

APPLICATION GUIDE
Sikalastic®-618

10.2016/ LIQUID APPLIED WATERPROOFING MEMBRANE FOR ROOFS / SIKA UK/ SARAH SPINK

UK EDITION

BUILDING TRUST

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1 SCOPE

This method statement outlines the step by step procedure for application of the Sikalastic®-618 liquid applied membrane for waterproofing roofs.

2 SYSTEM DESCRIPTION

Sikalastic®-618 is a one-component, cold applied, moisture-triggered polyurethane membrane. It cures to form a seamless and durable waterproofing solution for exposed roof areas and structures.

USES

Sikalastic®-618 may only be used by experienced professionals. For roof waterproofing solutions in both new construction and refurbishment projects

- For roofs displaying complex detail areas, even when accessibility is limited
- For cost efficient life cycle extension of failing roofs

CHARACTERISTICS/ ADVANTAGES

- Single component - No mixing, easy and ready to use
- Cold applied - requires no heat or flame
- Seamless membrane
- Compatible with Sika® Reemat Premium - easy to detail
- Easily recoated when needed - no stripping required
- Economic – provides a cost efficient life cycle extension of failing roofs
- Vapour permeable - allows substrate to breathe
- Elastic - retains flexibility even at low temperatures
- Good adhesion to most substrates
- Fast curing - Free from rain damage almost immediately on application

APPROVALS/STANDARDS

- Liquid applied roof waterproofing kit according to ETAG 005, ETA 13/0456 issued by Technical Assessment Body British Board of Agrément (BBA), Declaration of Performance 18636122 and provided with the CE marking.
- External fire performance according to ENV 1187:
- BRoof (t1) / Broof (t4) on non-combustible substrates
- BRoof (t1) / Broof (t2) over built up roofing system
- British Standard 476 part 3 Ext F.AA rating non-combustible substrates
- Reaction to fire according to EN13501: Euroclass E

2.1 REFERENCES

To ensure the correct application of Sikalastic® -618 please refer to the most recent issue of the following documents:

- PDS (Product Data Sheet)
- MSDS (Material and Safety Data Sheet)

If complying with the ETAG is required, the build-up as defined in the ETA is obligatory

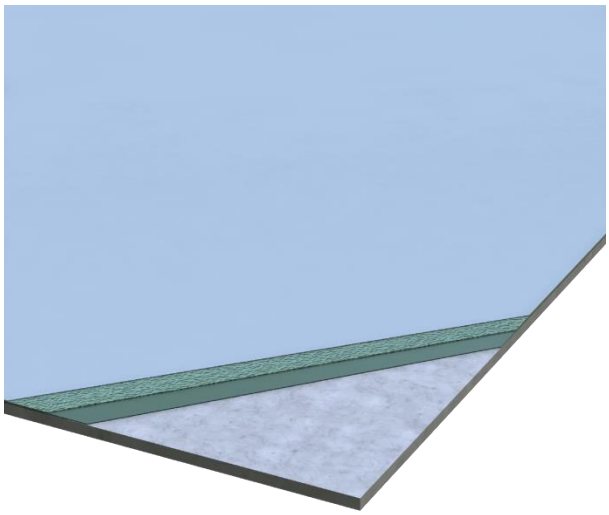
3 SYSTEMS

3.1 SYSTEM BUILD-UP

All figures are minimum material use

Prior to priming all substrates must be clean dry and sound free from any oxidisation, mould and any other deleterious materials.

Sikalastic®-618 Waterproof Coating for Roofs



System Build Up

4. Sikalastic®-618 (Top Coat)
3. Sika® Reemat Premium (GFM)
2. Sikalastic®-618 (Embedment Coat)
1. Substrate

Reinforced Roof Waterproofing
Sikalastic®-618 is applied in one coat reinforced with Sika® Reemat Premium and sealer with a further coat of Sikalastic®-618.

