

# Cempatch HB50

High strength, high build fibre reinforced structural repair mortar, containing migrating corrosion inhibitors



## DESCRIPTION

Cempatch HB50 is a one component polymer modified and fibre reinforced, high build, hand / wet-spray applied, structural repair mortar. Cempatch HB50 is a blend of dry powders, selected aggregates, fibres, polymers and corrosion inhibitors which when mixed with water produces a thixotropic mortar suitable for vertical and overhead application.

Cempatch HB50 can be applied in a single application of up to 80 mm thickness in vertical applications and up to 60 mm thickness in overhead applications without the need for formwork. Where higher thicknesses are required, sections can be achieved by the use of formwork or can be built up in layers.

Cempatch HB50 incorporates proven Migrating Corrosion Inhibitor technology to provide high durability repairs, which minimise further corrosion to steel reinforcement. Longterm protection is provided by the migration of corrosion inhibitor molecules from the mortar into the structure.

These are adsorbed onto the reinforcement to form a protective film which inhibits both anodic and cathodic sites, effectively reducing corrosion activity to a negligible level. Adjacent concrete is also protected from incipient anode corrosion in chloride-contaminated concrete.

## APPLICATIONS

- » Repair of all types of structural concrete where high strength and extremely low shrinkage properties are required.
- » For the repair of vertical and overhead elements.
- » As a repair mortar for all structural elements in buildings, water retaining structures, industrial plants, bridges, etc.
- » Deep pockets can be filled in a one application depending on the shape of the pocket and the volume of exposed reinforcement.

## ADVANTAGES

- » Easy to apply. Single component, requires only addition of water.
- » High bond strength, ensuring monolithic performance of the repair.
- » Contains corrosion inhibitors for additional protection of reinforcement.
- » Can be spray applied efficiently by the wet spray technique.
- » Shrinkage controlled polymer modified cementitious repair mortar.

## TECHNICAL PROPERTIES. W/P = 0.14:

Colour:	Grey
Fresh wet density:	2.00 ± 0.10 g/cm <sup>3</sup>
Mixing ratio:	3.5 litre of water for 25 kg
Minimum application temperature:	3°C

Performance Characteristics	EN 1504-3 Requirement for Class R4	Measured Value
Compressive strength: BS EN 12190	≥ 45 N/mm <sup>2</sup>	≥ 50 N/mm <sup>2</sup>
Chloride ion content: BS EN 1015-17	≤ 0.05%	≤ 0.03%
Adhesion bond: BS EN 1542	≥ 2 N/mm <sup>2</sup>	≥ 2 N/mm <sup>2</sup>
Carbonation resistance: BS EN 13295	≤ control concrete	Pass
Thermal compatibility: freeze-thaw cycling BS EN 13687-1	≥ 2 N/mm <sup>2</sup>	≥ 2 N/mm <sup>2</sup>
Capillary absorption BS EN 13057	≤ 0.5 kg·m <sup>-2</sup> ·h <sup>-0.5</sup>	≤ 0.5 kg·m <sup>-2</sup> ·h <sup>-0.5</sup>

- » Thixotropic properties allowing extra high build for vertical and overhead applications.
- » Extremely low permeability to water, providing excellent protection to steel reinforcements and host concrete.
- » Contains no chlorides.
- » Suitable for internal and external application.
- » Water vapour permeable.
- » Suitable for use in contact with potable water.
- » Easy to finish.
- » Cost effective, hand or wet spray applied no formwork is required.
- » Suitable for use with cathodic protection systems.

## STANDARDS

Cempatch HB50 complies with the requirements of BS EN 1504-3 Class R4 for repair principles 3.1, 3.3, 4.4, 7.1, and 7.2.

## Don Construction Products Ltd.

Helions Bumpstead Road, Haverhill CB9  
United Kingdom  
[info.uk@dcp-int.com](mailto:info.uk@dcp-int.com); [info@dcp-int.co.uk](mailto:info@dcp-int.co.uk)  
[www.dcp-int.com](http://www.dcp-int.com)



# Cempatch HB50

## METHOD OF USE

### SUBSTRATE PREPARATION

The perimeters of the repair area should be saw cut to a minimum depth of 10 mm to avoid feather-edging and to provide a square edge. All damaged and weak concrete should be cut back to reach sound concrete and/or to a minimum depth of at least 10 mm.

Corroded steel reinforcement should be grit blasted to remove all rust traces; In case of significant loss in the steel reinforcement cross section, the steel should be replaced. In all cases, the steel should be clean and bright after cleaning.

Exposed reinforcement that is contaminated with chloride or other material which may cause corrosion should be water blasted with high pressure to provide a clean surface and remove the corrosion products.

