

Sewer repair

CarboLith 111409 + Comp. C (CarboLith HL 3C)



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Preliminary Technical Data Sheet

Uses

CarboLith 111409 is a non-foaming, elasticised two-component resin having good adhesion, for impregnating inliners during sewer rehabilitation work, in particular of service lines.

CarboLith 111409

- o impregnates polyester mats well
- o cures excellently in thin layers, without heating or UV radiators
- o has high resistance to aggressive water, acids and alkaline solutions
- o CarboLith 111409 does not saponify

Technical data

The data below are laboratory data. They may differ in application due to heat exchange between adhesive and base and through other factors.

Reaction data (typical value at an sewer temperature of 15 °C)

pt. by vol. C-Comp. on 100 p. b. vol. A-Comp. / 200 pt. by vol. B-Comp.	0 pt. by vol. C-Comp.	1.0 pt. by vol. C-Comp.	2.0 pt. by vol. C-Comp.	3.0 pt. by vol. C-Comp.	4.0 pt. by vol. C-Comp.
10°C					
Impregnation time	~ 45 min	~ 40 min	~ 30 min	~ 20 min	~ 10 min
Time for placing	~ 180 min	~ 120 min	~ 50 min	~ 30 min	~ 20 min
Removal time	~ 24 h	~ 9 h	~ 8 h	~ 7 h	~ 6 h
15°C					
Impregnation time	~ 40 min	~ 25 min	~ 20 min	~ 15 min	~ 10 min
Time for placing	~ 180 min	~ 90 min	~ 45 min	~ 30 min	~ 15 min
Removal time	~ 24 h	~ 9 h	~ 8 h	~ 7 h	~ 6 h
20°C					
Impregnation time	~ 35 min	~ 20 min	~ 15 min	~ 15 min	~ 10 min
Time for placing	~ 180 min	~ 80 min	~ 40 min	~ 30 min	~ 15 min
Removal time	~ 24 h	~ 9 h	~ 8 h	~ 7 h	~ 6 h
25°C					
Impregnation time	~ 30 min	~ 20 min	~ 15 min	~ 12 min	~ 10 min
Time for placing	~ 180 min	~ 80 min	~ 35 min	~ 25 min	~ 15 min
Removal time	~ 24 h	~ 9 h	~ 8 h	~ 7 h	~ 6 h

Reaction data (typical value at an sewer temperature of 25 °C)

pt. by vol. C-Comp. on 100 p. b. vol. A-Comp. / 200 pt. by vol. B-Comp.	0 pt. by vol. C-Comp.	1.0 pt. by vol. C-Comp.	2.0 pt. by vol. C-Comp.	3.0 pt. by vol. C-Comp.	4.0 pt. by vol. C-Comp.
25°C					
Impregnation time	~ 40 min	~ 30 min	~ 20 min	~ 15 min	~ 10 min
Time for placing	~ 180 min	~ 80 min	~ 50 min	~ 30 min	~ 20 min
Removal time	~ 6 h	~ 5 ½ h	~ 4 ½ h	~ 4 h	~ 3 h

Material Data

		Component A	Component B	Component C	Norm
Density at 25 °C	kg/m ³	1480 ± 20	1200 ± 20	1090 ± 20	DIN 12791
Colour	-	brownish, clear	black brown	colourless/yellowish, clear	
Flash point	°C	-	> 100	> 100	DIN 53213
Viscosity at 25 °C	mPa*s	275 ± 75	260 ± 50	11 ± 2	ISO 3219

Composition and Properties

Components:

Industreitextil Lith, component A, is a special sodium silicate with additives. Component B is a modified polyisocyanate. Component C is a mixture of additives.

System:

The curing from component A results in a silicate; simultaneously a solid polyisocyanurate/polyurea is formed from the component B.

Final Product:

Together they form an interpenetrating network, a tough-elastic, non-foamed silicate resin (organomineral resin).

Processing

Stir the suitable quantity of component C into the component A.

