Murraywood Construction Ltd

St Gabriels Development - Manchester

Waterproofing / Gasproofing to the Lift Pits & Ground floor slabs

Issue 1 / 7th March 2024

Job Number C7860

Lainton Services Ltd
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Lainton Services
National Waterproofing Specialists

Lainton Services
National Waterproofing Specialists

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Our Ref: JB/MWC07032024

7th March 2024

Mike Walsh
Murraywood Construction Ltd
Endeavour House
Abbotsfield Road
St Helens
Merseyside
WA9 4HU
Dear Graeme

RE: St Gabriels, Rusholme

Following our recent conversation, I am pleased to enclose our outline specification for the required Gasproofing/ waterproofing works at St Gabriels, Rusholme

I have taken this opportunity to enclose all relevant product data sheets and application guides,

I trust the enclosed information proves useful, however, please contact me at any time if I can be of further assistance on this, or any other, project.

Yours sincerely

JC Burrows

James Burrows
Commercial Director

St Gabriels

Outline Specification Prepared for:
Murraywood Construction Ltd

Scope of Works

- This outline specification relates to the required external gasproofing / waterproofing works at St Gabriels in Rusholme and associated works.

Preambles

- This specification (the document) results from verbal and email communication relating to the clients preferred waterproofing system and from the description of the substrates and ground conditions offered to our representative. It incorporates related substrate/surface preparations necessary with respect to the application of Type A Barrier Waterproofing & Damproofing.

- The document is not intended to be a reflection on groundwater conditions or a diagnostic report detailing potential areas of weakness within the structure should water ingress be resolved.

- Client should ensure, where appropriate, via the services of an Independent Consultant, that the information provided to Lainton Services Limited is sufficient to formulate a correct course of treatment.

- Prior to the commencement of the contract, the Client should request a full hydrogeology report of the surrounding area, in order to satisfy himself that their work is inkeeping with best practice for the resultant ground conditions.

- The document is submitted on the understanding that the structure and surfaces to be treated are sound, of normal construction and are not subject to undue/excessive thermal or structural movement. The Contractor must take all steps necessary to provide a surface suitable for rendering and coating, whether the action is specifically designated or not.

- Work must proceed at all times in accordance with relevant legislation, codes of practice, or any other specific regulations applicable to such works. They must incorporate the use of approved and conventional materials and methods. If in doubt, seek advice from Lainton Services Ltd before continuing.

- Technical Data Sheets are attached and are offered to assist the client in the decision making process.

- If substrate defects/faults are discovered whilst work is in progress, they should be reported to the Contract Administrator or other appropriate authority prior to proceeding with further work.

- In such circumstances, additions and/or amendments to the specification may be necessary.

- This Specification is valid for one year from the date of issue at which point advice should be sought from Lainton Services Ltd to confirm its validity.

Outlying Methodology

- We have been asked to provide a gasproofing & waterproofing solution to a grade 3 “habitable structure” comprising of two existing buildings and two new builds for student accommodation and will range between 2 and 5 stories. The foundations are anticipated to comprise piles founded within the Bedrock. Shallow foundations on the clay layer within the Till deposits is to be considered.
- The design is required to be inkeeping with guidelines set out in BS8102:2009, BS8485:2015, Ciria 735 and is required to satisfy the guidelines listed by ICW as the warranty provider, who follow the guidance detailed in LABC Technical guidance document Version 8

- Based on the information provided via our the HGBS report 20231117 Rev 1 dated November 2023 and via our email/in person correspondence we note;

    - The site has been classified as a Characteristic Situation 2 scenario representing a low/medium risk to human health by hazardous ground gasses, thereby requiring special measures to mitigate the risk to human health.
    - Perched groundwater was encountered during the bore hole trials with the highest risk groundwater being found at 1.0mbgl. Note it is considered that this groundwater may be the result of a pre existing clay pipe.

