

CONSTRUCTION

CarboCrackSeal NV

TWO-COMPONENT POLYURETHANE RESIN

CE identification according to DIN EN 1504-5: 0921-CPR-2168

DESCRIPTION

CarboCrackSeal NV is used for the limited expansion, joining and sealing of flanks and crack ridges. It has a very low viscosity and may be injected via adhesive packers, borehole packers or embedded injection hoses into the pervious structure.

CarboCrackSeal NV Component A comprises of polyols and additives. CarboCrackSeal NV Component B is a modified polyisocyanate.



APPLICATION AND USE

CarboCrackSeal NV is used in buildings and other civil engineering structures constructed from concrete, brickwork or natural stone.

CarboCrackSeal NV serves for grouting/sealing and elastic connection of fissures and cavities.

- Tunnel linings
- Park decks
- Concrete foundations
- Subterraneous curtains
- Injection hoses

Applicable at ambient temperatures of between 6 °C and 40 °C.

ADVANTAGES

- Easily injected
- Wide range of grouting and sealing applications
- Elastic and extendable when cured

TECHNICAL DATA

The data below are laboratory values. In practice they may vary due to the heat exchange between the resin and the structure/soil as well as other external influences, such as pressure, moisture and other factors.

MATERIAL DATA

| Parameter | Unit | Comp.A | Comp.B | Mixture A+B | Standard |
|--------------------|-------------------|----------|-----------|-------------|-------------|
| Density at 25 °C | kg/m ³ | 990 ± 15 | 1220 ± 20 | - | DIN 12791-1 |
| Colour | - | honey | brown | - | - |
| Viscosity at 25 °C | mPa*s | 110 ± 20 | 70 ± 20 | 150 ± 30 | EN ISO 3219 |
| Viscosity at 15 °C | mPa*s | 210 ± 40 | 170 ± 40 | 170 ± 40 | EN ISO 3219 |
| Viscosity at 6 °C | mPa*s | 360 ± 50 | 380 ± 50 | 300 ± 50 | EN ISO 3219 |

REACTION DATA

| Mixing ratio A : B | 2.5 : 1 parts by volume = 2 : 1 parts by weight | | | | |
|---|---|-------------|-------------|-------------|---------------|
| Starting temperature | Unit | 6 °C | 15 °C | 25 °C | Standard |
| Mix viscosity 5 min. after end of mixing | mPa*s | 300 ± 50 | 170 ± 40 | 150 ± 30 | MCT PV 10-329 |
| Viscosity of 1000 mPa*s 1 mm crack (isotherm) | Min. | approx. 80 | approx. 100 | approx. 120 | MCT PV 10-327 |
| Gel Time | h | 18 ± 2.0 | 14 ± 1.5 | 11 ± 1.0 | MCT PV 10-311 |
| Foaming factor | - | approx. 1.0 | approx. 1.0 | approx. 1.0 | MCT PV 10-301 |

PROCESSING TIME

| Starting temperature | Unit | 5 °C | 18 °C | 23 °C | Standard |
|---|------|---------|---------|---------|---------------|
| Package processing time (1 kg-twin can) | Min. | 70 – 85 | 55 – 70 | 48 – 62 | MCT PV 10-328 |

MECHANICAL DATA

| Parameter | Unit | Value | Standard |
|---|---------|-------------|---------------------------------|
| Tensile strength | MPa | 1.1 ± 0.22 | DIN EN 1504-5 (EN ISO 527-1/-2) |
| Elongation at break | % | 126 ± 25 | DIN EN 1504-5 (EN ISO 527-1/-2) |
| E-module | MPa | 0.70 ± 0.11 | (EN ISO 527-1/-2) |
| Hardness Shore A after 28 days (23 °C / 50% humidity) | Shore A | 38 ± 3 | ISO 7619-1 |

APPLICATION METHOD

Generally, the resin mix is injected via a borehole packer and a borehole into the fissure to be sealed, until resin matter is discharged by monitoring boreholes. CarboCrackSeal NV can be also injected via the CT – injection hose which has to be installed beforehand into the concrete joint. The resin components are mixed carefully in a volumetric 2.5 : 1 ratio or weight 2 : 1 ratio, poured into a second container or hopper and injected by the single component pump CT ET I or WIWA HD I. The pot life in accordance to the application temperature has to be taken into account.

The resin mix penetrates the cracks to be sealed. The major part of the water in there is displaced by the hydrophobic resin and the remainder causes the acceleration of the curing and the formation of a mainly closed cell foam resin.

After more than 10 hours, the resin is solid; the final curing takes several days. The cured resin is elastic and extendable even in tabular adhesion.

SAFETY INSTRUCTIONS AND LIMITATIONS

Observe the usual precautionary measures for handling chemicals, see MSDS CarboCrackSeal NV component A and component B.

With strong water inflow, the fast reacting resin CarboStop W, accelerated by CarboAdd X, or CarboStop U have to be pre-injected, subsequently followed by the CarboCrackSeal NV injection.

PACKAGING AND TRANSPORTATION

All forms of packing are approved to the danger goods regulation road, railway, domestic shipping.

The components can be delivered in 5/10/20/26/200/1000 l units.

Other packaging units are available on request. Details are shown in the offer.

STORAGE AND SHELF LIFE

At least six months after delivery for dry storage between 10 °C and 30 °C. When this time is exceeded, we recommend having the material checked by Minova for compliance with specification.

The local legislation on storage has to be considered.

DISPOSAL

Follow local regulations.

APPROVALS AND CERTIFICATES

1. Certificate of conformity
Reg. Nr. ZERT 124 I 15/ 760 (QDB, 2015)
2. Certificate of conformity of the factory
production control No. 0921 – CPR - 2168
(QDB, 2015)
3. Determination of identifying
characteristics and performance P 2.1/07-
431/1 (MFPA Leipzig, 2008)
4. Chemically toxicological analysis
A-169489-08-WR (Hygiene Institut, 2008)
5. Assessment of the Effects of Construction
Products on Soil and Ground Water
C-172099-09-Bs (Column Test to the
DiBt-Working sheet, Hygiene-Institut
2009)
6. Report about effects of polyurethane
CarboCrackSeal NV on plastic mounting
parts (Essen, 2010)
7. Assay of performance features of
CarboCrackSeal NV according to
DIN V 18028 (Uni DUE, Essen 2010)

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ADDITIONAL DOCUMENTATION

- Operating instructions on proper use of Minova injection resins
- MSDS of CarboCrackSeal NV component A and component B

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- AUSTRIA: Minova MAI GmbH
- BELGIUM / FRANCE: Minova France C/O Orica Belgium SA
- CZECH REPUBLIC: Minova Bohemia s.r.o.
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