CertainTeed has helped shape the building materials industry for more than 100 years with the most forward-looking insulation solutions. And from the beginning, our mission has been the same — to continually strengthen your building success.

When you partner with us, the world’s largest insulation manufacturer, you’re installing much more than trusted high-performance insulation products. You’re installing confidence into every build. Confidence you can only get from the proven leader in the building materials industry, one that has a strong heritage of backing customers with industry-leading support and a commitment to product innovation at all levels. That’s why you can Be Certain™ we’re the trusted choice for sustainable solutions that meet all kinds of insulation and business challenges.
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certainteed.com/insulation — 800-233-8990
Products to Meet Your Needs

CertainTeed mechanical and industrial fiber glass insulation products deliver exceptional energy resistance and thermal performance that results in greater comfort for building occupants, along with better acoustics and lower energy bills for building owners. Products are available in a wide range of thicknesses, with different facings to meet specific code requirements. They are designed, packaged and delivered with the needs of today’s mechanical contractor in mind.

Thermal Performance

Heat flow is defined as the transfer of energy from one area to another due to a temperature difference between the two areas. Heat always flows from the area with the higher temperature to the area with the lower temperature, unless the transfer of heat is reduced by an effective insulation system.

Delivering Air to Occupied Spaces

For most HVAC applications, sheet metal ducts are used to deliver conditioned air to occupied spaces. Conditioned air is simply air that is filtered, warmed, cooled or dehumidified to maintain comfort and good air quality in buildings.

In order to add or remove heat from occupied spaces, the conditioned air must be delivered either much warmer or colder than the air in the room. It’s important to avoid a gain or loss of thermal energy through the ductwork in order for the system to work effectively and efficiently.

Supporting Results

You need what you ordered, on the date you expect it. You need products with a high quality standard, so that you can count on them every time. And finally, you need the business support and tools that put you ahead of the competition. Through our Service Advantage and Customer Bill of Rights, we promise to deliver just that. And we pledge open and honest communications with our customers at every step, from corporate direction to every support call.
Thermal Performance
High efficiency fiber glass and spray foam insulation enable you to significantly improve the thermal performance of your buildings.

Acoustic Performance
Adding insulation helps prevent unwanted outside noise from penetrating interior spaces, and — when added to interior walls — limits transmission of noise from room to room.

Superior Moisture Protection
Beyond traditional facings, vapor retarders can help reduce the risk of mold and mildew, improving indoor air quality and providing a healthier environment for occupants. There’s also less chance you’ll be called back to deal with moisture problems.

Most ductwork is made of galvanized sheet metal and can be insulated either on the inside or the outside.

- Duct wrap is an externally installed blanket with an external vapor retarder facing to prevent condensation on the sheet metal surface.
- Duct liner is an internally installed blanket with CertainTeed’s ToughGard® NSFA facing that provides a barrier to moisture, bacteria and air erosion.

Another method for delivering air involves making a duct from fiberglass duct board, which is an accepted method for fabricating a duct system. This system provides the facing, insulation and vapor retarder all in a finished board that can be made into any shape, size or configuration desired.

Acoustic Performance
Sheet metal ductwork can act as a conduit for noise generated by fans as well as crosstalk from adjacent spaces. Duct liners are particularly effective in attenuating duct-borne sound while also providing thermal performance. Duct board systems are another good option for sound attenuation and thermal performance.

Fire Safety
Complies with ICC model building codes.
Solutions for Your Every Challenge

Inside this catalog you’ll discover how CertainTeed’s comprehensive line of mechanical and industrial insulation products can help you to meet the challenges of today’s market.

With customer service that’s second to none, we’re focused on building your business success by delivering the right products on time, every time. Through our global team of researchers and building scientists, we offer the technical support and one-on-one assistance that enables you to find the right insulation solution for every project.

To learn more about the many services we provide to our partners, talk to your CertainTeed representative or give us a call. We’re always happy to hear from you.

Condensation Control

Duct systems that are run through ceilings or walls typically carry air that is much colder than the surrounding air; if the space humidity is high enough, the duct surface may reach dewpoint and “sweat.” If the ducts sweat enough the result can be corrosion, damaged ceilings and potential for microbial growth on the wet surfaces. In the case of duct wrap, proper sealing of the exterior vapor retarder jacket with tapes or sealant systems is essential.

Sustainability

CertainTeed SI (Sustainable Insulation) products bind fibers together using organic, plant-based binder systems. These binders are designed to be a more environmentally friendly alternative to some phenolic-type binders still in use. Both sustainable and standard binders are low emitting and provide very low formaldehydes, which is a key VOC as certified under the GREENGUARD® certification. The GREENGUARD Gold standard (formerly Children & Schools Certification) provides the end-user with the assurance of lower VOCs.
Duct Wrap
Sheet metal ductwork can be insulated by providing an insulating blanket on the exterior of the duct. An insulating blanket provides resistance to heat loss or gain from the air moving through the ductwork. Duct wrap also provide a vapor retarder outer jacket, which prevents condensation inside the insulating blanket or on the duct metal surface itself. They are available in 48” or 60” widths to reduce installation costs and are available in standard or sustainable fiber glass blankets.

Duct Liner
Ductwork can also be insulated on the inside surface by using a duct liner system. The insulating blanket provides thermal resistance to temperature loss or gain from the air moving through the ductwork. One additional benefit of duct liners is the ability to provide acoustic dampening. A liner reduces noise transmitted through the ductwork from equipment, air rush or cross talk from other spaces. To protect the liner from air erosion, moisture and microbial growth, a tough flexible liner is permanently adhered to the blanket.

Duct Board
By combining the thermal insulating qualities of fiber glass blanket, an airside liner surface and an exterior vapor barrier into a single system, duct board can provide an alternative to wrapped or liner insulation. Duct board is more rigid than duct liner or duct wrap and can be easily cut, taped together and made into a rectangular duct section. When properly assembled into a system, duct board offers low leakage and can be a cost effective option to duct wrap and duct liner systems.
SoftTouch™ Duct Wrap

Blanket-type insulation composed of glass fibers bonded together with a plant-based binder system. Unfaced or faced with a foil scrim kraft (FSK) vapor retarder facing. Used to insulate rectangular and round heating, ventilating and air conditioning ductwork.

Duct Wrap

Duct wrap products provide increased thermal efficiency that reduces unwanted heat loss or gain from equipment and ductwork. This means a likely savings of energy and improved system performance. When properly installed in the correct thickness, duct wrap virtually eliminates condensation problems on cold duct surfaces.

SoftTouch™ Duct Wrap

CertainTeed offers a softer, less itchy product, SoftTouch™ Duct Wrap, in both standard and wide widths. We deliver on our commitment to improve installation performance by offering options such as unfaced wrap, an FSK and/or PSK vapor retarder facing and an integrated taping tab on one edge of faced products.

This blanket-type insulation is composed of glass fibers bonded together with a plant-based binder system.

WideWrap® Duct Wrap

All WideWrap® Duct Wrap products are engineered to insulate rectangular and round heating, ventilating and air conditioning ductwork. Constructed specifically to accommodate longer duct lengths, the 5’ widths allow for less labor, less waste and a cleaner installed appearance.

This blanket-type insulation is composed of glass fibers bonded together with a plant-based binder system.

Check with your local distributor for WideWrap availability.

SoftTouch™ Duct Wrap Thermal Performance

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>NOMINAL THICKNESS</th>
<th>R-VALUE</th>
<th>INSTALLED R-VALUE</th>
<th>K-VALUE</th>
<th>INSTALLED K-VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TYPE</td>
<td>in.</td>
<td>mm</td>
<td>h•ft•°F/Btu</td>
<td>m•°C/W</td>
</tr>
<tr>
<td>75</td>
<td>1</td>
<td>25</td>
<td>62</td>
<td>3.8</td>
<td>0.67</td>
</tr>
<tr>
<td></td>
<td>1½</td>
<td>38</td>
<td>97</td>
<td>5.2</td>
<td>0.92</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>51</td>
<td>130</td>
<td>6.9</td>
<td>1.22</td>
</tr>
<tr>
<td></td>
<td>2½</td>
<td>54</td>
<td>144</td>
<td>7.3</td>
<td>1.29</td>
</tr>
<tr>
<td></td>
<td>2¾</td>
<td>64</td>
<td>168</td>
<td>8.6</td>
<td>1.51</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>76</td>
<td>192</td>
<td>10.2</td>
<td>1.80</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>102</td>
<td>256</td>
<td>13.5</td>
<td>2.38</td>
</tr>
<tr>
<td>100</td>
<td>1</td>
<td>25</td>
<td>62</td>
<td>3.8</td>
<td>0.67</td>
</tr>
<tr>
<td></td>
<td>1½</td>
<td>38</td>
<td>97</td>
<td>5.7</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>51</td>
<td>130</td>
<td>7.6</td>
<td>1.34</td>
</tr>
<tr>
<td></td>
<td>2½</td>
<td>64</td>
<td>168</td>
<td>9.7</td>
<td>1.80</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>76</td>
<td>192</td>
<td>12.8</td>
<td>2.38</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>102</td>
<td>256</td>
<td>16.5</td>
<td>3.05</td>
</tr>
<tr>
<td>150</td>
<td>1</td>
<td>25</td>
<td>62</td>
<td>4.1</td>
<td>0.72</td>
</tr>
<tr>
<td></td>
<td>1½</td>
<td>38</td>
<td>97</td>
<td>6.2</td>
<td>1.09</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>51</td>
<td>130</td>
<td>8.3</td>
<td>1.46</td>
</tr>
</tbody>
</table>

Tested in accordance with ASTM C518 and/or ASTM C177 at 75°F (24°C) mean temperature. R means resistance to heat flow. The higher the R-value, the greater the insulating power. The installed R-value is based upon 25% compression of the product thickness during installation. To get the installed R-value, it is essential that this insulation be installed properly. If you do it yourself, follow the installation instructions carefully.
**SoftTouch™ Duct Wrap Acoustical Performance**

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>NOMINAL THICKNESS</th>
<th>TRANSMISSION LOSS (dB) AT OCTAVE BAND CENTER FREQUENCIES (Hz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE</td>
<td>FACING</td>
<td>125</td>
</tr>
<tr>
<td>75</td>
<td>FSK</td>
<td>1½</td>
</tr>
<tr>
<td></td>
<td>FSK</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>FSK</td>
<td>2½</td>
</tr>
<tr>
<td></td>
<td>FSK</td>
<td>3</td>
</tr>
<tr>
<td>100</td>
<td>FSK</td>
<td>1½</td>
</tr>
<tr>
<td></td>
<td>FSK</td>
<td>2</td>
</tr>
</tbody>
</table>

Typical sound transmission loss values for SoftTouch™ Duct Wrap on 20-gauge sheet metal when tested according to ASTM E90.

