Technical Data Sheet
Issue: 28-06-2021

F9200

Properties:

F9200 is a ready-to-use dryblend mortar based on cement modified with organic additives, which hardens without shrinkage when mixed with water.

F9200 is suitable for injecting and grouting anchors in rock, soil, concrete and masonry and for filling joints, cracks and holes. *F9200* can be used at vertical and horizontal surfaces as well as for overhead working.

F9200 is also used as a cement suspension for grouting of the *VPRESS* injection hose system. In doing so, it is also possible to grout this injection hose up to a length of 30 m (see test certificates).

Therefore it is possible to perform a force transmitting injection of underside voids in concrete, underground cavities or roof clefts in tunnel construction.

Due to the multiple injectability of the *VPRESS* system a flushing of injection hose with water is possible. After that, the injection hose can be filled again, e.g. with polyurethane resin or acrylate gel.

Technical data:

Substance data:		
Consistency	solid	
Colour	grey	
Odour	odourless	
pH value	11 - 13.5	DIN EN ISO 10523
Max. grain size	0.125 mm	
Processing temperature	5 - 30°C	substrate temperature
Pot-life (20°C)	approx. 60 min	
Swelling rate	> 0.5 %	after 24 h
Hardened mortar properties:		
Compressive strength (liquid consistency 32 % of water)		DIN EN 12390-3
after 1 day	approx. 50 N/mm^2	
after 7 days	approx. 75 N/mm^2	
after 28 days	approx. 85 N/mm^2	
Compressive strength (plastic consistency 22 % of water)		DIN EN 12390-3
after 1 day	approx. 62 N/mm^2	
after 7 days	approx. 82 N/mm^2	
after 28 days	approx. 92 N/mm^2	
Bending tensile strength (liquid consistency 32 % of water)		DIN EN 12390-5
after 1 day	approx. 5.0 N/mm^2	
after 7 days	approx. 7.0 N/mm^2	
after 28 days	approx. 8.0 N/mm^2	
Bending tensile strength (plastic consistency 22 % of water)		DIN EN 12390-5
after 1 day	approx. 5.2 N/mm^2	
after 7 days	approx. 8.3 N/mm^2	
after 28 days	approx. 9.5 N/mm^2	

Exposure classes DIN 1045-2/DIN EN 206

X0
XC1, XC2, XC3, XC4
XD1, XD2, XD3
XS1, XS2, XS3
XF1, XF2, XF3
XA1
XM1

Processing:

1. Pretreatment:

The substrate must be cleaned down to load bearing grain structure. Before grouting the substrate is to be rinsed until it is saturated excess water will be removed.

2. Mixing:

F9200 should be mixed with a slowly rotating mixer to avoid air pockets. First add 2/3 of the totally required water into *F9200*. After mixing for a short time add the balance of water. It should be mixed for approx. 4-6 minutes.

Plastic consistency for vertical and overhead surfaces:
4.4 litres of water per 20 kg bag

Liquid consistency for injection:
5.6-6.4 litres of water per 20 kg bag

Consumption: - 20 kg of dry mortar correspond to 12-13 litres of fresh mortar
- approx. 1800 kg of dry mortar is required for 1 m³

3. Grouting:

In order to avoid areas of occluded air the product is grouted only from one side or corner.
Not mechanically stressed grouting edges should not be wider than 50 mm.

4. Injection:

Accessible joint sections must be checked for imperfections, rock pockets etc. prior to injecting the hose sections.
Detected imperfections must be professionally sealed prior to injection.
Injection work should be carried out at the earliest after the hydration process has abated and with the construction joint under full stress.
Injection work on connected structural components is carried out in sections, beginning on one side. Vertically positioned hoses are injected from the bottom up.

To prevent dewatering of cement suspension the injection hose system and injection zone is to flush with water prior to injection.
To bleed the injection hose one side of the hose is first filled with *F9200* cement suspension until the material pours out at the other end free of bubbles. Then this hose end is sealed.
After the hose end is sealed, the injection pressure is slowly increased to enable the injection material to pour out of the slots evenly into the joint.

To prevent segregation of the cement suspension injection pressure of 15 bar must not be exceeded.

Safety information:

F9200 contains cement and is 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:

20 kg paper bag

54 x 20 kg on pallet

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:

Injectability test of a 30 m long segment of the single-channel, multi-injectable injection hose *VPRESS* 10 mm with *F9200* grouting mortar; MFPA Leipzig 2010

Performance characteristics of anchoring products according to EN 1504-6; SGS INTRON Sittard 2011

Injectability test of the *VPRESS* injection hose system (*F9200* as injection product); MFPA Leipzig 2012

Determination of selected properties of a hydraulically hardening crack filler according to DIN EN 1504-5:2013; MFPA Leipzig 2020

Examination according to TrinkwV 2012 and Coatings Guideline; görtler analytical services gmbH Vaterstetten 2020

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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