

SIKA SYSTEM SPECIFICATION

Project:

Date:

Reference:

Client:

A 3.0 MM THICK, CRACK-BRIDGING, LIQUID APPLIED, ALKALI RESISTANT, WATERPROOFING MORTAR USING SIKALASTIC® -1 K

Part 1 - General

1.01 Summary

- A. This specification describes the flexible waterproofing and concrete protection system for new or existing exposed areas of onshore wind turbines concrete foundations with a 1-part cementitious, fibre-reinforced, polymer modified mortar.
- B. Related sections include:
 - 1. None
- C. **Sikalastic® -1 K** is based on cement modified technology with special alkali-resistant polymers.
- D. Related Work
The work includes but is not limited to the installation of:
 - 1. Substrate Preparation
 - 2. Waterproofing Mortar
 - 3. Sealants

1.02 Quality Assurance

- A. This waterproofing system shall be applied only by a Trained Applicator authorised by Sika prior to bid (Sika "Applicator").
- B. Upon completion of the installation and the delivery to Sika by the Applicator of certification that all work has been done in strict accordance with the contract specifications and Sika's requirements, a Sika Representative will review the installed waterproofing system where a Standard warranty has been specified.
- C. There shall be no deviation made from the Project Specification without prior written approval by the Owner, the Owner's Representative and Sika.
- D. All work pertaining to the installation of Sika's mortar shall only be completed by Applicators personnel trained and authorized by Sika in those procedures.

1.03 Delivery, Storage, and Handling

- A. All products delivered to the job site shall be in the original unopened containers or wrappings bearing all seals and approvals.
- B. Handle all materials to prevent damage. Place all materials on pallets and fully protect from moisture.
- C. As a general rule all materials should be stored at temperatures between 5°C and 30°C. Read instructions contained on the packaging label for specific storage instructions.
- D. Any materials which the Owner's representative or Sika determines to be damaged are to be removed from the job site and replaced at no cost to the Owner.

1.04 Job Conditions

- A. Some materials may be installed under certain adverse weather conditions but only after consultation with the manufacturer, as installation time and system integrity may be affected.
- B. Only as much of the new waterproofing as can be made weathertight each day, including all detail work, shall be installed.
- C. All surfaces to receive new mortar shall be prepared following the instructions described in Sika documentation. The substrate shall be adequately dampened before application. The surface shall be saturated surface dry.
- D. Prior to and during application, all dirt, debris and dust shall be removed from surfaces by vacuuming, sweeping, blowing with compressed air or similar methods.
- E. The Applicator shall follow all safety regulations as required by OSHA, COSHH and any other applicable authority having jurisdiction.
- F. Protective wear shall be worn when using alkaline materials or as required by job conditions.
- G. Always follow OSHA and other relevant fall protection standards when working on site.

1.05 Submittals

- A. At the time of bidding, the Applicator shall submit to the Owner (or Representative) the following:
 - 1. Copies of Specification.
 - 2. Samples of each primary component to be used in the waterproofing system and the manufacturer's current literature for each component.
 - 3. Certification from the Applicator that the system specified meets all identified code and insurance requirements as required by the Specification.
 - 4. Material Safety Data Sheets (MSDS)

1.06 Warranty

- A. A project specific warranty for the performance of the specified product should be agreed and confirmed in writing from the specialist applicator, backed by the product manufacturer's standard product supply warranty for the same period'. This warranty should form part of the tender bid documents.

Part 2 - Products

2.01 Flexible cementitious waterproofing system overview:

Sikalastic® -1K 3.0 mm thick, liquid-applied, UV-stable, waterproofing system by Sika or similar approved manufacturer consisting of:

- A. **Sikalastic® -1K:** One-component polymer modified cementitious flexible mortar. Minimum two layers of this material should be applied.

2.02 Flexible cementitious foundation waterproofing performance specification:

- A. The liquid-applied, cementitious waterproofing system shall be **Sikalastic® -1K**, a minimum of 3.0 mm thick, crack-bridging, fibre reinforced mortar with special alkali resistance waterproofing system, with the following minimum system performance properties:

Technical Data	Standard	Min requirement
Description		A 3.0 mm thick, seamless, elastic and crack-bridging, polymer modified, waterproofing system consisting of a minimum of two layers of Sikalastic® -1K.
Tensile adhesion strength	EN 1542	≥ 0.8 N/mm ²
Tensile adhesion strength after water contact	EN 14891, method A.6.3	≥ 0.5 N/mm ²
Tensile adhesion strength after heat aging	EN 14891, method A.6.5	≥ 0.5 N/mm ²
Tensile adhesion strength after freeze-thaw cycles	EN 14891, method A.6.6	≥ 0.5 N/mm ²
Crack-bridging ability	EN 1062-7	> 0.5 N/mm ² (Class A)
Reaction to fire	EN 13501-1	Euroclass A2
Freeze-thaw de-icing salt resistance	EN 13687-1	≥ 0.8 N/mm ²
Permeability to water vapour	S _D <5 m, Class I	EN ISO 7783-1
Permeability to carbon dioxide	S _D ≥ 50 m	EN 1062-6
Capillary Absorption	EN 1062-3	~0.02 kg/m ² *h ^{0.5}

