

VELOSIT® FF 220

Fine Filler 0 - 5 mm

Description

VELOSIT® FF 220 is a cement-based fine filler for all types of common construction substrates. It creates a very smooth surface and is especially suitable for skim coating exposed concrete surfaces. VELOSIT® FF 220 is a cement-based fine filler with rapid strength development. It forms a strongly bonded, smooth surface on the substrate. This product is formulated to be RCS (respirable crystalline silica) free and is manufactured using dust reduction technology.

Uses

- Filling surface defects on concrete and masonry.
- Application on horizontal and vertical surfaces, including overhead work.
- Filling blowholes, air voids, and rough surfaces.
- As a fine filler in concrete repair systems.
- Applicable in layer thicknesses from 0 to 5 mm.
- VELOSIT® FF 220 can be applied using a trowel or suitable spraying methods.

Features & Benefits

- Low shrinkage/expansion under dry or wet storage, minimizing cracking.
- Excellent workability, especially overhead.
- Walkable after 2–3 hours.
- Very high adhesion to concrete and masonry.
- Good resistance to chloride and CO² due to a dense pore structure.
- Working time: 30 minutes.
- Final strength of more than 25 MPa after 28 days.
- Good weather resistance.
- Good sulfate resistance.
- Colour similar to concrete.

Product Data

Characteristic	Result
Appearance	Medium Grey
Respirable Crystalline Silica	<0.1% RCS

Technical Data

Performance Characteristic	Test Method	Result
Compressive Strength (approx.)	EN 12190	24 hours: 6 MPa 7 days: 7 MPa 28 days: 25 MPa
Flexural Strength (approx.)	EN 196-4	24 hours: 2 MPa 7 days: 3 MPa 28 days: 6 MPa
Chloride ions	EN 1015-17	< 0.05%
Carbonation resistance	EN 13295	Passed
Bond strength*	EN 1542	Approx. 1.5 MPa

*According to EN 1542. Pull-off strength values are highly dependent on substrate preparation.



Application Data

Property	Property Value
Suitable application methods	Trowel / hand applied, wet spray
Application temperature	+5°C minimum; +35 °C maximum (ambient air & substrate)
Mixing Ratio	24–28% potable water; 4.8–5.6 litres per 20 kg bag
Density	1.1 kg/l
Working time	Approx. 30 minutes
Initial Setting	Approx. 80 minutes

Application Guidelines

SUBSTRATE PREPARATION

VELOSIT® FF 220 is designed for mineral substrates such as concrete or masonry.

Mineral substrates (concrete, masonry, and cement-compatible natural stone) must be free of all substances that reduce adhesion.

The surface must be open-pored and load-bearing. The minimum requirement for tensile bond strength is 0.7 MPa, and compressive strength must be at least 20 MPa. Lower strengths may be acceptable if reduced adhesion is tolerable.

Before applying VELOSIT® FF 220, the surface should be pre-wetted to create optimal conditions.

Mixing

Mix VELOSIT® FF 220 with 24–28% potable water, i.e., 4.8–5.6 litres per 20 kg bag.

Add 24% mixing water (4.8 litres per bag) into a clean container and mix the powder with a slow-speed mixer (300–600 rpm) until a lump-free consistency is achieved. Add more water (maximum 4%) if needed to reach the desired consistency.

Clean the mixing tool immediately after use. The product remains workable for approximately 30 minutes at 23 °C.

Optional Priming

Apply VELOSIT® FF 220 as a primer using a wet sponge onto the damp substrate. Apply approximately 0.3–1 kg/m² into the surface pores.

Trowel Application

VELOSIT® FF 220 can be applied wet-on-wet onto the primer or prepared surface. Maximum layer thickness is 5 mm on vertical surfaces.

Work in sections that can be completed within 30 minutes.

Repair of Architectural Elements

Once VELOSIT® FF 220 has started to set, it can be shaped

with a spatula as desired. Scrape the material in thin layers until the desired result is achieved. If necessary, finish the surface with a wet sponge to remove irregularities and air bubbles.

Curing

VELOSIT® FF 220 does not require extensive curing due to its rapid reaction with water.

Only under very hot and dry conditions may curing with water be necessary for up to 4 hours.

CONSUMPTION

Yield

Approximately 1.50 kg of VELOSIT® FF 220 powder per millimetre of layer thickness per m² on smooth surfaces. Consumption may be significantly higher on rough substrates.

Typical Wall Application

1.5 kg*/m² per 1 mm dry layer thickness on smooth substrates. On rough substrates, consumption may be higher.

*1.5 kg powder + 0.4 kg water = 1.9 kg mixed material per millimetre per m².

Quality Control

The execution of the work shall be carried out in accordance with the project quality plan. Refer to EN 1504-10 Table 5 for the requirements related to quality control tests and observations.

Clean Up

VELOSIT® FF 220 should be removed from tools, equipment and mixers in the fresh state with water immediately after use. Once it has cured acidic cleaners like muriatic acid may assist and mechanical cleaning will be required.

Limitations

Design: Where VELOSIT® FF 220 is used as a thin build layer, it may not be considered a structural repair or suitable for traffic. Additional protection measures may be required for



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resistance to chemicals, extreme and aggressive conditions.

Application: Not to be used when the temperature is below 5 °C and falling. Apply only to sound, prepared substrate. It should not be exposed to moving water during application.

Exposure to heavy rainfall prior to final set may result in surface scour. Avoid application in direct sun and/or strong wind. Do not add water over the recommended dosage. Do not apply mortar above the maximum recommended thickness.

Do not add other additives. Aggregate may be added only under the guidance of Hychem™ Infrastructure. Do not add additional water during surface finishing, as this will negatively affect the performance properties and may lead to cracking, laitance and discoloration. Protect freshly applied material from freezing.

If any doubts arise concerning suitability for use, application temperature or substrate conditions, contact Hychem™ Infrastructure Technical Support for advice.

VELOSIT® FF 220 is only available for professional applicators.

Never add water to VELOSIT® FF 220 when it has started to set. Stiffened material must be disposed of.

All described product features are determined under controlled laboratory conditions according to the relevant international standards. Values determined under job site conditions may deviate from the stated values.

Packaging

VELOSIT® FF 220 is available in 20 kg watertight plastic bags.

Storage

VELOSIT® FF 220 can be stored in unopened original packs for 12 months at 5–35 °C in a dry storage place protected against sunlight.

Safety

In an emergency, contact 000, the Poisons Information Centre (13 11 26 within Australia) or a doctor for advice. Please refer to the current SDS (Safety Data Sheet) and follow the prescribed safety precautions and handling procedures for the product. This material is RCS free.

Warranties and Disclaimers

Hychem™ warrants that this product shall conform to the technical specifications published in the product literature. The quality and fitness of the product are dependent upon its proper use and application by the applicator. Hychem's role is limited to the manufacture and supply of the product and its components and does not extend to supervision or control of its application. It is vital that the person applying this product understands its properties and limitations and is appropriately trained and competent in the use of the equipment, methods and materials associated with its application. There are no warranties that extend beyond the description contained herein, except where provided in writing directly by Hychem™ and executed under seal by a company officer.

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