Revolutionising concrete with Silafine

SILAFINE

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www.silafine.com

Contents

WELCOME TO DRM ENTERPRISE

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Welcome to DRM Enterprise, a leading organization at the forefront of manufacturing and distributing silica fume under the brand name Silafine. Our state-of-the-art facility in Bhutan is dedicated to setting industry benchmarks in plant operations, advanced production processes, and robust quality systems.

At DRM Enterprise, we are driven by a mission to create a cleaner and safer environment by reducing embodied energy and minimizing pollution. Quality is at the heart of everything we do, and we are committed to delivering superior products that strictly adhere to Indian standards.

What sets us apart is our relentless focus on innovation, sustainability, and customer satisfaction. Our team of experts continuously strives to enhance product performance, ensuring that Silafine meets the evolving needs of diverse industries. By fostering strong partnerships with our clients, we aim to deliver value-driven solutions that contribute to the success of their projects.

Together, let us build a future that is not just stronger, but also more sustainable and environmentally responsible.

TECHNICAL DATA SHEET

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SILAFINE CHEMICAL COMPOSITION AND PHYSICAL PROPERTIES		
Sl No.	**Composition**	**Percentage**
1	Bulk Density	500-700 KG/M’
2	% Retained on 45 Micron	0.30%
3	H2	0.60%
4	LOI	<4%
5	SiO,	>85.00%
6	AL 0 3	1.43%
7	Fe,O 3	3.78%
8	CaO	1.03%
9	MgO	0.67%
10	Alkalies as Na2O	-

The chemical properties of silica fume sare Silicondioxide(sio_2)min. 85%, other oxides like Aluminum Oxide (al_2o_3), Calcium Oxide (cao), Iron oxide (fe_2o_3), silica fume may contain smalla mounts of carbon, typically less than 1%.

Silafine Microsilica's properties undergo regular testing following IS 15388 standards.

WHY SILAFINE

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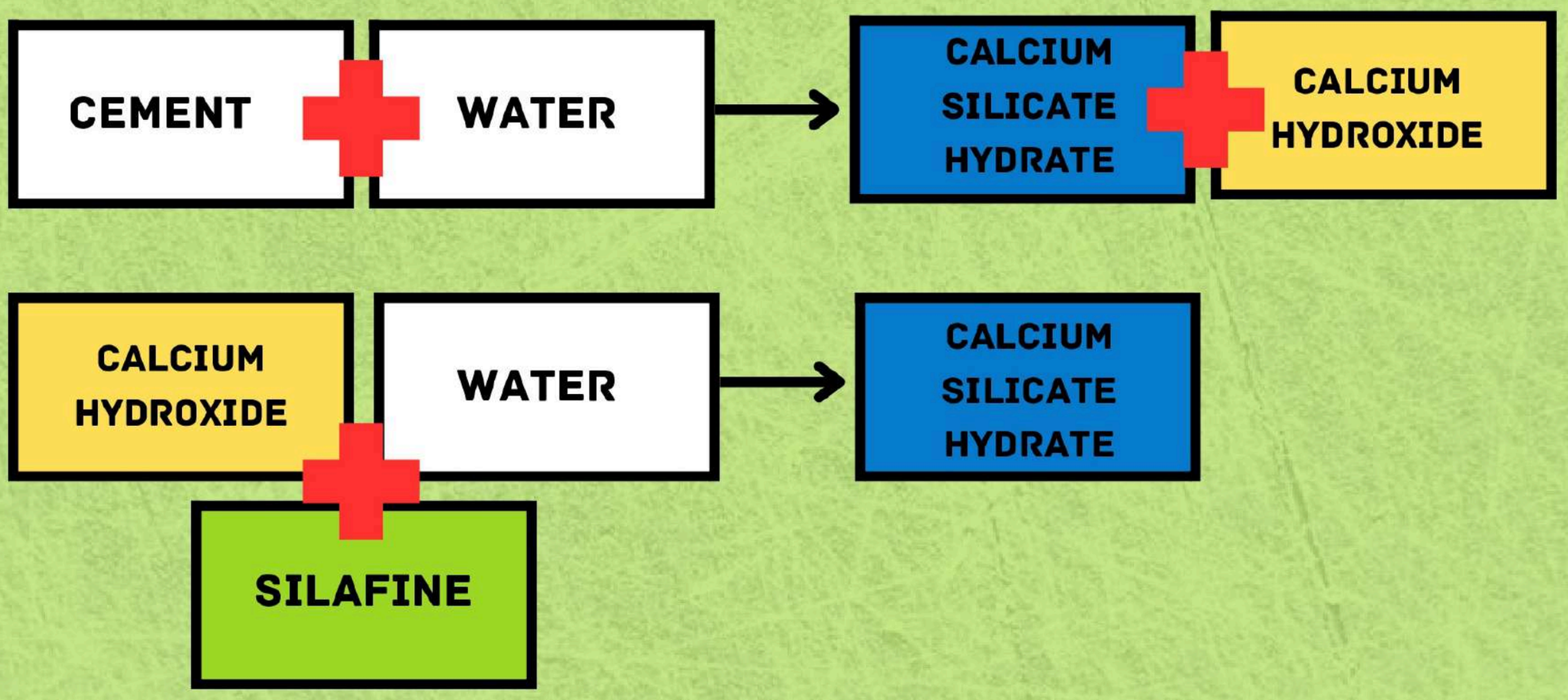
Microsilica, is a byproduct of ferrosilicon (Used in steel manufacturing) Mainly it consists of very fine non- crystalline silica spheres. The high silica content and fineness make it an ideal pozzolanic material for concrete

When water is added to Portland cement, hydration produces calcium silicate hydrate (CSH) and calcium hydroxide. CSH acts as the primary binding agent, providing strength to the structure. In contrast, calcium hydroxide weakens the mix, occupying up to a quarter of the volume and making concrete susceptible to issues like efflorescence, sulfate attack, and alkali-aggregate reactions.



Silafine, a pozzolanic material, reacts with calcium hydroxide and water to form more calcium silicate hydrate (CSH), which binds aggregates and reduces calcium hydroxide content. This reaction strengthens the concrete matrix, lowers permeability, and enhances durability by minimizing calcium hydroxide.