Table 3-3: Groundwater Monitoring Results

Strata	Borehole	Depth of Installation (mbgl)	Water Level	
			(mbgl)	(mOD)
Made Ground	WS05	1.00	0.15 to 0.51	+38.83 to +38.47
	WS10	1.00	Dry	-
Glacial Till	WS02	3.00	0.91 to 1.02	+39.21 to +39.10
	WS05	2.80	0.34 to 0.45	+38.64 to +38.53
	WS10	2.50	1.03 to 1.79	+44.59 to +43.83
	WS14	2.70	Dry	-
Glacial Till and Chester Formation	BH02	13.50	10.94 to 11.80	+28.09 to +27.23
	BH03	13.00	11.33 to 11.43	+28.44 to +28.34
Chester Formation	BH01	12.50	Dry to 10.95	+28.16 to +28.13

    - The structure is to be built in made ground, glacial till, chester formation glacial till and chester formation.

<u>Gasproofing Specification generally in accordance with the points guidance listed under BS8485:2015 Table 3</u>

- Specialist installed loose laid gas membrane terminating a minimum of 150mm above external ground level, with all jointing welded, Independently Tested and Validated – ***2.0 Points***
- Cast In Situ reinforced concrete slab, with minimal penetrations and waterbars in the concrete the concrete junctions – ***1.5 Points***
- Alternatively where block and beam is utilised **1.5 points** is achieved for good performance passive ventilation.
- Points Required 3.5
- **Points Achieved 3.5**

- Based on the aforementioned information, we can achieve a prudent and robust waterproofing / gasproofing design by utilising a combined system of membranes and cast in situ concrete

Waterproofing Specification for below ground elements in accordance with the points guidance listed under BS8102:2009 Table 2

- This can be achieved using the following specification;

1st Line of Defence

- Type A Barrier membrane, laid externally to the structure, comprising of a pre applied or liquid membrane underneath the slab and a post applied membrane placed vertically, terminating into the DPC or a minimum of 150mm above finished ground level.

2nd Line of Defence

- Type B waterproof concrete, designed to BS8110 / BSEN1992

- Embedded Metal: As required. The structure should be designed to either BS 8110, BS 8007 or BS EN 1992 Eurocode 2.
- In any case consideration should be given to restricting surface crack widths to a maximum of 0.3mm.
- Compressive strength class (cylinder/cube minimum): C28/35
- Fibres: As required.
  Aggregates:
- Size (maximum): 20mm, the sand content must provide a minimum of 10kg/m3 of fines less than 75 microns.
- Type/Density: Dependant on local availability.
- Design chemical class: As appropriate for site conditions.
- Limiting values for composition:
- Water/Cement Ratio (maximum): 0.45
- Total Cementitious content (minimum): 350kg/m3
- Total Cementitious content (maximum): 500kg/m3
- Consistence class (minimum): S3 (BS EN 206)
- Permitted cement/combinations: The product is compatible with cement blends containing pulverized-fuel ash, ground
- Granulated blast furnace slag and silica fume blends as defined in BS EN 197-1 : 2011.
- Admixtures: A powder based admixture consisting of a combined water resisting hydrophobic pore blocking and HRWR/Superplasticising admixture
- Hydrophilic Waterbars are to be placed in all concrete to concrete junctions.

Removal of Hydrostatic Pressure

- Geotextile lined Sheet drainage system, post applied vertically and linked into a serviceable & maintained land drain around the entire perimeter of the structure.

Schedule Of Works

Preparation & Substrate Condition

- All R/C concrete must be free from sharps and protrusions.
- All tie bar holes must be filled using a suitable R4 waterproof mortar,
- All concrete must be properly compacted and vibrated to structural engineers design & specification
- More detailed preparation guidelines can be found in the attached docs “SP01” & “SP02”

Lift Pits

- A 50mm smooth concrete blinding is required for horizontal works. Alternatively the pile caps must be to a suitable standard without sharps and free from friable materials.
- Shuttering must be solid and devoid of large cavitation.
- a high strength mortar fillet is required on any changes in direction hzl/vcl
- **Sikadur32** is to be applied internally both horizontally and vertically, lapping over the lift pit wall and down the external face by 100mm
- Waterproof reinforced concrete walls should be constructed inline with the engineers requirements and the preparation guidelines listed in “SP02” attached
- Internal penetrations are to be completed utilising a pure epoxy chemical anchor such as **Fischer EM390 or similar**
- Note; The internal works to the slab must be protected with a suitable screed by others

Underside Of The Slabs (Z3,Z4)

- A 50mm smooth concrete blinding is required for horizontal works. The pile caps must be to a suitable standard without sharps and free from friable materials.
- Any structural connections to pile caps and ground beams are to be painted with a **Sikadur32** liquid membrane.
- **Sikaplan 1650** loose laid membrane is then to be pre applied to the blinding and taped to the **Sikadur32** Prior to concrete and steel placement.

