

Best Practice

COMBINE BEST-IN-CLASS CRASH RESISTANCE WITH SUPERIOR RIDE COMFORT WITH HENKEL STRUCTURAL ADHESIVES

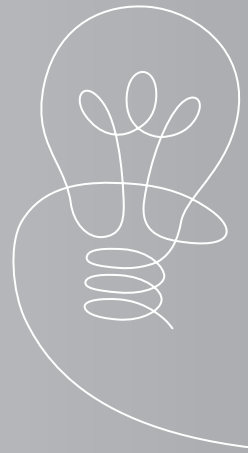
CHALLENGE

A leading OEM was challenged to develop a sub-4-meter platform architecture that features excellent ride handling and maximized crash resistance for best-in-class NCAP safety ratings.



SOLUTION

To meet the market needs of the expanding small vehicle segment, Henkel helped a leading OEM maximize vehicle dynamics and crash performance for scalable sub-4-meter platforms – while also optimizing weight efficiency. Best-in-class durability and body stiffness targets were set to gain 5-star NCAP safety ratings. To achieve this, Henkel recommended the strategic use of structural adhesive Teroson EP 5089 – a proven technology for multi-substrate bonding in vehicle construction having 20% AHSS steel. Teroson EP 5089 features a modulus greater than >1400 MPa and a fracture toughness greater than 20N/mm – which makes it suitable for applications requiring joint stiffness and crash resistance. The outstanding performance of Henkel's structural adhesives establishes a comprehensive answer to the specific needs of the small-car segment.



BENEFITS

- Improved structural performance that gained 5-star NCAP crash test ratings
- Up to 10% improved ride handling versus exclusively welded joinery
- Met application requirements
- Higher energy absorption in weld seam adhesive joinery resulted in uniform crumpling (Certification agency quote: "The bodyshell was rated as stable and it was capable of withstanding further loadings.")

PORTFOLIO OF HIGH CRASH-RESISTANT STRUCTURAL ADHESIVE

Henkel Product	E-Modulus (ISO 527-1)	LSS (ISO 4587, 2 mm/DCo4)	Impact Peel Strength (ISO 11343, 1mm/DCo4)	Special Properties
TEROSON	(ISO 527-1)	(ISO 4587, 2 mm/DCo4)	(ISO 11343, 1mm/DCo4)	
EP 5014	1500 MPa	38 MPa	36 N/mm	Medium viscosity
EP 5016 C	1600 MPa	30 MPa	35 N/mm	Medium viscosity
EP 5018	1600 MPa	34 MPa	40 N/mm	Excellent impact peel resistance and medium viscosity
EP 5089	1700 MPa	32 MPa	32 N/mm	Medium viscosity
EP 5089 EU	2000 MPa	28 MPa	32 N/mm	High viscosity and wash-off resistance
EP 5090	2400 MPa	32 MPa	34 N/mm	Medium viscosity and excellent humidity resistance
EP 5091	2000 MPa	28 MPa	34 N/mm	Medium viscosity, special wash-off resistance and excellent humidity resistance
EP 5092	1800 MPa	28 MPa	34 N/mm	Medium viscosity and excellent wash-off resistance
EP 5095	1600 MPa	30 MPa	33 N/mm	Medium viscosity, non-heated follower plate application, high wash-off resistance
EP 5150	1800 MPa	30 MPa	42 N/mm	Excellent stress durability, excellent impact peel resistance with low to medium viscosity

GET IN TOUCH WITH US

For more information on our Structural Adhesives, visit:

www.henkel-adhesives.com

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