WHY SILAFINE

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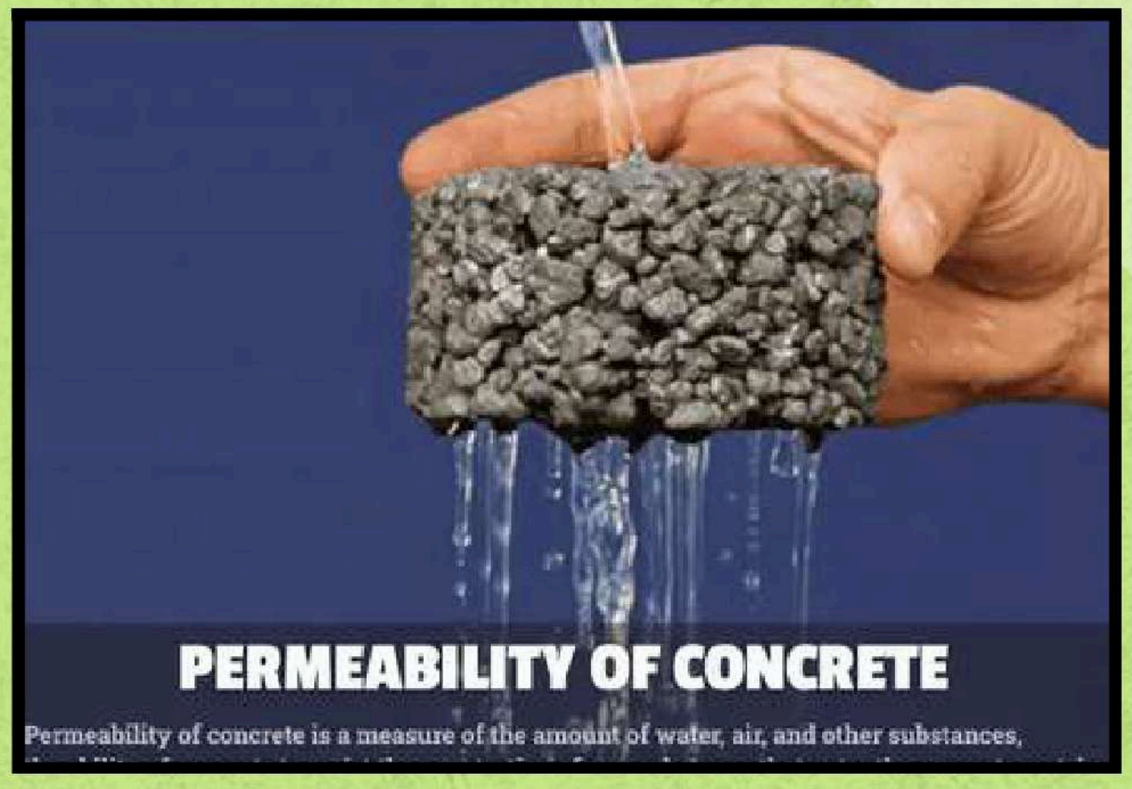
Effects on Permeability

Silafine Microsilica is a proven solution for enhancing the durability and longevity of concrete structures. By significantly reducing the rate of carbonation, it ensures that concrete remains robust and resistant to environmental challenges over time.



One of its key advantages is its ability to dramatically lower permeability by effectively filling the pore spaces within the concrete matrix.

This reduction in permeability plays a crucial role in preventing the intrusion of harmful chloride ions, which are a leading cause of corrosion in reinforced concrete. Additionally, Silafine Microsilica offers superior protection against chemical attacks, further strengthening the structure against aggressive environmental conditions.

By integrating Silafine Microsilica into concrete mixes, builders and engineers can achieve structures that are not only more resilient but also capable of maintaining their structural integrity for decades. It’s an ideal choice for projects where durability and longevity are of paramount importance.

WHY SILAFINE

Enhancing Abrasion and Erosion Resistance

Silafine Microsilica represents a groundbreaking advancement in the field of concrete technology, offering unparalleled benefits that significantly enhance the performance and durability of concrete structures. Among its standout attributes is its remarkable ability to improve abrasion and erosion resistance. This ensures that concrete surfaces are better equipped to endure the wear and tear caused by mechanical forces and harsh environmental conditions, making them ideal for applications subjected to high levels of stress.

Moreover, Silafine excels in improving segregation resistance within the concrete mix. By promoting a more uniform and consistent composition, it minimizes the risk of uneven distribution of materials, ensuring that every part of the structure achieves optimal strength and durability. This uniformity not only enhances the structural integrity of the concrete but also contributes to a superior surface finish, free from weak spots or vulnerabilities that could compromise the longevity or performance of the structure.

Incorporating Silafine Microsilica into concrete mixes empowers engineers and builders to create structures that combine exceptional resilience, durability, and aesthetic appeal, setting a new standard for high-performance concrete applications.

WHY SILAFINE

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Sustainable Development

Silafine Microsilica plays a vital role in promoting sustainability in construction by enhancing the durability and efficiency of concrete structures. As a byproduct of silicon and ferrosilicon alloy production, microsilica transforms industrial waste into a valuable resource, reducing landfill waste and conserving natural raw materials. When incorporated into concrete, it significantly increases strength and durability, which extends the lifespan of structures and reduces the need for frequent repairs or replacements. This durability minimizes resource consumption and construction waste over time. Furthermore, microsilica improves the impermeability of concrete, reducing the risk of damage from environmental factors like chloride intrusion and chemical attacks. By enabling the creation of long-lasting, resilient structures, microsilica helps lower the carbon footprint of the construction industry, contributing to more sustainable and environmentally responsible practices.

APPLICATIONS

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Dams and Bridges

Silafine is an ideal choice for high-strength concrete structures, such as dams and bridghes, due to its ability to enhance the performance & longevity of concrete in demanding environments. By refining the microstructure of concrete, Silafine reduces permeability, effectively minimizing water ingress and protecting against chemical attacks and chloride penetration. This is critical for structures exposed to constant water pressure and environmental stressors. Additionally, Silafine improves the compressive and flexural strength of concrete, enabling it to withstand the immense loads and dynamic forces typical of large infrastructure projects. Its contribution to abrasion resistance further ensures durability against the erosive action of flowing water and debris. By incorporating Silafine, engineers can achieve stronger, more durable, and low-maintenance structures that perform reliably over extended lifespans, making it an essential component for critical projects like dams and hydropower facilities.

Metro Systems and Flyovers

Silafine Microsilica is an ideal choice for high-strength concrete structures such as metro systems and flyovers due to its exceptional ability to enhance both the performance and the durability of concrete. Silafine minimizes the penetration of water, chloride ions, and other harmful agents, protecting the embedded steel reinforcement from corrosion. This makes the concrete capable of withstanding heavy loads and high-stress environments typical of metro networks and flyovers. Silafine, ensuring that these structures maintain their integrity and functionality over extended periods despite exposure to traffic loads and weathering.

