Microsilica (Silica Fume)

Product Overview:

- **Product Type:** Supplementary Cementitious Material (SCM)
- **Description:** Microsilica, also known as silica fume, is an ultrafine powder produced as a byproduct of the silicon and ferrosilicon alloy production process. It consists of very fine spherical particles rich in silicon dioxide (SiO2). Microsilica is a highly reactive pozzolan and is used to enhance the properties of concrete and other construction materials.
- **Source:** China, Malaysia, South Africa, France & Spain

Key Features:

- **High Reactivity:** Microsilica is highly reactive and provides excellent pozzolanic properties, improving concrete strength, durability, and other properties.
- **Reduced Permeability:** It significantly reduces the permeability of concrete, making it highly resistant to chloride ion penetration and sulfate attack.
- **Increased Strength:** Microsilica contributes to increased compressive and flexural strength in concrete.
- **Reduced Heat of Hydration:** It helps in controlling the heat generated during the cement hydration process.
- **Enhanced Durability:** Microsilica improves resistance to alkali-silica reactivity (ASR) and enhances freeze-thaw resistance.
- **Environmental Benefits:** Using Microsilica in concrete reduces the carbon footprint, making it a sustainable choice for construction projects.

Applications:

- **High-Performance Concrete:** Microsilica is used in high-strength and high-performance concrete to enhance strength, durability, and impermeability.
- **Shotcrete:** It is utilized in shotcrete applications, such as tunnel linings, to achieve high strength and resistance to harsh environmental conditions.
- **Bridge Decks:** Microsilica improves the durability of bridge decks, making them more resistant to corrosion and extending their service life.
- **Self-Compacting Concrete:** It is used in self-compacting concrete mixes to enhance flowability and strength.
- **Pre-cast Concrete:** Microsilica is valuable in pre-cast concrete products, including panels, beams, and columns.
- **Grouts and Repair Materials:** It enhances the properties of grouts and repair materials for structural repairs.

Technical Specifications:

Properties	Unit	ASTM C1240
Silicon Dioxide (Si02)	%	85 Min
Moisture Content (H2O)	%	3.0 Max
Loss on Ignition (L0I)	%	6.0 Max
CI	%	0.1 Max
Surface Area	%	>15m2/g
Pozzolanic Activity Index (7 days)	%	≥105
Fineness at 45-micron sieve	%	10 Max

Quality Standards:

Microsilica products conform to ASTM C1240 and other international standards for supplementary cementitious materials.

Storage and Handling:

Store Microsilica in a dry environment to prevent moisture absorption. Handle with care to minimize dust generation.

Environmental Benefits:

Using Microsilica in construction materials significantly reduces greenhouse gas emissions and conserves natural resources. It is an environmentally responsible choice for sustainable construction practices.

masheed is a **leading supplier** of Microsilica in Saudi Arabia. We maintain a leading position by delivering the best value to all our stakeholders in a sustainable manner. We are dedicated to both **environmental preservation and societal progress**

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