

# ICC-ES Evaluation Report

**ESR-2407\***

Reissued October 1, 2008

This report is subject to re-examination in two years.

[www.icc-es.org](http://www.icc-es.org) | (800) 423-6587 | (562) 699-0543

A Subsidiary of the International Code Council®

**DIVISION: 07—THERMAL AND MOISTURE PROTECTION**  
**Section: 07210—Building Insulation**  
**Section: 07220—Roof and Deck Insulation**

**REPORT HOLDER:**

**PROWALL BUILDING PRODUCTS, INC.**  
 301 SOUTH LOMBARD STREET  
 OXNARD, CALIFORNIA 93030  
 (805) 278-4474  
[www.prowall.com](http://www.prowall.com)

**EVALUATION SUBJECT:**
**PROWALL FOAM PLASTIC INSULATION BOARDS**
**1.0 EVALUATION SCOPE**
**Compliance with the following codes:**

- 2006 *International Building Code*® (IBC)
- 2006 *International Residential Code*® (IRC)
- 1997 *Uniform Building Code*™ (UBC)

**Properties evaluated:**

- Physical properties
- Surface burning characteristics
- Thermal performance (*R*-value)
- Attic and crawl space installation

**2.0 USES**
**2.1 PROWALL EPS Insulation Boards:**

The PROWALL expanded polystyrene (EPS) insulation boards described in this evaluation report are used as a general, nonstructural, thermal insulation material. Other uses include installation on exterior walls; in wall cavities; in door cavities; as a component of classified roof assemblies; at the exterior perimeter of foundations and basements; and as architectural shapes. When used as the core of sandwich panels, the insulation boards must be specifically recognized in a current evaluation report. PROWALL EPS insulation boards may be used in roof covering assemblies when specifically recognized in an current ICC-ES report for the roof-covering system. The evaluation report for the roof covering material must recognize the EPS insulation as part of a Class A, B or C roof assembly tested in accordance with ASTM E 108, UL 790 or UBC Standard 15-2.

PROWALL EPS insulation boards may be used as a core material in doors that do not require a fire-resistance

rating when installed in accordance with IBC Sections 2603.4.1.7 and 2603.4.1.8, IRC Sections R314.5.5 and R314.5.6, or UBC Section 2602.5.4.

**2.2 PROWALL EIFS Grade (PBP-EIFS) Insulation Boards:**

PROWALL EIFS Grade (PBP-EIFS) insulation boards are used as nonstructural thermal insulation in exterior insulation and finish systems (EIFS). The insulation is used on the outside faces of exterior walls when an ASTM C 578, Type I, EPS insulation board is specified in a current ICC-ES evaluation report for an EIFS.

**2.3 PROWALL One-Coat Stucco (PBP-OCS) Insulation Boards:**

PROWALL One-Coat Stucco (PBP-OCS) insulation boards are used in one-coat cementitious exterior wall coating systems recognized in an evaluation report in which a generic ASTM C 578, Type I or Type II, EPS insulation board is specified.

**2.4 PROWALL Attic and Crawl Space (PBP-ACS) Insulation Board:**

PROWALL attic and crawl space (PBP-ACS) insulation boards installed on the interior side of walls in attics and crawl spaces may be left exposed as prescribed in Section 4.4 of this report.

**3.0 DESCRIPTION**
**3.1 General:**

PROWALL insulation boards having a maximum thickness of 6 inches (152.4 mm) and a maximum nominal density of 2 pcf (32.0 kg/m<sup>3</sup>), have a flame-spread index not exceeding 25 and a smoke-developed index not exceeding 450 when tested in accordance with ASTM E 84 (UBC Standard 8-1).

**3.2 PROWALL EPS Insulation Boards:**

PROWALL EPS boards are molded closed-cell EPS insulation boards. The boards are available as Type I, II, or IX boards complying with ASTM C 578, and have densities and thermal resistance values as shown in Table 1. The boards are available in various lengths and widths and in thicknesses up to 6 inches (152 mm) with square, shiplap, or tongue-and-groove edges.

