Product Information Bulletin

PlastiSpan Insulation - ICC-ES Evaluation Report ESR-1587

(5 pages attached)

The ICC Evaluation Service, Inc. (ICC-ES) is a national evaluation body in the United States that does technical evaluations of building products, components, methods, and materials for compliance with code requirements. Plasti-Fab® PlastiSpan® expanded polystyrene (EPS) insulation is manufactured in compliance with ASTM C578, Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.

ICC-ES evaluation report ESR-1587 provides a convenient means of demonstrating compliance with the requirements of the US model codes listed below.

ICC-ES evaluation reports are made available to code officials, contractors, specifiers, architects, engineers, and anyone else with an interest in the building industry and construction on the internet at www.icc-es.org.

Attached is a copy of ICC-ES ESR-1587 for PlastiSpan insulation reissued in September 2016. ESR-1587 provides evidence that PlastiSpan insulation complies with the codes noted below:

- 2012 and 2009 International Building Code® (IRC)
- 2012 and 2009 International Residential Code® (IRC)

Refer to the attached report for additional detail.

A copy of the current report can also obtained from the ICC Evaluation Service website at https://icc-es.org/evaluation-report-program/reports-directory/.
DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
SECTION: 07 21 00—THERMAL INSULATION
DIVISION: 31 00 00—EARTHWORK
SECTION: 31 31 16—TERMITE CONTROL

REPORT HOLDER:

PLASTI-FAB LTD.

100, 2886 SUNRIDGE WAY NE
CALGARY, ALBERTA T1Y 7H9
CANADA

EVALUATION SUBJECT:

PLASTISPAN EXPANDED POLYSTYRENE (EPS) INSULATION BOARDS

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

DIVISION: 31 00 00—EARTHWORK
Section: 31 31 16—Termite Control

REPORT HOLDER:
PLASTI-FAB LTD.
100, 2886 SUNRIDGE WAY NE
CALGARY, ALBERTA T1Y 7H9
CANADA
(403) 248-9306
www.plastifab.com

EVALUATION SUBJECT:
PLASTISPAN EXPANDED POLYSTYRENE (EPS) INSULATION BOARDS

1.0 EVALUATION SCOPE

Compliance with the following codes:
- 2012 and 2009 International Building Code® (IBC)
- 2012 and 2009 International Residential Code® (IRC)
- 2012 and 2009 International Energy Conservation Code® (IECC)
- Other Codes (see Section 8.0)

Properties evaluated:
- Surface-burning characteristics
- Physical properties
- Thermal resistance
- Attics and crawl spaces

2.0 USES

PlastiSpan EPS insulation is an expanded polystyrene foam plastic board for use as nonstructural thermal insulation sheathing in wall cavities, ceiling assemblies and roof covering assemblies, or on the outside faces of exterior walls of Type V-B (IBC) or Type V-N (UBC) construction, or structures constructed in accordance with the IRC. PlastiSpan EPS insulation boards may also be used on walls in attics and crawl spaces without the ignition barrier required by the applicable code, when installation is as noted in Section 4.2 of this report. PlastiSpan (EPS) insulation boards may also be used as the core of structural insulated panels (SIPs), when specifically recognized in an ICC-ES evaluation report for the SIP showing compliance with the ICC-ES Acceptance Criteria for Sandwich Panels (AC04).

3.0 DESCRIPTION

PlastiSpan EPS insulation boards are Type I, II, VIII or IX boards, complying with ASTM C578, and have minimum densities of 0.90 pcf (14.4 kg/m³), 1.35 pcf (22.6 kg/m³), 1.15 pcf (18.4 kg/m³) or 1.8 pcf (28.8 kg/m³), respectively. The EPS insulation boards have a flame-spread index not exceeding 25 and a smoke-developed index not exceeding 450 when tested in accordance with ASTM E84. See Table 1 for manufacturing locations.

PlastiSpan EPS Insulation boards are available with flat faces and square edges in various lengths and widths and in thicknesses up to 6 inches (150 mm). PlastiSpan EPS insulation boards have the thermal resistance (R-values) given in Table 1.

