ICC-ES Evaluation Report

ESR-1006*

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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:

AFM CORPORATION
17645 JUNIPER PATH, SUITE 260
LAKEVILLE, MINNESOTA 55044
www.foam-control.com

EVALUATION SUBJECT:

FOAM-CONTROL® EPS BOARDS, FOAM-CONTROL® EPS WITH PERFORM GUARD® BOARDS AND FOAM-CONTROL® EPS WITH PERFORM GUARD² BOARDS AND FOAM-CONTROL EPS GEOFOAM BLOCKS

ADDITIONAL LISTEES:

ACH FOAM TECHNOLOGIES, LLC

BIG SKY INSULATIONS, INC.

BRANCH RIVER PLASTICS, INC.

HENRY PRODUCTS, INC.

MID ATLANTIC FOAM

NOARK ENTERPRISES, INC.

PACIFIC ALLIED PRODUCTS, LTD.

POLIESTIRENO ALFA-GAMMA S.A. de C.V.

POLY-FOAM INC.

THERMA FOAM, LLC

THERMAL FOAMS, INC.

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2012 *International Building Code®* (IBC)
- 2012 *International Residential Code®* (IRC)
- 2012 *International Energy Conservation Code®* (IECC)

Properties evaluated:

Foam-Control EPS Boards:

- Surface-burning characteristics
- Physical properties/thermal resistance (R-values)
- Attic and crawl space installation
- Fire resistance (D2D Foam-Control®)

Foam-Control EPS with Perform Guard Boards and Foam-Control EPS with Perform Guard² Boards:

- Surface-burning characteristics
- Physical properties/thermal resistance (R-values)
- Termite resistance

Foam-Control EPS Geofoam Blocks:

- Surface-burning characteristics
- Physical properties/compressive resistance

2.0 USES

2.1 Foam-Control EPS Boards (Types I, VIII, II, IX, XIV and XV):

Foam-Control expanded polystyrene (EPS) insulation boards are used as nonstructural insulation in wall cavities, door cavities, ceiling and floor assemblies, and roof covering assemblies, or on the outside faces of exterior walls. The insulation boards may be used on walls in attics and crawl spaces without a covering when installation is in accordance with Section 4.2.2.

The insulation boards may be used as the core of sandwich panels when specifically recognized in a current evaluation report.

The insulation boards may 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 exposure is “very heavy” as defined in IBC Section 2603.8 and IRC Section R318.4.

The insulation boards may be used as components of Class A, B, and C roof covering systems installed on steel decks, when installation is in accordance with Section 4.4. The insulation boards may be used as a roof insulation when recognized in an ICC-ES evaluation report on the roof covering system.

2.2 Foam-Control EPS Boards (Type I-WSG):

Foam-Control EPS boards designated as Type I-WSG may be used as a component of a wall covering system when recognized in an ICC-ES report.

2.3 Foam-Control EPS D2D Boards (Types I, VIII, II, IX, XIV and XV):

Foam-Control EPS D2D boards may be used as components of a Class A, B, or C roof covering system installed directly to steel decks, when installation is in accordance with Section 4.4 of this report.

2.4 Foam-Control EPS with Perform Guard Boards (Types I, VIII, II, IX, XIV and XV):

Foam-Control EPS with Perform Guard boards are used as nonstructural insulation. The boards are recognized for installation below grade in areas subject to termites in accordance with Section 4.5 of this report. When installation is in areas where the probability of termite infestation is "very heavy" as described in IBC Section 2603.8, or IRC Section R316.7, use is limited to areas exposed to the Reticulitermes species.

The insulation boards may be used in wall cavities or on the outside faces of exterior walls. The insulation boards may be used as exterior perimeter insulation around concrete slab edges, on foundation walls, or under concrete slab on grade construction.

2.5 Foam-Control EPS with Perform Guard^2 Boards (Types I, VIII, II, IX, XIV and XV):

Foam-Control EPS with Perform Guard^2 boards are used as nonstructural insulation. The boards are recognized for installation below grade in areas subject to termites in accordance with Section 4.6 of this report.

