



MOVING THE BATTERY INDUSTRY
FORWARD
BATTERY ASSEMBLY
BONDING SOLUTIONS

BUILDING TRUST



SIKA STRUCTURAL BONDING SOLUTIONS

MOVING ASSEMBLY TECHNOLOGIES FORWARD WITH SIKA BONDING SOLUTIONS

As electric vehicle design evolves, so does the variety of materials used in the construction of electric power trains. Thanks to deep experience and knowledge from the automotive industry and an extensive range of products, Sika helps manufacturers successfully manage these changing material demands.

THE PERFECT SOLUTIONS WITH SIKA:

Sika offers the broadest range of products in the industry and continually develops new bonding solutions that overcome challenges such as adhesion to unrelated metals, plastics and composites while offering heat and glycol resistance. These include one-component, two-component and boosted PUR, silicone, STP, MMA, epoxy, hybrids, hot-melts, and PSA technologies. The products offer flexibility in the manufacturing process, the potential for increasing throughput, as well as industry-leading performance.

“SIKA’S RESPONSE TO THE NEED OF TECHNOLOGIES FOR SEALING AND BONDING IN THE NEW ENERGY VEHICLES DRAWS ON OVER 100 YEARS OF EXPERIENCE AND INNOVATION, RESULTING IN OUR VAST PRODUCT RANGE SERVING THE GLOBAL MARKETS.”

Kai Paschkowski,
Corporate Head of E-Mobility

With over 100 years of experience, Sika offers its customers a global production footprint that enables us to create reliable supply chains and deliver high-quality adhesives worldwide. Furthermore, Sika is able to support customers locally with technical expertise accumulated and refined over the years.

Product	Chemical base	Characteristics	Lapshear strength MPa	E-Modulus MPa	Applications
SikaForce®-925 FR	2-component polyurethane	- Easy adhesion to aluminium and PET - Fast curing	4	15	Side plate to cell bonding
SikaForce®-920	2-component polyurethane	- Structural and flexible properties - Stable mechanical properties	11	345	Housing Structure / Structural cross members'
SikaFast®-555	2-component acrylate	- Fast strength build up - High strength - High flexibility	12	540	Component bonding Cell to wall bonding
SikaForce®-840	2-component polyurethane	- Structural and flexible properties - Stable mechanical properties over temperature range	15	350	Structural cross members Housing structure E-Coated Parts
SikaPower®-880	2-component Epoxy	- High fatigue resistance - High impact resistance - Very good application properties	23	2,100	Structural cross members Weld replacement (seek advise) Housing structure

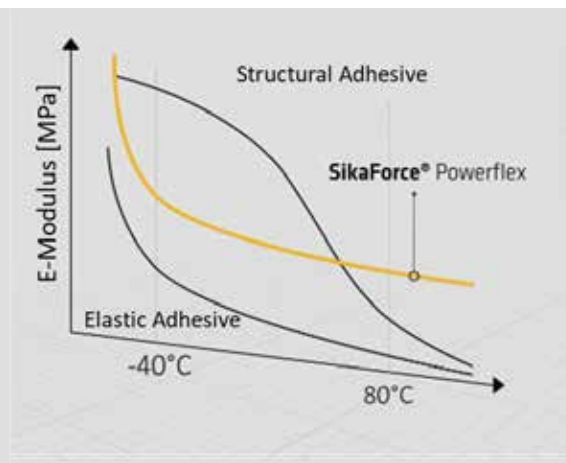
INNOVATION IN STRUCTURAL BONDING

ENHANCE MANUFACTURING PROCESSES AND IMPROVE MECHANICAL STABILITY

The new SikaForce® Powerflex makes it possible to combine the advantages of both structural and elastic adhesives to optimally meet the requirements for lightweight designs. Powerflex technology provides the highest levels of structural properties combined with long lasting elasticity in all climatic conditions.

Sika Force® Powerflex

- » **Combines** high strength of structural – with flexibility of elastic adhesives
- » Very **stable** mechanical strength throughout service temperature

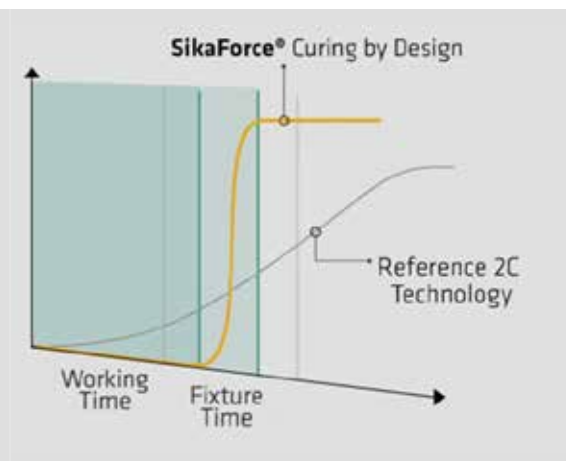


Powerflex technology explained

In addition, the Curing-by-Design technology allows adjustable pot life followed by immediate curing, resulting in drastic reductions in production cycle time.

Sika Force® Curing by Design

- » Unmatched **snap cure effect** to reduce fixture times
- » **Variability in working and open times** (short - long)
- » Unique **intellectual property** of Sika



Curing-by-Design technology explained

SIKA - YOUR PARTNER OF CHOICE:

As design moves forward, the introduction of new and innovative materials is a by product of development in battery design. This demands that engineers who design batteries widen their scope for new joining methods. With increasing regulations on safety and crash integrity, Sika structural bonding solutions are the ideal option for increasing battery safety along with optimizing manufacturing processes reducing cost in production and placing less demand on service and maintenance.

SIKA BATTERY SYSTEMS

SOLUTIONS SEALING & BONDING

STRUCTURAL BONDING			
SEALING			
LOW STRENGTH [0.5 - 3 MPA]	MEDIUM STRENGTH [3 - 10 MPA]	HIGH STRENGTH [10 - 15 MPA]	VERY HIGH STRENGTH [> 15 MPA]
STP 1C PU Silicones	STP-Hybrid 2C PU	2C PU Acrylates	Epoxy Acrylates
LID/TRAY SEALING	STRUCTURAL ASSEMBLIES OF MODULES/CELLS		STRUCTURAL BONDING OF BATTERY TRAY
Body shop substrates Fire retardant Nonpermanent sealing	Adhesion to PET, bare Al, coatings, ABS, (...) Fast/slow curing - Process requirements Fire retardant, dielectric properties (...) Re-work, debonding.		Body shop substrates Mainly cold applied No surface preparation



MOVING INDUSTRIES FORWARD

COMBINING GLOBAL REACH WITH LOCAL EXPERTISE



FOR MORE INFORMATION:
automotive.sika.com

WE ARE SIKA

Sika is a specialty chemicals company with a leading position in the development and production of systems and products for bonding, sealing, damping, reinforcing and protecting in the building sector and the motor vehicle industry. Sika's product lines feature concrete admixtures, mortars, sealants and adhesives, structural strengthening systems, industrial flooring as well as roofing and waterproofing systems.

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



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