

## PRODUCT DATA SHEET

# Sikalastic®-245

(formerly MSL 345)

Spray applied waterproofing membrane for tunnels

### DESCRIPTION

Sikalastic®-245 is a spray applied waterproofing membrane based on a flexible EVA copolymer. It is designed for application on cementitious substrates such as spray concrete primary linings. After application, by dry sprayed process, the membrane cures quickly to form a tough and yet flexible film with a tenacious bond to the substrate. Once the Sikalastic®-245 has cured a secondary lining of sprayed concrete or cast in situ concrete is installed against it creating a fully bonded composite lining.

### USES

- Permanent sprayed concrete linings including Composite Shell Linings (CSL).
- Underground structures with changeable geometry such as: cross passages, ventilation and escape tunnels, shafts and sumps.
- Diaphragm and secant pile retaining walls.

### PRODUCT INFORMATION

Chemical Base	EVA polymer and cement
Packaging	15 kg / 20 kg bag (adapt with local packaging)
Appearance / Colour	Beige powder
Shelf Life	12 months from date of production if stored properly in undamaged and unopened original sealed packaging in dry and cool conditions
Storage Conditions	Store properly in undamaged and unopened original packaging in cool and dry conditions between +5 °C to +40 °C. The product must be kept out of direct sunlight. The storage area must be kept dry.
Bulk Density	590 g/l ± 100 g/l (20 °C)

### CHARACTERISTICS / ADVANTAGES

- Double bond (to primary and secondary lining) prevents lateral water migration
- Fast curing allows rapid installation of secondary lining
- Quick wetting polymer ensures film formation with good continuity
- Application by dry spraying results in high application rates: 50 – 100m<sup>2</sup>/h with hand spray and 180m<sup>2</sup>/h with robotic arm
- High elasticity
- No toxic components

### APPROVALS / STANDARDS

- Test for use in contact with water intended for human consumption, according to SS 375:2001 and BS 6920:2000, (subject to local regulation)

## TECHNICAL INFORMATION

<b>Tensile Strength</b>	2.7 MPa ▪ Specimens conditioned at 23°C, RH 50% ▪ Type 5 Specimen ▪ Test Speed 100mm/min	(EN ISO 527-3; ISO 527-1)
<b>Tensile Adhesion Strength</b>	> 0.5 MPa at 28 days	(EN 1542)
<b>Crack Bridging Ability</b>	Class A5 (minimum 2.5 mm) at 20°C	(EN 1062-7)
<b>Reaction to Fire</b>	Class E/E <sub>FL</sub>	
<b>Leaching</b>	▪ Hot water ▪ Saturated Ca(OH) <sub>2</sub>	(EN 14415)
<b>Chemical Resistance</b>	▪ 2.5 g/l Ca(OH) <sub>2</sub> ▪ 10 % NaCl ▪ Site Water (C883, C882)	(EN 14414)
<b>Water Tightness</b>	Zero Penetration 28 days at 5 bar	(EN 12390-8)
<b>Water Penetration Under Pressure</b>	Zero Penetration 28 days at 5 bar	
<b>Elongation at break</b>	144% ▪ Specimens conditioned at 23°C, RH 50% ▪ Type 5 Specimen ▪ Test Speed 100mm/min	(EN ISO 527-3; ISO 527-1)

## APPLICATION INFORMATION

<b>Consumption</b>	Between 3 and 6 kg/m <sup>2</sup> depending on roughness of the substrate. Application of a regulating layer of shotcrete without coarse aggregate is recommended to reduce the surface roughness and limit the consumption of Sikalastic®-245.
<b>Layer Thickness</b>	3 to 6 mm
<b>Ambient Air Temperature</b>	+5°C to +40°C
<b>Relative Air Humidity</b>	Sikalastic®-245 cures and forms a film by evaporation, if relative humidity is too high or ventilation is insufficient then curing times can be extended.

## 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.

## FURTHER DOCUMENTS

- Method Statement Sikalastic-245

## LIMITATIONS

Sikalastic®-245 can be applied onto all types of concrete, if the surface is clean and without loose particles. Sprayed concrete and cast concrete may be placed against the membrane surface once it has cured. Fiber reinforced sprayed concrete can be used on both sides of the membrane.

## 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 Material Safety Data Sheet (MSDS) containing physical, ecological, toxicological and other safety-related data.

# APPLICATION INSTRUCTIONS

## EQUIPMENT

Sikalastic®-245 is applied by the dry spraying method with an air/electrical driven pump, such as Reed Sove dry spraying machine or similar.

Basic recommended equipment set-up:

- Equipped with 18 hole pocket bowl
- 32mm nozzle system with 18 hole water ring
- Dust collector
- Water supply booster pump
- Compressed air supply 6 bar @ 5m<sup>3</sup>/min
- Water interceptor on compressed air

## SUBSTRATE QUALITY

A smooth surface without free-standing water must be achieved. If the surface is too rough, it is recommended to do a regulating layer with a smoothing mortar or sprayed concrete to obtain an appropriate substrate and control the consumption of Sikalastic®-245. The surface must be thoroughly cleaned and pre-wetted before spraying Sikalastic®-245.

## SUBSTRATE QUALITY / PRE-TREATMENT

A smooth surface without free-standing water must be achieved. If the surface is too rough, it is recommended to do a regulating layer with a smoothing mortar or sprayed concrete to obtain an appropriate substrate and control the consumption of Sikalastic®-245. The surface must be thoroughly cleaned and pre-wetted before spraying Sikalastic®-245.

## MIXING

Sikalastic®-245 is mixed with water with a dosage between 45% and 75% of water by weight of powder, depending on the substrate and ambient site conditions. Recommended amount of water around 55% ± 10%.

## APPLICATION

Spray the Sikalastic®-245 continuously over the prepared surface with the dry spraying pump. The application of Sikalastic®-245 can be done in one layer ensuring proper coverage of the full substrate. Sikalastic®-245 can be also hand applied using a brush, for small repairs or spot applications if needed.

## CURING TREATMENT

The speed of curing depends on weather conditions on site (humidity, wind conditions and temperature). We recommend not exposing the membrane to air temperatures outside the range of +5 °C and +40 °C for a minimum of 5 days following application, and cyclic variations should not exceed 10 °C within this range.

## 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. It may be necessary to adapt the above disclaimer to specific local laws and regulations. Any changes to this disclaimer may only be implemented with permission of Sika® Corporate Legal in Baar.

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### Product Data Sheet

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