

SEALING AND BONDING BEYOND THE EXPECTED BATTERY TRAY AND MODULE ASSEMBLY

BUILDING TRUST



SEALING AND BONDING

MAXIMIZED PROCESS FLEXIBILITY WITH SIKA'S BROAD PORTFOLIO

As electric vehicle design evolves, so too 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 glyco 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, Global Product Manager E-Mobility

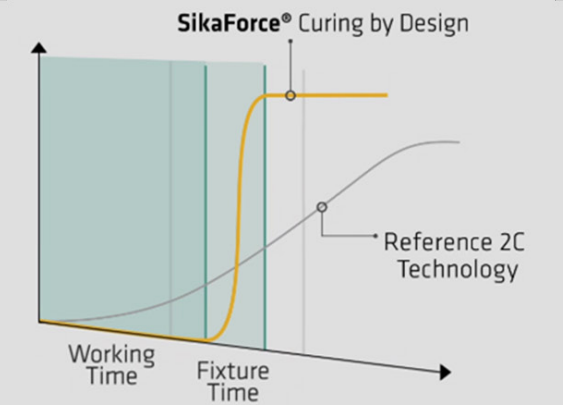
With over 100 years of experience, Sika offers their customer a global production footprint which enables the creation of reliable supply chains and delivers high quality adhesives all over the world. Further, Sika is also able to support their customers, locally, with technical knowledge, collected and refined during the years.

The new SikaForce® Powerflex makes it possible to combine the advantages of both structural and elastic adhesives to optimally meet the requirements for lightweight design. Powerflex technology provides the highest levels of structural properties combined with long lasting elasticity in all climatic conditions. In addition, the Curing-by-Design technology allows adjustable pot life followed by immediate curing, resulting in drastic reductions in production cycle times.

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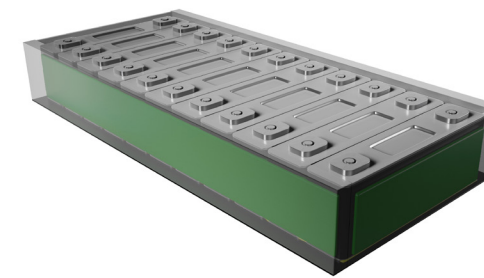
SikaForce® Curing by Design

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

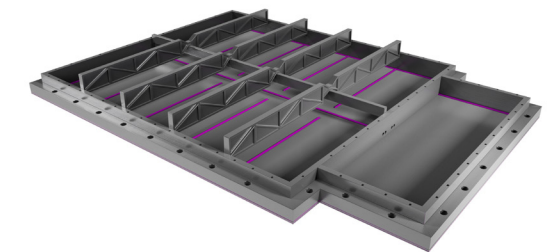


Curing-by- Design technology explanation

Sika can also use his experience in structural bonding to connect the module side walls and module lid to the cells. This application will increase the structural integrity of the whole module and therefore increase the integrity of the battery pack.



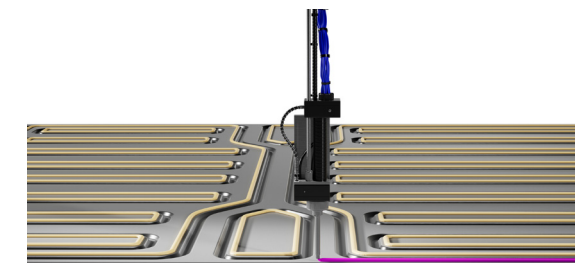
Structural bonding of side walls to cell



Structural bonding of the battery tray

SEALING AND BONDING SOLUTIONS ARE NOT ONLY IMPORTANT FOR THE BATTERY TRAY BUT ALSO FOR THE MODULES BONDING.

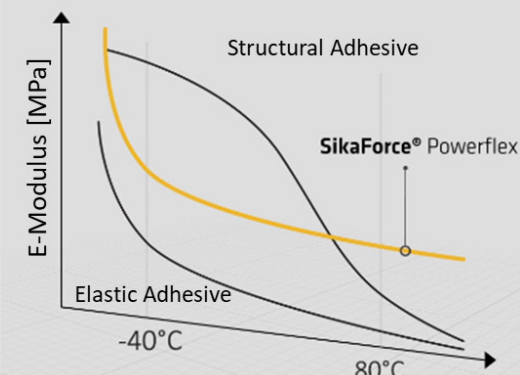
For sealing applications, the 2-component silane terminated polymer (STP) enables the bonding of various substrates, such as bare or coated metals like aluminum, and is also durable in heat and glycol environments. This performance can be achieved without pre-treatment if the substrates are free of contamination.



Bonding of the cooling plate

SikaForce® Powerflex

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



Powerflex technology explanation

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Enclosing the battery pack, also called battery lid sealing, is another core Sika competency. Here, Sika® Booster technology enables fast assembly processes and allows OEMs to control pack tightness down to 60 minutes after the final assembly step for lid sealing.

Together with the Sika Powercure® application technology, Sika offers full service from original manufacturing to aftermarket repair.



Lid sealer application

For bonding of prismatic cell to each other or to compression pads, the pressure sensitive adhesive (PSA) hotmelt technology is the future technology. The PSA hotmelts have a broad substrate adhesion range. It will help to automatize this stacking process and therefore further reduce manufacturing cycle times. Further, one-component reactive PU hotmelts can improve the fast-handling process of different components inside the battery pack.



Potting of cylindrical cells in modules

For the fixation of cylindrical cells inside the battery pack, the pot-life of the two-component potting material can be adjusted to match the cycling process of our customers.

