

## SOLID SEAL SL

**Properties:**

**SOLID SEAL SL** is a two-component, fast reacting, non-foaming injection resin based on silicate with good bonding properties, very fast strength development and high final compressive strength.

**SOLID SEAL SL** is mainly used in structural engineering, underground construction, tunneling, road construction, mining and water construction.

**SOLID SEAL SL** is suitable

- for force-transmitting injection of cracks > 0.2 mm,
- for stabilisation of soil or rocks,
- for injection, lifting or solidification of massive building structures such as foundations, baseplates, road constructions,
- for filling of cavities.

*Single components:*

**SOLID SEAL SL** component A is a special sodium silicate solution.  
**SOLID SEAL SL** component B is a mixture of isocyanates.

*Mixture:*

After homogeneous mixing of components a viscous emulsion results which does not absorb water from the grouting area, but the water is displaced due to the high density of the silicate resin. During this time the isocyanates react with the silicate solution to produce a mixture of polyisocyanurate and polyurea. Simultaneously, solid silicates are formed from sodium silicate solution. Both solid materials permeate each other and produce the high-strength silicate resin.

*Final product:*

**SOLID SEAL SL** is a non-foamed, high-strength, hardly inflammable silicate resin. **SOLID SEAL SL** is good mechanically workable and recyclable. It is resistant to acids, bases, salt solutions and many organic solvents.

**Technical data:**

*Substance data of components:*

*Component A*

Consistency	liquid	
Colour	colourless	
Geruch	charakteristisch	
Odour	characteristic	
Spec. density (23°C)	approx. 1.42 g/cm <sup>3</sup>	DIN EN ISO 2811-1
Dyn. viscosity (23°C)	approx. 280 mPas	DIN EN ISO 2555

*Component B*

Consistency	liquid	
Colour	brown	
Odour	characteristic	
Spec. density (23°C)	approx. 1.18 g/cm <sup>3</sup>	DIN EN ISO 2811-1
Dyn. viscosity (23°C)	approx. 40 mPas	DIN EN ISO 2555

*Mixture of A- and B-component:*

Mixing ratio A : B 1 : 1 (parts by volume)

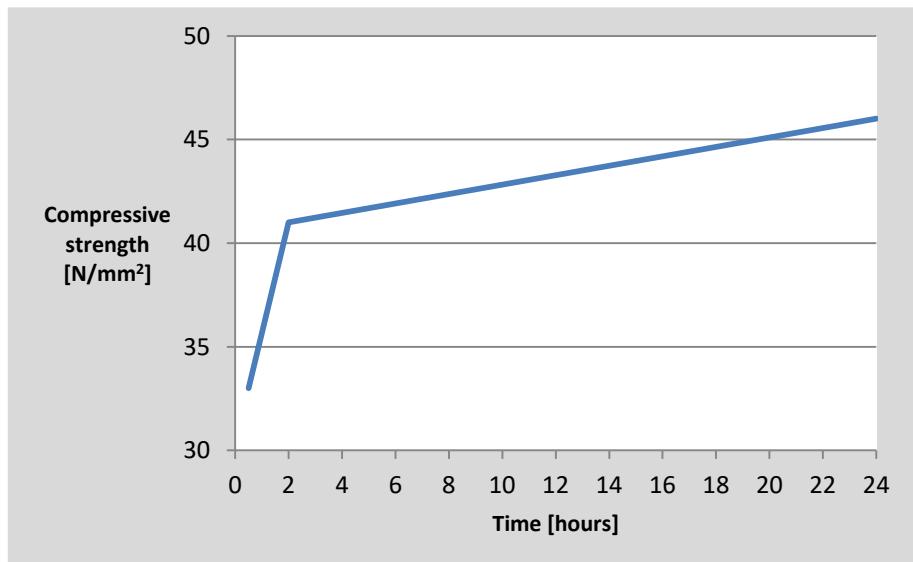
Reaction data (at 23°C):

Pot-life (String gel time) approx. 1 : 20 min ASTM D7487  
Final curing approx. 20 min

Properties of silicate resin:

Compressive strength	DIN EN 12190
15 min	approx. 32 N/mm <sup>2</sup>
30 min	approx. 33 N/mm <sup>2</sup>
2 h	approx. 41 N/mm <sup>2</sup>
24 h	approx. 46 N/mm <sup>2</sup>
7 d	approx. 51 N/mm <sup>2</sup>

*Compressive strength after 24 h:*



Bending tensile strength approx. 24 N/mm<sup>2</sup> DIN EN 12390-5  
E-modulus approx. 1100 N/mm<sup>2</sup> DIN EN ISO 527

**Processing:**

Both components are taken directly from the original packaging by means of a 2K injection pump and mixed homogeneously in a static mixer. Injection is done over packer or injection lances.

Recommended injection pumps: *TPH INJECT PS 25-II*  
*TPH INJECT PS 5-II*

The initial liquid material reaches quickly a non-liquid shape and cures in short time without foaming up.

The injection is performed with injection packers, special borehole seals or injection lances into/under building construction, soil, rock or road construction.

Applicable at ambient temperature of : 5°C to 40°C  
Recommended product temperature : 15°C to 30°C

Depending on product and ambient temperature a different viscosity and reaction time should be observed.

Viscosity depending on different temperatures:

Temperature [°C]	Dyn. viscosity Component A [mPas]	Dyn. viscosity Component B [mPas]
5	790	140
10	520	100
15	440	70
20	310	50
25	270	35
30	200	25
40	190	15

\* Standard DIN EN ISO 2555

Reaction time depending on different temperatures:

Temperature [°C]	Pot-life (String gel time) [min:s]
5	2 : 40
10	2 : 00
15	1 : 50
20	1 : 30
25	1 : 10
30	0 : 55
40	0 : 47

\* Standard ASTM D7487

**Safety information:**

*SOLID SEAL SL* components A and B are classified as hazardous according to Regulation (EC) 1272/2008 (CLP).

It is therefore necessary, before beginning processing, to become familiar with the precautions and safety advice as indicated in the material safety data sheet.

**Packaging:**

Component A	27 kg metal canister 1350 kg IBC	Art.-Nr. 357893 Art.-Nr. 357913
Component B	22.5 kg metal canister 1125 kg IBC	Art.-Nr. 357894 Art.-Nr. 357914

**Storage:**

Shelf life at least 12 month in original packaging when stored in dry conditions between 15-25°C, protected from heat, frost and direct sunlight.

After the expiration the use of the product is generally not recommended, unless an approval has been provided by TPH. This approval can only be obtained by the quality assurance department of TPH releasing the material after verification of main properties being within specification.

**Disposal:**

Small quantities of cured product residues can be disposed of as normal domestic waste. Dispose of not cured product components must be effected in accordance with the corresponding local regulations. For further information please refer to the material safety data sheets.

**Test certificates:**

Examination according to TrinkwV 2012 and Coatings Guideline; görtsler analytical services gmbh Vaterstetten 2019

Investigation of the elution behavior of a silicate-based injection resin; MFPA Leipzig 2020

Testing according to TP B-StB of the silicate resin *SOLID SEAL SL*; MFPA Leipzig 2021

**Legal notice:**

The correct and thus successful application of our products is not subject to our control. A guarantee can be issued for the quality of our products within the framework of our sales and supply conditions, however not for successful processing. All data and specifications in this specification sheet are based on the present state of the art and the right to changes and adaptations for the sake of development remains explicitly reserved. The consumption specifications designated by us can be only average empirical values, where deviations are possible on an individual basis and therefore cannot be excluded by us.

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