ECOFILL

Blowing Wool Insulation

KNAUF INSULATION

Data Sheet BI-BWE-DS 08-17
Knauf Insulation EcoFill Wx blowing wool insulation is an unbonded, virgin fibrous glass blowing insulation having a high degree of post-consumer recycled content, designed for weatherizing and retrofitting existing housing.

**APPLICATION**

Knauf Insulation EcoFill Wx blowing wool insulation is used to dense-pack sidewalls using the drill and fill technique common in retrofitting homes or in home weatherization activities. EcoFill Wx blowing wool insulation is also excellent for doing open blows in attics. This means that only one product is needed to complete an insulation retrofit/weatherization project.

**PRODUCT FEATURES**

**Excellent Thermal Properties**
- Fills all gaps and voids in wall cavities, creating a thermal barrier against outside air and better temperature control
- Greater resistance to air infiltration than cellulosic materials
- Resists heat flow with an R-value of R-15 in 2 x 4 construction and R-23 in 2 x 6 construction
- Absolutely will not settle in walls
- Will not change from its intended R-value over its lifetime

**Saves Warehouse and Truck Space**
- Requires about one-half of the warehouse and truck space of competing cellulosic products

**Better Coverage than Cellulose**
- More than 2x the coverage per bag

**Sustainable**
- Contains a high degree of recycled glass verified every six months by UL Environment

**Improves Crew Productivity**
- Installers spend less time handling bags. In a 2,000 square foot home, about 46 bags of EcoFill Wx blowing wool insulation are required, compared to 145 bags of cellulosic material
- Installs cleaner than cellulose, virtually dust-free
- Blows clean and smooth and does not require stabilizing
- **Strong Poly Bag Packaging**
  - Packaged in a very strong poly bag that prevents bag breakage and jobsite spillage. The bags stack well and have a coefficient of friction sufficient to reduce slippage.

**Non-combustible**
- Glass mineral wool is naturally non-combustible and remains so for the life of the product. Unlike cellulose, EcoFill Wx blowing wool insulation requires no additional fire-retardant chemical treatments. Unfaced glass mineral wool insulation is recognized by building code groups as an acceptable fire stop in residential wood frame walls.

**Air Infiltration Resistance**
- When tested against three cellulose products using ASTM C522, EcoFill Wx blowing wool insulation showed 20 to 100% better air flow resistance than three leading brands. (See table)

**Noise Reduction**
- Improves Sound Transmission Class (STC) ratings by 4 to 10 points, with a 3 point STC change being a noticeable improvement

**INDOOR AIR QUALITY**
- UL Environment
  - GREENGUARD
  - GREENGUARD Gold

**SPECIFICATION COMPLIANCE**
- ASTM C764; Type I
- HHI-1030B, Class B Certified
- Meets the Quality Standards of the State of California

**THERMAL PERFORMANCE**
The stated thermal performance of EcoFill Wx blowing wool insulation requires installation in accordance with the manufacturer’s instructions. Failure to install the material properly will impact the performance of this product. This product must be installed according to the coverage charts provided.

**EQUIPMENT REQUIRED**
To achieve labeled R-value, this product must be applied with a pneumatic blowing machine and a corrugated hose with a minimum ¼" internal corrugation, a minimum length of 150'. Coils in the hose should not be less than 36" in diameter. Acceptable material feed rate is 5–35 lbs./min. The recommended feed rate is 15–35 lbs./min.

**GLASS MINERAL WOOL AND MOLD**
Glass mineral wool insulation will not sustain mold growth. However, mold can grow on almost any material when it becomes wet and contaminated. Carefully inspect any insulation that has been exposed to water. If it shows any sign of mold it must be discarded. If the material is wet but shows no evidence of mold, it should be dried rapidly and thoroughly.

**NOTES**
The chemical and physical properties of Knauf Insulation EcoFill Wx insulation represent typical average values determined in accordance with accepted test methods. The data is subject to normal manufacturing variations. The data is supplied as a technical service and is subject to change without notice. References to numerical flame spread ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions.

Check with your Knauf Insulation Territory Manager to ensure information is current.

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**Technical Data**

<table>
<thead>
<tr>
<th>Property (Unit)</th>
<th>Test</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrosion</td>
<td>ASTM C764</td>
<td>Pass</td>
</tr>
<tr>
<td>Critical Radiant Flux</td>
<td>ASTM E970</td>
<td>Greater than 0.12 W/cm²</td>
</tr>
<tr>
<td>Combustibility</td>
<td>ASTM E136</td>
<td>No temperature rise above 54º F (30º C)</td>
</tr>
<tr>
<td>Water Vapor Sorption (by weight)</td>
<td>ASTM C1104</td>
<td>5% maximum</td>
</tr>
<tr>
<td>Mold Growth</td>
<td>ASTM C1338</td>
<td>Pass</td>
</tr>
<tr>
<td>Surface Burning Characteristics</td>
<td>ASTM E84, CAN/ULC S102</td>
<td>25/50</td>
</tr>
</tbody>
</table>