System Working Life ~10 years (W2 according to ETA certificate ETA 13/0456)

Priming (typical)	Please refer to substrate pre-treatment	Please refer to PDS of the Primer
Base Coat	Sikalastic®-618	≥1.0 l/m²
	Sika®Reemat Premium	
Top Coat	Sikalastic®-618	≥0.75 l/m²

Note: These figures are theoretical and do not include for any additional material required due to surface porosity, surface profile, variations in level and wastage.

4 PREPARATION

4.1 SUBSTRATE PREPARATION GENERALLY

The surface must be sound, of sufficient strength, clean, dry and free of dirt, oil, grease and other contamination. Depending on the material the substrate must be primed or mechanically cleaned. Grinding may be necessary to level the surface. Suitable substrates are such as: concrete, bituminous felts and coatings, metal, brickwork, asbestos cement, ceramic tiles, wooden substrates.

For detailed information regarding substrate preparation and primer chart please refer to Method Statement No. 850 915 09.

4.3 SPECIFIC SURFACE ADVICE

Cementitious substrates

New concrete should be cured for at least 28 days and should have a pull off strength ≥1.5 N/mm2. Inspect the concrete, including up-stands, all areas should be hammer tested. Concrete must be suitably finished, preferably by wood float or steel pan. A smooth level finish is acceptable where the surface is prepared to avoid laitance (a tamped finish is not acceptable). The surface finish must be uniform and free from defects such as laitance, voids or honeycombing.

Loose friable material and weak concrete must be completely removed and surface defects such as blowholes and voids must be fully exposed.

Repairs to the substrate, filling of joints, blowholes/voids and surface levelling must be carried out using appropriate products. High spots must be removed by e.g. grinding.

Outgassing is a naturally occurring phenomenon of concrete that can produce pinholes in subsequently applied coatings. The concrete must be carefully assessed for moisture content, air entrapment, and surface finish prior to any coating work. Installing the coating either when the concrete temperature is falling or stable can reduce outgassing.

Old frequently trafficked concrete may contain a lot of ingrained contamination, rubber, oils, etc. Ensure by testing if necessary that preparation is sufficient to produce a good adhesion

Brick and stone

Mortar joints must be sound and preferably flush pointed. Make good any missing mortar and clean off. Power wash if necessary and use Sika® Biowash as required – allow sufficient time for drying.

Tiles

Ensure all tiles are sound and securely fastened, replacing obviously broken or missing sections. Tiles need a good adhesion to the substrate otherwise they need to be removed. Test adhesion to surface some tiles may need to be abraded to produce a good bond. Power wash and use Sika® Biowash as required – allow to dry. Ensure tiles and tile adhesive are not holding or situated above high levels of moisture.

Asphalt

The asphalt must be carefully assessed for bond, moisture and/or air entrapment, grade and surface finish prior to any coating works being carried out. All major cracks should be assessed for movement potential before application of Sikalastic®-618. All major cracks should be sealed to allow continuity of Sikalastic® waterproofing Membrane. Power wash and use Sika® Biowash as required-allow to dry.

Bituminous felt

Ensure that bituminous felt is firmly adhered or mechanically fixed to the substrate. Bituminous felt should not contain any badly degraded areas. Power wash and use Sika® Biowash as required-allow to dry. Treat blisters by removal or star cutting and remove any underlying water and allow to dry. There are many types of bitumen felt with variable softening points and additives – Test compatibility before use.

Bituminous coatings

Bituminous coatings must not have sticky or mobile surfaces, volatile mastic coatings, or old coal tar coatings may be problematic. Remove loose or degraded coatings. Test compatibility before use.

Metals

Metals must be in sound condition.

Steelwork is ideally prepared to Sa2½ (Swedish Standard SIS 05 : 5900 = 2nd quality BS4232 = S.S.P.C. grade SP10) or as indicated by the blasting specification which may be of a higher standard. Hand preparation is acceptable for adhesion purposes but may not totally restrict existing corrosion.

