



Ferrocem 500GP

GENERAL PURPOSE NON-SHRINK GROUT



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
Colour	Gray powder
Dry density	Approx. 1.44 kg./litre
Wet Density (water 15%)	Approx. 2.25 kg./litre

Technical properties

Load capacity criteria mortar grout according to ASTM C 109

SETTING TIME ASTM C 191			
Water(%) By weight	BLEEDING ASTM C 232	Initial (minute)	Final (minute)
15	0	275	405

Compressive Strength			
Day	Criteria	Ferrocem 500 GP	Result
12 hr	-	>170 ksc	Pass
1 day	70 ksc	>350 ksc	Pass
14 day	170 ksc	>500 ksc	Pass
28 day	340 ksc	>600 ksc	Pass

Change in height at Harden age (1-28 day) ASTM C1090

Change in Height of hydraulic-Cement Grout (ASTM C 1090)			
Change in height at Harden age 1-28 days under pressed conditions	Criteria	Ferrocem 500 GP	Result
Maximum % harden at 1 day	0 - 0.3	0.001 %	Pass
Minimum % harden at 28 days	0 - 0.3	0.08 %	Pass



Expansion from
Image for testing
machine.
Ferro laboratory

Criteria test the flow of mortar grout Flow of Hydraulic Cement Mortar ASTM C 939

Criteria	Ferrocem 500 GP	Pass
Fluid type 10-30 Sec (water 15%)	18 seconds	Pass
Placement time	Use within 10-15 minute	

Criteria of bond strength by slant shear between non-shrink grout mortar

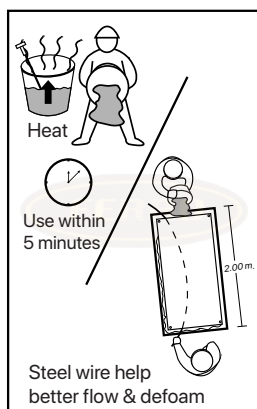
Age	Ferrocem 500 GP	Standard
28 days	>100 ksc	ASTM C 882

Surface Preparation

- Concrete substrates must be sound, and clean without laitance. Oil, grease, curing compounds, or other contaminants that May obstruct bonding properties of grout mortar.
- Steel plate surfaces should also be soaked with water in order to reduce expansion from sunlight heat and should be cleaned without rust or oil contaminants.
- It is recommended to spray a small amount of clean water upon concrete floors under steel plate to reduce water absorption and support a better flow of non-shrink grout mortar but avoid making a water ponding on concrete surface.



Mixing Guide Line

- 1) Mixing and blending period was only preliminary recommendations, primarily to reduce water of cement grouting. However, the required skills and methods empirically calcareous grouting prevent water stains. Through a combination of expertise and should stop the mixing phase. To observe the surface and to cement grouting or pouring it along the slick is not a tablet. Uh, no water stains may not necessarily fit the liquid mixture to a blender according to the recommendations that have calcareous grouting good.
- 2) If the mixture and couldn't stop the stain well water (Bleeding) should be left 1-2 minutes to rest ripen to absorb chemical stain well water, then stir gently with wood, stirring. If the skin stain well less can pour.
- 3) If it was still a lot of water curing. don't apply.
- 4) How to mix primary/(Mixing Guide Line (not mandatory) should be mixed by hand drill low (Hand Mixer) for pouring the plate, the small length not exceeding 2 m. Pour Ferrocem 500 GP into. use a clean container for mixing with water by 1 bag of 25 kg. Use 75 liters (15% by weight of Ferro-gallon cup water) to make a homogeneous mixture. Stir with a mixer at low speed (up to 300 rpm./min gear 1 speed 5) by weighing and pouring water into the bottom of the tank mix prior to spinning drill on the water and then cement grouting Ferrocem 500 GP to put the bag in about 30 seconds churn continued for another 90 seconds until the meat grouting of the same color uniform stained with less water lap test in calcareous grouting that a no grain (lump) and. bubbles on the surface Less (Low air bubbles) show that cement grouting is mixed into a homogenous timing should be right now. Introduced into the area, prepared in front of them once and use it within 5 minutes if necessary can be spun stimulate further 1 minute after setting aside 5 minutes but do not mix add water and do not leave it on longer than 10 minutes. since the mortar mixed with water in the first place. The cement grouting is the reaction heat generated during the set and a chemical mixture to accelerate the expansion if it is not activated by increased viscosity may impair the ability to pour.



Tool

Mixing type hand drill around low.

Drill data & Drill bit data		Mixing stage
 <p>Ferrocem 500/511/ Mixer</p>	Drill data	<p>-Mixing temperature 25 C° - 35 C° -Total mixing time 1 minutes</p> <ol style="list-style-type: none"> 1) Pour water supply clean down bottom of the tank 3.75 L (15%) blended by low speed drill gear 1 speed 5. 2) Pour mortar into the water to run out of the bag within 30 seconds spin continuously while pouring mortar. 3) Spinning continued for about 90 seconds observe mortar is homogeneous without lumps or pellets. 4) Pour cement give all no more than 5 minutes more than 5 minutes spin stimulate by drill 1 minute then pour the liquid immediately but the liquid may decrease. Do not add water. *High drilling cycles will help reduce problems with air bubbles.
	Drill bit data	
 <p>Ferrocem 500/511/ 3.75 L. (Gallon)</p>	<p>Drill bit size spiral M 14 x 2 Drill bit core size 16 mm. Drill bit diameter 166 mm.</p>	

How to use

After mixing Ferrocem 500 GP and then poured into the cavity to be poured.
Avoid air bubbles in the calcareous control voltage in the pour evenly over time.
Prepared model to pour dense and not leak.

