ICC-ES Evaluation Report

ESR-1962

Reissued July 2023

Revised March 2025

Subject to renewal July 2025

This report also contains:

- City of LA Supplement
- CA Supplement
- FL Supplement

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION Section: 07 21 00—Thermal Insulation Section: 07 22 00—Roof and Deck Insulation Section: 07 25 00—Water-Resistive Barriers/Weather Barriers	REPORT HOLDER: ATLAS MOLDED PRODUCTS, A DIVISION OF ATLAS ROOFING CORPORATION	EVALUATION SUBJECT: THERMALSTAR®, THERMALSTAR® GPS, THERMALSTAR® T&G, THERMALSTAR® GPS T&G, TALONGUARD TREATMENT, THERMALSTAR® EIFS, THERMALSTAR® EIFS GPS, THERMALSTAR® LCI, THERMALSTAR® LCI GPS, THERMALSTAR® LWI, THERMALSTAR® LWI GPS, THERMALSTAR® LRI INSULATION BOARD AND ATLAS GEOFOAM	

1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2024, 2021 and 2018 *International Building Code®* (IBC)
- 2024, 2021 and 2018 *International Residential Code®* (IRC)
- 2024, 2021 and 2018 *International Energy Conservation Code®* (IECC)

Properties evaluated:

- Surface-burning characteristics
- Thermal resistance (R-values)
- Physical properties
- Attic and crawl space installation
- Elimination of thermal barrier (ThermalStar used in roofing)
- Termite resistance (TalonGuard Treatment)
- Water-resistive barrier (ThermalStar LWI and ThermalStar LWI GPS)

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

- 2022 *California Green Building Standards Code (CALGreen)*, Title 24, Part 11
- 2020 ICC 700 *National Green Building Standard™* (ICC 700-2020)

Attributes verified:

See Sections 2.5 and 2.8

2.0 USES

2.1 ThermalStar® and ThermalStar® GPS:

ThermalStar® and ThermalStar® GPS are expanded polystyrene (EPS) and graphite enhanced expanded polystyrene (GPS) insulation boards used as nonstructural thermal insulation in buildings of any construction type.

The insulation boards are used as a component of Class A, B, and C roof covering systems installed directly on steel decks, when installed in accordance with Section 4.6 of this report.

The insulation boards are for use in wall cavities, ceiling assemblies, floor assemblies, roof covering assemblies, door cavities, or on the outside faces of exterior walls. The insulation boards may be used as roof insulation when recognized in a current ICC-ES evaluation report on the roof covering system.

The insulation may also be used as exterior perimeter insulation around concrete slab edges, on foundation walls, or under flat concrete slab on grade construction, except in areas where the probability of termite activity is “very heavy” as noted in Section 5.5 and defined in IBC Section 2603.8, 2024 IRC Section R305.4, or 2021 and 2018 IRC Section R318.4.

The ThermalStar insulation boards may be used on both walls and ceilings in attics and crawl spaces, with no thermal barrier or ignition barrier applied to the exposed foam plastic insulation when installed in accordance with Section 4.2.2.

The insulation boards may be used as a component of a one-coat cementitious exterior wall coating system when recognized in a current ICC-ES evaluation report for a one-coat cementitious exterior wall coating system.

2.2 ThermalStar T&G and ThermalStar GPS T&G:

ThermalStar T&G insulation boards are used as nonstructural thermal insulation in buildings of any construction type, as a component of a one-coat cementitious exterior wall coating system. The insulation is for use on the outside faces of exterior walls when an ASTM C578 Type I or Type II EPS board is recognized in a current ICC-ES evaluation report for a one-coat cementitious exterior wall coating system, or when installed as described in Section 4.3.

2.3 ThermalStar EIFS and ThermalStar EIFS GPS:

ThermalStar EIFS and ThermalStar EIFS GPS are EPS and GPS foam plastic insulation boards, respectively, and are used as nonstructural thermal insulation as a component in exterior insulation and finish systems (EIFS). The insulation may be used on the outside faces of exterior walls when an ASTM C578 Type I EPS board is recognized in a current ICC-ES evaluation report for an EIFS.

2.4 ThermalStar LCI and ThermalStar LCI GPS:

ThermalStar LCI is a film-faced EPS insulation board. ThermalStar LCI GPS is a film-faced GPS insulation board. The ThermalStar LCI insulation boards may be used as insulation in crawlspaces when installed in accordance with Section 4.2.2 of this report.

2.5 ThermalStar LWI and ThermalStar LWI GPS:

ThermalStar LWI is a film-faced EPS insulation board. ThermalStar LWI GPS is a film-faced GPS insulation board. The insulation boards may be used as an alternative to the water-resistive barriers specified in the codes when installed in accordance with Section 4.6.1. ThermalStar LWI insulation may be used on the outside faces of exterior walls when an ASTM C578 Type I or Type II EPS board is recognized in a current ICC-ES evaluation report for a one-coat cementitious exterior wall coating system, or when installed as described in Section 4.2.1.

The attributes of the ThermalStar LWI insulation boards used as a water-resistive barrier have been verified as conforming to the provisions of (i) CALGreen Section 5.407.1 and (ii) ICC 700-2020 Sections 602.1.8, 11.602.1.8, 1202.6 and 13.104.1.4; (iii) ICC 700-2015 Section 602.1.8, 11.602.1.8 and 12.6.602.1.8; (iv) ICC 700-2012 Section 602.1.8, 11.602.1.8 and 12.5.602.1.8; and (v) 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.

2.6 ThermalStar LRI:

ThermalStar LRi is a film-faced EPS foam plastic insulation board used as thermal insulation as a component of a Class A, Class B or Class C roof covering system, when specified in a current ICC-ES evaluation report for the roof covering system.