**SoftTouch™ Duct Wrap Physical Properties**

<table>
<thead>
<tr>
<th>PROPERTIES</th>
<th>PERFORMANCE</th>
<th>TEST METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Limits: Temperature</td>
<td>Unfaced: 35–450°F (1.7–232°C)</td>
<td>ASTM C411</td>
</tr>
<tr>
<td>Surface Burning Characteristics</td>
<td>Faced: 35–250°F (1.7–121°C)</td>
<td>ASTM E84, UL 723, CAN/ULC-S102</td>
</tr>
<tr>
<td>(Fire Hazard Classification)</td>
<td>Maximum: Flame Spread Index: 25 Smoke Developed Index: 50</td>
<td>ASTM C1104</td>
</tr>
<tr>
<td>Water Vapor Sorption</td>
<td>&lt; 5% by Weight</td>
<td>ASTM E96, Dessicant Method</td>
</tr>
<tr>
<td>Water Vapor Transmission</td>
<td>FSK and white FSK: 0.02 perms Gray PSK: 0.09 perms</td>
<td>ASTM C665, ASTM C1338, ASTM C1304, ASTM E136</td>
</tr>
<tr>
<td>Facing Only</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrosiveness</td>
<td>Pass</td>
<td>ASTM C665</td>
</tr>
<tr>
<td>Fungi Resistance</td>
<td>Pass</td>
<td>ASTM C1338</td>
</tr>
<tr>
<td>Odor Emissions</td>
<td>Pass</td>
<td>ASTM C1304</td>
</tr>
<tr>
<td>Noncombustible</td>
<td>Pass</td>
<td>ASTM E136</td>
</tr>
</tbody>
</table>

**SoftTouch™ Duct Wrap Typical Sizes**

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>THICKNESS</th>
<th>LENGTH</th>
<th>WIDTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>75</td>
<td>unfaced</td>
<td>1-1/2</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>unfaced</td>
<td>2</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>unfaced</td>
<td>2-1/2</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>unfaced</td>
<td>3</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>FSK/PSK</td>
<td>1-1/2</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>FSK/PSK</td>
<td>2</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>FSK/PSK</td>
<td>2-1/2</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>FSK/PSK</td>
<td>3</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>FSK/PSK</td>
<td>4</td>
<td>76</td>
</tr>
<tr>
<td>100</td>
<td>unfaced</td>
<td>1-1/2</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>FSK/PSK</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>FSK/PSK</td>
<td>1-1/2</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>FSK/PSK</td>
<td>2</td>
<td>51</td>
</tr>
<tr>
<td>150</td>
<td>FSK/PSK</td>
<td>1-1/2</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>FSK/PSK</td>
<td>2</td>
<td>51</td>
</tr>
</tbody>
</table>

Fiber glass boards, wraps and liners are safe to handle and install using standard respirators and recommended safety precautions. By reducing the generation of loose fiber and dust during normal handling, our CertainTeed product strives to improve the quality of the work environment for the installers, as well as the end-users of our products.
ToughGard® Duct Liner and Board

The ToughGard® family of duct liner and board products features CertainTeed's exclusive ToughGard facing. Designed for exceptional thermal and acoustical performance, ToughGard is a tough, durable airstream surface containing an EPA-registered antimicrobial agent to help reduce the potential of microbial growth. ToughGard's low air-friction loss and excellent thermal and acoustical insulating properties provide quiet and efficient HVAC system operation.

ToughGard® R Duct Liner

ToughGard® R rotary duct liner offers outstanding thermal and acoustical performance in duct liner applications. Composed of rotary-type glass fibers, it features a durable, moisture-resistant air stream surface with an antimicrobial agent and a sustainable base mat. Note: The antimicrobial properties are intended to only protect this product. ToughGard R absorbs unwanted crosstalk and equipment noises while helping to lower HVAC operating costs by reducing heat gain and heat loss in duct systems.

ToughGard® R Duct Liner Thermal Performance

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>THICKNESS</th>
<th>K-VALUE</th>
<th>C-VALUE</th>
<th>R-VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE</td>
<td>in.</td>
<td>mm</td>
<td>Btu/in·h·ft·°F</td>
<td>W/m·°C</td>
</tr>
<tr>
<td>● 150</td>
<td>1</td>
<td>25</td>
<td>0.24</td>
<td>0.035</td>
</tr>
<tr>
<td></td>
<td>1½</td>
<td>38</td>
<td>0.24</td>
<td>0.035</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>51</td>
<td>0.24</td>
<td>0.035</td>
</tr>
<tr>
<td>▲ 200</td>
<td>½</td>
<td>13</td>
<td>0.24</td>
<td>0.035</td>
</tr>
</tbody>
</table>

Thermal conductance (C) and resistance (R) values are derived from the material thermal conductivity (k) value. Tested in accordance with ASTM C518 and/or ASTM C177 at 70° F (24° C) mean temperature.

ToughGard® R Duct Liner Acoustical Performance

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>THICKNESS</th>
<th>ABSORPTION COEFFICIENTS AT OCTAVE BAND CENTER FREQUENCIES (HZ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE</td>
<td>in.</td>
<td>mm</td>
</tr>
<tr>
<td>● 150</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>1½</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>51</td>
</tr>
<tr>
<td>▲ 200</td>
<td>½</td>
<td>13</td>
</tr>
</tbody>
</table>

● Sustainable Insulation® (SI)
▲ Not available in Sustainable Insulation® (SI)

Sound absorption tested in accordance with ASTM C423 using Type A mounting per ASTM E795.
ToughGard® R Duct Liner Physical Properties

<table>
<thead>
<tr>
<th>PROPERTIES</th>
<th>PERFORMANCE</th>
<th>TEST METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Limits:</td>
<td>Maximum:</td>
<td>ASTM C411,</td>
</tr>
<tr>
<td>Temperature</td>
<td>250°F (121°C)</td>
<td>ASTM C1071, UL 181</td>
</tr>
<tr>
<td>Air Velocity</td>
<td>6000 fpm (30.5 m/s)</td>
<td></td>
</tr>
<tr>
<td>Surface Burning Characteristics</td>
<td>Maximum: Flame Spread Index: 25</td>
<td>ASTM E84, UL 723, CAN/ULC-S102</td>
</tr>
<tr>
<td>(Fire Hazard Classification)</td>
<td>Smoke Developed Index: 50</td>
<td></td>
</tr>
<tr>
<td>Water Vapor Sorption</td>
<td>≤ 3% by Weight</td>
<td>ASTM C1104</td>
</tr>
<tr>
<td>Corrosion Resistance</td>
<td>Pass</td>
<td>ASTM C665</td>
</tr>
<tr>
<td>Fungi Resistance</td>
<td>Pass; No growth</td>
<td>ASTM C1338, ASTM G21</td>
</tr>
<tr>
<td>Bacteria Resistance</td>
<td>No growth</td>
<td>NFPA 259</td>
</tr>
<tr>
<td>Limited Combustible</td>
<td>&lt; 3500 Btu/lb</td>
<td></td>
</tr>
<tr>
<td>Water Repellency Rating</td>
<td>≥ 4</td>
<td>INDA IST 80.6 – 92</td>
</tr>
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</table>

ToughGard® R Duct Liner Typical Sizes

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>DENSITY</th>
<th>NOMINAL THICKNESS</th>
<th>LENGTH</th>
<th>WIDTH*</th>
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<tbody>
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<td>pcf</td>
<td>in.</td>
<td>mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>mm</td>
<td></td>
</tr>
<tr>
<td>● 150</td>
<td></td>
<td>1.5 (24 kg/m3)</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>● 1½</td>
<td></td>
<td></td>
<td>1½</td>
<td>38</td>
</tr>
<tr>
<td>● 2</td>
<td></td>
<td></td>
<td>2</td>
<td>51</td>
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<tr>
<td>● 2½</td>
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<td></td>
<td>2½</td>
<td>70</td>
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<tr>
<td>● 3</td>
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<td>75</td>
</tr>
<tr>
<td>● 3½</td>
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<td></td>
<td>3½</td>
<td>90</td>
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<td>● 4</td>
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<td>100</td>
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<td>115</td>
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<td>125</td>
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<tr>
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<td>5½</td>
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<td>6</td>
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<td>● 6½</td>
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<td>● 7</td>
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<td>7</td>
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<tr>
<td>● 7½</td>
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<td></td>
<td>7½</td>
<td>190</td>
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<tr>
<td>● 8</td>
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<td>200</td>
</tr>
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<td>● 8½</td>
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<td></td>
<td>8½</td>
<td>215</td>
</tr>
<tr>
<td>● 9</td>
<td></td>
<td></td>
<td>9</td>
<td>225</td>
</tr>
<tr>
<td>● 9½</td>
<td></td>
<td></td>
<td>9½</td>
<td>240</td>
</tr>
</tbody>
</table>

*In 1/4” (6mm) increments. Not all widths between 34” (864 mm) and 72” (1829 mm) are standard; please contact CertainTeed for standard sizes.

● Sustainable Insulation® (SI)
▲ Not available in Sustainable Insulation® (SI)
Indoor Air Quality (IAQ) and Duct Liners

Duct liners provide the dual benefit of thermal as well as acoustic performance in a single cost-effective product. Liners have become more common over the years as automated coil lines install liners in a more cost-effective manner.

