



METHOD STATEMENT

Hot Spray Applied Membranes

Sikalastic®- 851 & M 811

JUN 2025 / VERSION 0.1/ CARL KNIGHT

TM WATERPROOFING / SIKA SERVICES AG

CORPORATE TEMPLATE FOR LOCAL ADAPTION

Table of Contents

1	Scope	3
2	System description	3
2.1	References	3
2.2	Storage Conditions	3
3	Products	4
3.1	Sikafloor®-P 922	4
3.2	Sikafloor®-150 Plus	4
3.3	Sikalastic®-851	4
3.4	Sikalastic®-810	4
3.5	System Build Up	4
4	PRE-PROJECT PREPARATION	5
4.1	Project check	5
5	Substrate Requirements	6
5.1	Concrete substrates	6
5.2	Concrete Surface Profiles	6
6	PRIMING OF CONCRETE SUBSTRATES	7
6.1	Priming	7
7	APPLICATION INSTRUCTIONS- SIKALASTIC® 851 & M 811	7
7.1	Stirring of the drums	7
7.2	Application / Ambient conditions	8
7.3	Suitable Hot Spray Equipment and Set up	8
7.4	Important notes	9
7.5	Application	10
7.6	Lapping	10
7.7	Repairs	10
8	Overcoating Times	10
8.1	BEFORE overcoating Sikafloor® - 150 plus/ P 922 (lightly Broadcast) with:	10
8.2	Before Overcoating Sikalastic®-851/ M 811 with:	10
8.3	Before Overcoating Sikalastic®-810 with:	11
9	INSPECTION AND QUALITY CONTROL	11
9.1	General Notes	11
9.2	Thickness Measurement	11
	Destructive test:	11
	Non-destructive test	11
10	Health & Safety Recommendations	12
10.1	Personal Protection	12
11	Limitations	12
12	Environment	13
12.1	Cleaning of tools / Mixing equipment	13
12.2	Waste disposal	13
13	Legal Notes	13

1 SCOPE

This Method Statement is for the application of the different Hot Spray Applied Membranes for waterproofing systems. These products can only be spray applied with special two-component hot spray equipment. This generic method statement provides a guideline and is basic tool for the understanding of common polyurea application methodology for concrete waterproofing.

This method statement does not include installation instructions for so-called “cold” polyurea’s or hand applied systems.

The formulation of Sikalastic® products utilized, the formulation of Sika® Primer utilized, and the requisite dry film thickness levels (DFT) are specified for each project individually dependent on the specific project use, abuse levels, erosion requirements, submersion levels, ultraviolet exposure levels, etc.

2 SYSTEM DESCRIPTION

Sikalastic® Hot Spray Applied Membranes are commonly used for waterproofing and anti-corrosion applications for concrete and steel surfaces and structures including drinking, sewage and wastewater treatment plants, flooring systems, vehicular parking garages, canals, hydroelectric dams, bridge decks, ponds, tanks and roofs. Their characteristics and advantages are that they have a very fast reactivity and curing time and therefore an almost immediate return-to-service time. They have excellent crack bridging properties, a good chemical resistance, an excellent abrasion resistance.

USES

- Abrasion resistant protective coating in industrial and manufacturing facilities
- Waterproofing for cut and cover structures, submersed structures, car park decks
- Water retaining structures in power plants
- Secondary containment structures
- Tank, bund and pit lining in sewage and wastewater treatment plants

CHARACTERISTICS/ADVANTAGES

- Seamless
- Applied by 2-Component hot spray equipment
- Performs in constant dry temperatures from -30 °C to +100 °C
- Very fast reactivity and curing time.
- Almost immediate return-to-service time
- Excellent crack bridging properties
- High to moderate chemical resistance
- Good abrasion resistance

2.1 REFERENCES

To ensure the correct application of all products, please refer to the following documents:

- Product Data Sheet.
- Material Safety Data Sheet.
- Declaration of Performance (DoP), when required.

2.2 STORAGE CONDITIONS

Sika® hot spray applied membranes have different shelf life. Check the label for more information.

Products must be stored properly in unopened, undamaged original packaging, in a horizontal position, in dry conditions and at temperatures between +5°C and +30°C. Must be protected from direct sunlight, rain, snow, ice, etc. Do not stack pallets containing drums on top of each other or place them under any other materials during transport or storage. This ensures the integrity of the product and prevents potential damage to the drums during transport or storage.

