TECHNICAL
DATA SHEET

RASCOhybrid HMS317

POLYURETHANE HYBRID MORTAR INJECTION MATERIAL

HYBRID INJECTION PRODUCTS

RASCOhybrid HMS317 is a solvent-free polyurethane injection resin system, with finely adjustable gel time, for use with a cement suspension. The hybrid system optimizes and enhances the performance of standard cement injection, thereby offering numerous additional benefits. Thanks to the efficiently matched polyurethane based and cementitious materials, the hybrid mortar system undergoes a precisely controlled and tailored curing reaction. This serves to minimize material loss through washing-out during injection, thus offering twofold benefits: on the one hand, the injection operations proceed up to five times faster than with standard filling mortars. On the other hand, material consumption is more predictable given the low material loss even with high hydrostatic pressures.

Further product info

USE

RASCOhybrid HMS317, a slow-reacting polyurethane resin system though with finely adjustable gel time, can be added to cement suspensions (RASCOhybrid HMS C1 or equivalent) that are used to waterproof and stabilize dry to heavily water-bearing soft ground in rock masses. Its adjustable gel times, controlled viscosity and reaction behaviour make it ideal for waterproofing above water and underwater. Combining synthetic resins and cementitious materials, the RASCOhybrid HMS-System enjoys the benefits of both systems.

FEATURES

- minimises washing-out of cement
- adjustable gel time and viscosity
- hybrid system with very high compressive strengths
- high cost-effectiveness
- gel time individually controllable using RASCOhybrid HMS AC
- high ground permeation

EXPERT REPORTS

- Groundwater suitability, MFPA Leipzig, Germany
- Ageing behaviour selected performance characteristics, MFPA Leipzig, Germany
- Compressive strength development, FHNW Muttenz, Switzerland
- Model environmental product declaration available
- Further reports on request

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TECHNICAL/PHYSICAL DATA

	A-component	B-component	C1 cement*	A:B mix	A:B:C mix
Supplied form	liquid	liquid	powdery		The A, B and C compo-
Material colour	slightly yellowish	brown	grey		nents shall be propor-
Container type	canister	canister	bag		tioned so as to meet si-
Container size *	990 ltr / 1000 kg	990 ltr / 1250 kg	25 kg		tespecific requirements.
Viscosity (DIN EN ISO 3219)	190 - 250 mPas	180 - 240 mPas	n/a		The technical properties
Density (DIN EN ISO 2811)	1,01 kg/ltr (± 0,04)	1,23 kg/ltr (± 0,04)			vary accordingly and
Hazardous goods/ADR	none	none			require separate defintion and verification for each project.
Mixing ratio				1:1 (by volume)	
Setting time at 25 °C				approx. 50 min.	
Tensile bond strength (DIN EN 12618-2)				approx. 3,7 N/mm²	
Flexural tensile strength (DIN EN 196-1)				approx. 17,7 N/mm²	
Tensile strength (DIE EN ISO 527-3)				approx. 44,2 N/mm²	
Compressive strength (DIN EN 196-1)				approx. 62 N/mm²	
Application temperature	from +5 °C bis +40 °C				
Storage/shelf life	12 months in original container, from +10 °C to +25 °C, in dry conditions				

**Filling is controlled by weight balance. Volume details are indicative only and vary with temperature fluctuations. Further technical / physical data for the RASCOhybrid HMS C1 cement can be found in the respective data sheet.*

SUPPLY/ADDITIVES

Item no.	Product	Container	Contents
1113.3171.001	RASCOhybrid HMS317 A-Comp	canister	20 kg
1113.3179.001	RASCOhybrid HMS317 B-Comp	canister	24,3 kg
1113.3171.002	RASCOhybrid HMS317 A-Comp	IBC	1000 kg
1113.3179.002	RASCOhybrid HMS317 B-Comp	IBC	1250 kg
1113.3901.001	RASCOhybrid HMS317 AC	canister	5 kg
1113.3901.002	RASCOhybrid HMS317 AC	canister	20 kg
1113.9211.111	RASCOhybrid HMS C1	bag	25 kg

Grouting machines, equipment and accessories available on requestt

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APPLICATION/PREPARATION

The A and B components are supplied in the correct, ready-to-use volumetric suitable proportions of 1:1. RASCOhybrid HMS AC (accelerator) is separately added to the A component and mixed with a stirrer. Application is by means of an injection pump, which acts as a bypass to the cement suspension and delivers the components in the ratio 1:1 by volume. The A and B components are delivered separately and mixed together by a static mixer immediately before being added to the cement suspension. The reaction of all mixed components produces a polyurethane hybrid mortar.

GENERAL GUIDELINES / SAFETY NOTICE

The gel and curing times are temperature-dependent. The reaction between the components is significantly influenced by the ambient, material, rock mass and groundwater temperatures. A minimum application temperature of +5 °C should be observed for the individual components.

The components shall be properly blended into a homogeneous mix. For this purpose, a static mixer of min. 300 mm length should be used. As all RASCOhybrid HMS resins are moisture-sensitive, always ensure that the containers are properly sealed during storage.

Do not use water or aqueous agents to clean the injection pump and bypass pipe.

Suitable protective clothing, gloves and goggles shall be worn. An eyewash bottle shall be kept at hand. For further details, please consult the safety data sheet.

CLEANING OF WORKING EQUIPMENT

As the injection product reacts with water, no parts of the working equipment shall under any circumstances be cleaned with aqueous cleaning agents. Either machine oil or RASCOflex PU-DT Cleaner V2 recommended for cleaning all equipment and accessories that have come into contact with polyurethane. Please consult the manufacturer's instructions for the relevant pumps and equipment.

DISPOSAL

For details on how to dispose of the individual components, please consult the product safety data sheet. Cured material, in moderate quantities, may be disposed of with normal domestic waste.

Mixing video

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