2.7 Atlas Geofoam:

Atlas Geofoam blocks are used as lightweight structural fill in floor cavities when installation is in accordance with Section 4.8 of this report.

2.8 TalonGuard Treatment:

ThermalStar, ThermalStar GPS, ThermalStar LCI, ThermalStar LCI GPS, and Atlas Geofoam with TalonGuard Treatment are recognized for use on the exterior face of foundation walls, under interior or exterior foundation walls or slab foundations below grade, or where located within 6 inches (152 mm) of exposed earth. When installed in areas where the probability of termite infestations is very heavy as described in 2024, 2021 and 2018 IBC Section 2603.8 or 2024 IRC Section R305.4, or 2021 and 2018 IRC Section R318.4, use is limited to areas exposed to the Reticulitermes species.

The attributes of the TalonGuard treated boards have been verified as conforming to the provisions of (i) ICC 700-2015 and ICC 700-2012 Sections 602.1.6 and 11.602.1.6; and (ii) ICC 700-2008 Section 602.8. 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 standards often provide supplemental information as guidance.

3.0 DESCRIPTION

3.1 General:

The ThermalStar, ThermalStar GPS, ThermalStar T&G, ThermalStar GPS T&G, ThermalStar EIFS, ThermalStar EIFS GPS, ThermalStar LCI, ThermalStar LCI GPS, ThermalStar LWI, ThermalStar LWI GPS, ThermalStar LRI insulation boards, at a maximum thickness of 4 inches (102 mm) and a nominal density of 3.0 pcf (48.1 kg/m³), have a flame-spread index not exceeding 25 and a smoke-developed index not exceeding 450 when tested in accordance with ASTM E84. The Atlas Geofoam blocks, at a maximum thickness of 4 inches (102 mm) and a nominal density of 3.0 pcf (48.1 kg/m³), have a flame-spread index not exceeding 25 and a smoke-developed index not exceeding 450 when tested in accordance with ASTM E84.

3.2 ThermalStar and ThermalStar GPS:

ThermalStar® EPS insulation boards comply with ASTM C578 and are molded, closed-cell EPS boards manufactured at minimum densities of 0.90, 1.15, 1.35, 1.80, 2.40, 3.00 pcf (14.4, 18.4, 21.6, 28.8, 38.4 and 48.1 kg/m^3). The ASTM C578 designations are Type I, Type VIII, Type II, Type IX, Type XIV, and Type XV respectively. For thermal resistance *(R*-values), see Table 1.

ThermalStar GPS complies with ASTM C578 and are molded, graphite enhanced, closed-cell GPS insulation boards manufactured at minimum densities of 0.90, 1.15, 1.35 (14.4, 18.4, and 21.6 kg/m^3). The ASTM C578 designations are Type I, VIII, and II, respectively. For thermal resistance *(R*-values), see Table 1.

The insulation boards are produced in various thicknesses with square, shiplap or tongue-and-groove edge profiles.

3.3 ThermalStar T&G and ThermalStar GPS T&G:

ThermalStar T&G and ThermalStar GPS T&G are molded, closed-cell, EPS and GPS foam plastic insulation boards, respectively, with tongue-and-groove edges, complies with the Type I and Type II requirements of ASTM C578, and are nominal 1-inch-thick (25.4 mm). For thermal resistance *(R*-values), see Table 1.

3.4 ThermalStar EIFS and ThermalStar EIFS GPS:

ThermalStar EIFS and ThermalStar EIFS GPS are molded, closed-cell, EPS and GPS insulation boards, respectively, complying with the Type I requirements of ASTM C578 and ASTM E2430. The insulation boards are manufactured at a minimum density of 0.90 pcf (14.4 kg/m^3). For thermal resistance (*R*-values), see Table 1.

The ThermalStar EIFS and ThermalStar EIFS GPS are produced in various thicknesses with square, shiplap or tongue-and-groove edge profiles.

3.5 ThermalStar LCI and ThermalStar LCI GPS:

ThermalStar LCI complies with ASTM C578 and are molded, closed-cell EPS insulation boards manufactured at minimum densities of 0.90, 1.15, 1.35, and 1.80 pcf (14.4, 18.4, 21.6, and 28.8 kg/m^3) with polymeric film facers adhered to both sides. The ASTM C578 designations are Type I, VIII, II, and IX, respectively. For minimum density and thermal resistance (*R*-values), see Table 1.

ThermalStar LCI GPS complies with ASTM C578 and are molded, graphite enhanced, closed-cell boards manufactured at minimum densities of 0.90, 1.15, and 1.35 (14.4, 18.4, and 21.6 kg/m^3) with polymeric film

facers adhered to both sides. The ASTM C578 designations are Type I, VIII, and II, respectively. For minimum density and thermal resistance (*R*-values), see Table 1.

3.6 ThermalStar LRI:

ThermalStar LRI complies with ASTM C578 and are molded, closed-cell EPS insulation boards manufactured at minimum densities of 0.90, 1.15, 1.35, and 1.80 pcf (14.4, 18.4, 21.6, and 28.8 kg/m^3) with polymeric film facers adhered to both sides. The ASTM C578 designations are Type I, VIII, II, and IX, respectively. For minimum density and thermal resistance (*R*-values), see Table 1. ThermalStar LRI are produced in various thicknesses with square, shiplap or tongue-and-groove edge profiles.

3.7 ThermalStar LWI and ThermalStar LWI GPS:

ThermalStar LWI complies with ASTM C578 and are molded, closed-cell EPS insulation boards manufactured at minimum densities of 0.90, 1.15, 1.35, and 1.80 pcf (14.4, 18.4, 21.6, and 28.8 kg/m^3). The ASTM C578 designations are Type I, VIII, II, and IX, respectively. For thermal resistance (*R*-values), see Table 1.

