

## Polymer / Silicate Surface Coating

Technical Data Sheet 509990-62 – 08.09

### Product Description

**seal-tec® POLYFILL®** is a two or three-component, solvent-free, polymer-/silicate-bonded surface coating.

### Properties

#### **seal-tec® POLYFILL®**

- is chemical-resistant from pH 0 to pH 14
- can be diffused by steam
- is resistant to heating oil, biodiesel, jet propellant, fuels, oils, greases and detergents
- stays fixed overhead or on inclines during application
- forms a very good bond to cement, steel and all mineral sub-surfaces
- is solvent-free and contains no volatile components
- has a high mechanical strength in its hardened state
- bonds fully even under water
- is resistant against the corrosive affects of biogenous sulphuric acid
- forms a very good bond to all mineral sub-surfaces

### Areas of Usage

**seal-tec® POLYFILL®** is used as a surface coating in industry, grease and light fluid separator systems, catch basin for chemical substances, biogas plants against aggressive media as well as physical and chemical stresses from biogenous sulphuric acid, etc.

### Application Instructions

#### **Sub-Surfaces:**

- Concrete and all concrete reconditioning and repair mortars as well as masonry and steel surfaces

#### **Sub-Surface Pre-Treatment:**

Clean the surface in accordance with ZTV-ING, for example through cleaning measures such as: compressed air with sturdy blasting agents, shot-blasting, milling, flame de-scaling, etc. To ensure a good bond, remove all loose particles and substances that could be detrimental, such as oil, grease, coating remnants and cement as well as nitrate and sulphate sinter layers until a sound sub-surface is reached.

#### **For Steel:**

Standard purity level SA 2 ½ in accordance with DIN 55 928. Surfaces must be dry and be at a temperature three degrees Celsius higher than the dew point. Relative humidity: < 80 %

#### **Mineral Sub-Surfaces:**

#### **seal-tec® POLYFILL®**

Technical Data Sheet 509990-61 – 02-09

The sub-surface must appear to be dry. The subsoil moistness has to be under 6%. If moisture is present on or behind the surface, it should be pre-treated or sealed against using the appropriate **seal-tec®** product(s).

#### **Mixing Procedure:**

Put **seal-tec® POLYFILL® Resin** in a container and put approx. 500ml **seal-tec® POLYFILL® Curing Agent** during mixing with high speed mixer (at ~1.200 rpm) slow together. Mix 30 seconds. After that put the rest of the curing agent in the same way scattered over 1-2 minutes and mix homogeneously. The whole mixing process takes approx. 4 minutes. Slowly add the powder component and stir again with a double-barrelled mixer with a very slow rpm for at least two minutes.

**Important:** A longer mixing time means a shorter setting time!

#### **Application:**

**seal-tec® POLYFILL®** should be sprayed, or applied using a scoop or leveller (plastic or steel), onto pre-treated sub-surfaces to a thickness of 3-4 mm. If applying several coats, there should be a waiting period of at least 3-4 hours between coat applications.

The underground temperature during preparation and the 72 hours following should be between +8°C and +30°C. The relative humidity should not rise above 80%. The temperature of the mixture should neither fall below +10°C nor exceed +30°C during this time.

Any strokes to the surface necessitated in the hand-work should be immediately evened out using a flat scoop or rubbed down 1½ to 3 hours later using a hard sponge and foam. To achieve a finely structured surface, it is recommended to apply using a spray.

During application and for 12 hours following, protect treated surfaces from intense sunlight and rain.

#### **Cleansing and Disposal**

Tools used in the application can be cleaned using clean water. Waste materials and packaging, including mixing vessels, can be disposed as per usual into appropriate receptacles.

Disposal codes for **POLYFILL®** in its hardened state:

- # **seal-tec® POLYFILL® Mortar**  
EWC-Nr. 17 01 01
- seal-tec® POLYFILL® Resin**  
EWC-Nr. 08 01 99
- seal-tec® POLYFILL® Curing Agent**  
EWC-Nr. 06 02 99
- seal-tec® POLYFILL® Powder**  
EWC-Nr. 17 01 01

## Work Safety

It is advisable to apply fat-free, protective skin cream before starting. In addition, protective clothing, safety goggles and safety gloves should be worn.

