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## COATING SPECIFICATION

### HIGH BUILD EPOXY COATING ON CONCRETE STRUCTURES

COATING SPECIFICATION: D3      ISSUE: 4      DATE: MARCH 2023

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#### 1.0 SCOPE

This document summarises the procedure for the application of a 2-pack chemical resistant epoxy coating suitable for concrete structures that are exposed to H<sub>2</sub>S gas attack in wastewater environment.

It shall be read in conjunction with Water Corporation Specification **A5 - Surface Preparation and Protective Coating on Concrete**.

#### 2.0 PURPOSE

The purpose of this coating specification is to prepare a concrete substrate, including concrete repairs and apply a chemical resistant coating system to concrete structures that are exposed to Hydrogen Sulphide (H<sub>2</sub>S) gas attack on waste water treatment assets, such as at Primary Sedimentation Tanks, Secondary Sedimentation Tanks, Oxidation Ditch, Clarifiers, Channels, etc.

The chemical resistant epoxy coating shall be applied to concrete surfaces above the water line and extend down to at least 500 mm below the lowest service water level in the structure.

#### 3.0 DEFINITIONS

**ACA:** Australasian Corrosion Association.

**Adhesion Testing:** Testing to determine the bonding strength of the coating to the substrates to which the coating is applied on.

**Contractor:** The service provider or its sub-contractor who will undertake the works.

**Corporation:** Water Corporation and the Principal for the purposes of externally contracted asset delivery.

**DFT:** Dry Film Thickness.

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**ITP:** The detailed Inspection and Test Plan(s) for the Works.

**NACE:** National Association of Corrosion Engineers.

**Spark Testing:** Testing of the continuity of a fully-cured coating film for evidence of defects, pinholes, holidays (misses) or damage.

**Superintendent:** The Superintendent for the contract, as defined in the conditions of the contract, who is appointed by Water Corporation to manage/oversee the work under the contract on behalf of Water Corporation.

**Works:** The surface preparation, coating application and inspection to be undertaken by the contractor to which this coating specification applies.

#### 4.0 COATING APPLICATOR/PERSONNEL QUALIFICATION

- 4.1 Work shall only be carried out by a competent person.
- 4.2 The work shall be undertaken by an approved Water Corporation Protective Coating and Concrete Repair Services panel member unless approved otherwise by the Principal.
- 4.3 The contractor shall nominate a certified coating inspector to perform inspections and maintain appropriate records for the work performed. The Coating Inspector engaged in testing, monitoring, and verification of surface preparation and coating application shall hold relevant inspection qualifications and current certifications (e.g. NACE or ACA) or approved by the Principal. The coating inspector shall conduct the following:
  - Prepare Quality Assurance documentation to meet the specified standards given herein and the required acceptance criteria.
  - Perform inspections and maintain appropriate records for work performed.
  - Testing, monitoring, and verification of surface preparation and coating application.

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#### 5.0 CONCRETE REPAIR AND COATING AREA IDENTIFICATION

- 5.1 Prior to the application of the coating, the Contractor shall carry out a visual inspection and delamination survey by hammer tapping to identify and confirm areas of defective concrete for repair works. The Contractor shall identify and document concrete defect areas and record defects in Defects Mapping Sketch and/or Drawings in a format agreed with the Principal and submit to the Principal for review and approval for a minimum of 10 days prior to commencement of repair works.
- 5.2 Defective concrete is defined as areas of the concrete, which has cracking or delamination or spalling (including exposed corroded reinforcement) or rust stains and inadequate or failing past patch repairs.