ThermalStar LWI GPS complies with ASTM C578 and are molded, closed-cell GPS insulation boards manufactured at minimum densities of 0.90, 1.15, and 1.35 (14.4, 18.4, and 21.6, kg/m^3). The ASTM C578 designations are Type I, VIII and II, respectively. For thermal resistance (*R*-values), see Table 1.

When an ASTM C578 Type I or Type II EPS board is specified in a current ICC-ES evaluation report for a one-coat cementitious exterior wall covering system, the core material of ThemralStar LWI and ThermalStar LWI GPS are a Type I manufactured at a minimum density of 0.9 pcf (14.4 kg/m^3).

ThermalStar LWI and ThermalStar LWI GPS are produced in various thicknesses with square, shiplap or tongue-and-groove edge profiles.

3.8 ThermalStar Tape:

ThermalStar tape is used with ThermalStar LWI, and ThermalStar LWI GPS insulation boards when the board is used as an alternate to the water-resistive barrier as described in Section 4.6.1. The tape consists of a polyethylene backing with a rubber-based adhesive and has a nominal thickness of 6 mils [0.006 inch (0.15 mm)] and a width of 2 inches (51 mm). The tape is supplied in rolls 36 yards (32.9 m) long.

3.9 Atlas Geofoam Blocks:

Atlas Geofoam blocks are manufactured at minimum densities of 0.90, 1.15, 1.35, 1.80, 2.40 and 2.85 pcf (14.4, 18.4, 21.6, 28.8, 38.4 and 45.7 kg/m^3), and comply with ASTM D6817 Type EPS15, EPS19, EPS22, EPS29, EPS39 and EPS46, respectively. Atlas Geofoam blocks are produced in various thicknesses and sizes with square edge profiles.

3.10 TalonGuard Treatment:

ThermalStar, ThermalStar GPS, ThermalStar LCI, ThermalStar LCI GPS and Atlas Geofoam with TalonGuard Treatment comply with ASTM C578 and the insulation boards are used as described in Sections 2.1, 2.4 and 2.8 when installed as described in Section 4.4 of this report. Atlas Geofoam with Talon Treatment blocks comply with ASTM D6817 and are used as described in Sections 2.7 and 2.8 when installed as described in Section 4.4 of this report.

3.11 Potential Heat:

See Table 2 for potential heat content of insulation boards when tested in accordance with NFPA 259.

4.0 DESIGN AND INSTALLATION

4.1 General:

Installation of the foam plastic insulation boards must comply with this report and the manufacturer's published installation instructions. The manufacturer's published installation instructions must be available at all times on the jobsite during installation. The insulation boards must be attached to supports in a manner that will secure the insulation in place.

4.2 ThermalStar, ThermalStar GPS, ThermalStar EIFS, ThermalStar EIFS GPS, ThermalStar LCI, ThermalStar LCI GPS, ThermalStar LWI, ThermaStar LWI GPS, ThermalStar LRI, and Atlas Geofoam:

4.2.1 General: The interior of the building must be separated from the insulation boards with a thermal barrier as required in IBC Section 2603.4, or 2024 IRC Section R303.4 or 2021 and 2018 IRC Section R316.4, as applicable, except as described in Section 4.2.2 of this report.

Under the 2024, 2021 and 2018 IBC, protection against condensation must be provided in accordance with Section 1403.2. A vapor retarder must be provided in accordance with 2024, 2021 and 2018 IRC Section R702.7.

A water-resistive barrier in compliance with IBC Section 1404.2 and IRC Section R703.2 is required and, when applied over wood-based sheathing, must comply with IBC Section 2510.6, 2024, 2021 and 2018 IRC Section R703.7.3, as applicable.

The insulation board is permitted to be applied to exterior faces of walls, to a maximum thickness of $1^1/_2$ inches (38 mm), except insulation board thicknesses greater than $1^1/_2$ inches (38 mm) may be permitted if such installation is recognized in an ICC-ES evaluation report on wall coverings or when attachment of claddings is in accordance with the prescriptive requirements of 2024 IBC Section 1404.5, 2021 and 2018 IBC Sections 2603.11 or 2603.12 or 2024, 2021 and 2018 IRC Sections R703.15, R703.16 or R703.17. The attachment of finish materials over the insulation board must provide a minimum 1-inch (25.4 mm) penetration of the fasteners into wood framing members. Exterior wall assembly, exterior finish or a wall covering over the insulation boards must be structurally adequate to resist the required horizontal forces perpendicular to the wall.

The insulation boards must not be used structurally to resist transverse, vertical or in-plane loads. The boards must not be used as exterior stud wall bracing. Wall bracing must be provided in accordance with the applicable code. All walls must be braced in accordance with 2024 IBC Section 2308.10, 2021 and 2018 IBC Section 2308.6, or IRC Section R602.10, as applicable.

The insulation boards must not be used as a nailing base for exterior siding materials. All fastening must be made through the boards and either into the wall framing or into structural sheathing, as required by the siding manufacturer's published installation instructions, or in accordance with the applicable code.

Insulation boards installed with a one-coat cementitious exterior wall coating system must be installed in accordance with a current ICC-ES evaluation report.

The insulation boards may be used as the core material for doors that do not require a fire-resistance rating, when installed in accordance with IBC Sections 2603.4.1.7, 2603.4.1.8 and 2603.4.1.9, 2024 IRC Sections R303.5.5 and R303.5.6 or 2021 and 2018 IRC Sections R316.5.5 and R316.5.6.

