

Safety & Buildings Division
201 West Washington Avenue
P.O. Box 2658
Madison, WI 53701-2658

Wisconsin Building Products Evaluation

Material

Reflective Insulation Board
Perka "P2000" Insulation

Manufacturer

Polar Industries, Inc.
32 Grammer Ave
PO Box 7075
Prospect, CT 06712

SCOPE OF EVALUATION

GENERAL: This report evaluates the use of Perka P2000 reflective composite insulation board manufactured by Polar Industries, Inc.

The **IBC** requirements below in accordance with the current **Wisconsin Amended ICC Code:**

- **Vapor Barrier:** Perka "P2000" reflective insulation board was evaluated in accordance with the vapor retarder requirements of **s. IBC 1403.3** and **s. Comm 62.1403(1)**. **Note:** See LIMITATIONS OF APPROVAL section.
- **Foam Plastic Material:** Perka "P2000" reflective insulation board was evaluated in accordance with the fire safety requirements of **ss. IBC 2603.1, 2603.2, 2603.3, 2603.4** and **2603.5.6**.
- **Thermal Performance:** Perka "P2000" reflective insulation board was evaluated in accordance with the thermal performance requirements of **s. Comm 63.1018(2)(a)3**. and **(b)**. **Note:** See LIMITATIONS OF APPROVAL section.

The **IECC** requirements below in accordance with the current **Wisconsin Amended ICC Code:**

- **Moisture Control:** Perka "P2000" reflective insulation board was evaluated in accordance with the moisture control requirements of **s. IECC 502.1.1 [Comm 63.0502(1)]** and **IECC 802.1.2 [Comm 63.0802(2)]**.

DESCRIPTION AND USE

Perka "P2000" is a composite insulation board consisting of Type 1 molded/expanded rigid polystyrene (ESP) faced on one or both sides with reflective or white polyvinyl finish. Failure to have ALL assemblies defined in this approval negates the R-values referenced in this approval, as well as the approval itself.

TESTS AND RESULTS

Test data on Perka “P2000” is a composite insulation board was submitted to the department in accordance with the following standards:

- ASTM C203-99, Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation
- ASTM D2842-01, Standard Test Method for Water Absorption of Rigid Cellular Plastics
- ASTM D1621-00, Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- ASTM D2126-94, Standard Test Method for Response of Rigid Cellular Plastic to Thermal and Humid Aging
- ASTM E96, Standard Test Method for Water Vapor Permeance
- ASTM C518-04, Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus. **Note:**
- ASTM D2863, Standard Test Method for Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics (Oxygen Index)

The above testing was performed by Intertek ETL SEMKO, Report No. 3077735, dated July 21, 2005. Test data is on file with the department.

Test data on Perka “P2000” is a composite insulation board was submitted to the department in accordance with the following standard:

- ASTM C236-89, Standard Test Method for Steady-State Thermal Performance of Building Assemblies by Means of a Guarded Hot Box. **Note:** See LIMITATIONS OF APPROVAL section.

The above testing was performed by the Center For Applied Engineering. Inc., MTS Job No. 257436-A, dated November 20, 1995. Test data is on file with the department.

LIMITATIONS OF APPROVAL

The **IBC** limitations below are in accordance with the current **Wisconsin Amended ICC Code:**

- **Vapor Barrier:** Perka “P2000” is a composite insulation board is approved for use as vapor retarder and air barrier.

Note: Although air retarders are to reduce transmission of water vapor by convection (air movement), and vapor retarders are to reduce transmission of water vapor by diffusion, these functions may be combined in a single membrane. In practice, considerably more moisture is transported by convection than by diffusion.

- **Foam Plastic Material:** Perka “P2000” reflective insulation board shall be separated from the building interior with a thermal barrier as required by **s. IBC 2603.4.**
- **Thermal Performance:** Perka “P2000” reflective insulation board shall be installed as allowed by **s. Comm 63.1018(2) (a) 3. and (b).**

Notes:

1. Applicable testing in accordance with ASTM C518 was done. In the conclusion of the report, it shall be noted that, though the description “R” factor is utilized when discussing the results, the nature of testing performed does not pretend to provide results which should be compared to those obtained from testing against standardized test methods like ASTM C518.
2. Applicable testing in accordance with ASTM C236 was done. However, the state of Wisconsin does not recognize the reflective foil facing used on the product. Heat transfer in Wisconsin is based solely on conduction and convection.
3. Perka “P2000” reflective insulation board will only be allotted an **R-5 per inch** as indicated in the “ASHRAE BOOK OF FUNDAMENTALS-1997” and recognized by **s. Comm63.1018(1).**

4. Calculations shall be signed, sealed and submitted in accordance with **s. Comm 63.1019**.
5. Note that any future advertising of this product in the State of Wisconsin involving the R-value of this composite insulation board, shall reflect this approval, as based on the conductive and convective limitations of the product. The distributor and/or manufacturer may not reference radiant R-values associated with radiant testing of this product in the State of Wisconsin since these tests, and their associated results, are not recognized by the Wisconsin Department of Commerce as a means to demonstrate commercial building code compliance.

This approval will be valid through December 31, 2011, unless manufacturing modifications are made to the product or a re-examination is deemed necessary by the department. The product approval is applicable to projects approved under the current edition of the applicable codes. This approval may be void for project approvals made under future applicable editions. The Wisconsin Building Product Evaluation number must be provided when plans that include this product are submitted for review.

DISCLAIMER

The department is in no way endorsing or advertising this product. This approval addresses only the specified applications for the product and does not waive any code requirement not specified in this document.

Revision Date: October 9, 2006

Approval Date: March 31, 2006 By: _____

Lee E. Finley, Jr.
Product & Material Review
Integrated Services Bureau