

CONSTRUCTION

CarboLith SL

TWO-COMPONENT SILICATE RESIN

DESCRIPTION

CarboLith SL is a fast reacting, non-foaming, flexible two-component silicate resin with good adhesive properties and a high final strength.

CarboLith SL component A is a special sodium silicate. CarboLith SL component B is a modified polyisocyanate.

During the reaction component A hardens to form a silicate, whereas component B simultaneously forms a solid polyurea.

CarboLith SL is an unfoamed, flame-resistant silicate resin (organomineral resin).

APPLICATION AND USE

CarboLith SL serves to:

- Grout and uplift slabs in road construction
- Grout and fix road structures
- Stabilise and consolidate loose rock and soil
- Fill minor cavities

Temperature range of application ranges from 5°C – 40 °C.

ADVANTAGES

- Compression strength ≥ 35 MPa after 1 h
- Cured CarboLith SL is resistant to acids, salt solutions and many organic solvents

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	Component A	Component B	Standard
Density at 25 °C	kg/m ³	1470 ± 30	1175 ± 30	DIN 12791-1
Colour	-	yellowish	dark brown	-
Flash point	°C	-	> 100 °C	DIN 53213
Viscosity at 5 °C	mPa*s	995 ± 150	465 ± 100	DIN EN ISO 3219
Viscosity at 10 °C	mPa*s	650 ± 100	315 ± 80	DIN EN ISO 3219
Viscosity at 15 °C	mPa*s	450 ± 80	220 ± 75	DIN EN ISO 3219
Viscosity at 20 °C	mPa*s	330 ± 80	155 ± 50	DIN EN ISO 3219
Viscosity at 25 °C	mPa*s	275 ± 75	110 ± 40	DIN EN ISO 3219
Viscosity at 35 °C	mPa*s	160 ± 50	70 ± 20	DIN EN ISO 3219
Viscosity at 40 °C	mPa*s	140 ± 40	50 ± 10	DIN EN ISO 3219

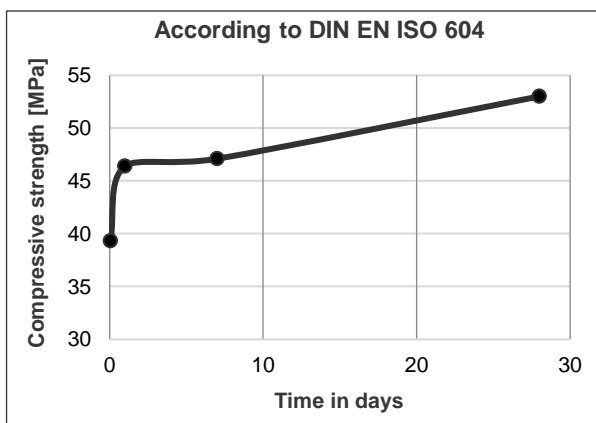
REACTION DATA

Initial temperature	Flow time	Setting time	Standard
5 °C	5 min 45 s ± 30 s	9 min 15 s ± 60 s	MCT PV 10-325
10 °C	4 min 10 s ± 25 s	7 min 40 s ± 50 s	MCT PV 10-325
15 °C	2 min 30 s ± 20 s	6 min 15 s ± 45 s	MCT PV 10-325
25 °C	1 min 25 s ± 20 s	4 min 25 s ± 45 s	MCT PV 10-325
30 °C	1 min 05 s ± 15 s	3 min 20 s ± 30 s	MCT PV 10-325
40 °C	35 s ± 10 s	2 min 20 s ± 20 s	MCT PV 10-325
Foaming factor	1		MCT PV 10-325

MECHANICAL DATA

Parameter	Unit	Data	Standard
Modulus of elasticity after 7 d at 23 °C / 70% relative humidity	MPa	approx. 550	DIN EN ISO 604
Nominal compressive strain at compressive strength	%	> 30	DIN EN ISO 604
Tensile strength after 30 min	MPa	9	DIN EN ISO 178

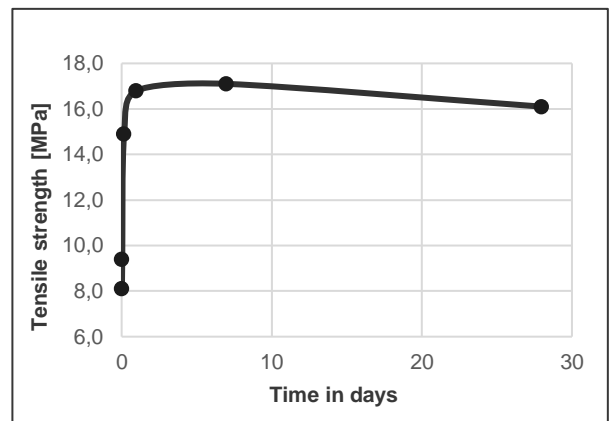
PROCESSING OF COMPRESSIVE STRENGTH



COMPRESSIVE STRENGTH

Time	Unit	1 h	4 h	24 h	7 d	28 d
Compressive strength	MPa	approx 40	approx 45	approx 45	approx 48	approx 55

TENSILE STRENGTH (DIN EN ISO 178)



ADDITIONAL DATA

Parameter	Unit	Value	Standard
Electrical resistance	Ω	> 1 x 10 ⁹	PN-EN 61340-2-3
Fire class	-	B2	DIN 4102

APPLICATION METHOD

Initially, both components are delivered separately with a volume ratio of 1 : 1 by means of a two-component pump (e.g. SK 90, CT-GX 5, CT-GX 45 or CT-EL 5 II).

At the end of the feed lines both components are joined in the mixing head and fed through a mixing pipe with an integrated static mixer. Here, both resin components are intensely mixed.

Then, the resin is injected into the structure, the soil or beneath the road surface by means of a drill hole closure, packer or an injection lance. Very soon the texture of the initially liquid resin mixture changes such that the material is no longer able to flow freely (flow time) and hardens without foaming.

If both components are sufficiently mixed, the resulting viscous emulsion does no longer absorb water (e.g. from the soil) and does no longer mix with water but sinks in water.

SAFETY INSTRUCTIONS AND LIMITATIONS

Observe the usual precautionary measures for handling chemicals, see MSDS of CarboLith SL A- and B-component.

We recommend storing the product for at least 12 hours at a minimum temperature of 15 °C before processing to achieve the recommended processing temperature of between 15 °C and 30 °C. If the product has strongly cooled down (< 0 °C), it needs to be warmed up before it can be applied. A minimum processing temperature of 15 °C is required for processing with self-priming piston pumps (CT-GX-45 pump).

When heating, it is absolutely essential to avoid local overheating, e.g. at the container wall.

For further information please refer to the manual "Instructions for Handling Injection Resins" of Minova.

PACKAGING AND TRANSPORTATION

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

The quantities of the individual component correspond to the mixing ratio (1: 1 by volume).

The components can be delivered in 18/200 l units or IBC.

Other packaging units are 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. When this time is exceeded, we recommend having the material checked by Minova for compliance with specification.

The local legislation on storage needs to be considered.

DISPOSAL

Follow local regulations.

APPROVALS AND CERTIFICATES

1. IKT Test Report P06904 "Freeze/de-icing salt testing of pure resins", January 2018

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ADDITIONAL DOCUMENTATION

- MSDS of CarboLith SL Component A
- MSDS of CarboLith SL Component B
- Instructions for Handling Injection Resins

CUSTOMER SERVICE

For additional support options available at your area, contact our local offices.

www.minovaglobal.com/emea-cis