4.2.2 Attics and Crawl Spaces:

4.2.2.1 Where ThermalStar insulation boards, with a maximum nominal thickness of 2 inches (50.8 mm) and a maximum density of 2.0 pcf (32 kg/m^3), are installed with mechanical fasteners on vertical walls and the underside of the surface above in attics and crawl spaces, the prescriptive ignition barrier required by 2024 IRC Sections R303.5.3 and R303.5.4, 2021 and 2018 IBC Section 2603.4.1.6 and IRC Sections R316.5.3 and R316.5.4 may be omitted, where the following conditions apply:

a. Attic ventilation is provided when required by 2024, 2021 and 2018 IBC Section 1202.2 or IRC Section R806, as applicable, except unvented attic assemblies are permitted under the conditions prescribed in 2024, 2021 and 2018 IRC Section R806.5.

b. Under-floor (crawl space) ventilation is provided when required by 2024, 2021 and 2018 IBC Section 1202.4, or IRC Section R408.1, as applicable, except unvented crawl spaces are permitted under the conditions prescribed in 2024, 2021 and 2018 IRC Section R408.3, Items 1 and 2.4.

c. Combustion air is provided in accordance with *International Mechanical Code*® (IMC) Section 701.

4.2.2.2 Where ThermalStar insulation boards, with a maximum nominal thickness of 4 inches (101.6 mm) and a maximum density of 1.0 pcf (16 kg/m^3), are installed with mechanical fasteners only on vertical walls in attics and crawl spaces, the prescriptive ignition barrier required by 2024 IRC Sections R303.5.3 and R303.5.4, 2021 and 2018 IBC Section 2603.4.1.6 and IRC Sections R316.5.3 and R316.5.4 may be omitted, where the following conditions apply:

a. Attic ventilation is provided when required by 2IBC Section 1202.2 or IRC Section R806, as applicable, except unvented attic assemblies are permitted under the conditions prescribed in 2024, 2021 and 2018 IRC Section R806.5 .

b. Under-floor (crawl space) ventilation is provided when required by 2024, 2021 and 2018 IBC Section 1202.4, or IRC Section R408.1, as applicable, except unvented crawl spaces are permitted under the conditions prescribed in 2024, 2021 and 2018 IRC Section R408.3, Items 1 and 2.4.

c. Combustion air is provided in accordance with *International Mechanical Code*® (IMC) Section 701.

4.3 ThermalStar T&G and ThermalStar GPS T&G:

ThermalStar T&G and ThermalStar GPS T&G insulation boards must be installed in accordance with a current ICC-ES evaluation report on a one-coat cementitious exterior wall coating system.

4.4 TalonGuard Treatment:

TalonGuard Treatment insulation boards must be installed in the same manner as described for ThermalStar, ThermalStar GPS, ThermalStar LCI and ThermalStar LCI GPS insulation boards in Section 4.2. Atlas Geofoam with Talon Treatment blocks must be installed as described in this section and Section 4.8 of this report.

4.5 ThermalStar EIFS and ThermalStar EIFS GPS:

ThermalStar EIFS and ThermalStar EIFS GPS insulation boards must be installed as part of an EIFS system in accordance with the current ICC-ES evaluation report on the EIFS.

4.6 ThermalStar used in Roofing without a Thermal Barrier:

4.6.1 Application Directly to Steel Roof Decks without a Thermal Barrier: ThermalStar insulation boards may be used as a component of a Class A, B or C roof covering installed on steel decks without a thermal barrier, when installed in accordance with this section (Section 4.6) of this report.

4.6.2 Materials:

4.6.2.1 Steel Deck: Steel roof decking must be minimum No. 22 gage [0.030 inch (0.76 mm)], $1^1/_2$-inch-deep (38 mm), unperforated, galvanized steel decking, with flutes spaced a maximum of 6 inches (152 mm) on center. The deck must be welded or mechanically fastened to structural supports in accordance with the applicable code.

4.6.2.2 Foam Plastic Insulation: The ThermalStar insulation boards are recognized for use on steel decks without a thermal barrier. The ThermalStar insulation boards are limited to have maximum thicknesses as follows: up to 9 inches (229 mm) for (Type I), 7.2 inches (183 mm) for (Type VIII), 6.0 inches (152 mm) for (Type II), and 4.5 inches (114 mm) for (Type IX).

4.6.2.3 Cover Board: When used, the cover board in the roof-covering system must be either $^1/_4$-inch-thick (6.4 mm) Dens-Deck® Roof Board manufactured by Georgia-Pacific Corporation, or $^1/_2$-inch-thick (12.7 mm) wood-fiber board complying with ASTM C208.

4.6.2.4 Slip Sheet: The slip sheet must be one layer of FR10 or FR50 manufactured by Atlas Roofing Corporation, and may be used as an alternative to the cover board specified for the membrane roof systems noted in Section 4.6.2.3 of this report.

4.6.2.5 Roof Covering: The roof covering membrane must be either an EPDM or a thermoplastic membrane, recognized in a current ICC-ES evaluation report as part of a Class A, B or C roofing covering system. The membrane must be either mechanically attached, fully adhered, or ballasted. Thermoplastic membranes include polyvinyl chloride (PVC), modified PVC, chloro-sulphonated polyethylene (CSPE), and thermoplastic polyolefin (TPO). The membrane must be limited to a maximum nominal thickness of 0.045 inch (1.1 mm) for use under the IBC. The evaluation report on the roof-covering system must specify one of the following systems as the only components of the classified roof-covering system permitted under the conditions of this report:

a. A generic EPS insulation board, having the same density and installed thickness as the ThermalStar insulation boards recognized in Section 4.6.2.2 of this report; the cover board described in Section 4.6.2.3 or the slip sheet described in Section 4.6.2.4; and the mechanically attached roof-covering membrane described in this section, installed over a steel deck described in Section 4.6.2.1.

b. A generic EPS insulation board, having the same density and installed thickness as the ThermalStar insulation board recognized in Section 4.5.2.2 of this report; the roof covering membrane described in this section; and stone ballast installed over a steel deck described in Section 4.6.2.1.

