

Thinsulate™ Acoustic Insulation  
For the Automotive Industry



Less weight

Quieter ride

**3M**



## Solving acoustic challenges

Acoustic absorption continues to be an important consideration for vehicle engineers with occupants increasingly demanding lower cabin noise. The traditional insulation materials which are used can be bulky and often add excessive weight to the vehicle, making it expensive to manufacture and less fuel efficient. Thinsulate™ Acoustic Insulation from 3M can enable more cost effective use of insulation materials by more precise material usage.



### Key benefits

- Reduces vehicle weight when compared with felt, foam and polyester materials
- Easy to compress and highly conformable, enabling installation in smaller cavities
- Production costs can be reduced as less material is required
- Hydrophobic, non-woven structure allows both internal and external use without the need for a waterproofing barrier
- Easily recycled as it is a Polypropylene blend
- The product resists mould and mildew growth so no odours or material degradation occurs

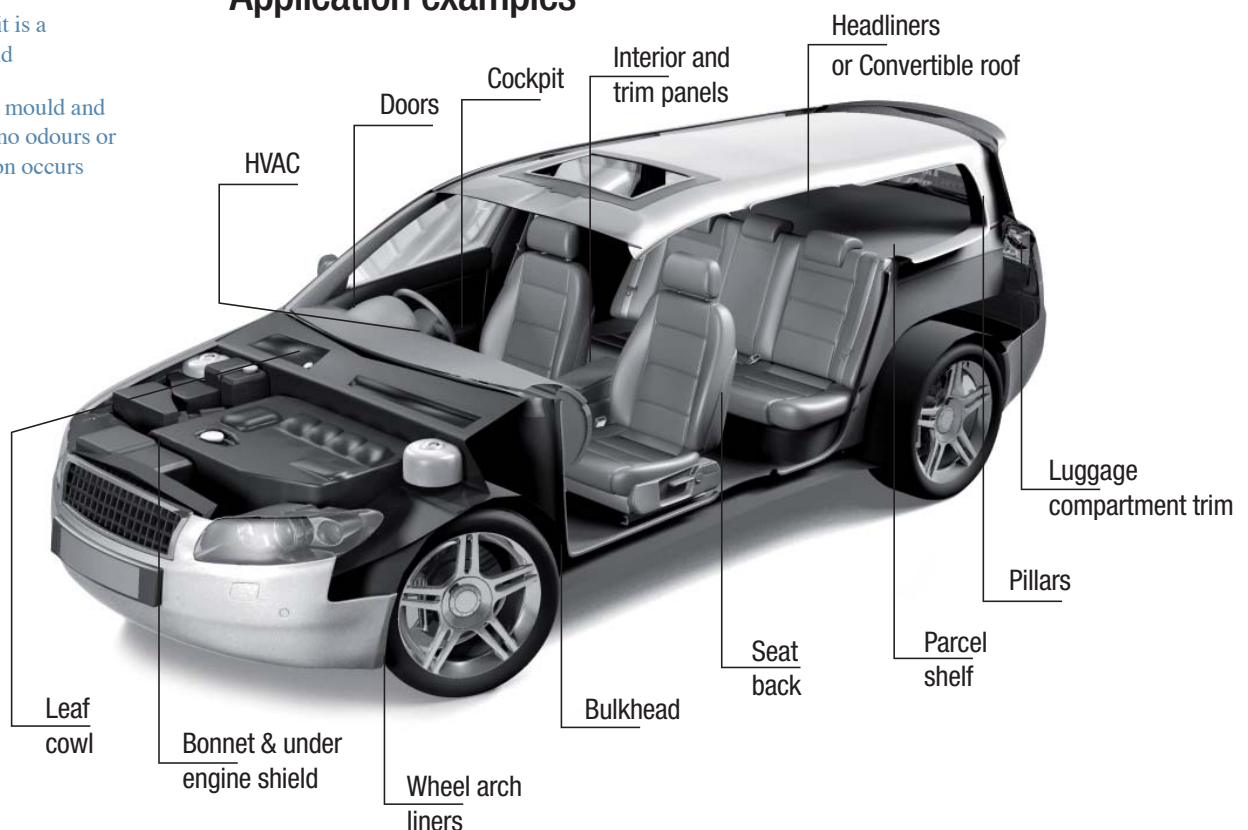
### More performance

Thinsulate™ Acoustic Insulation material overcomes obstacles such as excessive weight or bulk and provides engineers with a more effective sound absorption solution which is lighter than traditional materials.