Liners have evolved over the years as well, reducing the potential for erosion of the fiber glass liner at the surface from the air velocity and turbulence present inside a duct system. To virtually eliminate this problem, CertainTeed developed the ToughGard® liner facing. The glass tissue facing provides a reinforced liner shield that is permanently bonded into the fiber mat. Air erosion and liner deterioration is a thing of the past.

Another problem can present itself in duct systems that are made wet from poorly designed or maintained HVAC air handling equipment. Commonly known as moisture carryover, the liners can get wet and provide a surface for microbial growth, molds, etc. The ToughGard coating system not only repels moisture but is made with an EPA registered anti-microbial agent that will not support growth should the liner surface become wet.

Providing high quality liners is only part of good system design. Proper air apparatus design is essential in any duct system. Improper filtration and condensation control can create IAQ problems even with unlined ductwork.

ToughGard® T Textile Duct Liner

With its superior thermal-insulating properties, this duct liner features an extremely tough and durable fire-resistant black composite air stream surface that repels water and prevents it from seeping into the fiber glass. Engineered to enhance thermal performance, ToughGard® T’s long, textile-type glass fibers are firmly bonded together with a thermosetting resin so efficient that noise is trapped and dissipated within the glass fiber matrix.

ToughGard® T Duct Liner Physical Properties

<table>
<thead>
<tr>
<th>PROPERTIES</th>
<th>PERFORMANCE</th>
<th>TEST METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Limits:</td>
<td>Maximum:</td>
<td>ASTM C411, ASTM C1071</td>
</tr>
<tr>
<td>Temperature</td>
<td>250°F (121°C)</td>
<td></td>
</tr>
<tr>
<td>Air Velocity</td>
<td>6000 fpm (30.5 m/s)</td>
<td></td>
</tr>
<tr>
<td>Surface Burning Characteristics</td>
<td>Maximum:</td>
<td>NFPA 255, ASTM E84, UL 723, CAN/ULC-S102-M88</td>
</tr>
<tr>
<td>(Fire Hazard Classification)</td>
<td>Flame Spread Index: 25</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Smoke Developed Index: 50</td>
<td></td>
</tr>
<tr>
<td>Water Vapor Sorption</td>
<td>≤ 3% by Weight</td>
<td>ASTM C1104</td>
</tr>
<tr>
<td>Corrosiveness</td>
<td>Pass</td>
<td>ASTM C665</td>
</tr>
<tr>
<td>Fungi Resistance</td>
<td>Pass; No growth</td>
<td>ASTM C1338, ASTM G21</td>
</tr>
<tr>
<td>Bacteria Resistance</td>
<td>No growth</td>
<td>ASTM G22</td>
</tr>
<tr>
<td>Limited Combustible</td>
<td>Pass (&lt; 3500 Btu/lb)</td>
<td>NFPA 259</td>
</tr>
<tr>
<td>Water Repellency</td>
<td>≥ 4</td>
<td>INDA IST 80.6-92</td>
</tr>
</tbody>
</table>

NOTE: Not available in Sustainable Insulation® (SI)
### ToughGard® Duct Liner Typical Sizes

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>DENSITY</th>
<th>NOMINAL THICKNESS</th>
<th>LENGTH</th>
<th>WIDTH*</th>
</tr>
</thead>
<tbody>
<tr>
<td>150</td>
<td>1.6 (24 kg/m³)</td>
<td>1 25</td>
<td>50–100</td>
<td>24–72</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1½ 38</td>
<td>100</td>
<td>24–72</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 51</td>
<td>50</td>
<td>24–72</td>
</tr>
<tr>
<td>200</td>
<td>2.0 (32 kg/m³)</td>
<td>1 25</td>
<td>50–100</td>
<td>24–72</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1½ 38</td>
<td>100</td>
<td>24–72</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 51</td>
<td>50</td>
<td>24–72</td>
</tr>
<tr>
<td>300</td>
<td>3.0 (48 kg/m³)</td>
<td>1 25</td>
<td>50–100</td>
<td>24–72</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1½ 38</td>
<td>100</td>
<td>24–72</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 51</td>
<td>50</td>
<td>24–72</td>
</tr>
</tbody>
</table>

*In 1/4" (6mm) increments. Not all widths between 24" (610 mm) and 72" (1829 mm) are standard; please contact CertainTeed for standard sizes.
ToughGard® Ultra*Round™ Spiral Duct Liner

For increased performance, ToughGard® Ultra*Round™ reduces heat gain or loss while absorbing unwanted crosstalk, equipment and air rush noise. This acoustical and thermal insulation is designed specifically to line the interior of spiral and round sheet metal ducts and plenums in HVAC systems. Fabrication and installation is simplified in the shop or on the job and may eliminate the need for pins and adhesives in most straight duct sections. Compared to double wall systems, ToughGard Ultra*Round installation costs are lower, weight is reduced and acoustical performance is improved.

ToughGard® Ultra*Round™ Spiral Duct Liner Thermal Performance

<table>
<thead>
<tr>
<th>THICKNESS</th>
<th>K-VALUE</th>
<th>C-VALUE</th>
<th>R-VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>in.</td>
<td>mm</td>
<td>Btu/in/h•ft•°F</td>
<td>W/m•°C</td>
</tr>
<tr>
<td>1</td>
<td>25</td>
<td>0.23</td>
<td>0.033</td>
</tr>
<tr>
<td>1½</td>
<td>38</td>
<td>0.23</td>
<td>0.033</td>
</tr>
<tr>
<td>2</td>
<td>50</td>
<td>0.23</td>
<td>0.033</td>
</tr>
</tbody>
</table>

Thermal conductance (C) and resistance (R) values are derived from the material thermal conductivity (k) value. Tested in accordance with ASTM C518 and/or ASTM C177 at 75° F (24° C) mean temperature.

ToughGard® Ultra*Round™ Spiral Duct Liner Acoustical Performance

<table>
<thead>
<tr>
<th>THICKNESS</th>
<th>ABSORPTION COEFFICIENTS AT OCTAVE BAND CENTER FREQUENCIES (HZ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>in.</td>
<td>mm</td>
</tr>
<tr>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>1½</td>
<td>38</td>
</tr>
<tr>
<td>2</td>
<td>51</td>
</tr>
</tbody>
</table>

Sound absorption tested in accordance with ASTM C423 using Type A mounting per ASTM E795.

ToughGard® Ultra*Round™ Spiral Duct Liner Available Sizes

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>THICKNESS</th>
<th>DIMENSIONS</th>
<th>INTERIOR DIMENSIONS</th>
<th>R-VALUES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>in.</td>
<td>mm</td>
<td>in.</td>
<td>mm</td>
</tr>
<tr>
<td>SD</td>
<td>1</td>
<td>25</td>
<td>48 X 120</td>
<td>1219 X 3048</td>
</tr>
<tr>
<td></td>
<td>1½</td>
<td>38</td>
<td>48 X 120</td>
<td>1219 X 3048</td>
</tr>
<tr>
<td>LD</td>
<td>1½</td>
<td>38</td>
<td>48 X 120</td>
<td>1219 X 3048</td>
</tr>
<tr>
<td>SD</td>
<td>2</td>
<td>50</td>
<td>48 X 120</td>
<td>1219 X 3048</td>
</tr>
</tbody>
</table>
**ToughGard® Rigid Liner Board**

Developed to line large sheet metal ducts and plenums, this rigid, board-type insulation consists of black resin-bonded glass fibers with a smooth, durable black mat facing applied to the air stream surface. Perfect for applications where the ToughGard® surface is desired on a black fiber glass base mat.

**ToughGard® Rigid Liner Board Thermal Performance**

<table>
<thead>
<tr>
<th>THICKNESS</th>
<th>K-VALUE</th>
<th>C-VALUE</th>
<th>R-VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>($\text{Btu} \cdot \text{in}/\text{h} \cdot \text{ft}^2 \cdot ^\circ\text{F}$)</td>
<td>($\text{W/m} \cdot ^\circ\text{C}$)</td>
<td>($\text{Btu}/\text{h} \cdot \text{ft}^2 \cdot ^\circ\text{F}$)</td>
</tr>
<tr>
<td>in.</td>
<td>mm</td>
<td>125</td>
<td>250</td>
</tr>
<tr>
<td>1</td>
<td>25</td>
<td>0.23</td>
<td>0.033</td>
</tr>
<tr>
<td>1½</td>
<td>38</td>
<td>0.23</td>
<td>0.033</td>
</tr>
<tr>
<td>2</td>
<td>51</td>
<td>0.23</td>
<td>0.033</td>
</tr>
</tbody>
</table>

Thermal conductance (C) and resistance (R) values are derived from the material thermal conductivity (k) value. Tested in accordance with ASTM C518 and/or ASTM C177 at 75°F (24°C) mean temperature.

**ToughGard® Rigid Liner Board Acoustical Performance**

<table>
<thead>
<tr>
<th>THICKNESS</th>
<th>ABSORPTION COEFFICIENTS AT OCTAVE BAND CENTER FREQUENCIES (Hz)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>125</td>
</tr>
<tr>
<td>in.</td>
<td>mm</td>
</tr>
<tr>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>1½</td>
<td>38</td>
</tr>
<tr>
<td>2</td>
<td>51</td>
</tr>
</tbody>
</table>

Sound absorption tested in accordance with ASTM C423 using Type A mounting per ASTM E795.

**ToughGard® Rigid Liner Board Typical Sizes**

<table>
<thead>
<tr>
<th>WIDTH</th>
<th>LENGTH</th>
<th>NOMINAL THICKNESS</th>
<th>DENSITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>in.</td>
<td>mm</td>
<td>in.</td>
<td>mm</td>
</tr>
<tr>
<td>24–48</td>
<td>610–1219</td>
<td>48–120</td>
<td>1219–3048</td>
</tr>
<tr>
<td>24–48</td>
<td>610–1219</td>
<td>48–120</td>
<td>1219–3048</td>
</tr>
<tr>
<td>24–48</td>
<td>610–1219</td>
<td>48–120</td>
<td>1219–3048</td>
</tr>
</tbody>
</table>

*NOTE: Contact CertainTeed for minimum order quantities and availability.*
ToughGard® BMC Liner Board  
Also suitable for acoustical and thermal lining of large sheet metal ducts and plenums, this rigid board-type insulation consists of yellow resin-bonded glass fibers with a smooth, durable black mat facing applied to the air stream surface. Perfect for applications where the ToughGard® surface is desired on a yellow fiber glass base mat.