4.6.3 Installation: The ThermalStar insulation boards must be loosely laid directly over the steel deck in single or multiple layers, to a maximum total thickness as described in Section 4.6.2.2. The top layer of insulation must be placed so that the wording required in item 1 of Section 7.0 is facing up. The optional cover board described in Section 4.6.2.3, or the slip sheet described in Section 4.6.2.4, must be laid over the insulation. The cover board is optional, depending on system requirements, when the method of attaching the roof membrane is either mechanical fastening or adhesion. A cover board is not permitted in the system when the roof membrane is ballasted.

The method of attaching the roof covering, cover board, slip sheet or ballast, and insulation boards to the steel roof deck must be in accordance with the ICC-ES evaluation report on the roof-covering membrane, and as described in Section 4.6.2.5.

4.6.4 Reroofing: New roofing must not be applied over existing roof-covering systems as described in this report, since the fire performance of the systems is directly affected by the materials covering the foam plastic insulation. The components of the existing roofing that are to remain on the roof deck must be inspected in accordance with 2024 and 2021 Section 1512, 2018 IBC Section 1511 or IRC Section R908. The existing roof-

covering membrane and, if necessary, the slip sheet or cover board must be removed before new roofing materials are installed; the new roofing materials must have characteristics specifically described in this report.

4.7 ThermalStar LWI and ThermalStar LWI GPS:

ThermalStar LWI and ThermalStar LWI GPS insulation boards used as an alternative to a code-prescribed water-resistive barrier must be installed as described in Section 4.7.1.

4.7.1 Water-resistive Barrier:

4.7.1.1 General: When installed in accordance with this section, the ThermalStar LWI and ThermalStar LWI GPS insulation boards combined with ThermalStar tape may be used as an alternative to the water-resistive barrier in 2024, 2021 and 2018 IBC Section 1403.2 and IRC Section R703.2 when installed on exterior walls as described in this section.

The 2- or 4-foot-wide (610 or 1219 mm) ThermalStar LWI and ThermalStar LWI GPS insulation boards with tongue-and-groove joints on the long edges must be oriented horizontally, with tongues facing upward. The 2- or 4-foot-wide (610 or 1219 mm) boards with square edges may be oriented horizontally or vertically.

The ThermalStar LWI and ThermalStar LWI GPS insulation boards must be installed directly to framing spaced a maximum of 24 inches on center, except where further limited by the requirements for a wall covering. Fasteners used to attach the boards to framing must be corrosion-resistant roofing nails with a minimum $^{3}/_{8}$-inch-diameter (9.5 mm) head; 6d ring-shank nails and $^{15}/_{16}$-inch-diameter (24 mm) plastic washers; self-drilling screws with $^{3}/_{4}$-inch-diameter (19 mm) cap washers; or 1-inch-wide-crown (25.4 mm), No. 16 gage staples. Fasteners must be spaced at a maximum of 24 inches (610 mm) apart and be long enough to penetrate the framing members a minimum of $^{3}/_{4}$ inch (19 mm). All Joints between the insulation boards must be backed by a framing member (stud) or sheathing. Joints between boards must be tightly butted together, and corners created with the boards, must be taped with ThermalStar polyethylene tape centered over the joint. ThermalStar LWI and ThermalStar LWI GPS insulation boards must be installed with a weep screed and require the use of self-adhering flashing complying with AAMA 711 or the ICC-ES Acceptance Criteria for Flashing Materials (AC148), around penetrations. The boards must be covered by an approved exterior wall cladding or cementitious wall coating recognized in a current ICC-ES evaluation report.

4.7.1.2 Installation Around Penetrations and Openings: The system is limited to use with flange-type windows. An AC148-compliant or AAMA 711 compliant flashing material must be installed completely covering the framing sill and extending a minimum of 6 inches (152 mm) up the sides of the opening and approximately $1^{1}/_{2}$ inches (38 mm) beyond the edge of the foam board at the front of the window opening. The sill flashing must be flush with the inside edge of the framing members on the inside of the wall. The flashing extending outside of the ThermalStar LWI and ThermalStar LWI GPS insulation board must be folded over the front face of the foam board. The flange-type window must then be installed in accordance with the window manufacturer's installation instructions. Jamb flashing must be installed prior to the installation of the head flashing. All jamb and head flashing must completely cover the window flanges.

Flashing of pipe penetrations must be accomplished by sealing around the pipe with flashing complying with AC148 or AAMA 711. Flashing of other penetrating items must be in accordance with the wall covering manufacturer's instructions.

4.8 Atlas Geofoam:

Atlas Geofoam must be in accordance with the manufacturer's installation instructions and as noted in Section 5.9. The Atlas Geofoam must not be used structurally to resist loads except as provided for in Section 5.9.2 and 5.9.3.

The interior of the building must be separated from the Atlas Geofoam with a thermal barrier as required by IBC Section 2603.4, except when installation is in accordance with Section 5.9.1.

5.0 CONDITIONS OF USE:

The insulation boards 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 The insulation boards must be installed in accordance with this report, the manufacturer's published installation instructions and the applicable code. In the event of a conflict between the installation instructions and this report, this report governs.

5.2 The boards must be separated from the building interior with a thermal barrier complying with the applicable code, such as minimum ½-inch-thick (12.7 mm) gypsum wallboard installed in accordance with the applicable code, except as described in Sections 4.2.2, 4.6.1 and 5.8 of this report.