Termination Detail 150mm Above EGL

- **Sikaproof P12** is to be lapped onto the Sikadur32 along the perimeter ground beams , with the leading edge sealed with **Sika Combiflex Adhesive**
- It is to be terminated onto the top of the RC upstand wall with **Sika Combiflex Adhesive** This material must be shielded from direct contact with sunlight
- The membranes are to be protected with a 4mm correx protection board

NOTE – Level threshold details and substation details are still in abeyance. If the ground floor slab need gas protection further design development is required.

BUILDING TRUST

PRODUCT DATA SHEET

Sikaplan®-1650 DPM Gas Barrier

Multi-layer, low density polyethylene membrane for ground level damp-proofing

PRODUCT DESCRIPTION

Sikaplan®-1650 DPM Gas Barrier is a multi-layer, low density polyethylene membrane, reinforced with a polypropylene reinforcing grid with an integral aluminium foil. Sikaplan®-1650 DPM Gas Barrier is specifically designed and manufactured to perform as a Methane, Carbon Dioxide, Radon Ground Gas, air and moisture protection system.

USES

- Ground level DPM
- Building protection from ground gases, radon, methane and carbon dioxide

CHARACTERISTICS / ADVANTAGES

- Fully tested to BS8485:2015
- Welded joints for improved sealing
- In-built grid to give greater strength
- Fully compatible with below ground waterproofing systems

APPROVALS / STANDARDS

- Conforms to the requirements of EN13967:2012
- NHBC Standards Compliant
- BS 8485:2015 Compliant
- BBA Certified – Certificate No: 20/5738

PRODUCT INFORMATION

Packaging	2m x 50m roll. Roll weights can be in excess of 20kg and hence appropriate care and equipment is required for unloading and handling.		
Shelf Life	Indefinite		
Storage Conditions	Rolls of Sikaplan®-1650 DPM Gas Barrier should be stored on stable/level ground and stacked not more than five rolls high, with no other material stacked on top. The rolls can be stored outdoors when packaged, but should be protected from exposure to UV.		
Overall Thickness	Thickness	0.6 mm	(EN 1849-2)
	Thickness - between scrim	0.4 mm Micrometre	
	Width / Length	2 m x 50 m	
	Weight	370 G/m²	
Tensile Strength	Tensile Strength (MD)	600 N/50mm	(EN 12311-1)
	Tensile Strength (CMD)	480 N/50mm	
Elongation	Tensile Elongation (MD)	20%	(EN 12310-1)
	Tensile Elongation (CMD)	20%	
Resistance to Static Puncture	1.25 kN		(EN 12236)

Resistance to Static Load	20 kg		(EN 12730-B)
Water Tightness	Pass		(EN 1296, EN 1367, EN 1928)
Resistance to Tearing (nail shank)	(Nail Shank) MD	330 N	(EN 12310-1)
	(Nail Shank) CMD	400 N	
Chemical Resistance	Methane Permeability	<0.09 ml/m²/day/atm	(BS EN ISO 15105-1)
	Carbon Dioxide Permeability	<0.09 ml/m²/day/atm	
	Radon Permeability	8.0 x 10^{-15} m²/s	(K124/02/95)
Reaction to Fire	Class E		(EN 13501-1)

VALUE BASE

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.

ECOLOGY, HEALTH AND SAFETY

This product is an article as defined in article 3 of regulation (EC) No 1907/2006 (REACH). It contains no substances which are intended to be released from the article under normal or reasonably foreseeable conditions of use. A safety data sheet following article 31 of the same regulation is not needed to bring the product to the market, to transport or to use it. For safe use follow the instructions given in the product data sheet. Based on our current knowledge, this product does not contain SVHC (substances of very high concern) as listed in Annex XIV of the REACH regulation or on the candidate list published by the European Chemicals Agency in concentrations above 0,1 % (w/w)

APPLICATION INSTRUCTIONS

INSTALLATION

Sikaplan®-1650 DPM Gas Barrier should be installed in accordance with the product installation guidelines, and in accordance with BS 8485:2015.

