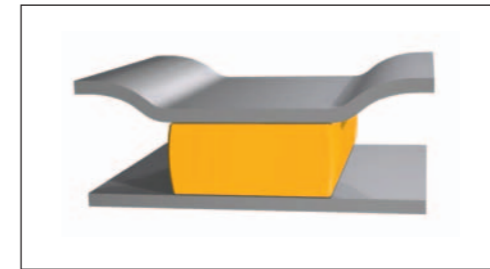
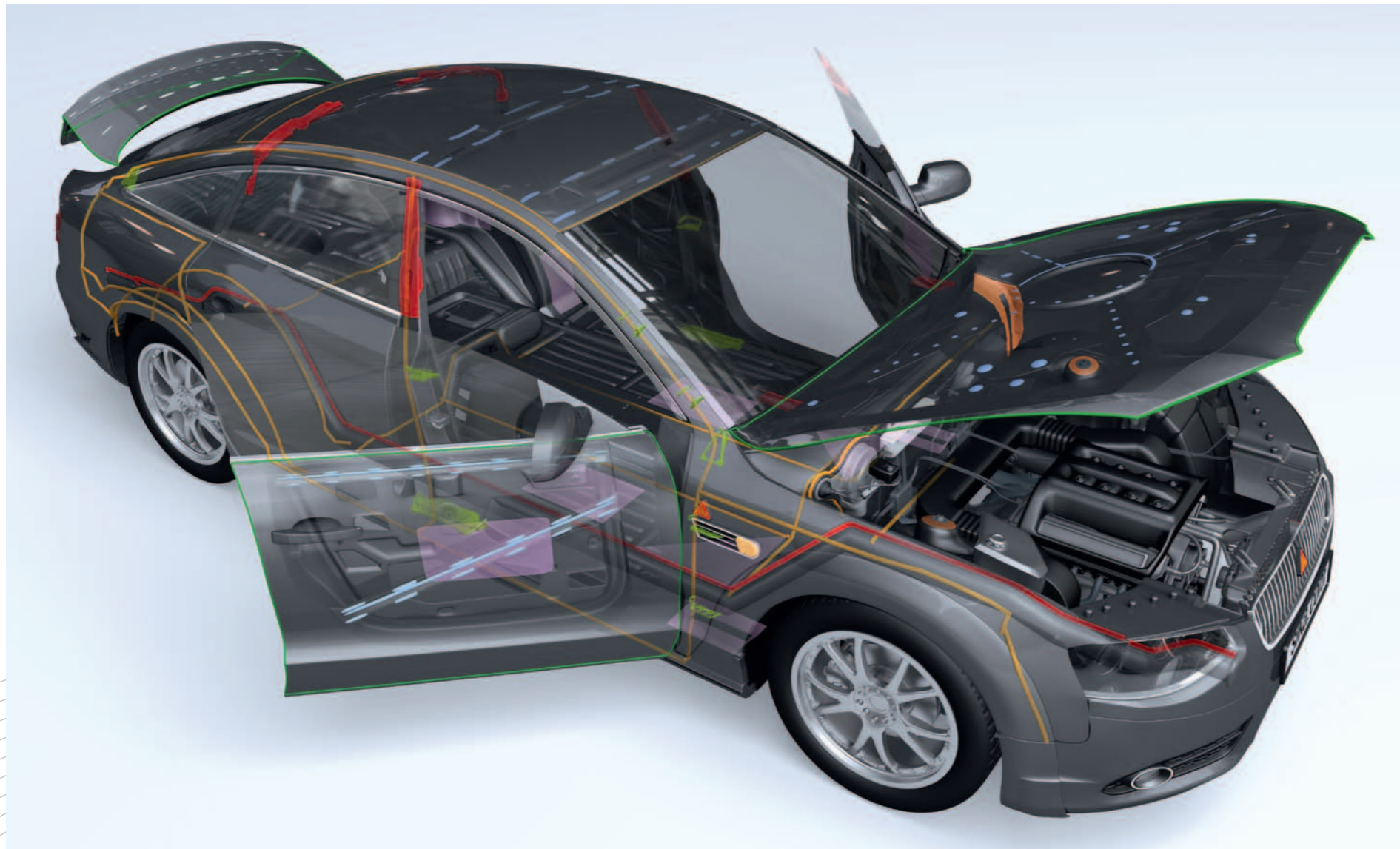




