

SIKA ROOFING TECHNICAL SPECIFICATION



**WE
ANSWER**



BWP Construction and Property Consultants -

Manchester Paradise Wharf
PROJECT REF: 0342497 DRAFT
DATE: 11 October 2022

BUILDING TRUST



INTRODUCTION

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11 October 2022
Reference: 0342497 DRAFT

Dear Tim Birchall

Further to the site visit, this document has been compiled for your attention by Phil Reid of Sika LIMITED, it is based on the information gathered during recent discussions and is intended to provide details relating to the treatment of the area(s) in question.

Quality and innovation are just two of the characteristics replicated throughout Sika Liquid Plastics – visible in our products, manufacturing processes, and technical support.

For over 50 years we have produced an extensive range of high performance, technologically advanced coatings and membranes for the protection and waterproofing of roofs, walls and balconies, and for hygiene control. These products are leaders in their fields because of their unique properties and ability to outlast and outperform traditional counterparts. Also available is a complete range of cold applied built-up roofing systems including warm roofs, inverted roofs, and green roof finishes.

As a member of the Sika worldwide group of companies, the demand for Sika Liquid Plastics' products stretches across the globe and many successful projects have been completed in the Middle East, USA, and Europe.

We are leading the way with innovative products for the future, as the construction industry evolves towards safer applications and protection systems with design lives as long as the building itself.

For more information about our products and the wide range of approvals and accreditations we have achieved, please visit our website at www.liquidplastics.co.uk.

This specification should be read in conjunction with the relevant product data sheets and all named appendices.

This specification is valid for a period of 12 months, after which a further site survey should be carried out to ensure that the suggested solutions are still fit for purpose.

Any variations to this specification must be confirmed by Sika Limited to ensure the suitability of the

proposed change and any impact this may have on any guarantees offered or implied. As part of Sika Limited's continuous product development, we retain the right to alter our product specifications in accordance with relevant national and international standards without notice.

The specified system is designed utilising cold applied Sika Liquid Plastics products and intended to avoid the use of hot works.

However, should the installing contractor require use of any heat or hot works during installation for preparation or drying, care should be taken and all hot works must be carried out with the clients permission and in strict accordance with Health & Safety Guidelines with particular reference to Safe2Torch. A comprehensive guidance document can be found on the NFRC website: <https://www.nfrc.co.uk/safe2torch>.

We trust this is of assistance to you. If we can be of further help on this, or any other project, please contact me on +44 07970814865.

Kind regards

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Area Technical Manager

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1 TECHNICAL SPECIFICATION PARADISE WHARF

1.1 SYSTEM SCHEDULE

AREA	MATERIAL
Primer	Adhesion Test Confirmation Required
Waterproofing (Embedment Coat)	Sika® Decothane Ultra Base Coat
Waterproofing (Reinforcement)	Sika® Reemat Premium
Waterproofing (Top Coat)	Decothane® Ultra

1.2 SPECIFICATION DETAILS

Specification Details: Gutters	
Roof size (m2):	200
Roof height (m):	12
Degree of Roof Pitch (°):	-
Profile of Roof:	Flat
Hipped:	No
Longest Building Length (m):	50
Type of eaves:	Parapet
Building use:	RESIDENTIAL
Humidity class:	1
U Value:	-
The criteria above must be checked by the Specifier. The Sika Roofing Technical Department should be notified of any discrepancy.	

1.3 WIND LOADING

Wind Loading Calculations - Wind load and perimeter zone width calculations have been carried out in general accordance with BS EN 1991-1-4, UK National Annex Method, using the criteria stated within the Sika project specification.

Grid Reference/Postcode:	SJ 84962 98155
Basic Wind Speed V_b (m/s 10min):	22.7
Altitude Factor C_{alt} :	1.046
Orography Factor C_o :	1.000
Exposure Factor C_e (sqrt):	1.417
Direction Factor C_{dir} :	0.990
Peak velocity pressure qp (kPa)* :	0.559

*External/internal pressure coefficients (C_{pe}/C_{pi}) and partial safety factors (γ_q) have been applied to the calculated peak velocity pressure generating maximum wind loads (kN/m²) for the applicable roof zones.

