Product Data Sheet
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Construction

Sikacrete®-PP1 TU

Polymer Modified Silica Fume Based Shotcrete Admixture

Product Description	**Sikacrete®-PP1 TU** is a one-component, polymer-modified shotcrete admixture in powder form, based on Sika's silica fume technology. Suitable for use in hot and tropical climatic conditions.
Uses	**Sikacrete®-PP1 TU** is used to produce high-quality gunite for application by the dry-spray and wet-spray methods. It is particularly suitable for ■ permanent tunnel linings, ■ structural shells ■ applications calling for high-strength, high-density gunites.
Advantages	**Sikacrete®-PP1 TU** contains extremely fine (0.1µm) latently reactive silicone dioxide. The presence of this substance greatly improves the internal cohesion and water receptivity of the fresh concrete. In the set concrete the latently reactive silica fume forms a chemical bond with the lime released during hydration. The additional crystal formation significantly improves the strength and density of the set cement matrix. Gunite mixes containing **Sikacrete®-PP1 TU**, with its specially formulated blend of SiO_2 and selected plasticizing and waterproofing polymers, exhibit the following beneficial properties: ■ Greatly reduced rebound ■ High early strengths resulting from lower w/c ratios ■ Greatly increased ultimate strengths ■ Greatly increased impermeability to water ■ Increased impermeability to gases ■ Reduced chloride penetration ■ Outstanding resistance to frost and freeze-thaw cycles, subject to correct choice of mix design and aggregate grading ■ Increased resistance to abrasion ■ No complicated dosing equipment is required; the dry powder is simply added directly into the concrete mixer. **Sikacrete®-PP1 TU** contains no chlorides or other potentially corrosive substances
Certificates	EMPA, Federal Material Testing Laboratory (Dübendorf, Switzerland) LPM, Laboratory for Preparation and Methodology (Beinwil am See, Switzerland)

Product Data

Type	A polymer modified, latently hydraulic blend of active ingredients
Form	Grey-black Powder

Packaging	15 kg Bags. Special packs and bulk silo deliveries are also available on request
Storage Condition	Store in a dry area in unopened original packing at temperatures between +5°C and +35°C. Protect from direct sunlight.
Shelf life	12 months minimum from production date if stored properly in original unopened packaging

Technical Data

Density (Bulk at 20ºC)	0.70 ± 0.1 kg/lt.

Application Details

Dosage	4 - 10% by weight of cement. It is advisable to conduct trial mixes to establish exact dosages.
Compatibility	For the production of the basic mix for shotcrete applications the following Sika products are normally used: ■ All SikaTard types ■ Sikament ■ SikaPump Tests have shown, and the manufacturer warrants, that this product is fully compatible with the Sigunit range of set accelerators.
Method of Application	For dry-spray gunite, **Sikacrete®-PP1 TU** is added to the mixer at the batching plant after the addition of the cement. Optimum mixing time: 90 seconds. For wet-spray gunite, **Sikacrete®-PP1 TU** is added to the concrete at the batching plant before the gauging water. Optimum mixing time: 90 seconds. The quantity of water should be adjusted to suit the dosage of **Sikacrete®-PP1 TU** and the final consistency required.
Curing	Where the work is exposed to intense sunlight or strong air currents, the freshly applied mortar should be kept damp and prevented from drying out rapidly. For optimum strengths and performance characteristics the material should be applied by a skilled nozzle man, and good curing practice should be observed at all times.
Cleaning	Uncured mortar should be removed from tools with water. To clean dry-spray cement guns simply blow -out with compressed air. Once cured, the mortar can only be removed mechanically.
Remarks	Gunite mixes incorporating **Sikacrete®-PP1 TU** should be handled and placed in the same way as conventional mixes. Standard good guniting practice should be observed throughout, and proper curing procedures should be initiated immediately after placement. Please consult Sika's Technical Services Department for further advice.
Notes	All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

Safety

For information and advice on the safe handling, storage and disposal of chemical products, users should refer to the most recent Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related data.

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 written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. 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.

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