The Joining Performance SikaPower[®] and SikaSeal[®]



Innovation & since
Consistency | 1910



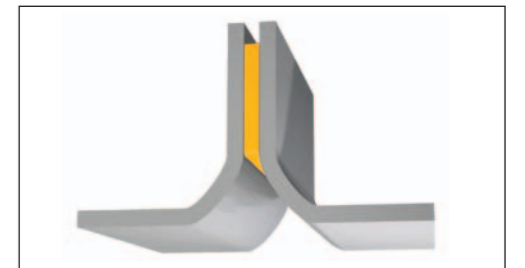
Anti-Flutter_4



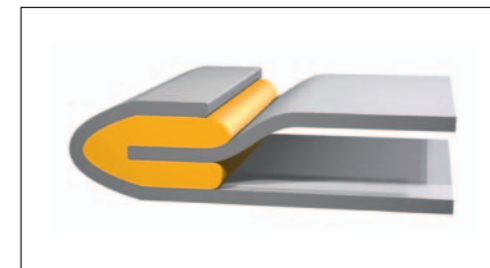
Sealing_5



Structural Bonding_6



Crash Resistant Bonding_7



Hem-Flange Bonding_8

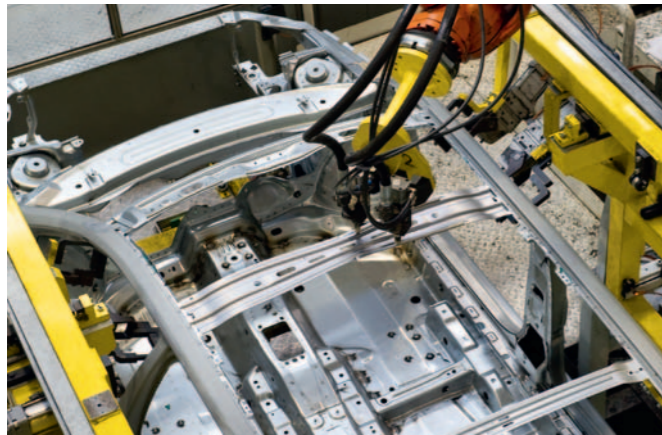
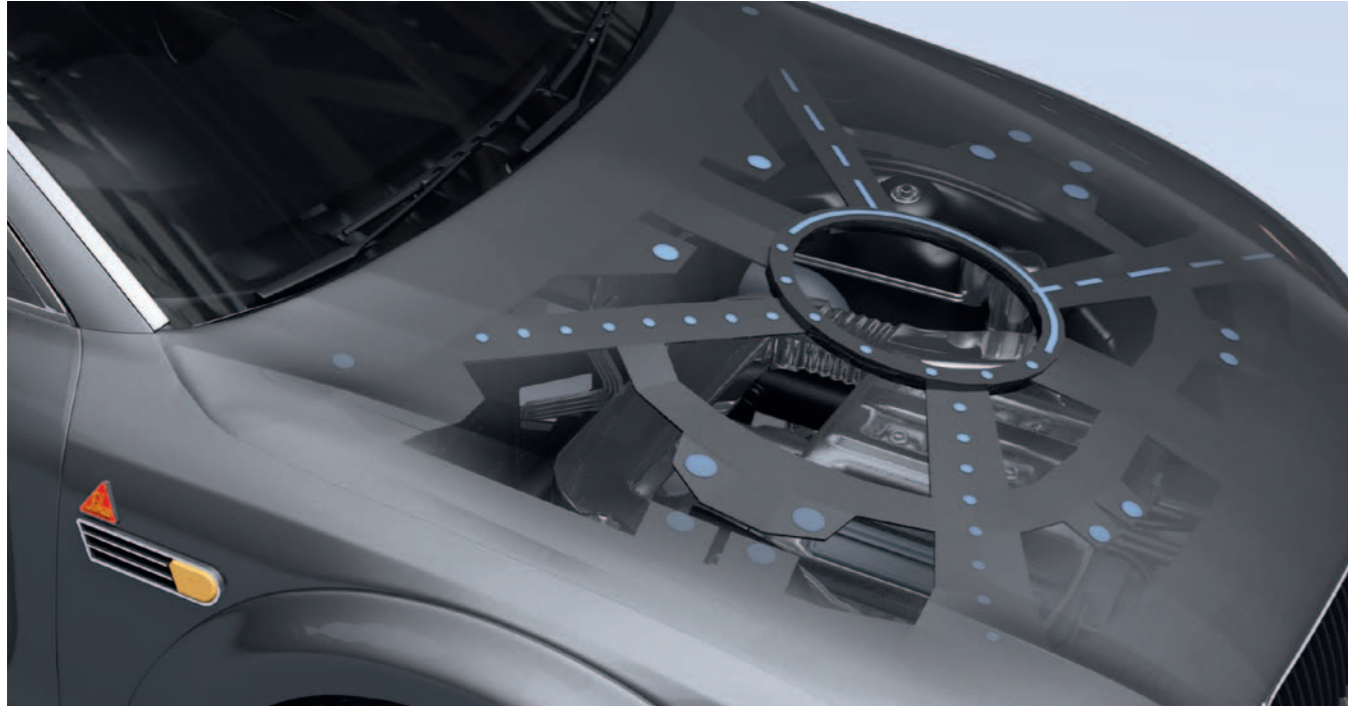
Body-In-White Applications

