

Automotive

Technical Data Sheet

3M™ Thinsulate™ Acoustic Insulation

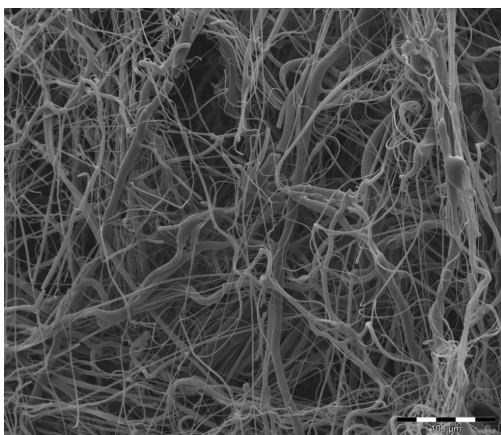
TAI4047

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. TAI4047 has a surface embossing treatment on both sides for handling strength improvement and better abrasion resistance of the material.

General Construction

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.



Magnified image of Thinsulate™ Acoustic Insulation showing fine PP and larger PET fibres.



Thinsulate™ Acoustic Insulation TAI4047 material

Special Characteristics

Suitable for applications in vehicle cabin, headliners, trim panels, luggage compartment interiors.

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.

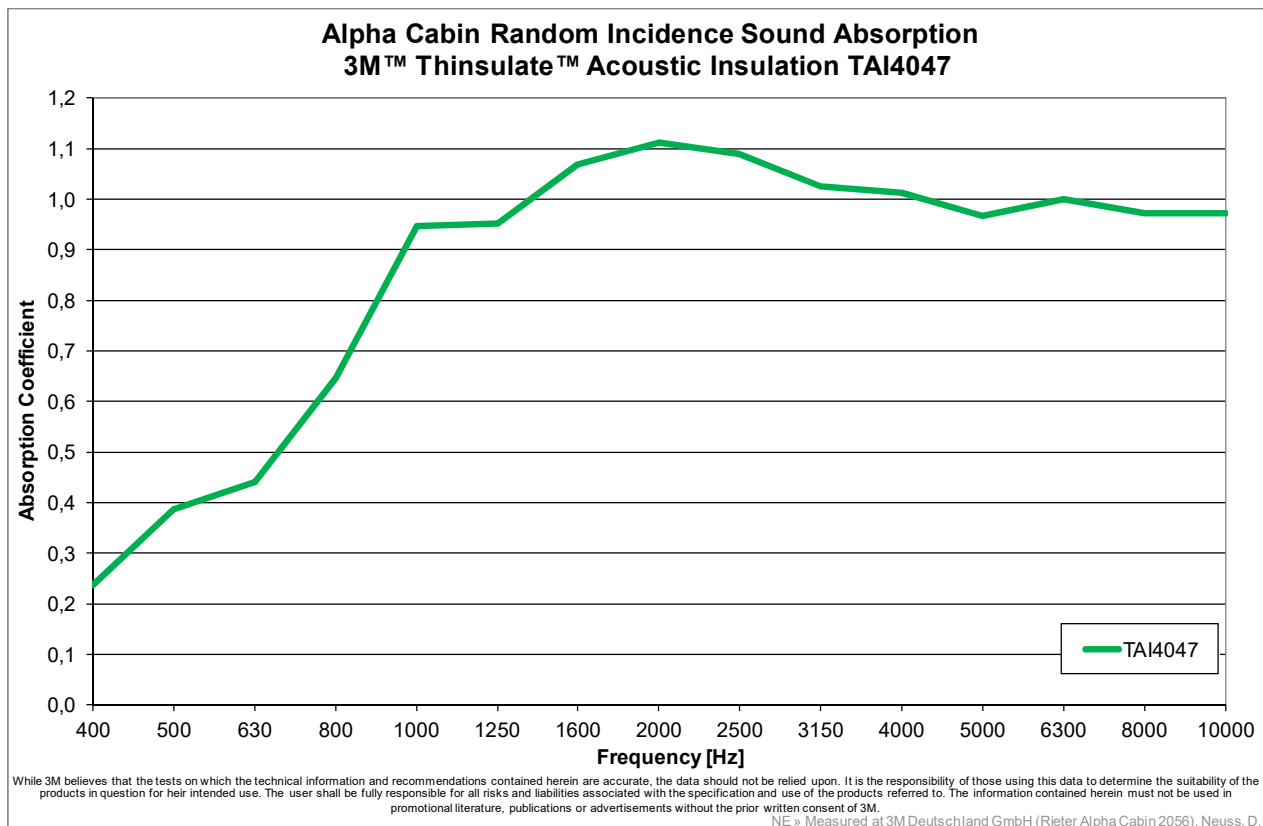
Properties

General properties (typical values)	
Composition web	65% polypropylene, 35% polyester
Composition scrim	none
Construction and color	White web, both sides embossed
Material Thickness	23 mm (tested after 6 weeks on roll according to SAE J1355 @ 0,002psi (14N/m ²))
Surface weight	420 g/m ² (web tested on 315 x 315 mm samples)
Density	18 kg/m ³
Flammability	Self-Extinguishing (SE) as per SAE J369 (FMVSS 302, ISO 3795, DIN75200)
Temperature resistance	120°C (tested for 2000 hours)
Storage	Rolls need to be stored upright.
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.