3 PRODUCTS

3.1 SIKAFLOOR®-P 922

Sikafloor® P 922 is a two-part primer based on Xolutec technology, providing high substrate penetration and acting as bond promoter for the subsequent waterproofing systems.

3.2 SIKAFLOOR®-150 PLUS

Sikafloor®-150 Plus is a two-part, low-odour, low-viscosity, multipurpose epoxy resin which can be used as an epoxy primer, levelling mortar and mortar screed.

3.3 SIKALASTIC®-851

Sikalastic®-851 is a two component, elastic, 100% solids, very fast curing and coloured polyurea-hybrid, liquid applied membrane with fair chemical resistance. Sikalastic®-851 is applicable by two component hot-spray equipment. Sikalastic® M 811

Sikalastic® M 811 is a two component polyurea hybrid waterproofing membrane. It is high reactive and needs to be applied by two component hot-spray equipment.

3.4 SIKALASTIC®-810

Sikalastic®-810 is an adhesion promoter designed to ensure proper bonding between layers of waterproofing membranes when maximum waiting times are exceeded.

3.5 SYSTEM BUILD UP

The general system buildup for the liquids is:

Product	Consumption
<u>Sealing / levelling mortar (optional)</u> Sikagard®-720 EpoCem®	2.00 kg/m ² /mm
<u>1st Primer / Broadcast</u> Sikafloor®- 150 Plus or Sikafloor®-P 922 Lightly broadcast with Sikadur®-507	0.35 – 0.50 kg/m ² 0.80 – 1.00 kg/m ²
<u>2nd Primer coat (optional)</u> Sikafloor®- 150 Plus or Sikafloor®-P 922	0.35 – 0.50 kg/m ²
<u>Waterproofing layer</u> Sikalastic®-851 Sikalastic® M 811	~ 1.00 kg/m ² /mm Min 2mm DFT
<u>Bonding Bridge</u> Sikalastic®-810 for day joints and areas where over coating time has been exceeded	~ 0.07kg/m ²

IMPORTANT: These figures are theoretical and do not allow for any additional material due to surface porosity, surface profile, variations in level and wastage etc

4 PRE-PROJECT PREPARATION

4.1 PROJECT CHECK

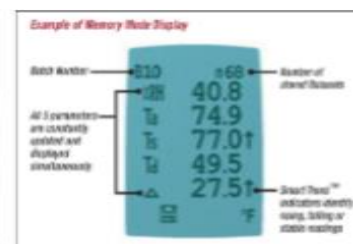
It is invaluable to check the project in advance. The following checklist, although not exhaustive, is a guide the most important points to take in consideration.

Check that the construction and substrate are in good condition.

- ✓ Check that new concrete has cured for at least 28 days and has a pull off strength $\geq 1.5 \text{ N/mm}^2$, compressive strength (minimum 25 N/mm^2).
- ✓ Check that the surface is dry, and substrate humidity is maximum 4% without emitting dampness.
- ✓ A CSP (Concrete Surface Profile) of between 3-5 is required. Please refer to "Floor Surface Evaluation & Preparation" method statement.
- ✓ Check the ventilation and ensure that during application it is sufficient.
- ✓ During the refurbishment phase, check that the application on the roof is not disturbing the internal environment.
- ✓ Check that the necessary health and safety equipment e.g. scaffolding, ladder etc is available on site.
- ✓ Check the measurement of the project.
- ✓ Make a programme for the whole project. Check staff (where necessary) are available when required, all Sikalastic® products including tools/equipment as well as the protective health and safety equipment are available at and for the required period of time.
- ✓ Check weather conditions system requires conditions as below.
- ✓ Substrate Temperature $+ 2 \text{ }^{\circ}\text{C min.} / + 40 \text{ }^{\circ}\text{C max.}$ See PDS of the respective products.
- ✓ Ambient Temperature $+ 2 \text{ }^{\circ}\text{C min.} / + 40 \text{ }^{\circ}\text{C max.}$ See PDS of the respective products.
- ✓ Relative Humidity - $< 80\%$. See PDS of the respective products.
- ✓ Dew Point - Beware of condensation! The substrate and uncured membrane must be at least $3 \text{ }^{\circ}\text{C}$ above the dew point to reduce the risk of condensation. Condensation may affect adhesion and could affect appearance – see below.
- ✓ Apply primers and waterproofing LAM during falling ambient and substrate temperatures
- ✓ Non-target surfaces should be adequately masked or shielded prior to membrane application to avoid unintended overspray.