4.0 INSTALLATION

4.1 General:

Except as noted in Section 4.2 of this report, the interior of the building must be separated from the insulation boards with an approved thermal barrier as required in IBC Section 2603.4 or IRC Section R316.4, as applicable. If required, a vapor retarder must be installed in accordance with 2012 IRC Sections R702.7 and N1102.2.10 (2009 IBC Section 1405.3 or 2009 IRC Section R601.3 or N1102.2.9), as applicable. Protection against condensation in exterior wall assemblies must be provided in accordance with IBC Section 1403.2 or IRC Section R703. For cementitious exterior wall coating applications, fasteners for insulation boards thicker than $1\frac{1}{2}$ inches (38 mm) must be considered for lateral resistance to ensure support for the exterior wall coatings. The attachment of finish materials over the insulation board must allow for a minimum 1-inch (25.4 mm) penetration of the fasteners into wood framing. Sheathing or a wall covering over the insulation must be structurally adequate to resist horizontal forces perpendicular to the wall. All walls must be braced in accordance with IBC Section 2308.9.3, or IRC Section R602.10, as applicable.

Insulation boards as roof insulation must be installed as recognized in a current ICC-ES evaluation report for the roof covering system.

4.2 Special Uses: Attics and Crawl Spaces

PlastiSpan EPS insulation boards can be used on walls in attics and crawl spaces with no covering applied to the
attic or crawl space side of the foam plastic, provided all of
the following conditions are met:

a. Entry to the attic or crawl space is only to service
utilities, and no storage is permitted.
b. There are no interconnected attic or crawl space
areas.
c. Air in the attic or crawl space is not circulated to other
parts of the building.
d. Attic ventilation is provided when required by IBC
Section 1203.2 or IRC Section R806, as applicable.
Under-floor (crawl space) ventilation is provided when
required by IBC Section 1203.3 or IRC Section
R408.1, as applicable.
e. Boards are produced from BASF Styropor, NOVA or
Styrochem beads; having a nominal density of 1 pcf
(16 kg/m$^3$) and a maximum thickness of 4 inches
(102 mm); or a nominal density of 2 pcf (32 kg/m$^3$)
and a maximum thickness of 2 inches (51 mm).
f. Combustion air is provided in accordance with
Section 701 of the International Mechanical Code®.

4.3 Termite Resistance:
PlastiSpan EPS treated with Lanxess Preventol TM-EPS
Preservative Insecticide is recognized for installation in
areas subject to termites as noted in Table 2.

5.0 CONDITIONS OF USE
The PlastiSpan EPS insulation boards described in this
report comply with, or are acceptable 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 and the
manufacturer’s published installation instructions. In
the event of a conflict between this report and the
manufacturer’s published installation instructions, this
report governs.

5.2 The insulation board must be covered with an
approved exterior wall covering, including a water-
resistant barrier complying with IBC Section 1404.2 or
IRC Section R703.2, as applicable.

5.3 The exterior wall covering spanning between wall
framing members must provide the necessary
structural resistance to wind and seismic forces.

5.4 Insulation boards must not be used as a nailing base
for exterior siding materials. All nailing must be made
through the insulation into the wall framing or
structural sheathing as required by the siding
manufacturer’s instructions or the applicable code.

5.5 Except as noted in Section 4.2 of this report, the
insulation boards must be separated from the interior
of the building with a thermal barrier complying with
IBC Section 2603.4 or IRC Section R316.4, as
applicable.

5.6 For structures required to comply with the IBC or IRC,
use of the foam plastic insulation in areas where the
probability of termite infestation is “very heavy” must
be in accordance with 2012 IBC Section 2603.9 (2009
IBC Section 2603.8) or IRC Section R318.4,
respectively.

5.7 The minimum density and maximum thickness of the
insulation boards must be as noted in Table 1.

5.8 Jobsite certification and labeling must comply with
2012 IECC Sections C303.1.1 and R303.1.1 (2009
IECC Section 303.1.1).

5.9 The foam plastic boards are produced under a quality
control program with inspections by ICC-ES, at
Crossfield, Alberta, Canada; Saskatoon, Saskatchewan, Canada; Winnipeg, Manitoba,
Canada; Ajax, Ontario, Canada; Delta, British
Columbia, Canada; Kitchener, Ontario, Canada; and
Lebanon, Ohio.

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

6.2 Data in accordance with the ICC-ES Acceptance
Criteria for Termite-resistant Foam Plastics (AC239),
dated October 2008 (editorially revised February
2014).

6.3 Reports of tests in accordance with NFPA 286.

7.0 IDENTIFICATION
The insulation boards must be packaged in bundles
bearing a label with the Plasti-Fab Ltd. name; the
manufacturing facility location; the date of manufacture; the
evaluation report number (ESR-1587); the density; the
flame-spread index; the smoke-developed index; and the
thermal resistance (R-value).