Further the different technology ranges allow for flexible to high structural material to meet the customer requirements.

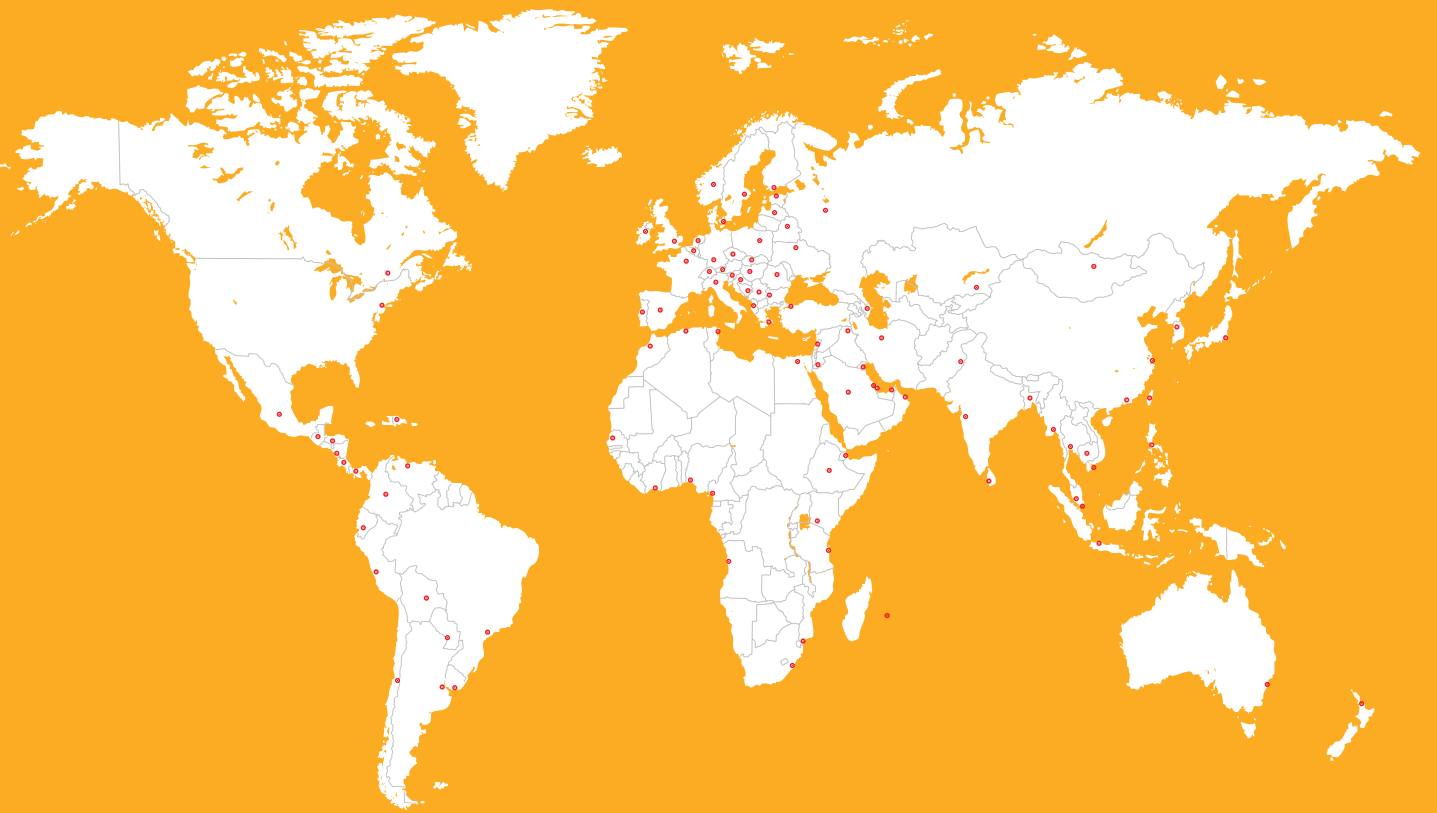
Product Family	Structural Application		Key Benefit
	Technology	Typical Bonding of	
SikaForce®	2C PU	Tray	Curing-by-Design and Powerflex technology
SikaPower®	2C EP	Tray	Broad adhesion range and crash resistant
SikaFast®	2C Acrylate	Tray	Broad adhesion range and very fast curing
SikaForce®	2C PU	Module	High strength and elasticity
SikaPower®	2C EP	Module	High strength and self-extinguish

Product Family	Sealing Application		Key Benefit
	Technology	Typical Sealing of	
Sikaflex® + SikaBooster®	1C PU	Lid	Accelerated curing and adhesion build-up
Sikaflex®	2C STP	Tray	Minimal pre-treatment required for most common substrates like aluminium

Product Family	Further Bonding Application		Key Benefit
	Application	Typical Bonding of	
SikaMelt®	Hotmelt	Cells (to compression pad) and components	Fast fixation
SikaBiresin® RE	Potting	Cells	Fast fixation

WHILE THE LANDSCAPE OF E-MOBILITY WILL CONTINUE TO EVOLVE, APPLICATIONS IN SEALING AND BONDING WILL ALSO CONTINUE TO CHANGE, SIKA'S CONSTANT FOCUS ON TECHNOLOGY TRENDS WILL ENSURE OUR SOLUTIONS REMAIN VALUABLE TO THE CUSTOMERS.

GLOBAL REACH BUT LOCAL PARTNERSHIP



FOR MORE INFORMATION:



automotive.sika.com

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



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