Optimal environmental conditions are essential for surface preparation, application, and curing of coatings and LAM waterproofing systems to maximize successful performance. Here are five of the most critical environmental conditions that should be observed and measured to have a successful job:

- Air temperature
- Surface temperature
- Relative humidity (RH)
- Dew point temperature
- The difference between the surface and dew point temperatures



5 SUBSTRATE REQUIREMENTS

5.1 CONCRETE SUBSTRATES

Concrete substrates must be mechanically prepared to remove cement laitance, existing coatings and achieve a gripping profile that is clean, dry, and free from laitance, dirt, grease, oil, and any other form of surface contamination. Vacuum blasting or similar techniques are ideally suited.

Cementitious substrates (concrete) must be sound and of sufficient compressive strength (minimum 25 N/mm²) with a minimum tensile strength of 1,5 N/mm²

High spots must be removed by e.g., grinding.

All dust, loose and friable material must be completely removed from all surfaces before application of the product, preferably by vacuum.

Weak concrete must be removed and surface defects such as blowholes and voids must be completely exposed.

Repair of the substrate, filling of blowholes/cavities and levelling of the surface must be carried out with suitable products from the Sikafloor® and Sikadur® range. The concrete or screed substrate must be primed or trowelled to obtain a level surface.

The chosen method of surface preparation depends on the surface condition, environmental conditions and chosen flooring system. The method may be selected based on trial surfaces, which must then be approved by the client. Professional equipment is required to achieve a functioning surface, such as: Scarifier, Grinder, Bush-Hammer Equipment, Vacuum Shot Blaster, Vacuum Cleaner and equivalent.

5.2 CONCRETE SURFACE PROFILES

The International Concrete Repair Institute (ICRI) has defined nine different guidelines for proper surface preparation and has developed profile replica blocks to give a visual point of reference for the user.

The nine profile replicas of the CSP standards can be obtained from ICRI. Each profile carries a CSP number ranging from a base line of 1 (nearly flat) through 9 (very rough).

Sika's Recommendation: Concrete must be prepared to achieve a laitance-free and contaminant-free, open textured surface by shot blasting or equivalent mechanical means (CSP-3 to CSP-5 as per ICRI guidelines).



6 PRIMING OF CONCRETE SUBSTRATES

6.1 PRIMING

The primer is one of the most important layers of the LAM Waterproofing system which the substrate receives. The performance of the LAM Waterproofing system is dependent on the primer doing its job. The primer will only be able to perform well if surface preparation has been done.

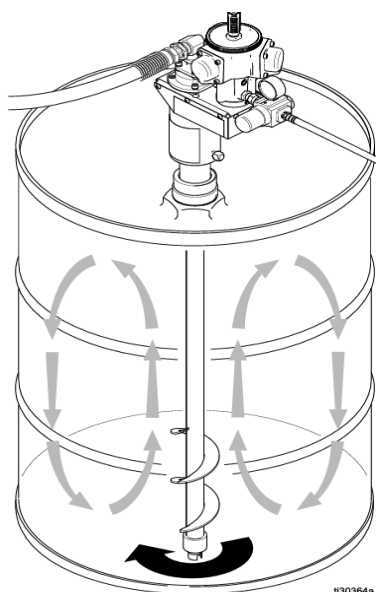
See below an example of the filling rate for a standard epoxy primer applied on a cementitious substrate or for a levelling layer defined as scratch coat



7 APPLICATION INSTRUCTIONS- SIKALASTIC® 851 & M 811

7.1 STIRRING OF THE DRUMS

The drums are clearly labelled as either ISO or Resin, with the ISO component always stored in a red drum for easy identification. The resin blend is pigmented and may settle over time. To ensure consistency, thoroughly stir Resin part until a homogeneous mixture and uniform colour are achieved. Failure to properly mix Resin part can lead to an incorrect mix ratio, resulting in poor opacity of the finished coating, improper curing, colour inconsistencies, blistering, foaming, a sticky surface, and overall reduced coating performance.



