

INDOSIT™ MF 9903

(Micro Fine Mineral Additive for Concrete and Mortar)



INDOSIT™ MF 9903 activated grinded powder of GGBS. Ultra fineness improve the properties of regular GGBS like high surface area, improved penetration properties, high resistant to chemical attack. It is a third generation supplementary cementitious material (SCM) with a built-in high tech content. In spite of its high fineness it does not increase water demand at the dosage range of 5 to 15 percent of normal OPC. The concrete slump is seen to be improved, due to the dense placing of cementitious material, producing less void content. The use of INDOSIT™ MF 9903 results in hydrated cement matrix to comprise of very small pores. INDOSIT™ MF 9903 is a specially processed material based on high glass content with high reactivity. The raw materials are composed primary of low calcium silicates. Due to its unique chemistry and super fine particle size distribution. It provides reduced water demand for required workability.

INDOSIT™ MF 9903 can be used as practical substitute for Silica Fume as per the results obtained. If the advantages of INDOSIT™ MF 9903 are observed in the concrete mix design that the initial rate of strength development was found to be increased or similar as that of Micro Silica.

Uses

Precast Unit residential , commercial building prestressed concrete water reservoir ,structure tunnels, dams, canal , heavy water tanks marine structure bridges manufacturing mortars.

Advantages

1. Lesser water demand for desired workability
2. Cohesion of concrete is improved
3. Bleeding and Segregation are minimized
4. Better workability retention
5. Reduced plastic shrinkage cracks

In Harden stage of concrete & mortar:

More overall strength than plain O.P.C concrete is ensured because of continuing pozzolanic reaction between high reactive glass content in INDOSIT™ MF 9903 with free lime in cement paste.

The pore reinforcement due to excellent particle size distribution of INDOSIT™ MF 9903 & pozzolanic reaction the concrete & mortar become almost impervious.

Better gel spacing is achieved due high reactivity glass contain in INDOSIT™ MF 9903 resulting in to a strong & durable concrete or mortar. The concrete & mortar are protected from sulphates & chloride attack because of reduced permeability & reduced free lime from the hydrate cement paste because of pozzalanic reaction the leachable free lime is converted in to additional calcium silicate. The use of INDOSIT™ MF 9903 also reduces the alkaline silica reaction between the reactive aggregates & alkaline content of cement namely K_2O & Na_2O .

The use of INDOSIT™ MF 9903 increases is the flexural strength by 10 to 15% the tensile strength is also improved.

Dosage

INDOSIT™ MF 9903 is recommended 5% to 15% by weight of total binder content as per the grade of concrete. Dose can vary as per requirement but it is recommended to validate it first in the laboratory.

Chemical Properties

Sr, No.	Test	Test Standard	Test Result	Specification Requirement
1	Silica, %	IS 4032 -1985	33.82	Max. 36.0%
2	Alumina, %	IS 4032 -1985	17.94	Max. 20.0%
3	Calcium Oxide, %	IS 4032 -1985	34.25	Max. 36.0%
4	Magnesium Oxide(MgO), %	IS 4032 -1985	8.80	Max. 10.0%
5	Insoluble Residue, %	IS 4032 -1985	0.45	Max. 1.5 %
6	Sulphide Sulphur (S), %	IS 4032 -1985	0.38	Max. 1.3 %
7	Loss on ignition (LOI), %	IS 4032 -1985	0.87	Max.3.0%
8	Glass Content, %	IS 16714 -2018	93.00	Min. 85 %
9	Manganese Oxide (MnO), %	IS 4032 -1985	0.14	Max. 1.5 %
10	Iron Oxide, %	IS 4032 -1985	0.40	Max. 1.5 %
11	Alkali as Na ₂ O, %	IS 4032 -1985	0.32	Max. 1.0 %
12	Potassium Oxide (K ₂ O), %	IS 4032 -1985	0.48	Max. 1.0%
13	Titanium dioxide (TiO ₂), %	MPAES	0.61	Max. 2.0%

Physical Properties

Item No	Test Name	Test Method	Test Result	Specification Requirement
1	Moisture Content %	I.S. 4031	0.23	--
2	Particles retained on 45µ I.S. Sieve % (Wet Sieving)	I.S. 1727-1967	1%	--
3	Slag Activity Index (SAI)			
a	7 Days	I.S. 16714-2018	75%	Not less than 60 Percent of control OPC 43 Grade Cement Mortar Cube
b	28 Days		100%	Not less than 75 Percent of control OPC 43 Grade Cement Mortar Cube

Process

Normal GGBS is coarse and particles are uneven in size of particles INDOSIT™ MF 9903 is a specialized material with great uniform particle size distribution which differentiate for specific use for special application also. Uniformed particle size helps to finalize application of material.

Vigorous milling technique is carried out to make it fine. Strict controlled classifying process is being used to make uniformed particle size distributed material. Strict quality management enhances maintaining of quality of Finished product

Health & Safety

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related data.

Manufacturer

Velosit India Pvt Ltd
209 Exim Link
Mulund Goregoan Link Road
Nahur West
Mumbai 400078