ToughGard® Duct Board  
Designed for fabrication into supply and return air ductwork, this lightweight duct board is easy to install. Tough, durable and easy to clean, the fire-resistant black composite air stream surface and built-in vapor retarder resists microbial growth, thereby reducing the chance of condensation damage. ToughGard® Duct Board is made of resin-bonded glass fibers with a reinforced foil laminate air barrier/vapor retarder facing applied to the outside surface. The low leakage rate and increased thermal and acoustical properties improve the overall quality of the indoor environment while delivering increased energy savings.
### ToughGard® Duct Board Thermal Performance

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>THICKNESS</th>
<th>K-VALUE</th>
<th>C-VALUE</th>
<th>R-VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>EI</td>
<td>in.</td>
<td>mm</td>
<td>Btu/in/h•ft•°F</td>
<td>W/m•°C</td>
</tr>
<tr>
<td>475</td>
<td>1</td>
<td>25</td>
<td>0.23</td>
<td>0.033</td>
</tr>
<tr>
<td>800</td>
<td>1⅝</td>
<td>38</td>
<td>0.23</td>
<td>0.033</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>51</td>
<td>0.23</td>
<td>0.033</td>
</tr>
</tbody>
</table>

Thermal conductance (C) and resistance (R) values are derived from the material thermal conductivity (k) value. Tested in accordance with ASTM C518 and/or ASTM C177 at 75°F (24°C) mean temperature.

### ToughGard® Duct Board Acoustical Performance

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>THICKNESS</th>
<th>ABSORPTION COEFFICIENTS AT OCTAVE BAND CENTER FREQUENCIES (HZ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EI</td>
<td>in.</td>
<td>125</td>
</tr>
<tr>
<td>475</td>
<td>1</td>
<td>0.07</td>
</tr>
<tr>
<td>800</td>
<td>1⅝</td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0.17</td>
</tr>
</tbody>
</table>

Sound Absorption tested in accordance with ASTM C423 using Type A mounting per ASTM E795.

### ToughGard® Duct Board Physical Properties

<table>
<thead>
<tr>
<th>PROPERTIES</th>
<th>PERFORMANCE</th>
<th>TEST METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Leakage Class</td>
<td>SMACNA Class 6</td>
<td>SMACNA HVAC Air Duct Leakage Test Manual</td>
</tr>
<tr>
<td>Operating Limits:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature Pressure Air</td>
<td>Maximum: 250°F (121°C)</td>
<td>ASTM C411, UL 181</td>
</tr>
<tr>
<td>Velocity</td>
<td>±2” w.g. (51m)</td>
<td>UL 181</td>
</tr>
<tr>
<td>Surface Burning Characteristics (Fire Hazard Classification)</td>
<td>Maximum: Flame Spread Index: 25 Smoke Developed Index: 50</td>
<td>ASTM E84, UL 723</td>
</tr>
<tr>
<td>Water Vapor Sorption</td>
<td>≤ 2% by Weight</td>
<td>ASTM C1104</td>
</tr>
<tr>
<td>Water Vapor Transmission</td>
<td>0.02 perms</td>
<td>ASTM E96, Dessicant Method</td>
</tr>
<tr>
<td>(Facing only)</td>
<td></td>
<td>UL 181, ASTM C665</td>
</tr>
<tr>
<td>Corrosiveness</td>
<td>Pass</td>
<td>ASTMG 22</td>
</tr>
<tr>
<td>Fungi Resistance</td>
<td>Pass; No growth</td>
<td>ASTMG 21, UL 181, ASTM C1338</td>
</tr>
<tr>
<td>Bacteria Resistance</td>
<td>No growth</td>
<td></td>
</tr>
<tr>
<td>Limited Combustible</td>
<td>&lt; 3500 Btu/lb</td>
<td>NFPA 259</td>
</tr>
<tr>
<td>Water Repellency Rating</td>
<td>≥ 4</td>
<td>INDA IST 80.6-92</td>
</tr>
</tbody>
</table>

NOTE: Refer to the next section for Typical Sizes.
Ultra*Duct™ Black Duct Board

Easy to fabricate and install, this durable, lightweight duct board is made from resin-bonded glass fibers. Decreases the chance of condensation damage with an exterior reinforced foil laminate air barrier/vapor retarder facing and a textile fiber glass non-woven mat bonding to the air stream surface. Exceptional thermal efficiency and low leakage rate improve the overall quality of the indoor environment while lowering operating costs. High-performance properties make this ductwork perfect for both residential and commercial heating, ventilating and air-conditioning systems.

Ultra*Duct™ Black Duct Board Physical Properties

<table>
<thead>
<tr>
<th>PROPERTIES</th>
<th>PERFORMANCE</th>
<th>TEST METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Leakage Class</td>
<td>SMACNA Class 6</td>
<td>SMACNA HVAC Air Duct Leakage Test Manual</td>
</tr>
<tr>
<td>Operating Limits:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air Velocity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface Burning Characteristics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Fire Hazard Classification)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Vapor Sorption</td>
<td>≤ 2% by Weight</td>
<td>ASTM C1104</td>
</tr>
<tr>
<td>Water Vapor Transmission (Facing only)</td>
<td>0.02 perms</td>
<td>ASTM E96, Dessicant Method</td>
</tr>
<tr>
<td>Corrosion Resistance</td>
<td>Pass</td>
<td>UL 181, ASTM G665</td>
</tr>
<tr>
<td>Fungi Resistance</td>
<td>Pass; No growth</td>
<td>ASTM G21, UL 181, ASTM C1338</td>
</tr>
<tr>
<td>Bacteria Resistance</td>
<td>No growth</td>
<td>ASTM G22</td>
</tr>
<tr>
<td>Limited Combustible</td>
<td>Pass (&lt; 3500 Btu/lb)</td>
<td>NFPA 259</td>
</tr>
</tbody>
</table>
Ultra*Duct™ Black Duct Board Thermal Performance

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>THICKNESS</th>
<th>K-VALUE</th>
<th>C-VALUE</th>
<th>R-VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>EI</td>
<td>in.</td>
<td>mm</td>
<td>Btu•in/h•ft•°F</td>
<td>W/m•°C</td>
</tr>
<tr>
<td>475</td>
<td>1 25</td>
<td>0.23</td>
<td>0.033</td>
<td>0.23</td>
</tr>
<tr>
<td>800</td>
<td>1½ 38</td>
<td>0.23</td>
<td>0.033</td>
<td>0.15</td>
</tr>
<tr>
<td></td>
<td>2 51</td>
<td>0.23</td>
<td>0.033</td>
<td>0.12</td>
</tr>
</tbody>
</table>

Thermal conductance (C) and resistance (R) values are derived from the material thermal conductivity (k) value.
Tested in accordance with ASTM C518 and/or ASTM C177 at 75°F (24°C) mean temperature.

Ultra*Duct™ Black Duct Board Acoustical Performance

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>THICKNESS</th>
<th>ABSORPTION COEFFICIENTS AT OCTAVE BAND CENTER FREQUENCIES (HZ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EI</td>
<td>in.</td>
<td>mm</td>
</tr>
<tr>
<td>475</td>
<td>1 25</td>
<td>0.04</td>
</tr>
<tr>
<td>800</td>
<td>1 25</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>1½ 38</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td>2 51</td>
<td>0.17</td>
</tr>
</tbody>
</table>

Sound absorption tested in accordance with ASTM C423 using Type A mounting per ASTM E795.

ToughGard® and Ultra*Duct™ Black Duct Board Typical Sizes

<table>
<thead>
<tr>
<th>PRODUCT TYPES</th>
<th>THICKNESS</th>
<th>WIDTH</th>
<th>LENGTH</th>
<th>NO. BOARDS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>in.</td>
<td>mm</td>
<td>in.</td>
<td>mm</td>
</tr>
<tr>
<td>475</td>
<td>Shiplap or Butt Edge</td>
<td>1 25</td>
<td>48</td>
<td>1219</td>
</tr>
<tr>
<td></td>
<td>Shiplap or Butt Edge</td>
<td>1 25</td>
<td>48</td>
<td>1219</td>
</tr>
<tr>
<td>800</td>
<td>Shiplap or Butt Edge</td>
<td>1 25</td>
<td>48</td>
<td>1219</td>
</tr>
<tr>
<td></td>
<td>Shiplap or Butt Edge</td>
<td>1½ 38</td>
<td>48</td>
<td>1219</td>
</tr>
<tr>
<td></td>
<td>Shiplap or Butt Edge</td>
<td>1½ 38</td>
<td>48</td>
<td>1219</td>
</tr>
<tr>
<td></td>
<td>Butt Edge</td>
<td>2 51</td>
<td>48</td>
<td>1219</td>
</tr>
</tbody>
</table>

NOTE: Contact CertainTeed for minimum order quantities and availability.
CortaPro® Acoustic Products

CortaPro® fiber glass acoustic insulation is specifically designed for theaters, sound studios and other interior spaces where sound quality is of paramount importance.

CortaPro® AcoustaBlanket™ Black

This fiber glass blanket has an abuse-resistant surface and is used for applications requiring black sound-absorbing insulation. AcoustaBlanket™ Black is flexible for easy fabrication and installation on irregular surfaces. It improves acoustics in theaters, sound studios and entertainment facilities — and is ideal for interiors that are meant to be dark. AcoustaBlanket Black carries a Class A/Class I fire hazard classification of 25/50 for exposed applications.

