



BEST PRACTICE

Achieve Body Stiffness, Durability And Safety Performance Targets With Teroson® EP 5089 GB Structural Adhesive

CHALLENGE

An OEM was challenged to improve all-aluminum body structure performance by optimizing major joints affecting body stiffness, durability and safety. A combination of extrusions, castings and sheet subassemblies required outstanding parent-metal adhesion to meet crash resistance, ride and handling, and corrosion resistance targets. Structural adhesive solutions being considered had to meet stringent endurance requirements for heat, cold, corrosion and rough road surfaces that could potentially fatigue the vehicle structure. An additional challenge when working with the heat-dissipating aluminum body was maintaining the proper adhesive temperature long enough to cure completely and ensure a robust bonded joint.

**Henkel**

SOLUTION

In the early design stage of this all-new EV, Henkel experts collaborated with the OEM to offer adhesive technology and application expertise. The team addressed concerns that the structural adhesive would be squeezed out of essential bonded areas during joining. Together, they determined that adding solid glass beads to Henkel TEROSON EP 5089 structural adhesive was the correct solution. The new formula was named TEROSON EP 5089 GB.

In addition to evenly spreading crash loads through the vehicle without failures, TEROSON EP 5089 GB addressed the heat-dispersing properties of aluminum. Enabling a reliable heat cure, the formula bonded heavy metal gauge thicknesses and areas situated lower in the vehicle. Combining OEM engineering and design aspirations with Henkel's collaborative approach saved project time and cost – right from the start.



TEROSON EP 5089 GB BENEFITS

- Maintained uniform bond line thickness and bond gap consistency
- Met crash resistance targets with an ideal balance of strength and toughness
- Delivered on demanding body stiffness, durability and safety performance targets
- Overcame heat-dispersing properties of aluminum with fully cured joints at 175°C in 25 minutes
- Ensured a reliable bond to aluminum, steel, magnesium and composite materials in all operating environments

PORTFOLIO OF HIGH CRASH-RESISTANT STRUCTURAL ADHESIVES

HENKEL PRODUCT TEROSON	EP 5089/EP 5089 GB	EP 5089 EU
E-MODULUS (ISO 527-1)	1,700 MPa	2,000 MPa
LAP SHEAR STRENGTH (ISO 4587, 2mm/DC04)	32 MPa	28 MPa
IMPACT PEEL STRENGTH (ISO 11343, 1mm/DC04)	32 N/mm	32 N/mm
SPECIAL PROPERTIES	Medium viscosity; glass beads (GB) can be added to maintain bond line thickness consistency	High viscosity and wash-off resistance

**WHAT PROJECT CHALLENGES ARE YOU FACING?
GET IN TOUCH WITH US TODAY ABOUT OUR
EXTENSIVE PORTFOLIO OF TECHNICAL SOLUTIONS.**

Visit:

www.henkel-adhesives.com

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