
nolax Start-up Heares at Techtextil | Stand Nr. 11.0 D46

Heares bonds > 900 °C – flexible, durable

Durable high-temperature resistant adhesives and coatings for fire and heat protection applications in buildings, vehicles (battery and engine) and industry

Heares, a nolax start-up, presents novel adhesives and coatings for durable and flexible applications under high temperatures > 900 °C. Extreme heat for an extreme duration. Application areas are for example: fire curtains for buildings, fire protection in battery cell carriers, heat protection laminates in combustion engines and exhaust gas/turbocharger insulation. The novel adhesives and coatings are aimed at anyone who wants to make their flexible heat and fire protection products more durable or is looking for high-heat resistant adhesives that enable flexible composites. In addition, the Heares range addresses those who want to bring durable heat resistance to new applications such as electronics, aerospace, rail, etc.

Heares products are water-based, ready-to-use and environmentally friendly. They are easy to apply by roller, knife, screen printing systems or robotics and provide good adhesion to glass fiber fabric, metal, or aluminium foils.

The Heares team consists of chemists who develop and formulate as well as material and bonding professionals who support customer projects. They also include application engineers and technicians with experience in lamination and coating. These specialists carry out test series at the customer's request: burn tests (UL94), plasma treatment test, furnace test.)

Fire protection in buildings - thin, light, flexible and space-saving

By combining Heares products with glass fiber fabric and aluminium foil, fire protection curtains and smoke barriers can be manufactured with optimized dimensions, because Heares creates thinner, lighter, and more flexible composites. This enables space-saving designs. The lower weight of the fire protection curtains also reduces the load on the statics, suspension, and drive systems, allowing them to be optimized. In addition, the behavior and resistance of the entire composite is improved in the event of a fire. The heat resistance increases over time and the aluminium foil does not delaminate from the fabric. If the aluminium foil is placed towards the flame, it is not destroyed. The glass fiber fabric remains flexible. In addition, in the

event of a fire, smoke emission from the textile curtain is lower than with conventional fire protection curtains, thanks to Heares products.



Figure 1: EW test (DIN EN 16034) carried out in March 2022 at IBS in Linz. The laminate coated with Heares (glass fiber fabric/Heares adhesive/aluminium foil) withstood the heat ($> 900\text{ }^{\circ}\text{C}$) for 60 minutes. (Photo nolax)

Impact protection parts increase personal safety in e-mobility

The combination of Heares products enables the production of novel, flexible impact protection parts, which are used in high-voltage systems such as EV batteries and protect the battery lid from burnthrough. Heares' novel adhesives and coatings allow the impact-protective parts to be thinner, lighter, and more flexible. This enables space-saving designs that contributes to cost savings.

Heares products offer very good protection against abrasive heat stress during uncontrolled thermal runaway in EV battery systems. During thermal runaway, hot gases $> 1000\text{ }^{\circ}\text{C}$ and metallic particles (for example copper and aluminium) are catapulted out of the battery and against the lid within milliseconds.

In nolax's own test rig, a thermal runaway can be simulated by means of a fountain firework in accordance with VW TDO V03.986.764.A2021.05.



Figure 2: Impact by means of a fountain firework in nolax's own test rig (temperature: 1300 °C, duration: 20 s, distance between fireworks and test specimen: 30 mm). The result: No burnthrough of the test specimen after 20 seconds.

Heat protection in the engine compartment for optimized performance

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.

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.



Figure 3: 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.
(Foto nolax)

For more information, please visit nolax stand no. 11.0 D46

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((Background nolax AG))

The adhesive scene's farm team

nolax is an independent family business based in Sempach Station, Switzerland. The goal of nolax is the invention of new technologies and products. In doing so, nolax develops radically new system solutions and opens up new application areas and markets for the adhesive industry. nolax develops those new businesses as internal start-ups until they have proven themselves and are ready to be transferred to an ideal partner who will take the business global. At the same time, nolax specialists cultivate selected adhesive technologies and thus serve technically interesting niches in various industries in Europe, North America and Asia.

New business and product ideas form the core business of nolax, which are developed into commercial products in interdisciplinary teams at the nolax house, our company headquarters. The nolax house is designed as a chemical-technical think tank. It sets standards in flexibility and transparency: Office, laboratory and application interlock in a forward-looking co-working space and promotes dialogue and creativity which results in quick decisions and surprising bonding solutions for the customer. Many years of experience as well as industry and technology knowledge are paired with the joy to experiment and a pioneering spirit to form the unique nolax added value. nolax offers employees room for personal development in a corporate culture based on trust.