CortaPro® AcoustaBlanket™ Black Typical Sizes

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>THICKNESS</th>
<th>WIDTH</th>
<th>LENGTH</th>
<th>R-VALUES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TYPE</td>
<td>DENSITY</td>
<td>in.</td>
<td>mm</td>
</tr>
<tr>
<td>150</td>
<td>1.5 pcf (24 kg/m³)</td>
<td>1</td>
<td>25</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>1.5 pcf (24 kg/m³)</td>
<td>1½</td>
<td>38</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>1.5 pcf (24 kg/m³)</td>
<td>2</td>
<td>51</td>
<td>48</td>
</tr>
<tr>
<td>200</td>
<td>2.0 pcf (32 kg/m³)</td>
<td>½</td>
<td>13</td>
<td>48</td>
</tr>
</tbody>
</table>

Acoustic Applications

Sound quality is as important as thermal comfort in occupied spaces. It’s a prime concern for both designers and end-users of buildings. Theaters and libraries would be great examples of acoustically sensitive buildings, but schools, offices and retail spaces increasingly demand a higher standard of sound quality.

Fiber glass blankets and boards provide superior sound-absorbing benefits without special treatment for fire or smoke considerations. Installation of acoustic fiber glass mat can be behind a porous surface or directly applied to walls or ceilings. Available with a black mat and surface, these products are unobtrusive treatments for controlling and attenuating sound.

Duct liners are excellent products for both thermal and acoustic treatment of air systems, since the liner absorbs sound that would transmit through the ductwork.
CertaPro® AcoustaBoard™ Black

This rigid fiber glass board is used for applications requiring an exposed black faced sound-absorbing insulation. AcoustaBoard™ Black has an abuse-resistant nonwoven facing that is fully bonded to the insulation; delamination is not an issue. It is widely used to improve acoustics in theaters, sound studios and entertainment facilities — controlling reverberation time, reducing noise levels and eliminating echoes — and is ideal for interiors that are meant to be dark. It is lightweight, easy to fabricate and install, and carries a Class A/Class I fire hazard classification of 25/50 for exposed applications.

CertaPro® AcoustaBoard™ Black Acoustical Performance

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>THICKNESS</th>
<th>125</th>
<th>250</th>
<th>500</th>
<th>1000</th>
<th>2000</th>
<th>4000</th>
<th>NRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>225</td>
<td>1</td>
<td>0.06</td>
<td>0.30</td>
<td>0.58</td>
<td>0.85</td>
<td>0.91</td>
<td>0.94</td>
<td>0.65</td>
</tr>
<tr>
<td></td>
<td>1½</td>
<td>0.12</td>
<td>0.48</td>
<td>0.83</td>
<td>0.90</td>
<td>0.90</td>
<td>0.89</td>
<td>0.80</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0.20</td>
<td>0.72</td>
<td>1.08</td>
<td>1.04</td>
<td>1.01</td>
<td>0.98</td>
<td>0.95</td>
</tr>
<tr>
<td>300</td>
<td>1</td>
<td>0.05</td>
<td>0.26</td>
<td>0.69</td>
<td>0.89</td>
<td>0.92</td>
<td>0.96</td>
<td>0.70</td>
</tr>
<tr>
<td></td>
<td>1½</td>
<td>0.10</td>
<td>0.51</td>
<td>0.89</td>
<td>0.95</td>
<td>0.92</td>
<td>0.93</td>
<td>0.80</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0.17</td>
<td>0.76</td>
<td>1.05</td>
<td>1.02</td>
<td>0.95</td>
<td>0.96</td>
<td>0.95</td>
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</table>

Sound absorption tested in accordance with ASTM C423 using Type A mounting per ASTM E795.

CertaPro® AcoustaBoard™ Black Typical Sizes

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>THICKNESS</th>
<th>DIMENSIONS</th>
<th>DENSITIES</th>
<th>R-VALUES</th>
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<tbody>
<tr>
<td>225</td>
<td>1</td>
<td>24 x 48</td>
<td>610 x 1219</td>
<td>2.25</td>
</tr>
<tr>
<td></td>
<td>1½</td>
<td>24 x 48</td>
<td>610 x 1219</td>
<td>2.25</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>24 x 48</td>
<td>610 x 1219</td>
<td>2.25</td>
</tr>
<tr>
<td>300</td>
<td>1</td>
<td>48 x 96</td>
<td>1219 x 2438</td>
<td>3.00</td>
</tr>
<tr>
<td></td>
<td>1½</td>
<td>48 x 96</td>
<td>1219 x 2438</td>
<td>3.00</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>48 x 96</td>
<td>1219 x 2438</td>
<td>3.00</td>
</tr>
</tbody>
</table>
CertaPro® Board

Composed of resin-bonded glass fibers in a range of densities, CertaPro® board can be used to add both thermal insulation and sound absorption to interior spaces. CertaPro board stiffness ranges from rigid to more flexible for curved and/or sharp-edged applications. It is available unfaced, for use where an exterior finish will be applied, or faced with a vapor retardant finish in either a clean metallic (FSK) or attractive white (ASJ) surface. CertaPro boards are easy to cut to size and shape and to install. Additionally, unfaced and FSK faced CertaPro board are compliant where a fire hazard classification of 25/50 is required, can be used for exposed or non-exposed applications, resist mold and mildew, and will not rot or deteriorate.

CertaPro® Board Available Sizes and Thermal Performance

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>THICKNESS</th>
<th>DENSITY</th>
<th>THERMAL RESISTANCE</th>
<th>THERMAL CONDUCTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE</td>
<td>in.</td>
<td>mm</td>
<td>lb/ft²</td>
<td>Kg/m²</td>
</tr>
<tr>
<td>CB 110</td>
<td>1½</td>
<td>38</td>
<td>1.1</td>
<td>17.57</td>
</tr>
<tr>
<td></td>
<td>3½</td>
<td>89</td>
<td>1.1</td>
<td>17.57</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>153</td>
<td>1.1</td>
<td>17.57</td>
</tr>
<tr>
<td>CB 150</td>
<td>1½</td>
<td>38</td>
<td>1.50</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>51</td>
<td>1.50</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>2½</td>
<td>64</td>
<td>1.50</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>76</td>
<td>1.50</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>3½</td>
<td>89</td>
<td>1.50</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>102</td>
<td>1.50</td>
<td>24</td>
</tr>
<tr>
<td>CB 180</td>
<td>1½</td>
<td>38</td>
<td>1.80</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>51</td>
<td>1.80</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>2½</td>
<td>64</td>
<td>1.80</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>76</td>
<td>1.80</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>3½</td>
<td>89</td>
<td>1.80</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>102</td>
<td>1.80</td>
<td>24</td>
</tr>
<tr>
<td>CB 225</td>
<td>1</td>
<td>25</td>
<td>2.25</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>1½</td>
<td>38</td>
<td>2.25</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>51</td>
<td>2.25</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>2½</td>
<td>64</td>
<td>2.25</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>76</td>
<td>2.25</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>3½</td>
<td>89</td>
<td>2.25</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>102</td>
<td>2.25</td>
<td>36</td>
</tr>
<tr>
<td>CB 250</td>
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<td>2.50</td>
<td>40</td>
</tr>
<tr>
<td></td>
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<td>51</td>
<td>2.50</td>
<td>40</td>
</tr>
<tr>
<td>CB 300</td>
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<td>25</td>
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<td>48</td>
</tr>
<tr>
<td></td>
<td>1½</td>
<td>38</td>
<td>3.00</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>51</td>
<td>3.00</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>2½</td>
<td>64</td>
<td>3.00</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>76</td>
<td>3.00</td>
<td>48</td>
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<tr>
<td></td>
<td>3½</td>
<td>89</td>
<td>3.00</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>102</td>
<td>3.00</td>
<td>48</td>
</tr>
<tr>
<td>CB 450</td>
<td>1</td>
<td>25</td>
<td>4.50</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>51</td>
<td>4.50</td>
<td>72</td>
</tr>
<tr>
<td>CB 600</td>
<td>1</td>
<td>25</td>
<td>6.00</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td>1½</td>
<td>38</td>
<td>6.00</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>51</td>
<td>6.00</td>
<td>96</td>
</tr>
</tbody>
</table>

All Service Jacket (ASJ) is not available in Type CB 150.
CB 110, 150 and 600 are not available in FSK, WMP or ASJ facings.
### CertaPro® Board Acoustical Performance

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>THICKNESS</th>
<th>ABSORPTION COEFFICIENTS @ OCTAVE BAND FREQUENCY (Hz)</th>
<th>NRC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>125</td>
<td>250</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>mm</td>
<td></td>
</tr>
<tr>
<td>CB 110</td>
<td>1 ½</td>
<td>37</td>
<td>0.25</td>
</tr>
<tr>
<td></td>
<td>3/8</td>
<td>95</td>
<td>0.55</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>153</td>
<td>1.09</td>
</tr>
<tr>
<td>CB 150</td>
<td>1 ½</td>
<td>38</td>
<td>0.19</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>51</td>
<td>0.23</td>
</tr>
<tr>
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<td>2 ½</td>
<td>64</td>
<td>0.41</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>76</td>
<td>0.41</td>
</tr>
<tr>
<td></td>
<td>3 ½</td>
<td>89</td>
<td>0.60</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>102</td>
<td>0.64</td>
</tr>
<tr>
<td>CB 180</td>
<td>2 ½</td>
<td>64</td>
<td>0.41</td>
</tr>
<tr>
<td>CB 225</td>
<td>1</td>
<td>25</td>
<td>0.06</td>
</tr>
<tr>
<td></td>
<td>1 ½</td>
<td>38</td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>51</td>
<td>0.22</td>
</tr>
<tr>
<td></td>
<td>2 ½</td>
<td>64</td>
<td>0.31</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>76</td>
<td>0.34</td>
</tr>
<tr>
<td></td>
<td>3 ½</td>
<td>89</td>
<td>0.54</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>102</td>
<td>0.70</td>
</tr>
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<td>25</td>
<td>0.05</td>
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<tr>
<td></td>
<td>2</td>
<td>51</td>
<td>0.21</td>
</tr>
<tr>
<td>CB 300</td>
<td>1</td>
<td>25</td>
<td>0.08</td>
</tr>
<tr>
<td></td>
<td>1 ½</td>
<td>38</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>51</td>
<td>0.21</td>
</tr>
<tr>
<td></td>
<td>2 ½</td>
<td>64</td>
<td>0.31</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>76</td>
<td>0.41</td>
</tr>
<tr>
<td></td>
<td>3 ½</td>
<td>89</td>
<td>0.72</td>
</tr>
<tr>
<td></td>
<td>4</td>
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<td>0.75</td>
</tr>
<tr>
<td>CB 450</td>
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<td>25</td>
<td>0.09</td>
</tr>
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<td></td>
<td>2</td>
<td>51</td>
<td>0.32</td>
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<tr>
<td>CB 600</td>
<td>1</td>
<td>25</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>1 ½</td>
<td>38</td>
<td>0.17</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>51</td>
<td>0.31</td>
</tr>
</tbody>
</table>

*Estimated sound absorption coefficients and NRC. Sound absorption tested in accordance with ASTM C423 using Type A mounting per ASTM E795.

