



# Ferrocem 520

**SKIM COAT GRAY POWDER (SMOOTH)  
0.5-2 MM.**



Ferrocem 500 GP is a general purpose, fluid type non-shrink grout mortar made of Portland cement, selected quartz sand and special additives these components will create an excellent flowability, high early compressive strength, after dried will not shrinkage. Ferrocem 500 GP is suitable for filling gap 10-50 mm. between steel plate and concrete floor or machinery base. Meet to ASTM C-1107

## Advantages

- Excellent in flowability for filling gab.
- Low bleeding and non-segregation.
- Non chloride in our formulation will not effect to corrosion in concrete structures.

## Area of use

- Fill gab between
- Steel plate-concrete columns in steel structure erection.
  - Machinery bases.
  - Precast concrete panel gabs.
  - Porous concrete structural repair.
  - Anchoring.

## Standards and compliances

Ferrocem 500 GP is manufactured under standards which conform to ASTM C 1107-02, grades A,B and C fluid consistency Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Non-shrink)



## Physical properties

| Properties                                            | Value                                                                |
|-------------------------------------------------------|----------------------------------------------------------------------|
| General appearance                                    | White powder                                                         |
| Dry density, kg./litre (Approx.)                      | 0.90+2% kg./litre                                                    |
| Plastering well within, minute (Approx.)              | 15 minutes                                                           |
| Sanding trowel marks only the number 0, hr. (Approx.) | 6-24 hours after finished plastered                                  |
| Painted over within, day (Approx.)                    | 7 days after finished plastered<br>(Should be use primer water-base) |

## Technical properties

| Properties                                                         | Values                 | Standards                 |
|--------------------------------------------------------------------|------------------------|---------------------------|
| Compressive strength, MPa. (Approx.)<br>- At 1 day<br>- At 28 days | 1.98 MPa.<br>7.07 MPa. | ASTM C109/<br>C109M - 20b |
| Water retension, % (Approx.)                                       | 104.46%                | ASTM C1506 - 17           |
| Initial setting time, minute (Approx.)                             | 497 minutes            | ASTM C191 - 19            |
| Final setting time, minute (Approx.)                               | 634 minutes            | ASTM C191 - 19            |
| Linear shrinkage at 28 days, % (Approx.)                           | -0.269%                | ASTM C531 - 18            |
| Adhesive strength at 14 days, MPa. (Approx.)                       | 1.02 MPa.              | ASTM C1583/C1583M - 20    |

## Selection Guide match to area of use

| Area of use                                                                                                                                                     | Objective                                                | Thickness (mm.)                               | Tightness render round/up-down | Recommend                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Covering pin hole of concrete precast panel prior to acrylic paint.</p>   | Caulking all pin hole after demonded.                    | Approx. 0.5 mm. patching (Thin film forming). | 3-4 rounds.                    | Should be sand with sand paper No.0.                                                                                                                      |
| <p>Decorate an imperfect concrete precast panel prior to acrylic paint.</p>  | Plastered all area, both porous and hide uneven surface. | 1 mm.                                         | 6 rounds.                      | Should be render at 1 mm. per time total thickness 2 mm. Should be sand with sand paper No.0 to remove the trowel ridges after dry for at least 24 hours. |

## Step 1 Surface Preparation

- Concrete surface must be clean free from oil stain, grease, old paint, curing compound stain or form release agent should be rough by grinding with a cub wheel grinding to be rough good for adhesion.
- Concrete crack should be repair with epoxy injection (Ferrorez 717).
- Concrete seam from the prototype should be grinding smoothed first.
- Concrete and new plaster wall should be cure at least 3-7 days before start to decorative with Ferrocem 520/White.
- Curing up the water before starting plastered work with Ferrocem 523/White at least 2-3 hours. Protect against wind and sun with canvas to protect cracking or dislodged from losing water especially high-rise buildings.

