

# Cementfill FC

RIW Cementfill FC is a single component, thixotropic, polymer modified, cement based, waterproof fairing coat and repair mortar for concrete and masonry.

## BENEFITS

- Totally waterproof
- Resists up to 100m head of positive and negative water pressure
- Applied to damp surfaces
- Suitable for horizontal, vertical and overhead applications
- Can be feathered edged
- Environmentally friendly

## APPLICATIONS

- Fairing coat to fill minor blow holes and defects
- Repair surface cavities and honeycombed concrete
- Thin waterproof screed

## APPLIED TO

- Concrete
- Masonry

The logo for RIW, consisting of the letters 'RIW' in a bold, white, sans-serif font, centered within a dark blue oval shape with a white glow effect around it.

**RIW**

**Cementfill FC**

## DESCRIPTION

**RIW Cementfill FC** is a single component, thixotropic, polymer modified, cement based repair mortar with high adhesive properties. It incorporates the most advanced microsilica, polymer and fibre technology, curing to provide high waterproofing properties, excellent protection from acid gases, chlorides and freeze / thaw cycles as well as enhanced chemical resistance. The product is supplied as a single component system, ready for onsite mixing and use, requiring only the addition of clean water.

## TYPICAL USES

**RIW Cementfill FC** is a fully waterproof, engineering quality fairing coat for filling minor blow holes and defects, and for repairing surface cavities and honeycombed concrete. Thin screed applications can be used to waterproof and / or level both vertical and horizontal concrete surfaces.

## DURABILITY


Subject to normal conditions of use, **RIW Cementfill FC** will provide an effective barrier to the transmission of liquid water for the life of the structure.

## SPECIFICATION

C42 – Repairing / Renovating / Conserving concrete or  
M10 – Cement based leveling / wearing screeds.

Please consult RIW Ltd. for further information.

## INDEPENDENT AUTHORITY

 RIW424	
RIW Limited Arc House, Terrace Road South, Binfield, Bracknell, Berkshire, RG42 4PZ, England 11 0086-CPD-530942	
EN1504-3: Concrete repair product for structural repair PCC mortar (based on hydraulic cement polymer modified)	
Compressive Strength:	Class R4 ≥ 45 MPa
Adhesive Bond:	Class R4 ≥ 2.0 MPa
Chloride Ion Content:	< 0.05%
Carbonation Resistance:	Passes
Elastic Modulus:	17.3 GPa
Thermal Capability Part 1:	Class R4 ≥ 2.0 MPa
Capillary Absorption:	0.047 kg.m-2.h-0.5
Dangerous Substances:	Complies with 5.4
Reaction to Fire:	Euroclass A2-s1, d0

## PERFORMANCE & COMPOSITION

TECHNICAL DATA	
Mixed Colour	Concrete grey
Mixed Density	1860 kg / m <sup>3</sup>
Application thickness	6mm maximum per layer
Application temperature	5 – 35° C
Working life	30 minutes at 20° C

MECHANICAL CHARACTERISTICS ( TYPICAL )	
Compressive Strength : BS 4551 Tested at 20°C	
1 day	23 N / mm <sup>2</sup>
7 days	46 N / mm <sup>2</sup>
28 days	60 N / mm <sup>2</sup>
Flexural Strength : BS 4551 Tested at 20°C, 65% RH.	
28 days	10.5 N / mm <sup>2</sup>
Water Permeability Coefficient : Taywood Test by Penetration. 6.94 x 10 <sup>-16</sup> m / sec. ie - 1mm of RIW Cementfill - FC = 1000mm of typical concrete.	
Oxygen Diffusion Coefficient - Taywood Test. D <sub>O2</sub> = 4.90x 10 <sup>-5</sup> cm <sup>2</sup> s <sup>-1</sup> ( Normal concrete : D <sub>O2</sub> = 2.12 x 10 <sup>-3</sup> cm <sup>2</sup> / s <sup>-1</sup> ) Equivalent concrete thickness = 250mm	

The above performance figures are typical values and should not be considered a product specification.

## CONSTRUCTION

### GENERAL

All construction should conform to the Building Regulations, Codes of Practices and British Standards in current use at the time the building is being constructed.