**3.3 PROWALL EIFS Grade (PBP-EIFS) Insulation Board:**

PROWALL EIFS Grade (PBP-EIFS) insulation boards have a minimum density of 0.90 pcf (14.4 kg/m<sup>3</sup>). The boards comply as Type I in accordance with ASTM C 578, and are available in various thicknesses up to 6 inches

\*Revised April 2010

(152 mm) with square, shiplap, or tongue-and-groove edges. The boards have more restrictive requirements than the EPS board for conditioning, product dimensions, marking and packaging. For thermal resistance properties, see Table 1.

### 3.4 PROWALL One-Coat Stucco (PBP-OCS) Insulation Board:

PROWALL One-Coat Stucco boards are maximum 1½-inch-thick (38 mm), nominally 1.5 pcf density (24 kg/m<sup>3</sup>), EPS insulation boards with tongue-and-groove edges. The boards are available in various lengths and widths. The boards comply as Type II in accordance with ASTM C 578. For thermal resistance properties, see Table 1.

### 3.5 PROWALL Attic and Crawl Space (PBP-ACS) Insulation Board:

PROWALL attic and crawl space (PBP-ACS) insulation boards have a maximum thickness of 1½ inches (38 mm) and a maximum density of 1.5 pcf (24 kg/m<sup>3</sup>).

## 4.0 INSTALLATION

### 4.1 General:

Installation must comply with this report and the manufacturer's published installation instructions. The manufacturer's published installation instructions must be available at the jobsite at all times during installation.

Except as described in Section 4.4, the interior of the building must be separated from the insulation boards by an approved 15-minute thermal barrier as required in IBC Section 2603.4, IRC Section R314.4 or R314.5, or UBC Section 2602.4 or 2602.5.3. The installation of the insulation boards in areas of "very heavy" termite infestation probability must comply with IBC Section 2603.8 or IRC Section R320.5, as applicable.

A water-resistive barrier must be installed in accordance with IBC Section 1403.2, IRC Section R703, or UBC Section 1402. Under the IBC, protection against condensation must be provided in accordance with IBC Section 1403.2; under the IRC, a vapor retarder must be provided in accordance with IRC Section R318; under the UBC, a vapor barrier must be provided when required by the code official. The insulation board may be applied to exterior faces of walls to a maximum thickness of 1½ inches (38 mm), except insulation board thicknesses greater than 1½ inches (38 mm) may be permitted if such installation is recognized in a current ICC-ES evaluation report on a wall covering. 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, or the fasteners must protrude through structural sheathing or structural steel framing beneath. 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 Sections 2308.9.3 and 2308.12.4, IRC Section R602.10.3, or UBC Section 2320.11.3 or 2320.11.4, as applicable.

Insulation boards must not be used as a nailing base for finish materials or wall covering materials. Attachment must comply with a current evaluation report for proprietary wall covering materials, or with the applicable code for code-described wall-covering materials.

When the insulation boards are applied over open framing, vertical butt joints must be over framing members. For cementitious exterior wall coating systems, unbacked joints are permitted only when specified in the evaluation report on the cementitious exterior wall coating system.

### 4.2 PROWALL EIFS Grade (PBP-EIFS) Insulation Board:

Type I PROWALL EIFS Grade (PBP-EIFS) insulation boards must be installed in accordance with an ICC-ES evaluation report on an EIFS wall system.

### 4.3 Cementitious Exterior Wall Coatings:

When used with ICC-ES-recognized cementitious exterior wall coatings, the PROWALL OCS boards are an alternative to 1-inch-thick (25.4 mm), 1.5 pcf density (24 kg/m<sup>3</sup>), EPS insulation specified in an ICC-ES evaluation report on the coating. The PROWALL OCS boards must be installed over a water-resistive barrier with vertical insulation board joints directly over framing, or must be installed over solid sheathing. Conditions in the cementitious exterior wall coatings evaluation report for the EPS insulation, such as orientation, tongue-and-groove edges, square edges and taping, must be observed.

