 2440 mm) and having $^1/_2$-inch (13 mm) thickness. H-Shield HD is classified as Type II Class 4 in accordance with ASTM C1289.

3.2.5 H-Shield F: The foam plastic core is faced on each side with aluminum foil facing material. It is produced in panels measuring 4 feet by 4 feet (1220 mm by 1220 mm) and 4 feet by 8 feet (1220 mm by 2440 mm) and having thicknesses from 1 inch (25 mm) to 4.5 inches (115 mm). -Shield F is classified as Type I Class 1 in accordance with ASTM C1289.

3.2.6 H-Shield NB: The foam plastic core is faced with a fiber-reinforced facer on one side and $^7/_{16}$-inch (11.1 mm) or $^5/_8$-inch (15.9 mm) oriented strand board (OSB), or $^3/_4$-inch (19.0 mm) or $^5/_8$-inch (15.9 mm) plywood, on the other. It is produced in panels measuring a nominal 4 feet by 8 feet (1220 mm by 2440 mm) and having thicknesses from 1.5 inches (38 mm) to 4.5 inches (115 mm). H-Shield NB is classified as Type V in accordance with ASTM C1289.

3.2.7 H-Shield WF: The foam plastic core is faced with a fiber-reinforced facer on one side and $^1/_2$-inch (13 mm), **asphalt**-coated, high-density wood fiberboard on the other. It is produced in panels measuring a nominal 4 feet by 8 feet (1220 mm by 2440 mm) and having thicknesses from 1.5 inches (38 mm) to 4.5 inches (115 mm). H-Shield WF is classified as Type IV in accordance with ASTM C1289.

3.2.8 Cool-Vent: The foam plastic core is faced with a fiber-reinforced facer on one side, a middle layer of solid wood spacers, creating an air gap having thicknesses from 1-inch (25.4 mm) to 2 inches (50.8 mm) and $^7/_{16}$-inch (11.1 mm) or $^5/_8$-inch (15.9 mm) oriented strand board (OSB), or $^3/_4$-inch (19.0 mm) or $^5/_8$-inch (15.9 mm) plywood, on the other. It is produced in panels measuring a nominal 4 feet by 8 feet (1220 mm by 2440 mm) and having thicknesses from 2 inches (50.8 mm) to 6.2 inches (158 mm). Cool-Vent is classified as Type II, Class 1 in accordance with ASTM C1289.

4.0 DESIGN AND INSTALLATION

4.1 General:

Hunter Panels insulation panels must be installed in accordance with the manufacturer's published installation instructions and this report. The manufacturer's published installation instructions and this report must be strictly adhered to, and a copy of the instructions must be available on the jobsite during installation.

4.2 Installation:

When installed as above-deck roof insulation as a component of a Class A, B or C roof covering, the H-Shield, H-Shield CG, H-Shield HD Composite CG, H-Shield HD, H-Shield F, H-Shield NB, H-Shield WF, and Cool-Vent roofing insulations comply with IBC Sections 1508.2 and 2603.4.1.5 and 2024 IRC Section R303.5.2 and R906 (2021, 2018, 2015, 2012 and 2009 IRC Sections R316.5.2 and R906). H-Shield NB, H-Shield WF, and Cool-Vent must be installed, respectively, with the wood structural panel side and the fiberboard side up.

H-Shield, H-Shield CG, H-Shield HD Composite CG, H-Shield HD, H-Shield F, H-Shield NB, H-Shield WF, and Cool-Vent roofing insulation panels may be installed as a component of a Class A, B, or C roof covering, when identified either by product name or generically (ASTM C1289) in a classified roof assembly that is specified in an ICC-ES evaluation report for roof coverings or as listed by an approved testing agency.

The insulation panels may be installed on steel decks without a thermal barrier provided installation is in accordance with the classified roof covering and the following: Minimum No. 22 MSG gauge steel decking, with a minimum fluted depth of $1^1/_2$ inches (38 mm) and no perforations, is welded or mechanically fastened to the supports in accordance with the approved plans. H-Shield, H-Shield CG, H-Shield HD Composite CG, H-Shield HD, H-Shield F, H-Shield NB, or H-Shield-WF is attached to the deck with steep asphalt at a rate of 12 to 15 pounds per 100 square feet (0.6 to 0.7 kg/m^2), or with mechanical fasteners. Cool-Vent must be

mechanically fastened to the deck of a UL-classified hot-mopped or cold-applied built-up roof covering or a UL-classified single-ply membrane roof covering is applied over the insulation. The roof covering must be a Class A, B or C roof assembly in accordance with IBC Section 1505.1 or IRC Section R902.1, as applicable.