5.3 Except for ThermalStar LWI and ThermalStar LWI GPS insulation boards installed in accordance with Section 4.7.1, when applied on exterior walls, the boards must be protected by a water-resistive barrier complying with IBC Section 1403.2 or IRC Section R703.2, and by wall coverings that provide the necessary structural resistance to wind and seismic forces in spanning between wall framing members. When used as a water-resistive barrier, all ThermalStar LWI and ThermalStar LWI GPS insulation joints must be backed with a framing member (stud) or sheathing.

5.4 Use of the insulation boards to structurally resist transverse, racking-shear or vertical loading is outside the scope of this report. Walls must be braced in accordance with the applicable code.

5.5 In areas where the probability of termite infestation is defined as “very heavy,” the foam plastic must be installed in accordance with 2024, 2021 and 2018 IBC Section 2603.8; or 2024 IRC Section R305.4, 2021 and 2018 IRC Section R318.4, except as allowed for TalonGuard treated products described in Section 4.4.

5.6 Jobsite certification and labeling of the insulation must comply with 2024, 2021 and 2018 IRC Section N1101.10.1, 2024, 2021 and 2018 IECC Section C303.1.1 or R303.1.1 and R401.3, as applicable.

5.7 ThermalStar Tape has not been evaluated by ICC-ES for use as flashing under 2024, 2021 and 2018 IBC Section 1404.4 or 2024, 2021 and 2018 Section R703.4.

5.8 When ThermalStar insulation boards are installed directly to a steel roof deck without a thermal barrier, the following conditions apply:

5.8.1 The insulation boards must be part of a Class A, B or C roof covering system described in Section 4.6 of this report. The boards are permitted to be installed without the thermal barrier addressed in IBC Section 2603.4.1.5. The system is not permitted under the IRC.

5.8.2 Reroofing must be in accordance with Section 4.6.4.

5.9 When Atlas Geofoam blocks are installed, the following conditions of use apply:

5.9.1 The geofoam blocks must be separated from the building interior with a minimum 1-inch-thick (25.4 mm) layer of concrete or masonry on all faces as required by IBC Section 2603.4.1.1, except in buildings of Type V construction where separation may be by a minimum nominally ½-inch-thick wood structural panel when installation is in accordance with IBC Section 2603.4.1.14. Where the thermal barrier consists of a minimum 1-inch-thick (25.4 mm) layer of concrete or masonry, the thickness of the geofoam blocks in the floor assembly may exceed 4 inches (102 mm). The design of the concrete or masonry covering is outside the scope of this report and must comply with all applicable code requirements for the occupancy and type of construction for the specific project.

5.9.2 The design loads to be resisted by the geofoam blocks must be determined in accordance with the IBC. The compressive resistance of the geofoam blocks at 1 percent strain is listed in Table 3 as determined in accordance with ASTM D6817. The use of the geofoam blocks is limited to floor applications where the uniform and localized loading does not exceed the compressive resistance of the geofoam blocks at 1 percent strain.

5.9.3 Design calculations and details for the specific applications, verifying compliance with this report and applicable codes, must be furnished to the code official. The documents must be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.

5.9.4 Use of Atlas Geofoam is limited to applications where the geofoam will not be subject to direct exposure to hydrocarbons.

5.9.5 Penetrations through the thermal barrier described in Section 5.9.1 shall be subject to approval by the code official. When the geofoam blocks are used in a fire-resistance-rated floor assembly, penetrations through the assembly must be protected in accordance with 2024, 2021 and 2018 IBC Section 714.5. If used, through-penetration firestop systems must be tested in accordance with ASTM E814 or UL 1479, as required by 2024, 2021 and 2018 IBC Section 714.5.1.2.

5.10 Installation in unvented attics, when equipped with vapor diffusion ports in accordance with Section 1202.3, Item 5.2 of the 2024 and 2021 IBC and Section R806.5, Item 5.2 of the 2024, 2021 and 2018 IRC, is outside the scope of this report.

5.11 The products are manufactured in the locations specified in Table 4 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 Test report in accordance with UL1256.

6.3 Test reports in accordance with ASTM E84.

6.4 Test reports in accordance with the ICC-ES Acceptance Criteria for Foam Plastic Sheathing Panels Used as Weather-resistive Barriers (AC71), dated February 2003 (editorially revised July 2024).

6.5 Test reports in accordance with the ICC-ES Acceptance Criteria for Termite-resistant Foam Plastics (AC239), dated October 2008 (editorially revised July 2024).

6.6 Test reports in accordance with NFPA 286.

6.7 Test report in accordance with NFPA 259.

6.8 Data in accordance with ICC-ES Acceptance Criteria for Rigid Cellular Polystyrene (RCPS) Geofoam Used in Interior Floor Applications (AC452), dated October 2013 (editorially revised July 2024).

7.0 IDENTIFICATION

7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-1962) along with the name, registered trademark, or registered logo of the report holder (Atlas Molded Products) must be included in the product label.

7.2 In addition, the insulation boards and Atlas Geofoam blocks are packaged in bundles that are labeled with the manufacturer's name (Atlas Molded Products or "AMP") and plant ID; the date of manufacture; the product type (including TalonGuard where applicable); the ASTM C578 Type, ASTM D6817 Type or density; the flame-spread and smoke-developed indices; the thermal-resistance R-value (when applicable); and the evaluation report number (ESR-1962).

