

SmartCore Technology

HIGH PERFORMANCE
TOUGHENING AGENT
FOR SikaPower[®] EPOXY
ADHESIVES

BUILDING TRUST



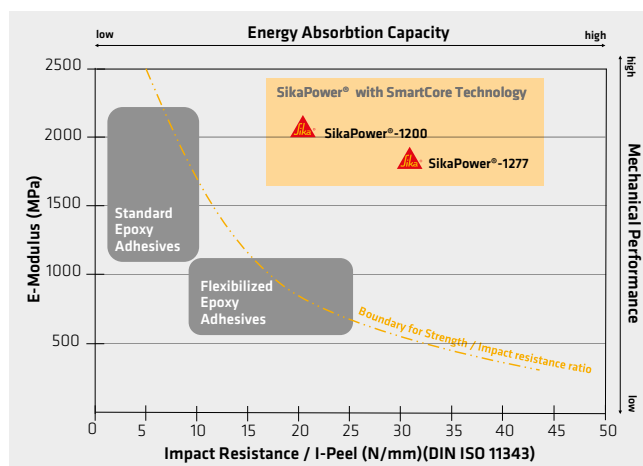


SmartCore – HIGH PERFORMANCE TOUGHENING AGENT

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.

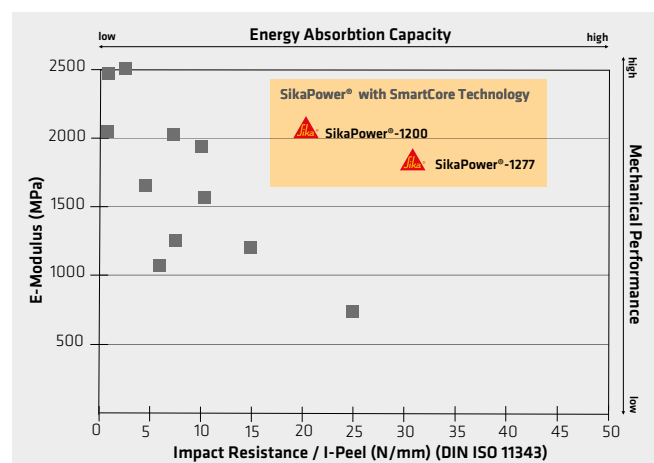


Next level of toughness with SikaPower® two component epoxy adhesives

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 ²		28.0 N/mm ²
Tensile strength	40.0 N/mm ²		30.0 N/mm ²
Elongation	3.5%		4%
E-Modulus	2800 N/mm ²		2000 N/mm ²
Impact Peel Strength	20 N/mm		30 N/mm

GLOBAL BUT LOCAL PARTNERSHIP



WHO WE ARE

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 Data Sheet prior to any use and processing.



SIKA SERVICES AG
Tueffenwies 16
8048 Zurich
Switzerland

CONTACT
Phone: +41 58 436 40 40
Fax: +41 58 436 55 30
www.sika.com

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