Part 3 – Execution

3.01 Substrate condition

- A. The applicator shall be responsible for acceptance or provision of proper substrate to receive new waterproofing mortar.
- B. The applicator shall verify that the work done under related sections meets the following conditions:
 1. All coated surfaces are compatible with the new waterproofing system
 2. All surfaces are smooth and free of dirt, debris and incompatible materials.
 3. All roof surfaces shall be free of ponding water, ice and snow.
 4. All surfaces to be coated are dampened before the application of the mortar

3.02 Substrate preparation

- A. **New Concrete – new foundations:** New Concrete shall be designed and placed in accordance with current working practices and is to have a minimum compressive strength of 25kN/m² (C20/25) and must be allowed to cure for a minimum of 28 days. Consideration is to be given to joints, interfaces and terminations. Concrete must be suitably finished. The surface finish must be uniform and free from defects such as laitance, voids or honeycombing. Surfaces to be coated are to be free of contamination such as oil, grease. Surface preparation must be carried out in accordance with our specification and power washing can often assist in revealing suspect areas. Any defective areas must be made good using an appropriate **Sika MonoTop**[®] concrete repair mortar and allowed to cure for a minimum period of 72 hours, in accordance with standard concrete repair procedures. Concrete surfaces where laitance is present must be mechanically prepared using dust controlled mechanical preparation equipment. Surfaces that have been mechanically ground are to be vacuumed to a dust free state. The substrate must be adequately dampened before application. The surface shall not be moist to the touch and shall not be dark matt. It should have a saturated surface dry appearance.
- B. **Initial Cleaning:** All surfaces to be coated are to be thoroughly cleaned by conventional means. Ensure that surfaces are free from visible ponded water and that surface lying dust, dirt and other forms of contamination are removed.

Generally

- A. **Surface Contamination:** Surface demoulding agents, loose debris, etc., must be removed from areas to be coated immediately prior to application of the mortar.
- B. **Joints:** Prepare all joints with the suitable sealing system. Sikadur[®] Combiflex[®] jointing system may be required in the connection between steel flange and concrete foundation surface if big movements are expected.
- C. **Final Cleaning:** Immediately prior to application, ensure that all surfaces are free from lying dust, dirt and other forms of contamination are removed.
- D. **Pre-wetting Substrate:** before application, ensure that the concrete substrate is dampened until a saturated surface dry appearance is obtained.

3.03 Detailing

- A. Termination details are to be agreed.
- B. **Tower/ Flange:** Inspect that all surfaces to be waterproof are prepare as required in order to accept the coating.

3.04 Mixing

- A. Mixing procedure stated in Sika's instructions must be followed

3.05 Waterproofing

- A. **First layer:** Apply an initial first layer of **Sikalastic® -1K** to the surface, using a minimum quantity of **1.8** kg per square meter. The application may be done by trowel. Wait until the first layer is dry before applying subsequent layers.
- B. **Second layer:** Apply a second layer of **Sikalastic® -1K** crosswise.

Note: The application shall cover the whole surface of the substrate with an uniform thickness. **Sikalastic® -1K** cannot be smoothed using a float or a sponge. It is possible to finish the surface as soon as the curing of the product is completed by light abrasion techniques.

- C. **Material Consumption:** Consumption rates may vary depending on substrate condition. Contact the local **Sika®** office for advice.
- D. **Completion:** On completion of waterproofing works, check the finish for pinholes, voids, damage, etc. Spot treat to rectify. The site should be left clean, tidy and free from spillage, waste or other residue and in a manner acceptable to the client or their representative.

END OF SIKA PRODUCT SPECIFICATION FOR A 3.0 MM THICK, CRACK-BRIDGING, LIQUID APPLIED, ALKALI RESISTANT, WATERPROOFING MORTAR

This specification is given in good faith and has been prepared based on Sika's current knowledge and experience of Sika's products when properly stored, handled and applied under normal conditions. It only applies to the application and product referred to in this specification.

In case of changes in the parameters of the application, such as changes in substrates, ambient conditions etc. or in case of a different application, consult Sika's Technical Service or Specification Division prior to using Sika's products.

The user of the product must test the product's suitability for the intended application and purpose.

All Sika product data sheets & method statements are updated on a regular basis and can be subject to change without notice. It is the users' responsibility to obtain the latest version of the information required.

Except as expressly stated in writing, Sika's warranty is governed exclusively by our current sales conditions, and does not warrant the correct application of its product.