In addition to the labeling noted above, the following additional labeling is required:

1. When ThermalStar insulation boards are used in roof-covering assemblies attached directly to steel roof decks under Section 4.6 of this report, in addition to the labeling noted above, the boards must bear the designation "ThermalStar" and the wording "When used in reroofing applications, limits exist for cover board and membrane. See ICC-ES evaluation report ESR-1962 before reroofing"; and the words "THIS SIDE UP" printed on, or included on a permanent label affixed to, one face of each insulation board.
2. The ThermalStar T&G and ThermalStar GPS T&G insulation boards are individually identified with the Atlas Molded Products name, the product type, the density, the evaluation report number (ESR-1962), and the name of the inspection agency (ICC-ES).
3. ThermalStar T&G ThermalStar GPS T&G, and ThermalStar LCI and ThermalStar LWI insulation boards intended for use on walls required to be of noncombustible construction are also identified along one edge, and on the face of one board in each bundle, with the name of the exterior coating company and the company's respective ICC-ES evaluation report number.
4. ThermalStar EIFS insulation boards are individually identified by a marking appearing on the edge of each insulation board, and on both faces of one board in each bundle, identifying the product type, the manufacturing plant designation, and the ICC-ES evaluation report number (ESR-1962).
5. The ThermalStar polyethylene tape is identified with the product name and the ICC-ES evaluation report number (ESR-1962).
6. Insulation boards used for installations in attics and crawl spaces as described in Section 4.2.2 must be identified as being produced from Styropek or Epsilyte resin beads.

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

ATLAS MOLDED PRODUCTS, A DIVISION OF ATLAS ROOFING CORPORATION
2100 RIVEREDGE PARKWAY, SUITE 600
ATLANTA, GEORGIA 30328
www.atlasmoldedproducts.com

TABLE 1—MINIMUM *R*-VALUE (°F ft² h/Btu) AT 75°F MEAN TEMPERATURE

PROPERTY	TYPE I - ThermalStar, ThermalStar GPS, ThermalStar T&G, ThermalStar T&G GPS, ThermalStar EIFS, ThermalStar EIFS T&G, ThermalStar LCI, ThermalStar LCI GPS, ThermalStar LRI, ThermalStar LWI, ThermalStar LWI GPS	TYPE VIII - ThermalStar, ThermalStar GPS, ThermalStar T&G, ThermalStar T&G GPS, ThermalStar LCI, ThermalStar LCI GPS, ThermalStar LRI, ThermalStar LWI, ThermalStar LWI GPS	TYPE II – ThermalStar, ThermalStar GPS, ThermalStar T&G, ThermalStar T&G GPS, ThermalStar LCI, ThermalStar LCI GPS, ThermalStar LRI, ThermalStar LWI, ThermalStar LWI GPS	TYPE IX - ThermalStar, ThermalStar LCI, ThermalStar LRI, ThermalStar LWI	TYPE XIV – ThermalStar, ThermalStar LCI, ThermalStar LRI, ThermalStar LWI	TYPE XV – ThermalStar, ThermalStar LCI, ThermalStar LRI, ThermalStar LWI
Thermal resistance value, Per inch of thickness at 75°F. °F ft² h/Btu (°K m²/W)	3.60 (0.63)	3.80 (0.67)	4.00 (0.70)	4.20 (0.74)	4.20 (0.74)	4.20 (0.74)

For **SI:** 1 lb/ft³ = 16.018 kg/m³, 1°F ft² h/Btu = 0.176°K m²/W, 1inch = 25.4 mm.

TABLE 2—POTENTIAL HEAT OF INSULATION BOARD

C578 TYPE ATLAS EPS	HEAT POTENTIAL (ENGLISH)	HEAT POTENTIAL (METRIC)
I	1500 Btu/ft²	17.0 mJ/m²
VIII	1875 Btu/ft²	21.3 mJ/m²
II	2250 Btu/ft²	25.5 mJ/m²
IX	3000 Btu/ft²	34.0 mJ/m²
XIV	3600 Btu/ft²	40.8 mJ/m²
XV	4500 Btu/ft²	51.0 mJ/m²

TABLE 3—ATLAS GEOFOAM COMPRESSIVE RESISTANCE VALUES[1]

ASTM TYPE	MINIMUM DENSITY pcf (kg/m³)	COMPRESSIVE RESISTANCE AT 1% STRAIN, psi (kPa)
Type EPS15	0.90 (14.4)	3.6 (25)
Type EPS19	1.15 (18.4)	5.8 (40)
Type EPS22	1.35 (21.6)	7.3 (50)
Type EPS29	1.80 (28.8)	10.9 (75)
Type EPS39	2.40 (38.4)	15.0 (103)
Type EPS46	2.85 (45.7)	18.6 (128)

For **SI:** 1 pcf = 16.018 kg/m3, 1 psi = 6.894757 kPa.

[1]The compressive resistance values specified are the minimum required by ASTM D6817.

TABLE 4 – PLANT LOCATIONS AND ID

MANUFACTURER NAME	ADDRESS	PLANT ID
ATLAS MOLDED PRODUCTS	8240 Byron Center Ave SW, Byron Center, MI 49315	EGRMI
ATLAS MOLDED PRODUCTS	90 Trowbridge Drive, Fond du Lac, WI 54936	EFDWI
ATLAS MOLDED PRODUCTS	445 Industrial Park Drive, Ridgeway, VA 24148	EMVVA
ATLAS MOLDED PRODUCTS	2731 White Sulfur Road, Gainesville, GA 30501	EGAGA
ATLAS MOLDED PRODUCTS	1400 North 3rd Street, Kansas City, KS 66101	EKCBL
ATLAS MOLDED PRODUCTS	911 Industrial Drive, Perryville, MO 63775	EPVMO
ATLAS MOLDED PRODUCTS	111 West Fireclay Avenue, Murray, UT 84107	EMUUT
ATLAS MOLDED PRODUCTS	5250 North Sherman Street, Denver, CO 80216	EDNCO
ATLAS MOLDED PRODUCTS	Privada Misiones 1108, Tijuana, Mexico CP22500	ELACA
ATLAS MOLDED PRODUCTS	809 East 15th Street, Washington, IA 52353	EWAIA
ATLAS MOLDED PRODUCTS	13695 Mt. Anderson Street, Reno, NV 89506	ERNNV
ATLAS MOLDED PRODUCTS	4555 N. Olympic Way, Kingman, AZ 86401	EKMAZ
ATLAS MOLDED PRODUCTS	3220 Avenue F, Arlington, TX 76011	EARTX

ICC-ES Evaluation Report

ESR-1962 City of LA Supplement

Issued March 2025

This report is subject to renewal July 2025.

