BUILDING TRUST
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PRODUCT DATA SHEET

Sikacrete® M-100

Metakaolin Powder

PRODUCT DESCRIPTION

Sikacrete® M-100 is highly reactive metakaolin pozzolan for portland cement concrete, grouts and mortars applications. Sikacrete® M-100 meets the chemical requirements of ASTM C-618, Class N pozzolan.

WHERE TO USE

Sikacrete® M-100 is recommended for all high performance, high strength concrete and cementitious applications. Sikacrete® M-100 is highly beneficial for concrete that needs to resist water and chemical ingress and concrete required to resist mechanical abrasion. Due to its cream white color, Sikacrete® M-100 is also suitable to produce colored concrete and architectural precast concrete products.

CHARACTERISTICS / ADVANTAGES

How it works: Sikacrete® M-100 is a pozzolanic material, it is produced by thermally activating kaolin clay to produce an amorphous and chemically reactive material. Unlike other supplementary cementitious materials like flyash, slag and silica fume, Sikacrete® M-100 is not a by-product, it is specifically manufactured to its specification that improve the properties of concrete. The average particle size of Sikacrete® M-100 is 5 µm.

Pozzolanic action: Sikacrete® M-100 reacts with the free lime, Ca (OH)2 produced during the hydration process of cement to produce Calcium Aluminates and additional Calcium Silicate hydrates which is responsible for the strength of the cementitious mixture or concrete.

Void Reduction: The fine particles of Sikacrete® M-100 fill the tiny voids and capillary pores within the cement matrix and significantly reduce porosity to produce an extremely dense and impermeable concrete.

Advantages:

- Increased early and later age compressive and flexural strength, which allows flexibility in structural design and allows early stripping of forms.
- Increased resistance to bleeding and segregation.
- Improved abrasion and erosion resistance, which increases concrete durability in hightraffic areas.
- Reduced permeability, which increases durability, resists chemical attack and increases service life of concrete.
- Improved corrosion resistance, due to reduced chloride ingress in concrete.
- Improved concrete performance in freeze thaw conditions.
- Reduced deleterious expansions in concrete due to alkali-silica reaction.
- Produces lighter color concrete due to its creamy white color.
- Reduced efflorescence.

Sikacrete® M-100 does not contain any calcium chloride nor any other intentionally added chloride containing ingredients.

PRODUCT INFORMATION

Packaging	Sikacrete® M-100 is available in 18.1 kg (40 lb.) repulpable bags, 1000 kg

	(2200 lb.) super sacks and bulk delivery.
Appearance / Colour	Creamy White
Shelf Life	Shelf life when stored in dry warehouse conditions above 2 °C (35 °F) is 24 months.
Storage Conditions	Sikacrete® M-100 should not exposed to wet or moist conditions, this can cause hardening of the material. Once hardened, the material is not suitable for use in concrete.
Specific Gravity	Approx. 2.6

APPLICATION INFORMATION

Recommended Dosage	Typical dosage rates range between 7 to 15 % of the total cementitious mass. Higher dosages up 25 % may be used for improved performance or to meet specific project requirements. Sika strongly recommends that trial batches be performed using project materials in order to determine the optimum dosage for specified project requirements.
Mixing	Sikacrete® M-100 may be stored in bulk storage in a cement silo and be batched in the same manner as bulk cement. The 40 lb. bags of Sikacrete® M-100 are repulpable or shredable bags, these bags are intended to be added directly to central or truck mixer without opening. The bags are designed to disintegrate through a combination of wetting and grinding the paper during concrete mixing. **Limitations**: Do not introduce repulpable bags into concrete mixes with low water cementitious ratios and smaller size aggregates as these mixes may not develop sufficient mixing energy to fully repulp the bags. Always determine repulpability of bags by pretesting mix designs and batch sequence. Please contact your local Sika representative for more information and assistance. **Compatibility with cement and other admixtures**: Sikacrete® M-100 is compatible with all known portland cements manufactured under ASTM specifications. The low water cement ratios typically specified for concrete containing metakaolin make the use of a high range water reducer, such as a ViscoCrete® or a Sikament® product essential in most applications. Sika recommends the use of Sika air entraining admixtures where air entrained concrete is required. **Workability and Finishing:** Sikacrete® M-100 may affect the finishing characteristics of the concrete, particularly where warmer ambient conditions are encountered. The amount of bleed water from the concrete also may be reduced and Sika recommends the use of a finishing aid and evaporation retarder such as SikaFilm® to aid finishing.

BASIS OF PRODUCT DATA

Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.

ENVIRONMENT, HEALTH & SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for exact product data and uses.

LEGAL NOTES

The information, and in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any recommendations, or from any other advice offered. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request or may be downloaded from our website at: www.sika.ca

Sika Canada Inc.
Head Office
601, avenue Delmar
Pointe-Claire, Quebec
H9R 4A9
1-800-933-SIKA
www.sika.ca

Other locations
Boisbriand (Quebec)
Brantford; Cambridge;
Sudbury; Toronto (Ontario)
Edmonton (Alberta)
Surrey (British Columbia)