### PREPARATION

Mechanically remove all damaged concrete back to a sound core. The areas to be treated must be free from all unsound material, i.e. dust, oil, grease, corrosion by-products and organic growth. Smooth surfaces should be cleaned to remove release agents, curing compounds and surface laitance ; preferably using wet grit or water blasting techniques or equivalent approved methods. The concrete sub-base should be a minimum of 20 N / mm<sup>2</sup>. The prepared substrate should be thoroughly soaked (preferably 24 hours before) with clean water until uniformly saturated without any standing water.

### PRIMING

**RIW Cementfill FC** is highly polymer modified and as a result concrete surfaces do not generally require a primer. Highly porous substrates should be primed with **RIW Cementseal Primer** ; see separate data sheet.

## MIXING

**RIW Cementfill FC** should be mechanically mixed in tub supplied using a slow speed drill and paddle or with a forced action pan mixer. A normal concrete mixer is not suitable. For normal application, use from 2.2 to 2.6 litres of clean water per 20 kg depending upon desired consistency. For part mixes, this equates to approximately 6.5 volumes of powder to one volume of water. Typically, for screeding applications, use 2.4 litres of clean water per 20kg which gives a water : powder ratio of 0.12. Normal mixing time depends on the type of mixer used but 2 minutes is average. Mix so as to entrain as little air as possible, and use without delay.

## PLACING

**RIW Cementfill FC** can be applied to localised minor voids and surface defects using a palette knife. For large areas of pore filling, work well into the prepared substrate using a wooden float or “bag rubbing” techniques.

When used as a highly alkaline thin screed for the protection of concrete and for structural waterproofing, **RIW Cementfill FC** should be applied to the prepared surface using a steel float to provide a smooth, polymer rich surface finish. An initial thin layer should be worked well into the surface, to fill blow holes and minor defects, prior to building up the thickness to a maximum of 6mm. Alternatively, spray techniques can be used. For repairs which require multi-layer applications it is important to ensure that previous layers have been finished with a wood or plastic float and are stable but not fully set prior to the application of subsequent layers.

No inter-layer priming required. Once the last layer has stabilised, trowel marks can be removed using a wooden float or damp sponge to produce a surface comparable to emery paper which provides an excellent finish for the subsequent application of a surface coating.

## CLEANING

All tools should be cleaned with water immediately after use.

## CURING

Particular attention should be paid to adequate curing of **RIW Cementfill FC**. It is important that the surface of the mortar is protected from strong sunlight and drying winds with **RIW Cementseal Primer**, polythene sheeting, damp hessian or similar.

## ADVANTAGES

- Dense matrix offers low permeability to water, even at 10 bar pressure.
- Incorporates the latest proven cement chemistry, microsilica, fibre and styrene acrylic copolymer technology.
- Pre-packaged material requiring mixing with clean water on-site to give an adhesive mortar which can be rapidly applied in vertical, horizontal and overhead situations.
- Economical mortar generally requiring no substrate or inter-layer priming. Part bags can be mixed.
- Suitable for feather edging.
- Non-toxic when cured.

## SAFETY

Full health and safety instructions are contained on the product material safety data sheets and these must be referred to before use.

## SUPPLY

### AVAILABILITY

All RIW products can be obtained through Builders Merchants or approved stockists. A list of approved stockists is available from RIW Ltd's offices.

### PACKAGING

Pack size	20 kg bag in plastic tub
Yield	12 litres / 20 kg powder.
Coverage	20 kg pack covers 4 m <sup>2</sup> at 3 mm thickness.

### SHELF LIFE

12 months in dry, frost free conditions with unopened containers at 20° C

## TECHNICAL SERVICES

The RIW Technical Department is available to advise on individual projects and to prepare and assist in the preparation and specifications and drawings. A list of experienced applicators of RIW materials is available from RIW Ltd's offices.

The information in this literature was correct at the time of going to press. However, we are committed to continually improving our products and reserve the right to change product specifications. For the latest information, please consult RIW Limited. Conditions of use are beyond our control, therefore we cannot warrant the results to be obtained.



**RIW Limited**

Arc House, Terrace Road South, Binfield, Bracknell, Berkshire RG42 4PZ

Technical enquiries tel: **01344 397777**

Commercial enquiries tel: **01344 397788**

[www.riw.co.uk](http://www.riw.co.uk)