The above is based on information stated within the Sika project specification. For further information please contact Sika's Roofing Technical Department.

The criteria above must be checked by the Specifier. Sika's Roofing Technical Department should be notified of any discrepancy.

1.4 CDM REGULATIONS

CDM Regulations (Refurbishment Works) – The Construction (Design and Management) Regulations (CDM) are about the management of health and safety and apply to everyone associated with construction projects including the client. Regulations 4 and 5 state that it is the client's duty to make suitable arrangements for managing a project and maintaining and reviewing them for its duration so that it is carried out in a way that manages the health and safety risks involved. For projects involving more than one contractor, these regulations require the client to appoint a Principal Designer and Principal Contractor and to make sure that they carry out their duties. It is also the client's responsibility to engage a competent team that can include Contractors, Designers and Sub-Contractors and to provide all duty holders the appropriate information at the appropriate time.

For further information on the requirements of the CDM Regulations visit <http://www.hse.gov.uk/pubns/books/l153.htm> for free guidance.

All construction projects will have to comply with the CDM Regulations, however Regulation 6 states that the HSE or other relevant enforcing authority, do not need to be notified about all of them. Notifiable projects are projects that:

- Last longer than 30 working days and have more than 20 workers working simultaneously at any point in the project; or;
- Exceed 500 person days.

The easiest way to notify any project to the HSE or other relevant enforcing authority is to use the online notification form F10 on the HSE's website. Further information on how to notify construction work can be found at:

www.hse.gov.uk/construction/cdm/faq/notification.htm.

Clients, Designers and Contractors still have responsibilities for those projects that the HSE does not require notification on.

Sika Limited does not fulfil the role of the Principal Designer and therefore preparation for the proposed specification and subsequent works should only commence when all parties involved with the design and execution of the works are satisfied the appropriate CDM regulations have been fulfilled.

1.5 ADHESION TESTING

Adhesion Tests - Bond Strength of the Existing Coatings to the Substrate: Prior to the commencement of works, adhesion tests must be carried out on the existing coatings to determine bond strength to the substrate beneath.

Adhesion tests/assessments must be carried out in accordance with **ISO 2409** & Assessment of coating adhesion using **ISO 16276-2**: Assessment of, and acceptance criteria for, the adhesion/cohesion (fracture strength) of a coating.

Sika Liquid Plastics takes no responsibility for the long-term adhesion of the underlying existing coatings.

Adhesion Tests - Existing Coatings: Prior to the commencement of works, adhesion/compatibility tests must be carried out onto the existing coatings in order to determine priming requirements and the suitability of the proposed system.

The adhesion/compatibility test must include the following:-

- Assess the substrate for existing coatings to determine preparation & priming requirements.

Test:-

- Proposed waterproofing system direct
- Sika Metal Primer & proposed waterproofing combined

Note: Each application must be left for a minimum of 7 days before returning to site for completion of the test.

This specification may be subject to change based on findings.

A PC sum must be allocated for the inclusion of primers if confirmed as a requirement.

1.6 PREPARATION

Structural Integrity - The existing structure is to be checked by a suitably qualified agent. Structural requirements are beyond the scope of this specification.

Existing Coatings: Substrate defects may be hidden by existing surface coatings. Inspect all areas carefully, coatings which are loose or flaking must be removed, returning to a firm, feathered edge. Remaining coatings can only be overcoated if soundly adhered. All necessary Health & Safety requirements are to be observed when removing and/or disposing of materials, in particular in the case of lead based paints and/or hazardous substrates. Contractors seeking advice on methodology should contact the HSE infoline on 0845 345 0055.

Discipline: Coating Overlay.

The following **Coating Overlay proposal** is subject to cross hatch testing and peel/pull testing by Sika Limited to confirm suitability to receive the new system.

Surface Lying Debris: Prior to the initial power washing of the roof, all surface lying debris should be removed by conventional methods.

Note: Outlet leaf grates and/or protection should be fitted, in all cases, to ensure that no debris enters the drainage system.