The insulation boards may be used in wall cavities or on the outside faces of exterior walls. The insulation boards may be used as exterior perimeter insulation around concrete slab edges, on foundation walls, or under concrete slab on grade construction.

2.6 Foam-Control EPS Geofoam (Types EPS 15, EPS 19, EPS 22, EPS 29, EPS 39 and EPS 46):

Foam-Control expanded polystyrene (EPS) Geofoam blocks are used as lightweight structural fill in floor cavities when installation is in accordance with Section 4.7 of this report.

3.0 DESCRIPTION

3.1 General:

The Foam-Control EPS products described in Sections 3.2 through 3.7 are molded, closed-cell expanded polystyrene. The insulation boards described in Sections 3.2 through 3.6 comply with ASTM C578. The geofoam blocks described in Section 3.7 comply with ASTM D6817. All insulation boards and geofoam blocks have a flame-spread index not exceeding 25 and a smoke-developed index not exceeding 450 when tested at a thickness of 6 inches (152 mm) in accordance with ASTM E84, and have thermal resistance values noted in Table 1. The maximum thicknesses and requirements for installation of a thermal barrier for the specific insulation types are described in the applicable sections of Section 4.0.

3.2 Foam-Control EPS Boards (Types I, VIII, II, IX, XIV and XV):

Foam-Control EPS boards are manufactured at minimum densities of 0.90, 1.15, 1.35, 1.80, 2.40 and 3.00 pcf (14.4, 18.4, 21.6, 28.8, 38.4 and 48.0 kg/m^3) and have designations Type I, Type VIII, Type II, Type IX, Type XIV and Type XV, respectively.

3.3 Foam-Control EPS Boards (Type I-WSG):

Type I-WSG Foam-Control EPS boards are manufactured at a minimum density of 0.90 pcf (14.4 kg/m^3). Type I-WSG boards comply with ASTM E2430.

3.4 Foam-Control EPS D2D Boards (Types I, VIII, II, IX, XIV and XV):

Foam-Control D2D EPS boards are manufactured at minimum densities of 0.90, 1.15, 1.35, 1.80, 2.40 and 3.00 pcf (14.4,18.4, 21.6, 28.8, 38.4 and 48.0 kg/m^3), corresponding to designations Type I, Type VIII, Type II, Type IX, Type XIV and Type XV, respectively.

3.5 Foam-Control EPS with Perform Guard Boards (Type I, VIII, II IX, XIV and XV):

Foam-Control EPS with Perform Guard boards are factory-treated for termite resistance. The boards are manufactured at minimum densities of 0.90, 1.15, 1.35, 1.80, 2.40 and 3.00 pcf (14.4, 18.4, 21.6, 28.8, 38.4 and 48.0 kg/m^3), corresponding to designations Type I, Type VIII, Type II, Type IX, Type XIV and Type XV, respectively.

3.6 Foam-Control EPS with Perform Guard^2 Boards (Type I, VIII, II IX, XIV and XV):

Foam-Control EPS with Perform Guard^2 boards are factory-treated for termite resistance. The boards are manufactured at minimum densities of 0.90, 1.15, 1.35, 1.80, 2.40 and 3.00 pcf (14.4, 18.4, 21.6, 28.8, 38.4 and 48.0 kg/m^3), corresponding to designations Type I, Type VIII, Type II, Type IX, Type XIV and Type XV, respectively.

3.7 Foam-Control EPS Geofoam Blocks (Type EPS15, EPS19, EPS22, EPS29, EPS39, and EPS46):

Foam-Control EPS 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), corresponding to the Type designations EPS15, EPS19, EPS22, EPS29, EPS39 and EPS46, respectively.

4.0 INSTALLATION

4.1 General:

Foam-Control EPS boards, Foam-Control EPS with Perform Guard boards, Foam-Control EPS with Perform Guard^2 boards and Foam-Control EPS Geofoam blocks are installed in accordance with the manufacturer's published installation instructions and this evaluation report. The manufacturer's published installation instructions and this report must be strictly adhered to, and a copy of the instructions must be available at all times on the jobsite during installation.

