

Acoustic and thermal management for all sectors of industry.

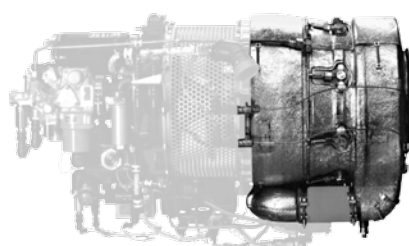
More than 30 years ago, we laid the foundations for our innovation leadership by developing the first internal and external high-temperature insulation and sealing systems.

Today, ISOLITE offers a comprehensive portfolio designed to optimise the acoustic and thermal characteristics of individual components and entire systems. As a result, ISOLITE is one of the most popular insulation specialists across many branches of industry and, in particular, the aerospace and automotive sectors.

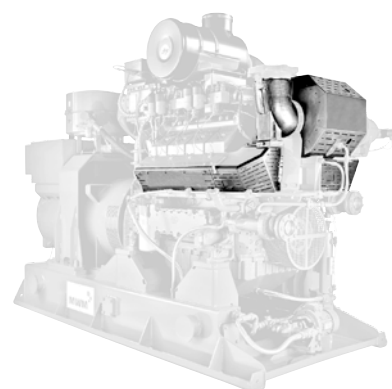
Automotive



Aviation



Industry



Key application areas

- | | | |
|--|--|---|
| <ul style="list-style-type: none">• Combustion engines• Turbochargers• Powertrains• Exhaust gas routing• Exhaust gas treatment | <ul style="list-style-type: none">• Turbines and turbine components• Oil and air lines• Control devices• Engine control units | <ul style="list-style-type: none">• Gas turbines• Heavy-duty motors• Machine tools• Power plants• Test stands |
|--|--|---|

Benefits

- | | | |
|--|--|---|
| <ul style="list-style-type: none">• Compliance with acoustic emissions standards• Improved driving comfort• Sound design• Weight savings• Shorter warm-up stage• Reduced fuel consumption and emissions | <ul style="list-style-type: none">• Compliance with acoustic emissions standards• Performance improvements• Increased safety• Weight savings• Reduced fuel consumption and emissions | <ul style="list-style-type: none">• Compliance with acoustic emissions standards• Performance improvements• Increased safety• Reduced fuel consumption and emissions |
|--|--|---|

Should you require any further information, we'll be happy to send you the following brochures:

- ISOLITE XP
- ISOLITE Insulation Shells

Please get in touch!