Non-ferrous metals are prepared as follows. Remove any deposits of dust and oxidation and abrade to bright metal. Wire brushing can be used for soft metal such as lead. The surface must be clean and free from grease which, if present, must be removed with a proprietary solution. Wash with detergent, rinse and dry.

Most metals can be coated directly – adhesion test and try a suitable metal primer e.g. Sikalastic® Metal Primer or Sika Primer 204n and observe relevant application and overcoating instructions. Adhesion test before full application.

Wooden substrates – Roofing and upstands only nor subject to mechanical loading

Timber and timber based panel roof decks require a complete layer of Sikalastic® Carrier Membrane with a bond break at panel joints prior to the application of the chosen system. They will be limited in the degree and type of traffic that will be acceptable. Small timber protrusions eg upstands etc may be treated directly, provided that the timber is of exterior quality, e.g. water proof or marine plywood,

Paints/Coatings

Remove any previous coatings. Ensure the surface is clean and free from grease.

Solar Reflective Coating

Solar reflective coatings should preferably be removed because of the tendency for the film to delaminate, making good, overall adhesion of subsequent coatings difficult to achieve. Such coatings must be inspected carefully and thoroughly with integrity/adhesion tests carried out to determine their suitability for overcoating.

PVC Membranes

Ensure that PVC membrane is firmly adhered or mechanically fixed to the substrate. PVC membranes must be inspected carefully and thoroughly with integrity/adhesion tests carried out to determine their suitability for overcoating.

4,4 PRIMER CHART

	Sikalastic® Metal Primer or Sika Primer 204N	Sikalastic® Concrete Primer	Sika® Reactivation Primer	Apply Direct	Sikalastic® Primer PVC	EPDM Primer	Adhesion Test Required	Abrade/ Remove
Exposed Asphalt				X				
Coated Asphalt							X	
Felt				X				
Felt – Solar Reflective							X	
Mineral Felt				X*7				
Brittle Bitumen*2								X
Stable Bitumen				X				
Concrete		X*1						
Damp Concrete		X*3						
Brickwork				X				
Porous Brickwork*4		X						
Metal	X							X
Lead	X							X
Aluminium	X							X
Stainless Steel							X	
Galvanised*5	X							
Timber Upstands*6		X						
PVC Membranes					X		X	
GRP				X				X
Asbestos Cement		X						
EPDM						X		
Existing Sikalastic Roof Coatings			X					

Key

*1 Concrete Primer is not necessary for adhesion but can be used to improve material consumption and prevent outgassing

*2 Remove from substrate

*3 Damp concrete must be allowed to dry
*4 Apply suitable mortar screed using a bag and rubbing technique
*5 Apply a mordant solution prior to metal primer application
*6 Sika® Flexitape Heavy required on the joints
*7 Only fully reinforced systems

Note: For the consumption rates and waiting time/overcoating you should refer to the PDS of the appropriate cleaner or primer. Other substrates must be tested for their compatibility. If in doubt, apply a test area first.

5 CONDITIONS

Application Temperatures
The system can be applied within an ambient temperature range between +5 °C and +40 °C. . Please refer to the table below for exact details.

	Temperature Range in °C		
	Air	**Substrate**	**Material**
Sikalastic®-618	+5°C to +40°C	+5°C to +60°C	+5°C to +25°C

The substrate temperature must be at least 3 °C above dew point during application and curing.
The substrate temperature must not be less than +3 °C if a topping is applied to the surface. Reaction problems can occur at lower temperatures.

Moisture
Relative humidity must be less than 85 %. The surface must be protected from moisture until the coating has hardened.

The substrate temperature will affect how quickly the materials will cure sufficiently to be overcoated. See individual data sheets for specific information.

It is important that substrate temperatures are generally above 3°C to ensure the surface (including that if previous primers and coatings) is free from ice or condensation.

Equipment for measuring Dew Point, humidity, surface temperature and therefore condensation risk is widely available either as individual components or 'all in one' items. Typical all in one units are shown below.

