

SikaFast®-5221 NT

Fast curing, two-part structural adhesive

Technical Product Data

| Properties | Component A SikaFast®-5221 NT | Component B SikaFast®-5200 |
|--|-------------------------------------|-------------------------------|
| Chemical base | Acrylate | |
| Colour (CQP ¹ 001-1) | White | Black |
| Colour mixed | Grey | |
| Curing mechanism | Radical polymerisation | |
| Density (CQP 006-4) | 1.15 kg/l approx. | 1.5 kg/l approx. |
| Density mixed (calculated) | 1.19 kg/l approx. | |
| Mixing ratio | by volume | 10 : 1 |
| | by weight | 10 : 1.3 |
| Consistency | Thixotropic paste | |
| Application temperature | 5 - 40°C | |
| Open time ² (CQP 526-2) | 10 min approx. | |
| Fixture time ² | time to reach 80% of final strength | |
| | 25 min approx. | |
| Shore A hardness (CQP 023-1 / ISO 868) | 90 approx. | |
| Shore D hardness (CQP 023-1 / ISO 868) | 50 approx. | |
| Tensile strength ² (CQP 036-1 / ISO 37) | 10 MPa approx. | |
| Elongation at break ² (CQP 036-1 / ISO 37) | 200% approx. | |
| E-Modulus ² (CQP 036-1 / ISO 37) | 250 MPa approx. | |
| Tensile Lap-Shear Strength ² (CQP 046-6 / ISO 4587) | 10 MPa approx. | |
| Glass transition temperature (CQP 509-1 / ISO 6721-2) | 60°C approx. | |
| Service temperature | -40 - 80°C | |
| Shelf life ³ (CQP 016-1) | Cartridge | 9 months |
| | Pail / Drum | 12 months |
| | | 9 months |

¹⁾ CQP = Corporate Quality Procedures

²⁾ 23°C / 50% r.h.

³⁾ Stored at temperature below 25°C and not exposed to direct sun light

Industry

Description

SikaFast®-5221 NT is a fast curing, flexibilised structural, two-part adhesive system, which is based on Sika's Acrylic Double Performance (ADP) polymer technology. Uncured SikaFast®-5221 NT is a pasty, non-sagging, hardly inflammable material which allows an easy and precise application.

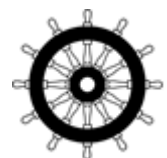
Product Benefits

- Strength development within minutes after application
- Adhesion to a wide range of substrates without or with limited surface preparation
- High strength and impact resistance
- Solvent and acid free
- Lower odour than MMA containing products
- Easy mixing

Areas of Application

SikaFast®-5221 NT is a fast curing, flexibilised structural adhesive designed to replace mechanical fixings such as rivets, screws or welding. It is suitable for high strength fastening of concealed joints and exhibits excellent adhesion on different types of substrates including top coats, plastics, glass, wood, etc. This product is recommended for professional experienced users only. Tests with actual substrates and conditions have to be performed to ensure adhesion and material compatibility.

Cure Mechanism



SikaFast®-5221 NT cures according to radical chain polymerisation when mixed with SikaFast®-5200. Open and fixture time are influenced by mixing ratio deviations as well as temperature, e.g. as higher the temperature as shorter the open- and fixing time and vice versa.

Chemical Resistance

SikaFast®-5221 NT is resistant to many chemicals. For specific information, contact the Technical Department of Sika Industry.

Adhesion results

The following table summarises lap-shear test results obtained with different standard substrates. These results are indications only. Due to the diversity of substrates, preliminary tests are mandatory.

Adhesion table (typical values)

| Material | FM ¹ | Value |
|-----------------|-----------------|--------|
| AlMg3 | C | 10 MPa |
| Stainless steel | C | 10 MPa |
| El. galv. steel | C/A | 8 MPa |
| Glass | C/A | 7 MPa |
| ABS | C | 9 MPa |
| PVC | C | 10 MPa |
| PC | C | 9 MPa |

Table 1: Lap shear samples according to ISO 4587 bond line thickness 1.5 mm

¹ Failure mode: Adhesive, Cohesive, Substrate

Method of application

Substrate preparation

Surfaces must be clean, dry and free from grease, oil and dust. Remove all loose particles or residues by cleaning it thoroughly. For best adhesion performance pre-treat the bonding area with Sika® ADPrep prior to the bonding process. Due to the diversity of materials, preliminary tests with original substrates are necessary.

Advice on specific applications is available from the Technical Department of Sika Industry.

Application

SikaFast®-5221 NT is applied with a mixing ratio of 10 : 1 (± 10%) by volume through a 24 elements static mixer.

Consider that if applied in large masses, heat is generated by the exothermic reaction. To avoid excessive temperature increase, bond line thickness is limited to 3 mm, but must measure at least 0.5 mm. The mixed adhesive has an open time of approx. 10 minutes and achieves handling strength (fixture time) in approx. 25 minutes. Optimum temperature for the bonding process is between 15°C and 25°C. The approved temperature range for substrates and adhesive is between 5°C and 40°C. The influence of the reactivity by temperature changes has to be respected.

After the open time has elapsed the bonded parts must not be moved against each other anymore. When the fixture time is reached the parts can be moved if no additional stress is distributed to the bond line.

For additional information and support in evaluation of the appropriate application equipment contact the Sika System Engineering department of Sika Industry.

Removal

Uncured excess of SikaFast®-5221 NT can be removed easily before curing with a dry wipe, with Sika® Remover-208 or another suitable solvent. Once the adhesive is cured it can only be removed mechanically. Hands and exposed skin should be washed immediately using Sika® Handclean towels or a suitable industrial hand cleaner and water. Do not use solvents!

Further Information

Copies of the following publications are available on request:

- Safety Data Sheets
- General Guidelines - bonding with SikaFast® adhesives

Packaging Information

| | |
|------------------------|--------|
| Dual cartridge | 250 ml |
| Dual cartridge | 490 ml |
| Pail SikaFast®-5221 NT | 20 l |
| Pail SikaFast®-5200 | 18 l |
| Drum SikaFast®-5221 NT | 169 l |

Value Bases

All technical data stated in this Product Data Sheet 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.

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.

Further information available at:

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