Sika's body-in-white adhesives and sealants are hot curing and based on different technologies including epoxy and rubber. Depending on the application the suitable technology is chosen, providing good adhesion and ageing performance. Special rubber based tougheners avoid brittleness but still allow a high stiffness and in high amounts even crash resistance.



Anti-Flutter

Sika's expertise in rubber and rubber hybrid technologies provides anti-flutter and mastic sealing materials which prevents read through. The high elasticity and good adhesion on metals enable sound damping and stiffness increase.



Automated robot application of SikaSeal®

SikaSeal®

SikaSeal® is a one part, cold pumpable sealant for anti-flutter applications in the body shop. It has excellent adhesion on aluminium and steel surfaces.

Sealing

Sika's BIW sealants are based on a polyurethane-epoxy technology. These products have a very good corrosion protection on all metal types used in the body shop. After pre-curing it has an excellent wash out resistance.



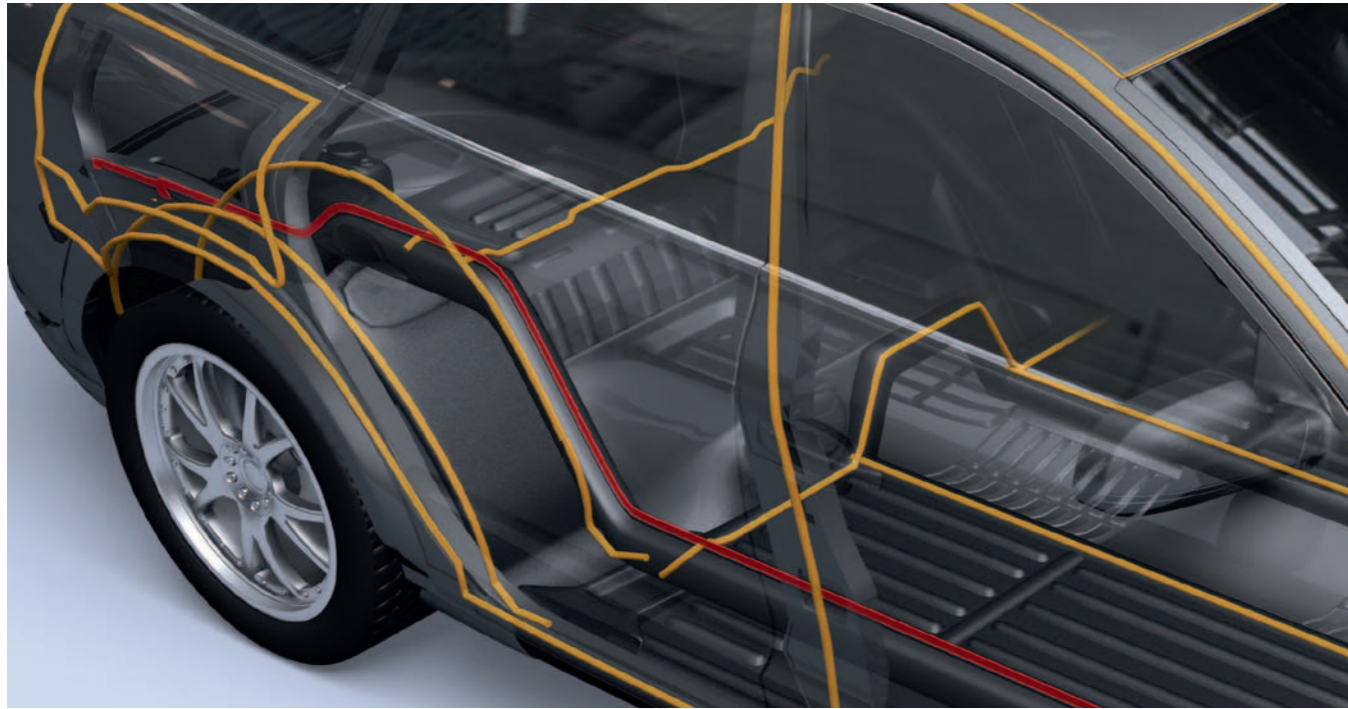
Applicaton of SikaPower® -415 P1

SikaPower® -415 P1

SikaPower® -415P1 is a moisture pre-curable sealant with a good wash out resistance. After pre-curing the sealant is e-coatable and it has an excellent corrosion protection.

Structural Bonding

SikaPower® structural adhesives are widespread in the body shop for bonding applications all over the car body, e.g. in the platform, for carriers, sills, pillars, the roof connection, hinges, etc. They provide outstanding strength and stiffness and are designed for use in combination with or as a partial replacement for spot-welding, riveting, clinching and other ongoing techniques.