### 4.4 Special Uses—Attics and Crawl Spaces:

PROWALL (PBP-ACS) insulation boards may be left exposed on the interior side of walls in attics and crawl spaces without an ignition barrier separating the attic or crawl space from the EPS insulation boards 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 crawl space or attic areas.
3. Air in the attic or crawl space is not circulated to other parts of the building.
4. Attic ventilation is provided when required by IBC Section 1203.2, IRC Section R806, or UBC Section 1505.3, as applicable.
5. Under-floor (crawl space) ventilation is provided when required by IBC Section 1203.3, IRC Section R408.1, or UBC Section 2306.7, as applicable.
6. Combustion air is provided in accordance with Sections 701 and 703 of the *International Mechanical Code*.
7. Insulation boards must be 1.5 inches (38 mm) thick or less, and have a maximum density of 1.5 pcf (24 kg/m<sup>3</sup>).

## 5.0 CONDITIONS OF USE

The PROWALL EPS 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 boards must be manufactured, identified and installed in accordance with this report, the manufacturer's published installation instructions and the applicable code. If there is a conflict between the manufacturers's published installation instructions and this report, this report governs.
- 5.2 The insulation boards must be covered with an approved exterior wall covering. A water-resistive barrier complying with IBC Section 1404.2 or IRC Section R703.2, or a weather-resistive barrier complying with UBC Section 1402.1, as applicable, must be installed as specified for the approved assembly.
- 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 published installation instructions or the applicable code.
- 5.5 Except as noted in Section 4.3, the insulation boards must be separated from the interior of the building with an approved 15-minute thermal barrier complying with IBC Section 2603.4, IRC Section R314.4 or R314.5, or UBC Section 2602.4 or 2602.5.3, as applicable.
- 5.6 Use of the EPS insulation boards in areas where the probability of termite infestation is “very heavy” must be in accordance with IBC Section 2603.8 or IRC Section R320.5, as applicable.
- 5.7 The insulation boards are produced in Casa Grande, Arizona, under a quality control program with inspections by RADCO (AA-650).

**6.0 EVIDENCE SUBMITTED**

Data in accordance with the ICC-ES Acceptance Criteria for Foam Plastic Insulation (AC12), dated June 2009, including data in accordance with Appendix B.

**7.0 IDENTIFICATION**

**7.1 General:**

Packages of insulation boards are labeled with the name and the address of the manufacturer (PROWALL Building Products, Inc.); the product name; the date of manufacture; the nominal board density; the flame-spread index (25 or

less); the smoke-developed index (450 or less); the thermal-resistance value (R-value); the evaluation report number (ESR-2407); and the name of the inspection agency (RADCO).

**7.2 PROWALL EIFS Grade (PBP-EIFS) Insulation Boards:**

In addition to the identification provisions noted in Section 7.1, PROWALL EIFS Grade (PBP-EIFS) insulation boards are identified along one edge, and on both faces of one board from each package, with the name of the exterior coating (EIFS) company and the EIFS company’s evaluation report number.

**7.3 PROWALL One-Coat Stucco (PBP-OCS) Insulation Boards:**

In addition to the identification provisions noted in Section 7.1, PROWALL One-Coat Stucco boards are identified along the short, square edge, with the board type (Type II); the nominal density (1.5 pcf); the PROWALL name; the evaluation report number (ESR-2407); and the name of the inspection agency (RADCO).

**7.4 PROWALL Attic and Crawl Space (PBP-ACS) Insulation Boards:**

In addition to the identification provisions noted in Section 7.1, PROWALL PBP-ACS insulation boards used for installations in attics and crawl spaces as described in Section 4.4 must be identified as being produced from BASF, NOVA, Styrochem, or Flint Hills Resources LP beads.

**TABLE 1—DENSITIES AND R-VALUES FOR INSULATION BOARDS**

EPS CLASSIFICATION	NOMINAL DENSITY (pcf)	MINIMUM DENSITY (pcf)	R-VALUE FOR 1-INCH THICKNESS AT 75°F [(hr-ft <sup>2</sup> -°F)/Btu]
Type I	1.00	0.90	3.6
Type II	1.50	1.35	4.0
Type IX	2.00	1.80	4.2

For SI: 1 inch = 25.4 mm, 1 pcf = 16.02 kg/m<sup>3</sup>, 1°F-ft<sup>2</sup>-hr/Btu = 0.176 m<sup>2</sup>·K/W, 1°F = 1.8°C+32.