Permanently high temperature resistant bondings and coatings

Heares, a nolax start-up, presents novel adhesives and coatings for durable and flexible applications under high temperatures. Extreme heat for an extreme duration. Application areas are for example: Heat protection laminates in combustion engines, exhaust gas/turbocharger insulation, fire protection in battery cell carriers, and fire curtains for buildings.

Advantages of Heares adhesives and coatings at a glance

- High heat-resistant and flexible bonding (flexible heat protection can be produced in the same simple way as rigid heat protection components).
- Heat barrier and heat shield function of the substrates is massively improved by Heares (integrated heat insulation of up to ΔT 300 °C).
- Adhesive and coating are water-based.
- Good adhesion to glass fibre fabric, metal, aluminium foil.
- Easy to apply: blade or roller systems, nozzle, spray.
- Resistance to all vehicle fluids.
- Tested and certified solutions that are already in use in automotive applications.
Heat protection with high heat-resistant adhesive bonding: Heares adhesive is particularly suitable for flexible bonding of aluminium and glass fibre fabric or for heat protection in the exhaust tract: glass fleece into shaped stainless steel sheets.

Heat protection in the engine compartment

Flexible material composite
Heares offers a durable solution for high heat-resistant, flexible material combinations such as glass fibre fabric with aluminium. In addition to heat resistance >400 °C, the adhesive also provides integrated heat insulation that remains intact for more than 1000 hours. The laminate is produced on standard equipment via roll-to-roll processing. Example: Heat protection sleeve exhaust flap control.

Rigid material composite
Heares offers a permanent solution for high heat-resistant bonding of glass fleece into shaped stainless steel sheets. The adhesive is applied by hand with a brush or robot controlled via contactless spray heads. The adhesive adheres quickly without pre-cleaning of the metal surface and penetrates optimally into the glass fleece. Drying takes place at room temperature. Example: Covering turbocharger insulation; Bi-Turbo car.

Properties of Heares adhesive in rigid and flexible material composites
- Fulfils the heat protection requirement for exhaust tract >500 °C, 1000 h
- In the hot gas generator at 500 °C no self-delamination takes place after 2 hours.
- Meets the requirement for flexible heat protection >350 °C, 3000 h. No delamination of the heat protection composite glass fibre fabric/aluminum.
- Fulfils the fire test: Material must not ignite under any circumstances.
- The adhesive is low-odour (VDA 270).
Heat protection in the battery cell carrier
Heat/fire protection with Heares coatings is provided on the lid and between the battery cells. This coating combination provides the necessary reflective and insulating properties. Both adhere to many base materials (glass fibre fabric, metals). The coating takes place via standard coating equipment.

Advantages of the combination of reflective and insulating coatings:
- Burnthrough protection: permanently heat and flame resistant, ΔT 560 °C
- Heat resistance thermal oven; 300 °C; 1000 h
- Flame retardancy tested (B-s1, d0; ift Rosenheim)
- Resistant to acids and alkalis
- Abrasion resistant, can be tailored

Impact test fire protection battery cell carrier at ZSW Ulm. Aluminium coating still functional after test. Construction: Glass fibre fabric with a combination of reflective and insulating coatings bonded to aluminium sheet (1.3 mm).

Fire protection
Heares adhesives and coatings are also ideal for smoke and fire protection doors and slats: The reflective high heat-resistant coating can be used for surfaces such as glass fibre fabric, the adhesive for wet bonding of aluminium foil with glass fibre fabric. Both applications have been successfully tested: Test combustion chamber EN 1634-1, glass fibre fabric coated with Heares at IBS Linz (February 2020).
Setting new benchmarks for the heat and fire protection of the future

Are you looking for high heat-resistant adhesives >900 °C that allow flexible compounds? Or do you want to radically improve the performance of your heat protection products? Heares adhesives and coatings are specifically designed to set new benchmarks in heat and fire protection as well as heat management.

Heares expertise

The Heares team is made up of material and bonding professionals. They support and accompany the projects and, if desired, carry out Heares test series for you. Challenge us with your ideas. Together we will find the right solution and set new standards in fire protection. In the engine, in the battery cell, in the building.

Contact

Markus Läpple, Start-up Heares, nolax AG
Phone +41 41 545 98 33, markus.laepple@nolax.com

nolax invents and develops new bonding technologies and thus opens up new markets.
nolax AG, Neulandstrasse 1, 6203 Sempach Station, Switzerland, www.nolax.com