Fully automated SikaPower® wheel arch application

SikaPower®-480

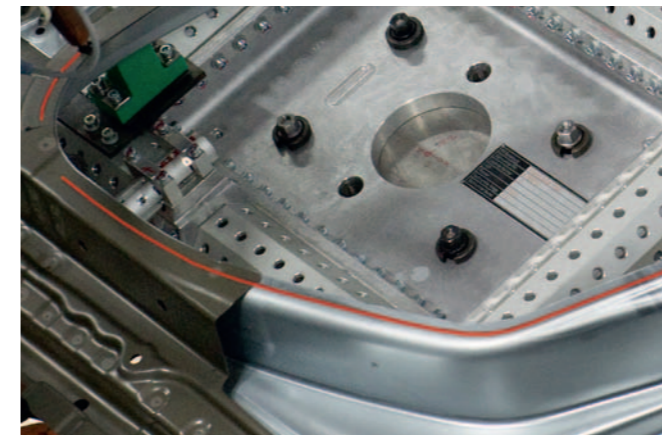
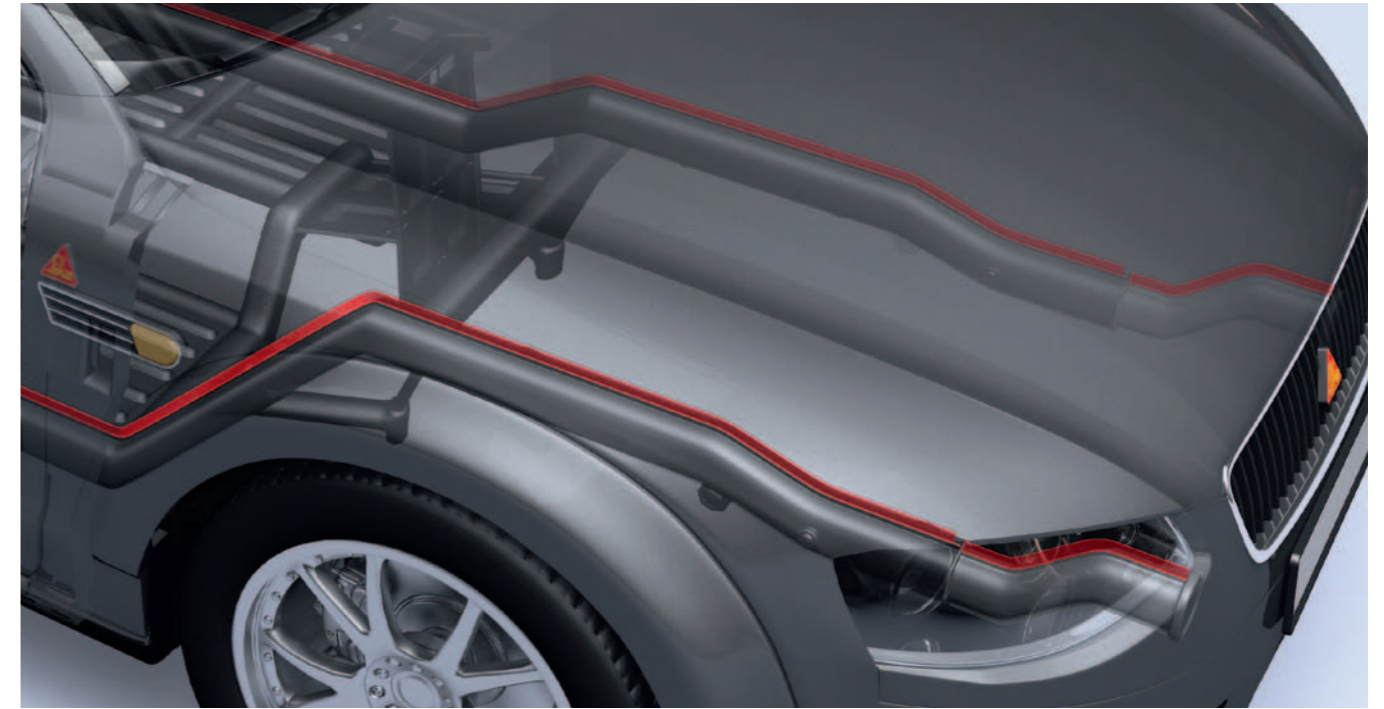
SikaPower®-480 is a structural adhesive providing extra high strength and stiffness. It is high-viscous and thixotropic leading to superior wash out resistance, non-sag and gap filling properties.

SikaPower®-492

SikaPower®-492 is an all purpose structural and semi-crash resistant adhesive for stiffening applications in the car body. The combination of high wash out performance and medium viscosity are ideal for applications in the body-in-white.

Crash Resistant Bonding

Sika has developed a new generation of crash-resistant structural adhesives with high performance between -40 and +90 °C. Crash resistant adhesives are thoughted to avoid rupture in case of a crash and provide at the same time the high stiffness of structural adhesives.