#### 6.0 CRACKS, JOINTS AND INTERFACE REPAIRS

- 6.1 If crack or joint repairs are required prior to the application of the coating, the Contractor shall repair in accordance with Section 6.0 of this specification.
- 6.2 **For static (non-moving) cracks**, the cracks shall be repaired with epoxy resin or mortar compatible with the epoxy coating, e.g., Epigen 0301 if Epigen 4028/4029 epoxy coating system or similar approved equivalent is used. The cracks shall be 5mm x 5mm “V” grooved and cleaned of laitance, and contaminants prior to filling with epoxy resin or mortar. The cracks filled with resin/mortar shall be cured to the manufacturer’s instruction. Any excess epoxy resin/mortar shall be ground back to flush with the existing surface. It is preferable to fill cracks at the coolest part of the day (i.e., early in the morning) followed with epoxy coating thereafter. The repaired crack shall be treated with glass fibre fabric system as described in Section 11.6.
- 6.3 **The non-moving joints**, such as wall vertical joints shall be filled with epoxy repair mortar, e.g., Epigen 0301 if Epigen 4028/4029 epoxy coating system or similar approved equivalent is used and then treated as described in Section 11.6.

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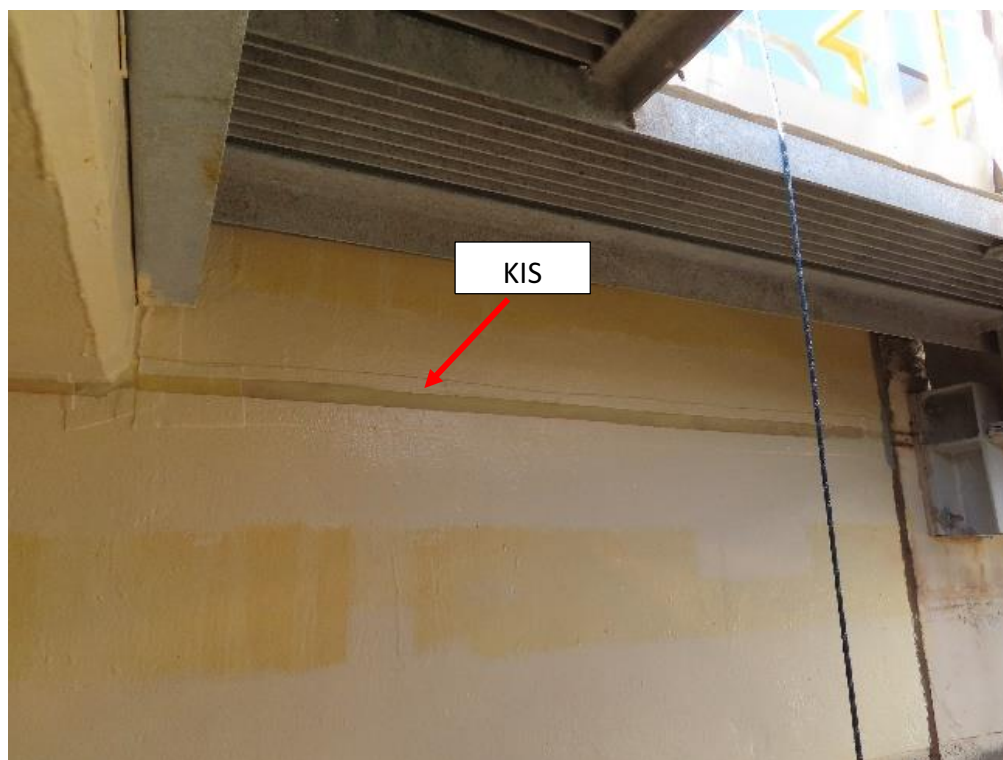
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- 6.4 **The moving joints**, such as at wall to top slab and/or beam joints shall be treated with a flexible jointing bridging fabric system, e.g., Epigen KIS™ system or a similar approved equivalent that is compatible with the epoxy coating system. The application of a flexible crack bridging system shall strictly follow the manufacturer's specifications. The existing joint sealant shall be replaced with a chemical-resistant sealant, such as Fosroc Nitoseal SC600 or similar approved equivalent prior to installation of KIS system.
- 6.4.1 The two sides of the joint surface that are to receive the fabric binder/primer shall be cleaned of laitance and contaminants by mechanical means to ensure that the bond of the binder/primer to the substrate can satisfy the performance requirements.
- 6.4.2 Apply a minimum of 1000 microns of primer for the bridging system on both sides of the joint (do not apply primer on the sealant). The KIS fabric shall be applied directly on the binder/primer while the binder/primer is wet and tacky and pressed in and smoothed (no crease or fold is permitted).
- 6.4.3 Allow adequate curing time for the fabric binder/primer (typically curing time is 24 hours depending on the manufacturer's recommendation) prior application of KIS Polymer to the fabric.
- 6.4.4 Apply KIS Polymer to the fabric until the cloth is 100% saturated. Brush with a roller to firm the cloth and release any air bubbles. Allow curing for a minimum of 24 hours. Apply the epoxy coating on both sides of the joint as described in Section 11.0.

