

SikaForce® -7810 L80 (formerly 1851)

High performance non-sagging structural adhesive for windmill blade bonding

Technical Product Data

| Properties | Component A: SikaForce® -7810 L80 | Component B: SikaForce® -7050 |
|---|---|---|
| Chemical base | Polyols, filled | Isocyanate derivatives |
| Colour (CQP ¹⁾ 001-1) | White | Brown, transparent |
| Colour mixed | Beige | |
| Curing mechanism | Poly addition | |
| Density (CQP 006-4) | 1.2 g/cm ³ approx. | 1.2 g/cm ³ approx. |
| Density mixed (calculated) | 1.2 g/cm ³ approx. | |
| Mixing ratio | by volume 100 | 45 |
| | by weight 100 | 45 |
| Solids content | 100% | 100% |
| Viscosity ²⁾ (CQP 538-2) | Paste | 35,000 mPa·s approx. (Brookfield RVT 5/10) |
| Viscosity ²⁾ mixed (CQP 538-2) | Light paste | |
| Thixotropy | 1.8 (Sika Danmark A/S test method E6) | |
| Application time ²⁾ (CQP 536-3) | 45 min. approx. | |
| Shore D hardness (CQP 537-2 / DIN 53505) | Min. 56 immediately upon the heat curing process Min. 77 at 23°C 36 hours after demoulding | |
| HDT (Heat Deflection Temperature) (ISO 75-2) | 43°C ± 1°C | |
| Tensile strength ³⁾ (CQP 545-2 / ISO 527) | 36.5 ± 1.7 MPa | |
| E-Modulus ³⁾ (ISO 527) | 3070 ± 141 MPa | |
| Elongation at break ³⁾ (CQP 036-1 / ISO 527) | 3.1% ± 0.8% | |
| Water absorption (ISO 62) | Max. 80 mg | |
| Impact strength (ISO 179) | 12.3 kJ/m ² | |
| Shelf life | 12 months in unopened packaging | |

¹⁾ CQP = Corporate Quality Procedures ²⁾ 23°C (73°F) / 50% r.h.

³⁾ 50 min. at 23°C, from 23°C to 60°C increasing by 1°C/min. – 40 min. at 60°C, from 60°C to 23°C falling by 1°C/min.
+ 2 months at room temperature, measured by the Technical University of Denmark in 2003

Description

SikaForce®-7810 L80 is the base part of a 2-component polyurethane adhesive used with SikaForce®-7050 Hardener.

This product is manufactured in accordance with ISO 9001 and ISO 14001 quality assurance systems.

Product Benefits

- Thixotropic
- High structural for rigid bonding

Areas of Application

Bonding of windmill blades (epoxy prepreg).

Industry



Cure Mechanism

The curing of SikaForce®-7810 L80 takes place by chemical reaction of the two components. Higher temperatures speed up the curing process; lower temperatures slow down the curing process.

Chemical Resistance

In case of expected chemical or thermal exposure, we recommend a project related testing. Please consult our Technical Service for advice.

Method of Application

Surface preparation

It is generally necessary to prepare the items for bonding to ensure optimal adhesion and strength. The pre-treatment may consist of sanding, degreasing, corona treatment, priming, etc. Especially on metals, it may be an advantage to use a primer. Type of pre-treatment must be determined by tests. Please consult our Technical Service for advice.

Application

Coat weights between 150 and 350 g/m² are recommended depending on the substrates to be bonded. The specific coat weight for a given substrate combination should be determined by tests.

Automated application: Bead application requires metering and application equipment which can be supplied by Sika Danmark A/S.

Manually: Stir the base part thoroughly before use, add the hardener in the given ratio and stir constantly until a homogeneous mixture is obtained. Apply with trowel before expiry of the application time and press parts together before end of the open time. Please consult our Technical Service for detailed information.

Pressing

A minimum bonding pressure of 200 g/cm² should be used. The specific pressure is dependent on the core material and should be determined by tests. The pressure must always be below the maximum compressive strength of the core. The bonded items should not be moved during the pressing stage.

Cleaning

Non-cured adhesive on tools and application equipment can be removed with SikaForce®-7260 Cleaner. Cured adhesive can only be removed mechanically.

Storage Conditions

To be kept between +10°C and +30°C in a dry place. Do not expose to direct sunlight or frost. After opening of the packaging, the contents should be protected against the atmospheric humidity. The minimum temperature during transportation is 0°C.

Further Information

The following publications are available on request:

- Safety data sheet
- Reactivity curves in large format

Packaging Information

| | | |
|----------------------|-----------|--------|
| Component A Polyols | Drum | 240 kg |
| | Pail | 6 kg |
| Component B Hardener | Pail | 20 kg |
| | Drum | 250 kg |
| | Container | 750 kg |

Important

For information and advice on the safe handling, storage, and disposal of chemical products, users should refer to the relevant safety data sheet(s) containing physical, ecological, toxicological and other safety related data for the appropriate type of substance.

Notice:

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