

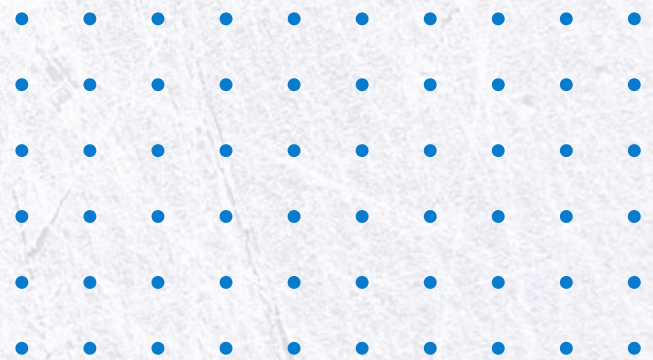


SILAFINE

#STRENGTH #DURABILITY #SUSTAINABILITY



Revolutionising concrete with Microsilica



SILAFINE

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DRM ENTERPRISE



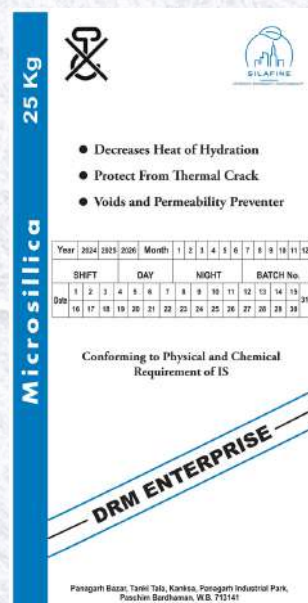
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SILAFINE

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WELCOME TO DRM ENTERPRISE

Welcome to DRM Enterprise, a leading organisation at the forefront of manufacturing and distributing Silica Fume, with the brand name of Silafine. Our cutting-edge facility, located in Bhutan, is dedicated to setting industry benchmarks in plant and machinery, production process and quality systems. We are on a mission to contribute to a cleaner and safer environment by minimising embodied energy and reducing pollution. At DRM Enterprise quality is our priority, and we are committed to delivering high quality products that strictly adhere to Indian standard.



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WHY SILAFINE?

- Silafine is a dry powder made of silica fume, following IS15388 standards. It helps to improve concrete and mortar by packing particles better and reacting effectively as a pozzolan. Silafine comes in a densified form with a typical bulk density of 500 to 700 kg/m³ and is sourced from Bhutan.
- Silafine Microsilica's properties undergo regular testing following IS 15388 and ASTM C1240 standards.



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WHY SILAFINE?

- Silafine Microsilica effectively lowers the rate of carbonation in concrete and reduces permeability to chloride, thereby enhancing the durability and longevity of structures.
- Silafine enhances the abrasion-erosion resistance of concrete and ensures a more uniform and consistent composition by improving segregation resistance.
- The material mitigates thermal cracking, offers effective corrosion protection, and provides high bond strength and flexural strength in concrete.



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APPLICATIONS OF SILAFINE

1. High Strength Concrete Structures

- Silafine is well-suited for the construction of high-strength concrete structures, ensuring structural integrity and stability.

1. Precast Structures for Metro and Flyovers

- Our materials meet the demanding requirements of precast structures for metro systems and flyovers, making them an optimal choice for these projects.



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INDIAN STANDARD

IS 15388:2003

Indian Standard SILICA FUME

SPECIFICATION

1. SCOPE

This standard covers the chemical and physical requirements of silica fume for use in concrete and other systems containing hydraulic cement.

2. REFERENCES

The following standards contain provisions which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

**Table 1 Chemical Requirements
(Clause 4)**

Sl.No. (1)	Characteristic (2)	Requirements (3)	Test Method (4)
i)	SiO ₂ , percent by mass, Min	85.0	IS 1727
ii)	Moisture content, percent by mass, Max	3.0	see Note 1
iii)	Loss on ignition, percent by mass,	4.0	IS 1727
iv)	Alkalies as Na ₂ O, percent, Max	1.5	



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INDIAN STANDARD

TABLE 1 Chemical Requirements

SiO ₂ , min, %	85.0
Moisture content, max, %	3.0
Loss on ignition, max, %	6.0

8.2 Test for specific surface, density, and accelerated pozzolanic strength activity index using composite samples that represent 3200 Mg (3520 tons) or 3 months of production, whichever gives the highest frequency. Prepare each composite sample by combining portions from the samples representing

