

ECMAFLOOR 431

Non-Metallic, Dry Shake Concrete Surface Hardener

Description

ECMAFLOOR 431 is ready-to-use blend of factory processed and specially graded non-oxidizing, non-metallic, hard wearing aggregate, special cement and additives to improve abrasion and wear resistant properties. When it is broad casted on freshly laid concrete and finished, ECMAFLOOR 431 cure monolithically to provide a tough, dense, non-porous surface which is extremely hard wearing and abrasion resistant. Monolithic cure ensures that problems normally associated with thin Granolithic screeds, viz., shrinkage, cracking, etc., are completely eliminated. Being non-metallic, ECMAFLOOR 431 provide a non-slip surface which will never rust and disintegrate.

Areas of Application

ECMAFLOOR 431 is ideally suited for use in all types of industrial floors, which are subjected to heavy traffic movement. It can withstand the impact load due to movement of heavy load over the floor topping. It is specially recommended in heavy engineering industries, power plants, loading bays, trucking lanes, car parking, workshops, machine shops, ramps and spillways.

Advantages

- Non-metallic - does not rust or stain, safe to be used for dry as well as wet areas.
- Provides a hard, abrasion resistant surface
- Impact resistance 2 to 3 times more than that of plain concrete.
- Superior densified surface than plain concrete which increases resistance to penetration by oil, grease, hydraulic fluids, motor fuels, and many industrial chemicals.
- Compatible with vacuum dewatering flooring (VDF) system
- Facilitates fast construction with minimum site costs.
- Bonds well with most conventional cementitious substrates

Technical Specification

Appearance & Form	Grey Powder
Abrasion Resistance (as per IS 1237-2012)	300 % (minimum) as compared to reference sample
Compressive Strength (as per IS 4031-1988)	50 N/mm ² (minimum)
Water absorption (as per IS 1237-2012)	10% (maximum)
Average Wear (application rate 7kg/Sqm)	< 2mm
Mohs Scale Hardness (aggregate)	7

Coverage

Type of Floor	Consumption of ECMAFLOOR 431
Light Duty	3.0 – 3.5 Kg/Sqm
Moderate Duty	4.0 – 5.0 Kg/Sqm
Heavy Duty	6.0 – 8.0 Kg/Sqm

Application Instructions

Base Concrete Preparation:

The base floor concrete should be placed in accordance with good concrete practices. The base concrete should have a minimum cement content of 300 kg/m³. The concrete mix should be designed to minimize segregation and bleeding. The Water: Cement ratio should be kept to a maximum limit of 0.55 with a slump value of 60-80mm. Concrete produced with water reducing admixture results better performance with reduced bleed water. Particular care must be taken at the corners and edges of bays, hand ramming and firm trowelling being carried out to ensure that the level can be maintained throughout the subsequent trowelling operations. The floor concrete can also be vacuum dewatered.

Application Method:

ECMAFLOOR 431 can begin as soon as surfaces or bleed water has evaporated and when the base concrete has stiffened to the point when light foot traffic leaves an imprint of about 3 – 5 mm. ECMAFLOOR 431 is applied in two stages. (a) The first application is made using 50% to 70% of the total material. ECMAFLOOR 431 is evenly broadcast onto the concrete surface. When the material becomes uniformly dark by the absorption of moisture from the concrete this first application can be floated. Wooden floats or, on large areas, the power trowel with disc may be used. It is important, however, that the surface is not over worked. (b) Immediately after floating, the remaining ECMAFLOOR 431 is sprinkled evenly over the surface. Again, moisture is absorbed and the surface can be floated in the same way as before. Final finishing of the floor using a power trowel can be carried out when the floor has stiffened sufficiently so that damage will not be caused.

Timing for Application:

Application timing of ECMAFLOOR 431 is important and critical. If applied too early, bleed or excess water will wash away the cementitious content of the product, thereby making them ineffective. Also, denser aggregates sink into the concrete. If the application of ECMAFLOOR 431 is done too late, there will not be sufficient water/moisture to absorb the material into the concrete. Material forcibly applied and trowelled thus, will cause cracks on the surface later, as there is no water/moisture to hydrate the product.

Curing:

Curing is essential part of ECMAFLOOR 431 flooring system. The effective curing method is to apply ECMACURE or ECMACURE AB or any other effective curing agent. Other curing methods such as covering with plastic sheet, wet hessian cloth or pond curing is also accepted and shall be continued at 7days.



Packing

ECMAFLOOR 431 is supplied in 25 Kg moisture resistant HDPE bag.

Storage & Shelf Life

12 months from the date of manufacturing when stored in unopened, original sealed pack in moisture free & covered place at a temperature range from +5°C to 40°C

Precautions

ECMAFLOOR 431 should not be applied on too wet or surfaces with bleed Water. If it is used in such cases, heavier aggregates may sink into the fresh concrete; therefore, performance of ECMAFLOOR 431 shall not be achieved as expected. On the other hand, if the concrete is too dry, there should not be sufficient water to bond with the concrete and because of over trowelling, surface crack and delamination may appear in later stage.

Safety

Wear hand gloves, safety shoes and safety goggles while using and handling the product. ECMAFLOOR 431 contains Portland cement and are therefore alkaline when in contact with water. Prolonged contact with the skin should be avoided. Any eye contamination should be washed immediately with plenty of clean water and medical advice sought

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