Side panel application with crash resistant SikaPower®

SikaPower®-497

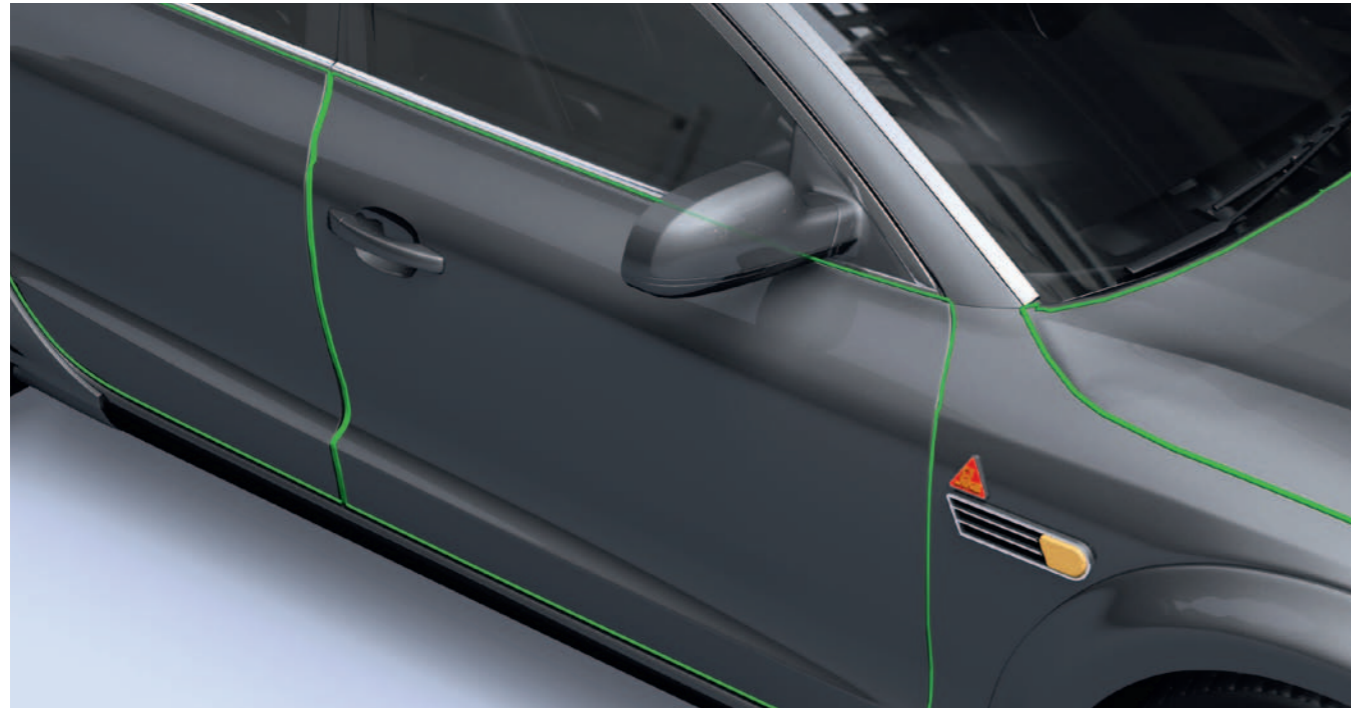
SikaPower®-497 is a crash-resistant structural adhesive with a low viscosity allowing pumping at ambient temperature and high application speeds. Furthermore, SikaPower®-497 has a Tg of more than 110 °C and is optimized for adhesion on aluminium and steel.

SikaPower®-498

SikaPower®-498 is a crash-resistant adhesive providing at the same time high strength and stiffness. It is high-viscous and thixotropic leading to superior wash-out resistance, non-sag and gap filling properties.

Hem-Flange Bonding

Based on the new generation of SikaPower® adhesives, a wide range of products from structural to crash resistant