F R

For Acid-proof surface and Effluent treatment plants

Features

High temperature resistance up to 165^{0}C

Suitable for acid proof tile fixing and grouting on concrete substrate

High strength

Suitable for acid proof substrates

Ease to apply

Resistant to a wide range of chemical and liquids

Interior and Exterior

Indian Green Building Council
M E M B E R

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F R

For Acid-proof surface and Effluent treatment plants

DESCRIPTION

F R is two component cement based on Furane Resin, graded fillers, special additives with a catalyst. The hardened cement exhibits resistance to all non oxidizing acids dilute oxidizing acids and has a temperature resistance up to 165°C.

The F R is an ideal choice for laying and pointing of ceramic tiles, grouting where non oxidizing acids, oxidizing acids, solvents and alkalis used for neutralizing reaction. F R should not be used where Hydrogen Fluoride, Strong alkalis are encountered.

SUBSTRATE/SURFACE PREPARATION

Concrete substrates should be clean sound free from oil, grease laitance dust and other barrier materials.

If the tiles are laid hollow pointed in composition which react alkalis, these pointing composition must have set and dry. The hollow points which are cut right angled and are atleast 15 mm and where possible 5 to 8 mm deep, should be clean and dry and should be treated with acid before jointing. Where cement mortar based on epoxy has been used as a laying component it should be given an acid treatment with 10% alcoholic Hydrochloric Acid and where cement based on Potassium Silicate, the acid treatment should be with 20% Sulphuric Acid.

The hollow joints which have been treated with acid must be dry before pointing with F R.

MIXING

Add 1 part of liquid to 3 parts of powder. The liquid is taken in the pan and the powder is added and mixed lump free until the powder composition is completely homogeneous. Because of the exothermic nature of the reaction the powder should be kept spread out. The pot life depends upon the processing temperature, At 27 ± 1°C, it is about 15 to 20 minutes, and it is reduced at higher temperature and increased at lower temperatures. At hot building sites only small amount of powder should be mixed to avoid uncontrolled exothermic reactions.

Moisture even in the form of water vapours is harmful to powder which has not yet hardened, care should be taken that the working site remains dry and warm until the powder has completely hardened. The use of transportable hot air blowers or IR lamps are advantageous.

APPLICATION

Tiling and grouting:
Apply the mixed F R as adhesive at 3-6mm bed thickness for wall and 6mm bed thickness for floor area using steel notch trowel, fixing of tiles by gently tamping them by rubber mallet, removing excess adhesive from the joint.

Grouting the joints using mixed F R by grout float or rubber squeeze, removing of excess grout from the joints, cleaning of tiles and joints surface with in 25 min using sponge-board dampened in clean water, finally, cleaning the entire surface using clean cloth and allowed to dry completely. Applied F R should not be used until a week after completion.

Rendering work:
Apply the mixed F R at 3-6mm thickness as render using plain steel trowel. Tiled surface and masonry linings cemented with F R should not be used until a week after completion. In order to achieve good chemical resistance to solvents and alkalies, a heat treatment with hot blowers or IR lamps should be provided for about 8 to 12 hours. The heat treatment should be provided after the initial setting has been completed. While carrying out jobs for effluent treatment tanks, after heat treatment is strongly recommended.

CLEANING

Before the F R sets, the remaining material can be removed with suitable solvent like Methyl Ethyl Ketone or Acetone after treatment of the laid cement.

F R that has hardened at room temperature for 7 days exhibits a high degree of chemical resistance for achieving the optimum resistance particularly to solvents and alkalis, a thermal after treatment is recommended.

PHYSICAL PROPERTIES

F R	@ 27 ± 1°C
Application thickness	3 - 6 mm
Compressive strength	> 35.0 N/mm²
Flexural strength	75 Kg/cm²
Bond strength	> 0.50 N/mm²
Water absorption	< 0.5%
Setting time	24 Hrs
Mixed density	1.94 - 1.98 g/cc
Woking time	20 minutes

COVERAGE ESTIMATES

Pack Size	Coverage
4kg Part A 1kg Part B 3kg	Approximately 1m²/Kit @ 3mm thickness using Notched trowel

Note : This will be depend on the nature and flatness of the surface and the method of application.

CHEMICAL RESISTANCE

F R is resistant to a wide range of liquids and chemicals, for specific information please refer to the following ARDEX ENDURA "Chemical Resistance" chart.

CHEMICAL RESISTANCE CHART - SUMMARY OF RESULTS

Reagent	Concentration in %	F R
Acetic Acid		R
Aliphatic solvents		R
Aqua Regia		N
Calcium Hydroxide	(+1% to 1:1)	R
Chlorinated Hydrocarbons		R
Chromic Acid	10	L
Conc. Aromatic Hydrocarbons	100	R
Hydrogen Fluoride		N
Hydrochloric Acid	37	R
Lactic Acid	100	R
Nitric Acid	5	R
Nitric Acid	10	L
Nitric Acid	25	N
Oleic Acid (Upto150°C)		R
Sodium Hydroxide at 30°C	10	R
Sodium Hydroxide	20	L
Sodium Hydroxide	30	N
Sodium Hydroxide	50	N
Sulphuric Acid at 100°C	70	L
Sulphuric Acid at 100°C	80	N
Sulphuric Acid at 30°C	80	R
Sulphuric Acid	20	R
Sulphuric Acid	50	R

Resistant	R	28 Days +
Limited Resistance	L	up to 7 Days
Not Resistant	N	
Short Term Resistance	S	up to 1 Day

Note: These results are based on immersion testing and ARDEX ENDURA products may appear less resistant when compared with other manufacturer's surface swab test results.

STORAGE AND SHELF LIFE
F R must be stored in unopened packaging clear of the ground in cool dry conditions. If stored correctly as detailed above the shelf life of this product is 6 months from date shown on the packaging.

PRECAUTIONS
In case of contact with the eyes, rinse immediately with plenty of water and seek medical advice and after contact with the skin wash immediately with plenty of soap and water (do not use solvents). Prolonged contact with the skin should be avoided, especially where the user has an allergic reaction to epoxide materials. Always wear gloves and eye/face protection is necessary. Observe personal hygiene, particularly washing the hands after work has been completed or at any interruption whilst work is in progress. Care should be taken when removing gloves to avoid contaminating the insides. In case of accidents seek medical advice.

DISPOSAL/SPILLAGE
Spillage of any of the component products should be absorbed onto sand or other inert materials and transferred to a suitable disposable vessel. Disposal of such spillage or empty packaging should be in accordance with local waste disposal authority regulations.

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

CONDITIONS OF SALE
Sold subject to the Company's conditions of sale which are available on request.

NOTE
The information supplied in this datasheet is based upon extensive experience and is given in good faith in order to help you. Our Company policy is one of continuous Research and Development; we therefore reserve the right to update this information at any time without prior notice. We also guarantee the consistent high quality of our products; however as we have no control over site conditions or the execution of the work, we accept no liability for any loss or damage which may arise as a result thereof.