

**Cement Based, Iron Aggregate Metallic, Ultra High Heavy-Duty Floor Hardener for Industrial & Warehouse Flooring****Carbon Metal [Iron Aggregate Type] System**

<b>Heavy Duty Floor</b>	>12mm thick
<b>Medium Heavy Duty Floor</b>	>20mm thick
<b>Ultra High Heavy Duty Floor</b>	>30mm – 40mm thick

**Description**

**Cem Floor M90**, is a partially premixed ready to use, cast at 12mm until 40mm 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 M90** 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 M90** 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**

<b>Ease of Application</b>	Extended working life at screedable consistency (130 to 180mm slump) allows ample time to place, float and finish. Rotary compactors are not required.
<b>Ultra Heavy-Duty Durable</b>	Provides compressive strengths equivalent or superior to no-slump and other toppings.
<b>Outstanding Toughness</b>	Energy absorbing capacity is significantly greater than normal high strength concrete or natural Aggregate toppings.
<b>Increased Impact Resistance</b>	Eight times more wear resistance than plain concrete.
<b>High Density Surfaces</b>	Resists oil and grease penetration, reduces dusting.
<b>Protects Against</b>	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 M90**

Density Fresh Mortar		<b>approximately 3600kg/m3</b>
Toughness, MPa x 10 <sup>2</sup>		<b>21</b>
Modulus of Elasticity, 10 <sup>6</sup> MPa		<b>2.79</b>
Mohs Hardness	DIN 52450	<b>7 to 9 [steel score]</b>
Final Set (Vicat)	DIN 52450	<b>approximately &gt;3 hours</b>
Compressive Strength	DIN 52450	<b>24 hours: 45-47N/mm2 3 days: 59-62N/mm2 7 days: 67-70N/mm2 28 days: 90N/mm2</b>
Tensile Strength	DIN 52450	<b>28 days: &lt;1.15N/mm2</b>
Flexural Strength	DIN 52450	<b>28 days: 11N/mm2</b>
Ball pressure hardness	<b>after 1 days after 3 days after 7 days</b>	<b>28 N/mm<sup>2</sup> 52 N/mm<sup>2</sup> 75 N/mm<sup>2</sup></b>

**Surface Preparation**

**New Concrete**

Do not use salt water or salt contaminated aggregates for casting the base concrete slab, over which **Cem Floor M90** 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 M90** should be applied at thickness between 13mm and 40mm depending on project requirements.

**Cem Floor M90** 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/mm<sup>2</sup> and with a thickness designed for the service conditions of the floor.

**Priming**

Monolithic application: no priming is 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 M90** with 2.5L of clean water.

Place approximately 75% of the required water into the mixer drum. Keeping the mixer running, add **Cem Floor M90** 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. Keeps 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 blades are set flat and the speed, low. For small areas, magnesium hand floats can be used. If a course, 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 over trowel.

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 spray 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 M90** 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 M90**. Do not spray on a membrane curing compound. Do not allow the **Cem Floor M90** to dry out prior to the application of the curing compound.

**Estimating Data** One 25kg bag of **Cem Floor M90** mixed with 9 to 10% clean water (2.4 litres) provide approximately 0.007m of screedable topping at 150mm slump.

**Coverage**

<b>Heavy Duty Floor</b>	Approximately 12mm thick
<b>Medium Heavy Duty Floor</b>	Approximately >20mm thick
<b>Ultra High Heavy Duty Floor</b>	Approximately >30mm – 40mm thick

**Packaging** Net weight 25 kg set

**Storage Shelf Life** **Cem Floor M90**, 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.

**The General Term & Conditions**

All recommendations for use of our product, whether given by us in writing, verbally, or to be implied from the results of tests carried out by us are based on the current state of our knowledge. Notwithstanding any such recommendations the Buyer shall remain responsible for satisfying himself that the products as supplied by us are suitable for this intended process or purpose. Since we cannot control the application, use or processing of the products, we cannot accept responsibility therefore. The Buyer shall ensure that the intended use of the products will not infringe any third party's intellectual property rights. We warrant that our products are free from defects in accordance with and subject to our general conditions of supply.

The above mentioned details Specified key data are individually checked throughout, guarantee, and included in the certificates of Analysis (CoAs). & Typical key data are spot checked, the value are typical for the product and are indicated for information only. The values are not guaranteed or included in the CoAs.



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