is available for hem-flange bonding. All the products contain glass beads to enable a homogenous gap. These products can be pre-cured by induction. SikaPower® hem-flange adhesives are applied as a bead or swirl application.



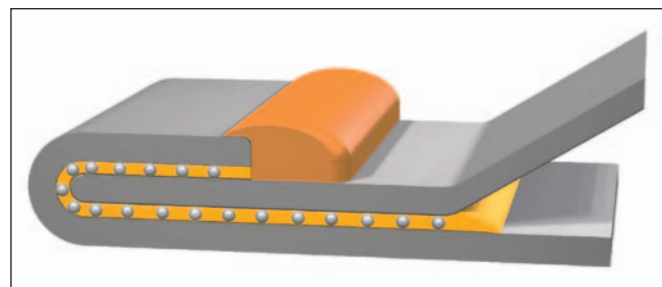
Fine jet SikaPower® hem-flange application

SikaPower®-492G

SikaPower®-492G is a semi-crash resistant adhesive. The incorporated glass beads and the good ageing performance make the product ideal for hem-flange bonding.

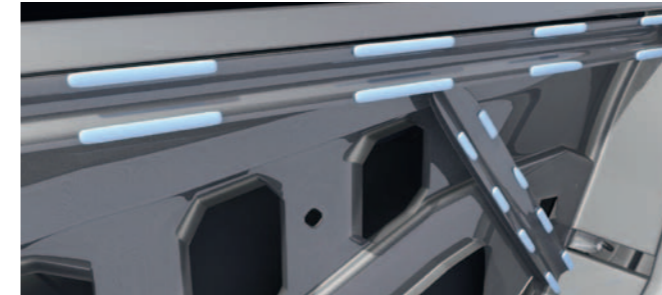
SikaPower®-497G

SikaPower®-497G is a crash-resistant hem-flange adhesive with low viscosity for easy and fast application. Special properties are the suitability for aluminium bonding and the high tag.