	ISO (Red Drum)	Resin
Sikalastic®-851	Part A	Part B
Sikalastic®-M 811	Part B	Part A

- The resin blend (Amine) of the product is the pigmented side
- The drum of the resin side contains a center bung in the lid. Install a drum mixer for mechanically stirring the resin side, which is essential prior to spraying
- The pigment of Resin will have the tendency to settle down over time
- Drums are clearly identified as Iso or Resin, due the ISO component, always clearly identified as stored in RED drum.

7.2 APPLICATION / AMBIENT CONDITIONS

Product	Temperature	Substrate moisture content	Relative air humidity
Sikafloor®-150 Plus	+5°C to +30°C	≤ 4% pbw	≤ 80%
Sikafloor®-P 922	+8°C to +30°C	Not restricted, but no condensation of water on the surface	Not restricted, but no condensation of water on the surface
Sikalastic®-851	+1 °C to +40°C		≤ 85%
Sikalastic®-M 811	+5 °C to +35 °C		≤ 85%
Sikalastic®-810	+8°C to +40°C		≤ 80%

7.3 SUITABLE HOT SPRAY EQUIPMENT AND SET UP

The below mentioned equipment, with the appropriate setup is suitable to spray our hot spray applied membranes:

GAMA:

GAMA Evolution G 50 H*		Supplier's Address: GAMA, Garraf Maquinaria, S.A. Camí Pla 31, Pol. Ind. Mas Alba, 08870 Sitges, BARCELONA (Spain) Tel. (+34) 938 114 000 Fax (+34) 938 944 279 info@gamapur.com
Spray Equipment:		
Supply pumps:	GAMA GHO	
Spray gun:	GDI	
Mixing chamber:	Mixing chamber Nr. 8	
Nozzle:	FL 117	
Alternative spray guns:		
Spray gun:	Master II	
Mixing chamber:	Mixing chamber Nr. 1	
Nozzle:	-	
Spray gun:	Master III	
Mixing chamber:	Mixing chamber Nr. 1	
Nozzle:	-	

Isotherm:

Spray Equipment:	PSM 700*	Supplier's Address: Isotherm AG Industriestrasse 6 CH-3661 Uetendorf Tel. +41 (0)33 346 02 02 www.isootherm.ch
Supply pumps:	GRACO T2	
Spray gun:	SP 300	
Mixing chamber:	MK Nr. 3K; 4K; 8,4K	
Nozzle:	-	

GRACO:

Spray Equipment:	Graco Reactor H-XP 3* Graco E-XP 2*, H-XP 2* are only suitable for smaller areas	Supplier's Address Europe: GRACO BVBA Industrieterrein-Oude Bunders Slakweidestraat 31 B-3630 Maasmechelen, Belgium Phone: +32 89 770 700 www.graco.com
Supply pumps	GRACO T2	
Spray gun:	Graco Fusion AP	
Mixing chamber:	AR 2929 or AW 3333	
Nozzle:		

WIWA:

Spray Equipment:	WiWa PU 460* WiWa DuoMix PU 540	Supplier's Address: Wilhelm Wagner GmbH Gewerbestraße 1 - 3 D-35633 Lahnau, Tel.: +49 6441 609-0 www.wiwalp.com
Supply pumps:	Walter MBP 5212	
Spray gun:	WIWA PU 4040	
Mixing chamber:	BR	
Nozzle:	-	
Alternative spray guns:		
Spray gun:	Graco Fusion AP	
Mixing chamber:	AR 2929	
Nozzle:	-	

MAGMA Macchine s.r.l.:

Spray Equipment:	MAGMA MS LC K09-fixed ratio*	Supplier's Address: Magma Macchine S.r.l. , Via dell'Artigianato 9/11 28043 Bellinzago Novarese (NO) Italy Tel +39 0321 986637commercile Email commerciale@magmamacchine.it
Supply pumps:	Not required	
Spray gun:	Magma Head gun HMG, with standard mixing chamber	
Mixing chamber:	HMG spray gun with tungsten carbide nozzle 2503	

* Recommended material/ hose temperature: ISO: approx. +70°C/ Resin :approx. +60°C
Pressure: approx. 160 bar/ ~2300 psi

Other equipment producers: The proportioning equipment utilized must be capable of supplying correct pressure and heat for the appropriate hose length on a consistent basis.