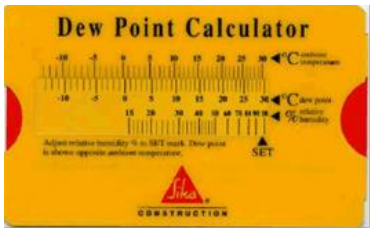


GE Protimeter MMS System



HT-8663 Laser Dew Point Hygrometer

If you do not have such a unit it is still important to know what the conditions are to be able to ensure you follow the conditions set out in the tables above. The dew point can be determined manually by the dew point chart below.





1. Measure air temperature in °C
2. Measure atmospheric humidity in %
3. Measure substrate temperature in °C
4. Determine dew point temperature using dew point chart or Sika slide rule guide
5. Add 3 °C to dew point temperature
6. Verify that substrate temperature is at least 3 °C higher than dew point

Example: Air temperature: 20 °C Atmospheric humidity: 60% Substrate temperature: 16 °C
Determined dew point temperature with dew point chart: 12.0 add 3 °C: 15.0 °C.
Verify: Is 16 °C greater than 15.0 °C? Decision: Installation should not take place.

	Dew point temperature in °C													
Room air temperature	Relative humidity in %													
	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%
30	10,5	12,9	14,9	16,8	18,4	20,0	21,4	22,7	23,9	25,1	26,2	27,2	28,2	29,1
29	9,7	12,0	14,0	15,9	17,5	19,0	20,4	21,7	23,0	24,1	25,2	26,2	27,2	28,1
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12	-4,5	-2,6	1,0	0,4	1,9	3,2	4,5	5,7	6,7	7,7	8,7	9,6	10,4	11,2
11	-5,2	-3,4	1,8	-0,4	1,0	2,3	3,5	4,7	5,8	6,7	7,7	8,6	9,4	10,2
10	-6,0	-4,2	2,6	-1,2	0,1	1,4	2,6	3,7	4,8	5,8	6,7	7,6	8,4	

6 APPLICATION

6.1 GETTING STARTED

Ensure you have all relevant Safety Data Sheets and Product Data Sheets and have read the information and planned your risk assessment accordingly





Typical tools required







Medium pile roller Rad rollers Paint brushes –various

6.2 APPLICATION SIKALASTIC®-618

Preparation

- You must ensure the substrate is free from old plant and debris
- Cut all brick chases if required. Do all your dirty work before cleaning
- The outlets and gutters must be free from obstruction

Cleaning

- Clean the substrate with minimum 2000 psi power wash
- If needed clean the area with Sika® Biowash, this eliminates all the moss/algae. This must be applied and left on the substrate for seven days, then washed off prior to the application of Sikalastic® -618
- The susbstrate must then be dried off using squeegees/rags (Gas guns should be avoided)
- Once the substrate is clean and dry, you can then begin the application

Priming

Prior the application of Sikalastic®-618 the priming coat if used must have cured tack-free. For the waiting time /overcoating please refer to the PDS of the appropriate primer. Damageable areas (handrails etc.) should be protected with tape or plastic wrapping.

All detail areas should be completed first by using Sikalastic®-618 into which Sika® Reemat Premium is embedded. Detail areas should be allowed to cure prior to the application of Sikalastic®-618 to the whole roof surface.

For detail areas follow step 1-3

Details (Embedment Coat):

1. Prepare the required pieces of Sika® Reemat Premium for each particular detail. Tear the mat to overlap it rather than cutting it and ensure a good overlap of at least 5 cm

2. Apply first coat of approximately 1 l/m^2 of Sikalastic®-618 onto the detail. Work only so far in advance that the material stays liquid.

