

Cement Based, Iron Aggregate Metallic, Ultra High Heavy-Duty Floor Hardener for Industrial & Warehouse Flooring

Carbon Metal Iron Aggregate Contain >75%
Modified Cement Contain >20%
Polymer Additive Contain >5%

Heavy Duty Floor >12mm thick
Medium Heavy Duty Floor >20mm thick
Ultra High Heavy Duty Floor >30mm thick

Description

Cem Floor M105, is a partially premixed ready to use, cast at 12mm until 30mm thick and a freshly floated on concrete floor, iron metal aggregate concrete floor hardener with excellent properties of impart, adhesion and high abrasion resistance.

Due to its special formulation, **Cem Floor M105** product is based on selected high grade of Aggregate Iron Carbon Course Mineral, Original Portland Cement Type II & Rheological Additives. For better workability of machinery floating on all types of flooring.

Use

Cem Floor M105 is recommended for superficial of floor slabs and screeds where smoothing surface, oils, greases, reduces dusting is required.

- Warehouses,
- Workshops,
- Car Parking,
- Complex Commercials
- Factories
- Port Pier

Features & Benefits

Ease of Application	Extended working life at screedable consistency (130 to 180mm slump) allows ample time to place, float and finish. Rotary compactors are not required.
Ultra Heavy-Duty Durable	Provides compressive strengths equivalent or superior to no-slump and other toppings.
Outstanding Toughness	Energy absorbing capacity is significantly greater than normal high strength concrete or natural Aggregate toppings.
Increased Impact Resistance	Eight times more wear resistance than plain concrete.
High Density Surfaces	Resists oil and grease penetration, reduces dusting.
Protects Against	Iron armoring eliminates the risk of dangerous Protruding or buckled joints from steel tiles and Increases the life of materials handling equipment.

Properties of Specification

Cem Floor M105

Density Fresh Mortar		approximately 4200kg/m³	
Toughness, MPa x 10 ²		22.3	
Modulus of Elasticity, 10 ⁶ MPa		2.82	
Mohs Hardness	DIN 52450	7 to 9 [steel score]	
Final Set (Vicat)	DIN 52450	approximately >3 hours	
Compressive Strength	DIN 52450	24 hours:	50N/mm²
		3 days:	65N/mm²
		7 days	72N/mm²
		28 days	105N/mm²
Tensile Strength	DIN 52450	28 days:	<1.20N/mm²
Flexural Strength	DIN 52450	28 days:	12N/mm²
Ball pressure hardness	after 1 days	35 N/mm²	
	after 3 days	59 N/mm²	
	after 7 days	82 N/mm²	

Surface Preparation

New Concrete

Do not use salt water or salt contaminated aggregates for casting the base concrete slab, over which **Cem Floor M105** is to be applied. Do not use any curing compound on the base concrete.

Use hand floats for the first floating of the base concrete then a power trowelling machine equipped with float shoes. Commence floating as soon as concrete has stiffened sufficiently.

Existing Concrete

Saw cut along the perimeter to the desired thickness of the topping at right angles to the surface. Hack off concrete layer to the saw cut depth. Clean the surface free of all contaminants.

Note: On a level and flat concrete base, grit/shot blasting or hydro-jetting is necessary to achieve a clean and rough surface, but saw cutting and removal of top layer are not essential.

Application

Cem Floor M105 should be applied at thickness between 12mm and 30mm depending on project requirements.

Cem Floor M105 can be applied on new concrete floors as a monolithic topping on freshly placed concrete or as a granolithic top layer over at least 28 day old concrete. It can also be applied as a granolithic topping over existing , old concrete floors. It gives optimum performance on a reinforced concrete base, with a compressive strength of at least 30 N/mm² and with a thickness designed for the service conditions of the floor.

Priming

Monolithic application: no priming id required.

Granolithic application: prime with an epoxy bonding agent such as **EPO Bond Primer** on dry substrates.

Mixing

Use a powered mortar mixer. Mix 25kg of **Cem Floor M105** with 2.5L of clean water.

Place approximately 75% of the required water into the mixer drum. Keeping the mixer running, add **Cem Floor M105** slowly. After all the powder is added, mix for about 2 minutes. Then add the remaining 25% water and continue mixing for a further minute. Keep the total mixing time within 5 minutes.

