

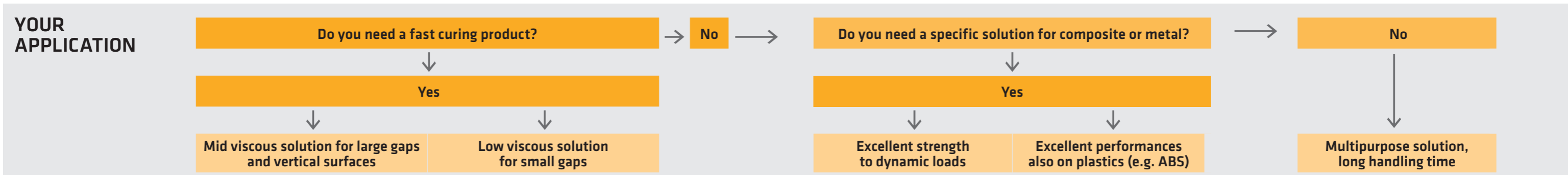


# STRUCTURAL BONDING SOLUTIONS EPOXY ADHESIVE SELECTION GUIDE

# EPOXY ADHESIVE SELECTION GUIDE

Sika epoxy-based adhesive solutions for structural bonding allow to obtain high performances from each assembly with lightweight, reliable and durable joints. Epoxy adhesive applications range from composite body assembly to generic industrial components and housing manufacturing.

Sika epoxy technology shows excellent adhesion properties on almost all the most common industrial substrates, it allows wide freedom in design and cost optimization in manufacturing process. This guide provides general selector guidance. Always refer the most actual Product Data Sheets prior to product usage or consult your Sika contact.



SIKA SOLUTION	SikaPower®-1511	SikaPower®- 1511 LV	SikaPower®-1554	SikaPower®-1576	SikaPower®-1548
Chemistry	2-component epoxy	2-component epoxy	2-component epoxy	2-component epoxy	2-component epoxy
Color	Light amber	Light amber	Black	Gray	Light yellow
Shore hardness	80 D	80 D	80 D	80 D	75 D
Mix Ratio	1 : 1	1 : 1	1 : 1	1 : 1	1 : 1
Viscosity (Pa.s.)	45	15	430	940	40
Pot life (min)	6	6	30	70	100
Lap shear strength (MPa)	8.1	10.7	20.6	21	15
Peel strength (MPa) <sup>1</sup>	3	3	5	4	5
Elongation at break (%)	1.7	2.4	2	2.2	7.2
Service temperature (°C)	-40 to +80	-40 to +80	-40 to +100	-40 to +120	-40 to +120

**PRODUCT DESCRIPTION**

**SikaPower®-1511** is a 2-component epoxy adhesive suitable for bonding metals, glass, wood, plastics (except polyolefins and non polar plastics) and fancy jewels. Typical applications are: embedding and anchoring of metal rods on hollow or full supports, bonding of decorative elements such as facing and tiles, bonding of concrete prefabricated elements, reinforcements and repairing of structures. It can be used for transparent assemblies if a thin layer is applied. It combines excellent mechanical performances with reduced assembly time.

**SikaPower®-1511 LV** is a 2-component epoxy adhesive for general maintenance or diverse repairs, suitable for bonding metals, glass, wood, plastics (except polyolefins and non polar plastics) and fancy jewels. Typical applications are: assembly of decontamination filters, embedding and anchoring of metal rods on hollow or full supports, bonding of decorative elements such as facing and tiles, bonding of concrete prefabricated elements, reinforcements and repairing of structures. It can be used for transparent assemblies if a thin layer is applied. It combines excellent mechanical performances with reduced assembly time.

**SikaPower®- 1554** is a 2-component high performance room temperature curing epoxy adhesive suitable for bonding car body metallic structures, inserts and composite structures with non sagging properties. Suitable for vertical applications and to fill irregular joints. Excellent mechanical and thermal performances up to 100°C. Excellent strength to dynamic loads, vibrations and impacts. Product adapted to stringent aging and aggressive environments.

