INDOSIT™ UFC 2018

(Cementitious Micro-Fine Injection Grouting Powder)

INDOSIT™ UFC 2018 is cementitious micro-fine injection grout powder. It is based on unique Particle SD technology to facilitate the effective filling of very fine cracks, pores, and voids. It has an extremely finer particle size compared to other hydraulically setting materials like OPC. It is produced in state of an 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.

> Soil SOLIDIFICATION 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 finecracks, fissures & and pore spaces imparting 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 the spread/quantum of various sizes of particles. Unique patented PSD design ensures effective grout ability of micro- fine & and ultrafine particles. The specification value may change but the value is within standard conformities.

Applicable Standards

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

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Technical Data

The Material & Water used for testing should be kept under Laboratory conditions (i.e. 27±2^{0}C) & t h e 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)	< 2.5
D_{50}	micron(μ)	< 5.0
D_{90}	micron(μ)	< 9.2
D_{95}	micron(μ)	< 10
Fineness by BET method	m^2/kg	>2000
Specific Gravity	-	2.99 ± 0.03
Bulk Density	kg/m^3	950 ± 50
Wet Density		
W/P - 1:1	kg/lit	1.57 ± 0.03
W/P - 1.1:1		1.55 ± 0.03
Marsh Cone Viscosity* (Orifice Dia. – 5 mm & SP-0.5%	seconds	27 to 38
Bleeding (At the end of 3 hr)* (SP – 0.5%)	%	< 2.5
Setting Time of Grout* (IS 5513 by Vicat Apparatus)		
✓ Initial	hrs	>1
✓ Final	hrs	<12
Compressive Strength of Grout* (SP – 0.5%) Refer Clause 12.5 as per ASTM C1107-02		
✓ 3 days	mpa	>3.5
✓ 7 days	mpa	>12.5
✓ 28 days	mpa	>22.0
Compressive Strength of Mortar (IS 16993,W/P – 0.5)		
✓ 3 days	mpa	>18
✓ 7 days	mpa	>25
✓ 28 days	mpa	>35

Note:
A Superplasticizer (SP) has to be used & and keep its dosage between ranges of 0.5 to 1 % to get the Marsh cone viscosity between 28-35 Seconds. As per the site conditions these parameters may vary. To get the desired flow, the W/P ratio may vary to 0.9-1.1:1 & dosage of superplasticizer is to be adjusted as specified.

Mixing Process for Site Application

Always add t h e powder to the water. Small quantities of up to 25 kg can be mixed with hand-held assembly of a drill machine and mixing paddle with 400 to 1200 rpm. Take 70-80% of water initially & and slowly add INDOSIT™UFC 2018 & superplasticizer. Mix properly for 90 sec & then add the 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. The 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 to the 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 the injection process.

Precautions

Make sure to agitate the mixed grout slurry in the container continuously. Observe leaving mixed grout. Make sure that an adequate quantity of grout is available for the continuous injection process. For better flow and flow retention properties the temperature of mixing water should be less than 20^{0}C. Clean all the tools and equipment immediately after use with an ample amount of water.

Packaging
INDOSIT™UFC 2018 is available in 25 Kg bags.

Note
If required, INDOSIT™UFC 2018 can be supplied pre-mixed with a compatible super- plasticizer.

Storage and Shelf Life
Bags of INDOSIT UFC™2018 should be stored in a 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.

HAZARD: Regarded as non-hazardous for transportation.

Health and Safety
PPE: Hand gloves, goggles and suitable respiratory mask shall be used.

Manufacturer

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Formulated In Germany

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