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

REPORT HOLDER:

ATLAS MOLDED PRODUCTS, A DIVISION OF ATLAS ROOFING CORPORATION

EVALUATION SUBJECT:

THERMALSTAR®, THERMALSTAR® GPS, THERMALSTAR® T&G, THERMALSTAR® GPS T&G, TALONGUARD TREATMENT, THERMALSTAR® EIFS, THERMALSTAR® EIFS GPS, THERMALSTAR® LCI, THERMALSTAR® LCI GPS, THERMALSTAR® LWI, THERMALSTAR® LWI GPS, THERMALSTAR® LRI INSULATION BOARD AND ATLAS GEOFOAM

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the insulation boards and Atlas Geofoam, described in ICC-ES evaluation report ESR-1962, have also been evaluated for compliance with the codes noted below as adopted by the Los Angeles Department of Building and Safety (LADBS).

Applicable code editions:

- 2023 *City of Los Angeles Building Code* (LABC)
- 2023 *City of Los Angeles Residential Code* (LARC)

2.0 CONCLUSIONS

The insulation boards and Atlas Geofoam, described in Sections 2.0 through 7.0 of the evaluation report ESR-1962, comply with the LABC Chapter 26, and the LARC Section R316, and are subject to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The insulation boards and Atlas Geofoam described in this evaluation report supplement must comply with all of the following conditions:

- All applicable sections in the evaluation report ESR-1962.
- The design, installation, conditions of use and identification of the insulation boards and Atlas Geofoam are in accordance with the 2021 *International Building Code®* (IBC) and 2021 *International Residential Code®* (IRC) provisions noted in the evaluation report ESR-1962.

This supplement expires concurrently with the evaluation report, reissued July 2023 and revised March 2025.

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 21 00—Thermal Insulation
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Section: 07 25 00—Water-Resistive Barriers/Weather

REPORT HOLDER:

ATLAS MOLDED PRODUCTS, A DIVISION OF ATLAS ROOFING CORPORATION

EVALUATION SUBJECT:

THERMALSTAR®, THERMALSTAR® GPS, THERMALSTAR® T&G, THERMALSTAR® GPS T&G, TALONGUARD TREATMENT, THERMALSTAR® EIFS, THERMALSTAR® EIFS GPS, THERMALSTAR® LCI, THERMALSTAR® LCI GPS, THERMALSTAR® LWI, THERMALSTAR® LWI GPS, THERMALSTAR® LRI INSULATION BOARD AND ATLAS GEOFOAM

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that Expanded Polystyrene (EPS), described in ICC-ES evaluation report ESR-1962, have also been evaluated for compliance with the codes noted below.

Applicable code edition(s):

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

2.0 CONCLUSIONS

2.1 CBC:

The Expanded Polystyrene (EPS), described in Sections 2.0 through 7.0 of the evaluation report ESR-1962, comply with the CBC, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) 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 CRC:

The Expanded Polystyrene (EPS), described in Sections 2.0 through 7.0 of the evaluation report ESR-1962, comply with the CRC, provided the design and installation are in accordance with the 2021 *International Residential Code*® (IRC) provisions noted in the evaluation report.

2.3 CEC:

The Expanded Polystyrene (EPS), described in Sections 2.0 through 7.0 of the evaluation report ESR-1962, comply with the 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 2019 California Energy Code (CEC), 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 Materials." The certification must 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 July 2023 and revised March 2025.

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REPORT HOLDER:

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1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the insulation boards and Atlas Geofoam, described in ICC-ES evaluation report ESR-1962, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2023 *Florida Building Code—Building*
- 2023 *Florida Building Code—Residential*

2.0 CONCLUSIONS

The insulation boards and Atlas Geofoam, described in Sections 2.0 through 7.0 of ICC-ES evaluation report ESR-1962 comply with the *Florida Building Code—Building* and *Florida Building Code—Residential*. The design requirements must be determined in accordance with the *Florida Building Code—Building* or the *Florida Building Code—Residential,* as applicable. The installation requirements noted in ICC-ES evaluation report ESR-1962 for the 2021 *International Building Code®* meet the requirements of the *Florida Building Code—Building* or the *Florida Building Code—Residential,* as applicable, with the following conditions:

Installation must meet the requirements of Section 1403.8 and 2603.8 of the *Florida Building Code—Building* and Sections R318.7 and R318.8 of the *Florida Building Code—Residential*, as applicable.

Use of the insulation boards and Atlas Geofoam for compliance with the High-Velocity Hurricane Zone provisions of the *Florida Building Code—Building* or the *Florida Building Code—Residential* has not been evaluated, and is outside the scope of this supplemental report.

For products falling under Florida Rule 61G20-3, verification that the report holder's quality assurance program is audited by a quality assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official when the report holder does not possess an approval by the Commission).

This supplement expires concurrently with the evaluation report, reissued July 2023 and revised March 2025.