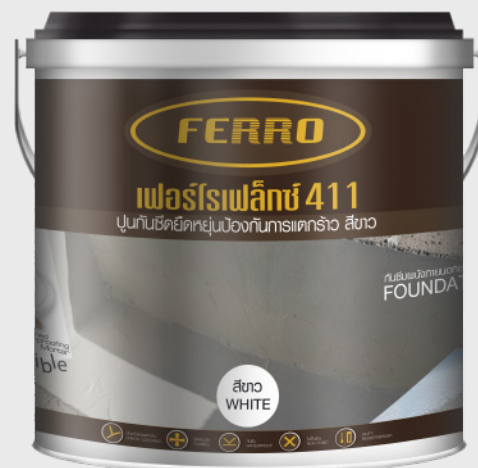




Ferrofex 411

2 COMPONENT FLEXIBLE CEMENTITIOUS WATERPROOFING MORTAR



Ferrofex 411 is a 2 component flexible waterproofing mortar composed of high quality acrylic copolymer and selected quartz, cement and special additives. This product is suitable for concrete or masonry waterproof protection both in dry and saturated area such as swimming pool, concrete tank.

Advantages

- Protects concrete and masonry against carbonation.
- Protects concrete and masonry against moisture and water penetration.
- High adhesion to concrete substrate and no corrosion effects to steel and iron structure.
- Paintable with water base paint.
- Good vapour transmission (breathable).
- Can cover micro hair line crack (not moving crack).
- Resist to normal hydrostatic pressure in concrete water tank coating (3 coats by rendering).
- Can be used in contact with potable water.

Area of use

- Internal Concrete tank waterproof coating (potable water).
- Concrete swimming pool coating prior to tile adhesive application.
- As a rigid waterproof protection of external masonry wall, cellars and basement.
- Leveling mortar in concrete repair application.
- Interior & Exterior use.

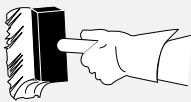
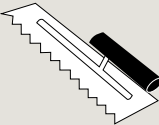
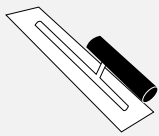
Physical properties

Properties	Value
Appearance - Part A - Part B	Cement gray powder White liquid
Density, kg./litre - Part A (Dry powder) - Part B (Liquid density)	Approx. 1.6 kg./litre Approx. 1 kg./litre
Fresh slurry, kg./litre (Part A mixed with Part B density)	Approx. 2 kg./litre
Thickness per layer, mm.	Minimum approx. 0.75 mm./ 1 coat Maximum approx. 1.5 mm/ 1 coat
Pot life, minute	Approx. 20 minute/ 30 °C Approx. 30 minute/20 °C

Technical properties

Properties	Values	Standards
Bond strength by slant shear test at 28 days, kg./cm ²	Approx. 24 kg./cm ²	ASTM C 882
Vapour diffusion, perm.sec.	Approx. 12 perm.sec.	ASTM E 96
Waterpermeability, E-17/m ²	Approx. 4.44 E-17/m ²	JIS A 1404
Potable water contact	Non toxic	Department of science service
Tensile strength at 28 days, kg./cm ²	Approx. 8.3 kg./cm ²	ASTM C 190

Coverage (Size 25 kg./set)

Waterproofing area	Depth of the concrete tank	Total thickness layers	Number of floor coating	Coating method	Coverage	Area (m ²) /1 set/25 kg.
-Fish pond -Small pond	0-1.5 m.	1.5 mm.	0.75 mm. x2 layer	 Soft brush	≈2.5-3 kg./m ²	≈8 m ² /set
-Standard pool -Water tanks concrete deck	1.5-6 m.	2.25 mm. Total plaster 2 layer	1.5 mm. x1 layer	 Trowel V2	≈3.5-4 kg./m ²	≈6 m ² /set
-Standard pool -Water tanks concrete deck	1.5-6 m.	2.25 mm. Total plaster 2 layer	0.75 mm. x1 layer	 Trowel smooth edges	≈3.5-4 kg./m ²	≈6 m ² /set

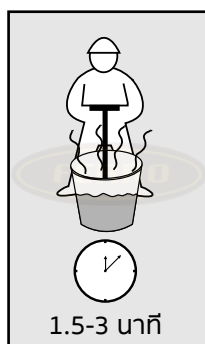
*Note - a case of deep groove than 6 meters. Should consult the technical department of the company.
technic@ferroproduct.co.th don't gloss over 1.5 mm./layer at one time will cause cracking.

