BUILDING TRUST

PRODUCT DATA SHEET

# SikaCeram®-500 Ceralastic

CEMENTITIOUS 2 IN 1 WATERPROOFING AND TILE ADHESIVE MORTAR

CE

## DESCRIPTION

SikaCeram®-500 Ceralastic is a cementitious, 1 component, polymer modified, highly deformable, alkali-resistant, synthetic fibre-reinforced tile adhesive with waterproofing and concrete protection mortar properties. Layer thickness < 5,0 mm. Indoor and outdoor use. Classifications: EN 12004: C2 E S2. EN 14891: CM02P. EN 1504-2: PI-MC-IR. Product can also be used for spot-fixing indoor insulating panels.

## USES

Tile adhesive for:
- All kinds of ceramic tiles including grès porcelain in large sizes
- Marble and other natural stones
- Laying tiles on floors with underfloor heating
- Indoor over-tiling of existing tiles
- High performance and demanding applications, such as: Swimming pools, façades, balconies and terraces
- Spot-fixing insulating panels

Waterproofing mortar before application of tile adhesive and tiles:
- Swimming pools, terraces, balconies, bathrooms, showers, before the application of ceramic tiles laid with tile adhesives

Concrete protection mortar for:
- Water containment structures and against de-icing salt (chlorides), carbon dioxide deterioration

## CHARACTERISTICS / ADVANTAGES

- Tile adhesive, waterproofing and concrete protection mortar, in a single product
- 1 component
- Bonding floor and wall tiles
- Applied by: trowel, brush, roller or spray
- Good adhesion on all types of substrates: cementitious, ceramic tiles, stone, brick, wood and more
- Highly deformable
- Extended open time
- Good crack-bridging ability
- Joint grouting after 12–24 hours
- Single spread bonding
- Spot-fixing insulating panels made of polystyrene, polyurethane foam and glass / rock wool
- Low material consumption compared to traditional systems

## APPROVALS / CERTIFICATES

**Tile adhesive**
- CE Marking and Declaration of Performance to EN 12004 – Adhesives for Tiles

**Waterproofing**
- CE Marking and Declaration of Performance to EN 14891 – Liquid applied water impermeable products for use beneath ceramic tiling bonded with adhesives

**Concrete protection**
- CE Marking and Declaration of Performance to EN 1504-2 - Surface protection product for concrete - Coating

## PRODUCT INFORMATION

| | |
|---|---|
| **Composition** | Cement, selected aggregates, water retention additives, re-dispersible polymer, fibres |
| **Packaging** | 20 kg bags |
| **Appearance / Colour** | Grey powder |
| **Shelf life** | 9 months from date of production |
| **Storage conditions** | Product must be stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between +5 °C and +35 °C. Always refer to packaging. |
| **Maximum Grain Size** | $D_{max}$: 0,315 mm |
| **Product Declaration** | EN 12004 — C2 E S2<br>EN 14891 — CM O2P<br>EN 1504-2 — IP-MC-IR |

## TECHNICAL INFORMATION

| | | | |
|---|---|---|---|
| **Permeability to Carbon Dioxide** | $S_D \geq 50$ m | | (EN 1062-6) |
| **Permeability to Water Vapour** | $S_D < 5$ m (Class I) | | (EN ISO 7783:2012) |
| **Capillary Absorption** | < 0,1 kg/(m²h$^{0,5}$) | | (EN 1062-3) |
| **Freeze Thaw De-Icing Salt Resistance** | > 0,8 N/mm² | | (EN 13687-1) |
| **Watertightness** | No passage (7 days at 1.5 bar) | | (EN 14891 - A.7) |
| **Crack Bridging Ability** | **Conditions** | **Crack Bridging** | (EN 1062-7) |
| | Static | > 0,5 mm (Class A3) | (EN 1504-2) |
| | Dynamic, 1000 cycles | No cracks (Class B2) | |
| | **Conditions** | **Crack Bridging** | (EN 14891) |
| | Standard (+23 °C) | ≥ 0,75 mm | |
| | Low temperature (- 5 °C) | ≥ 0,75 mm | |
| | Low temperature (-20 °C) | ≥0,75 mm * | |
| | * With reinforcing mesh | | |
| **Tensile Adhesion Strength** | Initial | ≥ 1,5 N/mm² | (EN 14891) |
| | Water immersion | ≥ 1,0 N/mm² | |
| | Heat ageing | ≥ 1,0 N/mm² | |
| | Freeze-thaw cycles | ≥1,0 N/mm² | |
| | Lime water immersion | ≥ 1,0 N/mm² | |
| | Chlorinated water immersion | ≥ 0,5 N/mm² | |
| **Transverse deformation** | ≥ 10 mm | | (EN 12002) |