Initial Power Wash: All surfaces are to receive an initial power wash in order to reveal a clean surface suitable for inspection and repair, where necessary. 1500-2000 psi is recommended for preparation. There is no specific maximum as this may vary according to the equipment used and the surfaces being cleaned. At no time should the pressure jet be so high as to cause damage to the substrate being cleaned. Adjust the pressure to clean away contamination and friable material from the surface.

Note: Exercise suitable precautions when using high pressure equipment, check for any roof leaks, and verify that the drainage provides for an adequate flow.

Exposed Metal Surfaces: Exposed metal surfaces to be included in the coating schedule are to be wire brushed or mechanically abraded to remove rust/scale or oxidation. Return to a clean, bright metal wherever possible.

Note: Use equipment with deference to safety and, where necessary, check suitability with the equipment provider.

Brickwork: Inspect associated brickwork. If any spalling, flaking, or other damage is encountered then it is to be repaired using compatible materials to match surroundings, or it should be replaced as necessary.

Mortar Joints: Inspect the mortar joints, all hollow or defective areas are to be made good using compatible materials to match surrounding.

Note: Under typical conditions the free movement of air across the substrate will result in a rapid dispersion of vapours. Therefore, in order to avoid any odours entering buildings within the surrounding area, windows must be closed and air-conditioning systems redirected or switched off. The odour will contain solvents, but at a level much lower than household gloss paint, and therefore poses little risk to both those applying our system and those in the vicinity. For further information, please see our Decothane Health & Safety User Guide which can be found in the appendices of this specification.

1.7 PRE-TREATMENTS

Suspected, Known, or Stubborn Growths – All Surfaces/Waterproof Membranes, Felt, Asphalt, Single Ply Membranes, Concrete, Blockwork, Masonry, etc: Visible growths or vegetation should first be removed. Treat remaining adhered growths (and/or where active spores are suspected) by liberally applying a water/domestic bleach solution (maximum dilution 7:1). Allow to act in accordance with the manufacturer's instructions before removing the affected material using the appropriate tools. Repeat the procedure if necessary. Thoroughly rinse off and allow the surfaces to dry before continuing with the application.

Note: Exercise care and wear necessary protective equipment when handling bleach, as directed by the provider.

Metallic Surfaces - Once metal surfaces have been cleared of all rust, degrease said metal surfaces using a proprietary solvent-based degreasant. Work well onto the surfaces and allow to react before thoroughly rinsing with fresh water. Allow surfaces to dry before continuing.

Note: Apply in accordance with the manufacturer's instructions and exercise any precautions issued by the manufacturer.

1.8 PRIMING - GENERAL

General Priming: All relevant surfaces should be primed in strict accordance with product data sheets. These can be found on our website www.liquidplastics.co.uk

Substrate Condition Tests - Brickwork: Prior to the commencement of works, compatibility tests are to be carried out onto the brickwork to confirm substrate suitability with the proposed system. Subject to this test, the following primer may need to be amended.

Brickwork Surfaces: Subject to the above test, apply a coat of **Sika Concrete Primer LO** to the prepared, sound brickwork surfaces. This should be applied by a brush or roller, at a maximum spread rate of **0.2kg/m²** (approximately **5m²** per litre) and must be left to dry for a minimum of 60 minutes before overcoating.

Note: On porous/open substrates, apply as two coats, each at a maximum spread rate of **0.2kg/m²** (approximately **5m²** per litre). Overcoat the primer between 60 minutes to 24 hours of the initial application. If more than 24 hours have passed, apply an additional coat of the primer before overcoating.

Metal Detail Areas: Apply a coat of **SikaPrimer 204N** by brush to all prepared, exposed metallic details. This is to be applied at a minimum coverage rate of 50ml/m² (20m² per pack) depending on surface porosity, and should be allowed to dry for a minimum period of 20 minutes before overcoating.

1.9 HUMIDITY CLASSIFICATION

Consideration should be given to **BS 5250:2021 Management of Moisture in Buildings - Code of Practice**.