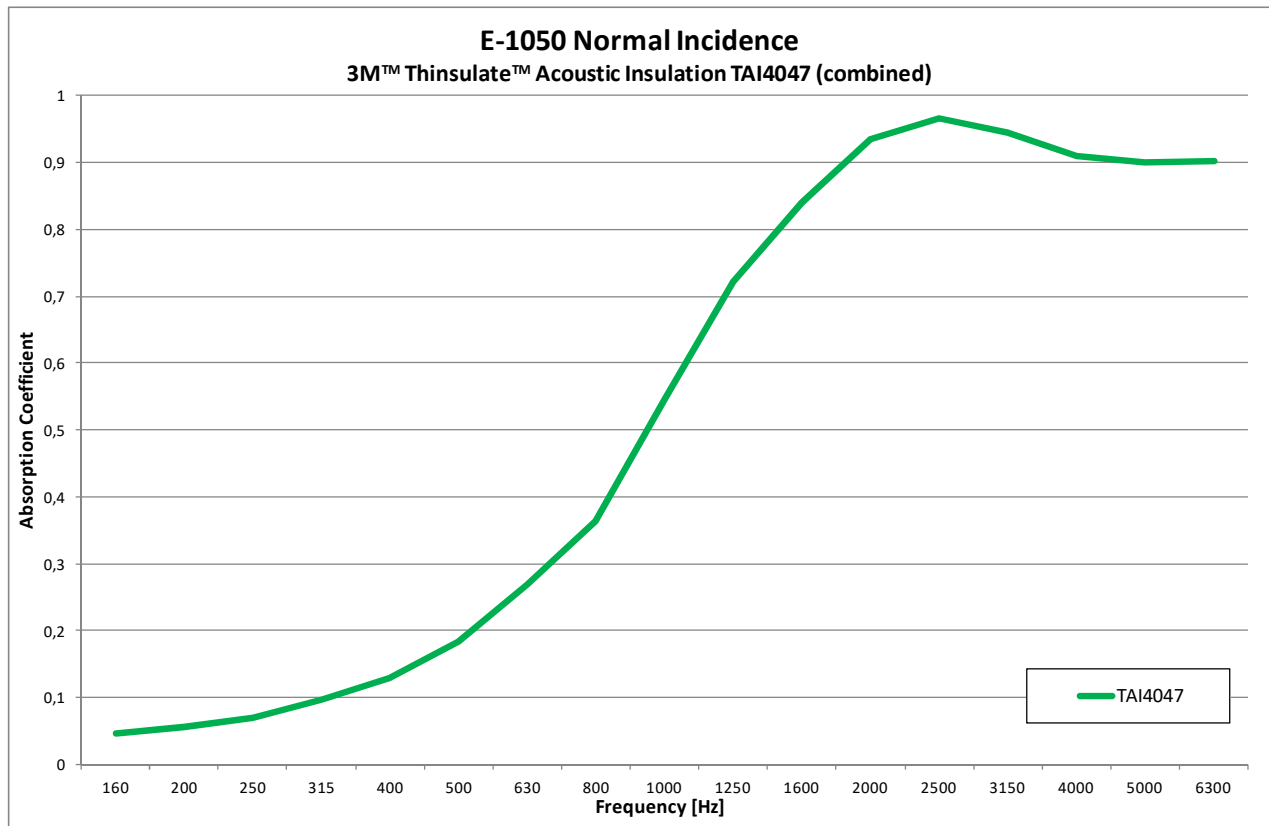
Result is average of 30 samples measured up and down, tested after 6 weeks on roll (24hrs conditioning @ RT) and 25mm frame used (acc. 3M TMAE 017 (Rieter standard Alpha Cabin test) at 3M Germany in Neuss)



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.

Important notice to purchaser All statements, technical information, and recommendations herein are based on tests we believe to be reliable, but the accuracy or completeness thereof is not guaranteed. Please ensure before using our product that it is suitable for your intended use. All questions of liability relating to this product are governed by the Terms of Sale subject, where applicable, to the prevailing law.