4.2 Foam-Control EPS Boards:

4.2.1 General: Foam-Control EPS boards must be attached to supports in a manner that will hold the insulation securely in place. The insulation boards must not be used structurally to resist transverse, vertical or in-plane loads except when this is specifically recognized in a separate evaluation report. The boards must not be used as exterior stud wall bracing. Wall bracing must be provided in accordance with IBC Sections 2308.9.3 and 2308.12.4 or IRC Section R602.10.

The insulation boards must not be used as a nailing base for exterior finish materials. Fasteners used to attach exterior finish material over insulation boards must comply with a current ICC-ES evaluation report for proprietary wall covering materials, IBC Section 1404 or 1405, IRC Table 703.4, and the installation instructions from the finish

manufacturer. For cementitious exterior wall coating applications, fasteners for insulation board thicker than $1^1/_2$ inches (38 mm) must be considered for lateral resistance to ensure support for the exterior wall coatings. Finish materials over the insulation boards must be structurally adequate to resist the required horizontal forces perpendicular to the wall.

The interior of the building must be separated from the insulation boards with a thermal barrier as required by IBC Section 2603.4 or IRC Section R316.4, except when installation is in accordance with Section 4.2.2 of this report.

In areas where the probability of termite infestation is defined as "very heavy" and when foam plastic insulation is used with wood construction, the foam plastic must be installed in accordance with IBC Section 2603.8 or IRC Section R318.4. Areas of very heavy termite infestation must be determined in accordance with IBC Figure 2603.8 and IRC Figure R301.2 (6), as applicable.

Insulation boards for use as roof insulation must be installed in accordance with Section 4.4 or as recognized in an ICC-ES evaluation report on a roof covering system.

The insulation board 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 or IRC Sections R316.5.5 and R316.5.6.

4.2.2 Special Use—Attics and Crawl Spaces: Foam-Control EPS boards may be used on walls of attics and crawl spaces, without the coverings listed in Section 2603.4.1.6 of the IBC or IRC Sections R316.5.3 and R316.5.4, under all of the following conditions:

1. Entry to the attic or crawl space is limited to service of utilities, and no storage is permitted. Utilities include, but are not limited to, mechanical equipment, electrical wiring, fans, plumbing, gas or electric hot water heaters, and gas or electric furnaces.
2. There are no interconnected attic or basement areas.
3. Air in the attic or crawl space is not circulated to other parts of the building.
4. Attic ventilation is provided in accordance with IBC Section 1203.2 or IRC Section R806, as applicable.
5. Under-floor ventilation is provided in accordance with IBC Section 1203.3 or IRC Section R408.1 as applicable.
6. Combustion air is provided in accordance with Section 701 of the *International Mechanical Code*® (IMC).
7. Insulation boards are limited to a maximum thickness as follows: up to 4.0 inches (102 mm) for Type I, up to 3.2 inches (81 mm) for Type VIII, up to 2.7 inches (69 mm) for Type II, up to 2.0 inches (50 mm) for Type IX, up to 1.6 inches (41 mm) for Type XIV and up to 1.3 inches (33 mm) for Type XV.

4.3 Foam-Control EPS Boards (Type I-WSG):

Type I-WSG Foam-Control EPS boards must be installed as part of an exterior cementitious wall covering, an EIFS system or other proprietary wall system, when installation is in accordance with an ICC-ES evaluation report on the wall covering system

4.4 Foam-Control EPS D2D Boards (Type I, VII, II, IX, XIV and XV):

4.4.1 Application Directly to Steel Roof Decks without a Thermal Barrier: Foam-Control D2D EPS roof insulation may be used as a component of a Class A, B, or C roof covering installed on steel decks without a thermal barrier, when installation is in accordance with Sections 4.4.2, 4.4.3 and 4.4.4.

4.4.2 Materials:

4.4.2.1 Steel Deck: Steel roof decking must be minimum No. 22 MSG [0.030 inch (0.76 mm)], $1^1/_2$-inch-deep (38 mm), unperforated, painted or 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.

