

# R-545

## High Strength Grab Adhesive

### Overview

R-545 is a low emission 1-component Silane Terminated Polymer (STP) assembly adhesive. It has a unique high initial grab with high load capacity and excellent workability. It bonds well to a wide range of substrates with minimal pre-treatment.

- Powerful initial grab
- Very low emission
- Bonds well to a wide variety of substrates without the need for special pre-treatments
- Excellent workability
- Free of isocyanate, solvent and phthalate
- Meets highest EHS standards
- EC1 certificate



### Details

<b>Material</b>	Silane Terminated Polymer
<b>Colour</b>	White
<b>Cure mechanism</b>	Moisture curing
<b>Density</b>	1.4kg/l (uncured)
<b>Packaging</b>	Cartridge / Unipack: 600ml Pail/Drum: 195 l
<b>Shelf Life</b>	Cartridge / Unipack: 12 months*, Pail/Drum: 9 months*

\* Storage below 25 °C

### Performance

<b>Non-Sag Properties</b>	Excellent
<b>Application Temperature</b>	ambient 5-40 °C
<b>Skin Time</b>	15 minutes**
<b>Open Time</b>	10 minutes**
<b>Curing Speed</b>	(see diagram 1 below)
<b>Shore A Hardness</b>	45
<b>Tensile Strength</b>	2.5 MPa
<b>Elongation at Break</b>	400%
<b>Tear Propagation Resistance</b>	7 N/mm
<b>Tensile Lap-Shear Strength</b>	1.5 MPa
<b>Service Temperature</b>	-50-90 °C

\*\* 23 °C / 50 % r.h.,

See Annex 3 below for further information

## Annex 3

### Areas of application

R-545 is especially designed for applications which require a very high initial grab and a broad adhesion range. Suitable substrate materials include timber, glass, metals, metal primers and paint coatings (2-part systems), ceramic materials and plastics. Seek manufacturer's advice and perform tests on original substrates before using R-545 on materials prone to stress cracking. R-545 is suitable for experienced professional users only. Test with actual substrates and conditions have to be performed to ensure adhesion and material compatibility.

### Cure mechanism

R-545 cures by reaction with atmospheric moisture. At low temperatures the water content of the air is generally lower and the curing reaction proceeds some-what slower (see diagram 1).

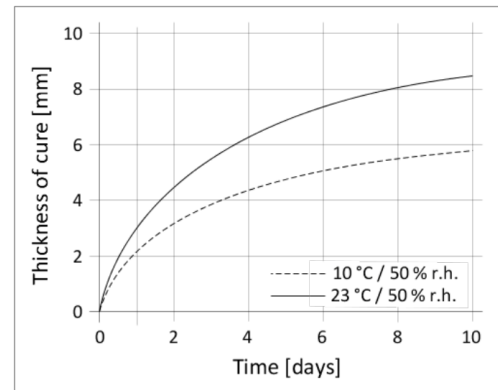


Diagram 1: Curing speed R-545

### Chemical resistance

R-545 is generally resistant to fresh water, seawater, diluted acids and diluted caustic solutions; temporarily resistant to fuels, mineral oils, vegetable and animal fats and oils; not resistant to organic acids, glycolic alcohol, concentrated mineral acids and caustic solutions or solvents.

### Method of application

#### Surface preparation

Surfaces must be clean, dry, and free from grease, oil and dust. Surface treatment de-pends on the specific nature of the substrates and is crucial for a long-lasting bond. Suggestions for surface preparation may be found on the current edition of the appropriate re-treatment chart, available on request. Consider that these suggestions are based on experience and have in any case to be verified by tests on original substrates.

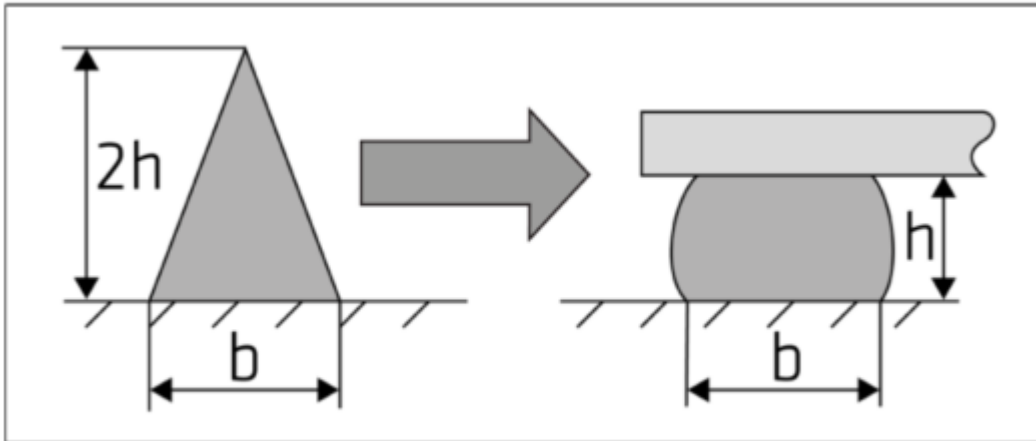
#### Application

Apply the adhesive with a suitable caulking gun. Take care to avoid air entrapment in the joint.

R-545 can be processed between 5 °C and 40 °C but changes in reactivity and application properties have to be considered. The optimum temperature for substrate and sealant is between 15 °C and 25 °C.

Consider that the viscosity will increase at low temperature. For easy application, condition the adhesive at ambient temperature prior to use.

To ensure a uniform thickness of the bond line it is recommend to apply the adhesive in form of a triangular bead (see Figure 1).



**Figure 1: Recommended bead configuration**

R-545 can be processed with manual, pneumatic or electric driven piston guns as well as pump equipment. The open time is significantly shorter in hot and humid climate. The parts must always be installed within the open time. Never join bonding parts if the adhesive has built a skin.

#### **Tooling and finishing**

Tooling and finishing must be carried out within the skin time of the adhesive. It is recommended using Sika® Tooling Agent N. Other finishing agents must be tested for suitability and compatibility prior to the use.

#### **Removal**

Uncured R-545 can be removed from tools and equipment with Sika® Remover-208 or another suitable solvent. Once cured, the material can only be removed mechanically. Hands and exposed skin have to be washed immediately using hand wipes such as Sika® Cleaner-350H cleaning towels or a suitable industrial hand cleaner and water. Do not use solvents on skin.

#### **Overpainting**

R-545 can be best painted within the skin formation time. If painting process takes place after the sealant has built a skin, adhesion could be improved by treating the joint surface with Sika® Aktivator-100 or Sika® Aktivator-205 prior to paint process. If the paint requires a baking process (> 80 °C), best performance is achieved by allowing the sealant to fully cure first. All paints have to be tested by carrying preliminary trials under manufacturing conditions. The elasticity of paints is usually lower than that of sealants. This could lead to cracking of the paint in the joint area.

#### **Further information**

The information herein is offered for general guidance only. Advice on specific application is available on request from the Technical Department.

Copies of the following publications are available on request:

- Safety Data Sheets
- Pre-treatment Chart
- or Silane Terminated Polymers (STP)
- General Guideline
- Bonding and Sealing with 1-component R

#### **Basis of product data**

All technical data stated in this document are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

**Health and safety information**

For information and advice regarding transportation, handling, storage and disposal of chemical products, users shall refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety-related data.

**Disclaimer**

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