When applying the product, do not smoke, eat or drink!

Excessive dust build-up is to be avoided.

Should the material come into contact with the skin or eyes, rinse immediately for at least 15 minutes with clean water. Consult an optometrist immediately following in the case of eye contact. It is advisable to bring a bottle of sterile solution for the eyes (available in pharmacies) should thorough eye rinsing be necessary. Please observe the safety data sheets and provisions of the workers' compensation standard regarding cement-bonded materials.

## Storage

Required storage is to keep the product in the original packaging within a dry area. The temperature in the storage should be kept between +5°C and +30°C.

## Storage Life

When stored appropriately:

<b>seal-tec® POLYFILL® Resin</b>	12 months
<b>seal-tec® POLYFILL® Curing Agent</b>	12 months
<b>seal-tec® POLYFILL® Powder</b>	12 months

## Item No. / Packaging

### **seal-tec® POLYFILL® Resin**

Item No.:	501005
Packaging:	6.8 kg plastic canister

### **seal-tec® POLYFILL® Curing Agent**

Item No.:	501106
Packaging:	4.2 kg plastic canister

### **seal-tec® POLYFILL® Powder**

Item No.:	501203
Packaging:	11 kg plastic bucket

## Technical Data

### Individual Components

#### **seal-tec® POLYFILL® Harz**

Basis material:	Polymer
Density at 20°C:	1.22 kg/dm <sup>3</sup>
Colour:	black, yellow, grey

#### **seal-tec® POLYFILL® Härter**

Basis material:	modified alkali silicate
Density at 20°C:	1.33 kg/dm <sup>3</sup>
Colour:	transparent

#### **seal-tec® POLYFILL® Pulver**

Basis material:	Mineral
Density at 20°C:	1.64 kg/dm <sup>3</sup>
Colour:	beige, white

## Fresh Mortar

Mixing Ratio:	6.8 : 4.2 : 11 (by weight) (resin : curing agent : powder)
Setting time:	~30 minutes (depending on temperature)
Setting temperature:	+8 to +30°C
Material quantity required:	1.4 kg/m <sup>2</sup> /mm
Coat thickness:	3-4 mm (three-component) 1-2 mm (two-component)
(in compliance with the German Water Resources Authority)	

## Hardened Mortar

Adhesive tensile strength:	3.5 N/mm <sup>2</sup> (to concrete)
After 28 days:	6.8 N/mm <sup>2</sup> (to steel)
After 1 day:	> 1.0 N/mm <sup>2</sup> (to asphalt)
Elastic tensile strength	
After:	1day 7 N/mm <sup>2</sup> 28days 14 N/mm <sup>2</sup>
Compressive strength:	
After:	1day 21 N/mm <sup>2</sup> 28days 33 N/mm <sup>2</sup>
Scratch resistance:	No damage to the coating evident at 50 N.
Impact resistance:	No flaking or initial tearing (either concentric or radial) at 4 Nm.

## Test Certificates / Licences

### **German Institute for Construction Technology**

Z-59.12-300 Coating system

### **Testing Institute Hoch**

Certificate of Fire Behaviour according to DIN 4102

### **Polymer Institute**

Verification as a coating for light fluid separator systems according to DIN EN 858-1

Verification as a coating for light fat separator systems according to EN 1825-1

### **Hygiene-Institut Gelsenkirchen**

Groundwater hygiene harmlessness

### **Chemical Resistance**

Biodiesel	high
Oil, grease, fuel	high
Sea salt	high

### **Stress in the Test Piece > 2 years**

• Sulphuric acid	50%
• Chromate	35%
• Nitric acid	35%
• Formic acid	45%
• Hydrochloric acid	20%
• Caustic potash	40%

## Further Information

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