Selection Table of non-shrink grout Mortar by GAP size

Item	Gap size (mm.)	Product Name	Type
1	1-5 mm.	Ferrorez 717	2 components epoxy grout.
2	5-10 mm.	Ferrorez 721	3 components epoxy grout.
3	10-50 mm.	Ferrocem 500 GP, 511 HP	Mortar excellent flow.
4	50-200 mm.	Ferrocem 515	Mortar mixing stone.

Selection Table of Non-Shrink Grout Mortar by Application

NON-SHRINK GROUT Selection	Ferrocem 500 GP	Ferrocem 511 HP	Ferrocem 515	Ferrorez 717	Ferrorez 721	Remove
ACID SPILLAGE				●	●	
CRANE RAIL		●			●	
ANCHORING	●	●			●	
MACHINE BED	●	●	●	●		See gap table
CONCRETE REPAIR	●	●	●			
WIND TURBINE BASE		●				
LARGE VOLUME		●				Extend flowable time to 45-60 min.
PRECAST PANEL JOINT	●					Good flow at 10-15 min.

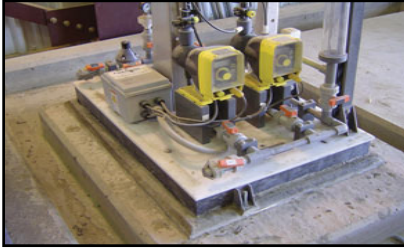
Grouting large cavities (5-10 cm.)

Can mix scaly stone size 4-8 mm. (Saturated) at a rate of about 50-100% of mortar depending on the desired flow rate should not add water rate limit. (15%) mixing stone will be reduced flow but reduce the cracking reaction hydration the pour thickness over 10 cm. should reinforce steel grating together to crack or use a mortar type mixed scaly stone instead (Ferrocem 515)



Machinery Beds grouting

- Water injection cleaning the floor. Don't let the water trapped in the bolt holes base machine.
- Should pour the mortar to fill in the bolt holes before pouring the slab.
- A size gap between the concrete floor to under the machine base plate should be between 10-50 mm.



Base Plate Grouting

- Should the carpet before 2-3 h. without wetlands.
- Should be pour mortar to prevent leakage. And make cold steel plates with water and cover with a damp sack before starting work.
- Can be used to wire stimulates the flow if you want.



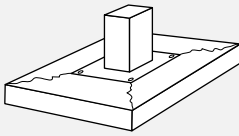
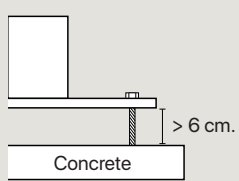
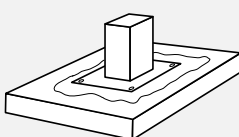
Limitations/Cautions

- A size spaces will pour mortar minimum of 10 mm. and not more than 50 mm. Pour over thickness may cause cracking.
- Temperatures while pouring should be between 25-35 °C
- Do not use pour in the cold room.
- Do not add water exceeds the set and use the clean water.
- Do not use water canals, water ponds and water the sea.
- Avoid mixing and pouring the hot sun wind.
- Do not use mortar pouring a topping slab.
- Pour the mortar under steel plate the sun wind may cause cracking. Corner area of plate because metal expand while mortar between the development compressive strength. So be watered to cool the steel plate and steel plate cover with a sack burlap. Before start pouring mortar.
- Pouring under machine should be prepare a mix of tools such as a drill more than one machine for mix and pour continuous no boundaries.
- Pour the mortar is longer or thicker or wider or exposed to acid, alkali or vibrations should consult the company every time.
- See more information "Problems shooting" in the www.ferroproduct.co.th and discuss the technical department of the company.
- If you want more advice before using the real goods every time at the technic@ferroproduct.co.th
- Data from the bag the product is not considered an obligation. or according to legal because they may not be last updated So buyers must request information product (Datasheet) with the last update (Update) from the company prior to the actual use product.
- The mix and speed of the drill is only a guideline.

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).

1. Corner crack of steel plate	Cause	Problem shooting
	1.1 Too hot steel plate by strong sun cause stress and expansion of the plate's corner. This stress will break non-shrink grout mortar which is in setting stage.	1.1 If the steel plate temperature is above 35 oC spray tap water or cover with soaked blanket during grouting works. 1.2 If pour thicker than 5 cm. should be mix stone 3/8 inch wetlands *approx 3-6 kg. /Ferrocem 500 GP 25 kg.
2. Gap wider than 6-10 cm. may cause crack.		
	2.1 Ferrocem 500 GP design for pouring space 10-50 mm. See the table using mortar in product information (Datasheet).	2.1 Check product selection to suit the gap according to the product information (Datasheet)
3. Bleeding		
	3.1 Mix water more than the prescribed rate is 15% (3.75 liters/bag 25 kg.) will have the best quality in terms of the compressive strength and flow. 3.2 Do not use a drill and drill bit and spinning cylinder of water Ferro.	3.1 Preparation scales and cylinder water ready before starting work. 3.2 Must use the drill and drill bit the spinning speed of about 150-300 rpm. /min spin long 1 minutes instead of using hand stirring.

Coverage

Mortar mix with water (15%) 1 liter use mortar dry approx 2 kg.
For 1 m³ using 78 bags x 25 kg. and water 292.5 liters.

Package

25 kg./bag



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 500 GP 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

Ferrocem 500 GP

25 kg./bag

80 bags/pallet

Code FG-IC-8858915255242

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Equipment

1) Ferrocem 500GP/511HP/Mixer

Code FG-SM-00078

2) Drill bit low speed spin

3) Ferrocem 500GP/511HP/3.75 L. (Gallon)

Code FG-SM-00077

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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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