

MasterRoc[®] MP 303 CE

Low viscosity, fast reacting acrylic resin with adjustable reaction speed for permanent water sealing and layer curtaining of concrete and masonry

DESCRIPTION

MasterRoc MP 303 CE is a highly reactive two-component acrylic sealing resin with a low viscosity for good penetration. The product cures quickly, forming a highly flexible hydrogel with excellent swelling/re-swelling properties.

FIELDS OF APPLICATION

- Concrete repair – swelling fitted filling of cracks and fissures (EN 1504-5: category S)
- Curtain injection
- Permanent water sealing of tunnel and shaft concrete linings and masonry
- Stopping of minor water inrush through cracks

FEATURES AND BENEFITS

- Upon curing forms a highly flexible compact resin with good adhesion properties even on damp or wet surfaces.
- The cured resin is resistant to acidic and alkaline solutions as well as many other solvents.
- Can swell to more than 200% of its initial volume, accommodating structural and ground movement. The swelling is reversible and after dry periods the resin maintains its self-healing properties.
- Good bond strength to fractured rock and concrete, even under wet conditions.
- Very low viscosity (close to water) allows deep penetration at low pressure into very fine cracks or fissures and long flow paths.
- Controlled gel time between 14 seconds and 3 minutes at 20°C. With the retarder the gel time can be prolonged to more than 40 minutes.
- Environmentally friendly: Harmless in contact with groundwater and no emission of dangerous substances.

PACKAGING

MasterRoc MP 303 CE Resin: 22.5kg can
MasterRoc MP 303 CE Accelerator: 1.0kg can
MasterRoc MP 303 CE Hardener: 1.0kg can
MasterRoc MP 303 CE Retarder: 1.0kg can

TECHNICAL DATA*

MasterRoc MP 303 CE Resin
Appearance Clear blue liquid
Viscosity (20°C) 40 mPa·s
Density (20°C) 1.19kg/liter

MasterRoc MP 303 CE Accelerator
Appearance Clear liquid
Viscosity (20°C) 280 mPa·s
Density (20°C) 1.12kg/liter

MasterRoc MP 303 CE Hardener
Appearance White solid
Density (20°C) Approx. 2.6kg/liter

MasterRoc MP 303 CE Retarder
Appearance Clear yellowish liquid
Viscosity (20°C) ~1 mPa·s
Density (20°C) 1kg/liter

Mixed material (mixing ratio Resin : Part B of 1:1 without retarder)

Appearance Clear blue liquid
Viscosity (20°C) 5 mPa·s
Density (20°C) 1.14kg/liter
Gel time (20°C) 10 seconds to 3 minutes
Final curing (20°C) 10 to 20 minutes

APPLICATION PROCEDURE

Premix the Resin (22.5kg) with 4.5% of Accelerator (1kg) to activate it prior to use. To prepare Part B, take 20 litres of water and dissolve 0.15% (30g) to 5% (1kg) of hardener powder in the water (the same volume of water as of activated resin). The amount of hardener is adjusted to the needed pot life (see Table 1). The activated resin and Part B have a pot life of approx. 5 hours at 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. In cases of long open times a one-component pump can also be used.

For steel reinforcement injection, the amount of hardener powder should be limited to 1.5% (e.g. 300g).

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Table 1: Hardener dosage to adjust gel time

Amount of MasterRoc MP 303 CE Hardener		Gel time at 10°C (min)	Gel time at 20°C (min)
(%)	(g) per 20kg water		
0.2	40	05:00	02:10
0.25	50	04:05	01:58
0.5	100	01:55	00:63
1.0	200	01:18	00:36
1.5	300	00:50	00:27
3	600	00:38	00:18
5	1000	00:24	00:14

CE certification tests have been carried out with approximately 0.5% of Hardener powder.

For special application where CE certification is not needed, the reaction can be prolonged using **MasterRoc MP 303 CE** retarder (see Table 2). Simply add 5% of Retarder into the premixed Part B. For the complete set this means 20 litres of water, 1 liter of Retarder and 30g to 1kg of Hardener.

Table 2: Hardener dosage and MasterRoc MP 303 CE Retarder to adjust gel time

Amount of MasterRoc MP 303 CE Hardener		Gel time at 10°C (min)	Gel time at 20°C (min)
(%)	(g) per 20kg water and 1kg Retarder		
1	200	103:00	40:57
2	400	40:40	15:16
3	600	21:45	10:25
4	800	12:48	7:02
5	1000	11:18	5:43

Please Note: The reaction time is dependent on the temperature of the components and the ground.

CLEANING OF INJECTION EQUIPMENT

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

STORAGE

In unopened, tightly closed containers, the components of **MasterRoc MP 303 CE** can be stored for up to 12 months, if kept dry and within a temperature range of +10°C to +30°C, protected from sunlight.

SAFETY PRECAUTIONS

Please refer to the Material 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 303 CE** is 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.

* Properties listed are based on laboratory controlled tests.

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