7.4 IMPORTANT NOTES

- Prevent exposing the isocyanate (Red Drum) to moisture or to frost.
- Always use a sealed container with a desiccant dryer in the vent, or a nitrogen atmosphere.
- It is mandatory to prevent reaction with air moisture on the ISO-Drum: Use always Silica Gel Dryer.
- The material transfer pumps shall have 2x volume output of spray equipment/gun combination
- A dry air blanket is recommended.
- Electricity installation must match the machine demands: run motors, heaters, hose heat, setting controllers and timers.
- Air supply installation must match machine demands to run motors, guns, fresh air respirators, develop spray pressure etc.
- Please note that the mix viscosity is lower at higher material temperature.
- Beware of spillages and clean them up immediately.
- Equipment must be maintained and in proper conditions.
- When changing materials, flush the equipment multiple times to ensure it is thoroughly clean.
- Never leave the machine filled with material (Iso/Amin) for longer than 2-4 weeks and keep it under pressure.
- If the machine will not be used for a long period of time, clean the equipment thoroughly and fill the whole system with Mesamoll (Alkane sulphone acid phenyl ester).

7.5 APPLICATION

- All areas not to be coated or primed shall be taped and masked off for protection.
- The membrane shall be sprayed in a cross direction to ensure a homogeneous thickness over the whole surface.
- Do not apply more than 3mm in one cross application. In case higher thicknesses must be applied it shall be done in multiple cross sections with a short standby time between the sections.
- All areas where spray application takes place shall have an enclosure.
- Prevent distribution of overspray in surrounding areas. Settled overspray can cause damage to goods and may lead to strong damage claims.
- Take care of environmental issues and prevent overspray from contaminating inshore waters.

7.6 LAPPING

- Where new waterproofing membrane is to be joined to an existing waterproofing membrane and at day joints, the new application shall be lapped onto the existing by a minimum of 100 mm.
- Where the existing Waterproofing Membrane is clean and less than three hours old, no additional preparation is necessary.
- Where the existing cured Waterproofing Membrane is dirty or contaminated, the surface shall be first cleaned using Sika Thinner C and then Sikalastic®-810 shall be applied at a maximum coverage rate of 0.07 kg/m² to give a minimum lap margin of 100 mm and allowed to dry

7.7 REPAIRS

- a) Within one hour of membrane application, identified pin/blow holes are over-sprayed with the waterproofing membrane to a minimum thickness of 2.0 mm.
- b) If repairing is to take place more than three hours after membrane application, the area over and around any pin/blow holes must be grinded, cleaned using a suitable solvent, ensuring a minimum 100 mm overlapping and Sikalastic®-810 applied.
- c) A minimum of one hour must be allowed for Sikalastic®-810 to dry, after which the Sikalastic®-851 or Sikalastic®-M 811 waterproofing membrane is applied to a minimum thickness of 2.0 mm, ensuring a minimum peripheral lap of 100 mm around the repair.

Blisters and other damage are made good by cutting back to sound material and repairing as described in the preceding a) – c).

8 OVERCOATING TIMES

8.1 BEFORE OVERCOATING SIKAFLOOR®- 150 PLUS/ P 922 (LIGHTLY BROADCAST) WITH:

Ambient Temperature	+ 10°C		+20°C		+30°C	
Membrane	Min	Max	Min	Max	Min	Max
Sikalastic®-851/ M 811	24 hours	4 days ¹⁾	8 hours	2 days ¹⁾	8 hours	24 hours ¹⁾

¹⁾In case the maximum over coating time is exceeded the surface must be cleaned and primed again

8.2 BEFORE OVERCOATING SIKALASTIC®-851/ M 811 WITH:

Ambient Temperature	+ 10°C		+20°C		+30°C	
Product	Min	Max	Min	Max	Min	Max
Sikalastic®-851/ M 811	30 sec.	3 hours	30 sec.	3 hours	30 sec.	3 hours
Sikalastic®-810	3 hours ¹⁾	24 hours ¹⁾	3 hours ¹⁾	24 hours ¹⁾	3 hours ¹⁾	24 hours ¹⁾

- 1) In case the maximum over coating time is exceeded Sikalastic®-810 + 15 wt. % Thinner C must be applied as a bonding bridge

