

INDOSIT™ MFC 2019

(Cementitious Micro-Fine Injection Grouting Powder)



INDOSIT™ MFC 2019 cementitious micro-fine injection grout powder. It is based on unique Particle SD technology to facilitate effective filling of very fine cracks, pores and voids. It has extremely finer particle size compared to other hydraulically setting materials like OPC. It is produced in state of the art manufacturing plant in a controlled environment resulting in consistent quality.

Fields of Application

Grouting of pointing or jointing mortars old with new concrete of masonry dams, heritage structures, etc.

Development of early compressive strength in high performance concrete using INDOSIT™ MFC 2019

- > Soil Stabilization under foundations
- > Dam/tunnel curtain grouting, permeation grouting
- > Consolidation of strata consisting of alluvium, fine sand & coarse silt where normal cement grouts cannot penetrate
- > Grouting for subway excavation, river water canals, fine Grouting of pointing or jointing mortars of masonry dams/ tunnels, heritage structures, etc.
- > Cracks, fissures in rock, RCC structures etc.
- > Strata consolidation during tunnel construction: injection grouting for pre- excavation (face grouting) and pre or post- excavation

Advantages

Unique PSD results in enhanced N value, effective penetration and filling of deep fine cracks, fissures & pore spaces imparts greater water tightness

- Can be injected with standard cement grouting equipment
- Extended workable time for ease of application and effective penetration in soil strata
- Compatible with most of the admixtures to accelerate / retard the setting time
- Non-toxic, environmentally friendly
- Cost effective, economical solution

Particle Size Distribution Curve (PSD)

PSD is the most important property of grout material which indicates spread / quantum of various sizes of particles. Unique patented PSD design ensures effective grout ability of micro fine & ultrafine particles.

Applicable Standards

IS 16993, IS 4031, IS 11578, ASTM C1107-02

Technical Data

The Material & Water used for testing should be kept under Laboratory conditions (i.e. 27±2°C) & below tests are done with W/P ratio 1:1 by weight.

Property	Unit	Value
Form		Dry Fine Powder
Component		Single
Particle Size		
D ₁₀	micron(μ)	< 2
D ₅₀	micron(μ)	< 5
D ₉₀	micron(μ)	< 10
D ₉₅	micron(μ)	< 12
Fineness by BET method	6290 m ² /kg	>6000
Specific Gravity	-	3.16 ± 0.03
Bulk Density	kg/m ³	1445 ± 50
40 Micron	100 % Passed	100 % Passed
Marsh Cone Viscosity* (Orifice Dia. – 5 mm & SP-0.5%)	seconds	30 to 42
Bleeding (At the end of 3 hr)* (SP – 0.5%)	%	< 2.6
Setting Time of Grout* (IS 5513 by Vicat Apparatus)		
✓ Initial	78 min	>1
✓ Final	3.4 hrs	<4
Compressive Strength of Grout* (SP – 0.5%) Refer Clause 12.5 as per ASTM C1107-02		
✓ 3 days	39 mpa	>3
✓ 7 days	48.5 mpa	>7
✓ 28 days	68 mpa	>10
Compressive Strength of Mortar (IS 16993, W/P – 0.5)		
✓ 3 days	mpa	>15
✓ 7 days	mpa	>25
✓ 28 days	mpa	>35

Note:

A Superplasticizer (SP) has to be used & keep its dosage between ranges of 0.5 to 1 % to get the Marsh cone viscosity between 30-42 Sec. As per the site conditions this parameters may vary. To get the desired flow, the W/P ratio may vary to 0.6-1.1:1 & dosage of superplasticizer to be adjusted as specified.

Mixing Process for Site Application

Always add powder in to water. Small quantities up to 25 kg can be mixed with hand held assembly of drill machine and mixing paddle with 400 to 1200 rpm. Take 70-80% of water initially & slowly add INDOSIT™ MFC 2019 & superplasticizer. Mix properly for 90 sec & than add remaining 20- 30% water. Mix until a smooth, lump free slurry is obtained. Larger quantities shall be mixed with high speed colloidal shear vane mixers of 1400 rpm. Typical mixing time is 5 to 10 minutes. Mix until a smooth,lump free fluid grout is obtained.If required, adjust the fluidity and setting time with the help of chemical admixtures. Transfer the mixed material in agitator container. Mixed material shall be injected within 45 minutes after mixing. To remove site contaminants from this grout, sieve the slurry just prior to injection process.

Precautions

Make sure to agitate mixed grout slurry in the container continuously. Observe leaving mixed grout . Make sure that adequate quantity of grout is available for continuous injection process. For better flow and flow retention properties; temperature of mixing water should be less than 20°C. Clean all the tools and equipment immediately after use with ample amount of water.

Packaging

INDOSIT MFC™ 2019 is available in 25 Kg bags.

NOTE

If required, INDOSIT™ MFC 2019 can be supplied pre mixed with compatible super- plasticizer.

Storage and Shelf Life

Bags of INDOSIT™ MFC 2019 should be stored in well-ventilated, sheltered, cool, dry area and protected from moisture, rain and heat. Under such storage conditions shelf life of sealed product is 3 months from the date of manufacture.

General Healthy and Safety

PPE: Handgloves, goggles and suitable respiratory mask shall be used.

Manufacturer

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