ADDITIONAL INFORMATION

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Compatibility

Silafine is compatible with all types of Portland cement. Its proven water-reduction and accelerated hydration properties have been successfully utilized in key projects, resulting in high-performance concrete with exceptional strength and extreme durability.
Silafine is also highly compatible with a wide range of admixtures. Thanks to its water-reduction capabilities, it often enables more cost-effective admixture dosages. For optimal results, admixtures should always be used in line with the manufacturer's recommendations, with trials conducted to replicate actual site conditions and materials.

Addition Rates {RECOMMENDED DOSAGE)

The optimal addition rate of Silafine depends on various factors, including design strength, placement method, and durability requirements. Typically, Silafine is added at a rate of 5-10% by weight of the cementitious content in the mix.

Packaging

Silafine is available in 25 kg bags and 1-ton jumbo bags for distribution across India and export..

Handling and Storage

Silafine can be handled for batching, mixing, and delivery of concrete in the same manner as cement, using standard equipment.
When stored in bulk as a dry powder, it is recommended to install an aeration system to ensure smooth discharge from the silo. With proper storage, Silafine has an indefinite shelf life. To maintain its quality, it must be protected from moisture and contamination, similar to cement.
For bagged storage, it is advisable to keep the product in a dry, enclosed area. Bags should be stored off the floor on wooden pallets and covered with plastic sheeting for additional protection.

ADDITIONAL INFORMATION

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Health and Safety

For comprehensive Health, Safety, and Disposal information, please refer to the Silafine Material Safety Data Sheet (MSDS). A copy is available upon request or can be downloaded from www.silafine.com.

Customer Service

Silafine provides unparalleled sales support, technical services, and a robust supply infrastructure tailored to the Indian market. We are committed to meeting customer demands promptly, efficiently, and cost-effectively.

Our team of experienced professionals is readily available to offer technical advisory services, including on-site assistance, mix design guidance, evaluation trials, and handling recommendations.

INDIAN STANDARDS

IS 15388

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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.

IS No.	*Title*
1727 : 1967	Methods of test for pozzolanic materials (*first revision*)
4082 : 1996	Recommendations on stacking and storage of construction materials and components at site (*second revision*)
4305 : 1967	Glossary of terms relating to pozzolana
6491 : 1972	Methods of sampling fly ash

3 TERMINOLOGY

3.0 For the purpose of this standard, the definitions given in IS 4305 and the following shall apply.

3.1 Silica Fume — Very fine pozzolanic material, composed mostly of amorphous silica produced by electric arc furnaces as a byproduct of the production of elemental silicon or ferro-silicon alloys.

3.2 Silica Fume in Natural State — Silica fume taken directly from the collection filter. The bulk density typically being in the range of 150-350 kg/m^3.

3.3 Densified Silica Fume — Silica fume that has been treated to increase the bulk density by particle agglomeration. The bulk density typically being above 500 kg/m^3.

3.4 Silica Fume Slurry — A homogenous, liquid suspension of silica fume particles in water, typically with a dry content of 50 percent by mass, corresponding to about 700 kg/m^3 of silica fume.

4 CHEMICAL REQUIREMENTS

Silica fume shall conform to the chemical requirements given in Table 1.

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* Note1
iii)	Loss on ignition, percent by mass, *Max*	4.0	IS 1727
iv)	Alkalies as Na_2O, percent, *Max*	1.5	*See* Notes 2 and 3

NOTES

1 For determination of moisture content, dry a weighed sample as received to constant mass in an oven at 105°C to 110°C. Express in percentage, the loss in mass and record as moisture content.

2 Requirement of limiting alkali shall be applicable in case silica fume is to be used in concrete containing reactive aggregate.

3 For determination of alkalies, method of test used for determination of this in cement may be adopted.

5 PHYSICAL REQUIREMENTS

Silica fume shall conform to the physical requirements given in Table 2.

6 SAMPLING AND CRITERIA FOR CONFERMITY

6.1 Sampling

6.1.1 The methods and procedure of sampling of silica fume shall be same as the method given for fly ash in IS 6491. All samples whether grab or composite shall have a mass of at least 1 kg. Two grab/composite samples shall be taken from the lot for the first 100 t of silica fume. For each subsequent 100 t from the lot of silica fume, one sample shall be taken. However, not less than two samples shall be taken in any sampling programme.

6.1.2 The sample or samples for the purpose of testing may be taken by the purchaser or his representative or by any person appointed to supervise the work for the purpose of which the silica fume is required or by the latter's representative.

6.2 Criteria for Conformity

6.2.1 The samples of silica fume drawn in accordance with **6.1** and then prepared as per **7** and shall be tested as per **4** and **5**.

INDIAN STANDARDS

IS 15388

Table 2 Physical Requirements
(*Clause* 5)

Sl No.	Characteristic	Requirement	Method of Test, Ref to	
			Annex	IS No.
(1)	(2)	(3)	(4)	(5)
i)	Specific surface m^2/g, *Min* (*see* Note 1)	15	A	—
ii)	Oversize percent retained on 45 micron IS Sieve, *Max* (*see* Note 1)	10	—	1727
iii)	Oversize percent retained on 45 micron IS Sieve, variation from average percent, *Max* (*see* Notes 1 and 2)	5	—	1727
iv)	Compressive strength at 7 days as percent of control sample, *Min* (*see* Note 3)	85.0	—	1727

NOTES

1 Any one of the tests specified in (i) or (ii) and (iii) indicated may be adopted.

2 For (iii) the average shall consist of the ten preceding tests or all of the preceding tests if the number is less than ten.

3 In the test method for determination of compressive strength of silica fume cement mortar in accordance with IS 1727, the value of factor N may be taken as one.

6.2.1.1 Samples representing each 100 t of silica fume shall be tested for moisture content, loss on ignition and oversize.

6.2.1.2 Testing for all other physical and chemical requirements shall be carried out on composite samples representing not more than 400 t material each. The composite samples shall be prepared by combining portions equally from each of 100 t sample.

6.2.2 The lot shall be considered passing if samples meet in all the requirements. The silica fume may be rejected if it fails to meet any of the requirements of this standard. In case of dissatisfaction with the results of tests, the producer or supplier may request re-testing of the failed consignment.

7 SAMPLE PREPARATION

7.1 The grab or composite samples drawn in accordance with **6.1** shall be mixed thoroughly. A clean and dry laboratory concrete drum mixer provides adequate mixing for the purpose. The amount of silica fume shall be 10 to 50 percent of the volume capacity of the mixer. The mixing time shall be 5 ± 1 min. A polyethylene film shall be secured on the drum to keep the material in the drum during mixing of the sample lot.

7.2 A sampling device of appropriate size shall be used to take material from the thoroughly mixed sample for purpose of making the test specimen. At least six random sub-samples shall be taken to prepare the test specimen.

8 STORAGE AND INSPECTION

8.1 The silica fume shall be stored in such a manner so as to permit easy access for proper inspection and identification of each consignment.