C 1240 – 05

- 3.1.1 Silica Fume—very fine pozzolanic material, composed mostly of amorphous silica produced by electric arc furnaces as a by-product of the production of elemental silicon or ferrosilicon alloys (also known as condensed silica fume and microsilica).
- 3.1.2 Other terms in this specification are defined in Terminologies C 125 and C 219.
- 4. Ordering Information**
- 4.1 The purchaser shall specify any optional chemical or physical requirements.
- 5. Chemical Composition**
- 5.1 Silica fume shall conform to the requirements for chemical composition prescribed in Table 1.
- 6. Physical Requirements**
- 6.1 Silica fume shall conform to the physical requirements prescribed in Table 2. Optional physical requirements are given in Table 3.
- 7. Sampling**
- 7.1 When the purchaser desires that the silica fume be sampled and tested to verify compliance with this specification, perform the sampling and testing in accordance with Practice C 183, modified as described in 7.3.

TABLE 2 Physical Requirements

Oversize:	
Percent retained on 45-µm (No. 325), max, % ^a	10
Percent retained on 45-µm (No. 325), max variation from average, percentage points ^b	5
Accelerated pozzolanic strength activity index ^c	
With portland cement at 7 days, min percent of control	105
Specific surface, min, m ² /g	15

^a Exercise care to avoid retaining agglomerations of extremely fine material.

^b The average shall consist of the ten preceding tests or all of the preceding tests if the number is less than ten.

^c Accelerated pozzolanic strength activity index is not to be considered a measure of the compressive strength of concrete containing the silica fume. This is a measure of the reactivity of a given silica fume with a given cement and may vary with the source of both the silica fume and the cement.

TABLE 3 Optional Physical Requirements^a

Uniformity requirements:	
When air-entraining concrete is specified the quantity of air-entraining agent required to produce air content of 18.0 vol % of mortar shall not vary from the average established by the ten preceding tests or by all preceding tests if less than ten, by more than, %	20
Reactivity with cement alkalis ^b	
Reduction of mortar expansion at 14 days, min, %	80
Sulfate resistance expansion ^c	
(moderate resistance) 6 months, max, %	0.10
(high resistance) 6 months, max, %	0.05
(very high resistance) 1 year, max, %	0.05



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TECHNICAL DATA

TEST CERTIFICATE OF SILICA FUME

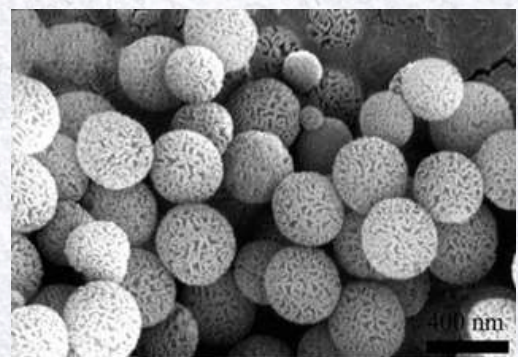
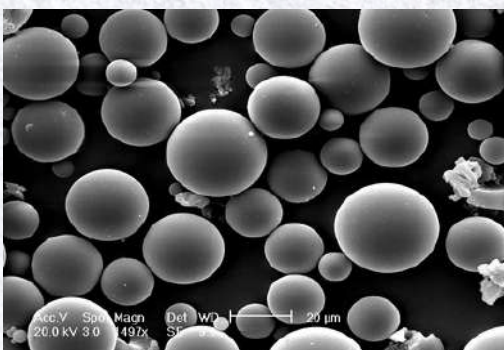
Sl No.	Composition	Percentage
1	Bulk Density	550-600 KG/M ³
2	Coarse Particles	0.30%
3	H ₂	0.60%
4	LOI	3.60%
5	SiO ₂	86.30%
6	AL ₂ O ₃	1.43%
7	Fe ₂ O ₃	3.78%
8	CaO	1.03%
9	MgO	0.67%
10	Alkalies as Na ₂ O	-



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SILAFINE

Silafine is available in a densified form with a typical bulk density of 500 to 700 Kg/m³





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