

# SmartCore Technology

HIGH PERFORMANCE  
TOUGHENING AGENT  
FOR SikaPower<sup>®</sup> EPOXY  
ADHESIVES

BUILDING TRUST



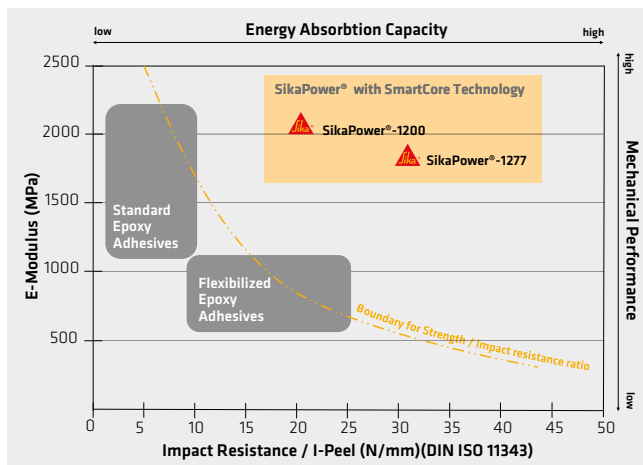


# SmartCore – HIGH PERFORMANCE TOUGHENING AGENT

**THE PATENTED SmartCore TECHNOLOGY** provides exceptional impact resistance designed to withstand dynamic stresses. It allows Sika to formulate SikaPower® two component cold curing epoxies bridging the performance gap to one component heat curing epoxy systems traditionally used to bond automotive lightweight structures.

The SmartCore technology provides the highest levels of toughness without compromising on mechanical strength and static load capacity. SikaPower® epoxy adhesives, toughened by SmartCore, outperform the state-of-the-art 2C epoxy adhesives – either brittle or flexibilized formulations – in terms of durability and fatigue resistance. They are therefore becoming

the preferred choice in industries such as commercial transportation (e.g. rail), wind, appliances and industrial equipment. They are designed to withstand high impact energies and elevated dynamic load cycles making them the ideal solution when strong and durable bonds are required.

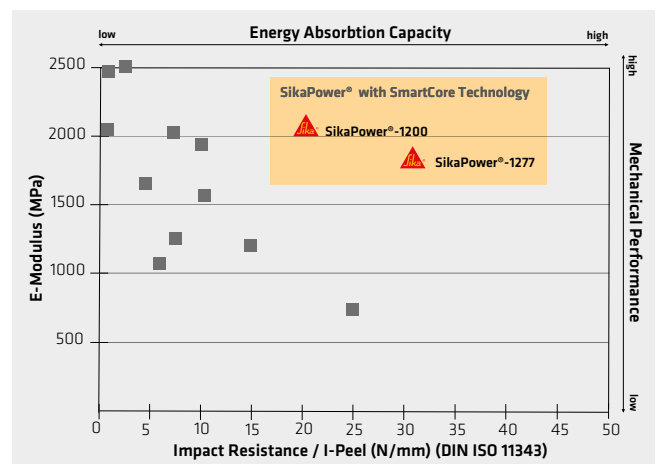


## Next level of toughness with SikaPower® two component epoxy adhesives

Over the course of modern history, new epoxy systems with improved toughness have emerged. Most of them claiming to have superior toughness over conventional epoxy systems. However, the achieved level of toughness strongly correlated with the elastic modulus: the increased toughness of classic 2C epoxy adhesives resulted in non-desired drop of stiffness and capability to carry high mechanical loads. The SmartCore toughener patented by Sika breaks this correlation. SikaPower® two component epoxy adhesives toughened by SmartCore display a superior level of toughness by retaining extremely high mechanical properties.

## SikaPower® 2C epoxy adhesives toughened by SmartCore provide unmatched impact resistance

In the automotive industry the dynamic impact peel test is an established method to determine the toughness of an adhesive on steel substrates. Benchmark studies suggest that SikaPower®-1277 and SikaPower®-1200 provide superior toughness without compromising on mechanical strength when compared to commercially available 2C epoxy adhesives used in the market today. The products benchmarked are not exceeding medium toughness without reduction of mechanical performance. Sika clearly sets new standards in terms of highly toughened 2C epoxy adhesives. Crack propagation becomes a secondary issue as the SmartCore toughener increases the durability of SikaPower® epoxy adhesives.



■ Benchmarked epoxy adhesives


# SikaPower®-1200 SERIES SETTING NEW STANDARDS

**SikaPower®-1200 SERIES PROVIDES HIGH IMPACT AND FATIGUE RESISTANCE** combined with high tensile properties and are therefore best suited to withstand static and dynamic stresses. They have long-term creep resistance, higher peel strength, and exceptionally higher resistance against shock, vibration and impact loads. They are designed for bonding rigid substrates such as metals and composites.



#### Key Features of SikaPower® adhesives toughened by SmartCore:

- Exceptional energy absorption capacity
- Excellent crack resistance
- Superior fatigue performance
- Improved elongation at break
- Unmatched impact resistance

	SikaPower®-1200		SikaPower®-1277
Description	High strength, excellent impact resistance, non-sagging, metal and composite bonding		High strength, extraordinary impact resistance, excellent temperature resistance, metal and CFRP bonding
Technology	2C Epoxy		2C Epoxy
Mixing ratio	2:1		2:1
Color (mixed)	Green		Red
Viscosity	Thixotropic paste		Thixotropic paste
Pot life	45 minutes		60 minutes
Handling time	10 hours		11 hours
Lapshear strength	20.0 N/mm <sup>2</sup>		28.0 N/mm <sup>2</sup>
Tensile strength	40.0 N/mm <sup>2</sup>		30.0 N/mm <sup>2</sup>
Elongation	3.5%		4%
E-Modulus	2800 N/mm <sup>2</sup>		2000 N/mm <sup>2</sup>
Impact Peel Strength	20 N/mm		30 N/mm

# SIKA FULL RANGE SOLUTIONS FOR CONSTRUCTION:



**LIQUID APPLIED ROOFING**



**SINGLE PLY ROOFING**



**CONCRETE**



**CONCRETE REPAIR**



**STRUCTURAL STRENGTHENING**



**WATERPROOFING**



**JOINT SEALING**



**FAÇADE STRUCTURAL ADHESIVES**



**FLOORING**



**INDUSTRY**



**DISTRIBUTION**



**BUILDING TRUST**

## WHO WE ARE

Sika Limited and Sika Ireland Limited are part of the global Sika Group, specialising in the manufacture and supply of chemical based products. Sika have 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 has subsidiaries in 101 countries around the world and manufactures in over 200 factories. With more than 20,000 employees Sika generates annual sales of CHF 7.09 billion (£5.45bn). We are also committed to providing quality, service, safety and environmental care.

In the UK and Ireland, we provide market-leading solutions for concrete, waterproofing, roofing, flooring, refurbishment, sealing & bonding, and industry, and have manufacturing sites in Welwyn Garden City, Preston, Leeds and Dublin with more than 870 employees and a turnover of more than £260 million.

The information, and, in particular, the recommendations relating to the application and end use of Sika® products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The proprietary rights of third parties must be observed. Please refer to our homepage [www.sika.co.uk](http://www.sika.co.uk) for our current standard terms & conditions applicable to all orders. Users should always refer to the most recent issue of the Product Data Sheet for the product concerned, copies of which will be supplied on request.



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