8.2 Adequate facilities shall be provided to the purchaser for careful sampling and inspection, either at the source or at the site of work, as may be specified by the purchaser. For guidance on storage of silica fume at site, IS 4082 may be referred to. In general, the material shall be stored similar to cement/fly ash storage depending upon the storage requirement in bags/bulk form.

9 DELIVERY

The supply of silica fume shall be made in suitable quantities mutually agreed upon between the purchaser and the supplier. Where so required by the purchaser, the material shall be supplied in bags (jute laminated, multiply paper or polyethylene lines).

10 MANUFACTURER'S CERTIFICATE

The supplier/manufacturer shall satisfy himself that the silica fume conforms to the requirements of this standard and, if requested by the purchaser, shall furnish a certificate to this effect, indicating the results of the tests carried out on the samples of silica fume.

11 MARKING

11.1 Each bag/consignment of silica fume shall be clearly and permanently marked with the following informations :

a) Identifications of the source of silica fume,
b) Net mass of silica fume,
c) Batch/Control unit number,
d) Month and year of packing, and
e) Any other identification mark as required by the purchaser.

11.2 BIS Certification Marking

The silica fume may also be marked with the Standard Mark.

11.2.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

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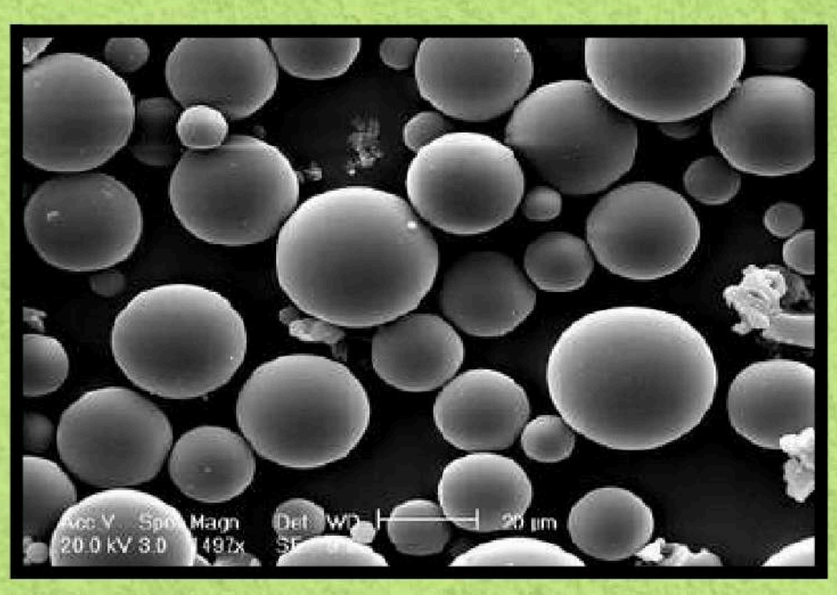
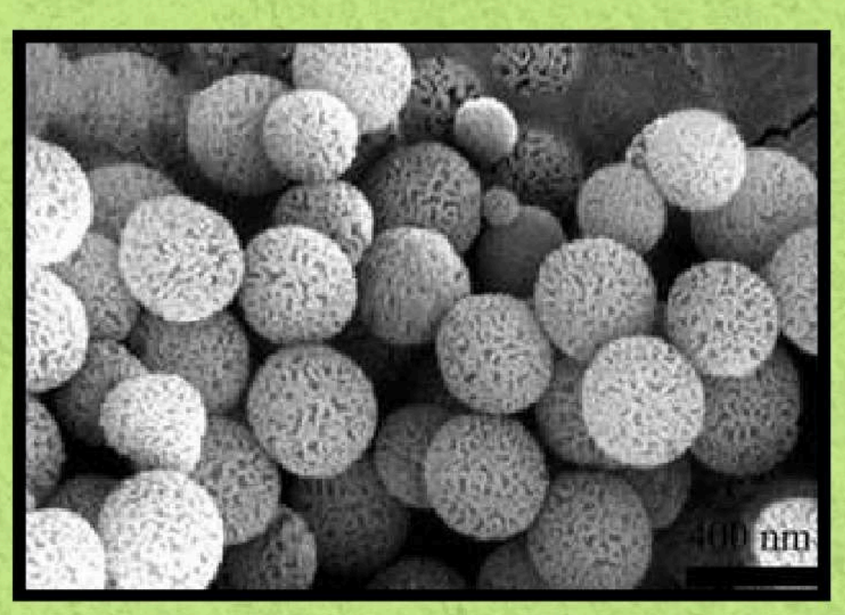
Silafine is available in a densified form with a typical bulk density of 500 to 700 Kg/m3





PROUD CUSTOMERS

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BELAN

PRISM RMC®

Complete Concrete Solutions

DURAMIX®

SHIELD WITH DURABILITY

CHRYSO

SAINT-GOBAIN

एन एच पी सी

NHPC

रेल विकास निगम लिमिटेड

Rail Vikas Nigam Limited

STP LIMITED

Trusted Since 1935

SGX Minerals Private Ltd

NPR

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NHPC Limited
(A Government of India Navratna Enterprise)
CIN: L40101HR1975GOI032564

दिबांग बहुउद्देशीय परियोजना
Dibang Multipurpose Project,
Mayu Sector, PO: Roing,
Dist.: Lower Dibang Valley,
Arunachal Pradesh, Pin: 792110
Email: lot4-dibang@nhpc.nic.in

No.: NH/Dibang/Lot-IV/2025/08/ 38

Date: 18.03.2025

To,

M/s Dibang Power (Lot-4) Consortium
C/o- GR Infraprojects Limited
Novus Tower, 2nd Floor,
Plot No. 18, Sector-18
Gurugram-122015
Tel: +91 1246435000
Email: lot4dhrt@grinfra.com

Kind attention: The Contractor's Representative- Sh. Shiv Pratap Singh

Sub: Construction of civil works for LOT-4: **Source approval of Third Party Lab, Cement, Admixtures & Accelerators, Steel Fibre, Microsillica, Resin/cement Capsule and Welded Wire mesh**

Ref:

1. LOA Letter No. NH/CC-1/Dibang/Lot-4/2023/1526-1538 dated 25.08.2023
2. Your Letter No. GRIL-PEL(JV)//NHPC/ Dibang/Lot-IV/70 dated 12.12.2023
3. Your Letter No. GRIL-PEL(JV) /NHPC/Dibang/Lot-IV/73 dated 14.12.2023
4. Your Letter No. GRIL-PEL(JV) /NHPC/Dibang/Lot-IV/78 dated15.12.2023
5. Your Letter No. GRIL-PEL(JV)/NHPC/Dibang/ Lot IV/0176 dated 09.05.2024
6. Your Letter No. GRIL-PEL(JV)/NHPC/Dibang/Lot-IV/0360 dated 21.11.2024
7. Your Letter No. GRIL-PEL(JV)/NHPC/Dibang/Lot-IV/0381 dated 07.12.2024