### CertaPro® Board Physical Properties

<table>
<thead>
<tr>
<th>PROPERTIES</th>
<th>PERFORMANCE</th>
<th>TEST METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Limits</td>
<td>Up to 250°F (faced) or 450°F (unfaced)</td>
<td>ASTM C411</td>
</tr>
<tr>
<td>Surface Burning Characteristics</td>
<td>Maximum: Flame Spread Index 25; Smoke Developed Index 50</td>
<td>ASTM E84, UL 723, NFPA 255</td>
</tr>
<tr>
<td>Vibration Resistance</td>
<td>Will not crack, split, shrink, or crumble</td>
<td>ASTM C1139</td>
</tr>
<tr>
<td>Moisture Absorption</td>
<td>&lt; 5% by Weight</td>
<td>ASTM C1104</td>
</tr>
<tr>
<td>Fungi Resistance</td>
<td>Pass</td>
<td>ASTM C1338</td>
</tr>
<tr>
<td>Odor Emissions</td>
<td>Pass</td>
<td>ASTM C1304</td>
</tr>
<tr>
<td>Water Transmission (Facing Only)</td>
<td>.02 Perms</td>
<td>ASTM E96, Dessicant Method</td>
</tr>
<tr>
<td>Limited Combustible</td>
<td>Pass (&lt; 3500 Btu/lb)</td>
<td>NFPA 259</td>
</tr>
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</table>
CrimpWrap® Crimped Pipe and Tank Wrap

CrimpWrap® provides the thermal and compressible properties of rigid insulation board in a unique flexible blanket of variably oriented glass fibers firmly bonded together with a thermosetting resin. Available with either Foil Scrim (FS) or white ASJ vapor retarder facings, CrimpWrap can control heat loss or gain on large diameter piping and equipment more economically than molded insulation. Insulating vessels and pipes with service temperatures from 35°F to 850°F (2°C to 454°C), CrimpWrap also provides hot surface protection for personnel during system operation.

CrimpWrap® Thermal Performance

<table>
<thead>
<tr>
<th>MEAN TEMPERATURE (in. &amp; mm)</th>
<th>APPARENT THERMAL CONDUCTIVITY (Btu•h•ft•°F/W•m•°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 25</td>
<td>0.24 0.035</td>
</tr>
<tr>
<td>1½ 38</td>
<td>0.24 0.035</td>
</tr>
<tr>
<td>2 51</td>
<td>0.24 0.035</td>
</tr>
<tr>
<td>½ 13</td>
<td>0.24 0.035</td>
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</tbody>
</table>

CrimpWrap® Physical Properties

<table>
<thead>
<tr>
<th>PROPERTIES</th>
<th>PERFORMANCE</th>
<th>TEST METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Use Temperature (See Limitations)</td>
<td>850°F (454°C)</td>
<td>ASTM C411</td>
</tr>
<tr>
<td>Water Vapor Sorption Maximum % by Weight</td>
<td>&lt; 5%</td>
<td>ASTM C1104</td>
</tr>
<tr>
<td>Density</td>
<td>2.5 lb/ft² (40 kg/m²)</td>
<td>ASTM C167</td>
</tr>
<tr>
<td>Surface Burning Characteristics (Fire Hazard Classification)</td>
<td>Maximum: Flame Spread Index: 25 Smoke Developed Index: 50</td>
<td>ASTM E84</td>
</tr>
<tr>
<td>Corrosiveness</td>
<td>Pass</td>
<td>ASTM C665</td>
</tr>
<tr>
<td>Fungi Resistance</td>
<td>Pass</td>
<td>ASTM C1338</td>
</tr>
<tr>
<td>Odor Emissions</td>
<td>Pass</td>
<td>ASTM C1304</td>
</tr>
<tr>
<td>Water Vapor Transmission (Facing Only)</td>
<td>.02 Perms</td>
<td>ASTM E96, Dessicant Method</td>
</tr>
<tr>
<td>Compressive Resistance, Minimum Load Required to Produce a 10% Reduction in Thickness</td>
<td>25 lb/ft² (1.2 kPA)</td>
<td>ASTM C165</td>
</tr>
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</table>
### CrimpWrap® Available Sizes

<table>
<thead>
<tr>
<th>THICKNESS</th>
<th>WIDTH</th>
<th>LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>in.</td>
<td>mm</td>
<td>in.</td>
</tr>
<tr>
<td>1</td>
<td>25</td>
<td>48</td>
</tr>
<tr>
<td>1½</td>
<td>38</td>
<td>48</td>
</tr>
<tr>
<td>2</td>
<td>51</td>
<td>48</td>
</tr>
<tr>
<td>2½</td>
<td>64</td>
<td>48</td>
</tr>
<tr>
<td>3</td>
<td>76</td>
<td>48</td>
</tr>
<tr>
<td>3½</td>
<td>89</td>
<td>48</td>
</tr>
<tr>
<td>4</td>
<td>102</td>
<td>48</td>
</tr>
</tbody>
</table>

**NOTE:** Contact CertainTeed for minimum order quantities.

### CrimpWrap® Stretch-out Lengths

<table>
<thead>
<tr>
<th>NOMINAL PIPE SIZE</th>
<th>PIPE OUTSIDE DIAMETER</th>
<th>CRIMPWRAP THICKNESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>in.</td>
<td>in.</td>
<td>mm</td>
</tr>
<tr>
<td>1</td>
<td>25</td>
<td>1.5</td>
</tr>
<tr>
<td>2</td>
<td>51</td>
<td>2.5</td>
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<td>3</td>
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<td>3.5</td>
</tr>
<tr>
<td>4</td>
<td>102</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
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<td>8</td>
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<td>8.63</td>
</tr>
<tr>
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<td>12.75</td>
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<td>14</td>
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<td>16</td>
<td>389</td>
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</tr>
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<td>18</td>
<td>422</td>
<td>18</td>
</tr>
<tr>
<td>20</td>
<td>455</td>
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</tr>
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<td>22</td>
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<td>28</td>
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<td>30</td>
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<tr>
<td>32</td>
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<td>32</td>
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<tr>
<td>34</td>
<td>686</td>
<td>34</td>
</tr>
<tr>
<td>36</td>
<td>719</td>
<td>36</td>
</tr>
</tbody>
</table>

**NOTE:** The lengths shown in this table do not have a 3" staple flap incorporated into the calculated dimensions. If a staple flap is desired, add 3" to the number shown.
Metal Building Insulation

CertainTeed Fiber Glass Metal Building Insulation can provide thermal and acoustical insulation for the roofs and sidewalls of pre-engineered metal buildings and post frame construction. Our sustainable Metal Building Insulation is composed of inorganic glass fibers bonded with a formaldehyde-free resin, formed as a uniformly textured tan blanket insulation and furnished in rolls. Once laminated on one side with a suitable vapor retarder, Metal Building Insulation reduces transmission of exterior sound to the interior of the building and absorbs reverberating sounds within the building.

Metal Building Insulation Thermal Performance

<table>
<thead>
<tr>
<th>NOMINAL THICKNESS PRIOR TO LAMINATING</th>
<th>R-VALUES</th>
</tr>
</thead>
<tbody>
<tr>
<td>in.</td>
<td>mm</td>
</tr>
<tr>
<td>3.375</td>
<td>86</td>
</tr>
<tr>
<td>3.75</td>
<td>95</td>
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<tr>
<td>4.375</td>
<td>111</td>
</tr>
<tr>
<td>5.25</td>
<td>133</td>
</tr>
<tr>
<td>6.375</td>
<td>162</td>
</tr>
<tr>
<td>6.75</td>
<td>171</td>
</tr>
<tr>
<td>8</td>
<td>203</td>
</tr>
<tr>
<td>9.25</td>
<td>235</td>
</tr>
</tbody>
</table>

Metal Building Insulation Sound Absorption - Unfaced

<table>
<thead>
<tr>
<th>R-VALUE</th>
<th>NOMINAL THICKNESS</th>
<th>ABSORPTION COEFFICIENTS AT OCTAVE BAND CENTER FREQUENCIES (HZ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>in.</td>
<td>mm</td>
</tr>
<tr>
<td>10</td>
<td>3.375</td>
<td>86</td>
</tr>
<tr>
<td>11</td>
<td>3.75</td>
<td>95</td>
</tr>
<tr>
<td>13</td>
<td>4.375</td>
<td>111</td>
</tr>
<tr>
<td>16</td>
<td>5.25</td>
<td>133</td>
</tr>
<tr>
<td>19</td>
<td>6.375</td>
<td>162</td>
</tr>
</tbody>
</table>

Sound absorption tested in accordance with ASTM C423 using Type A mounting per ASTM E795.
**Metal Building Insulation Sound Transmission**

<table>
<thead>
<tr>
<th>CONSTRUCTION TYPE</th>
<th>TRANSMISSION LOSS IN DB AT THE OCTAVE FREQUENCIES</th>
<th>STC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>125</td>
<td>250</td>
</tr>
<tr>
<td>roofs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Insulation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R-10 Faced 202-96 Insulation Over the Purlins</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>R-19 Faced 202-96 Insulation Over the Purlins</td>
<td>13</td>
<td>20</td>
</tr>
<tr>
<td>202-96 Insulation Over &amp; Between the Purlins to Fill the Cavity (R-25 Combined)</td>
<td>14</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>125</td>
<td>250</td>
</tr>
<tr>
<td>walls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Insulation</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>R-10 Faced 202-96 Insulation Over the Girts</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>R-13 Faced 202-96 Insulation Over the Girts</td>
<td>13</td>
<td>17</td>
</tr>
<tr>
<td>R-13 Faced 202-96 Insulation Over the Girts (R-25 Combined)</td>
<td>26</td>
<td>40</td>
</tr>
<tr>
<td>R-13 Faced 202-96 Insulation Over the Girts (R-11 Batts &amp; 1/8&quot; Gypsum Board on Interior.)</td>
<td>31</td>
<td>43</td>
</tr>
</tbody>
</table>

Sound Transmission Class (STC) in accordance with ASTM E90.
- Roof construction is 24ga. standing seam roof with 8" Z purlins on 5' centers.
- Wall construction is 26ga. wall panels screwed to 8" Z girts placed on 7' centers.
- Interior metal furring wall studs were 35/8" by 25ga. on 24' centers.