Step 1 Surface preparation

- Concrete substrate must be sound, clean without any contaminants such as grease, oil, curing compound, paint etc. compressive strength not less than 2N/mm^2 at 28 days or surface pull off strength higher than 1N/mm^2
- Porous concrete or honey comb should be repaired by repair mortar (Ferrocem 518)
- Non moving crack should repair by epoxy injection (Ferrorez 717)
- Moving crack or expansion joint should be sealed by swellable waterstop (Ferrostop 415) and patch with epoxy mortar (Ferrorez 714)
- Soak with water to wash and moisten concrete substrate 1-2 hours prior to waterproof coating works.

Step 2 Mixing

- CASE 1 as a waterproofing slurry (Apply by brush) mixing ratio by weight A : B (Approx.) 4 : 1
- CASE 2 as a waterproofing or repair mortar (Apply by spatula) mixing ratio by weight A : B (Approx.) 4.5 : 1
- Shake and slowly pour part B (Liquid) into part A (Powder) while using a low speed paddle mixing machine (400-600 rpm./minute) agitate both part until reach homogeneous without lump (1.5-3 minutes).
- Additional of a little water is permitted (1-2% of the total mixture) in order to adjust a smooth workability. Use the finish mixture within 20 minutes.



Mixer type drill low.



Electricity
Blade diameter
Shaft diameter
Spin diameter
Speed 2 level Gear 1)
Gear 2)

1600W
M 14 x 2
16 mm.
166 mm.
150-300 rpm.
300-600 rpm.

Gear 1
Gear 5
Compound period 1.5-3 minutes.
(Mixture B (Liquid) into the bottom of the tank and pour the mixture A (Cement) spinning the mixture immediately.)
Mix and use it within 20 minutes



Soft brush.



Trowel, smooth edges.



Notched trowel V2

Step 3 Application

- **CASE 1 SLURRY (By brush) A : B : 4 : 1 p.b.w.**
After soak the concrete surface and left dried approx. 1 hour then use a stiff brush apply the first coat in horizontal direction, left the first coat tacky free about 3-6 hours then apply the second coat in vertical direction. Low pressure sprayer can also be used in large area in order to save time and labour.
- **CASE 2 THIN MORTAR RENDERING (By spatula) A : B : 4.5 : 1 p.b.w.**
Use notched trowel to control the first coat thickness about 1.5 mm. and left the first layer to be dried 3-6 hours then apply the second coat by spatula to cover and smoothen all surface. It is recommended to apply the second coat while the first coat is still tacky (Normally in between 3-6 hours) this period will help a better bond between to both layer. In case of waiting time period longer than 24 hours (Over night) it is recommended to lightly blast clean the first coat surface prior to start the second coat.

Step 4 Curing

Use Low pressure water Spray to clean the waterproof surface about day after waterproof application has finished and go on spraying 3-5 days in order to stimulate a cement hydration and minimise cracking.

Limitations/Cautions

- Application on substrate temperature should be in between 20-35 °C
- Avoid working directly to strong sun and windy condition, If necessary, construct a light screen net to create a shaded area in order to cool down the substrate during waterproof application.
- Do not apply over expansion joint or a non repaired crack.
- Do not use in chemical or waste water tank.
- After cured, avoid cleaning the waterproof surface by high pressure water jet.
- Ferrofex 411 is not designed as decorative finish so it may appear some sign of blooming or white efflorescence if contact to rain or damp.
- All fixings through the waterproof layer must be seal with a waterproof product such as epoxy adhesive (Ferrorez 711, Ferrorez 714 or Ferrorez 713)

Technical support

Customers can contact the sales department of the company at sale@ferroproduct.co.th to inquire about product usage methods. Furthermore they can also request information or organize the following activities :

1. Request for the latest updated data sheet.
2. Request for the sale conditions document and the product price list.
3. Schedule a technical staff visit to demonstrate the products at the customer's job site by filling out the "Demonstration request form" prior to the product purchase.
4. Schedule a technical staff visit to provide product usage training to the customer's workers at the job site by filling out the "Worker training request form".
5. Schedule training for the customer's foreman at the company's training center (Ferro training center) by filling out the (Foreman training request form).