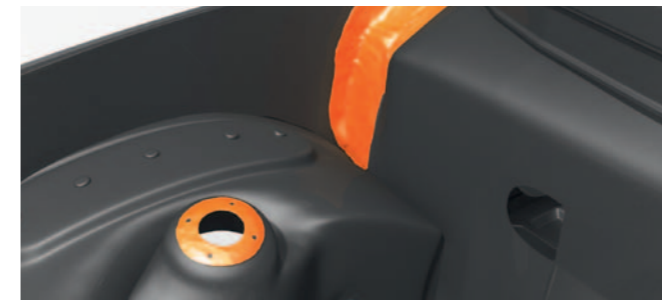
Schematic effect of glass beads for hem-flange application

Benefits



Anti-Flutter

- Prevents read through
- Cold pumpable
- Thinner metal sheets



Sealing

- E-coat over paintable
- Corrosion protection
- Flat bead application



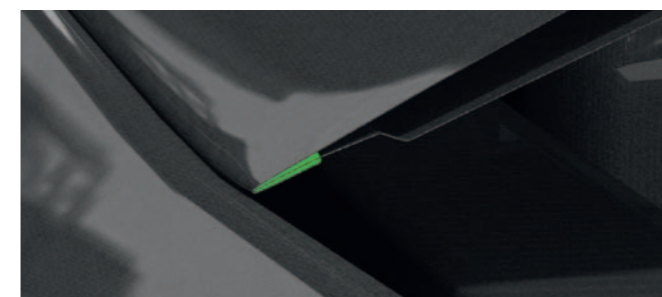
Structural Bonding

- Stiffness increasing
- Less spot welding
- Excellent ageing performance



Crash Resistant Bonding

- High impact energy absorption
- Wash-out resistance
- High performance over temperature



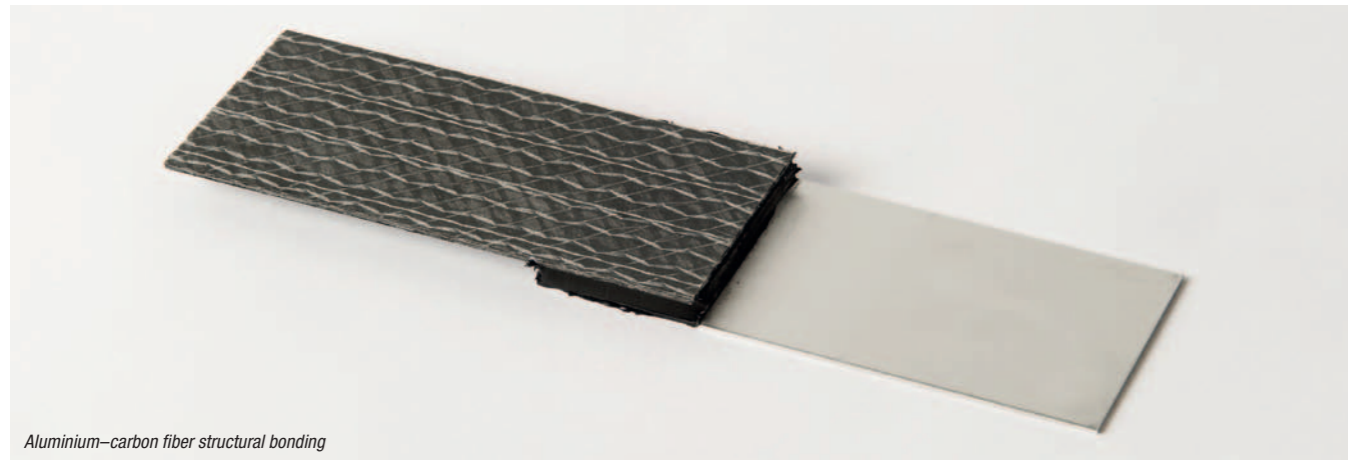
Hem-Flange Bonding

- Well defined gaps
- Various application methods
- Prevents distortion

Lightweight, Crash-Test and CAE Simulation

SikaPower® adhesives improve stiffness and crash behavior of car bodies, SikaSeal® sealants reduce noise and vibrations while both are contributing for reduction of overall car weight, fuel consumption and cost per unit.