4.4.2.2 Foam Plastic Insulation: The Foam-Control D2D EPS insulation boards may have a maximum thickness as follows: up to 9.0 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, 3.6 inches (91 mm) for Type XIV and 3.0 inches (76 mm) for Type XV.

4.4.2.3 Cover Board: When used, the cover board in the roof covering assembly is $^1/_4$-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.

4.4.2.4 Roof Covering: The roof covering membrane must be a mechanically attached, fully adhered or ballasted EPDM or thermoplastic membrane listed in an ICC-ES evaluation report as part of a Class A, B, or C roof covering assembly. Thermoplastic membranes include polyvinyl chloride (PVC), modified PVC, chlorosulphonated polyethylene (CSPE), and thermoplastic polyolefin (TPO). The membrane is limited to a maximum nominal thickness of 0.045 inch (1.1 mm). The evaluation report on the roof covering assembly must specify one of the following assemblies as the only components of the classified roof covering assembly permitted under the conditions of this report:

a. A generic EPS insulation board having the same density and installed thickness as the Foam-Control EPS roof insulation listed in Table 1 of this report, the cover board described in Section 4.4.2.3, and the roof covering membrane described in this section (Section 4.4.2.4), installed over a steel deck as described in Section 4.4.2.1.

b. A generic EPS insulation board having the same density and installed thickness as the Foam-Control EPS roof insulation listed in this report, the roof covering membrane described in this section (Section 4.4.2.4), and stone ballast, installed over a steel deck as described in Section 4.4.3 of this report.

4.4.3 Installation: The Foam-Control EPS roof insulation boards are loosely laid directly over the steel deck in single or multiple layers, to a maximum total thickness and density as noted in Section 4.4.2.2. The top layer of insulation must be placed so that the labeling required in Section 7.0 is facing up. Tapered EPS foam boards may be installed, provided the maximum allowable thickness is not exceeded. The cover board described in Section 4.4.2.3, when required, is laid over the insulation.

The method of attaching the roof covering, cover boards, 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 4.4.2.4 of this report.

4.4.4 Reroofing: New roofing must not be applied over existing roof covering assemblies. Additional EPS foam insulation may be added over the existing EPS foam

insulation, provided inspection in accordance with IBC Section 1510 or IRC Section R907 indicates the existing EPS is sound material, the density of the EPS being added is equal to the density of the existing EPS, the existing EPS meets the requirements of this report, and the total thickness of the existing EPS plus the new EPS being added conforms to Section 4.4.2.2. The existing roof covering and, if necessary, the cover board must be removed before new roofing materials, having characteristics specifically described in this report, can be installed.

4.5 Foam-Control EPS with Perform Guard Boards:

Foam-Control EPS with Perform Guard boards is installed as specified in Section 4.2.1 of this report, except that use is not restricted in areas where the probability of termite infestation is defined as "very heavy" under Section 2603.8 of the IBC or IRC Section R318.4.

4.6 Foam-Control EPS with Perform Guard^2 Boards:

Foam-Control EPS with Perform Guard^2 is installed as specified in Section 4.2.1 of this report, except that use is not restricted in areas where the probability of termite infestation is defined as "very heavy" under IBC Section 2603.8 or IRC Section R318.4.

4.7 Foam-Control EPS Geofoam Blocks:

Foam-Control EPS Geofoam blocks must be in accordance with the manufacturer's installation instructions and as noted in Section 5.8. The insulation blocks must not be used structurally to resist loads except as provided for in Section 5.8.2 and 5.8.3.

The interior of the building must be separated from the geofoam blocks with a thermal barrier as required by IBC Section 2603.4, except when installation is in accordance with Section 5.8.1.

5.0 CONDITIONS OF USE

The Foam-Control EPS boards, Foam-Control EPS with Perform Guard boards, Foam-Control EPS with Perform Guard^2 boards and Foam-Control EPS Geofoam blocks 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 produced, identified, and installed in accordance with the manufacturer's published installation instructions. If there is a conflict between this report and the manufacturer's instructions, this report governs.