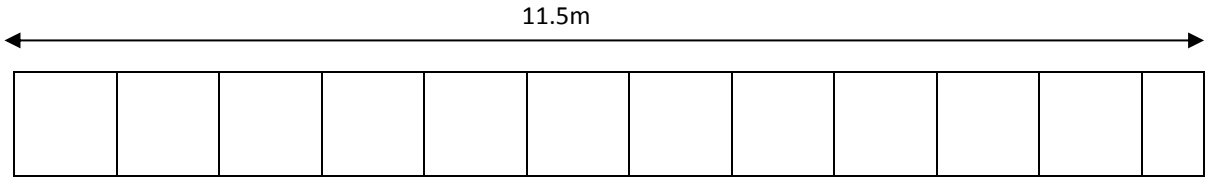
3. Embed the Sika® Reemat Premium and roll it into the wet material. Turn the matting grey or green and leave for 5-10 minutes to allow the matting to break down. Once the matting has broken down you can then mould it into the desired detail. The treated details must be left to cure tack free (4-10 hrs.) before the flat area can be applied.



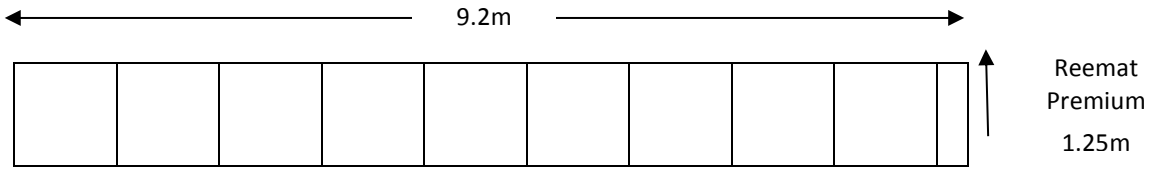


Gridding Out Guide Flat Areas (Embedment Coat)

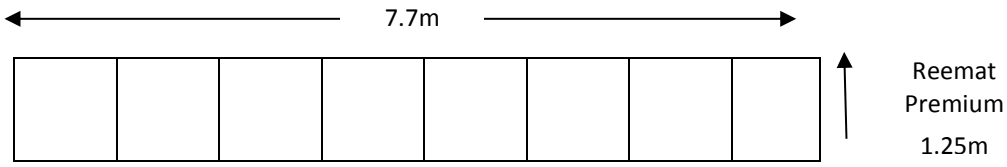
Base Coat – Smooth Substrate (Asphalt/Carrier Membrane/Single Ply) – 1 x 15 litre tin coverage 1 l/m²



Base Coat – Intermediate Substrate (Worn Mineral Felt) 1 x 15 litre tin coverage 1.25 l/m²



Base Coat – Rough Substrate (Heavily Mineralised Felt) – 1 x 15 litre tin coverage 1.5 l/m²



Flat Areas (Embedment Coat):

4. Apply first coat of Sikalastic®-618 with the consumption rate, stated under point 2.2 “System Build up’s “. Work only so far in advance that the material stays liquid*. Roll in the Sikalastic® Reemat Premium and push into the wet liquid and ensure full saturation. Overlapping of the Reemat Premium a minimum 5 cm and ensure overlaps are sufficiently wet to bond. The roller may require only a little extra material to keep wetted but no further significant material needs to be added at this stage. The surface of the reinforcement should look wet and fully sealed.



Gridding Out Guide Flat Areas (Top Coat)

Top Coat – 0.75 l/m²

20m²	20m²
20m²	20m²

Upstands & Flat Areas (Top Coat)

5. Before applying the second coat, check for upstanding Sika Reemat Premium fibres. These fibres have to be eliminated by using sandpaper. Make sure that all upstanding fibres are abraded.



6. Sikalastic®-618 is applied directly onto the first layer of Sikalastic®-618 in all roof areas including details such as up stands, pipes and protrusions. Apply with consumption rates according to point 2.2 “System build up” of Sikalastic®-618 depending upon the system required.

