Product Data Sheet

PRODUCT NAME
St Marys Silica Fume Cement (GUb-SF)

MANUFACTURER
St Marys Cement
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PRODUCT DESCRIPTION
St Marys Silica Fume Cement is an intergound blended cement consisting of silica fume and normal portland cement that is often used in high performance concrete.

St Marys offers the convenience of a preblended product in bulk or in packaged form with the assurance of consistency to the engineer/architect. Silica fume is the by-product of the manufacture of silicon metal in electric arc furnaces and is captured by dust collectors or bag houses. Our silica fume is over 90% pure silicon and is extremely fine; in fact, silica fume particles are approximately 60 times finer than Portland cement particles. As a highly reactive pozzolan, silica fume combines with cement to enhance the strength and durability characteristics of concrete.

BASIC USE
It is typically proportioned for use in concrete with and without other supplementary cementitious materials (SCMs). When used with other SCMs it is typically proportioned so that the amount of silica fume represents between 3-6% by mass of the total quantity of cementitious materials in the concrete mix.

Concrete manufactured with St Marys Silica Fume Cement can also be used in concrete exposed to freeze thaw conditions and permits the development of a stable air void system to meet the requirements for extended service life concrete.

BENEFITS
St Marys Silica Fume Cement is ideal for high performance concrete and is often used in applications such as commercial high-rise and tower construction where specifications for compressive strength exceed 50 MPa.

Concrete with St Marys Silica Fume Cement exhibits accelerated strength development resulting in early form stripping and quicker turnover. This is a benefit to the pre-cast concrete manufacturer

Upon hydration, St Marys Silica Fume Cement produces a concrete that is denser with a pore structure that is less permeable than that of a standard concrete mix. This feature makes St Marys 10SF ideal for a wide range of applications – from containment tanks, to bridge and parking decks, to pipe construction. With decreased permeability, Silica fume concrete has been shown to be effective in protecting reinforcing steel against corrosion.

Silica fume concrete has proven to be effective in resisting alkali aggregate reactivity and sulfate attack, as well as the ingress of de-icing salts and other chemical agents. In practice, higher resistance to salt scaling results in structures such as bridge decks and parking garages that maintain their service live over a longer period of time.

TECHNICAL DATA

APPLICABLE STANDARDS

Type GUb-SF conforms to CSA A3001- Cementitious materials for use in concrete

PHYSICAL AND CHEMICAL PROPERTIES

St Marys Silica Fume Blended Cement has similar handling characteristics to Portland cement powder.

St Marys Silica Fume Blended Cement darker than normal portland cement and has a specific gravity of 3.07.

PRECAUTIONS

Cementitious materials can be harmful to skin and eyes. Exposed skin areas should be washed with water as soon as possible. If cement gets into the eyes, rinse thoroughly with water and seek immediate medical attention. Wear appropriate clothing and protective gear when handling these materials. Consult Safety Data Sheets (SDS) for detailed information.

AVAILABILITY

Contact manufacturer for information on distribution and availability.

WARRANTY

Manufacturer will provide mill test certificates that the products meet and exceed applicable CSA Specifications.

St Marys Cement will not guarantee finished work, having no control over the use of this product.

TECHNICAL SERVICES

For technical assistance contact the local St Marys Cement office.