

Product Data Sheet

Microsilica (Silica Fume) 85D — Densified Grade

Description

Description	Microsilica 85D (Densified Silica Fume) is a densified grade of amorphous silicon dioxide, produced by agglomerating ultra-fine silica fume particles into larger granules. With a minimum SiO ₂ content of 85%, it offers excellent handling, reduced dustiness, and improved flow during batching, making it the preferred grade for concrete and construction applications.
Applications	Ready-mix concrete, precast concrete, high-performance concrete (HPC), high-strength concrete (HSC), shotcrete, grouts, self-compacting concrete (SCC), bridge decks, marine structures, and industrial floors.
Grade	85D – Densified
HS Code	28112200

Key Benefits

1. Reduced dustiness – safer and easier to handle on site compared to undensified grades
2. Improved flowability during batching – compatible with standard concrete batching equipment
3. Increased concrete compressive strength – pozzolanic reaction fills capillary pores
4. Reduced permeability – significantly lowers chloride ion penetration and water absorption
5. Enhanced durability – resistance to sulphate attack, alkali-silica reaction (ASR), and carbonation
6. Reduced bleeding and segregation in fresh concrete
7. Compatible with all Portland cement types and common admixtures

Chemical Analysis & Physical Data

Chemical Composition (Weight %)

Parameter	Unit	Specification*
SiO ₂	wt%	Min. 85.0
C (Carbon)	wt%	Max. 3.0
Fe ₂ O ₃	wt%	Max. 1.5
CaO	wt%	Max. 1.5
MgO	wt%	Max. 1.5

K ₂ O	wt%	Max. 2.0
Na ₂ O	wt%	Max. 1.0
H ₂ O (when packed)	wt%	Max. 3.0

Physical Properties

Property	Unit	Specification*
Loss on Ignition (LOI)	%	Max. 4.0
Coarse Particles (>45µm)	%	Max. 10.0
pH-value	—	5.0 – 9.0
Bulk Density – Densified (when packed)	kg/m ³	500 – 700
Specific Surface Area (BET)	m ² /g	15 – 25 (typical)
Activity Index (7-day)	%	Min. 85
Activity Index (28-day)	%	Min. 95

* Specifications conform to IS 15388:2003, ASTM C1240, and EN 13263-1 requirements for use in concrete. Test methods available on request. HS Code: 28112200

Concrete Application Guide

Application	Typical Dosage (% by wt. of cement)	Primary Benefit
General concrete	5 – 8%	Strength, reduced permeability
High-performance concrete (HPC)	8 – 12%	Compressive strength >60 MPa
High-strength concrete (HSC)	10 – 15%	Compressive strength >80 MPa
Shotcrete / sprayed concrete	5 – 10%	Cohesion, reduced rebound
Marine / aggressive environments	8 – 12%	Chloride & sulphate resistance
Self-compacting concrete (SCC)	5 – 10%	Flow, stability, reduced bleeding

Dosage rates are indicative. Optimal dosage should be determined by trial mixes. Microsilica may partially replace cement (up to 15%) for cost optimisation and sustainability benefits.

Standards Compliance

Indian Standard IS 15388:2003 – Silica Fume – Specification

ASTM ASTM C1240 – Standard Specification for Silica Fume Used in Cementitious Mixtures

European EN 13263-1 – Silica Fume for Concrete – Definitions, Requirements and Conformity

Packaging

Packaging 1000 kg Jumbo Bags (FIBC / Big Bags)
25 kg Small Bags (multi-wall paper / PE-lined)
Custom packaging available on request.

Storage & Handling

8. Avoid dust generation – use appropriate PPE when handling
9. Store material properly, protected from moisture and contamination
10. Keep bags sealed until point of use
11. Store in a dry, covered area away from direct sunlight

Disclaimer: The information provided in this document is based on our current knowledge and is intended as a general guide. Ochnology Solution Pvt. Ltd. reserves the right to modify specifications without prior notice. Buyers are advised to conduct their own testing for specific applications.

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