**Surface Burning Characteristics** (flame spread/smoke developed)
Open Attic Application

<table>
<thead>
<tr>
<th>R-Value*</th>
<th>Minimum Bags/1,000 ft²</th>
<th>Maximum Coverage/Bag</th>
<th>Net Minimum Weight/ft²</th>
<th>Initial Installed Thickness</th>
<th>Minimum Settled Thickness**</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-11</td>
<td>5.3</td>
<td>188.4 ft²</td>
<td>0.152 lbs.</td>
<td>4&quot;</td>
<td>4&quot;</td>
</tr>
<tr>
<td>R-13</td>
<td>6.4</td>
<td>156.6 ft²</td>
<td>0.183 lbs.</td>
<td>4 3/4&quot;</td>
<td>4 3/4&quot;</td>
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<tr>
<td>R-19</td>
<td>9.4</td>
<td>106.6 ft²</td>
<td>0.268 lbs.</td>
<td>6 1/4&quot;</td>
<td>6 1/4&quot;</td>
</tr>
<tr>
<td>R-22</td>
<td>10.9</td>
<td>91.4 ft²</td>
<td>0.313 lbs.</td>
<td>7 1/4&quot;</td>
<td>7 1/4&quot;</td>
</tr>
<tr>
<td>R-26</td>
<td>13.2</td>
<td>75.9 ft²</td>
<td>0.377 lbs.</td>
<td>9 3/4&quot;</td>
<td>9 3/4&quot;</td>
</tr>
<tr>
<td>R-30</td>
<td>15.3</td>
<td>65.5 ft²</td>
<td>0.437 lbs.</td>
<td>10 3/4&quot;</td>
<td>10 3/4&quot;</td>
</tr>
<tr>
<td>R-38</td>
<td>19.9</td>
<td>50.2 ft²</td>
<td>0.569 lbs.</td>
<td>13&quot;</td>
<td>13&quot;</td>
</tr>
<tr>
<td>R-44</td>
<td>23.4</td>
<td>42.7 ft²</td>
<td>0.670 lbs.</td>
<td>14 3/4&quot;</td>
<td>14 3/4&quot;</td>
</tr>
<tr>
<td>R-49</td>
<td>26.3</td>
<td>38.0 ft²</td>
<td>0.753 lbs.</td>
<td>16 3/4&quot;</td>
<td>16 3/4&quot;</td>
</tr>
<tr>
<td>R-60</td>
<td>33.3</td>
<td>30.1 ft²</td>
<td>0.952 lbs.</td>
<td>19 3/4&quot;</td>
<td>19 3/4&quot;</td>
</tr>
</tbody>
</table>

To obtain an insulation resistance of:
- Number of bags per 1,000 ft² of net area should not be less than:
- Contents of this bag should not cover more than:
- Weight per ft² of installed insulation should not be less than:
- Installed insulation should not be less than:
- Installed insulation should not be less than:

Cavity Wall Application - Dense Pack

<table>
<thead>
<tr>
<th>Framing</th>
<th>Cavity Depth</th>
<th>R-Value*</th>
<th>Density</th>
<th>Bags/1,000 ft²</th>
<th>Maximum Coverage/Bag</th>
<th>Net Minimum Weight/ft²</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&quot; x 4&quot;</td>
<td>3.50*</td>
<td>R-15</td>
<td>2.2 lbs.s./ft³</td>
<td>22.4 bags</td>
<td>44.6 ft²</td>
<td>0.624 lbs.s.</td>
</tr>
<tr>
<td>2&quot; x 6&quot;</td>
<td>5.50*</td>
<td>R-23</td>
<td>2.2 lbs.s./ft³</td>
<td>35.3 bags</td>
<td>28.4 ft²</td>
<td>1.008 lbs.s.</td>
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<tr>
<td>2&quot; x 8&quot;</td>
<td>7.25*</td>
<td>R-31</td>
<td>2.2 lbs.s./ft³</td>
<td>46.5 bags</td>
<td>21.5 ft²</td>
<td>1.329 lbs.s.</td>
</tr>
<tr>
<td>2&quot; x 10&quot;</td>
<td>9.25*</td>
<td>R-39</td>
<td>2.2 lbs.s./ft³</td>
<td>59.3 bags</td>
<td>16.9 ft²</td>
<td>1.696 lbs.s.</td>
</tr>
</tbody>
</table>

Bag Net Weight - 28.6 lbs., 27.6 lbs. minimum.

Coverage and installation data were determined using a Volu-Matic® II blowing machine in 3rd gear with a 13" gate opening, 2.0 psi air pressure and 150' of 3" diameter internally-corrugated hose.

Volu-Matic® II is a registered trademark of Unisul.

Air Flow Resistance vs. Density

![Graph showing air flow resistance vs. density for different types of insulations, including EcoFill Wx, Cellulose A, Cellulose B, and Cellulose C.](image-url)
LEED Eligible Product
Use of this product may help building projects meet green building standards as set by the Leadership in Energy and Environmental Design (LEED) Green Building Rating System.

LEED v2009
MR Credit 4.1 - 4.2 Recycled Content
MR Credit 5.1 - 5.2 Regional Materials

LEED v4
Knauf Insulation offers several products for both envelope and mechanical systems that have ingredient disclosure and transparency. Please contact transparency@knaufinsulation.com for products that currently contribute to MR credits.

UL Environment GREENGUARD Certification Program
EcoFill Wx is certified to UL Environment GREENGUARD standards for low chemical emissions into indoor air during product usage.

UL Environment GREENGUARD Gold Certification Program
Knauf Insulation has achieved UL Environment GREENGUARD Gold Certification for EcoFill Wx.

This product has been tested and is certified to meet the EUCEB requirements.