Additionally, the labels for insulation boards used for attic
and crawl space installations, in accordance with Section
4.2 of this report, must be identified as being produced
from NOVA, BASF or Styro Chem beads. PlastiSpan
EPS boards treated with Preventol TM-EPS
Preservative Insecticide are labeled as shown in Figures 1
through 3.

8.0 OTHER CODES
In addition to the codes referenced in Section 1.0, the
products described in this report were evaluated for
compliance with the requirements of the following codes:

- 2006 International Residential Code® (2006 IRC)
IECC)

The products comply with the above-mentioned codes as
described in Sections 2.0 through 7.0 of this report, with
the revisions noted below:

Application with a Prescriptive Thermal Barrier: See
Section 4.1, except the approved thermal barrier must
be installed in accordance with Section R314.4 of the
2006 IRC.

Application with a Prescriptive Ignition Barrier: See
Section 4.2, except an ignition barrier must be installed
in accordance with Sections R314.5.3 or R314.5.4 of
the 2006 IRC, as applicable.

Attics and Crawlspaces: See Section 4.2, except
combustion air must be provided in accordance with
Sections 701 and 703 of the 2006 IMC.

Protection against Termites: See Section 5.6, except
use of the insulation in areas where the probability of
termite infestation is “very heavy” must be in
accordance with Section R320.5 of the 2006 IRC.

Jobsite Certification and Labeling: See Section 5.8,
except jobsite certification and labeling must comply
with Section 102.1.1 of the 2006 IECC.
TABLE 1—PLASTISPAN EPS INSULATION BOARD PROPERTIES AND MANUFACTURING LOCATIONS

<table>
<thead>
<tr>
<th>MANUFACTURING LOCATION</th>
<th>ASTM C578 TYPE</th>
<th>MINIMUM DENSITY (pcf)</th>
<th>MAXIMUM THICKNESS (inches)</th>
<th>R-VALUE PER INCH OF THICKNESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delta, British Columbia, Canada, Kitchener, Ontario, Canada, Crossfield, Alberta, Canada, Saskatoon, Saskatchewan, Canada, Winnipeg, Manitoba, Canada, Ajax, Ontario, Canada, Lebanon, Ohio</td>
<td>I</td>
<td>0.90</td>
<td>6</td>
<td>3.6</td>
</tr>
<tr>
<td></td>
<td>II</td>
<td>1.35</td>
<td>6</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>VIII</td>
<td>1.15</td>
<td>6</td>
<td>3.8</td>
</tr>
<tr>
<td></td>
<td>IX</td>
<td>1.80</td>
<td>6</td>
<td>4.2</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm, 1 pcf = 16.02 kg/m³, $1^\circ \text{F} = 1.8^\circ \text{C} + 32$.

TABLE 2—MINIMUM DOSAGE LEVELS OF PREVENTOL® TM BY END USE

<table>
<thead>
<tr>
<th>END USE</th>
<th>MINIMUM¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPS Foam Used Above Ground Contact Low Hazard “None to Moderate” Termite Zones Per IRC Figure R301.2(6), IBC Figure 2603.8</td>
<td>100 ppm</td>
</tr>
<tr>
<td>EPS Foam Used Above Ground Contact Medium Hazard “Heavy to Very Heavy” Termite Zones Per IRC Figure R301.2(6), IBC Figure 2603.8 Formosan Termites</td>
<td>200 ppm</td>
</tr>
<tr>
<td>EPS Foam Used in Ground Contact/Below Ground Contact High Hazard “None to Very Heavy” Termite Zones Per IRC Figure R301.2(6), IBC Figure 2603.8 Formosan Termites</td>
<td>500 ppm</td>
</tr>
</tbody>
</table>

¹The minimum dosage rate is expressed as ppm (parts per million) and is based on the final volume of molded EPS.

Preventol® TM-EPS Low Hazard Use Above Ground Contact “None to Moderate” Termite Zone IRC Fig. R301.2(6), IBC Fig. 2603.8

ICC-ES ESR-1587

100 ppm (w/v)

Plasti-Fab Ltd.

MONITORED BY:

Intertek Testing Services

AA-690

FIGURE 1—PREVENTOL® TM-EPS LOW HAZARD USE MARKING
FIGURE 2—PREVENTOL® TM-EPS MEDIUM HAZARD USE MARKING

FIGURE 3—PREVENTOL® TM-EPS HIGH HAZARD USE MARKING