Multicrete Silica Fume

Technical Data Sheet

General Overview:

Silica Fume (also known as microsilica) is a pozzolanic material used to produce high performance concrete with increased strength, impermeability and durability characteristics.

Enhanced Concrete Properties:

The addition of Silica Fume leads to several improvements:

- **Increased Strength –** Higher compressive and flexural strengths
- **Reduced Permeability –** Silica Fume fills voids between cement particles, making the concrete less permeable to water and harmful substances such as chlorides
- **Enhanced Durability –** Increased resistance to chemical attacks, abrasion and corrosion, especially from deicing salts and marine environments
- **Enhanced Bonding –** Silica Fume improves the bond between the paste and aggregates further strengthening the concrete

Silica Fume is available in different forms, including as-produced, densified or compacted and slurried, to facilitate handling.

Silica Fume has been specially developed to provide enhanced bulk material flow and handling characteristics., providing efficient bulk transportation and pneumatic unloading.

Physical Properties (Estimated):

Parameter	Standard	Results
Appearance		Light Grey Powder
Specific Gravity	CSA A3001	2.15
Bulk Density	ASTM C1240	650 kg/m^3
Oversize Fineness: 45 microns	CSA A3001	<1%
PSA Index (7 Days)	CSA A3001	114%
Autoclave Expansion	CSA A3001	0.04%
Tendency to Entrap Air	CSA A3001	No Foam

Chemical Analysis (Typical):

Component	Units	Standard	Results
Silicon Dioxide (SiO_2)	wt %	CSA A3001	92.0
Sulphur Trioxide (SO_3)	wt %	CSA A3001	0.1
Loss On Ignition (LOI)	wt %	CSA A3001	3.0
Moisture Content	wt %	CSA A3001	0.1 – 0.5

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Yield, Packaging and Shelf Life

- Multicrete Shotcrete Materials are available in 1650 kg bulk bags that, when mixed with water, will produce one cubic yard of concrete.
- These bulk bags are capped and wrapped in durable poly plastics to prevent water from entering these bags when stored outside.
- Additional protection (covering with tarps or placed into a structure) from the elements may be required if bags are to be left outside for longer periods of time.
- If protected from the elements, bagged materials should be used up within one calendar year. If more time has passed, a couple simple tests can determine whether this older material is good for use.
- Custom packaging between 500 kg and 2200 kg is also available. Please contact Multicrete to discuss your packaging needs.

Safety Precautions

Shotcrete contains Portland cement, silica fume and other carefully selected additives. Normal safety wear such as rubber gloves, dust masks and safety glasses used to handle conventional cement-based products should be worn. Safety Data Sheets (SDS) are available upon request.

Website

For more information about Multicrete Group and all our related products visit us at https://multicretesystems.com/ or call us at (204) 262-5900