

VICASEAL-FM®

Edition 03019

Fast setting, Non-Shrink, Waterproof Cementitious Flowable Mortar

Description

Vicaseal-FM is a Fast setting, Waterproof, Non-shrink Flowable mortar based on **Vicat** special binders, graded siliceous fillers and additives. The material readily mixes with water to produce an easily placed mortar which is used in structural support and repair situations. **Vicaseal-FM** is characterized by its very low shrinkage values, low permeability and long-term strength development. Plastic shrinkage and bleeding are overcome by quick setting and hardening which also allow the possibility of early curing, within the first 7 days. **Prompt** cement is used in the mix to reduce the heat of hydration, accelerate setting and hardening, decrease drying shrinkage, decrease permeability, increase bond, and insure long term strength gain. The mix contains no chlorides, ferrous metal or other deleterious materials and it can be safely used in contact with all reinforcing steel and steel units.

Advantages

- High early and ultimate strength.
- Non-shrink in both plastic and dry states.
- Increased strength due to the hydration process and lower water / cement ratio.
- Enhanced properties gradually up to 10 years.
- Waterproof and can resist high hydrostatic pressures.
- Resists carbonation providing excellent protection to steel.
- Formulated for short and long term efficiency.
- Nontoxic & Suitable for food industry and potable water.
- No plastic settlement or bleeding.
- Excellent adhesion.
- Easy to use.
- Chloride free.

Uses

Vicaseal-FM can be easily used to fill voids and gaps between concrete or masonry elements, or between underneath base plates of steel columns or machines or any other applications that require high strength & low shrinkage in combination with waterproofing features. Typical applications include but are not limited to:

- Flowable Non-Shrink repair mixes.
- Under-plate grouting.
- Pile capping
- Infill concrete.
- Jointing precast units.
- Repairing of water structures.

Technical characteristics

Color	Grey (other colors are available upon request)
Setting time @ 23° C	Initial 25 min. Final 40 min.
Toxicity	Non-toxic
Dry density	≈ 1.3 Kg/L
Fresh density	≈ 2.2 Kg/L (Flowable consistency)
Maximum Particle size	3 mm
Adhesion to concrete substrate <small>(Adhesion depends very much on proper surface preparation)</small>	> 1 N/mm ²
Linear Shrinkage at 56d according to BS EN 12617-4 (%)	0.05% (Unrestrained)
Linear Expansion at 56d according to BS EN 12617-4 (%)	0.04% (Unrestrained)
Flexural strength at 28d according to BS EN 196-1 (MPa)	> 8 MPa (Flowable)
Compressive strength typical results according to BS EN 196-1 (MPa) (4x4x16 prisms)	

Consistency	Water/Powder ratio	Age				
		24 hours	7 days	28 days	56 days	90 days
Flowable	0.150	37	50	62	70	79

Compressive strength is increasing thereafter due to the hydration of active Dicalcium silicate.

Depth of water penetration under pressure according to BS EN 12390-8

Age(days)/pressure(bar)	24hours / 1.0 bar	7 days / 3.0 bar	28 days / 7.0 bar
Penetration (mm)	Nil	Nil	Nil

Package & Yield

Vicaseal-FM is supplied in 25 Kg bags (other sizes maybe available upon request).

After mixing with water, the 25 Kg bag yields about 13 liters of grout when mixing water per bag is 3.75 liter.

Allowance should be made for any possible wastage or surface unevenness when estimating.

Application Instructions

Surface preparation

All substrates should be clean, free from dust, loose particles, grease, oil or any other foreigner matter.

Formwork should be erected and made grout-tight. The formwork must be designed with sufficient hydrostatic head to ensure grout flow into and across the grouting area. Saturate the grouting area with water, check for leaks, leave for one hour and then blow out any surplus water. All concrete surfaces should be surface saturated dry (SSD) just before the application.

Mixing

Pour about 3.5 – 4.0 liters of clean water into the mixing vessel for each complete bag of **Vicaseal-FM**. Slowly add the **Vicaseal-FM** to the water whilst continually mixing for 2 - 3 minutes. Mechanical mixing is essential using either a high torque slow speed drill with a Grout Stirrer or a grout mixer set on a slow speed. (High speed or colloidal mixing will cause thixotropy leading to loss of flow). Hand mixing is not recommended.

Application

Grout should be placed before the gelling time to insure good flowability; otherwise slight vibration could overcome the problem. Continuous placing is important, pouring from one side of the formwork until the grout appears at the opposite side of the grouting area. Do not disturb once grouting has been completed. The grout is chloride-free, can be safely used in contact with steel and can be placed in section thicknesses of 30mm up to 100mm. **Vicaseal-FM** should be placed as soon as possible after mixing.

Curing

Immediately after placing the grout, all exposed areas should be covered with clean wet hessian and kept moist until grout surface is ready to be finished, or until final set. After final setting, continue the curing process with soaking, wet hessian or a curing compound for a minimum period of 3 days. Curing is very important for the success of the task.

Precautions

Protect the **Vicaseal-FM** bags from direct sun rays or any other source of heat before use; this can lead to a very fast setting. Avoid working on hot substrates and avoid mixing with hot water, the temperature of both the grout and elements coming into contact with the grout should be in the range of +5°C to +35°C. Never exceed the stated water dose and temperature to avoid bleeding, segregation and further cracking. Never remix with water to retrieve its initial workability. For application thickness other than the stated, please refer to our technical office.

Avoid contact with gypsum or any other sulfates on substrate, mixing water or curing water in plastic state.

Health and safety

Vicaseal-FM is alkaline when mixed with water and should not come into contact with skin or eyes. Avoid inhalation of dust during mixing and wear safety glasses, dust mask and gloves. If skin contact occurs, wash thoroughly with clean water. Should eye contact occur, rinse immediately with plenty of clean water and seek medical advice.

Full health and safety data are given in Product Safety Data Sheet.

Storage & shelf life

Vicaseal-FM should be stored in normal temperature and closed shaded dry area in undamaged original packing. It is recommended to be re-tested after 6 months from the production date.

Technical support

For any technical support, please consult our technical office or representatives.

Disclaimer...The information contained herein is included for illustrative purpose only and, to the best of our knowledge, is accurate and reliable. Hemts cannot however under any circumstances make any guarantee of results or assume any obligation or liability in connection with the use of this information. As Hemts has no control over the use to which may put its products, it is recommended that the products be tested to determine if suitable for a specific application and/or our information is valid in a particular circumstance. Responsibility remains with the architect or engineer, contractor and owner for the design, application and proper installation of each product. Specifier and user shall determine suitability of products for specific application and assume all responsibilities in connection therewith.

Hemts Construction Chemicals Ltd.

Head quarter: 35 ElGazayer St. 11435 Maadi, Cairo, Egypt
 Factory: CPC industrial compound, 6th of October, Giza, Egypt
 Tel: (+202)27030503 - 27542745 - 25180578 info@hemts.net

www.hemts.net

