ICC-ES Evaluation Report

ESR-1095

Reissued November 2023

This report also contains:

- CBC Supplement

Subject to renewal November 2025

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION **Section: 07 21 00—Thermal Insulation**	**REPORT HOLDER: SH ENERGY & CHEMICAL CO., LTD.**	**EVALUATION SUBJECT: ANYPOL EXPANDABLE POLYSTYRENE BEADS, SE-HF GRADE**	

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2018, 2015, 2012, 2009 and 2006 *International Building Code*® (IBC)
- 2018, 2015, 2012, 2009 and 2006 *International Residential Code*® (IRC)
- 1997 *Uniform Building Code*™ (UBC)
- 1999 *Standard Building Code*© (SBC)
- BOCA® *National Building Code*/1999 (BNBC)

Properties evaluated:

- Surface-burning characteristics
- Physical properties

2.0 USES

The Anypol expandable polystyrene beads, SE-HF Grade, are used by independent manufacturers to produce expanded polystyrene (EPS) insulation boards.

3.0 DESCRIPTION

Anypol expandable polystyrene SE-HF grade beads are designated as SE 1600HF, SE 2000HF, SE 2500HF, and SE 3000HF, and are used by independent manufacturers to produce expanded polystyrene (EPS) insulation boards. Boards manufactured with the Anypol beads are produced solely through the introduction of heat, without other additives. This process expands the beads, which are then molded into insulation boards in minimum densities and maximum thicknesses greater than those specified in Table 1. The end use of the polystyrene beads, including the manufacture of boards, is beyond the scope of this report. At minimum densities and maximum thicknesses specified in Table 1, insulation boards produced from the Anypol beads have a flame-spread rating of 25 or less and a smoke-developed rating not exceeding 450 when tested in accordance with the ASTM E84.

Anypol expandable polystyrene SE-HF grade beads have been qualified in accordance with Section 4.5.15.1.1 of the ICC-ES Acceptance Criteria for Foam Plastic Insulation (AC12).

The expandable beads can be used to produce expanded polystyrene products that comply with ASTM C578, for the types specified in Table 1, provided the final product is recognized in a current ICC-ES evaluation report and has been qualified in accordance with Section 4.5.15.1.2 of AC12.

4.0 INSTALLATION

Installation is as noted in the corresponding ICC-ES evaluation reports on foam plastic assemblies, or as otherwise permitted in applicable codes noted in Section 1.0 of this report.

5.0 CONDITIONS OF USE:

The Anypol SE-HF Grade Expandable Polystyrene Beads 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 maximum density and thickness of the insulated boards produced from expanded beads are noted in Table 1 of this report.

5.2 Products manufactured from the polystyrene beads described in this report must be recognized in a current ICC-ES evaluation report.

5.3 Insulation boards produced from Anypol SE-HF grade beads must be separated from the building interior by a thermal barrier complying with IBC Section 2603.4, 2018, 2015, 2012 and 2009 IRC Section R316.4 (2006 IRC Section R314.4), UBC Section 2602.4, SBC Section 2603.5, and BNBC Section 2603.4, as applicable.

5.4 The beads are produced by SH Energy & Chemical Co., Ltd., in Gunsan-Si, Korea, under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Foam Plastic Insulation (AC12), dated June 2015 (editorially revised October 2017).

7.0 IDENTIFICATION

7.1 Containers of Anypol beads bear a label noting the component designation; the name and address of SH Energy & Chemical Co., Ltd.; the evaluation report number (ESR-1095); and the lot number.

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

SH ENERGY & CHEMICAL CO., LTD.
20, OEHANG 7-GIL,
GUNSAN-SI
JEOLLABUK-DO
SOUTH KOREA
82-63-469-1547
www.sh-enerchem.com

TABLE 1—MAXIMUM INSULATION BOARD DENSITY AND THICKNESS

ASTM C578 TYPE	MINIMUM DENSITY (pcf)	MAXIMUM THICKNESS (inches)
I	0.90	6
VIII	1.15	5
II	1.35	5
IX	1.80	6

For **SI:** 1 pcf = 16.018 kg/m3, 1 inch = 25.4 mm.

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Section: 07 21 00— Thermal Insulation

REPORT HOLDER:

SH ENERGY & CHEMICAL CO., LTD.

EVALUATION SUBJECT:

ANYPOL EXPANDABLE POLYSTYRENE BEADS, SE-HF GRADE

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that Anypol expandable polystyrene beads, SE-HF grade, described in ICC-ES evaluation report ESR-1095, for use by independent manufacturers to produce expanded polystyrene (EPS) rigid foam insulation products, have also been evaluated for compliance with the code*(s)* noted below, provided the insulation products are described in an ICC-ES evaluation report with a CBC and CRC Supplement.

Applicable code edition*(s)*:

- 2019 and 2016 *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.

- 2019 and 2016 *California Residential Code*® (CRC)

2.0 CONCLUSIONS

2.1 CBC:

The Anypol expandable polystyrene beads, SE-HF grade, described in Sections 2.0 through 7.0 of the evaluation report ESR-1095, comply with the 2019 and 2016 *California Building Code* (CBC), and the insulation products produced from these beads also comply with the 2019 and 2016 CBC, provided the insulation products are described in an ICC-ES evaluation report with a CBC Supplement and are installed in accordance with the 2018 and 2015 *International Building Code*® (IBC) provisions, as applicable, of the evaluation report and the additional requirements of the 2019 and 2016 CBC, under the following condition:

2.1.1 OSHPD:

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

2.1.2 DSA:

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

2.2 CRC:

The Anypol expandable polystyrene beads, SE-HF grade, described in Sections 2.0 through 7.0 of the evaluation report ESR-1095, comply with the 2019 and 2016 *California Residential Code* (CRC), and the insulation products produced from these beads also comply with the 2019 and 2016 CRC, provided the insulation products are described in an ICC-ES evaluation report with a CRC Supplement and are installed in accordance with the 2018 and 2015 *International Residential Code*® (IRC) provisions, as applicable, of the evaluation report and the additional requirements of the 2019 and 2016 CRC, under the following condition:

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