Sir,

This is in reference to the above referred letters vide which you have requested for approvals of Third-party Labs and source approval for different construction materials.
In this regard, following is approved as per contractual provisions. Further, during the scrutiny of documents for source/ brand approval, some observations are raised by the Project Quality Division which are also mentioned in the Remarks:

Sl. No	Approval for	Source/Brand Approval proposed by Contractor	Approved/Not approved	Remarks/Observations
1	Third Party Lab TS A2.5	A M/s Omega Lab Testing Services Pvt. Ltd., Kolkata	Approved	
		B M/s Global Lab, Kolkata	Approved	
		C M/s Adharshila Infratech Private	Not Approved	The lab is a NABL accreditation lab. As per the credential furnished by the

Sl. No	Approval for	Source/Brand Approval proposed by Contractor	Approved/Not approved	Remarks/Observations
		Limited , Udaipur, Rajstan		contractor, the lab has provided test /services in Road & Highway Projects Further, the lab is located in Rajasthan, very far from Dibang MPP. Since there are many accreditation lab, conveniently located in this region Kolkata, Dibrugarh, Guwahati and the contractor has taken approval of some labs in this region, therefore conveyance of approval of this lab is not felt necessary at present.
2.	Cement TS Section B 9.4	A. M/s RAMCO Cement Ltd	Approved only for carrying out requisite test in site lab/approved third party lab.	MTC, Test reports (as per relevant IS codes/ TS) from third party labs of recent batches must be furnished by the contractor.
3	Admixtures & Accelerators TS Section B.5.3.1 B9.4.4,9.6.3.3	A. M/s Hindcon Chemical Ltd. B. M/s Kunal Conchem Pvt. Ltd C. M/s Asian Paints India Ltd C. M/s DRS Chemicals D. M/s Berger Paints India Limited	Approved only for carrying out requisite test in site lab/approved third party lab and test reports be furnished.	MTC/ test report on properties of the admixtures from third party lab must be furnished to assess its suitability for use in the permanent work. Earlier, source approval for reasonable numbers of brands of admixture has been conveyed by letter no. NH/Dibang/Dam & PH/Lot-4/2023/557 dated 28.11.2023. However, further requisite test carried out to assess its suitability for use in the permanent work in respect of the said approved brand of admixtures and test reports thereof may be furnished before going for additional source approval, if required.
4	Steel Fibre TS B 5.4.5	A. M/s Stewols India Pvt. Ltd.	Approved Requisite test must be carried out by the contractor in the approved third party lab/site before use in the	The MTC/ test report from third party lab of the make Shak timan steel fibre furnished, are before 2019. The recent MTC/third party test report must be furnished by the contractor.

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NHPC Limited
(A Government of India Navratna Enterprise)
CIN: L40101HR1975GOI032564

दिबांग बहुउद्देशीय परियोजना
Dibang Multipurpose Project,
Mayu Sector, PO: Roing,
Dist.: Lower Dibang Valley,
Arunachal Pradesh, Pin: 792110
Email: lot4-dibang@nhpc.nic.in

Sl. No	Approval for	Source/Brand Approval proposed by Contractor	Approved/Not approved	Remarks/Observations
			permanent work.	
5	Microsilica TS 5.4.4	A. M/s Elkem South Asia Pvt Ltd	Approved	Requisite test be carried out in site lab/third party lab to assess its suitability for use in the permanent work.
		B. M/s MAPEI C. M/s Normet D. M/s Buildtech India Pvt. Ltd E. M/s Concrete additive and Chemical Pvt. Ltd. F. M/s DRM Enterprise G. M/s Toshali Cement Pvt Ltd	Approved	Only for conducting test of physical/chemical properties and other properties in the third party/site lab to assess its suitability within the concrete.
6	Resin/cement Capsule	A. M/s Hindcon Chemicals Limited B. M/s TechnoKem	Approved. Requisite test be carried out in site lab/third party lab to assess its suitability for use in the permanent work.	MTC/ test report on properties of the resin/capsule from third party lab must be furnished.
		C. M/s Kunal Conchem Pvt Ltd. D. M/s Ramtek Industries E. M/s Minova-Runaya Pvt Ltd F. M/s DRS Chemicals G. M/s Concrete additive and Chemical Pvt. Ltd	Approved only for carrying out requisite test at site lab/approved third party lab to assess its suitability.	MTC/ test report on properties of the resin/capsule from third party lab may be furnished.
7	Welded Wire	A. M/s Shankar Weldmesh	Approved	Requisite test be carried out in third party lab to assess its suitability for use in the

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(भारत सरकार का एक नवरत्न उद्यम)
NHPC Limited
(A Government of India Navratna Enterprise)
CIN: L40101HR1975GOI032564

दिबांग बहुउद्देशीय परियोजना
Dibang Multipurpose Project,
Mayu Sector, PO: Roing,
Dist.: Lower Dibang Valley,
Arunachal Pradesh, Pin: 792110
Email: lot4-dibang@nhpc.nic.in

Sl. No	Approval for	Source/Brand Approval proposed by Contractor	Approved/Not approved	Remarks/Observations
	mesh	Private Limited		permanent work.
	TS Section B.4 clause 4.6.2	B. M/s R.V.Udyog C. M/s M M Industries Pvt Ltd	Not Approved	The test values of the material properties carried out in third party lab has not been provided. Further, document in support of usage of the materials in construction project (supply order/performance certificate from the client) has not been furnished

In view of above, it is requested to attend the observations and carry out requisite tests for the above materials and furnish the MTC/ test reports as required above.

