

Denka Printar

Fiber Reinforced Quick Setting Cementitious Mortar for 3D Printing

Description

Denka Printar is a pre-mixed mortar consisting of special additives with functionality, it enable to achieve excellent printing speed, setting performance, strength development, shrinkage control & durability. The mortar requires a 3D printing system equipped with mixing, pumping and printing equipment, it can be used for Dry & Wet mixing process. Denka 3DP Mortar was a develop jointly by Denka., Co Ltd. and OBAYASHI Corp..

Uses

- Digital Construction
- New customized, complex designs and structures.
- Automated process with less labor, no formwork.
- Pre-printed & Pre-casted Concrete structure
- Prefabricated Prefinished Volumetric Construction

Advantages

- Easy mixing & smooth pumping.
- Fast setting / early strength property.
- Time saving and increased productivity.
- Excellent compressive strength, bond strength and flexural strength achievement.



Printing of Denka Printar



Shell-shaped bench built up by 3D printing

Physical Properties (28°C)

Item	Spec	Reference
Flow mm	100-160	130
Initial Setting, min ※Retarder 0.2%	>30	40
Compressive Strength, N/mm ²		
3 hours	>5	9.6
1 day	>10	18.2
7 days	>20	48.0
28 days	>30	58.0
Flexural Strength, N/mm ²		
28 days	>7	8.8

Packing Size

Denka Printar	20 kg / bag
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Mixing

Mix Design

Denka Printar : 20 kg

Water : minimum 15% (3.00 kg)
: maximum 18% (3.60 kg)

Retarder : minimum 0.1% (20 g)
: maximum 0.5% (100 g)

To achieve non-deforming property of laminated mortar, it is required to adjust a setting time with retarder. The retarder should be dissolved in water in advance.

Placing

The mixed mortar should be printed continuously to a uniform required thickness and speed.

Yield and Coverage

Yield	10.0-10.6 liter per bag depending on water addition
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Cleaning

Wash all equipment with water after used.

Technical Support

Denka offers a technical support package to specifiers, end-user and contractors, as well as on site technical assistance.

Storage

Denka Printar has a shelf life of 6 months in unopened bags. Kept in a dry store. In high humidity locations, the shelf life may be reduced.

Application Equipment



Fig.1 Mixer (Example, OKASAN KIKO)



Fig.2 Pump (Example, PFT SWING L)

Precautions

- Refer to the Safety Data Sheet (SDS) before use.
- Protective wear (goggles, mask, gloves, and rubber boots) should be worn during handling.
- Do not dispose of **Denka Printar** in drains.
- The product in open bags should be used up completely or the container should be resealed for storage.
- The product should be stored in a dry area, indoors, and out of direct sunlight.
- For further information, please contact Denka.

Additional Information

Denka Construction Solutions Malaysia Sdn Bhd and offers a wide range of complementary products, which includes waterstops, waterproofing products, grouts, anchors, specialized flooring products. In addition, a wide range of products formulated for repair and refurbishment of spalled concrete are available.

Denka Construction Solutions Malaysia Sdn Bhd
(Formerly known as Estop Sdn Bhd)

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