5.2 The insulation boards must be separated from the building interior with a thermal barrier complying with the applicable code, such as $^1/_2$-inch (12.7 mm) gypsum wallboard installed in accordance with the applicable code, except as described in Sections 4.2.2, 4.4 and 4.7 of this report.

5.3 Exterior walls must be protected by a water-resistive barrier complying with IBC Section 1404.2 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.

5.4 In areas where the probability of termite infestation is defined as "very heavy", the foam plastic must be installed in accordance with IBC Section 2603.8 or IRC Section R318.4, except as permitted for Foam-Control Perform Guard EPS in Section 4.5 or for Foam-Control Perform Guard EPS^2 in Section 4.6.

5.5 Walls on which the boards are applied must be braced in accordance with the applicable code.

5.6 When Foam-Control EPS D2D insulation boards are installed directly to a steel roof deck without a thermal barrier for structures regulated under the IBC, the following conditions apply:

5.6.1 The insulation boards must be part of a Class A, B, or C roof covering system as described in Section 4.4 of this report. The insulation boards may be installed without a thermal barrier as addressed in IBC Section 2603.4.1.5.

5.6.2 Reroofing must be in accordance with Section 4.4.4.

5.6.3 Permanent placards bearing the following words are attached to roof hatches and where other roof access is located: "This roof covering includes foam plastic insulation applied directly to a steel deck. The existing roofing membrane, slip sheets, and cover boards must be removed before reroofing. Limits also exist for cover boards and membranes. See ICC-ES evaluation report ESR-1006 before reroofing."

5.7 Maximum thickness is as noted in Section 3.1 of this report, except where noted otherwise in Section 4.0.

5.8 When geofoam blocks are installed, the following conditions of use apply:

5.8.1 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

5.8.2 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 2 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.

5.8.3 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.

5.8.4 Use of the geofoam blocks is limited to applications where the geofoam will not be subject to direct exposure to hydrocarbons.

5.8.5 Penetrations through the thermal barrier described in Section 5.8.1 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 IBC Section 714.4. If used, through-penetration firestop systems must be tested in accordance with ASTM E814 or UL 1479, as required by IBC Section 714.4.1.1.2

5.9 The products are manufactured by the listees at the locations specified in Table 3 under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

6.1 Foam-Control EPS Boards:

6.1.1 Data in accordance with the ICC-ES Acceptance Criteria for Foam Plastic Insulation (AC12), dated June 2012, including reports of tests in accordance with Appendix B.

6.1.2 Data in accordance with UL1256.

Test reports of room corner fire tests in accordance with UBC Standard 26-3.

6.2 Foam-Control EPS with Perform Guard and Foam-Control EPS with Perform Guard[2]:

6.2.1 Data in accordance with the ICC-ES Acceptance Criteria for Foam Plastic Insulation (AC12), dated June 2012.

6.2.2 Data in accordance with the ICC-ES Acceptance Criteria for Termite-resistant Foam Plastics (AC239), dated October 2008 (editorially revised February 2013).

6.3 Foam-Control EPS Geofoam Blocks:

Data in accordance with the ICC-ES Acceptance Criteria for Rigid Cellular Polystyrene (RCPS) Geofoam for Use in Interior Floor Applications (AC452), dated October 2013.

7.0 IDENTIFICATION

Foam-Control EPS Boards, Foam-Control EPS with Perform Guard boards, Foam-Control EPS with Perform Guard[2] boards and Foam-Control EPS Geofoam blocks are marked on each board with the report holder's name (AFM); the plant ID number; the ASTM type; and the evaluation report number (ESR-1006). Additionally, an inspection agency certificate, including the flame-spread index, the smoke-developed index, and the thermal-resistance (*R*- value) (for insulation complying with ASTM C578), and compressive resistance (for insulation complying with ASTM D6817), is provided with each shipment of insulation boards.

Bundles of Foam-Control EPS insulation board include instructions regarding *R*-value required by ASTM C578.