1.10 AIR & VAPOUR CONTROL LAYER

Consideration should be given to **BS 5250:2011+A1:2016 Code of Practice for control of condensation in buildings**.

1.11 PRE-WATERPROOFING

Final Cleaning: Immediately prior to application, ensure that all surfaces are free from visible dampness and that surface lying dust, dirt and other forms of contamination are removed.

1.12 TECHNICAL DETAILING

1.12.1 DETAILING (UPSTANDS)

Upstand Heights:- Upstands should conform to the recommendations of BS 6229:2018: Flat roofs with continuously supported coverings – Code of practice: Section 7.1 concerning the minimum height of upstands.

“The design of drainage falls should ensure that the continuity of the waterproof covering is maintained for a vertical height of 150mm above the finished roof level at all abutments, door openings and parapets. For inverted roofs, those overlaid with paving, or garden roofs, the finished roof surface is the upper surface of the ballast, paving slabs or growing medium.”

Note: Where any upstand detail does not satisfy the above recommendations, Sika Limited must be informed, advice/recommendations may then be provided by Sika Limited. If this advice is not followed, the identified detail may be excluded from the guarantee.

Upstand - Pre-Cut Chase:-

Inspect and carry out all necessary maintenance work to the upstand details.

- Cut new 25mm deep chases in all upstands, ensuring a minimum 150mm upstand above the finished level of the new waterproofing.
- Ensure that all chases are clean and dust free before coating.
- Apply primers to the upstands, where required.
- Dress the coating as specified onto the upstand and into the chase.
- Seal the chase using **SikaHyflex-250 Facade** once the coating has fully cured.
- Ensure that any cavity trays discharge above the finished level of waterproofing

Pitched Roof - Roof Slates

- Remove the bottom three courses of slates and store safely for re-use. Any damaged items should be replaced as necessary.
- Prepare and prime the upstand beneath the removed tiles as specified, and coat with the specified system, up to a minimum height of 150mm above the finished flat roof level; terminating to a protected edge.
- The slates are to be reinstalled as necessary once the waterproofing has fully cured.

1.12.2 DETAILING (DRAINAGE)

General Design - Design of roof drainage systems shall take account of construction tolerances and settlement so as to avoid backfalls and ponding, which may adversely affect durability.

The design of roof drainage should be carried out in accordance with BS EN 12056-3:2000 which specifically states the following:

"All flat roofs should be laid to a minimum finished fall of 1:80, and to achieve this a design fall of 1:40 should be used to ensure proper drainage as recommended in BS 6229:2018."

Existing Chute Outlets - Ensure that the finished level of the outlets will be lower than the existing roof level.

Rainwater outlets (and down pipes) should be free from blockages or defects at the point of treatment. Drain covers should be in place until the preparation of surrounding areas is complete but removed prior to application to allow for coating access.

- Remove the covers immediately prior to application. Prime into the chute outlet as required.
- The coating is to be dressed as far as is practical into the chute outlet and finished to a neat edge.
- Allow the coating to cure before re-installing the grates where applicable.

1.12.3 DETAILING (GUTTERS)

Flow Capacity - The gutter may have been relined over the years and as a result the original capacity of the gutter may have been reduced and should be inspected by a competent person. Subsequently the gutter should be stripped back to reinstate the designed flow.

Internal Gutters - Apply the fully reinforced system with increased coverage rates as specified throughout the gutter.

1.13 PROPOSED SIKA LIQUID PLASTICS SYSTEM



Decothane Ultra Waterproofing System - 20 Year Guarantee

Higher solids, low odour, one component, UV-stable, versatile and easily applied liquid roof waterproofing.

FEATURES AND BENEFITS

- Low Odour - Sika Liquid Plastics has created a patented high solids formulation that achieves scientifically proven lower odour.
- Cold Applied - requires no heat or naked flame during application.
- Seamless - eliminates the possibility of joint failure through poor workmanship
- Rapidly Rain Resistant - free from rain damage immediately after application
- Easy Installation - using glass fibre matting to allow simple application in detailed areas.
- High Elasticity - allows for greater thermal movement.
- British Board of Agrément (BBA) certified No. 14/5158 10 - 25 years
- European Technical Approval No. ETA - 14/0331
- External fire performance: BROOF (t4) & (t1) & classification under BS 476-3: 1958 EXT.F.AC.
- Olfasense Low Odour test certification.
- Installed by a Sika Certified Contractor.