**SikaPower®- 1576** is a 2-component high performance room temperature curing epoxy adhesive suitable for bonding metallic or composite structures with non sagging properties for vertical applications and to fill irregular joints. Its slow setting time allows to cover and bond wide surfaces. Excellent mechanical and thermal performances up to 120°C. Excellent strength to dynamic loads, vibrations and impacts. Product adapted to stringent aging and aggressive environments.

**SikaPower®-1548** is a 2-component room temperature curing epoxy adhesive using a specific hardener technology that makes it suitable for different substrates such as metals, glass, wood, ceramics, hard plastics and composites. It shows good resistance to dynamic loads and shock resistance along with good aging resistance, lap shear and peel strength. When mixed it becomes translucent and appears nearly transparent when it is applied in very thin layers. Intermediate viscosity for both bonding and potting applications. Its slow setting time allows to cover and bond wide surfaces.

<sup>1</sup> Hardening conditions: 8 hrs at 80 °C + 48 hrs at room temperature

# APPLICATION EXAMPLES

Whenever a structural bond is needed, Sika offers a wide range of solutions suitable for the whole assembly process while satisfying the most demanding market requirements. For example, manufacturers of metal and wooden furniture rely on Sika's epoxy technology to assemble metal reinforcements and mountings to doors as well as desks and seats in various materials to their galvanized supporting frames. Bonded joints have to meet severe specifications to demonstrate performances in shear, peel and fatigue, achieving reliable and long-term results.

## ADVANTAGES

- High load-resistant solutions
- Easy to use
- No unaesthetic mechanical fixtures
- Reduced assembly time

## PRODUCT FEATURES

- SikaPower®-1548 suitable for wide surface bonding and potting applications
- SikaPower®-1511 and -1511 LV suitable for small component bonding
- SikaPower®-1576 gives best results on metals and composites, achieving high structural adhesion
- SikaPower®-1554 suitable where a good resistance to dynamic loads is needed
- Suitable solutions for a wide range of substrates
- Gap filling and short handling time with the 2-component technology



# PRODUCT FEATURES SUMMARY TABLE

	SikaPower®-1511	SikaPower®-1511 LV	SikaPower®-1548	SikaPower®-1554	SikaPower®-1576
<b>ADHESION ON SUBSTRATES</b>					
Aluminum (AlMg3, AlMgSi1)	●	●	●●	●●	●●
Stainless steel	●	○	●●	●●	●●
Anodised aluminum	●	●	●	●●	●●
Galvanized steel	●	●	●	●●	●●
Powder coated metals	●	●	●●	●●	●●
Polyester based GFR	●●	●●	●●	●●	●●
Epoxy based GFR	●	●	●●	●●	●●
ABS	○	○	○	○	●●
Elastomers and rubbers	○	○	●	○	●
Polyurethane (hard)	●●	●●	●	●●	●●
Foam materials (PU, PS)	●●	●●	●●	●●	●●
Glass, ceramics	●●	●●	●●	●	●

Remarks:

Strength >10 Mpa or substrate failure



Strength 5-10 Mpa



Strength 0-5 Mpa



## ENVIRONMENTAL AND MECHANICAL RESISTANCE

Temperature	○	○	○	●●	●
Chemical resistance	○	○	○	●	●
Water (Dehydrogenized / Sodium Chloride 5%)	○	○	○	●●	●●
Tensile strength	●●	●●	●●	●●	●●
Peel stress	○	○	●	●	●
Aging	●	●	●●	●●	●●

Remarks:

Very good



Good



Low performing



# PRODUCT PACK SIZES AND APPLICATION

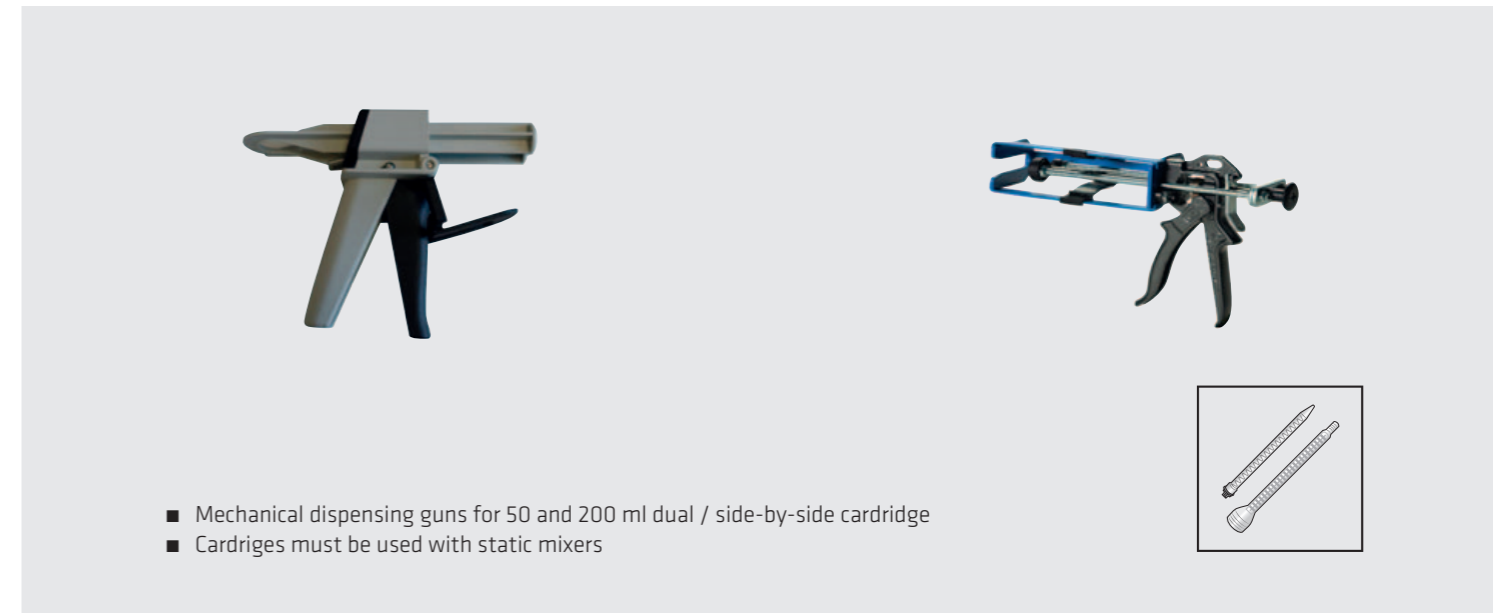
Sika offers epoxy-based solutions in 50 and 200 ml dual / side-by-side cartridge; whether the product has a fluid or a very viscous consistency, an application with manual or pneumatic dispenser can be advised. The choice of the right dispensing equipment depends on the frequency, volume and the type of application. Pneumatic dispensers are particularly suitable to create precise and regular beads and when using high viscosity adhesives as well as in the case of sensitive operations to be realized with a simple manual dispenser, especially if continuous and long joints must be formed.

For every pack size and every product viscosity, a suitable dispensing equipment is advised. Available pack sizes and dispensing solutions are shown hereinafter:

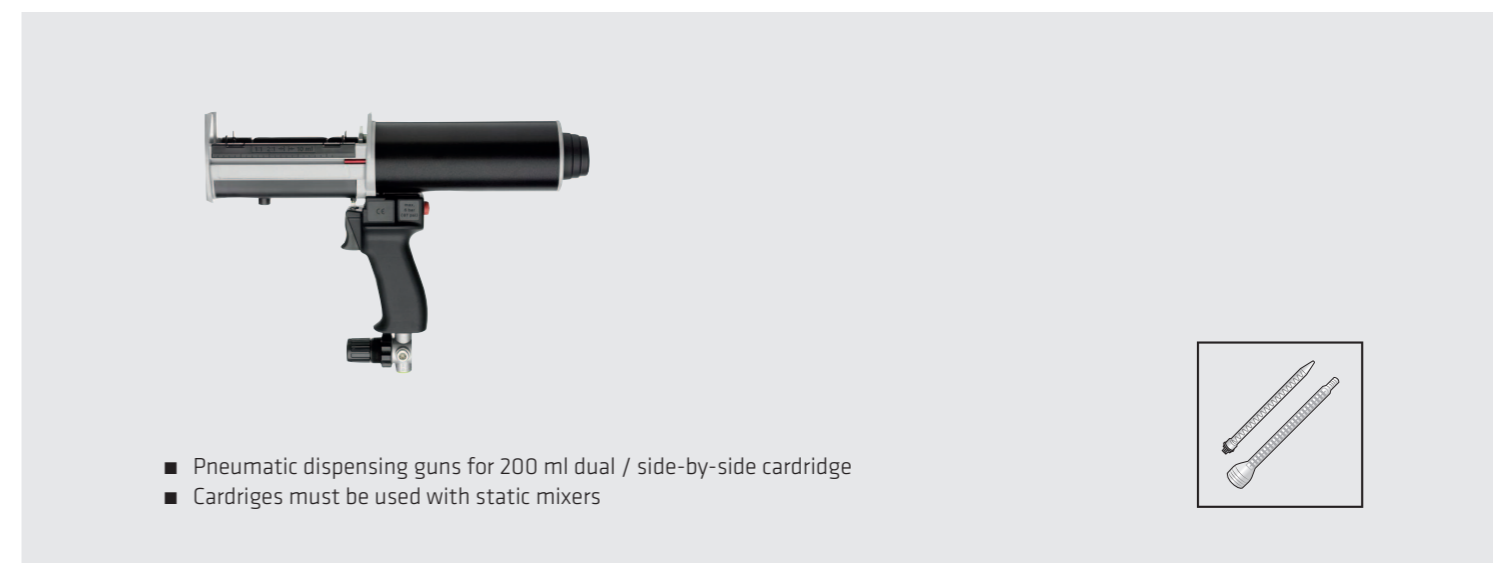
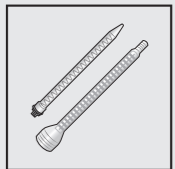


50 and 200 ml dual / side-by-side cartridges

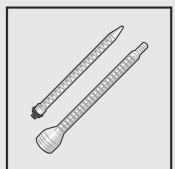
Product Range	Pack Size	Article Code
SikaPower®-1511	50 ml	000000
	200 ml	000000
SikaPower®-1511 LV	50 ml	000000
	200 ml	000000
SikaPower®-1548	50 ml	000000
	200 ml	000000
SikaPower®-1554	50 ml	000000
	200 ml	000000
SikaPower®-1576	50 ml	000000
	200 ml	000000



- Mechanical dispensing guns for 50 and 200 ml dual / side-by-side cartridge
- Cartridges must be used with static mixers



- Pneumatic dispensing guns for 200 ml dual / side-by-side cartridge
- Cartridges must be used with static mixers



Auxiliary Product Range	Article Code
50 ml cartridge mechanical dispensing gun	000000
200 ml pneumatic dispensing gun	000000
200 ml cartridge mechanical dispensing gun	000000
Static mixers for 50 ml cartridges (pack of ....pieces )	000000
Static mixers for 200 ml cartridges (pack of ....pieces)	000000

## REMINDEES FOR THE RIGHT DISPENSING

- Use equipment in good conditions
- If pneumatic equipment is used, set the pressure valve of the compressed air gun to control the flow of adhesive
- Clean the parts with Sika® Cleaner GGM (Glass and Metals) or Sika® Cleaner P (Plastics)
- Remove the cartridge cap
- Put the cartridge into the gun and apply a small bead on a sheet of paper to ensure that both components are properly extruded
- Apply the suitable static mixer to the cartridge
- Dispense the product on the surface to bond evenly
- Use clamps to keep the joint parts still
- Use a spatula to remove exceeding adhesive
- Use Sika cleaning agents to clean the parts from the uncured adhesive

**Bonding can succeed only if the adhesive is applied correctly.**

# GLOBAL BUT LOCAL PARTNERSHIP



## LEGAL NOTES

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 accordance with Sika's recommendations. 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 user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

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



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