Thanking you,

Yours sincerely,

18/03/25

(Sharad Jaikar)
General Manager (Civil)
Representative of Engineer-in-Charge
2880MW-Dibang Multipurpose Project, NHPC Limited

PURCHASE ORDER Approved On: 24.04.2025

DIBANG POWER (LOT-4) CONS

Registered Office: MAYU-I, TOWN-ROING, LOWER DIBANG VALLEY, ARUNACHAL PRADESH, 792110
Head Office: C/O GR INFRAPROJECTS LIMITED, NOVUS TOWER, 2ND FLOOR, PLOT NO-18, SECTOR 18, GURUGRAM-122015, HARYANA, INDIA
Ph: +91-124-6435000, Email: LOT4DHRT@GRINFRA.COM

Vendor Details
Vendor Code: 351840
GSTN No : 19HHDPM3507H1Z8
M/s DRM ENTERPRISE
N A, PANAGARH BAZAR, TANKI TALA KANKSA, KANKSA
Panagarh Industrial Park, Paschim Bardhaman
BARDHAMAN- 713148, West Bengal, India
Tel. No: 9339096309
Email: dhiraj.mukherjee@silafine.com

PO No: 3600203319 **Date:** 19.04.2025
PR No: 130146934 **Date:** 16.04.2025
Plant Code: DHJV (DIBANG JV)
Buyer Name: [illegible]
Buyer Mob: [illegible] **Buyer Ph:**
Vendor Ref:

Billing Address
DIBANG POWER (LOT-4) CONS
VILLAGE-DAMBUK, 8 KILO, PO & PS-DAMBUK, DAMBUK HQ
LOWER DIBANG VALLEY- 792110, Arunachal Pradesh, India
GSTN NO.:12AAJAD0519K1Z0

Delivery Address
DIBANG POWER (LOT-4) CONS
VILLAGE-DAMBUK, 8 KILO, PO & PS-DAMBUK, DAMBUK HQ
LOWER DIBANG VALLEY- 792110, Arunachal Pradesh, India
Site Contact Details

We are pleased to place our order on you for the following materials/services subject to terms & conditions and instructions specified here.

SNo	Item Code / HSN Code Item Description	Delivery Schedule	UOM	Quantity	Rate ₹	Disc (%)	Amount ₹
1	501000605 / 28112200 **SILICA FUME/MICRO SILICA** PACKAGING TYPE : 25 KG PP LAMINATED BAGS	05.05.2025	KG	[illegible]	[illegible]		[illegible]

Remarks:

Basic	[illegible]
IGST	-
Total Order Value	[illegible]

IGST for Line No. : 1 has:18.0%

Amount in words: Rs. [illegible]

Special Instructions: Kindly put PO No. in all documents (Invoice, Challan & Lorry Receipt etc.)
Standard terms & conditions as per annexure enclosed.

Terms & Conditions:

1.**Price Basis & Incoterms:** FOR

For site

2.Packing & Forwarding: Inclusive

Inclusive

3.Transportation: Inclusive, to be borne by supplier

4.Taxation:

a) All statutory deductions will be made as per prevailing laws. Nothing in this Agreement shall relieve the Supplier from its responsibility to pay any tax including any tax that may be levied in India on profits made by it in respect of this supply / service.
b) GST Extra shall be applicable as mentioned above.
c) The Supplier has to provide GST compliant tax invoice/ credit notes/ debit notes containing all the mandatory particulars viz; Place of Supply/work, GSTN, HSN etc. as per GST Act and Rules. As per CBIC Notification, if e-invoicing provisions applicable to Supplier, then supplier shall raise only E-Invoice & E-credit notes/ E-debit notes from date of applicability. In case of non-compliance

For **DIBANG POWER (LOT-4) CONS**

Authorized Signatory

MASAKANI PARADEEP ROAD VIKAS LIMITED

(A wholly-owned subsidiary of Rail Vikas Nigam Limited)

CIN : U421010D2023GO1043519

No. MPRVL/BBS/Company/NHAI/MSV/2025/115
Date: 14 February 2025

To

The Authorised Signatory,
MSV International INC.
in association with D.N. Consultant,
Plot No.HV/58, Hadibandhu Bihar,
Silva Das, Kendrapara-754211

Sub: Rehabilitation and Upgradation from 4 to 8 laning of Chandikhole- Paradip Section of NH-53 (Old NH-5A) from Km. 60.000 to Km. 76.646 (Package-4) in the State of Odisha on HAM Mode (Package-4)-**Submission of Concrete Mix Design.**
Ref: Concession Agreement Dated.10.10.2023

Sir,

Please find herewith enclosed the Concrete Mix Design Report of M25PCC, M-40RCC, M-45RCC& Pile, M-50RCC and M-55RCC witnessed by your representative for your review. The sources for the materials used in the mix design are as mentioned below:-

1.	**Sources of Stone Quarry**	:	Chadhaidhara
2.	**Sources of Sand**	:	Mahanadi River
3.	**Cement**	:	Ultratech OPC 43 Grade
4.	**Micro Silica**	:	Silafile
5.	**GGBS**	:	Tata Steel
6.	**Admixture**	:	Kunaplast PC SP

Encl: As above.

Yours Sincerely,

14/02/2025

(Rajeev Ranjan Pandey)
Director
MPRVL/Bhubaneswar

Copy to:

1. The Project Director, National Highway Authority of India, NHAI Complex, Neulpur, Chandikhole, Jajpur-755024-for kind information

Rehabilitation and Up-gradation of 4 TO 8 Laning of Chandikhol-Paradeep section of NH-53(Old NH-5A) From Km 60.000 to km 76.646(Package-4) In the state of odisha on HAM Mode.

CONCRETE MIX DESIGN SUMMARY WITH ULTRATECH OPC CEMENT ,TATA GGBS & KUNAL ADMIXTURE

Sr.No	Mix Grade	Cementious Material (Kg/m³)	Cement (Kg/m³)	GGBS (Kg/m³)	W/C	Doges of Admixture (%)	Quantity of Ingredients for 1 M³ in kg					Remark
							20 mm	10 mm	R - Sand	Water	Admixture	
1	M-25 PCC	326	163	163	0.40	1.00	738	487	832	130	3.26	
2	M-40 RCC	440	220	220	0.33	0.80	774	511	639	145	3.52	
3	M-40 Bottom Plug	440	220	220	0.33	0.90	778	513	631	145	3.96	
4	M-45 RCC	472	236	236	0.32	0.80	763	503	613	151	3.78	
5	M-45 Pile	480	312	168	0.32	0.65	759	501	610	154	3.12	
6	M-50 RCC	530	397	133	0.31	0.65	733	483	583	164	3.45	
7	M-55 RCC	550	412	138	0.29	0.70	735	485	575	160	3.85	

CONCRETE MIX DESIGN SUMMARY WITH ULTRATECH OPC CEMENT & KUNAL ADMIXTURE

Sr.No	Mix Grade	Cement (Kg/m³)	Micro Silica (Kg/m3)	W/C	Doges of Admixture (%)	Quantity of Ingredients for 1 M³ in kg					Remark
						20 mm	10 mm	R - Sand	Water	Admixture	
1	M-25 PCC	300	0	0.40	1.00	766	505	850	120	3.00	
2	M-40 RCC	420	0	0.38	0.80	760	501	655	160	3.36	
3	M-40 Bottom Plug	424	0	0.40	0.70	746	492	643	170	2.97	
4	M-45 RCC	440	0	0.36	0.80	754	497	632	158	3.52	
5	M-45 Pile	444	0	0.39	0.70	738	484	635	173	3.11	
6	M-50 RCC	450	0	0.31	0.85	722	476	738	139	3.83	
7	M-55 RCC	450	25	0.31	1.06	702	463	717	147	4.75	