JOINTING AND SEALING

It is recommended Sikaplan®-1650 DPM Gas Barrier be heat welded where possible, with welding carried out by competent personnel with suitable qualifications in accordance with best practice, and guidance contained within BS 8485:2015. Sikaplan®-1650 DPM Gas Barrier should be overlapped by at least 100mm. If taping joints, only suitable tape must be used, ensuring application with a silicone roller to remove trapped air. Pre-formed details, or Self Adhesive Gas Membrane are available for sealing around protuberances.

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.

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Construction

SikaSwell® S-2

Swellable adhesive/sealant

Product Description	One part polyurethane sealant which swells in contact with water.
Uses	To seal waterproof-structures and fix SikaSwell®- Profiles or Sika® Injectoflex. Sealing: ■ Construction joints ■ Pipe and steel work penetrations through walls and floor slabs ■ Around all types of penetrations and construction joints ■ Construction joints in cable ducts, etc. Fixation: ■ SikaSwell®- Profiles
Characteristics / Advantages	■ Easy to apply ■ Good adhesion to various substrates ■ Optimised expansion rate, therefore no damage to fresh concrete during curing ■ Highly economical ■ Swells in contact with water ■ Permanently water resistant ■ Adaptable to fit many different detail tasks

Product Data

Form

Colour	Oxide red
Packaging	600 ml unipacs (20 unipacs/box, 48 boxes/pallet)

Storage

Storage Conditions / Shelf-Life	9 months from date of production if stored in unopened, undamaged original packaging in dry conditions at temperatures between +5°C and +25°C.

Technical Data

Chemical Base	1-part polyurethane, moisture curing
Density	1.33 kg/l (+ 23°C)
Skinning Time	2 hours (+23°C / 50% r.h.)

Curing Rate	After 1 day: ~ 2.0 mm (+23°C / 50% r.h.) After 10 days: ~ 10.0 mm (+23°C / 50% r.h.)
Sag Flow	< 2 mm
Change of Volume	■ 1 day in tap water: < 25 % ■ 7 days in tap water: > 100 % Swelling properties in salty water will be reduced and delayed.

Mechanical / Physical Properties

Shore A Hardness	Swollen (7 days in tap water): > 10 Non-swollen (7 days: +23°C / 50% r.h.): 40-60

System Information

Application Details

Substrate Quality	The substrate must be sound, clean, dry max. mat moist, free from all surface contaminants.
Substrate Preparation	All loose particles, release agents, laitance, paint rust and other poorly adhering materials must be removed by suitable hand or mechanical preparation techniques.

Application Conditions / Limitations

Substrate Temperature	+5°C min. / +35°C max.
Ambient Temperature	+5°C min. / +35°C max.
Substrate Humidity	The substrate must be dry, max. mat moist.

Application Instructions

Application Method / Tools

For the fixation of SikaSwell® - Profiles:
Apply SikaSwell® S-2 (through triangular nozzle of approx. 5-10 mm sections) to prepared substrate. In case of uneven substrates the extruded triangular section of SikaSwell® S-2 may need to be adjusted accordingly. SikaSwell®- Profiles must be pressed well into the fresh SikaSwell® S-2.
Allow SikaSwell® S-2 to harden for 2-3 hours before placing concrete.
Please consult the product data sheet of the mentioned products.

As buried sealant for construction joint:
Use a triangular nozzle or cut the nozzle to obtain a regular triangular extrusion section and apply SikaSwell® S-2 according to the following table:

Structure thickness	Size of triangular section	*Theoretical yield of 600 ml unipacs	*Theoretical yield of 300 ml cartridges
300 mm	15 mm	6.2 m	3.1 m
300 - 500 mm	20 mm	3.6 m	1.8 m

*The actual yield can be lower than the theoretical yield depending on job-site conditions (substrate roughness, size of aggregates, etc.)

Place SikaSwell® S-2 in the centre of the concrete section.