In case of any oil and grease deposits, surfaces must be degreased using degreasing products, steam cleaning, or any other suitable method which assures the surface is free from any oil traces.

All surfaces must be clean and free from dust, oil, grease, paints, or any loose material, and the prepared area should be cleaned thoroughly by brush and/or compressed air.

Areas to be repaired with Cempatch HB50 should be soaked with clean water before applying the repair mortar. All excess water should be removed prior to applying Cempatch HB50.

### PRIMING

All grit blasted steel reinforcements should be primed within 2 - 4 hours with one or two coats of either:

- » Repcoat ZR: Zinc rich epoxy coating
- » Cempatch Primer: Cementitious Steel Reinforcement Primer & Bonding Agent.

### MIXING

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

3.5 litre of clean water should be added to clean container. The powder is then added slowly to the water while mixing continuously with low speed mixer/drill (400 - 600 rpm). Mixing time should be continued for 3 minutes until uniform consistency is obtained.

## PLACING AND FINISHING

Ensure all exposed steel reinforcement bars are firmly secured to prevent any movement during application.

Cempatch HB50 can be applied by trowel, or hand gloves. The mixed mortar should be applied with firm pressure to fully compact the mortar and ensure good adhesion with the steel reinforcement and substrate.

Finishing and leveling should be carried out initially by a straight edge or a steel float. Final finishing should be carried out using wooden or plastic float followed by a damp sponge. However, the completed surface should not be overworked.

For spray application, where large areas of repair are required, Cempatch HB50 can be efficiently applied by wet spray technique. This will provide rapid placement, higher build of the product, and enhanced bond compared to troweling application.

After spray application, Cempatch HB50 may need to be finished and [cut back] to the required profile using a steel float and then finished with damp sponges as described before.

### Notes:

- » *Cempatch HB50 should not be applied at a thickness less than 10 mm.*
- » *If any sagging or slumping occurs, Cempatch HB50 should be completely removed and reapplied at a lower thickness.*

## CURING

As Cempatch HB50 is a cementitious based material, it should be cured in a similar method to concrete. Curing can be conducted by using appropriate curing methods such as curing compounds or polythene sheeting.

## CLEANING

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

## PACKAGING

Cempatch HB50 is available in 25 kg sacks.

### Don Construction Products Ltd.

Helions Bumpstead Road, Haverhill CB9  
United Kingdom  
[info.uk@dcp-int.com](mailto:info.uk@dcp-int.com); [info@dcp-int.co.uk](mailto:info@dcp-int.co.uk)  
[www.dcp-int.com](http://www.dcp-int.com)

# Cempatch HB50

## THICKNESSES AND SIZE LIMITATIONS

Cempatch HB50 can be applied in a single application for sections up to 60 mm thick in overhead applications and 80 mm thick in vertical applications. Thickness should not be less than 10 mm deep in all applications.

Cempatch HB50 repair area should not exceed 2.5 m<sup>2</sup> in one single application. Thickness more than 60 mm overhead or more than 80 mm vertical can be built up in layers.

## YIELD

Approximately 13.5 – 14.5 litre per 25 kg bag. (approx. 72 bags/m<sup>3</sup>).

## STORAGE

Cempatch HB50 has a shelf life of 12 months from the date of manufacture if stored at temperatures between 2°C and 35°C in original unopened bags.

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

## CAUTIONS

### HEALTH AND SAFETY

Cempatch HB50 may cause irritation to skin or eyes. In case of accidental contact with eyes, immediately flush with plenty of water for at least 10 minutes and seek medical advice if necessary.

For further information, refer to the Material Safety Data Sheet.

### FIRE

Cempatch HB50 is nonflammable.



# Cempatch HB50

## MORE FROM DON CONSTRUCTION PRODUCTS

A wide range of construction chemical products are manufactured by DCP which include:

- » Concrete admixtures.
- » Surface treatments
- » Grouts and anchors.
- » Concrete repair.
- » Flooring systems.
- » Protective coatings.
- » Sealants.
- » Waterproofing.
- » Adhesives.
- » Tile adhesives and grouts.
- » Building products.
- » Structural strengthening.

**Don Construction Products Ltd.**  
Helions Bumpstead Road, Haverhill CB9  
United Kingdom  
[info.uk@dcp-int.com](mailto:info.uk@dcp-int.com); [info@dcp-int.co.uk](mailto:info@dcp-int.co.uk)  
[www.dcp-int.com](http://www.dcp-int.com)



**Note:**

We endeavour to ensure that any information, advice or recommendation we may give in product literature is accurate and correct. However, because we have no control over where and how products are applied, we cannot accept any liability arising from the use of the products.

[www.dcp-int.com](http://www.dcp-int.com)

DCP Building Excellence

04-0066-B-2022