

MasterRoc[®] MP 309

Low-viscosity, fast-reacting acrylic resin system with high compressive strength for consolidation of sand and silt strata

Description

MasterRoc MP 309 is a highly reactive two-component acrylic grouting resin with a low viscosity for good penetration. The product cures quickly, forming a hard, compact resin with high compressive strength for ground consolidation.

Applications

MasterRoc MP 309 resin system has been developed for the consolidation of sand- and silt-based strata and for injection into fine joints and fissures in rock. Due to its low viscosity (close to that of water), the resin is particularly well-suited for long flow passages through sandy soil or rock with capillary pores, where polyurethane resins cannot be used for ground improvement. In comparison to colloidal silica (MasterRoc MP 320), MasterRoc MP 309 resin system develops its mechanical strength much faster.

Recommended for use in:

- Ground consolidation, especially of silty and sandy soils
- Slope stabilization in rock
- Repair of concrete cracks

Features

- Very low viscosity
- Controlled gel time between 1 and 9 minutes at 68 °F (20 °C)
- Workable between 41 °F (5 °C) and 104 °F (40 °C)
- Final curing of 10 to 20 minutes
- Good chemical resistance to acids, bases, solvents, fuels, etc.
- Good bond strength to fractured rock and concrete, even under wet conditions

Benefits

- Environmentally preferable
- Low viscosity allows deep penetration into very fine fissures and cracks
- Good assimilation of movements or settlements
- Durability of more than 10 years
- Mixed product viscosity of 13 cP (13 mPa·s)
- Hard compact material with high compressive strength of > 9 MPa (1,300 psi) (injected into DIN ISO 196 sand)

Performance Characteristics

Technical Data¹

MasterRoc MP 309 Resin

Appearance	Clear liquid
Viscosity	13 cP (13 mPa·s)
Density	8.93 lb/gal (1.07 kg/L)

MasterRoc MP 309 Accelerator

Appearance	Clear liquid
Viscosity	280 cP (280 mPa·s)
Density	9.35 lb/gal (1.12 kg/L)

MasterRoc MP 309 Part B

Appearance	Clear liquid
Viscosity	10 cP (10 mPa·s)
Density	8.68 lb/gal (1.04 kg/L)

MasterRoc MP 309 Hardener

Appearance	White solid
Density	approx. 21.7 lb/gal (2.6 kg/L)

Mixed material - Activated components of Part A and Part B (mixing ratio of 1:1)

Appearance	Clear liquid
Viscosity	13 cP (13 mPa·s)
Density	8.93 lb/gal (1.07 kg/L)
Gel time	1 to 9 minutes
Final curing	10 to 20 minutes

Final properties

Appearance	Opaque, hard-elastic solid
Compressive strength	>1,300 psi (9 MPa) (filled with 90% DIN ISO 196 sand)

¹@ 68 °F (20 °C)

Guidelines for Use

Dosage and Application: Part A is activated by premixing the Resin (e.g. 44 lb (20 kg)) with 1.25 to 25% of Accelerator (e.g. 0.55 to 11 lb (0.25 to 5.0 kg)). The amount of Accelerator is adjusted to the needed pot life (see Table 1).

Part B (e.g. 44 lb (20 kg)) is activated by premixing it with a solution of 2% of Hardener (e.g. 0.88 lb (0.4 kg)) in 8.5% of water (e.g. 0.45 gal (1.7 L)).

The activated Part A and Part B have a pot life of approximately 5 hours at 68 °F (20 °C).

The activated components are injected in the ratio of 1:1 by volume, using a two-component injection pump, equipped with a static in-line mixer.

Table 1: Adjustment of gel time under lab conditions

Amount of MasterRoc MP 309 Accelerator		Gel Time at 50 °F (10 °C)	Gel Time at 68 °F (20 °C)
[%]	lb per 44 lb (kg per 20 kg) of Resin	min:s	min:s
1.25	0.55 (0.25)	12:28	09:06
2.5	1.1 (0.5)	08:03	05:28
5.0	2.2 (1.0)	04:23	03:34
7.5	3.3 (1.5)	03:38	02:35
10.0	4.4 (2.0)	03:08	02:24
12.5	5.5 (2.5)	02:58	02:13
25.0	11 (5.0)	02:27	01:42

NOTE: The reaction time is dependent on the temperature of the components and the soil.

Product Notes

Cleaning: Equipment can easily be cleaned of uncured material using water (if possible with a detergent).

Storage and Handling

In unopened, tightly closed containers, the components of MasterRoc MP 309 resin system may be stored for up to 12 months, if kept dry and within a temperature range of 50 °F to 86 °F (10 °C to 30 °C), protected from sunlight.

Safety: Please refer to the Safety Data Sheet for further safety measures.

Avoid contact with skin and eyes by using the required personal protective equipment, such as overalls, gloves and safety glasses.

If contact with skin occurs, wash thoroughly using soap and water. If contact with eyes occurs, rinse thoroughly with water and seek medical advice.

The cured MasterRoc MP 309 resin system is physiologically harmless.

Uncured products should be prevented from entering local drainage systems and water courses. Spillage must be collected using absorbent materials such as sawdust and sand, and disposed of in accordance with local regulations.

Packaging

MasterRoc MP 309 Resin: 44 lb (20 kg) container

MasterRoc MP 309 Accelerator: 11 lb (5 kg) container

MasterRoc MP 309 Part B: 44 lb (20 kg) container

MasterRoc MP 309 Hardener: 0.88 lb (0.4 kg) container

Related Documents

Safety Data Sheets: MasterRoc MP 309 resin system

Additional Information

For additional information on MasterRoc MP 309 resin system, contact your local sales representative.

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