Minimum cover to sealant on both sides must be 75 mm (reinforced concrete) or 150 mm (non reinforced concrete). For pouring heights < 500 mm allow sealant to harden for 2-3 hours. If the pouring height is > 500 mm, SikaSwell® S-2 must harden for at least 2 days.
During concreting, compact well around SikaSwell® S-2 to provide a dense concrete without any honeycombs or voids.

Construction

Cleaning of Tools	Clean application tools immediately after use with Sika Thinners C. Hardened / cured material can only be removed mechanically.
Notes on Application / Limitations	SikaSwell® S-2 expands in contact with water. This does not happen immediately, but slowly after a few hours. Nevertheless it is advisable not to leave SikaSwell® S-2 any length of time in standing water (max. 24 hours as long as the water can drain away). Do not use SikaSwell® S-2 for movement joints! If the water level suddenly increases the watertightness of joints will be achieved when SikaSwell® S-2 has swollen. In a totally dry state SikaSwell® S-2 shrinks to its original dimensions, but expands again in contact with water. Although SikaSwell® S-2 has been tested to water pressures up to 5 bar, it is not recommended for sealing against water pressures higher than 2 bar because of the limited sealing distance.
Value Base	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.
Health and Safety Information	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.
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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BUILDING TRUST

PRODUCT DATA SHEET

SikaProof® P-12

FULLY BONDED FPO SHEET MEMBRANE WATERPROOFING SYSTEM
FOR BASEMENTS AND OTHER BELOW GROUND STRUCTURES

PRODUCT DESCRIPTION

SikaProof® P-12 is a fully and permanently bonded, self-adhesive, post-applied, composite sheet membrane waterproofing system for reinforced concrete structures. It consists of a flexible polyolefin (FPO) based membrane that is pre-coated with an adhesive sealant layer so that the membrane system is self-adhesive. It is cold- and post-applied, without heat or open-flames, by a simple peel and stick process on hardened concrete structures.

USES

Damp-proofing, waterproofing and concrete protection for basements and other below ground structures against ground water ingress.
- On horizontal slabs, decks and podiums
- On vertical walls
- For extensions and reconstruction works
- For precast concrete structures

CHARACTERISTICS / ADVANTAGES

- Cold- applied and self-adhesive (no heat or open flames required)
- Fully and permanently bonded to the reinforced concrete structure
- No lateral water underflow or migration between the concrete structure and the membrane system
- High watertightness tested according different standards
- Easy to install with fully adhered joints (no welding required)
- Temporarily resistant to weathering and UV-light during construction
- Resistant to aging
- Highly flexibile with crack-bridging abilities
- Resistant to aggressive mediums in natural ground water and soil
- Can be combined with other approved Sika Waterproofing / Joint Sealing Systems

APPROVALS / STANDARDS

- Product Declaration according to EN 13967:2012 – Flexible sheets for waterproofing (type A&T)
- Function test according to German standards, test lab Wissbau, Essen Germany
- Function test according to ASTM D 5385 modified (resistance to lateral water underflow)

PRODUCT INFORMATION

Chemical Base	Membrane Layer:		Flexible Polyolefin (FPO)
	Sealant/adhesive:		Polyolefin (PO)
Packaging	SikaProof® P-12 rolls are wrapped individually in a yellow PE-foil.		
	Roll width:	Roll length:	
	1 m	20 m	
Appearance / Colour	Light yellow sheet membrane with a white release film on the back side		
Shelf Life	12 months shelf life from date of production if stored properly in undamaged, unopened, original sealed packaging. (for expiry date see label)		
Storage Conditions	Dry storage at temperatures from +5°C up to +30°C. Protect from direct sunlight, rain, snow, ice, humidity, etc. Store in a horizontal position. Do not stack pallets of the membrane rolls on top of each other, or under pallets of any other materials during transport or storage.		
Product Declaration	EN 13967:2012, mandatory for European countries		
Visible Defects	Pass		[EN 1850-2]
Effective Thickness	Effective Thickness	Membrane Thickness	Deviation [EN 1849-2]
	1.20 mm	0.60 mm	(-5 /+10%)
Straightness	≤50 mm / 10 m		[EN 1848-2]
Mass per unit area	1.20 kg/m²	(-5 /+10%)	[EN 1849-2]

