Insulation Technologies for the Automotive Sector. Made in Germany.

| Emission standards | Performance | Fuel economy | Acoustic insulation |

Thermamax Hochtemperaturdämmungen GmbH, Germany
Thermamax, Inc., USA
Taicang Thermamax High Temperature Insulation Equipment Co., Ltd., PRC

( Understanding Temperature.)
Thermamax is recognized worldwide as the specialist in the design and manufacture of thermal and acoustic insulation systems for engine compartments and exhaust lines for diesel and gasoline engines, fuel cells, and electric drive systems.

Thermamax serves customers around the world and operates two manufacturing facilities (Mannheim, Germany and Aurora, IL, USA), several sales & marketing offices in the US and Italy as well as a corporation in Taicang, China.

Thermamax is recognized for its comprehensive, process-oriented approach. With its in-house research and test laboratories, extensive engineering capability, continuous investment in advanced production technologies, and early-stage cooperation with development engineers in leading OEMs and Tier 1 supplier chain, they are able to propose unique solutions, tailor-made to meet all requirements. Thermamax supplies complete systems from concept, detailed design and prototypes, for low volume requirements through to series production.

Our insulation systems don’t just retain the necessary process heat in the system, they also provide an effective protection for man and machine.

The advantages are clear:

- safety for personnel and equipment
- innovative solutions for compliance with stringent emission standards
- significantly lower noise levels
- reduction of life cycle costs
- shorter development time frames
- easy installation solutions
Successful insulation concepts for passenger cars. From the development of new concepts to series production.

We deliver outstanding and cost-effective solutions for all geometry and temperature demands – for exhaust gas aftertreatment enhancement, for the protection of surrounding components, and for the reduction of engine compartment temperatures – from innovative concept design to full-scale manufacturing.

You provide us with the specifications for your ancillary exhaust gas treatment system and the control of exhaust gas energy in downstream components (SCR, DPF, CAT etc.) and we combine our unique materials expertise with innovative tooling and production technologies in effective and efficient packages.

- Exhaust gas turbochargers
- Exhaust pipes
- DPFs and SCRs
- Compensators and flexible hoses
- Cast manifolds

High temperatures of ≥1,000°C or more can affect different material combinations in small spaces (e.g., castings, stainless steel, mild steel).

The higher the temperature, the greater the amount of heat transferred to the environment. Extremely complex geometries, some with undercuts, demand high-performance insulation with a precision measured in single millimeters. Temperature differentials of several hundred degrees Celsius can be encountered within the tightest spaces.

Thermamax develops and manufactures numerous, precisely fitting solutions for all standard sizes of single- and two-stage turbocharging concepts.
Maintain full temperature control throughout the entire exhaust system.

Whether at the engine or further downstream, today exhaust systems are instrumental in ensuring compliance with emission standards. The challenge for development engineers and temperature designers lies in the ability to control temperatures in the exhaust pipework in such a way that optimum conditions for exhaust gas treatment are constantly maintained, and that temperature-sensitive components are simultaneously protected from undesired heat input.

Thermamax develops and manufactures numerous, precisely-fitting, custom solutions for all standard sizes.

Low additional weight
Minimal insulation thickness
Effective insulation
Reduced radiant heat
Reduced engine compartment temperatures

Diesel particulate filters and SCR systems present development engineers and temperature designers with enormous challenges. The sensitive systems must be supported by high-performance insulation in sometimes exceedingly complex geometries. Thermamax develops and manufactures insulation systems for leading manufacturers of:

Hydrolysis systems
Diesel particulate filters
Combined SCR-DPF modules

The key priority here is maintaining a constant system temperature, and the function is based on keeping parameters within a narrow temperature window. The better the temperature design, the better the performance.

Low additional weight
Maintain consistent system temperature
Speed up light-off
Prevent AdBlue (urea) crystallization
Reduce NOx
Improve functional efficiency

They are subject to various axial and lateral movements between components of the exhaust system and can be found in almost every engine. From a thermal point of view, the following components are frequently the remaining weak points in an otherwise finely tuned exhaust system:

Compensators
corrugated hoses
bellow

The challenge here is to close this last gap in the thermal system with extremely flexible, high-performance solutions. The fully encapsulated, metallic Tmax-Compensator Insulations integrated in the overall system close this gap and reduce temperature loss within the sensitive system.

Low additional weight
Effective insulation
Maintain consistent system temperature
Extremely flexible

Compensators and flexible hoses

Channel extremely high temperatures, protect surrounding parts – even in the tightest spaces.

Low additional weight
Minimal insulation thickness
Effective insulation
Maintain consistent system temperature
Speed up light-off

Cast manifolds and cast components frequently present a particular challenge as a consequence of their permitted dimensional tolerances.

The thermal insulation adopted for series production must compensate for deviations from nominal values arising during the casting process while simultaneously ensuring no loss of insulation performance.

Thermamax develops and manufactures numerous precision-fitting solutions for cast component applications for all serial production sizes.
A forward-looking approach – for more than 35 years.

One principle has guided us since the founding of the company in 1976: Understanding Temperature. We’ve made handling high temperatures in engines and exhaust systems our core mission. We continue to develop unique solutions and are recognized today as a specialist in the design and manufacture of thermal and acoustic insulation systems. You’ll find our high-temperature insulation systems in both on- and off-highway vehicles, in stationary power generation, in ships, and on oil platforms, both on land and at sea.