**Metal Building Insulation Available Sizes**

<table>
<thead>
<tr>
<th>R-VALUE</th>
<th>NOMINAL THICKNESS</th>
<th>WIDTH</th>
<th>LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>in.</td>
<td>mm</td>
<td>in.</td>
</tr>
<tr>
<td>10</td>
<td>3.375</td>
<td>86</td>
<td>36, 48, 60, 72</td>
</tr>
<tr>
<td>11</td>
<td>3.75</td>
<td>95</td>
<td>36, 48, 60, 72</td>
</tr>
<tr>
<td>13</td>
<td>4.375</td>
<td>111</td>
<td>36, 48, 60, 72</td>
</tr>
<tr>
<td>16</td>
<td>5.25</td>
<td>133</td>
<td>36, 48, 60, 72</td>
</tr>
<tr>
<td>19</td>
<td>6.375</td>
<td>162</td>
<td>36, 48, 60, 72</td>
</tr>
<tr>
<td>21**</td>
<td>6.75</td>
<td>171</td>
<td>36, 48, 60, 72</td>
</tr>
<tr>
<td>25**</td>
<td>8</td>
<td>203</td>
<td>36, 48, 60, 72</td>
</tr>
<tr>
<td>30**</td>
<td>9.25</td>
<td>235</td>
<td>36, 48, 60, 72</td>
</tr>
</tbody>
</table>

*Non-standard widths are available and subject to an upcharge on an individual basis determined by manufacturer’s capability, quantity, lead times and packaging availability.
**R-21, R-25 and R-30 are made to order.
Commercial Blanket Insulation

Used as a thermal or acoustical insulation in commercial buildings, Commercial Blanket Insulation offers increased comfort, lower energy use and noise control.

Commercial Blanket Insulation

The best choice where wide rolls of unfaced insulation are required, such as retrofitting a warehouse, the uniformly textured tan blanket is made from inorganic glass fibers bonded with a thermoset formaldehyde-free resin. A range of R-values are available to meet energy code requirements.

Commercial Blanket Insulation can be used in roofs and sidewalls as a sound layer over the unfaced side of Metal Building Insulation. Available up to 10” thick, Commercial Blanket is also used in post frame construction and may be installed over old roof decks (BUR and metal) prior to application of a new standing seam roof.

Commercial Blanket Insulation Available Sizes

<table>
<thead>
<tr>
<th>THICKNESS</th>
<th>WIDTH</th>
<th>LENGTH</th>
<th>R-VALUES</th>
</tr>
</thead>
<tbody>
<tr>
<td>(\text{in.})</td>
<td>(\text{mm})</td>
<td>(\text{in.})</td>
<td>(\text{mm})</td>
</tr>
<tr>
<td>3½</td>
<td>89</td>
<td>48, 60, 72</td>
<td>1219, 1524, 1829</td>
</tr>
<tr>
<td>6¼</td>
<td>159</td>
<td>48, 60, 72</td>
<td>1219, 1524, 1829</td>
</tr>
<tr>
<td>6½</td>
<td>165</td>
<td>48, 60, 72</td>
<td>1219, 1524, 1829</td>
</tr>
<tr>
<td>8</td>
<td>203</td>
<td>48, 60, 72</td>
<td>1219, 1524, 1829</td>
</tr>
<tr>
<td>10</td>
<td>254</td>
<td>48, 60, 72</td>
<td>1219, 1524, 1829</td>
</tr>
</tbody>
</table>
Universal Blanket Insulation

Universal Blanket is utilized in general purpose applications where a flexible thermal acoustical insulation is required. Available in five different densities and able to withstand temperatures up to 450°F (232°C), it will help lower energy consumption by reducing heat transfer through equipment walls. Universal Blanket can be fabricated into a variety of shapes and sizes to fit almost any application. When properly installed, it will maintain thermal and acoustical efficiency under normal conditions, won’t be affected by aging and temperature changes, and if installed with a suitable vapor retarder, will help to prevent condensation from forming on the equipment.

Universal Blanket Insulation Acoustical Performance

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>THICKNESS</th>
<th>ABSORPTION COEFFICIENTS AT OCTAVE BAND CENTER FREQUENCIES (Hz)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>in.</td>
<td>mm</td>
</tr>
<tr>
<td>501</td>
<td>1½</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>102</td>
</tr>
<tr>
<td>751</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>1½</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>76</td>
</tr>
<tr>
<td>1001</td>
<td>1½</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>51</td>
</tr>
</tbody>
</table>

Sound absorption tested in accordance with ASTM C423 using Type A mounting per ASTM E795.
ULTIMATE U SeaProtect

When you need a product that can withstand temperatures as high as 1200°F (650°C), look to ULTIMATE. Used in shipbuilding and industrial applications, ULTIMATE U SeaProtect provides excellent fire protection in addition to thermal and acoustic insulation. Composed of high melting point temperature fibers, non-combustible ULTIMATE U SeaProtect is available unfaced or faced on one side with a fiber scrim reinforced with aluminum, black cloth tissue, glass fiber fabric, or a wire mesh (to ensure the faced surface is limited to 212°F (100°C) maximum temperature).

Up to 45% Lighter Than Stone Wool

Fire protection solutions for steel constructions following FTP Code 2010

Selection Table

<table>
<thead>
<tr>
<th>ULTIMATE</th>
<th>PRODUCT RANGE</th>
<th>PRODUCT FORM</th>
<th>DENSITY (kg/m³)</th>
<th>FACING</th>
<th>THICKNESS (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>U</td>
<td>SeaProtect</td>
<td>Roll</td>
<td>24</td>
<td>Unfaced</td>
<td>20 mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Slab</td>
<td>36</td>
<td>Alu1</td>
<td>25 mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>56</td>
<td></td>
<td>30 mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wired Mat</td>
<td>76</td>
<td>G120</td>
<td>40 mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>86</td>
<td>G220</td>
<td>50 mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>90</td>
<td>G420</td>
<td>70 mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>—</td>
<td>B-Al</td>
<td>100 mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>B-Gl</td>
<td></td>
</tr>
</tbody>
</table>

* B facing is a laminated composite facing combining glass cloth and aluminum foil.
### Standard Design

**Lightweight and easy logistics** • 4 products to cover all Steel A-Fire Classifications

<table>
<thead>
<tr>
<th>STEEL</th>
<th>Plate</th>
<th>Weight (kg/m²)</th>
<th>Stiffener</th>
<th>Weight (kg/m²)</th>
<th>Complete Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>PRODUCTS</strong></td>
<td></td>
<td><strong>PRODUCTS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A-15 Bulkhead</td>
<td>U SeaProtect Slab 24 50mm</td>
<td>1.20</td>
<td>U SeaProtect Slab 76 25mm</td>
<td>1.90</td>
<td>2.53</td>
</tr>
<tr>
<td></td>
<td>U SeaProtect Roll 24 50mm</td>
<td></td>
<td>U SeaProtect Slab 76 25mm</td>
<td>1.20</td>
<td>2.04</td>
</tr>
<tr>
<td>A-30 Bulkhead</td>
<td>U SeaProtect Slab 36 70mm</td>
<td>2.52</td>
<td>U SeaProtect Slab 76 25mm</td>
<td>1.90</td>
<td>4.28</td>
</tr>
<tr>
<td>A-60 Bulkhead</td>
<td>U SeaProtect Slab 56 70mm</td>
<td>3.92</td>
<td>U SeaProtect Slab 76 25mm</td>
<td>1.90</td>
<td>5.25</td>
</tr>
<tr>
<td>A-15 Deck</td>
<td>U SeaProtect Slab 24 50mm</td>
<td>1.20</td>
<td>U SeaProtect Slab 76 25mm</td>
<td>1.90</td>
<td>2.53</td>
</tr>
<tr>
<td>A-30 Deck</td>
<td>U SeaProtect Slab 24 50mm</td>
<td>1.20</td>
<td>U SeaProtect Slab 76 25mm</td>
<td>1.90</td>
<td>2.04</td>
</tr>
<tr>
<td>A-60 Deck</td>
<td>U SeaProtect Slab 36 70mm</td>
<td>2.52</td>
<td>U SeaProtect Slab 76 25mm</td>
<td>1.90</td>
<td>3.85</td>
</tr>
</tbody>
</table>

