ISOLITE
High Temperature Solutions

Automotive | Aviation | Industry

ISOLITE XP

eXPand the future.

A **world-first** from ISOLITE

for insulating downstream units with breath-taking performance.

Following successful validation, the ISOLITE XP technologie originally used in the aviation sector has now found an application in automotive engineering and other industrial businesses. It enables more insulation effects to be used while maintaining the same installation space. This opens up entirely new opportunities in thermal and acoustic insulation.

The new ISOLITE XP insulation shell expand by up to 30 percent the first time they are exposed to heat, but do not contract again once they cool down. By automatically adapting to the surface structure, the shells provide better acoustic sound-absorbing properties and self-damping than conventional insulating materials.

ISOLITE XP

What is ISOLITE XP made from?

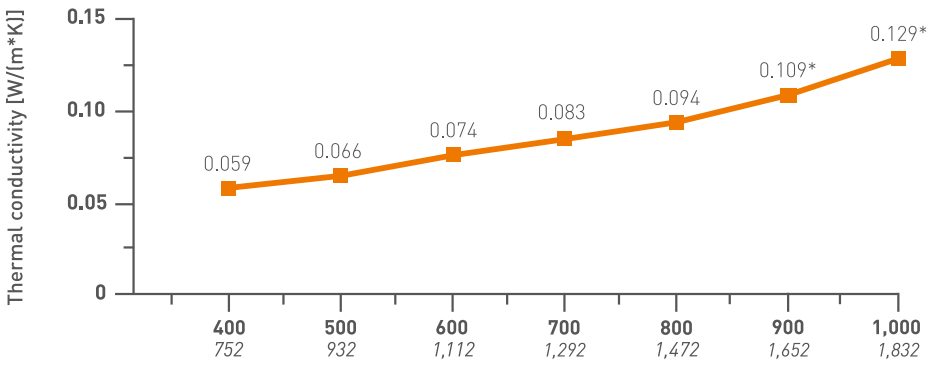
Unlike other expanding fibre materials, ISOLITE XP uses no carcinogenic ceramic fibres whatsoever, in full compliance with the REACH regulation. Instead, it uses a shot and particle-free long fibre that ensures increased mechanical stability. As the material contains no vermiculites, the insulating fibres display improved stability when exposed to vibration and better tensile strength following elongation. It also reduces the possibility of the insulating fibres being blown out in the event of damage to the outer liner (metallic exterior casing).

Varying the composition and special additives of the completely biodegradable insulation shells means they can be used in different applications and adapted to a diverse range of areas and tasks.

Additional properties of ISOLITE XP

The fact that ISOLITE XP insulation shells expand when heated but don't contract when subsequently cooled is a major advantage when it comes to achieving a perfect seal and insulation between components. But what use is a perfect seal without the corresponding low thermal conductivity? When using ISOLITE XP, thermal conductivity falls into an index range of 0.059 (at 400 °C / 752 °F) to 0.129 (at 1,000 °C / 1832 °F). This exceptionally low thermal conductivity makes the materials ideal for use as high-temperature insulating systems. Thanks to its special fibre structure, ISOLITE XP also exhibits significant acoustic advantages over other insulating technologies.

Thermal conductivity [W/(m*K)]



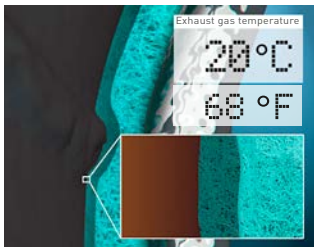
Gross weight: 260 kg/m³ +/- 18 %
thermal conductivity to the
DIN EN 993-14 hot wire method.

* after linear extrapolation

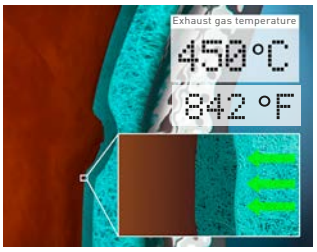
ISOLITE XP in **theory** and **practice.**

How ISOLITE XP works and what it does

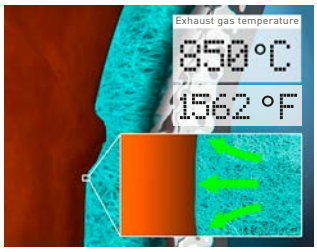
The first time it is exposed to heat that exceeds the activation temperature, the insulation shell expands. This expansion ensures that the insulation shells can adapt to match the component geometry with optimum precision. As a result, elements such as welded seams and the shoulders of exhaust pipes can be completely enveloped and the space to be insulated can be filled to almost 100 percent. The system thus provides enhanced protection against vibration and mechanical influences.

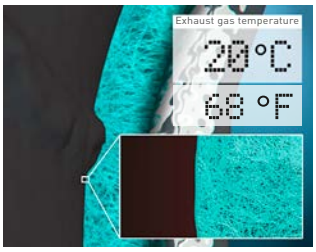


ISOLITE XP prior to its first heating



ISOLITE XP during heating: fibre insulation reaches activation temperature, the expansion process begins





ISOLITE XP after cooling

The images in the centre show how the insulation shell expands and the resultant benefits in terms of thermal and acoustic insulating properties. When the exhaust system cools, ISOLITE XP retains the same volume and does not contract, as the image on the right shows.

Technical properties

Raw material	Silicate fibre
Maximum operational temperature (short-term)	1,100 °C (2,012 °F)
Application temperature	1,000 °C (1,832 °F)
Filament diameter (DIN 1888)	> 6 µm
Loss on red heat (PA003)	< 11.0 %
Fire behaviour	Non-combustible
Specific heat capacity	0.8 kJ / (kg*K)
Expansion	up to 30 %

We supply ISOLITE XP to your specifications, in line with 3D design and material thickness without gradation above an insulation thickness of 2.5mm.

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

- ISOLITE Insulation Shells
- ISOLITE AKUSTOP

Please get in touch!

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