3M™ Thinsulate™ Acoustic Insulation

TAI3027

General Description
This non-woven mat has excellent sound absorbing properties useful in many automotive applications, for example inside door panels, instrument panels, pillar trim, package trays, wheelarch liner etc. It is compressible, non-linting, lightweight, and can be easily die-cut. A white polyolefin scrim on one side protects the fibres. It also has a surface embossing treatment on both sides to provide better attachment of the scrim and better abrasion resistance of the material.

General Construction
TAI3027 is made of a web and a white scrim on one side. The web is composed of 35% polyester staple fibres, and 65% polypropylene fibres. The polypropylene fibres are extremely fine, producing the high-energy absorption characteristic with the low weight. The polyester fibres are added to strengthen the web. The white scrim is a 100% polypropylene non-woven fabric.

Special Characteristics
Suitable for applications in vehicle cabin, headliners, trim panels, luggage compartment interiors and exterior applications like bumpers and wheelarch liners. Attaching to trim panels is recommended, preferably using ultrasonic or heat spot welding, but adhesives (double sided pressure sensitive tapes or hot melt) may also be used. It can be processed by conventional techniques such as die-cutting and heat sealing. As the fibres are hydrophobic, this material will not absorb water. Therefore the risk of mildew and odours developing are minimal allowing this product to be used in humid or moist conditions. Not recommended for applications where temperatures will be continuously above 120°C.
Properties

### General properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Composition web</td>
<td>65% polypropylene, 35% polyester</td>
</tr>
<tr>
<td>Composition scrim</td>
<td>100% polypropylene</td>
</tr>
<tr>
<td>Construction and colour</td>
<td>White web with single white scrim</td>
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<tr>
<td>Material Thickness</td>
<td>21 mm (tested after 6 weeks on roll according SAE J1355 @ 0,002psi (14N/m²))</td>
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<tr>
<td>Surface weight</td>
<td>330 g/m² (web and scrim; tested on 315 x 315 mm samples)</td>
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<tr>
<td>Density</td>
<td>15 kg/m³</td>
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<tr>
<td>Flammability</td>
<td>Self-Extinguishing (SE) as per SAE J369 (FMVSS 302, ISO 3795, DIN75200)</td>
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<tr>
<td>Temperature resistance</td>
<td>120°C (tested for 2000 hours)</td>
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<tr>
<td>Storage</td>
<td>Rolls need to be stored upright.</td>
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</tbody>
</table>

### Availability
- die cuts as per customer requirement
  - plain cut, hot trim edge or sealed edge
  - available with adhesive

### Acoustical Properties – Alpha Cabin

Alpha Cabin Measurement with 1.2m² sample measuring Random Incidence Sound. Result is average of 30 samples, tested after 6 weeks on roll (24hrs conditioning @ RT), scrim facing noise and 20 mm frame used (acc. 3M TMAE 017 (Rieter standard Alpha Cabin test) at 3M Germany in Neuss)

![Graph of Alpha Cabin Random Incidence Sound Absorption](image)

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Acoustical Properties – Impedance Tube
Dual Microphone Impedance Tube Method that measures Normal Incidence Sound.
Combined result average of min 5 samples (100mm & 29mm tube), on nominal weight samples and thickness set at nominal 6 weeks thickness.
(acc. 3M TMAE 016 (based on ASTM E-1050))

Additional Information
This data sheet contains typical information specific to the product. This information should not be used to determine a product specification. Samples and further information on the use of the product are available separately.

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