1.14 TOP COATS

1.14.1 APPLICATION - GUTTERS

Embedment Coat - Apply an initial embedment coat of **Decothane® Ultra Base Coat** to the prepared, sound gutter surfaces, using a minimum quantity of **1.00 litre per square metre (equivalent to a maximum spread rate of 1.00 square metre per litre)** and whilst wet, strengthen by inserting **Sika® Reemat Premium** glass fibre matting, followed by rolling until the mat is completely embedded and thoroughly saturated. Overlap adjacent areas already laid by 50mm ensuring sufficient embedment material is applied to these areas. At this stage, check the coating for pinholes and/or exposed matting and apply further material to correct if necessary. Allow to dry before applying the second coat.

Intermediate Coat - Apply a coat of **Decothane® Ultra** to these reinforced areas by roller/power roller (brushes may be used for detail work) using a minimum quantity of **0.80 litres per square metre (equivalent to a maximum spread rate of 1.25 square metres per litre)** and allow to dry before applying the next coat.

Top Coat - Apply a coat of **Decothane® Ultra** to these reinforced areas by roller (brushes may be used for detail work) using a minimum quantity of **1.00 litre per square metre (equivalent to a maximum spread rate of 1.00 square metre per litre)** to achieve an approximate overall dry film thickness of **2.3mm (2300 microns)**. Allow to dry.

Reinforcement - When embedding **Sika® Reemat Premium** glass fibre Matting onto rough, uneven surfaces or internal angles, etc., tamping of the matting may be required. Use a soft nylon/bristle brush or small specialised roller, work the matting as required to give all round contact with the substrate.

Following the embedment of **Sika® Reemat Premium** glass fibre matting, flatten any "wicks" or proud fibres by rolling with a loaded short pile roller.

Tenting - It is important to ensure that 'tenting' of the matting is avoided at all changes of angle by the sufficient application of the embedment membrane at these points.

Material Coverage - When applying materials, use volume to area calculations and/or wet film thickness readings where appropriate to ensure correct material coverage. Coverage rates may vary depending on substrate condition.

Completion of Waterproofing Works - On completion of waterproofing works, check the finish for pinholes, voids, damage etc. and spot treat to rectify.

Note: *The application of the system must be approached as one operation. Always plan for reasonable progress of each coat. Work only so far in advance that the existing surface can be overcoated as the next operation. Finish the coating system completely before progressing to the next area. The ideal time between coats is within 48 hours.*

It is not good practice to plan breaks between coats of more than 14 days. Periods between coats longer

than 14 days may affect the normal life term of the system –If this happens consult Sika Liquid Plastics for advice. Ensure each application/coat is clean and dry prior to overcoating.

At no stage should the Sika Liquid Plastics system or waterproof coating in its finished or intermediate stage be used as a workspace or access floor without adequate protection.

Colour (Embedment Coat) - Oxide Red (~RAL 3011).

Colour (Top Coat) - Slate Grey (RAL 7015) has been chosen for this project.

Note: Other non standard colours are available subject to a minimum order quantities, details on request.

Partial Treatment - The exposed edges of the coating, created as a consequence of partial treatment, must be inspected at regular intervals to identify any edge disbondment which should then be rectified accordingly. Such details will not be covered by a guarantee.



Olfasense are a team of independent consultants that develops, manages and delivers top level expertise on sensory analysis techniques and their application for product optimisation and material testing.

According to test data, **Decothane® Ultra** is scientifically proven to be much lower odour when benchmarked against other single pack polyurethanes available in the market.

1.15 DISCLAIMER

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 Limited's current knowledge and experience of the products when properly stored, handled and applied under normal conditions. 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, unless from any written recommendations, or from any other advice offered by Sika Limited. 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 Product Data Sheet for the product concerned, copies of which will be supplied on request.

Draft Specification