## SYSTEMS

**System Structure**

Tile adhesive:
For the following substrates, a primer must be used:

| Substrate | Primer |
|---|---|
| Gypsum, plaster or anhydrite screed | Sika® Primer-11 W |
| Existing ceramic tiles, PVC sheet, linoleum and existing vinyl tiled floors | Sika® Primer-21 W |
| Tile Adhesive | SikaCeram®-500 Ceralastic |

**Waterproofing layer:**

| | |
|---|---|
| Waterproofing tapes (control joints and small movement ) | Sika® SealTape F<br>Sika® SealTape S |
| Waterproofing strip (Large movement ) | Sikadur-Combiflex® SG system |
| Waterproofing mortar | SikaCeram®-500 Ceralastic |

## APPLICATION INFORMATION

**Mixing Ratio**

| | | |
|---|---|---|
| Floor application | ~4,8 litres per 20 kg bag | (24 % ± 1 %) |
| Wall application | ~4,0 litres per 20 kg bag | (20 % ± 1 %) |

**Fresh Mortar Density**

~1,6 kg/l

**Consumption**

Tile adhesive
Consumption is dependent on the substrate, surface profile, roughness and application technique.
As a guide for a single adhesive layer:

| Size of tiles | Notched trowel size | Size of tiles |
|---|---|---|
| Small | 8 mm square notch | ~ 2,5 kg/m² |
| Medium | 10 mm square notch | ~ 3 kg/m² |
| Large | 15 mm half-moon | ~ 6,5 kg/m² |

**Waterproofing and Concrete protection**
~1,2 kg/m² per mm of thickness.
These figures are theoretical and do not allow for any additional material due to surface porosity, surface profile, variations in level or wastage etc.

**Layer Thickness**

5,0 mm max.

**Ambient Air Temperature**

+5 °C min. / +30 °C max.

**Substrate Temperature**

+5 °C min. / +30 °C max.

**Maturing Time**

~3 min

**Pot Life**

~40 min at 23 °C

**Open Time**

≥ 0,5 N/mm² after 30 min (EN 1346)

**Curing Time**

3 hours depending on ambient conditions

**Curing Treatment**

Protect from adverse weather conditions, such as extremely high or freezing temperatures, rain, direct exposure to sun, for at least 12–24 hours from application.

**Applied Product Ready for Use**

| Use | Waiting time |
|---|---|
| Walkability | 12 hours |
| Grouting - floors | 24 hours |
| Grouting - walls | 3 hours |
| Full traffic | 48 hours |
| Water immersion | 72 hours |

## APPLICATION INSTRUCTIONS

### SUBSTRATE QUALITY / PRE-TREATMENT

**Tile adhesive, waterproofing and concrete protection mortar**
Cementitious substrates must be sufficiently cured and dried (2–6 weeks), All substrates must be structurally sound, able to support the weight of the new tiling and provide a stable and securely fixed background. Surfaces shall be clean, dry, free of any loose or friable particles, contaminants such as dust, dirt, oil, wax, polish grease, cement laitance or efflorescence.
Depending on the substrate condition and contaminants to be removed from the surface, use adequate preparation techniques to remove all traces of any materials that could reduce the product's adhesion to the substrate. Smooth surfaces should be roughened lightly to improve adhesion. To confirm adequate surface preparation and adhesion, carry out a small trial before full application.
Any small surface defects and variations in level, profile, or around exposed aggregates can be prefilled and levelled with an additional layer of SikaCeram®-500 Ceralastic to a maximum thickness of 5 mm, applied at least 24 hours before full adhesive application. For larger and thicker areas of surface re-profiling and making good, use appropriate mortars from the Sika MonoTop® or Sikafloor® Level range. Cracks in substrates must be identified and sealed appropriately e.g. with Sikadur® epoxy resins.
For applications in hot climates / environments, or on absorbent substrates, thoroughly pre-dampen the surface immediately prior to product application. Avoid any ponding / standing water on the surface. Surface must not be damp to touch.
**Tile adhesive**
When laying tiles on non-absorbent or substrates with limited absorbency, such as existing ceramic tiles, painted surfaces etc. Check to confirm these surfaces are all stable, firmly and securely bonded. Then use suitable degreasing/descaling products to thoroughly and completely clean the surface.
For tiling in constantly damp or wet rooms, then a suitable Sika® waterproofing product / systems should be applied to the substrate before tiling.

