

# Tecpatch HB50



**Cementitious Structural repair mortar for non-slump, high build repairs of concrete**

## USES

Tecpatch HB50 is a fine filled, light weight cementitious repair mortar for the repair of concrete where a high build is required. Repairs of up to 70mm can be achieved without slump or shrinkage, and when used with Renderprime HB, excellent adhesion to nearly all concrete substrates can be achieved. Tecpatch HB50 is ideal for high strength structural repairs and repairs to precast concrete panels.

## BENEFITS

- High strength and abrasion resistance
- Excellent adhesion to concrete substrate when used with Renderprime HB
- High build – up to 70mm repairs without slump
- Low permeability and high resistance to chlorides and carbon dioxide
- Easy mixing and application
- Durable finish

## TECHNICAL SUPPORT

Aitken Freeman offers a comprehensive range of high quality, high performance construction products. In addition, Aitken Freeman offers technical support to users and specifiers, and can arrange on-site visits to end users and contractors.

## APPLICATION

### Preparation

All surfaces to be repaired with Tecpatch HB50 should be clean of oil, grease or any other contaminant which may inhibit the bond. Cracked or weakened concrete should be removed prior to application so as to provide a good foundation for any repair. Scabbling or water blasting can also be used to remove any laitance and provide a mechanical key

## DESCRIPTION

Tecpatch HB50 is supplied as a ready to use, factory prepared, dry powder. Tecpatch HB50 is a blend of Portland cements, polymers and chemical additives which reduce water demand and produce an easily trowelled, high build concrete repair mortar.

## TYPICAL PROPERTIES

### Compressive Strength @20°C

|                                                    |                                                   |
|----------------------------------------------------|---------------------------------------------------|
| 24 Hours                                           | 22MPa                                             |
| 7 Days                                             | 33Mpa                                             |
| 28 Days                                            | 55MPa                                             |
| <b>Setting Times</b>                               |                                                   |
| Initial Set                                        | 175 minutes                                       |
| Final Set                                          | 285 minutes                                       |
| <b>Drying Shrinkage</b>                            |                                                   |
| 7 Days                                             | < 450 microstrain                                 |
| 28 Days                                            | < 100 microstrain                                 |
| 56 Days                                            | < 350 microstrain                                 |
| 56 Days                                            | < 450 microstrain                                 |
| <b>Fresh Wet Density</b>                           |                                                   |
| 2.7 litres Water per bag                           | 1800kg. m3                                        |
| <b>Flexural Strength</b>                           |                                                   |
| AS:1012-11-2000                                    |                                                   |
| 1 Day                                              | 4.5MPa                                            |
| 7 Days                                             | 6.5MPa                                            |
| 28 Days                                            | 7.5MPa                                            |
| <b>Abrasion Resistance</b>                         |                                                   |
| ASTM CS01-1984                                     |                                                   |
| Age                                                | Wear Index                                        |
| 28 Days                                            | 100                                               |
|                                                    | Standard 40 -50 MPa Concrete has Wear Index of 71 |
| <b>Youngs Modulus</b>                              |                                                   |
| Approx. 26GPa                                      |                                                   |
| <b>Co-efficient of thermal expansion</b>           |                                                   |
| 9-11 x 10-6/0C                                     |                                                   |
| <b>Maximum Water / Powder Ratio</b>                |                                                   |
| 0.15                                               |                                                   |
| <b>Chloride, as CI ,wt. %: as per AS:1012.20.1</b> |                                                   |
| 0.021                                              |                                                   |
| <b>Alkaline Solutions</b>                          |                                                   |
| Resistant                                          |                                                   |
| <b>Bond Strength</b>                               |                                                   |
| 2.7 MPa                                            |                                                   |
| <b>Tensile Strength</b>                            |                                                   |
| 3.2 MPa                                            |                                                   |

## Priming

Prime the concrete substrate with Renderprime HB just prior to commencing the repairs. Best results are achieved when the primer is tacky to touch. Where the substrate is very porous, predampening with water is advised, however free water on the surface will reduce the bond and inhibit ultimate strength of the product. Where reinforcement or other steel is exposed, coat with Zincote before application of Tecpatch HB50.

## Mixing

Add the required mixing water (2.7 – 3.0 litres per bag) to the mixing vessel and slowly introduce the Tecpatch HB50 powder. Mix for 3 – 4 minutes using a forced action mixer suitable for mortars, until a smooth consistent mortar is achieved. Avoid addition of excessive water which will reduce the final strength and make the application more difficult. Only mix as much Tecpatch HB50 as can be used within the setting time.

## ESTIMATING & SUPPLY

Tecpatch HB50 is supplied in 20kg moisture resistant bags. Coverage is around 1.3m<sup>2</sup> @ 10mm average thickness per bag. Renderprime HB is supplied in 1, 5 or 20 litre poly drums. Coverage of Renderprime HB is 5 -7 m<sup>2</sup> per litre. A scabbled or uneven surface will result in reduced coverage for primer and repair mortar.

## PRECAUTIONS

Tecpatch HB50 contains cement powders which, when mixed or become damp, release alkalies which can be harmful to the skin. During use, avoid inhalation of dust and contact with skin and eyes. Wear suitable protective clothing, gloves, eye protection and respiratory protective equipment. The use of barrier creams provides additional skin protection. In case of contact with the skin, rinse with plenty of clean water, then cleanse with soap and water.

In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice. If swallowed, seek medical attention immediately - do not induce vomiting.

**Material Safety Data Sheets (MSDS) are available to users of Aitken Freeman products on request. Please ensure you have read this data sheet, the MSDS, and the product label carefully before first use of any product.**

## Installation

Apply the mixed mortar to the substrate using a trowel or gloved hand. Ensure product is properly compacted around reinforcement bars. Maximum thickness of any application should be limited to 80mm, and feather edging should be avoided when making repairs. A minimum thickness of 5mm should be maintained for all repairs; this can be achieved by saw cutting the edge of areas to be repaired. Where repair depth is greater than 80mm, a second layer can be applied after 24 hours. Our technical or sales staff can advise on the best method of achieving large scale repairs.

## CURING

On completion of the trowelling operation, exposed areas can be cured with a thin layer of Renderprime HB50 to prevent the loss of surface moisture when the repair is subject to direct sunlight or strong winds. Where drying conditions are extreme, cure the exposed mortar with Pavecure A.

## LIMITATIONS

For low temperature working, when the air is 5°C on a falling thermometer, normal precautions for winter working with cementitious materials should be adopted.

At ambient temperatures above 35°C, ensure sufficient labour for applying and trowelling are available to finish the surface to the required standard before the final set has commenced. Good curing is essential under hot and/or windy conditions.

## CLEAN UP

Tecpatch HB50 should be removed from tools and equipment immediately after completion using water. Cured material can only be removed mechanically.

## STORAGE

Tecpatch HB50 has a shelf life of 12 months if kept in dry store in unopened, sealed bags. If stored in high temperature and/or high humidity locations, the shelf life may be significantly reduced

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**ALLIED PRODUCTS**

Aitken Freeman manufactures a broad range of construction products and can supply the following:

- Grouts and anchoring systems
- Epoxy Surface Coatings
- Admixtures for concrete
- Adhesives & Sealants
- Floor toppings
- Floor levelling compounds
- Concrete Repair materials
- Waterproofing solutions

***Refer to Material Safety Data Sheet for precautions and personal protection***

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