## Step 2 Mixing

### 2.1 Mixing by weight

- Mixing Ferrocem 520/White 1 bag with clean water 36-40% (7.2-8 litres) spin with a low speed drill 150-300 rpm. approx. 1-2 minute use within 15 minutes. Do not add more water after leaving for more than 20 minutes. Should be mixing each time 1-2 kg. to that there is freshness in plastered and to protect the dry material and reuse.
- Plastered with a spring trowel to be smooth can be trowel marks can be polish by gently stroking sandpaper No.0. Should be surface leave dry for at least 24 hours before polish.
- Leave surface to dry for at least 7 days before apply primer colour new wall and topcoat. According to the colour manufacturer's method.

\*Note - Do not recommend the use of solvent base colour.

### 2.2 Mixing by volume

- Mixing by volume of Ferrocem 520/White volume 1 litre, scoop to level 1 litre Do not knock or make tight because makes the density per litre easily distorted
- Measure of water approx. 324-360 cc./Ferrocem 520/White amount 1000 cc. (Cubic cm).



Ferrocem 520/1 L Powder



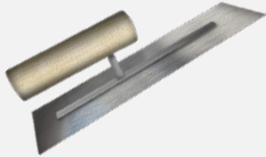
Ferrocem 520/Water

### Low speed driller



|                |                     |                                                                   |  |
|----------------|---------------------|-------------------------------------------------------------------|--|
| Electric power | 1600W               | Gear 1                                                            |  |
| Spin head      | M 14 x 2            | Speed 5                                                           |  |
| Core           | 16 mm.              | Mixing time 1-2 minute                                            |  |
| Ø Spin Head    | 166 mm.             | (Pour water into pail and follow by skim coat mixing immediately) |  |
| Speed 2 level  | Gear 1) 150-300 rpm | Then use mixture within 15 minutes.                               |  |
|                | Gear 2) 300-600 rpm | Do not add more water after 20 minutes                            |  |
|                |                     | Recommend to mixing per time 1-2 kg.                              |  |

### Trowel



Spring steel trowel, flexible wooden handle. When there is pressure can help to fill porous than general trowel and helps make skim coat tighter.

## Step 3 Curing

Should be curing with clean water using a brush. Moisturize the surface after finish plastering 24 hours. Will make the surface have less dust and become stronger. As well as less cracking.

## Limitations/Cautions

- Ferrocem 520/White is a designed primarily as a primer material before painting work. Therefore there is still dust on the surface to be able to polished and wrinkles delete trowel with sandpaper and not scratch resistance.
- Making dust less, should be sanded with sandpaper No.0 after finishing polishing 24 hours or more can shake off clean water curing skim coat (Ferrocem 520/White). If less dust is required must be plastered compressed skim coat to at thick least 1 mm.
- Gloss concrete surface after demoulded, should be to roughen with cup wheel grinding machine to be rough, suitable for adhesion.
- Protect aneurysms caused by steam pressure. While plastered skim coat (Ferrocem 520/White) with water control which is mixing at 36-40% to make it tough enough to fill porous and plastered press up and down at least 6 rounds to increase the density and should be avoid plastered on damp surface (After rain, concrete surface with moisture and there is a sunny, the steam will evaporate quickly and push the skim coat surface)
- Plastered skim coat (Ferrocem 520/White) several times while wet. Might help make the tighter, less dust when dry, but makes it more difficult to polish.
- Add more water blends than over set (40% by weight) will result in a skim coat

surface (Ferrocem 520/White) when dry, is dusty and weak therefore should be mixing of water strictly controlled (36-40%) and use a low speed drill 150-300 rpm.

- Do not plastered in concrete decorative work to bare surface since the skim coat is not strong enough surface will scratch easily and become dusty.
- Do not plastered on the old pain or plastered over a concrete wall that has moving joint.
- Do not plastered interior building without paint covering.
- Do not plastered Ferrocem 520/White upon gloss surface such as ceramic tile, steel as well and should be not be plastered in the floor work.
- Do not plastered sand mortar or stick tiles on the surface of Ferrocem 520/White.
- Do not plastered Ferrocem 520/White in a work decorative concrete surface that is always waterlogging.
- Do not plastered Ferrocem 520/White on hot concrete surface may cause rapid dehydration and cracking.
- Should be shake off the water to reduce the heat of concrete before plastered 10-15 minutes (In case the temperature of the concrete to be plastered exceeds 35 °C).
- Unevenness of the surface color of skim coat (Ferrocem 520/Gray) when dry is a normal limitation of thin plastering work. Due to the uneven pressure of the area and water diversion and mechanic skills.
- If clear coating is desired instead of painting. Can be apply over with water-based acrylic waterproof agent (Ferro surf 616).
- Product information from the product bag is not an obligation or legal reference as may not be the latest. Therefore the buyer must ask for datasheet that has been update last time from the company before using the actual product every time.