The desired resin quantity is homogeneously mixed from the two components in the volume ratio 1 : 2 in a mixing container using a drill mixer. For this, it has to be observed that only that quantity of resin is mixed which can be used up within a short period of time. The larger the formulation, the faster the resin cures due to the resulting reaction heat. After the mixing, the resin is poured into the readily cut hose or it is intermingled under vacuum using a roll or an impregnation device. The liner impregnated in this way is then inserted into the sewer by means of the inversion or retraction method using compressed air or water where it cures. The reaction process can be checked at the protruding ends.

Hazard notes and safety advice for handling CarboLith 111409

Observe the usual precautionary measures for handling chemicals.

Component A

Symbol: Xi (irritating)

R36/38 Irritating to eyes and skin.

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36/37/39 Wear suitable protective clothing, gloves and eye/face protection. S60 This material and/or its container must be disposed of as hazardous waste. (s. "Disposal")

Component B

Symbol: Xn (harmful)

Contains: diphenylmethandiisocyanate, isomers and homologues

R20 Harmful by inhalation. R36/37/38 Irritating to eyes, respiratory system and skin. R42/43 May cause sensitisation by inhalation or skin contact.

S23 Do not breathe fumes/aerosol. S24/25 Avoid contact with skin and eyes. S26 In case of contact with eyes, rinse with plenty of water and seek medical advice. S28 After contact with skin, wash immediately with plenty of water. S36/37/39 Wear suitable protective clothing, gloves and eye/face protection. S38 Wear a respirator if ventilation is inadequate. S45 In case of accident or if you feel unwell, seek medical advice immediately (show label where possible). S60 This material and/or its container must be disposed of as hazardous waste.

When at work, appropriate personal protective clothes, protective gloves and goggles / faceguards must be worn. Persons who frequently or regularly handle CarboLith 111409 or other polyurethane resins have to subject themselves to the prophylactic medical examination of the trade associations according to G27. Further details can be found in the safety data sheet.

Component C

Symbol: Xn (harmful)

Contains: ethandiol

R20 Harmful by inhalation. R36/38 Irritating to eyes and skin.

S26 In case of contact with eyes, rinse with plenty of water and seek medical advice. S28 After contact with skin, wash immediately with plenty of water. S36/37/39 Wear suitable protective clothing, gloves and eye/face protection. S60 This material and/or its container must be disposed of as hazardous waste.

Packing

Component A:

14 kg in tin containers

Component B:

21 kg in tin containers

Component C:

5 kg in tin containers

1 kg in tin containers

Other units on request.

Storage, shelf life: At least six months after delivery or twelve months after production, for dry storage between 10 and 30 °C. Frost can damage the A component. (Flaking; contact Minova CarboTech GmbH). When this time is exceeded, we recommend having the material checked by Minova CarboTech for compliance with specification.

The local legislation on storage has to be observed. (s. safety data sheet)

Disposal: In Germany completely emptied cans are taken back free of charge by the points of acceptance of the KBS system (recirculation system for steel sheet packing materials, further details of addresses available from Minova CarboTech). Empty cans should be cleared of liquid by punching a hole through the edge of the cover using a sharp object (e.g. screwdriver). Turn them upside down, until no liquid flows out any longer. We recommend to have any liquid residuals cured. The cured resin can be disposed of in a similar way as domestic waste (disposal code no. 20 01 39).



The contents of this data sheet correspond to our state of knowledge and experience at the time of printing which is stated below. Knowledge and experience are subject to continual further development. Please make sure that you always use the current version of this document.

The description of the product application within this document cannot take into account any special conditions and ratios, which might occur in isolated cases. Therefore please check the suitability of our product for the intended use on hand always before application. By definition we have no control over the application, use and processing of our products. Therefore these are solely within your area of responsibility, the same applies to the processing result based on our application technology information.

No data of this document constitutes a warranty in legal terms. We would like to point out that we are only liable within the contractual agreements with regard to the purchase of the product.

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