ISOLITE
High Temperature Solutions

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AKUSTOP

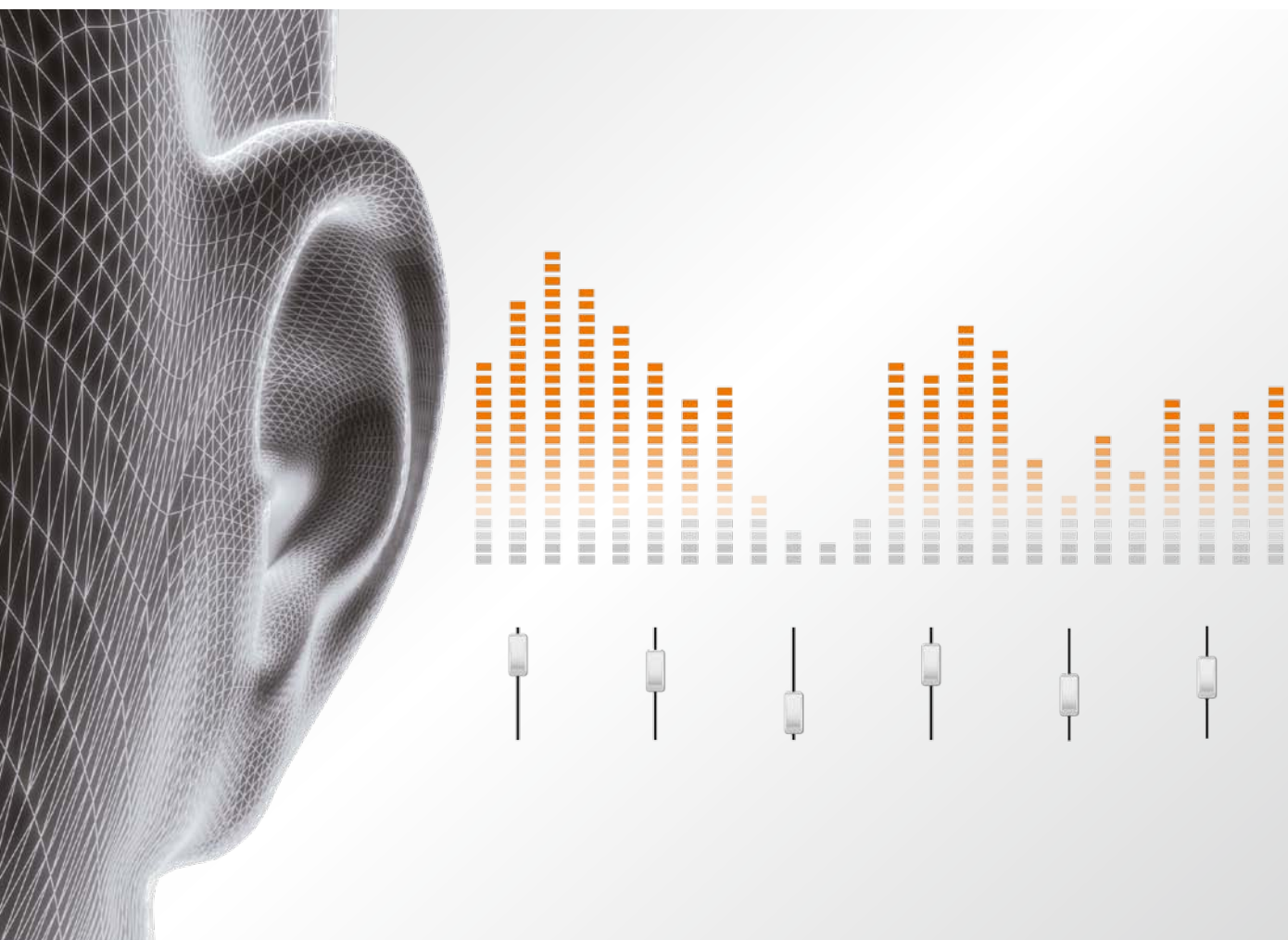
Experience acoustics
up close.

Acoustic comfort thanks to precision noise absorption.

Besides ensuring compliance with statutory regulations, modern noise-reducing systems also help companies satisfy the growing market demands for greater comfort.

Acoustics are a major consideration when it comes to comfort, particularly in automotive manufacturing, where the noise of a vehicle defines it and acts as a quality mark for customers.

As a result, the noise-absorbing properties of the heat-insulating components used in petrol and diesel drives are becoming increasingly important. When it comes to powertrains in particular, the acoustic parameters of the insulating systems can help boost driving comfort specifically to suit customer requirements. Acoustics are also becoming increasingly important in other sectors, too. For example, noise-absorbing solutions are also being used in APUs (auxiliary power units) in the aviation sector.



Given the increasing requirements being placed on acoustic performance, ISOLITE AKUSTOP insulation offers the most effective solution for near-engine noise absorption by delivering surface protection that can be tailored specifically to the relevant frequency range.

Thermal and acoustic theory ...

The AKUSTOP high-temperature insulating systems from ISOLITE consist of an insulation shell and a perforated liner, of which feature outstanding temperature resistance and noise-absorbing properties. By combining these two components, the system can deliver much better absorption performance than the corpus on its own.

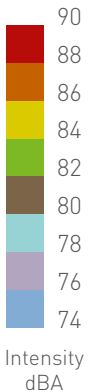
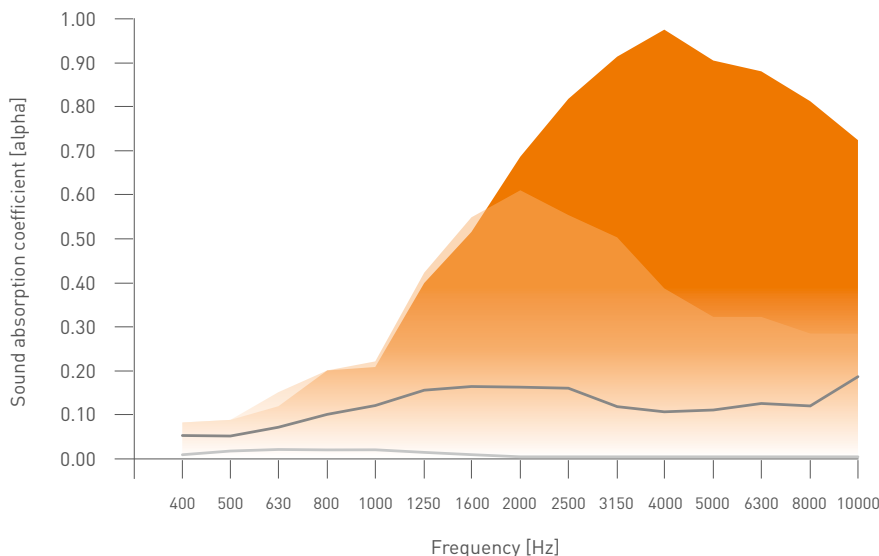
The acoustic and thermal high-temperature insulating systems from ISOLITE don't just drive down noise emissions, they also lower the temperature in the engine compartment and help retaining the heat – a key requirement in diesel vehicles. At the same time, they further reduce thermal radiation, boost material self-insulation, lower thermal stresses and improve the operational stability of the system under load.



