Airboard™ VB 100
Technical Specifications

1. PRODUCT NAME
Airboard™ VB100 Insulation + Vapor Barrier

2. MANUFACTURER
Airfoam Industries Ltd.
19402 - 36 Ave, Surrey BC V3S 6K4 Canada
800.663.8162 or 604.534.8626 | www.airfoam.com

3. PRODUCT DESCRIPTION
Airboard™ combines closed cell Expanded Polystyrene (EPS) rigid insulation with advanced polymeric facers for fast installation and excellent durability. The EPS insulation core is laminated on both sides with 1 mil [25.4μm] metallic reflective facers made of biaxially oriented polypropylene (BOPP) and other polymers. EPS is closed cell foam insulation that uses air as main ingredient. The reflective metallic facers can boost the effective insulation value, if installed like a radiant heat barrier against dead air space. Airboards are vapor barriers and serve as an air barrier when the seams, penetrations and transitions are properly sealed.

Basic Use: Continuous Rigid Insulation + Vapor Barrier for new construction & retrofits of foundation walls, concrete slabs, interior of above-grade walls (in heating climates), floors, front walls, crawl-spaces, cathedral ceilings, attics, radiant floor heating systems, snow melt and de-icing systems and more in residential, commercial, and industrial buildings.

Sizes: Airboards are 4’ x 8’ [1.22m x 2.44m] with thicknesses from 1” to 6” [25-152mm] packed in bundles up to 12-½” high.

4. TECHNICAL DATA

Code Compliance
Airboard™ is third-party certified and complies with:

• Thermal Insulation Canada: CAN/ULC-S701 Type 1,
US: ASTM C578 Type I, ICC-ES AC12
• Surface Burning Characteristics: CAN/ULC-S102.2, ASTM E84 (UL 723)

Material Properties
Airboard™ products exhibit the typical physical properties indicated in Table 1 and below when tested as represented.

Insulation values for given thicknesses are listed in Table 2.

Applicable Standards
• ASTM C203 - Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation
• ASTM C272 - Standard Test Method for Water Absorption of Core Materials for Sandwich Constructions

Table 1. Airboard™ VB 100 Insulation + Vapor Barrier

<table>
<thead>
<tr>
<th>Property</th>
<th>Type 100</th>
<th>Test Std.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third-Party Certified EPS Type</td>
<td>Canada 1</td>
<td>CAN/ULC-S701 ASTM C578</td>
</tr>
<tr>
<td></td>
<td>USA 1</td>
<td>ASTM D1621 Proc-A</td>
</tr>
<tr>
<td>Compressive Resistance</td>
<td>psi @ 10% Deformation, minimum</td>
<td>ASTM D1622</td>
</tr>
<tr>
<td></td>
<td>kPa @ 10% Deformation, minimum</td>
<td>ASTM C303</td>
</tr>
<tr>
<td>Thermal Resistance</td>
<td>R-Value per inch thickness</td>
<td>ASTM C512 at @25°F 4.2 ASTM C512 at @40°F 4.0 ASTM C512 at @75°F 3.75</td>
</tr>
<tr>
<td></td>
<td>RSI per 25mm thickness</td>
<td>ASTM C512 or C177 at @4°C 0.74 at @4°C 0.7 at @24°C 0.65</td>
</tr>
<tr>
<td>Water Vapor Permeance</td>
<td>perms tested at 1 inch thickness</td>
<td>ASTM E96 Proc-A deisiccant 7.5</td>
</tr>
<tr>
<td></td>
<td>ng/(Pa*s•m²)</td>
<td>ASTM E96 Proc-A deisiccant 0.13</td>
</tr>
<tr>
<td>Air Permeance</td>
<td>CFM/R² at 1.57 psf</td>
<td>ASTM E2178 0.0002 0.0001</td>
</tr>
<tr>
<td></td>
<td>l/(s•m²) at 75 Pa</td>
<td>ASTM E2178</td>
</tr>
<tr>
<td>EPS Flexural Strength</td>
<td>psi minimum</td>
<td>ASTM C203 Proc-B 25</td>
</tr>
<tr>
<td></td>
<td>kPa minimum</td>
<td>ASTM C203 Proc-B 172</td>
</tr>
<tr>
<td>EPS Water Absorption</td>
<td>% by volume</td>
<td>ASTM D272, 1 day 4 ASTM D2842, 4 days 6</td>
</tr>
<tr>
<td></td>
<td>% linear change max.</td>
<td>ASTM D272 1.5</td>
</tr>
</tbody>
</table>

The test methods used to determine the material properties provide a means of comparing different cellular plastic thermal insulations. They are intended for use in specifications, product evaluations and quality control but they are not intended to predict end-use product performance.

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4. Values are for 1 inch or 25mm thick samples with laminated skins intact and seams, fasteners & penetrations properly sealed. Better values will result for thicker materials.

R means resistance to heat flow. The higher the R-value, the greater the insulating power.

5. The elastic limit is between 1% and 2% strain. Compressive resistances at 10% strain are provided for applications where the intended end-use can tolerate plastic (permanent) deformation under load.

6. The test methods for water absorption use complete submersion under a head of water for 24 or 96 hours, so the values are applicable to specific design requirements only when the end-use conditions are similar to test method requirements.