### Thin Design

**Thin Solutions between and around the stiffeners**

<table>
<thead>
<tr>
<th>STEEL</th>
<th>Plate</th>
<th>Weight (kg/m²)</th>
<th>Stiffener</th>
<th>Weight (kg/m²)</th>
<th>Complete Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>PRODUCTS</strong></td>
<td></td>
<td><strong>PRODUCTS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A-15 Bulkhead</td>
<td>U SeaProtect Slab 66 30mm</td>
<td>1.98</td>
<td>No insulation around stiffeners</td>
<td>–</td>
<td>1.98</td>
</tr>
<tr>
<td>A-30 Bulkhead</td>
<td>U SeaProtect Slab 46 40mm</td>
<td>1.84</td>
<td>U SeaProtect Slab 46 30mm</td>
<td>1.38</td>
<td>2.81</td>
</tr>
<tr>
<td>A-30 Bulkhead</td>
<td>U SeaProtect Slab 36 70mm</td>
<td>2.52</td>
<td>U SeaProtect Slab 76 20mm</td>
<td>1.52</td>
<td>3.58</td>
</tr>
<tr>
<td>A-60 Bulkhead</td>
<td>U SeaProtect Slab 86 50mm</td>
<td>4.30</td>
<td>U SeaProtect Slab 76 25mm</td>
<td>1.90</td>
<td>5.63</td>
</tr>
<tr>
<td>A-15 Deck</td>
<td>U SeaProtect Slab 36 70mm</td>
<td>2.52</td>
<td>No insulation around stiffeners</td>
<td>–</td>
<td>2.52</td>
</tr>
<tr>
<td>A-30 Deck</td>
<td>U SeaProtect Slab 24 50mm</td>
<td>1.20</td>
<td>U SeaProtect Slab 76 20mm</td>
<td>1.52</td>
<td>2.26</td>
</tr>
<tr>
<td>A-60 Deck</td>
<td>U SeaProtect Slab 66 50mm</td>
<td>3.30</td>
<td>U SeaProtect Slab 76 25mm</td>
<td>1.90</td>
<td>4.63</td>
</tr>
</tbody>
</table>

*All U SeaProtect products are available for each construction with different facings approved by a recognized test laboratory (Alu facing Alu1, glass cloth facings G120, G220, G420, B facing, etc.). Products highlighted in colors are part of the U SeaProtect Easy Logistics Portfolio. These products are available with a low Minimum Order Quantity (equivalent to 1 pallet) for various facings. For more information, please contact your local CertainTeed representative.
Our High Temperature Blanket is composed of rotary glass fibers bonded with a thermosetting resin and formed into plain, flexible and resilient thermal insulation. HT blankets contain more than 60% recycled glass content and are designed for use on industrial equipment, panel systems, pipe fittings and tanks operating at temperatures up to 1000°F (538°C). HT Blanket Type 1 rolls and batts — used on panel systems, as a flexible wrap or on industrial ovens — and Type 2 batts — meant for metal mesh blankets, on boilers, vessels and other industrial equipment — are easy to handle, cut with a knife and install.

### CertaPro® HT Blanket Typical Sizes

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>THICKNESS</th>
<th>LENGTH</th>
<th>WIDTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1: Rolls</td>
<td>in.</td>
<td>mm</td>
<td>ft.</td>
</tr>
<tr>
<td>1</td>
<td>25.4</td>
<td>100</td>
<td>30.5</td>
</tr>
<tr>
<td>2</td>
<td>50</td>
<td>70</td>
<td>21.3</td>
</tr>
<tr>
<td>3</td>
<td>76</td>
<td>40</td>
<td>12.2</td>
</tr>
<tr>
<td>4</td>
<td>102</td>
<td>30</td>
<td>9.1</td>
</tr>
<tr>
<td>Type 1: Battts</td>
<td>in.</td>
<td>mm</td>
<td>ft.</td>
</tr>
<tr>
<td>1</td>
<td>25.4</td>
<td>48</td>
<td>1.219</td>
</tr>
<tr>
<td>2</td>
<td>50</td>
<td>48</td>
<td>1.219</td>
</tr>
<tr>
<td>2 1/2</td>
<td>64</td>
<td>48</td>
<td>1.219</td>
</tr>
<tr>
<td>3</td>
<td>76</td>
<td>48</td>
<td>1.219</td>
</tr>
<tr>
<td>3 1/2</td>
<td>89</td>
<td>48</td>
<td>1.219</td>
</tr>
<tr>
<td>4</td>
<td>102</td>
<td>48</td>
<td>1.219</td>
</tr>
<tr>
<td>Type 2: Battts</td>
<td>in.</td>
<td>mm</td>
<td>ft.</td>
</tr>
<tr>
<td>1</td>
<td>25.4</td>
<td>48</td>
<td>1.219</td>
</tr>
<tr>
<td>1 1/2</td>
<td>38</td>
<td>48</td>
<td>1.219</td>
</tr>
<tr>
<td>2</td>
<td>50</td>
<td>48</td>
<td>1.219</td>
</tr>
<tr>
<td>2 1/2</td>
<td>64</td>
<td>48</td>
<td>1.219</td>
</tr>
<tr>
<td>3</td>
<td>76</td>
<td>48</td>
<td>1.219</td>
</tr>
<tr>
<td>3 1/2</td>
<td>89</td>
<td>48</td>
<td>1.219</td>
</tr>
<tr>
<td>4</td>
<td>102</td>
<td>48</td>
<td>1.219</td>
</tr>
</tbody>
</table>

### K Factor at °F at Mean Temperatures

<table>
<thead>
<tr>
<th>TYPE</th>
<th>75</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>400</th>
<th>500</th>
<th>600</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.025</td>
<td>.027</td>
<td>.034</td>
<td>.043</td>
<td>.056</td>
<td>TBD</td>
<td>TBD</td>
</tr>
<tr>
<td>2</td>
<td>.023</td>
<td>.024</td>
<td>.030</td>
<td>.038</td>
<td>.046</td>
<td>.052</td>
<td>.064</td>
</tr>
</tbody>
</table>
CertainTeed now offers high-quality Sustainable Insulation® products for air handling applications made from recycled content and a renewable, plant-based binder without any formaldehyde, harsh acrylics, dyes or chemicals added. CertainTeed Sustainable Insulation is biosoluble fiber glass insulation that inhibits microbial growth on the airstream surface, contributing to better indoor air quality in commercial buildings while helping you to meet green building standards.

CertainTeed Sustainable Insulation is GREENGUARD Gold Certified for low emissions, with excellent thermal and acoustical performance — providing energy savings and comfort.

CertainTeed stands behind our commitment to Building Responsibly™ with customer service that’s second to none.

Scan here to learn more about our complete line of mechanical and industrial insulation solutions.
Fiber Glass Blowing Insulation

CertainTeed offers loose fill fiber glass blowing insulation products designed specifically for attics. The pneumatic blowing machines used to install these products are fast and efficient, so you can finish more projects in a day and maximize your revenue. The insulation fills every nook and cranny in an attic to deliver both thermal and acoustical benefits, and will not settle over time.

Go Retrofitting

Millions of older homes either have no insulation at all in the attic or are woefully under-insulated. The TrueComfort® system is an excellent way to tap this lucrative retrofit market. Distributors can purchase blowing machines and rent them to local contractors, while contractors who are serious about adding insulation retrofits to their service offering can buy their own machines.

TrueComfort is easy to transport: 16 packages vs. 46 packages of cellulose for a 1,000 sq. ft. area. Achieve the same R-value more easily and with less waste.

Blown-in Fiber Glass Insulation

TrueComfort® is the perfect add-on opportunity for HVAC contractors who want to add attic insulation retrofits to their list of services. It’s actually a system: TrueComfort blown-in fiber glass insulation and the blowing machine used to install it. The insulation is super-expanding, so fewer bags are required to achieve the target R-value than with cellulose insulation products. And, like other CertainTeed fiber glass blowing insulation, it’s easy to install, less dusty, noncombustible and noncorrosive, and won’t settle over time.

HVAC Contractors and Attic Insulation

While servicing attic-mounted HVAC equipment, most technicians have an opportunity to identify poorly insulated attic spaces.

A trained technician can identify and upgrade inadequate attic insulation and improve comfort and energy efficiency for their existing customers. Most attic insulation can be upgraded simply by blowing loose insulation over existing insulation.

HVAC System and Building Attic Insulation

Better attic insulation reduces roof heat gain in summer and heat loss in the winter. Why is this important for HVAC contractors?

- Helps meet capacity in homes with undersized equipment
- Right-size replacement HVAC equipment capacity
- Reduces run time of HVAC equipment = energy savings
- Improves comfort in space and reduces radiant panel effect from hot or cold ceilings
Open Attic Application

<table>
<thead>
<tr>
<th>R-VALUE</th>
<th>BAG REQUIREMENTS</th>
<th>MAXIMUM COVERAGE</th>
<th>MINIMUM WEIGHT</th>
<th>MINIMUM INSTALLED THICKNESS*</th>
<th>MINIMUM SETTLED THICKNESS</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Number of bags per 1,000 sq. ft. of net area:</td>
<td>Contents of bag shall not cover more than: (sq. ft.)</td>
<td>Weight per sq. ft. of installed insulation shall not be less than: (lbs./sq. ft.)</td>
<td>Should not be less than: (in.)</td>
<td>Should not be less than: (in.)</td>
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<tr>
<td>11</td>
<td>5.7</td>
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<td>0.291</td>
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</table>

R-values are determined in accordance with ASTM C687 and C518. Complies with ASTM C764 as Type 1 pneumatic application.

*Minimum Installed Thickness: When using the TrueComfort blowing machine and 2-1/2-inch-diameter x 100-foot internally corrugated blowing hose. Based upon 29.5-lb. package net weight.

This product is designed to be installed using the TrueComfort blowing machine and accessory equipment. Product performance, including coverage, may vary if installed using different equipment.

For Minnesota coverage chart, go to www.certainteed.com/truecomfort.

TrueComfort® Blowing Machine

This easy-to-learn system can generally insulate a 1,000-square-foot attic in about four hours with a two-man crew. Its compact, two-piece design transports easily in an SUV or pick-up. From set-up to tear-down, we supply complete instructions, making it easy for you to start insulation jobs right away.

The TrueComfort machine is portable and simple to operate. It consists of two pieces for easy transportation, a base and a hopper. Wheels on the base make it maneuverable, and it runs off of one basic 15-amp outlet.
For every insulation challenge, there’s a CertainTeed solution.

Be Certain™

You can Be Certain™ no other manufacturer offers the depth and breadth of interior and exterior building solutions, knowledge, innovation and sustainability that CertainTeed does. Our advanced, multi-product solutions optimize building efficiency, while creating beautiful, comfortable environments where people can thrive. We continue to shape the future of the building materials industry with a new generation of integrated building solutions.

That’s confidence worth building on.™

ASK ABOUT ALL OF OUR OTHER CERTAINT>EED® PRODUCTS AND SYSTEMS:
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