

# Cempatch FL60C

Shrinkage compensated free flowing pumpable micro concrete



## DESCRIPTION

Cempatch FL60C is a single component repair system. Cempatch FL60C is composed of a blend of dry powders and selected aggregates which when mixed with water produce a shrinkage compensated, self-compacting and free flowing pumpable micro-concrete suitable for large volume concrete repairs.

## APPLICATIONS

Cempatch FL60C is designed to repair large and deep voids in or between the structural elements such as walls, columns, footings and floors by pouring inside watertight shutter where the access to the damaged concrete is restricted or where reinforcement bars are too congested.

## ADVANTAGES

- » High initial and ultimate strength development.
- » High flow, it can be pumped and suitable for repair of steel congested areas.
- » Shrinkage controlled cementitious repair eliminates cracking.
- » Easy to apply, single component, requires only addition of water.
- » Extremely low permeability, providing excellent protection to steel reinforcements and host concrete.
- » Self compacting and self priming, with high bond strength.
- » Suitable for internal and external applications.
- » No independent primer is required.

## METHOD OF USE

### SUBSTRATE PREPARATION

All damaged and weak concrete shall be cut back to reach sound concrete or to a minimum depth of application. Corroded steel reinforcement should be grit blasted to remove all rust traces. Steel loss up to 25% of original section shall be compensated, where loss of section exceeds 25%, steel reinforcement shall be replaced.

Remove all concrete form around exposed steel reinforcements by 20 mm thickness. The perimeters of the repair area should be saw cut to a minimum depth of 10 mm. The prepared area should be cleaned thoroughly by brush and/or compressed air. A water tight formwork should be used to avoid material loss.

Areas to be repaired with Cempatch FL60C should be soaked with clean water for several hours before applying the Cempatch system. All excess water should be removed.

## TECHNICAL PROPERTIES:

Colour:	Grey
Fresh wet density:	2.35 ± 0.10 g/cm <sup>3</sup>
Compressive strength: ASTM C109/109M	> 40 MPa @ 3 days > 50 MPa @ 7 days > 60 MPa @ 28 days
Flexural strength: ASTM C348	> 9 MPa @ 28 days
Working time:	20 min @ 20°C 15 min @ 30°C 10 min @ 40°C
Expansion characteristics: ASTM C827/C827M-10	Up to 2%
Water penetration: DIN 1048	≤ 10 mm
Bleeding: ASTM C940	Nil

*Compressive strength cubes shall be under sufficient restraint for the first 24 hours.*

## PRIMING

All grit blasted steel reinforcements should be primed within 2 to 4 hours with one or two coats of zinc rich epoxy coating Repcoat ZR. Provided that the substrate has been thoroughly soaked with clean water, and is damp on application of product a primer is not normally required.

For concrete highly contaminated with soluble salts, it is recommended to use Quickmast 108, an epoxy bonding agent, which prevents migration of salts such as chloride ions and sulphate to the repair patch, as well as providing bond for Cempatch FL60C to host concrete.

## MIXING

To ensure proper mixing, a mechanically powered mixer or drill fitted with suitable paddle should be used.

3.00 litre of clean water should be added to clean container, Cempatch FL60C is then added slowly to the water while mixing continuously with low speed mixer/drill (400 – 600 rpm). Mixing should be continued for 3 minutes until a uniform consistency is obtained.



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## PLACING AND FINISHING

As the mixed mortar has high flowability characteristics, all shutters and formworks should be watertight. Cempatch FL60C should be poured in single continuous operation within 15 minutes of mixing.

The mixed material should be applied slowly from one point to prevent air entrapment. Ensure that the shutter will have outlets for extraction of the pre-soaking water and to prevent air entrapment during the mortar placement.

The unrestrained areas should be kept to a minimum due to the expansive nature of Cempatch FL60C. The shutter should be kept for a minimum of 24 hours after placement, during this period the unrestrained areas should be kept to a minimum due to the expansive nature of Cempatch FL60C.

## CURING

As Cempatch FL60C is a cementitious based material, it should be cured in a similar method to concrete. Curing can be conducted by using a good concrete curing compound such as Setseal A.

### Notes:

- » At low temperatures (below 8°C), warm water is recommended to achieve the early strength. And the formwork is recommended to be kept longer time.
- » At high temperatures (35°C and above), cold water (less than 20°C) must be used for mixing, the temperature of tools must be controlled (less than 20°C) and Cempatch FL60C should be stored at a low temperature range (less than 20°C) before use.

## CLEANING

All tools shall be cleaned immediately after application using fresh water. Hardened materials must be cleaned mechanically.

## PACKAGING

Cempatch FL60C is available in 25 kg bags.

## THICKNESSES AND SIZE LIMITATIONS

Cempatch FL60C can be applied in a single application for large repair voids at thicknesses between 10 to 200 mm.

## YIELD

Approximately 11.5 - 12 litre per 25 kg bag.

## STORAGE

Cempatch FL60C has a shelf life of 12 months from date of manufacture if stored at temperatures between 2°C and 50°C in original unopened bags.

If these conditions are exceeded, DCP Technical Department should be contacted for advise.

## CAUTIONS

### HEALTH AND SAFETY

Cempatch FL60C may cause irritation to skin or eyes. In case of accidental contact with eyes, immediately flush with plenty of water and seek medical advise.

For further information refer to the Material Safety Data Sheet.

## FIRE

Cempatch FL60C is nonflammable.

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