



Ferrocem 523

STANDARD TILE ADHESIVE FOR LOW ABSORPTION TILE



Ferrocem 523/5 is a standard tile adhesive mortar with high adhesion strength to concrete substrate is composed of cement, selected quarts sand and polymer, additives to enhance a low-sag property and easy to spread with notched trowel suitable for bonding a low-absorbent medium size ceramic tile 8"x8" interior floor and wall with maximum vertical tile weight not exceed 30 kg./m2 for bonding homogeneous tile/ceramic tile with low water absorption. Glass and ceramic mosaic, natural marble and granite.

Advantages

- High adhesion strength.
- Low-sag.
- Recommended thickness 2-10 mm.
- Can bond in vertical and horizontal floor and wall.
- Easy to use by adding water.

Area of use

- Floor and wall.
- Interior use.
- Suitable for low-absorbent ceramic tile, glass and ceramic mosaic, natural marble and granite.

Standards and compliances

Ferrocem 523 is manufactured meets to ISO 13007

Physical properties

Properties	Value
Appearance	Powder
Colour	Gray
Dry density, kg./litre (Approx.)	1.30±5% kg./litres
Fine aggregate, mm. (Approx.)	0-1 mm.
Tile adjustment time 30 oC, minute (Approx.)	<15 minutes

Technical properties

Properties	Requirement	Ferrocem 523-5	Standards
Tensile adhesive strength, N/mm ² (Approx.)	>0.5 N/mm ²	0.9 N/mm ²	ISO 13007
Tensile adhesive strength after water immersion, N/mm ² (Approx.)	>0.5 N/mm ²	1 N/mm ²	ISO 13007
Slip, mm. (Approx.)	<0.5 mm.	0.4 mm.	ISO 13007

Method statement

Ferrocem 523

Step 1 Surface Preparation

- Concrete surfaces must be clean, free from dust, oil stain, grease and old paint or other that is an obstacle to adhesion.
- Concrete surface must be strong and have a fairly good level.
- Tile must dry and clean, do not sealed with water.
- Tile not larger than 8"x8" installation height approx 3 m. If the tile size exceeds 8"x8" use an installation height of approx. 2 m. If you want to installation tile larger than 8"x8" should be use Ferrocem 524.

Step 2 Mixing

- Mixing Ferrocem 523/5 (5 kg./bag) with clean water 23-25% by weight (1.15-1.25 litres) thoroughly mixing low speed driller (150-300 rpm.) until reach homogeneous without lump. Leave cure 15 minutes, stir again before use. Do not add more water and reapply after that period.
- Remark : Use Ferrocem 523/Driller 1600W use gear 1 speed 5 mixing time 45-60 seconds. Use all mixture within 15 minutes. *Mixing by weight is more precise than by volume.

2.2 Mixing by volume

- Mixing ratio between Ferrocem 523/5 to clean water is approx. 3 : 1 by volume.
Caution : When use a normal cup do not knock or make any vibration to the cup that may
- increase the density of dry mortar (Ferrocem 523/5).
Use clean water 333 CC. per Ferrocem 523/5 1000 CC. by volume (In case of using a volume measured cup).



Ferrocem 523/1 L Powder



Ferrocem 523/Water

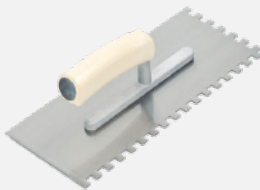
Low speed electric driller



Electric power	1600W
Spin head	M 14 x 2
Core	16 mm.
Ø Spin Head	166 mm.
Speed 2 level	Gear 1) 150-300 rpm
	Gear 2) 300-600 rpm

Gear 1
Speed 5
Mixing time 45-60 seconds
Pour water into pail and follow by Ferrocem 523
then mixing use mixture within 15 minutes.
Do not add more water. Mixing batch 1-2 kg.

Notched trowel



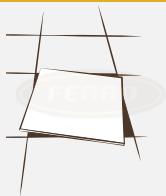
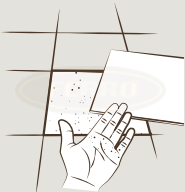
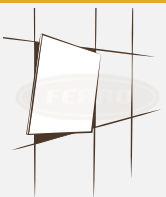

Notched trowel for spreading tile adhesive size of notched starting from U6-U12.

Step 3 Using

Use notched trowel (U6-U12) apply Ferrocem 523/5 tile adhesive apply into groove in the same direction by spreading in small area 1-2 m² and control the thickness of tile adhesive at 5-10 mm. Then apply Ferrocem 523/5 tile adhesive fill up back tile so as not to create a cavity behind the tile may bend or spalling off. Press tile upon Ferrocem 523/5 tile adhesive, adjustment tile into position within 15 minutes. Use rubber hammer slightly knock down to tile in order to make sure that it will complete bond without air void under tile. Left the tile adhesive bond perfectly to tile at least 24 hours. Before starting a grouting works.

