

PROJECT OVERVIEW

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1 June 2022
Reference: JC-00002917

Dear Heloise Wood

Further to our discussions regarding the above structure on Tuesday, 31 May 2022, this document has been compiled for your attention by James Collett of Sika Ltd detailing the remedial work necessary to extend the life of the structure.

Our concrete repair and protection remedial specification is based upon discussions, an understanding of the requirements and site survey and testing data where applicable.

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

Any variations to this specification and related clauses must be confirmed by Sika Limited to ensure the suitability of the proposed changes and any impact this may have on the performance of the proposed system specified in the specification clauses.

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.

We trust this is of assistance to you. If we can be of further help on this, or any other project, please do not hesitate to contact me on +447970940076.

Yours sincerely



James Collett
Area Specification Manager



Jamie Squires
Product Engineer

PROJECT PROPOSAL



Atelier Architecture - Manchester

PROJECT: Tootal Courtyard Windows
PROJECT REF: JC-00002917
DATE: 1 June 2022

CONTACT SHEET

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Date: 1 June 2022

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1 TOOTAL COURTYARD WINDOWS

1.1 PROJECT OVERVIEW

GENERAL COMMENTS

- The structure is located in a city area
- The structure is an other
- The approximate year of construction is unknown

2 CONCRETE REPAIRS - WINDOWS

2.1 SYSTEM SCHEDULE

AREA	MATERIAL
Classification	Concrete Repair & Protection
Main Degradation Cause Carbonation	N/A
Guarantee required	None
Remediation System Reference	Special
Total Corrosion Management?	No
Total Corrosion Management Options	N/A
Placement Method Options	Hand Placed
Reinforcement Corrosion Protection Coating	Sika MonoTop®-1010
Repair Mortars	Sika MonoTop®-4012
Corrosion Management Systems	N/A
Pore filler/Sealer	Sika MonoTop®-3020

2.2 GENERAL GUIDELINE INFORMATION

Repair and Protective Material Selection/Compliance

In all cases the Contractor shall provide manufacturers' evidence to verify that they meet the requirements set out in BS EN1504 and as such all materials where relevant should be 'CE/UKCA' marked.

All materials must be compatible and shall not have any effects on long term durability and bond. The materials must be supplied from a BS EN 1504 approved manufacturing plant and supplied from a single manufacturer to ensure compatibility and ensure long term durability.

For individual product application requirements refer to current Product data sheet.

Concrete Surfaces (Uncoated)

The concrete shall be cleaned and all blowholes and honeycombed areas exposed.

The resulting surface shall be free from dust, loose material, surface contamination, existing renders, laitance, coatings, membranes, oil and other materials which could reduce the required adhesion values of a protective coating /membrane system and penetration of a surface applied corrosion inhibitor (Sika® FerroGard® 903+) when specified.

Surfaces should be cleaned and prepared using abrasive blast cleaning techniques or high pressure waterblasting (up to 18 MPa / 2700 psi) techniques.

Where smoothing mortars, pore fillers, coating / membrane systems are to be used, surfaces should be prepared to an open texture suitable for the system specified to achieve the following adhesion values:

BS EN 1504-2 without trafficking: adhesion test average for smoothing mortar/pore filler/coatings must be ≥ 0.8 N/mm² (MPa) with no single value below 0.5 N/mm² (MPa) for crack bridging coatings and ≥ 1.0 N/mm² (MPa) with no single value below 0.7 N/mm² (MPa) for rigid coatings.

BS EN 1504-2 with trafficking: adhesion test average for coatings/membranes must be ≥ 1.5 N/mm² (MPa) with no single value below 1.0 N/mm² (MPa) for crack bridging coatings and ≥ 2.0 N/mm² (MPa) with no single value below 1.5 N/mm² (MPa) for rigid coatings.

Concrete removal

After removal of defective concrete, the prepared area shall be free from dust, loose material, surface contamination and materials which reduce bond or prevent suction or wetting by repair materials.

Delaminated, weak, damaged and deteriorated concrete and where necessary sound concrete shall be removed by suitable mechanical or very high pressure waterblasting (up to 110 MPa / 16500 psi) techniques.

Tying wire fragments, nails and other metal debris embedded in the concrete should be removed where possible.

The edges where concrete is removed should be cut at a minimum angle of 90° to avoid undercutting and a maximum angle of 135° to reduce the possibility of debonding with the top surface of the adjacent sound concrete and should be roughened sufficiently to provide a mechanical key between the original material and Sika concrete repair mortar.