Coverage

Approx. 1.6 kg./m²/1 mm.

Package

4.5 kg./set (Part A=3.9 kg, Part B=0.6 kg.)
25 kg./set (Part A=20 kg, Part B=5 kg.)

Cleaning tools

Clean tool and container with water before waterproof material start to dry. Use mechanical method such as chiseling in case of dried waterproof residue stick onto tools.

Storage

- 1 year in dried shaded area in unopened bag, room temp. 23 °C + 2%, Relative
- humidity 50 + 5%RH
(conform to ISO 554 standard)

Health and safety instructions



- May cause health effect :
- Eye : May cause eye irritation.
- Skin : May cause skin irritation.
- Ingestion : May cause vomiting or nausea if swallowed.
- Inhalation : No serious effect.
- Inhalation : Move to fresh air, oxygen support if necessary. In case of breathing difficulty is occurred continuously, should taken care by medical treatment.
- Eye : Flush with clean water at least 15 minute. if irritation still exist, see medical attention.





- Skin : Clean the irritation area with mild soap and water, if burning is still exist, see physician immediately.
- Ingestion : Do not induce vomiting. call physician immediately.

Disposal

Ferrofex 411 is composed of cement please do not put waste into public drainage, It is recommended to let the cement dried with sunlight.

Transportation and shipping data

THAI DOT : Not regulated. IMO : Not regulated.
USA DOT : Not regulated. IATA : Not regulated.
RID/ADR : Not regulated.

Size

- 411A/20 Gray 20 kg./bag
Code FG-4IC-8858915249494
- 411B/5 5 kg./gallon
Code FG-4IC-8858915240095
- 411/25 Gray (A+B) 25 kg./set
A = 20 kg., B = 5 kg.
Code FG-4IC-8858915241320
- 411/25 White (A+B) 25 kg./set
A = 20 kg., B = 5 kg.
Code FG-4IC-8858915240088
- 411/25 Blue (A+B) 25 kg./set
A = 20 kg., B = 5 kg.
Code FG-4IC-8858915240118
- 411/25 Green (A+B) 25 kg./set
A = 20 kg., B = 5 kg.
Code FG-4IC-8858915240125
- 411/4.5 Gray (A+B) 4.5 kg./set
Code FG-4IC-8858915240132
- 411/4.5 White (A+B) 4.5 kg./set
Code FG-4IC-8858915240149
- 411/4.5 Blue (A+B) 4.5 kg./set
Code FG-4IC-8858915240163
- 411/4.5 Green (A+B) 4.5 kg./set
Code FG-4IC-8858915240156

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Product warranty: The company is pleased to replace any product that is clearly proven to be defective due to manufacturing processes with a new products of equal value to the portion that is defective. Refunds are not available. Customers must be notify us of replacement within 7 days from the order date. Additionally customers can't claim damages resulting from direct or indirect using of the materials, as well as delays in delivery by the company. Furthermore replacements can't be made for errors in using that arise from customers negligence without consulting the sales staff or technical documentation provided by the company. The company reserves the right to amend manufacturing formulas or new packaging designs without prior notice. Therefore customers must be request the data sheet and sale conditions from the company before actual using and before each purchase. By doing so the company assumes that customers have understood and agreed to the company's sale conditions before using. (Company products are only allowed for using by individuals who have completed training provided by the company). *For further data please refer to the sale conditions from the company's sale department at sale@ferroproduct.co.th.



ISO 9001 & ISO 14001



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