### MIXING

Pour the recommended amount of clean cold water into a suitable, clean mixing container.
While stirring, slowly add SikaCeram®-500 Ceralastic powder to the water and then mix thoroughly using a low speed (~500 rpm) electric drill mixer until the material is fully mixed and lump free. Avoid entraining air into the mix by over mixing.
Allow the mixed product to ‘mature’ for 2–3 minutes before remixing for 30 seconds.
The finished mix should have a creamy consistency, uniformly coloured and it is easy to apply and spread.

### APPLICATION

**Tile Adhesive**
SikaCeram®-500 Ceralastic is applied using a suitable notched trowel.
Apply sufficient adhesive to the prepared fixing surface with the appropriate trowel and comb to the required bed thickness. Apply sufficient product to ensure adequate ‘wetting’of the backs of the tiles.
Tiling must to be carried out on freshly applied adhesive, exerting adequate pressure to ensure 100 % complete and uniform contact with the adhesive to achieve optimum adhesion.Tiling must to be carried out on freshly applied adhesive, exerting adequate pressure to ensure complete and uniform contact with the adhesive and thus optimum bond.
If a skin forms on the surface of the adhesive, immediately remove the adhesive layer with the trowel, discard material and apply a fresh layer of SikaCeram®-500 Ceralastic adhesive.
Adjust tiles if required.
Clean off surplus adhesive from tile face and between tile joints before the adhesive has dried.
After the required waiting time apply the appropriate grout into the tile joints
Refer to the individual Product Data Sheets.
**Waterproofing and tiling in two steps**
Waterproofing tapes must always be applied over control joints subject to small movements and other critical areas such as corners, edges and joints between different substrate materials:
Apply Sika® SealTape B self-adhering tape onto prepared substrate.
Apply Sika® SealTape S or Sika® SealTape F onto a fresh layer of SikaCeram®-500 Ceralastic and cover with a second layer of SikaCeram®-500 Ceralastic.
Refer to the individual Product Data Sheets.
After sealing tapes have been laid, wet the substrate
Apply SikaCeram®-500 Ceralastic with a flat trowel, pressing the mortar onto the substrate in order to ensure proper adhesion.
The total thickness of application should be at least 3 mm in 2 layers of 2 mm maximum to achieve a consistent and defect free continuous layer. Waiting time between two layers is ~3 hours.
After ~4 hours apply SikaCeram®-500 Ceralastic as a tile adhesive.
**Waterproofing and bonding of tiles in one step with special trowel***
- On floors, SikaCeram®-500 Ceralastic can be applied in one step using the special ‘Ceralastic trowel’.
- The choice of SikaCeram®-500 Ceralastic ‘Ceralastic trowel’ depends on the tile size to ensure a complete covering of the product on the underside of tile. A 10 mm ‘Ceralastic trowel’ is recommended for tile sizes up to 25×25 cm; for larger tile sizes use a 15 mm half moon trowel.
- The adjustable steel pins must exceed the trowel tooth length by at least 3 mm. The resulting waterproofing layer below the tile adhesive layer should be a minimum of 2 mm.
- Wet the substrate and apply SikaCeram®-500 Ceralastic with the ‘Ceralastic trowel’ then lay the tile directly onto the wet mortar.
- Apply sufficient product to ensure complete ‘wetting’ of the back of the tiles.
- Total thickness must be between 4 and 5 mm in a consistent and continuous layer.

* Not suitable for swimming pools and vertical application

### CLEANING OF EQUIPMENT

Removal of fresh remnants from tools and application equipment can be carried out using water immediately after use. Hardened material can only be mechanically removed.

## IMPORTANT CONSIDERATIONS

- Gypsum plaster and anhydrite screed substrates must have a maximum moisture content of 0,5 %.
- For swimming pools and vertical applications use SikaCeram®-500 Ceralastic in two application steps. The product must always be covered with tiles.
- Do not apply the waterproofing mortar and tile adhesive in one step for vertical applications.
- Refer to tile manufacturers instructions for guidance on providing expansion joints
- If service temperatures below -20 °C are expected, reinforce SikaCeram®-500 Ceralastic with an alkali-resistant glass fibre mesh.
- Do not use on marble or natural stone tiles if they are sensitive to water.

## BASIS OF PRODUCT DATA

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 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.

## ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) 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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