8.3 BEFORE OVERCOATING SIKALASTIC®-810 WITH:

Ambient Temperature	+ 10°C		+20°C		+30°C	
Product	Min	Max	Min	Max	Min	Max
Sikalastic®-851	3 hours	6 hours	2 hours	4 hours	1 hour	2 hours
Sikalastic®-M 811	3 hours	6 hours	2 hours	4 hours	1 hour	2 hours

All times mentioned in section 8 are approximate and will be affected by changing ambient conditions particularly temperature and relative humidity

9 INSPECTION AND QUALITY CONTROL

9.1 GENERAL NOTES

The applicator is responsible for the initial acceptance of the substrate prior to application. No works should be executed without the applicator's satisfaction.

- The applicator should create an inspection checklist based on the above sequence of application and modified as per the actual site condition and requirements.
- It is advisable to create daily records of material and batch used including application parameters and weather conditions for future reference, especially in case of any possible defects.
- Before starting any spray application, conduct at least 1 m² trial on a plastic sheet or any boards to see if the product is properly setting and to find any discoloration.

9.2 THICKNESS MEASUREMENT

Since Sikalastic®-851 and M 811 are fast-curing material, the common way to check coating thickness while wet is not possible. In this regard, below are the best possible ways of checking and monitoring the thickness of application.

AREA-TO-VOLUME: calculations can be used as a reliable method to assist in determining the coverage rate of the applied product. By accurately calculating the surface area and matching it with the volume of the product, the required coverage rate can be ensured, helping to achieve consistent and optimal application results

DESTRUCTIVE TEST: This is ideally done immediately, few minutes after spraying, before the material cures and gain its adhesion strength. This also allows immediate repair on the test location and respraying of area if the thickness does not meet the requirement. Test is done by cutting a small piece and peeling the coating off at minimum 3 random locations for every completed area. Measure the thickness using a calliper.

NON-DESTRUCTIVE TEST: Alternatively, the thickness can be checked without cutting the cured coating by using a digital thickness gauge. This can be done at minimum 3 random locations for every completed area. However, since the test is non-destructive, increasing the number of tests may be advisable to increase the accuracy of test.

10 HEALTH & SAFETY RECOMMENDATIONS

10.1 PERSONAL PROTECTION



Handling or processing resin-based materials might cause irritation to the eyes, skin, nose and throat.

Therefore, appropriate eye protection shall be worn at all times while handling resin-based materials.

Safety shoes, gloves (butyl rubber/nitrile rubber gloves) and other appropriate skin protection shall be worn at all times.

Always wear eye protection (safety glasses), hard hat, ear protection safety boots with steel toes.

Always wash hands with suitable soap after handling products and before food consumption.

Please make sure that drinking water, also for eye flushing and a first aid kit is always available.



When using high pressure plural component spray equipment all personnel working in the application area must wear double filter breathers, orinasal masks suitable for organic vapours, or respirators. Types: supplied air respirator, air purifying respirators, supplied air hood.

Take care on good ventilation and do not eat or drink at the workspace.

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 containing physical, ecological, toxicological and other safety-related data.

11 LIMITATIONS

- These products may only be used by experienced professionals.
- For spray application the use of protective health and safety equipment is mandatory.
- Always refer to the manufacturer's instructions before using the tools and mixing equipment.
- Products shall only be applied in accordance with their intended use.
- Local differences in product may result in performance variations. The most recent and relevant local product Data Sheets (PDS) and Material Safety Data Sheets (MSDS) shall apply.
- Beware of condensation! The substrate must be at least +3°C above dew point.
- Sikalastic®-851 and Sikalastic®-M811 are not sufficiently UV- and weather-resistant for use in exposed applications without additional protection. A range of compatible top coats are available to provide the necessary durability.

12 ENVIRONMENT

12.1 CLEANING OF TOOLS / MIXING EQUIPMENT

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

12.2 WASTE DISPOSAL



Do not empty surplus material into drains; dispose responsibly through licensed waste disposal contractor in accordance with legislation and local / regional authority requirements. Avoid runoff onto soil or into waterways, drains or sewers.

FOR DETAILED INFORMATION REFER TO THE MATERIAL SAFETY DATA SHEET

13 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 products 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.