TECHNICAL INFORMATION

Resistance to Impact	≥200 mm		[EN 12691]
Resistance to Static Load	≥20 kg		[EN 12730] (Method B, 24 h/20 kg)
Resistance to Root Penetration	Pass		[CEN/TS 14416]
Tensile Strength	MD:	≥6.0 N / mm²	[EN 12311-2]
	CD:	≥6.0 N / mm²	
Elongation	MD:	≥350 %	[EN 12311-2]
	CD:	≥350 %	
Adhesion in Peel	≥ 100 N/50mm, (on primed concrete)		[EN 1372]
Resistance to Tearing (nail shank)	MD:	≥200 N	[EN 12310-1]
	CD:	≥200 N	
Joint Shear Resistance	≥125 N / 50 mm		EN 12317-2
Reaction to Fire	Class E		[EN 13501-1:2000]
Accelerated Ageing in Alkaline Environment Tensile Strength	Pass		[EN 1847] (28 d/+23 °C) [EN 1928 B] (24 h / 60 kPa)
Water Vapour Transimission	0.50 g/m² x 24h	±20%	[EN 1931]
	sd = 78 m	±20%	(+23°C / 75% r.h.)
Water Tightness	Pass		[EN 1928 B (24 h / 60 kPa)]
Resistance to lateral water migration	Pass, up to 7 bar		[ASTM D 5385 modified]

Durability of Water Tightness against Ageing	Pass	[EN 1296] (12 weeks) [EN 1928 B] (24h / 60 kPa)
Durability of Water Tightness against Chemicals	Pass	[EN 1847] (28 d/+23 °C) [EN 1928 B] (24h / 60 kPa)

SYSTEM INFORMATION

System Structure

System Components:

SikaProof® Primer-01, solvent-dispersed primer

Accessories:

Ancillary products and accessories are provided for the SikaProof® system to create sealed connections, joints and other detailing solutions. Please refer to the current Method Statement for further more information.

APPLICATION INFORMATION

Ambient Air Temperature	+5°C to + 35°C
Substrate Temperature	+5°C to + 35°C
Substrate Moisture Content	Dry, ≤ 4% moisture content, no rising moisture
Dew Point	The substrate temperature must be at least 3°C above the dew point to reduce the risk of condensation and poor adhesion.

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY

The reinforced concrete structure must be
- Hardened and of sufficient compressive strength, minimum 25 N/mm2
- Minimal pull off strength, 1.5 N/mm2
- Dry, sound, clean and free of any contaminations (e.g. dust, oil, grease, release agent, etc.)
- Even, level and free from surface defects (e.g. blowholes, voids, honeycombing, cracks, protrusions, etc.)

Substrate Condition / Preparation:
The concrete or other suitable cementitious substrate must met the defined substrate quality. If the substrate does not fulfil the requirements the surface must be pretreated prior to the application, in order to prevent any subsequent damage to the membrane sheets. The use of SikaProof® Primer-01 is required to ensure an optimal, durable bond to the substrate (this primer is a defined system component).
For more detailed information and guidance please refer to the current Method Statement for the SikaProof® P membrane system.

APPLICATION METHOD / TOOLS

The installation method for SikaProof® P is state of the art for self-adhesive membrane sheets, by peel & stick, with simple and easy fixing and bonding of the membrane onto the prepared concrete surfaces.
- Substrate preparation
- Substrate priming
- Installation of the membrane system including all details
- Protection of the system

For more detailed information and guidance please refer to the current Method Statement for the SikaProof® P membrane system.

LIMITATIONS

The SikaProof® P membrane system must only be installed by Sika trained and approved contractors and the following notes and limitations have to be observed:

- After completion of the system it is recommended to protect the SikaProof® P membranes immediately to prevent any mechanical damage.
- SikaProof® P-12 membrane sheets are not permanently UV and weather resistant. Therefore they must be not installed on structures permanently exposed to UV light and weathering.
- The membrane system must always be protected from exposure within a defined time period depending on the climate conditions and region. For further detailed informations please refer to the current Method Statement for the SikaProof P system.
- For climate regions central europe the SikaProof® P-12 must be protected at least 30 days after their installation.
- For the optimal durablility of the SikaProof® P-12 system, adequate concrete and substrate quality is required, including the use of SikaProof® Primer-01 for the optimum adhesion.
- For the defined Application Conditions and Limitations for the use of SikaProof® Primer-01 please refer to the current Product Data Sheet.
- Additional appropriate Joint Sealing Solution must be used for any required connections, penetrations and joints, such as the SikaSwell®, SikaFuko® and Sika® Waterbars sealing system.