#### 1. Dusty surface of skim coat after dry.

##### Cause



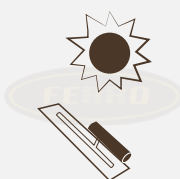
- Add exceed water.
- Do not use a spring steel trowel.
- Plastered less than 3 rounds will not create a tight skim coat surface.
- Thickness less than 0.5 mm.
- Left the skim coat mixture longer than 20 minutes before using.

#### 2. Swelling.






- There is a lot of moisture in the concrete resulting in a hot pressure.
- Mixing too much water and not firmly plastered.
- Avoid plastered in hot afternoon after have rain in the morning.

#### 3. Dry to fast.



- Hot concrete surface more than 35 °C. Should be water soaked and Left dry first skim coat plastered.

| 4. Plastered and rutted sand.                                                      | Cause                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <ul style="list-style-type: none"> <li>● The sand is contamination on the surface of concrete. Should be wash surface and sand scrape off before plastered.</li> <li>● Grain of sand contaminated drill, mixing tank and trowel. Should be wiped clean before start work.</li> </ul>                                                   |
| 5. Plastered crack because it is too thick.                                        |                                                                                                                                                                                                                                                                                                                                        |
|   | <ul style="list-style-type: none"> <li>● Ferrocem 520/White do not a mixture of sand because of the design for porous plastered thickness than 2 mm. at once may cause cracking should be plastered time 1 mm. 2 times continuous.</li> </ul>                                                                                          |
| 6. Plastered and surface slip off and fall into sheets.                            |                                                                                                                                                                                                                                                                                                                                        |
|  | <ul style="list-style-type: none"> <li>● Concrete surface hot+Add water to exceed requirements+Concrete surface smooth similar to mirror.</li> <li>● Should be curing with water to reduce surface temperature and mixing with water must not exceed 40% and grinding the surface rough more if is smooth similar to glass.</li> </ul> |

\*See more information product information and common problem.

## Technical support

Customers can contact the sales department of the company at [sale@ferroproduct.co.th](mailto: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. 1.3 kg./m<sup>2</sup>/1 mm.

## Package

5 kg./bag.  
20 kg./bag (80 bag/pallet).


## Cleaning tools

Wash all tool with clean water before the mortar is dried.  
In case a dry mortar sticks tightly on a tool, use mechanical methods such as chiseling equipment.

## Storage

- 6 months
- Keep in dry shaded area, temperature 23 °C + 2%, Humidity 50 + 5%RH (Conform to ISO 554)

## 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

Ferrocem 520/White 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. |      |                  |



5 kg



20 kg

## Size

- 520/5 White (5 kg./bag)  
Code FG-5IC-8858915215543
- 520/20 White (20 kg./bag)  
80 bag/pallet  
Code FG-5IC-8858915255082

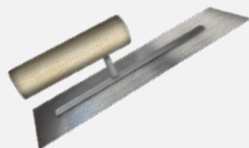
①



②



③



## Equipment

- 1) Ferrod Drill 1011  
Code FG-14OE-8858915290830
- 2) Paddle
- 3) Polished spring trowel  
Code FG-OE-8858915290854

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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](mailto:sale@ferroproduct.co.th).



**ISO 9001 & ISO 14001**



**FERRO CONSTRUCTION PRODUCTS CO.,LTD.**

144 M.1 Malaiman Rd. Tungkok, Songphinong, Suphanburi 72110,  
Thailand

Tel. : +66-35-473877-8 Fax : +66-35-473879

E-Mail : [sale@ferroproduct.co.th](mailto:sale@ferroproduct.co.th)