Near-engine noise absorption with positive thermal effects (l-r: without insulation, with 5 mm, with 10 mm).

The pictures above illustrate the sound-absorbing properties of the insulation system. Various amounts of insulation were applied to the outlet manifold on the exhaust side of a series engine and acoustic measurements were taken.

It became clear that a layer of insulation as thin as just 5 mm significantly reduced noise levels compared to using none at all. It is particularly striking that the application of a 10 mm layer of insulation produced only minor additional improvements.



AKUSTOP [customised perforation]

AKUSTOP [standardised perforation]

thermal insulation

no insulation

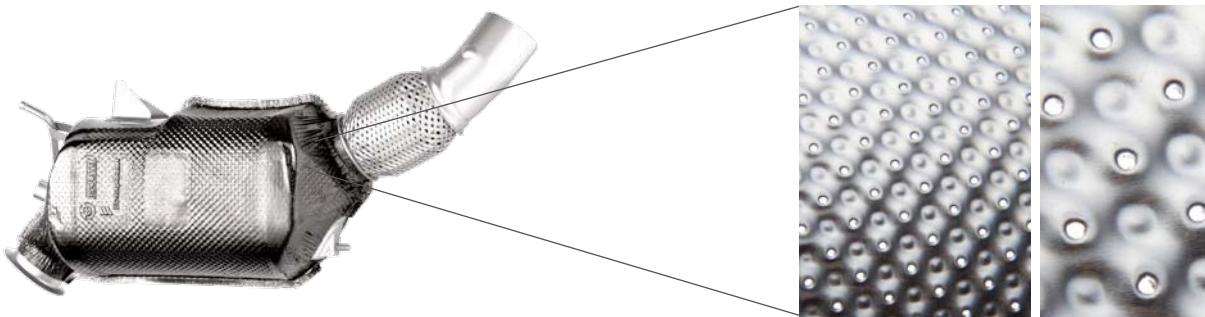
By taking measurements in an acoustics laboratory, the perforation of the liner can be designed so that it absorbs noise in a specific frequency field.

... and practice.

Customised acoustic solutions courtesy of new production technologies.

ISOLITE AKUSTOP is an external insulating system with a steel liner that exhibits effective thermal and acoustic insulation properties. The customisable micro-perforated insulating body comprising two or more layers of high-temperature fibres also provides an effective and versatile solution to ever greater demands in terms of acoustic performance.

Thanks to the latest, patented ISOLITE production technologies, insulating materials can be embossed with calottes or perforated with exceptional precision. By carefully varying specific parameters, noise absorption can be tailored to a defined frequency range – and thus to customer requirements.



Customised sheet perforation delivers a 50 percent improvement in acoustic insulating properties compared to standard perforated sheets. The noise absorber comprises a perforated sheet – preferably of metal or heat-resistant plastic – with perforations accounting for 3–5 percent of total area. The acoustic effect of the absorber is modified using different perforation factors. For example, varying the diameter (0.8–2 mm) and number of perforations can have a decisive impact on noise emissions.

Depending on customer requirements, we can supply ISOLITE AKUSTOP as complete applications and as solutions that can be reassembled and disassembled.

ISOLITE-Integralliner






-  Outer lining
-  Insulation system

ISOLITE-Integralliner is an integral insulation system. It comprises an insulating body encased in a metallic outer lining.

ISOLITE-Blanket



-  Outer lining
-  Insulation system
-  Inner lining

The ISOLITE-Blanket comprises an insulating body encased in inner and outer linings.