For more detailed informations and guidance please refer to the current Method Statement for the SikaProof P system.

VALUE BASE

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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

A Safety Data Sheet following EC- Regulation 1907/2006, Article 31 is not needed to bring the product to the market, to transport or to use it. The product does not damage the environment when used as specified.

REGULATION (EC) NO 1907/2006 - REACH

This product is an article as defined in article 3 of regulation (EC) No 1907/2006 (REACH). It contains no substances which are intended to be released from the article under normal or reasonably foreseeable conditions of use. A safety data sheet following article 31 of the same regulation is not needed to bring the product to the market, to transport or to use it. For safe use follow the instructions given in this product data sheet.Based on our current knowledge, this product does not contain SVHC (substances of very high concern) as listed in Annex XIV of the REACH regulation or on the candidate list published by the European Chemicals Agency in concentrations above 0.1 % (w/w)

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.

FM 12504 EMS 45308 OHS 585274

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Lainton Services
National Waterproofing Specialists

SURFACE PREPARATION AND ENABLING WORKS

FAILURE TO ADHERE TO THESE GUIDELINES WILL INCUR ABORTED VISIT COSTS AND PROGRAMME DELAYS!

CONCRETE BLINDING / CONCRETE FOUNDATIONS

- Concrete surfaces are to be “Easy Floated” and free from sharp penetrations or voids
- Tamped surfaces are not acceptable
- Non rigid shuttering including banking, or earth is not acceptable

SAND BLINDING

- Sand blinding is to be well compacted and solid under foot
- Soft spots within the base are not acceptable
- It must include a 6mm to dust Limestone topping, which is also to be properly rolled and compacted
- The use of sand alone is not permitted, as it will lose its integrity in adverse weather
- Chamfers & thickenings in the base are to be formed in concrete blinding
- If the membrane is being laid on Insulation there must be no movement in the boards

SHUTTERING

- Perimeter shuttering is to be formed using timber
- Shuttering must only be supported externally
- There must be no voids at the base of the shuttering
- Shuttering must not deflect when the concrete is installed
- Steel shuttering pans are not acceptable
- Shuttering must not contain release agents
- Shuttering must remain in position until the concrete has reached a minimum strength of 10N

PIPE PENETRATIONS

- Penetrations must protrude 150mm beyond the line of our waterproofing layer
- We require a minimum gap of 100mm between each pipe/service in order to effectively seal around them
- Voids between duct pipes etc. and the structural elements are to be filled in by others using an R4 high strength mortar
- Internal voids within the ducting / penetrations are to be sealed by others

British Structural Waterproofing Association
CHAS Accredited Contractor
Est. 1993

MASONRY WALLS

- Masonry is to be flush pointed or bagged finished
- The mortar must be fully cured before we attend
- Mortar spillages and snots must be removed
- Twin skinned masonry walls must have the concrete infill installed and cured prior to our works
- Existing surfaces are to be jet washed and free from voids

CLOSING OF CAVITIES

- The cavity at the top of the retaining wall is to be closed by others using a rigid cement board or masonry
- Cement board must be securely fastened and it must not deflect
- The cement boards should overlap each other so as to ensure there are no voids
- Rigid or soft insulation is not an acceptable material to close off the cavity

REINFORCED CONCRETE SURFACES

- Contaminated surfaces must be thoroughly cleaned
- Contamination not captured in the cleaning process is to be mechanically removed
- Tie bar holes are to be filled in using either an R4 high strength mortar or the waterproofing manufacturer's specific product specification.
- Aqua Plugs or X Plugs are to be installed within the tie bar holes if a mortar solution is utilised.
- Honeycombing in the concrete unacceptable and is to be remediated using an appropriate solution. All concrete spillages or high spots must be removed
- Fillets in horizontal / vertical junctions should be 40mm x 40mm and formed out of an R4 high strength mortar
- Sand & cement is not an acceptable material to form the fillets out of

