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

REPORT HOLDER:
FLINT HILLS RESOURCES, LP

EVALUATION SUBJECT:
FLINT HILLS RESOURCES, LP GRADES 54 AND 40 EXPANDABLE POLYSTYRENE BEADS

1.0 EVALUATION SCOPE
Compliance with the following codes:
- 2012, 2009 and 2006 International Residential Code® (IRC)
- 1997 Uniform Building Code™ (UBC)
- 2013 Abu Dhabi International Building Code (ADIBC)†

Properties evaluated:
- Physical properties
- Surface-burning characteristics
- Attic and crawl space evaluation

2.0 USES
The expandable polystyrene beads designated as Flint Hills Resources, LP Grades 54 and 40 are used by independent manufacturers to produce expanded polystyrene (EPS) insulation products.

3.0 DESCRIPTION
The EPS insulation products manufactured with the expandable polystyrene beads are produced solely through the introduction of heat, without other additives. This process expands the beads, which are then molded into insulation products with densities and thicknesses no greater than those specified in this report. The end use of the polystyrene beads, including the manufacture of products, is outside the scope of this report and must be addressed in a separate evaluation report. Boards manufactured from Grade 54 and Grade 40 beads at a maximum density of 2.0 pcf (32 kg/m³) and a maximum thickness of 5 inches (127 mm) have a flame-spread index of 25 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E84 (UBC Standard 8-1).

Flint Hills Resources, LP Grade 54 and Grade 40 expandable polystyrene 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 Types I, II, VIII and IX [1.0, 1.5, 1.25 and 2.0 pcf (16, 24, 20 and 32 kg/m³) nominal densities, respectively] of ASTM C578, 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 the ICC-ES Acceptance Criteria for Foam Plastic Insulation (AC12).

4.0 INSTALLATION
4.1 General:
Installation is as noted in the corresponding current ICC-ES evaluation report on the foam plastic assemblies.

4.2 Special Use:
Foam plastic boards produced from the Flint Hills Resources, LP Grade 54 and Grade 40 beads may be used on walls of attics and crawl spaces without covering applied to the attic or crawl space side of the foam plastic, provided all of the following conditions are met:
1. Entry to the attic or crawl space is only to service utilities, and no storage is permitted.
2. There are no interconnected attic or crawl space areas.
3. Air in the attic or crawl space must not be circulated to other parts of the building.
4. Attic ventilation is provided when required by Section 1203.2 of the IBC, Section R806 of the IRC, or Section 1505.3 of the UBC, as applicable. Under-floor (crawl space) ventilation is provided when required by Section 1203.3 of the IBC, Section R408.1 of the IRC or Section 2306.7 of the UBC, as applicable.
5. Combustion air is provided in accordance with Sections 701 and 703 of the International Mechanical Code®.
6. The boards have a maximum density of 1 pcf (16 kg/m³) at a maximum thickness of 4 inches (102 mm), or a maximum density of 2 pcf (32 kg/m³) at a maximum thickness of 2 inches (51 mm).

5.0 CONDITIONS OF USE
The Flint Hills Resources, LP Grades 54 and 40 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 insulation boards must be as noted in Sections 3.0 and 4.2 of this report.

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

5.3 Except as noted in Section 4.2 of this report, the insulation boards produced from the Flint Hills Resources, LP beads must be separated from the building interior by a thermal barrier complying with Section 2603.4 of the IBC, Section R316.4 of the 2012 and 2009 IRC, Section R314.1.2 of the 2006 IRC or Section 2602.4 of the UBC.

5.4 The beads are produced by Flint Hills Resources, LP, in Peru, Illinois, 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 2012, including data in accordance with Appendix B.

7.0 IDENTIFICATION

7.1 Each container of beads shall bear a label with the Flint Hills Resources, LP, name and address; the bead identification (grade and a lot number); the evaluation report number (ESR-1634).

7.2 The report holder’s contact information is the following:
FLINT HILLS RESOURCES, LP
4111 EAST 37TH STREET NORTH
WICHITA, KANSAS 67220
(757) 546-7767
www.fhr.com