Limitations/Cautions

- Do not use Ferrocem 523/5 with non-porous or low water absorption ceramic tile such as artificial rock, granito, glass block.
- Do not use Ferrocem 523/5 upon moving or expansion joint.
- Do not to bond to gypsum board, plastic panel, painted masonry wall, wood surface or fiber cement board.
- Do not use in swimming pool application.
- Vertical installation, tile weight must not exceed to 30 kg./m²
- Avoid apply in strong sun and windy condition.
- Not suitable for installation in these areas : department store floor, factory floor which has a wheel traffic or vibration.

1. Spalling off because tile have water too much.	Cause
	<ul style="list-style-type: none"> • A conventional method, many application are familiar with soaking tile into water before installment this method make tile rich of water then no space for tile adhesive to bond. • Do not bring tiles take water a dip if you want lay with tile adhesive.
2. Spalling off because dirty concrete surface.	
	<ul style="list-style-type: none"> • Sometimes the concrete surface has a low compressive strength 210 kg./cm² when dry the surface is dusty causing tile adhesive to adhere to weak surface and spalling off. • Use an axe to chop or grind the weakened surface to the strongest layer suitable for adhesion.
3. Spalling off after 2-3 weeks	
	<ul style="list-style-type: none"> • Mixing a lot of tile adhesive too much per time such as 1 bag but work slowly causing tile adhesive to dry reuse by add water resulting in the adhesion force below the threshold. • Do not add water after from the expiration of tile adjustment time. Should be mixing little at a time to suit the area of the work site.
4. Crack after 3-6 months.	
	<ul style="list-style-type: none"> • Use tile adhesive is not full tile causing gaps under sheet. • Should be avoid traditional installation that use tile adhesive as the dots behind the tile. (Pattern installation 5 point).

5. Grout line not in the same direction.

Cause



- Not use spacer separated between tile making it impossible to set the width of the grout to be the same for all sheets.
- Should be grout groove space at least 3-6 mm. for general flooring and groove 6-20 mm. for work area that want to show groove and 1.5-2 mm. for wall coverings.

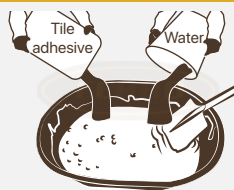
6. Wrong selection of tile adhesive type.



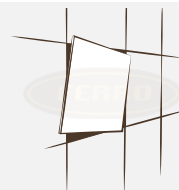
- Want to save, bring standard type tile adhesive to installation in the swimming pool, exterior wall installation that change temperature, fiber cement sheet or flexible gypsum and there was a vibration causing the problem to spalling off. Therefore should choose to use the appropriate model.

*See more information in our data sheet and problem shooting.

7. Add too much water makes tile adhesive not stronger.



- Add exceed water more than (23-25%).



8. Open traffic before tile adhesive is harden.



- Walking through the tile while the tile dry incomplete. Should be avoid touching surface during the first 7 days. for treading for grouting beware of creating vibrations.
- There is a cart through the first 1-7 days may cause spalling off without showing any obvious symptoms.


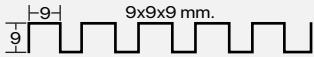
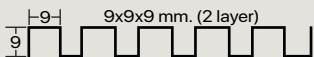
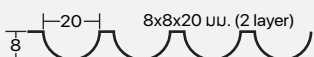
Technical support

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. 4-12 m2.

Notched trowel tooth shape	Tile size (Inch)	Approximate coverage per 20 kg bag of Ferrocem 523 (sq.m/bag).	Tile adhesive thickness (Ferrocem 523) after installation (mm).
	4x4 inches	5.7 sq.m/bag	1.5 mm.
	8x8 inches	4.4 sq.m/bag	3 mm.
	12x12 inches	2.85 sq.m/bag	5 mm.
	16x16 inches	2.5 sq.m/bag	6 mm.

Package

20 kg./bag (100 bag/pallet, 10 pallet/container)

25 kg./bag (80 bag/pallet)

Cleaning tools

Clean all tools before tile adhesive mortar start to dry.

In case of a dried mortar adhere to tools, use a mechanical method such as chiseling.

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 523/5 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.



20 kg

25 kg

Size

- 523/20 (20 kg./bag)
100 bag/pallet, 10 pallet/container
Code FG-5IC-8858915255785
- 523/25 (25 kg./bag)
Code FG-5IC-8858915255211



Equipment

Drill and blender bits
Code FG-OE-000

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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



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