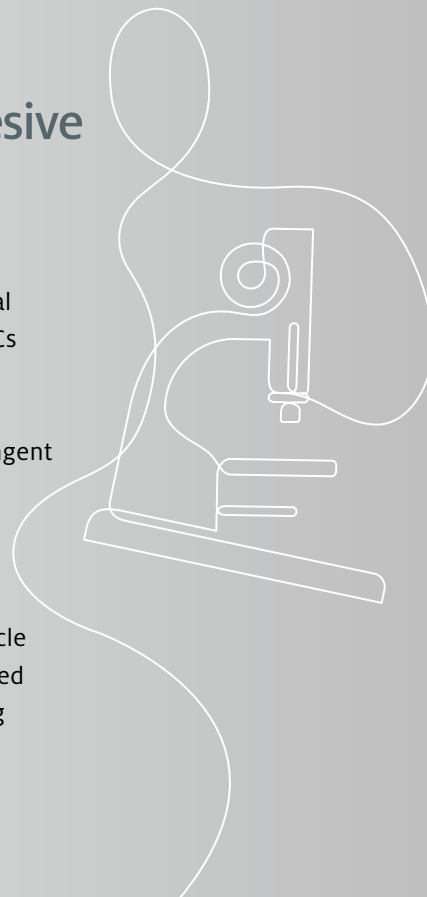


BEST PRACTICE

Optimize Safety, Body Stiffness and Durability with TEROSON® EP 5150 Structural Adhesive

CHALLENGE

A well-known global electric vehicle (EV) OEM was challenged to improve steel-and-aluminum body performance using a structural adhesive with stable, easy-to-use uncured properties and no VOCs or heavy metals in its formula – all at a reasonable per-unit cost. The structure's combination of extrusions, castings and sheet subassemblies required an adhesive formulation that meets stringent crash resistance, ride and handling and corrosion resistance specifications. Other requirements included long-term stress durability and flame resistance. The desired structural adhesive had to withstand years of demanding environmental conditions, including heat, cold, corrosion and harsh road inputs to the vehicle structure. Additionally, heat-dissipating aluminum joints presented a challenge to maintaining the proper adhesive temperature long enough to ensure a completely cured and robust bonded joint.

**Henkel**

SOLUTION

The OEM's quest for a universal structural adhesive compatible with multi-metal design included high structural, durability and workability standards. After teaming with their design team to determine specific application areas and bonding challenges, Henkel recommended the capable TEROSON EP 5150 formula.

Uncured properties and an eco-friendly formulation were vital performance factors. TEROSON EP 5150 offers a 1K, cold-pumpable design and wash-off resistance in all common automotive pretreatment lines. Meeting OEM requirements, TEROSON EP 5150 also offers open bead and closed bead humidity resistance for ease of manufacturing, and the formula contains no volatile organic compounds (VOCs) or heavy metals that could create environmental concerns.

TEROSON EP 5150 provides an optimum balance of strength and toughness (the ability to bend and not break in crash scenarios) while addressing the heat-dispersing properties that are characteristic of bonded aluminum joints. A short, 10-minute heat cure allows heavy-gauge metals and areas lower in the vehicle structure to attain full crash performance capability.



TEROSON EP 5150 BENEFITS

- Stress durability and flame resistance performance that exceeds common durability and crash resistance requirements
- Cold-pumpable 1K formulation for ease of application
- Excellent uncured open time, wash-off resistance and humidity resistance (open-bead and closed-bead)
- No solvents or heavy metals
- Full-cure strength and impact peel properties in 10 minutes at 160°C metal temperature

PORTFOLIO OF HIGH-STRENGTH STRUCTURAL ADHESIVE FOR STRESS DURABILITY IN A MULTI-METAL DESIGN

HENKEL PRODUCT TEROSON	EP 5150
E-MODULUS	>1,800 MPa
LAP SHEAR STRENGTH ISO 4587, 2mm/DC04 at 23°C, test-cured at 175°C/25 minutes)	30 MPa
IMPACT PEEL STRENGTH (ISO 11343)	>45 N/mm substrate CRS 1.0mm
SPECIAL PROPERTIES	Good adhesion for pretreated galvanized/galvannealed steel, cold-rolled steel, zinc-aluminum-magnesium coated steel, aluminum alloys

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

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