Note: Mix only quantities that can be placed and screeded well before the initial set of base concrete for monolithic topping and before the gel time of primer for granolithic topping.

Placing

Do not place the topping under direct sunshine.

Place the mixed topping before the initial setting time of the fresh concrete base or when the primer is still tacky on hardened concrete.

Mark the floor area into bays of width 1 to 2m. Place and screed the topping within 15 to 20 minutes after mixing at 30°C. At higher temperatures, the working life will be shorter. Tamp the topping with a rigid mesh tamper to consolidate and ensure total contact to the screed with the prepared substrate, without voids.

Note: Under rapid drying conditions,

- *shade the area from sun and use wind breakers*
- *immediately after screeding, spray the surface with an LAMACO approved curing compound to prevent rapid moisture loss and minimize plastic shrinkage cracks.*

Float with a power trowel equipped with float shoes as soon as the topping can bear the weight of the machine and its operator without damaging the level. Ensure that the blade are set flat and the speed, low. For small areas, magnesium hand floats can be used. If a coarse, non-slip surface is desired, start curing without any more finishing operations.

Finishing

The extent of further floating or trowelling depends upon the finish desired on the surface.

Following machine floating, remove the float shoes and proceed with one or two normal trowelling operations to obtain hard steel or burnish trowelled finish. Start with flat blades and slow speed, raising the blades gradually to obtain the desired finish. Do not overtravel.

Late trowelling or too high a rotational speed may cause tearing of the surface. If trowel blades are raised too early, blistering could occur.

Pierce blisters with the corner of a hard trowel and re-float immediately with flattened trowel blades. Delay raised trowelling until no blisters occur.

Curing

Proper curing is essential to achieve the designed performance and strength of the topping. Immediately after final finishing, mist sprays the surface of the topping with water and cover with weighted polyethylene sheeting for 3 to 5 days. When mist spraying is not possible, use soaker hoses with burlap, or two layers of saturated burlap or similar type material and cover with polyethylene for 3 to 5 days. After wet curing, and while **Cem Floor M105** is still moist, remove excess water with a squeegee. Immediately apply an LAMACO approved curing compound, such as **Curing Agent**, with a short nap roller. The use of a roller will ensure complete coverage of the **Cem Floor M105**. Do not spray on a membrane curing compound. Do not allow the **Cem Floor M105** to dry out prior to the application of the curing compound.

- Estimating Data** One 25kg bag of **Cem Floor M105** mixed with 9 to 10% clean water (2.4 litres) provide approximately 0.007m³ of screedable topping at 150mm slump.
- Coverage**
- | | |
|------------------------------------|----------------------------------|
| Heavy Duty Floor | Approximately 12mm thick |
| Medium Heavy Duty Floor | Approximately >20mm thick |
| Ultra High Heavy Duty Floor | Approximately >30mm – 40mm thick |
- Packaging** Net weight 25 kg set
- Storage Shelf Life** **Cem Floor M105**, 6 months if stored in dry conditions.

Approximate Coverage:

Desired thickness	1 x 25kg bag covers(m2)	Quantity required per m2
13 mm	0.59	45
25 mm	0.31	80
40 mm	0.19	130

Because the depth of surface preparation may vary from design, it is best to overestimate the quantity by 10 to 20% for the first stages, until actual usage is established.

Cleaning of Equipment All tools and mixing containers should be washed and cleaned in water immediately after use before the material sets.

Handling Precautions

Wash off any mortar or latex on the skin before it dries. During mixing and application ensure adequate ventilation since the latex component contains ammonia which is volatile and may cause eye watering in confined spaces. Avoid generation of airborne dust during mixing. Cem Floor N88 powder contains more than 20% Portland cement and, therefore, in line with current legislation, is classified as irritating to eyes and skin. For this reason the following precautions should be observed:-
 Avoid contact with the skin and eyes; in case of contact with the eyes, rinse immediately with plenty of water and seek medical advice; wear suitable gloves and keep the product out of the reach of children.

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Health & Safety Some of the components of this product may be hazardous during mixing and application. Please consult the relevant Health & Safety Data Sheets, available from **LAMACO Malaysia** on request and sent with each delivery.



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