Ensure sufficient concrete is removed from around the reinforcement to allow application of the reinforcement corrosion protection coating and compaction of the repair material.

Preparation of Steel reinforcement - Blasting

Rust, scale, mortar, concrete, dust and other loose and deleterious material which reduces bond or contributes to corrosion shall be removed to a minimum standard of SA2 or SA2½ depending on the reinforcement corrosion protection coating used.

The whole circumference of the exposed reinforcement shall be uniformly cleaned, except where structural considerations prevent it.

Unless the cleaning is carried out immediately before application of the reinforcement corrosion protection coating, the reinforcement shall be protected against further contamination.

Surfaces should be prepared using abrasive blast cleaning techniques or high pressure waterblasting (up to 60 MPa (9000 psi)) techniques.

Method and choice of cleaning shall take into account bar congestion, contact between bars, proximity to concrete substrate and other factors which prevent access for cleaning.

Where exposed reinforcement is contaminated with chloride or other material which may cause corrosion, the reinforcement shall be cleaned by low pressure waterblasting (up to 18 MPa (2700 psi)) techniques to wash away contaminants.

2.3 REINFORCEMENT CORROSION PROTECTION COATING

(BS EN 1504-7 Classification)

Immediately after preparation to Sa 2 or other specified preparation standard specified in this document, apply to the whole exposed circumference of reinforcement, two coats of Sika MonoTop 1010. Wait until the first layer has dried before applying second layer. Allow to harden before applying repair mortars.

2.4 REPAIR MORTAR APPLICATION

Structural repairs

Hand Applied

(BS EN 1504-3 Classification R4)

Before applying the concrete repair mortar, apply a bonding primer of Sika® MonoTop-610/1010.

Pre-wet the surface of the prepared repair area.

The surface should not be allowed to dry before application of the bonding primer. The pre-wetted surface should achieve a dark matt appearance without glistening and surface pores and pits should not contain water.

Apply the pre-mixed Sika® MonoTop-610/1010 to pre-dampened repair substrate at a thickness of >1.0mm.

Apply pre-mixed Sika® MonoTop-4012 repair mortar “wet on wet” onto the bonding primer between the minimum and maximum layer thicknesses and compacted without inclusion of entrapped air pockets using a trowel or gloved hand.

Where layers are to be built up to prevent sagging or slumping, each layer should be allowed to harden and exothermic reaction of the material completed. The first layer shall be at ambient temperature before applying the second layer. Do not smooth the first layer before applying a second layer. The first layer should have sufficient roughness to provide a mechanical key for subsequent mortar layers.

Finishing of the applied repair mortar should be carried out to the required surface texture as soon as the mortar has started to stiffen. To prevent surface cracking, do not apply water or overwork the surface with finishing tools.

Site adhesion values to comply with BS EN 1504-3:

Structural Repairs: Class R4 > 2.0 N/mm² (MPa). Class R3 > 1.5 N/mm² (MPa).

Non Structural repairs: Class R1 & R2 > 0.8 N/mm² (MPa)

2.5 CURING TREATMENT

It is essential to cure the repair mortar immediately after application for a minimum of 3-7 days depending on site exposure and weather conditions, to ensure full cement hydration and to minimise cracking. Use polythene sheeting taped down at the edges or other approved method.

Curing compounds shall not be used if subsequent smoothing coats/pore filling or protective coatings are to be used.

2.6 PORE FILLER APPLICATION

Fair Faced/Textured Concrete Surfaces

Surface preparation should have been carried out in accordance with concrete substrate quality & preparation clause for uncoated concrete prior to application.

Tightly trowel a pore filler/sealer of Sika MonoTop® 3020 over the concrete surface to ensure that all blowholes and other surface imperfections are filled to provide a pore (holiday) free surface in preparation for protective coatings.

3 TOOTAL COURTYARD WINDOWS

3.1 DISCLAIMER

The information contained herein and any other advice 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. The information only applies to the application(s) and product(s) expressly referred to herein. In case of changes in the parameters of the application, such as changes in substrates etc., or in case of a different application, consult Sika's Technical Service prior to using Sika products. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. 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.

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.

3.2 PRODUCT DATA SHEETS

Concrete Repairs - Windows

Sika MonoTop®-1010	VIEW
Sika MonoTop®-4012	VIEW
Sika MonoTop®-3020	VIEW