Lightweight and multi-material joining



Aluminium-carbon fiber structural bonding

Crash energy absorption and crumple zone reduction

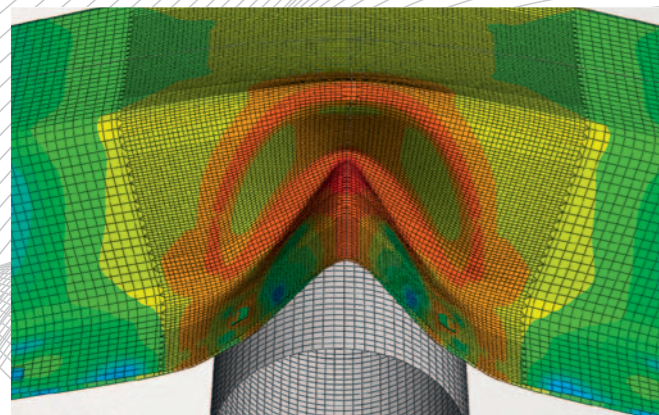


Crash beams: original form bonded welded

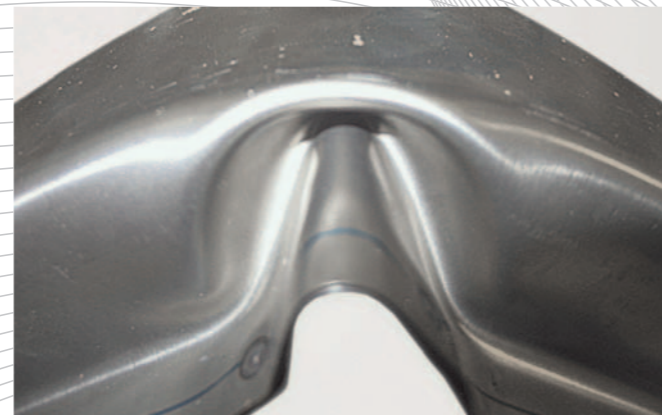


Crash beams: bonded bonded + welded

CAE simulation comparison to experimental results



Numerical results



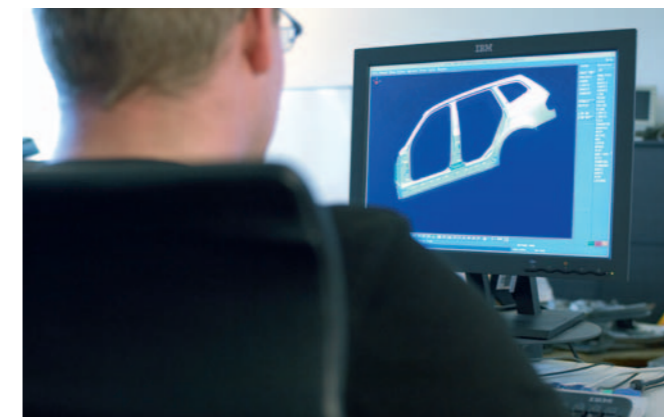
Experimental results

The Sika System Solutions

All our activities are focused on the needs of the customer. To meet those needs we have put together the Sika package for integrated System Solutions, which consists of three elements:



The technologies form the platform for advanced, high-performance products. Sika has developed a comprehensive range of process materials delivering complete system solutions for industry in its core competencies of technological expertise: sealing, bonding, damping, reinforcing and protecting.



During the last decade Sika gained know-how in the design of bonded and reinforced structures for cars. Sika's experienced CAE engineers are equipped to support customers with a variety of commercial software packages for static and dynamic analysis as well as topological optimization.



The people, finally, our team of over 13'500 experienced and highly trained Sika professionals who are on the ground in more than 74 countries around the world to assist customers in developing and implementing solutions.

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Our most current General Sales Conditions shall apply.
Please consult the most current local Product Data Sheet prior to any use.

www.sika.com/automotive



10/2011

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