Product Data Sheet
Edition 12/12/2005
Identification no: CM-corp

Construction

Sika®-101 HD

High Density Thin-layer Sealing Mortar

Product Description	**Sika®-101 HD** is one-part, cementitious, silica fume modified high density thin layer protective sealing mortar.
Uses	As a rigid thin-layer protective sealing mortar for the concrete surfaces of: ■ Reservoirs ■ Water-tanks ■ Structures subject to water ingress ■ Rigid waterproofing in general
Characteristics / Advantages	■ Easy handling ■ Suitable for mechanical application ■ Impervious to water ■ Frost resistant ■ Easy to repair ■ Permeable to water vapour ■ One part ■ Non flammable ■ Approved for potable water contact ■ Resistant to electro-chemical corrosion (by stray currents, etc.)
Tests	
Approval / Standards	Drinking water contact approval by the Health Laboratory of the Canton of Zurich. Resistant to electro-chemical corrosion (study of the Swiss Federal Institute of Technology). KTD-Approval “Prüfstelle Wasser, Karlsruhe” for Drinking Water Contact.

Product Data

Form	
Appearance /Colour	White powder
Packaging	25 kg bags

Storage

Storage Conditions/ Shelf-Life	15 months from date of production if stored properly in undamaged and unopened, original sealed packaging in dry and cool conditions between 5°C and 35°C. Protect from direct sunlight. Material in opened bags must be used the same day.

Technical Data

Chemical Base	Portland cement, silica fume, selected aggregate and admixtures.
Density	Fresh mortar density: ~ 2.10 kg/lt
Grading	D_{max}: 1.0 mm
Layer Thickness	1.5 mm minimum. 2.5 mm maximum.
Thermal Expansion	$13 . 10^{-6}$ per °K
Water Vapour Diffusion Coefficient (μH_2O)	~ 50

Mechanical / Physical Properties

Compressive Strength	28 days = ~ 50 to 60 N/mm²	(According to EN 196-1)
Flexural Strength	28 days = ~ 8 to 10 N/mm²	(According to EN 196-1)
Bond Strength	2.0 to 3.0 N/mm²	
E-Modulus	Static: ~ 27 kN/mm²	

System Information

Application Details

Consumption / Dosage	Dependent on the substrate roughness and profile. As a guide, on a level, smooth surface ~ 2.1 kg of fresh mortar/m²/mm (excluding allowances for loss wastage, surface profile and porosity) or generally 1.8 kg of powder per m² per mm thickness. 1 bag of 25 kg yields ~ 14.3 lt of mortar. Recommended consumption: Water-head up to 1 m: 4 - 6 kg/m² Water-head higher than 1 m: 6 - 8 kg/m² Rising damp: 3 - 4 kg/m²
Substrate Quality	The substrate must be structurally sound and free of all traces of contaminants, loose and friable particles, cement laitance, oils and grease etc. The concrete “pull off” (tensile strength) strength must be > 1.0 N/mm².
Substrate Preparation	The substrate must be prepared by suitable mechanical preparation techniques such as high pressure water jetting, needle guns, blast cleaning, scabblers etc., and properly pre-wetted to a saturated surface dry condition.

Application Conditions / Limitations

Substrate Temperature	+5°C min. / +35°C max.
Ambient Temperature	+5°C min. / +35°C max.

Application Instructions

Mixing	Dependent on the required consistency: 4.75 lt to 5.25 lt clean, cool water per 25kg bag of **Sika®-101 HD**.
Mixing Tools	Dependent on the desired mixing ratio, pour the correct amount of water into a suitable mixing container. While mixing, slowly add the total quantity of powder. Mix mechanically for at least 3 minutes using an electrical low speed mixer to avoid entraining too much air (maximum 500 rpm). One or two armed basket type, forced action or stand mixers are recommended.
Application Method / Tools	The surface must be pre-wetted to a saturated surface dry condition before application. Apply the first layer with a toothed trowel (teeth of 3 - 5 mm length), followed by a second coat applied by a flat edged trowel (plastic or stainless steel) to the required thickness. The 2nd coat shall be only applied after the first layer has hardened sufficiently. **Sika®-101 HD** may also be mechanically spray applied in two layers of 1.5 to 2.5 mm each with suitable wet mortar spray machine. An even surface texture may be achieved by rubbing it down with a suitable synthetic sponge. Additional smoothing of the mortar results in a tight surface that can easily be cleaned (important for drinking water reservoirs).
Cleaning of Tools	Clean all tools and application equipment with water immediately after use. Hardened / cured material can only be removed mechanically.
Potlife	~ 30 - 60 minutes (at +23°C)
Waiting Time / Overcoatability	Waiting time between coats: 24 hours min.
Notes on Application / Limitations	Avoid application in direct sun and/or strong wind. Apply only to sound, prepared substrates. Apply at least 2 coats. Do not exceed maximum layer thickness. Protect freshly applied material form freezing conditions and rain. When used in contact with drinking water, ensure associated Sika® products and construction materials also comply with the local regulations for drinking water. Stray currents may electrochemically dissolve cementitious material. The Consultant / Contractor have to ensure that necessary design details are implemented to avoid the presence of stray currents.

Curing Details

Curing Treatment	It is essential to cure **Sika®-101 HD** immediately after application for a minimum of 5 days to ensure full cement hydration and to minimise cracking. Use polythene sheeting or other similar methods.
Applied Product ready for use	Prior to the filling of coated drinking reservoirs, a curing time of at least 7 days must be observed and the coated surfaces must be thoroughly cleaned and rinsed with clean water first.

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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.
Local Restriction	Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the product uses.
Health and Safety Information	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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