Note: The top coat should be applied in straight lines, leaving no runs or raised areas (puddling effect). This should then be laid off in one direction, which creates a good finish to the system

Don’t forget to grid out the area and use your Wet Film Thickness Gauge

* Material will dry at the surface in around 30 minutes depending on temperature. Always maintain a wet edge and finish surface as work proceeds. Going back to re-work areas that are partially dried may disrupt the surface

6.3 CURING TIME

Ambient conditions	Rain resistant*	Touch dry	Full cure
+5 °C/50 % r.h.	10 minutes	10 hours	19 hours
+10 °C/50 % r.h.	10 minutes	6 hours	10 hours
+20 °C/50 % r.h.	10 minutes	4.5 hours	6 hours
+30 °C/50 % r.h.	10 minutes	2 hours	4 hours

*Be aware that impact of heavy rain or rain showers can physically mark or damage the still liquid membrane.

Note: Times are approximate and will be affected by changing ambient conditions particularly temperature and relative humidity

7 LIMITATIONS

- Do not apply Sikalastic®-618 on substrates with rising moisture.
- Sikalastic®-618 is not suitable for permanent water immersion.
- On substrates likely to exhibit out-gassing, apply during falling ambient and substrate temperature. If applied during rising temperatures “pin holing” may occur from rising air.
- Do not dilute Sikalastic®-618 with any solvent.
- Do not use Sikalastic®-618 for indoor applications.
- Do not apply close to the air intake vent of a running air conditioning unit.
- Do not apply Sikalastic®-618 directly on Insulation boards. Instead use Sikalastic® Carrier Membrane between Insulation board and Sikalastic®-618
- Volatile bituminous materials may stain and or soften below the coating.
- Areas with high movement, irregular substrates, or timber based roof decks require a complete layer of Sikalastic® Carrier Membrane.
- Do not apply cementitious products (e.g. tile mortar) directly onto Sikalastic®-618.
- Sikalastic®-618 may exhibit slight chalking at the surface – do not use run off water for live fish tanks, etc.
- Volatile bituminous materials may stain and or soften below the coating.
- Low melting point bituminous materials may needpriming – using a darker shade also helps hide any staining from the volatiles.

8 SAFETY MEASURES ON SITE

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.



Personal Protection:

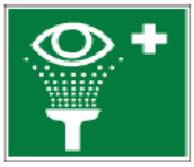
The following protective equipment is essential for anyone working with Sikalastic® products.



In addition to protective clothing it is also recommended to use a barrier cream on the skin. The use of a barrier cream is more useful and effective than often reputed, they are inexpensive, convenient, and protect well if they are not frequently flushed with solvents. However, barrier creams are only a supplement to and not a replacement for protective gloves, so always wear gloves. Always ensure there is no contamination inside gloves before reusing them.

Safety glasses or other eye protection obviously help those doing the work but they can also create a false sense of security. Do not take risks with health!

In the event of any spillage or contact into the eyes, always seek medical advice immediately after rinsing and cleaning the eyes with the clean water.





Ensure sufficient ventilation during application in closed or confined spaces. Dependent on local regulations respiratory masks may be required. Please observe all relevant local regulations.

Hard hats, safety shoes and ear protection are also generally recommended on construction sites. Please observe all necessary requirements

Wash your exposed skin occasionally during the workday and immediately if any Liquid Applied product gets on it. Avoid using solvents to clean yourself since they can help Liquid Applied Membrane material penetrate in to the skin and solvents themselves are aggressive and harmful to the skin. If water is no more available at any time or shorten, then clean the contamination with sand instead. Certain hand cleaners also work without harmful effects. Citrus skin cleaners, for example, are effective and mild. Soap and water takes time, but also eventually works for small areas.

Avoiding skin contact by keeping tools and equipment clean is one of the best ways to protect oneself.



Despite safety precautions, with any instances of skin contact rinse immediately with clean water and use warm water and soap to thoroughly clean the skin. A good skin cleaner is Sika® Topclean T or Wonder Wipes



No Sikalastic® applications should ever proceed without sufficient water being adjacent and available for eye washing.

If adequate clean water is not provided then the project should not commence, no matter what the urgency. If a professional eyewash kit is not available, then at the very minimum one quart of clean water must be present. The water can be in a pail, plastic jug or via a hosepipe.

9 LEGAL NOTE

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.

NOTES

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