

CONSTRUCTION

CarboStop U

WATER-REACTIVE SINGLE-COMPONENT RESIN

Approval according to the German ZTV-RISS regulations as a pre-seal for sealing of concrete structures

DESCRIPTION

CarboStop U is a water-reactive single-component resin with integral catalyst. CarboStop U is free of CFC and phthalate plasticisers. CarboStop U consists of modified polyisocyanates with additives.

CarboStop U cures by reaction with ambient water yielding a polyurethane/polyurea foam. The expansion rate of the foam depends in the first place on the backpressure effected by the propagation of the resin into the structure to be sealed, i. e. wide cracks/gravel result in a high foaming factor, narrow cracks/ sand in a low expansion rate and high strength.



APPLICATION AND USE

CarboStop U stops water inflows and provides a temporary seal, which often is satisfactory for the sealing of excavation sites during the construction work. CarboStop U also is used as a pre-seal for sealing work according to German ZTV-ING (Sealing and extendable joining of cracks in reinforced concrete). Following the injection of CarboStop U, CarboCrackSeal H is injected into the not fully cured foam.

- Stopping of water inflow (also salt water)
- Stopping of water ingress, also seawater, in cracks
- Seals in tunnel construction
- Consolidation of gravelly sand
- Sealing of drill holes

Application at ambient temperatures of between 0 °C and 40 °C.

ADVANTAGES

- Free of CFC and phthalate plasticisers
- Ready for use without mixing
- Works with high pressure water
- Grouts fine to grained sands
- Insignificant disturbance of the groundwater quality (tested for groundwater compatibility according to the official guidelines of the German Institute for Construction Technology (DIBt))

TECHNICAL DATA

The data below are laboratory data. They may vary in practice due to thermal exchange between the resin and strata, surface properties of the stone, humidity, pressure, and other factors.

MATERIAL DATA

Parameter	CarboStop U	Unit	Standard
Density at 25 °C	1100 - 1140	kg/m ³	DIN 12791-1
Colour	brown		
Flash point	> 100	°C	DIN 53213
Viscosity at 5 °C	2500 - 6000	mPa*s	ISO 3219
Viscosity at 10 °C	1900 - 4500	mPa*s	ISO 3219
Viscosity at 15 °C	1100 - 2500	mPa*s	ISO 3219
Viscosity at 25 °C	270 - 1000	mPa*s	ISO 3219

REACTION DATA*

Initial Temperature	5 °C	10 °C	15 °C	20 °C	25 °C
Start of Foaming	27 s ± 5 s	26 s ± 5 s	24 s ± 5 s	22 s ± 5 s	20 s ± 5 s
End of Foaming	4 min 20 s ± 15 s	3 min 20 s ± 15 s	2 min 50 s ± 15 s	2 min 20 s ± 15 s	2 min ± 15 s
Foam Factor (free rise)	30-60	30-60	30-60	30-60	30-60

*all measurements regarding MCT PV10-305

Note 1: The reaction is affected by addition of 10 % water to the freshly prepared blend.

Note 2: If necessary, the reaction can be accelerated with CarboAdd X.

APPLICATION METHOD

CarboStop U reacts with water. Therefore, in open cans a skin may be formed on the surface of the liquid by reaction with the humidity contained in the air; but this does not affect the pumping operation.

CarboStop U are injected as a single component via packers into the water-bearing zones using

manual or motor-driven pumps. When in contact with water, the reaction mix foams up strongly and hardens. If the zone to be sealed is dry, a full hardening of the CarboStop mass can be achieved by preliminary or subsequent water injection.

In contrast to two-component systems, CarboStop U will not harden in the injection pipe for hours since contact with the water contained in the ground is necessary for hardening.

Immediately after ending the injection work flush the pump with CarboSolv D, in order to prevent clogging. For standstill periods of more than one day, fill the pump with CarboSolv S afterwards.

It needs to be assured that the product temperature is between 15° – 30 °C before processing and during application.

When the material is warmed up, local overheating of the resin or accelerator canisters must be avoided by all means.

SAFETY INSTRUCTIONS AND LIMITATIONS

Observe the usual precautionary measures for handling chemicals, see MSDS of CarboStop U.

PACKAGING AND TRANSPORTATION

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

CarboStop U can be delivered in 20/26/200/1000 l units.

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

STORAGE AND SHELF LIFE

At least six months from date of delivery when stored in a dry place between 10 °C and 30 °C. During this time, the viscosity may increase for about 100 %; this does not affect the operability of the product. When this time is exceeded, we recommend having the material checked by Minova for compliance with specification and usability.

The local legislation on storage has to be observed.

DISPOSAL

Follow local regulations.

APPROVALS AND CERTIFICATES

1. Hygiene assessment with respect to ground water risks (Hygiene-Institut, Gelsenkirchen, 2006)
2. Report on basic trial of one- and two-component grouting process with filling grouts CarboCrackSeal H/ CarboStop U according to ZTV RISS (Institut für Massivbau Essen, 2003)
3. Conformity certificate № ZERT. 124 I 15 / 761 (QDB, 2015)
4. Registration number KR07-887 (Product register, Sweden 2008)
5. Certificate according to KTW-guidelines (LADR GmbH, 2010)

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MCT-900101/CarboStop U_E25 (February 2019)

ADDITIONAL DOCUMENTATION

- Operating instructions on proper use of Minova injection resins
- MSDS CarboStop U

LIST OF REPRESENTATIVES

- AUSTRIA: Minova MAI GmbH
- BELGIUM / FRANCE: Minova France C/O Orica Belgium SA
- CZECH REPUBLIC: Minova Bohemia s.r.o.
- GERMANY: Minova CarboTech GmbH
- ITALY: Minova CarboTech GmbH
- KAZAKHSTAN: Minova Kazakhstan JV LLP
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- POLAND: Minova Ekochem S.A.
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