In addition to the marking noted above, each Foam-Control EPS D2D insulation board has the following wording: "When used in reroofing applications, limits exist for cover board and membrane. See ICC-ES evaluation report ESR-1006 before reroofing."

In addition to the foam plastic EPS board markings noted above, Foam-Control EPS insulation boards for use under Section 4.2.2, in attics and crawl spaces, are labeled with one of the following: "BASF," "Flint Hills," "Nova," or "StyroChem."

TABLE 1—FOAM-CONTROL EPS INSULATION BOARD THERMAL RESISTANCE VALUES[1]

ASTM TYPE	MINIMUM DENSITY (pcf)	THERMAL RESISTANCE (per 1 inch thickness) (°F-ft^2-h/Btu)
Type I	0.90	3.6
Type VIII	1.15	3.8
Type II	1.35	4.0
Type IX	1.80	4.2
Type XIV	2.40	4.2
Type XV	3.00	4.2

For **SI:** 1 pcf = 16.018 kg/m3, 1°F-ft^2-h/Btu = 0.176 m^2-K/W.

[1]Thermal resistance (*R*) values are based on tested values between 1 and 4 inches and must be multiplied by the installed thickness for thicknesses greater than 1 inch (25 mm). Maximum foam plastic thickness recognized in this report is 9 inches.

TABLE 2—FOAM-CONTROL EPS GEOFOAM INSULATION BLOCK COMPRESSIVE RESISTANCE VALUES

ASTM TYPE	MINIMUM DENSITY (pcf)	COMPRESSIVE RESISTANCE (at 1% strain) (psi)
Type EPS15	0.90	3.6
Type EPS19	1.15	5.8
Type EPS22	1.35	7.3
Type EPS29	1.80	10.9
Type EPS39	2.40	15.0
Type EPS46	2.85	18.6

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

TABLE 3—MANUFACTURING LOCATIONS

LISTEE	LOCATION	PLANT ID NO.
ACH Foam Technologies, LLC	5250 North Sherman Street Denver, Colorado 80216	U-1
ACH Foam Technologies, LLC	111 West Fireclay Avenue Murray, Utah 84107	U-2
ACH Foam Technologies, LLC	2731 White Sulfur Road Gainesville, Georgia 30503	U-4
ACH Foam Technologies, LLC	775 Waltham Way, Suite 105 McCarran, Nevada 89434	U-53
ACH Foam Technologies, LLC	1400 North 3rd St. Kansas City, Kansas 66101	U-8
ACH Foam Technologies, LLC	90 Trowbridge Drive Fond Du Lac, Wisconsin 54936-0669	U-37
ACH Foam Technologies, LLC	809 East 15th Street Washington, Iowa 52353	U-55
Big Sky Insulations, Inc.	15 Arden Drive Belgrade, Montana 59714	U-30
Branch River Plastics, Inc.	15 Thurber Boulevard Smithfield, Rhode Island 02917	U-6
Henry Products, Inc.	302 South 23rd Avenue Phoenix, AZ 85009	U-62
Mid Atlantic Foam	326 McGhee Road Winchester, Virginia 22603	U-14
Mid Atlantic Foam	57 Joseph Drive Fredericksburg, Virginia 22404	U-63
Noark Enterprises, Inc.	10101 Highway 70 East North Little Rock, Arkansas 72117	U-24
Pacific Allied Products, Ltd.	91-110 Kaomi Loop Kapolei, Hawaii 96707	U-17
Poliestireno Alfa-Gamma S.A. de C.V.	Maquiladoras #331 Int A y B Tijuana, Baja California Mexico	U-60
Poliestireno Alfa-Gamma S.A. de C.V.	Boulevard México Km. 2.5 exejido Aquiles Serdan C.P. 35080 Gómez Palacio, Durango México	U-67
Poly-Foam, Inc.	116 Pine Street South Lester Prairie, Minnesota 55354	U-22
Therma Foam, LLC	1240 Hwy 77 N Hillsboro, Texas 76645	U-25
Thermal Foams, Inc.	2101 Kenmore Ave. Buffalo, NY 14207	U-26