### Less weight

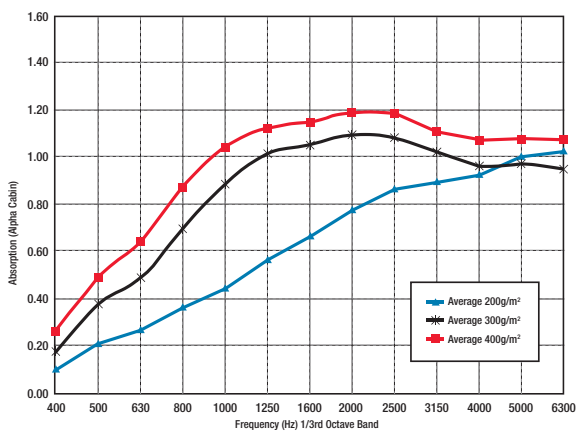
With its higher acoustic performance per unit weight, less Thinsulate™ is required to achieve the same level of noise reduction when compared with traditional materials. As a higher performing and more efficient material, Thinsulate™ can be used in more accurate and tailored applications meaning that it can be more cost effective.

### Application examples



# Thinsulate™ Acoustic Insulation for the Automotive Industry

## Average Performance of Thinsulate™ Products Grouped by Surface Weight



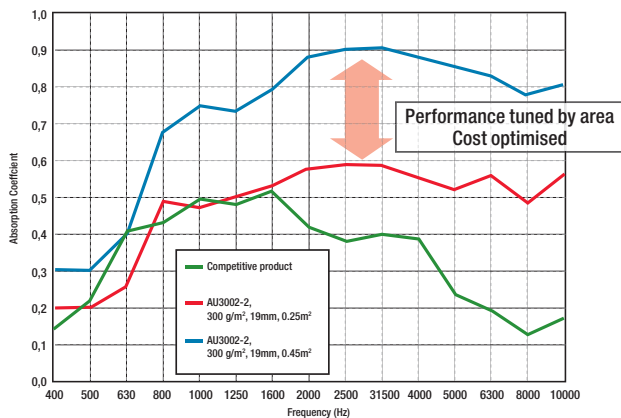
## Versatile applications

Available in a comprehensive range of surface weights and thicknesses, Thinsulate™ gives engineers maximum flexibility when designing their sound absorption systems. With varying performance over different frequency ranges, engineers can select the material which is ideally suited to their acoustic challenge.

Thinsulate™ materials come in a range of thicknesses to suit different frequency needs. They cover the spectrum of most common automotive cabin frequencies, as show in the graphs.



## Acoustic Optimisation in Engine Spaces Performance over wide frequency range



## Case study

Thinsulate™ was selected by a leading vehicle manufacturer looking to improve the sound absorption in its engine space. The original material delivered satisfactory performance across a wide frequency range. However, when the material was replaced by a similar size piece of Thinsulate™, the absorption co-efficient improved by as much as four times. Rather than over-engineer the solution, the Thinsulate™ material was reduced in size by 44% which still delivered an improvement in sound absorption over the original material but also **reduced both weight and cost for the manufacturer.**



## Customer Support on Acoustic Projects

3M have additional expertise in working with customers in the following areas:



- Material Comparisons
- Component Optimisation
- In-vehicle acoustic measurement and analysis
- Cost optimisation through more efficient materials usage and assembly techniques

## Solutions across every manufacturing process

3M Automotive offers a wide range of products and solutions for the Automotive Industry, supported by worldwide R&D centres, local technical specialists and testing facilities. Principal solution segments includes:

- Acoustic Insulation and NVH/Buzz Rattle and Squeak
- Body in White Structural Adhesives and Films
- Manufacturing Consumables
- Engineered Paint Replacement and Paint Protection Films
- Attachment and Bonding Solutions
- Powertrain and Chassis



For more information on Thinsulate™ Acoustic Insulation or other Automotive products please contact 3M on: 01344 857875



**3M United Kingdom PLC**  
Automotive Business Centre  
3M Centre  
Cain Road  
Bracknell  
Berkshire  
RG12 8HT

Phone +44(0) 1344 857875  
Fax +44(0) 1344 857885  
[www.3M.co.uk/automotive](http://www.3M.co.uk/automotive)

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