Contractors Representative

Concessionaire Representative

IE/NHAI Representative

BELANI NPR PROJECTS LLP
257 A,
DESHPRAN SASMAL ROAD,

PURCHASE ORDER

Business Unit : Block 4 - CTC :257 A,,DESHPRAN SASMAL ROAD, GST LOCATION- WEST BENGAL GSTIN- 19AAXFB0663K1ZV

DRM ENTERPRISE

PANAGARH BAZAR, TANKI TALA KANKSA, KANKSA, Panagarh Industrial Park, Paschim Bardhaman,
GST LOCATION- WEST BENGAL GSTIN- 19HHDPM3507H1Z8

AAXFB0663K

Order No.	:	105POIND0002624-25
Order Date	:	23-09-2024
Quotation No.	:	CS_0074_MICRO SILICA
Quotation Date	:	23-09-2024
Kind Attention	:	
Tele-	:	

Mode of Transport :

Delivery Address :
Sanctuary Project, Tollygunge-- 257/A, Deshpran Sasmal Road,-- Opposite of Tollygunge / Mahanayak Uttam Kumar Metro Station,KOLKATA,WEST BENGAL,INDIA 700033
GST LOCATION - WEST BENGAL
GSTIN - 19AAXFB0663K1ZV

Contact Person- Sagar Chowdhury
Contact No- 9[redacted]4

Please supply the following Materials/items in accordance with your Quotation and subject to following terms and conditions.

SlNo.	Code	HSN	Description	Budget Head	Unit	Quantity	Rate	Amount	Indent No.	Delivery D
1	3255375	28112200	MICRO SILICA Silica Fume (SIO2 86%) Source: Bhutan Silafine: Densified Silica Fume Grade: D860 CGST(NON ITC)@ 9% -[redacted], SGST (NON ITC)@ 9% -[redacted]	Civil Expenses- Super Structure	KGS	4,000.000	[redacted]	[redacted]	105IND0002724-25	23-09-2024

BASIC	[redacted]
CGST(NON ITC)	[redacted]
SGST(NON ITC)	[redacted]
Gross	[redacted]

Rupees [redacted]

Terms & Conditions :

1. The above Order Value Is Inclusive Of GST.

2. Payment - Payment will be made after received of materials & submission of Tax Invoice at site.

3. Delivery: FOR at site, unloading is Including. The delivery schedule will be share by store personnel.

4. Client reserves the right to get the materials tested. In case the client found the testing result dissatisfactory the material shall be rejected.

5. Return Policy - In case of Material Quality is not as per IS - 15388 ASTM C - 1240-01 mention in P.O & also the material manufacturing date is not in current month, then you have to return the same immediately at your own Cost after confirmation from us.

Created By: npr.swaraj

For, BELANI NPR PROJECTS LLP
Authorised Signatory

This Purchase Order Is Subject To Juridiction Of High Court Only.

Gmail

DHIRAJ MUKHERJEE <drmenterprise2023@gmail.com>

Proforma Invoice for 30 MT Silicafume

Mahavir Mandir Patna <mahavirmandir@gmail.com> Sat, Oct 26, 2024 at 4:40 PM
To: DHIRAJ MUKHERJEE <drmenterprise2023@gmail.com>
Cc: sroy@tce.co.in, Viraat Ramayan Mandir <viraatramayantemple@gmail.com>, jainendra1963@rediffmail.com

Please send us your proforma invoice for 30 MT of Silica fume at the earliest.

K. Sudhakaran
Temple Superintendent

Contact Us :
Mahavir Mandir Patna
(Shri Mahavir Sthan Nyas Samiti)
Near Patna Railway Junction,
Bihar India - 800001
Phone : 0612-2223789
E-mail : mahavirmandir@gmail.com
Website : www.mahavirmandirpatna.org

GSTIN 19HHDPM3507H1Z8 Original Copy ( ) Duplicate Copy ( )

TAX INVOICE

DRM ENTERPRISE

PANAGARH BAZAR, TANKI TALA KANKSA, KANKSA, Panagarh Industrial Park
Paschim Bardhaman, West Bengal, 713148

Mobile No. 9339096309 Email Id- sales@silafine.com

Party Name	:	**SRI MAHAVIR STHAN NYAS SAMITY**	Invoice No.	:	DRM/24-25/030
Address	:	MAHAVIR CANCER SANSTHAN PHULWARI SHARIF, PATNA BIHAR - 801505	Date	:	14-11-2024
			Sale Type	:	INTERSTATE SALE
			PO No	:	DRM/PI004/24-25
Party GST NO	:	10AABTS7972G1ZG	PO Date	:	29-10-2024
State Code	:	BIHAR - 801505-(10)	Vehicle No	:	UP22AT0991
Contect Persion	:		E-Way Bill	:	8914 6792 0116
Phone No	:		LR No	:	25

Ship To : MAHAVIR CANCER SANSTHAN, Viraat Ramayan Mandir, Kaithwaliya
Chakia Kesariya Highway, Block - Kalyanpur, East Champaran, Bihar,BIHAR-845432

S.NO.	ITEM NAME	HSN CODE	QUANTITY	RATE	UNIT	TOTAL AMOUNT
1	SILAFINE DENSIFIED SILICA FUME	28112200	30.00	[redacted]	MTS	[redacted]
			Total Qty.	30	Amount	[redacted]
Amount in Words -	[redacted]				IGST 18%	[redacted]
					Total Amount	₹ [redacted]0.00

Bank Details :- BANK NAME: UNION BANK OF INDIA (KANSKA)
A/c Holder Name:- DRM ENTERPRISE
Account No :- 211611010000145
IFSC - UBIN0821161

Authorised [redacted]

DRM ENTERPRISE KANKSA Panagarh, 713148, W.B.