7. not part of the industry consensus standards (ASTM C578, CAN/ULC-S701) and provided AS-IS solely for informational purposes.
Environment Data
EPS has much lower environmental impacts than most other foamed plastic insulation materials. The Environmental Product Declaration (EPD) has been certified by UL Environment and is available on www.airfoam.com.
Airboard™ EPS may contain up to 30% pre-consumer recycled content.
Airboard™ EPS resists mold & fungi growth per ASTM C1338 and has no nutritional value for insects. To protect against termites place adequate physical barriers such as membranes around below-grade EPS.
Max. service temperature: Long-Term Exposure 75°C [167°F]; Intermittent Exposure 80°C [176°F].
Thermal expansion coefficient: 5-7 • 10⁻¹/°K
Capillarity: None.

Surface Burning Characteristics
• Canada: CAN/ULC-S102.2: Flame Spread Rating ≤290,Smoke Developed Classification over 500.
• USA: ASTM E84 (UL 723)*: FSI ≥25,SDI ≥450 up to 6” thick.
* Ceiling measurement only, conducted through determination of flame spread index and smoke developed index with the removal of any contribution of molten materials ignited on the floor of the Steiner tunnel.

Fire Protection
CAUTION: This product is combustible. Keep away from high heat and ignition sources. A protective barrier or a thermal barrier is required as specified in the appropriate building code.
¾ Hour Fire Rating for a Composite Wall Assembly with EPS c.i. (Continuous Insulation) per CAN/ULC-S101, ASTM E119, see Design No. CPIA/CWP 45-01. Meets NFPA 285 with specific limitations for an exterior wall assembly. For more information consult Airfoam’s CCRR-0379 at www.airfoam.com/Airfoam-Code-Report-CCRR-0379.pdf, your engineer, local building department or call Airfoam at 800.663.8162.

Solubility & Incompatibility
Insoluble in water and in general chemically inert. EPS dissolves in hydrocarbons (e.g. fuels, oils, tar), organic solvents (e.g. acetone/ketones, benzene, paint thinner), ethers, esters, aldehydes and amines. The facers made of biaxially oriented polypropylene (BOPP) and polyethylene are incompatible with strong oxidizing agents, many hydrocarbons and aromatics.

5. INSTALLATION
Follow the Airboard™ Installation Guide available at www.airboard.ca.
Install Airboard™ Insulation in compliance with all applicable building codes. Airboard™ Insulation is easy to handle and install and can be cut with a utility knife or any sharp blade. Butt edges and ends tightly to adjacent Airboards. Ensure compatibility of any other product (such as adhesives, tapes, coatings or finishes) with Expanded Polystyrene and Airboard™ facers. Airboard™ Insulation is a non-structural material. Airboard™ Insulation shall only be placed into an assembly where the moisture transport mechanisms are well understood and determined to be acceptable in accordance with accepted engineering practice (e.g. current ASHRAE Handbook of Fundamentals).
For safe handling and storage information refer to the Safety Data Sheet (SDS) at www.airfoam.com/SDS.pdf or request a printed copy.

GHS Classification: Non-Hazardous

UV-Light Degradation: Airboard™ Insulation can be exposed to direct sunlight for a few days. Prolonged exposure to ultraviolet light can degrade the facers and EPS.

9. TECHNICAL SERVICES
Airfoam can provide technical information and support to help address questions when using Airboard™ EPS Insulation. Technical personnel are available to assist with any insulation project. For technical assistance, contact Airfoam at:
Online: www.airfoam.com/EPS-Insulation-Support.php
Phone: 800.663.8162 or +1.604.534.8626
Fax: +1.604.534.1212

10. FILING SYSTEM
Airboard™ Technical Specifications filed at: www.airfoam.com

Please contact us for a free estimate or additional information: www.airfoam.com

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<table>
<thead>
<tr>
<th>Material Thickness</th>
<th>R-Value¹</th>
<th>Rs¹</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ft²•hr•F/ BTU</td>
<td>(m²•C)/W</td>
</tr>
<tr>
<td>1”</td>
<td>25.4mm</td>
<td>3.75</td>
</tr>
<tr>
<td>1.5”</td>
<td>38.1mm</td>
<td>5.63</td>
</tr>
<tr>
<td>2”</td>
<td>50.8mm</td>
<td>7.50</td>
</tr>
<tr>
<td>2.5”</td>
<td>63.5mm</td>
<td>9.38</td>
</tr>
<tr>
<td>3”</td>
<td>76.2mm</td>
<td>11.25</td>
</tr>
<tr>
<td>4”</td>
<td>101.6mm</td>
<td>15.00</td>
</tr>
<tr>
<td>5”</td>
<td>127mm</td>
<td>18.75</td>
</tr>
<tr>
<td>6”</td>
<td>152.4mm</td>
<td>22.50</td>
</tr>
</tbody>
</table>

¹ Taken at 75°F [24°C]

6. AVAILABILITY
Airboard™ is supplied from Surrey BC through our extensive distribution network. For product availability or to get in touch with your local distributor, call Airfoam at 800.663.8162 or +1.604.534.8626.

7. WARRANTY
Airfoam offers a limited product warranty for defective products. Please visit www.airfoam.com/terms for Terms and Conditions of Sale.

8. MAINTENANCE
No maintenance is required in normal use. EPS insulation that became wet can be dried out within reasonable times per ASTM C1512 tests using adequate drainage and/or ventilation.

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