VELOSIT® DS 272

Quartz-based Monolithic Floor Hardener

Application fields

VELOSIT DS 272 is a ready to use, non metallic, monolithic floor hardener for surfacing fresh concrete floors using the dry shake application method. VELOSIT DS 272 is based on Quartz and results in hard-wearing, abrasion-resistant surfaces with significantly improved resistance to impact. Typical applications include the following heavy & ultra heavy trafficked floors:

- Outdoor & indoor car parks
- Steel mills
- Warehouses, workshops & loading bays
- Aviation hangers
- Power plants
- Laboratories and slaughter houses

Properties

VELOSIT DS 272 is a blend of proprietary binders, powders, water-reducers and fillers based on Quartz, a natural mineral with unique hardness properties reaching 7.0 on the Mohs Scale.

VELOSIT DS 272 surpasses the requirements for class CT-C50-F7-A5 acc. EN 13813.

VELOSIT DS 272 is broadcast at the specified rate and worked (ideally power floated) into the fresh concrete to form a monolithic bond with the host concrete floor and providing a surface with the following properties:

- Significantly improved impact and abrasion resistance owing to the Quartz filler
- Denser surface and reduced permeability and hence improving resistance to both water and oil absorption
- Increased compressive strength
- Improved aesthetic finish.

VELOSIT DS 272 is designed for use in plain and reinforced concrete floors including Polypropylene and/or steel fibre reinforcements.

VELOSIT DS 272 is available in 3 standard colours; Grey, Red and Green

Application

1.) Concrete & joint requirements

Concrete should have a minimum cement content of 300 Kg/m^3, a w/c ratio below 0.55 and a slump between 75 mm & 100 mm at pour. Prior lab trials should be conducted to ensure the resultant mix is free from segregation and major bleeding (minor bleed water may be acceptable in many cases as it assists in wetting of VELOSIT DS 272).

Special care should be given to execution of the joints:

Expansion: Use proper joint fillers capable of accommodating the expected cyclic movements and in case of dowel & sleeve ensure joint filler is continued above and below the dowel line.

Saw-cut (crack control): Ensure preciseness of saw-cutting to be right above the pre-placed crack inducers and execution to be within the open time specified by the design/structural engineer.

Perimeter joints:
Use an appropriate slip membrane between the concrete floor slab and external walls, columns and separated machinery footings.

2.) Processing

Perimeters, expansion & saw cut joint lines: to ensure strong edges of the resultant floor surface, it is recommended - once the concrete has been vibrated and initially levelled - to remove a 100 mm wide and 10 mm deep tapered wedge from all edges (such as perimeters and expansion joint sides) and replace with a stiff paste of VELOSIT DS 272. The same should also be done where saw cutting is planned.

Entirety of the floor: processing should commence once the concrete begins to stiffen and foot traffic results in a 3 mm to 5 mm imprint.

Depending on the expected traffic, the design engineer would specify the application rate, recommended as follows:

Medium traffic:	3.0 kg/m^2
Heavy traffic:	5.0 kg/m^2
Ultra heavy traffic:	7.0 – 9.0 kg/m^2

VELOSIT DS 272 should be applied in two steps for the Medium and Heavy traffic rates and three steps for the Ultra Heavy traffic rate.

The consumption per step should not exceed 3.0 kg per square meter.

Broadcasting of second and third steps must be at right angle to the previous step.

Each broadcast must be thoroughly worked and power floated into the concrete (or previous floor hardener) ensuring full wetting of the VELOSIT DS 272 broadcast.

3.) Curing

Follow standard curing procedures for the site conditions. Take the required steps by either water curing as specified or applying a curing compound.

Estimating

VELOSIT DS 272 should be uniformly broadcast and power floated into the fresh concrete at the following rates:

Traffic Grade	Recommended consumption per square meter	Coverage per 25 kg bag
Medium	3.0kg (6.6 lbs)	6.30 m^2
Heavy	5.0 kg (11.0 lbs)	5.00 m^2
Ultra heavy	7.0 - 9.0 kg (15.4 - 19.8 lbs)	2.80 m^2 - 3.60 m^2

Cleaning

VELOSIT DS 272 can be removed in the fresh state with water. Once cured VELOSIT DS 272 can only be either removed mechanically or by using acidic cleaners such as muriatic acid).

Quality features

Colours:	grey, red, green
Hardness of Quartz filler:	7.0 (Mohs scale)
Compressive strength @ 28d:	55/7 MPa (7975/1015 psi)(ASTM C39)
Abrasion resistance:	+ 150 % over control (ASTM C779-89a)

Packaging

VELOSIT DS 272 is available in 25 kg (55 lb.) plastic bags.

Storage

VELOSIT DS 272 must be stored in unopened original packs for 12 months at 5 – 35 °C (40 – 95 °F) in a dry storage place protected against sunlight.

Safety

Please observe the actual valid material safety data sheet and follow the described safety measures for handling of the product.

Recommendations

VELOSIT DS 272 is only available for professional applicators.

All described product features are determined under controlled laboratory conditions according to the relevant international standards.

Values determined under job site conditions may deviate from the stated values.

Always use the latest version of this data sheet available from our website www.velosit.de.

Manufacturer

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