5.0 CONDITIONS OF USE

The Hunter Panel, LLC, insulation panels described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 Installation must comply with this report, the manufacturer's published installation instructions 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 boards must be separated from the interior of the building by an approved thermal barrier in accordance with IBC Section 2603.4 or 2024 IRC Section R303.4 (2021, 2018, 2015, 2012 and 2009 IRC Section R316.4), as applicable, except as described in Section 4.2 of this report.

5.3 When use is in a roof covering assembly required to have a Class A, B, or C roof covering classification, the Class A, B, or C roofing assembly must specify a polyisocyanurate foam plastic insulation having characteristics consistent with the Hunter Panels products.

5.4 Evaluation of H-Shield, H-Shield CG, H-Shield HD Composite CG, H-Shield HD, H-Shield F, H-Shield NB, H-Shield WF, and Cool-Vent roofing insulation panels for resistance to wind uplift loads is outside the scope of this report.

5.5 Hunter Panels, LLC, insulation panels are manufactured in Montgomery, New York; Franklin Park, Illinois; Tooele, Utah; Lake City, Florida; Smithfield, Pennsylvania; Terrell, Texas; and Puyallup, Washington, 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 Foam Plastic Insulation (AC12), dated June 2015 (editorially revised June 2024).

6.2 Reports of tests in accordance with UL 1256.

7.0 IDENTIFICATION

7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-3174) along with the name, registered trademark, or registered logo of the report holder (Hunter Panels A Division of Carlisle Construction Materials LLC) must be included in the product label.

7.2 In addition, H-Shield, H-Shield CG, H-Shield HD Composite CG, H-Shield HD, H-Shield F, H-Shield NB, H-Shield WF, and Cool-Vent insulation products or packaging are marked with the manufacturer's name (Hunter Panel, LLC); the product name; the manufacturing facility location; the telephone number; the lot number; the date of manufacture; and the evaluation report number (ESR-3174).

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

HUNTER PANELS A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC
15 FRANKLIN STREET
PORTLAND, MAINE 04101
(888) 746-1114
www.hunterpanels.com

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 21 00—Thermal Insulation
Section: 07 22 00—Roof and Deck Insulation

REPORT HOLDER:

HUNTER PANELS A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC

EVALUATION SUBJECT:

ROOF INSULATION: H-SHIELD, H-SHIELD CG, H-SHIELD HD COMPOSITE CG, H-SHIELD HD, H-SHIELD F, H-SHIELD NB, H-SHIELD WF, AND COOL-VENT

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that Hunter Panels H-Shield, H-Shield CG, H-Shield HD Composite CG, H-Shield HD, H-Shield F, H-Shield NB, and H-Shield WF, recognized in ICC-ES evaluation report ESR-3174, have also been evaluated for compliance with the code noted below.

Applicable code edition(s):

- 2022 *California Building Code*® (CBC)

For evaluation of Hunter Panels H-Shield, H-Shield CG, H-Shield HD Composite CG, H-Shield HD, H-Shield F, H-Shield NB, and H-Shield WF roofing insulation panels of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) and Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2022 *California Residential Code*® (CRC)
- 2022 *California Energy Code*® (CEC)

2.0 CONCLUSIONS

2.1 CBC:

The Hunter Panels H-Shield, H-Shield CG, H-Shield HD Composite CG, H-Shield HD, H-Shield F, H-Shield NB, and H-Shield WF roofing insulation panels, described in Sections 2.0 through 7.0 of the evaluation report ESR-3174, comply with CBC Chapter 15, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapter 15, as applicable.

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 CRC:

The Hunter Panels H-Shield, H-Shield CG, H-Shield HD Composite CG, H-Shield HD, H-Shield F, H-Shield NB, and H-Shield WF roofing insulation panels, described in Sections 2.0 through 7.0 of the evaluation report ESR-3174, comply with CRC Chapter 9, provided the design and installation are in accordance with the 2021 *International Residential Code*® (IRC) provisions noted in the evaluation report and the additional requirements of CRC Chapter 9, as applicable.

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2.3 CEC:

The Hunter Panels H-Shield, H-Shield CG, H-Shield HD Composite CG, H-Shield HD, H-Shield F, H-Shield NB, and H-Shield WF roofing insulation panels, described in Sections 2.0 through 7.0 of the evaluation report ESR-3174, comply with the 2022 CEC, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report.

2.3.1 Conditions of use:

In accordance with Section 110.8 of the 2022 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 December 2023 and revised December 2024.