DE-WATERING

- De-watering is by others and must be before, during and for a minimum of 24 hours after our works are completed.
- It is essential that our applied liquid materials are kept free from water contamination until they have fully cured

PILE HEADS

- Piles are to be neatly profiled and carefully cropped down to a minimum of 75mm above the blinding
- Piles head should be clean and free from any contamination
- Pile heads should be cylindrical and uniformly profiled
- If the pile does not conform to these requirements it is to be re-profiled using a pourable non shrink grout by others

WALL / HIGHER SLAB INTERSECTION

- The concrete blinding is to be chamfered down by 150mm at the wall / slab intersections at high level

REINFORCED CONCRETE STRUCTURES
MAIN CONTRACTORS REQUIREMENTS

Lainton Services
National Waterproofing Specialists

CONCRETE BLINDING

- SURFACES ARE TO BE "EASY FLOATED"
- FREE FROM SHARP PENETRATIONS OR VOIDS
- TAMPED SURFACES ARE NOT ACCEPTABLE

SHUTTERING

- NON RIGID SHUTTERING, INC BANKING, OR EARTH IS NOT ACCEPTABLE
- PERIMETER SHUTTERING MUST BE FORMED USING TIMBER
- SHUTTERING MUST ONLY BE SUPPORTED EXTERNALLY
- SHUTTERING MUST NOT DEFLECT WHEN THE CONCRETE IS INSTALLED
- STEEL SHUTTERING PANS ARE NOT ACCEPTABLE
- SHUTTERING MUST NOT CONTAIN RELEASE AGENTS
- ALL SHUTTERING MUST REMAIN IN SITU UNTIL THE CONCRETE HAS REACHED A MINIMUM

PIPE PENETRATIONS

- PENETRATIONS MUST PROTRUDE 150MM BEYOND THE LINE OF WATERPROOFING LAYER
- A MINIMUM GAP OF 100MM BETWEEN EACH PIPE/SERVICE IS REQUIRED
- VOIDS AROUND DUCTS / PIPES ETC ARE TO BE FILLED BY OTHERS USING AN R4 MORTAR
- INTERNAL VOIDS WITHIN THE DUCTING / PENETRATIONS ARE TO BE SEALED BY OTHERS

REINFORCED CONCRETE SURFACES

- CONTAMINATED SURFACES MUST BE THOROUGHLY CLEANED
- CONTAMINATION /SNOTS NOT CAPTURED IN THE CLEANING PROCESS IS TO BE MECHANICALLY REMOVED
- TIE BAR HOLES ARE TO BE FILLED IN USING EITHER AN R4 HIGH STRENGTH MORTAR OR THE WATERPROOFING MCFR'S SPECIFIC PRODUCT SPECIFICATION.
- ANY HONEYCOMBING IN THE CONCRETE IS NON COMPLIANT AND WILL NEED TO BE MADE GOOD
- FILLETS IN HZL / VCL JUNCTIONS SHOULD BE 40MM X 40MM AND FORMED OUT OF AN R4 MORTAR
- SAND & CEMENT IS NOT AN ACCEPTABLE MATERIAL TO FORM THE FILLETS OUT OF.

PILE HEADS

- PILES ARE TO BE PROFILED AND CAREFULLY CROPPED TO A MINIMUM OF 75MM ABOVE THE BLINDING
- PILES HEAD SHOULD BE CLEAN AND FREE FROM ANY CONTAMINATION
- PILE HEADS SHOULD BE CYLINDRICAL AND UNIFORMLY PROFILED
- IF THE PILE DOES NOT CONFORM TO THESE REQUIREMENTS IT IS TO BE REPROFILED USING A POURABLE NON SHRINK GROUT.

******* IMPORTANT NOTE *******

IT IS CRITICAL THAT THE ABOVE GUIDELINES ARE FOLLOWED IN ORDER TO ENSURE A ROBUST AND WARRANTABLE INSTALLATION CAN TAKE PLACE