For DRM ENTERPRISE

Vendor's Name & Address

DRM ENTERPRISE
Panagarh Bajar, Tankitala,
Burdwan
Burdwan, 713148
India

Phone No.
Buy-from Vendor 4969
GSTIN 19HHDPM3507H1Z8
State Code 19

CHRYSO
SAINT-GOBAIN

CHRYSO India Pvt Ltd
JLNO. 93,MOUZA-JARURAH,
DELHI ROAD, SUGANDHA PANCHAYAT,
HOOGHLY
712138

Phone No. 022-2768 5991
PAN No. A[redacted]M
GSTIN 19AABCT0878M1ZS
Bank ICICI BANK LIMITED
Account No. [redacted]2
IFSC [redacted]0

13 November 2024
Order No. POPO24-0420
Order Date 13-11-2024
Amendment No. 0

Prices Including VAT No

Description	Quantity	HSN Code	Unit of Measure	Direct Unit Cost	Expected Receipt Date	Discount %	Line Discount Amount	CE Duty %	Amount
CHRYSO SILICA MS	50,000.00	28112200	KG	[redacted]	14-11-24			0	[redacted]

Total INR	[redacted]
Total INR Excl. Taxes	[redacted]
Freight Charges	**0.00**
IGST 0 %	0.00
CGST 9 %	[redacted]
SGST 9 %	[redacted]
UGST 0 %	0.00
TDS	0.00
Total INR Incl. Taxe	[redacted]

E.C.C/C.E.X. Regn. No.
Range
C.E. Division
Commissionrate
VAT/S.Tax% 0
S.T.Form

Note: Material will be accepted subject to our lab approval.
Amount in words:
[redacted]

Payment Terms 10 Days
Delivery Schedule 14-11-2024
Shipment Method FOR SITE

Ship-to Address
CHRYSO India Pvt Ltd
JLNO. 93,MOUZA-JARURAH,
DELHI ROAD, SUGANDHA PANCHAYAT,
HOOGHLY, 712138
India
GSTIN : 19AABCT0878M1ZS
State Code : 19

Special Instruction

Instruction to Vendor :
1. The material should confirm to the specification mentioned.
2. Please mention our Purchase Order No. in your Invoice,Despatch Documents & other relating Correspondence.
3. Please send your Invoice(in duplicate) alongwith the duplicate copy of the Purchase Order.
4. Please indicate your S. Tax Regn. No. in your Invoice to claim applicable S. tax.
5. Transit insurance shall be done by you as per our specific instruction only.

This order is subject to the terms and conditions, mentioned above.

CHRYSO India Pvt Ltd

This is Computer generated Purchase Order, No Signature required.

Purchase Order:
5000116574
Date
19.07.2024

PRISM JOHNSON LIMITED
RMC (India) Division

Complete Concrete Solutions

Vendor Code	**: 10003052**
Name	**: DRM ENTERPRISE**
Address	: TANKI TALA KANKSA,
	: Panagarh Industrial Park,
	: Paschim Bardhaman-713148
GSTIN	: 19HHDPM3507H1Z8
State	: 19 - West Bengal
PAN	: HHDPM3507H
CONTACT NO	**: Dhiraj -**
Purchaser Name	: Raj
Email ID	:
Mobile Number	:

Delivery Address:
Name : Prism Johnson Limited-RMC India Division
Betkuchi Comm. Concrete

Address	: DAG NO.2875/2876,
	: VILL.-BETKUCHI,
	: Guwahati-781034
GSTIN	: 18AAACP6224A1ZW
State	: 18 - Assam
Our Reference	:
Your Reference	:

Sr. No	HSN/SAC	MaterialCode/Description	UOM	Delivery Schedule	Qty	Rate/Unit (INR)	Gross Amount (INR)
10	3824	1000000132 Microsilica BHUTAN SOURCE SUPPLY IN 25 KG BAG IGST @ 18.00 %	MT	19.08.2024	10.000	[redacted]	[redacted]
						Assessable Value:	[redacted]
						SGST:	0.00
						CGST:	0.00
						IGST:	[redacted]
Total Value: [redacted]						**Total Value:**	[redacted]

Terms of Payment :Payable in 30 Days

Printed on 19-Nov-24 at 19:21

PURCHASE ORDER

DURAMIX CONCRETE INDIA PRIVATE LIMITED

PLOT NO. 1205, NUAHAT, TELENGAPENTHA,
CUTTACK-754001

State	: Odisha	PAN	: AAHCD7652B
State Code	: 21	GST	: 21AAHCD7652B1Z2
Phone No.	: 9861934840/ 9861934841	CIN	: U45201OR2020PTC033082
Email	: support@duramix.in		

Billed Address

DRM Enterprise
Panagarh Bazar, Tanki Tala Kanksa,Kanksa,
Panagarh Industrial Park, Paschim Bardhaman,
GSTIN/UIN : 19HHDPM3507H1Z8
PAN/IT No : HHDPM3507H
State Name : West Bengal, Code : 19

Order No. : 1TP2425475
Order Date : 19-Nov-24
Ref Quot. No : DMRQ/55/24-25
Payment Term : 90 Days

SI	PARTICULARS	HSN/SAC	QTY	RATE	AMOUNT
1	**MICROSILICA** (Note) ***Silafine. Densified Silica fume D 86***	28112200	5,00,000.000 KG	[redacted]	[redacted]
	Sub Total		5,00,000.000 KG		[redacted]

Amount in words : [redacted]

IGST	[redacted]
Grand Total	[redacted]

Declaration

Terms & Conditions:

1. The above-mentioned rates are inclusive of all taxes, transportation etc. Payment of bills or invoices of the Supplier shall be made as per the terms of the Purchase Order.
2. Delivery as per the Plant requirement.
3. Order acceptance must be submitted on receipt of the order . If not received within 2 days of dispatch of order it would be considered as acceptance of order.
4. The Company shall have the option to reject any invoice , which is not accompanied with the requisite documents or otherwise deemed fit by the Company. In such event, the Supplier shall submit the revised invoice along with the requisite documents .
5. All statutory levies i.e. Customs, SGST, CGST and IGST etc. will be charged separately in the invoice by the Supplier . Kindly ensure to mention activity SAC code /material HSN Code in every invoice .
6. Please quote the purchase order number & po line-item no. in all your challan, bills & correspondence with us.
7. The Supplier shall be required to submit valid Royalty Challans issued by the Department of Steel & Mines, Odisha for the raw materials supplied especially in Aggregate & Sand. Non-compliance with the submission of valid Royalty Challans shall result in withholding of vendor payment until the necessary documentation is provided .
8. Supplier shall be responsible to issue documents required for movement of goods and the logistic partner shall not be liable for any loss arising due to confiscation of goods by Government agencies on account of lack of proper documents or any miss -declaration.

Customer's Seal and Signature	**for DURAMIX CONCRETE INDIA PRIVATE LIMITED** DURAMIX CONCRETE (INDIA) PVT. LTD. BHUBANESWAR Authorised Signatory

SUBJECT TO CUTTACK JURISDICTION

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DRM ENTERPRISE

SILAFINE

CALL FOR INQUIRY
+91 9339096309

DRM Enterprise
Panagarh Industrial Park
Prayagpur: 713214,
Paschim Burdwan, WB
Email: sales@silafine.com