

Monolithic fresh concrete surface hardener

USES

METOP EX gives the finished concrete surface very high abrasion resistance. It is economical to use. Bonds monolithically with the surface of the fresh concrete.

ADVANTAGES

- Supplied ready to use
- Easy and economical to apply
- Contains Corundum and natural Iron Oxide aggregates which gives the finished surface very high abrasion resistance.
- **It will never rust.**

AGGREGATE CHARACTERISTICS

| Table 1.0 | |
|--|-----------------|
| Aggregate type | Hardness (Mohs) |
| Corundum and natural Iron Oxide (Al ₂ O ₃ +Fe ₃ O ₄) aggregates | 9.0 Mohs |

DESCRIPTION

METOP EX dry shake hardener is a factory blended, quality controlled, ready to use hardener in powder form.

It consists of natural very hard mineral/metallic aggregates (Corundum and natural Iron Oxide) which never rusts. It also contains high quality cement and very special additives.

It is well known that Corundum aggregate has a hardness of 9 Mohs, it gives the final concrete surface very high abrasion and wear resistance.

COLOR

Dark gray, Brick red, Green.

DESIGN CRITERIA

Base concrete :

The quality of the base concrete is important and will effect the final finished surface. High quality concrete mixture must be used with a minimum 250-350 kg/m³ cement content. The water cement ratio and The concrete mix are very important too because excessive bleeding and segregation are not desirable and must be brought down to minimum level. Depending on the weather conditions, the water/cement ratio, slump can vary between 60-120mm.

METOP EX is a dry shake hardener therefore some moisture from the surface of the concrete is necessary to wet the powder. If there is any excess bleed water on the surface then it should be removed before applying METOP EX.

PROPERTIES

Abrasion resistance

METOP EX has high abrasion resistance. It has been tested as described in ASTM D 4060-90 and in **Böhme test** and TS 699. The tests gave an improved abrasion resistance of over 300 % .

| Table 2.0 of the abrasion resistance of METOP EX coatings | |
|---|---|
| Type of coating | Average abrasion resistance Böhme test (TS 699) (cm ³ / 50 cm ²) |
| METOP EX | 1.5 |

Aggregate specific gravity

The specific gravity of the aggregate is 3.87

Compressive strength

The typical 28 day compressive strength of METOP EX is 76.8 N/mm².

INSTRUCTIONS FOR USE

- Site preparation

* Finish all necessary soil compaction and floor preparation work before placing the concrete.

* Sub grade must be well drained and must be graded in uniform thickness to create uniform load bearing characteristics and eventually reduce cracks.

- Concrete placement

* Protect the working area from wind and direct sunlight. Preferably finish concreting work, after finishing roofing and wall construction.

* The concrete forms must be positioned in their correct positions one or two days before placing the Concrete, taking into consideration joint locations such as control and construction joints.

* Always use good quality concrete mix suitable for industrial floors and prepared according to internationally accepted standards.

* In industrial floors thickness of the placed fresh concrete should not be less than 10cm. unless it contains special additives to reduce thickness.

* Discharge the concrete directly from the concrete mixer truck. Deposit concrete uniformly in front of the vibrating screed.

* The grade behind the screed must be checked frequently over vibration must be avoided to stop excess fine material from coming to the surface.

* The surface is then bull floated with wood or magnesium floats.

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– Color hardener application

* When no bleed water remains on the surface of the concrete and the concrete is firm enough so that an imprint of 1.5-2 cm is made by the weight of a person. Apply the specified amount of **METOP EX** dry shake hardener (as show in table 3) spread evenly (the amount depends on outdoor or indoor use and the amount of traffic on the floor). **METOP EX** is sprinkled on the surface and spread using a squeegee. Minimum 6 kg/m² is recommended for industrial floors. 3-5 kg/m² for pedestrian traffic but this coverage is not recommended for long lasting use.

For 10 kg/m² and more the aggregate design and the application system must be changed .If such an application is chosen then please contact our office for application and type of **METOP EX** hardener used.

Most important point always comply with company application instruction details.

CLEANING

All tools should be washed with water after use.

CURING

– 100-200 g/m² **METOCURE** curing agent should be applied to the dry cleaned concrete surface. It is manufactured to conform to ASTM C309.

– **METOCURE** has the advantage of preventing initial water loss from the concrete surface and eventually result in better quality and higher strength concrete . Depending on the type of curing agent used best results can be achieved. If no moisture is present on the surface of concrete during the curing agent application.

STORAGE:

- Store in a dry , non humid area,
- No more than five bags should be stacked on top of each other,
- For cement based hardeners, preferably use in 6 months from production date and if properly stored this period can be as long as 1 year.

COVERAGE :

– 6-20 kg/m² can be used in industrial floors.

Table 3.0

| | |
|---|---|
| Coverage M i n i m u m requirement for i n d u s t r i a l purposes is 6-7 kg/m ² . Approximately 1mm thickness is achieved for each 2 kg/m ² of hardener | Very Light traffic (pedestrian traffic) min 3 -5 Kg./m ² |
| | Light traffic min5 -6 Kg./m ² |
| | Medium traffic min7-9 Kg./m ² |
| | Heavy traffic min 10-20 Kg./m ² (used under special conditions) (special mix mortar design is used) |

CAUTION:

Fire

METOP EX is not flammable.

Health and safety

* It is cementitious material so do not use on floors subjected to acids and other corrosive chemicals,

* Avoid inhalation of dust while throwing the dry shake hardener on the surface by hand.

* The above mentioned application system is for normal weather conditions. In the case of extreme weather conditions this application method, the concrete mixing and curing application must be modified accordingly.

* **METOP EX** is a cementitious material and becomes alkaline when mixed with water therefore avoid contact with skin it can be harmful and wash thoroughly with water.

LIMITED WARRANTY

All recommendations, statements and technical data herein are based on tests we believe to be reliable and correct also based on our long experience in this field of construction.

METOP LTD. Warrants it's products (**METOP EX**) to be free of manufacturing defects and contains best quality ingredients. Since no control is exerted over it's application and use **METOP LTD.** Makes no warranty ,either expressed or implied, concerning this product.

Extra and special guaranties can be granted to certain big project by obtaining mutual agreements between concerning parties. The company detailed application instructions must be complied with for any company guaranties to be applicable.

METOP

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