VICAROC®

Edition 01019

High performance, Rapid setting hydraulic binder

Description

VICAROC is a high performance hydraulic binder based on **PROMPT natural cement**, modified with selected mineral additives. This is to improve the microstructure as well as the physicochemical and mechanical properties of the hydration products to suit structural purposes and rapid applications.

Advantages

- Quick and adjustable setting as well as rapid hardening.
- High initial strength.
- Long term strength gain (Durability guaranteed).
- Water proof.
- Non – Shrink in plastic state, very low shrinkage after hardening.
- Low heat of hydration (high cement content can be used and high thickness can be applied).
- High resistance to chemicals with pH ≥ 4.
- High adhesion to steel reinforcement, concrete and most construction substrates.
- Autogenous healing: any pores or cracks are automatically filled as a result of the hydration process.
- Carbonation resistant, therefore optimum protection is provided for steel reinforcement against corrosion.
- Nontoxic, suitable to be in contact with potable water.

Uses

VICAROC is ideal for all applications which require any or all the above mentioned properties and are not limited to the following examples:

- In and around the sea.
- Negative and Positive water proofing.
- Rapid fixing works and anchorage.
- Agricultural projects, food industries and potable water tanks.
- Structural repair works.
- Tunneling and sewage works.
- Water plugging.
- Bedding, tiling and pointing works.
- Any construction works which require tremendous speed.
- Shotcreting.
- Grouting underneath bearing base plates of machinery and foundations of steel structures columns.
- Anchorage of bolts and rebars.
- Concrete protection from chemical attack and carbonation.

Standards & Specifications

Color	Grey to Beige
Stiffening time of mortar (C/S =0.5, W/C= 0.40) according to BS EN 13294:2002	≈IST 5 min. @ 23° C ≈FST 10 min. @ 23° C
Toxicity	Non-toxic
Bulk density	0.8 -1.0 Kg/liter
Adhesion	> 10 Kg/cm^2

Permeability

Linear Shrinkage typical value at 28days according to BS EN 12617-4 (%): 0.04%
Linear Expansion typical value at 28days according to BS EN 12617-4 (%): 0.004% (≈ 0.0%)
Compressive Strength (C/S = 0.5) (W/C = 0.4) typical values (MPa) according to BS EN 196-1

Age					
1 hour	3 hours	24 hours	7 days	28 days	56 days
1	10	20	33	37	40

* Steady increase in **Compressive strength** over one year and thereafter

Application Instructions

VICAROC is applied as either concrete or mortar on well prepared substrates. Due to the special properties of **VICAROC**, mixes with high **VICAROC** content are possible leading to early strength, low permeability, adhesion and compactness. This is clear in mortar rather than concrete where high cement content mortars made with other cement types are impossible to apply due to high heat of hydration and shrinkage.
Like any type of cement, **VICAROC** is subject to mix design and/or trial mixes to optimize the performance of the mix regarding specific applications and verify the compatibility of the additive(s).
Most additives which are compatible with Portland cement are also compatible with **VICAROC**.
The effective set retarders are citric acid and tartaric acid at a dosage rate up to 0.6% of the **VICAROC** weight.
VICAROC is compatible with Portland cement. The higher the ratio of Portland cement, the lower are the benefits of **VICAROC** in the mix, but a combination of the two types is useful to decrease the heat of hydration where high cement content mixes are to be used and/or a big mass are to be poured.

Nominal mixes examples:

Mortar: One part **VICAROC** to one part graded sand, by volume (≈ 665Kg/m³).
Two parts **VICAROC** to one part graded sand, by volume (≈ 890Kg/m³).
Concrete: Two parts **VICAROC** to two parts graded gravel to one part graded sand, by volume (≈525Kg/m³).

Water is to be added while mixing to obtain a plastic consistency.
The water/cement ratio should be maintained the lowest practicable and not exceeding 0.5.
The general practice rules apply when performing applications using **VICAROC**.

Precautions

- Protect the **VICAROC** bags from direct sun rays or any other source of heat before use, this can lead to a very fast setting.
- **Protect the fresh mortar immediately from premature drying for a minimum of 3 days using an appropriate curing method e.g. wet hessian, curing compound, moist geotextile membrane, polythene sheet etc.**
  Curing compounds shall not be used when they adversely affect subsequently applied products and systems.
- Avoid working on hot substrates.
- Avoid mixing with hot water.
- **Avoid contact with gypsum or any other sulfates on substrate, mixing water or curing water in plastic state.**

Health and safety

VICAROC 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

VICAROC 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.

More information

Please refer to the **PROMPT** technical document .