BUILDING TRUST

PRODUCT DATA SHEET

Sikacrete®-801 Fibre CZ

Fibre Modified, High Performance, Class R4 Dry Sprayed Cementitious Micro-Concrete with Dust Reduction Technology for Large Volume Repairs

PRODUCT DESCRIPTION

Sikacrete®-801 Fibre CZ is one-part repair mortar for dry spraying, containing cement, specially selected fibres, additives and graded aggregates with grain size size up to 4 mm. Sikacrete®-801 Fibre CZ is a mortar with 'normal' pot life and meets the requirements of EN 1504-3, Class R4. Reduced shrinkage enables it to be applied in thick layers by the dry spraying method, and dust reduction technology creates a cleaner, safer working environment.

USES

Sikacrete®-801 Fibre CZ is suitable for:

- Large scale repairs of weathered, cracked, spalling and / or damaged structural concrete.
- Highways works.
- Bridges (columns, piers, sofits, beams, parapets, abutments, etc.).
- Marine structures (quays, piers, jetties, sea walls, docks, dry docks, marinas, offshore platforms, coffer-dams, caissons, etc.).
- New construction.
- Lining and structural enhancement of mines and tunnels.
- Viaducts and culverts.
- Façades and retaining walls.
- Embankment and rock stabilisation.
- Encasing steel sections.
- Cooling towers, chimneys and pylons.
- Concrete restoration (Principle 3, Method 3.3 of EN 1504-9): Restoring the original concrete to the originally specified profile and function. Restoring the concrete structure by replacing part of it by spraying concrete or mortar.
- Structural strengthening (Principle 4, Method 4.4 of EN 1504-9): Increasing or restoring the structural load bearing capacity of an element of the concrete structure by adding mortar or concrete.
- For interior and exterior use.
- Repair of fire damaged concrete structures.
- In place of Class R1, R2 and R3 mortars.
- Low resistivity - can be used with cathodic protection systems.

CHARACTERISTICS / ADVANTAGES

- One component, ready to use.
- Economical - low rebond.
- Large areas can be completed quickly and easily.
- Low shrinkage.
- High cohesion with most substrates.
- Good workability with low waste.
- Good stability during overhead applications.
- High build.
- Class R4 according to EN 1504-3.
- Rapid strength development.
- Low permeability.
- Good adhesion to most building materials.
- High freeze-thaw resistance.
- Dust reduced for a cleaner, safer application.
- Can be easily finished to a high standard.
- Fibre modified for enhanced performance (increased toughness, minimal shrinkage cracking, improved stress distribution and strain reduction).
- Fast setting properties and fibre modification reduces the effect of tidal wash out in coastal or rising water situations.
- Low resistivity - can be used with cathodic protection systems.
- Overcoatable with Sika® reprofiling / levelling / smoothing mortars and coatings.

APPROVALS / STANDARDS

- CE Marking and Declaration of Performance in accordance with EN 1504-3.

PRODUCT INFORMATION

Chemical Base	Pre-mixed cementitious powder containing cement, fibres, graded aggregates, and synergistic admixtures.	
Packaging	25 kg bag	
Shelf Life	12 months	
Storage Conditions	Store properly in original unopened, sealed and undamaged packaging in dry and cool conditions.	
Appearance / Colour	Grey colour	
Maximum Grain Size	D_{max}: ~4 mm	
Density	~2310 kg/m³ NOTE: Hardened density determined after 28 days.	
Soluble Chloride Ion Content	≤ 0.05%	EN 1015-17

TECHNICAL INFORMATION

Compressive Strength	≥ 45 MPa NOTE: Determined at 28 days. 7 Days ~53 MPa 14 Days ~56 MPa 28 Days ~62 MPa	EN 12190 (BS EN 12504-1)
Modulus of Elasticity in Compression	≥20 GPa	EN 13412
Tensile adhesion strength	≥2.0 MPa	EN 1542
Restrained Shrinkage / Expansion	≥2.0 MPa	EN 12617-4
Electrical Resistivity	~6.6 kΩcm	(Socotec In-House Method DIHM 406)
Carbonation Resistance	dk ≤ control concrete (MC(0.45))	EN 13295
Reaction to Fire	EuroClass A1	EN 13501-1

APPLICATION INFORMATION

Consumption	~2.5 kg/m²/mm NOTE: Consumption depends on the application method and working conditions.
Layer Thickness	Minimum application thickness is 10 mm. Maximum thickness of the vertical layers is usually around 80 mm. With reinforcement / mesh, 100 mm layer thicknesses can be achieved.
Ambient Air Temperature	+5°C minimum / +30°C maximum
Substrate Temperature	+5°C minimum / +30°C maximum
Pot Life	~30 minutes at +20°C

VALUE BASE

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.

LIMITATIONS

- Refer to the Method Statement for Concrete Repair for more information regarding substrate preparation, or refer to the recommendations provided in EN 1504-10.
- Avoid application in direct sun and / or strong wind.
- Apply only to sound, prepared substrates.
- Do not add additional water during the surface fin-

ishing as this will cause discolouration and / or cracking.
- Protect freshly applied material from freezing.
- Ensure the applied Product is cured effectively.

ECOLOGY, HEALTH AND 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.

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY

The concrete substrate must be sound and have a minimum bond strength of 1.5MPa and a compressive strength greater than 25MPa. The surface must be dry, free of dust, dirt, grease and oil, with no loose material. Laitance paints or other surface treatment agents must be completely removed. A prerequisite for a good bond between the substrate and repair mortar is an appropriate roughness of the surface. Roughness should be at least 1 mm (test based on the sand patch method according to RVS 15 346, Sheet 1). Suitable methods for substrate preparation is high pressure jetting or sand blasting. Other methods such as grinding, etc., require subsequent blasting to remove any remaining faults in the structure of the substrate. The substrate must be pre-wetted for at least 12 hours prior to application to ensure saturation and prevent suction. Remove all excess / standing water prior to application. Rust, scale, weak mortar or concrete, dust and other loose and deleterious material which reduces bond or contributes to corrosion shall be removed. In case of doubt, a sample area should be used to confirm suitability / compatibility.

MIXING

The quantity of water is ~2.5 litres per 25 kg of powder - set the machine to this level for the application of the repair mortar. The consistency of the mortar is then fine-tuned by the speed of feeding the dry powder from the mixing machine into the hose and the amount of water added in the nozzle. The nozzleman should be experienced applying dry spray mortars.

APPLICATION

Sikacrete®-801 Fibre CZ is sprayed onto a prepared and pre-wetted surface. The application thickness on vertical surfaces is usually 20 to 80 mm, and up to 100 mm with reinforcement / mesh. Immediately after the spraying is completed, the surface is smoothed with a steel trowel. Where additional levelling of the substrate is required, a thinner layer of Sikacrete®-801 Fibre CZ is hand applied in a thin layer to the freshly sprayed surface. Do NOT apply fallout / rebound material on the ground to the surface.

CURING TREATMENT

Sikacrete®-801 Fibre CZ cures with low shrinkage under normal weather conditions. In strong sunlight and / or wind, it must be kept moist and should be protected against rapid drying. To achieve the high values of the physical properties, it is essential to have a professional operating with a suitable spraying machine, and adequately cure the final surface.

CLEANING OF TOOLS

Clean all tools and application equipment with water immediately after use. Hardened / cured material can only be mechanically removed.

LOCAL RESTRICTIONS

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 application fields.

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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