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**Figure 1 – Example of KIS application system application**

- 6.5 **The interface of concrete and steel/other elements** shall be filled with a chemical-resistant sealant, such as Fosroc Nitoseal SC600 or similar approved equivalent. After application of sealant, the interface shall be treated using flexible crack/ jointing bridging fabric system, e.g., Epigen KIS™ system or a similar approved equivalent that is compatible with the epoxy coating system.

## 7.0 CONCRETE REPAIRS

- 7.1 If concrete repairs are required prior to the application of the coating, the Contractor shall repair in accordance with Section 7.0 of this specification.
- 7.1.1 Carry out patch repair to the areas of defective concrete which has cracking or delamination or spalling (including exposed corroded reinforcement) or rust stains and inadequate or failing past patch repairs.

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- 7.1.2 The reinstatement repair mortar shall be a proprietary single-component polymer modified, a cement-based blend of powders such as Parchem Renderoc HB70 or LA55 or similar approved equivalent, depending on the size and depth of the patch repair.
- 7.1.3 The approved perimeter of the defective concrete to be removed shall be saw cut to a depth of 20mm to delineate the extent of the repair and to avoid feather edges in the repair. The saw-cut areas shall be kept as rectangular as possible.
- 7.1.4 Any exposed reinforcement shall be cleaned to AS 1627.4 Class 2.5 with particular attention to the back of exposed steel bars. No rebar is to be cut or augmented without the approval of Principal. After cleaning, apply zin-rich epoxy primer, e.g., Nitoprime zinc rich 75 microns DFT.
- 7.1.6 Concrete substrate shall be clean sound and pre-soaked with water for a few hours. Just prior to application, the concrete surface shall in a surface dry state. Epoxy bonding agent, e.g., Nitoprime EP or similar approved equivalent shall be applied on the substrate, depending on the repaired product. Placement of mortar shall be performed while the bonding agent is still tacky.
- 7.1.7 Where multiple layers are applied, the surface of the repair mortar shall be scarified before curing for adhesion of next layer.
- 7.1.8 An adequate wet curing method, e.g., covering the concrete repair area with wet hessian shall be implemented for repair with a minimum wet curing time of 3 days immediately after initial set. **The use of curing compounds for curing is not permitted.**
- 7.1.9 Any alternative concrete repair methodology and/or materials that are not stipulated in this Specification shall be submitted to the Principal and subject to approval by the Principal prior to commencement of repair works.

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**8.0 COATING SURFACE PREPARATION**

- 8.1 The concrete substrate shall be sound, dry, free from dust/dirt, any surface defects, laitance and contaminants (e.g., oil, grease, salts, chemicals, paint, formwork release and curing membranes) that may be detrimental to the coating adhesion to the substrate.
- 8.2 Prior to coating application, the concrete substrate shall be prepared to CSP 2 or 3 surface profile with methodologies and standards to follow ICRI Guideline No. 310.2R-2013, NACE SSPC-SP 13/NACE No. 6 and the coating manufacturer’s recommendations for surface preparation. [Refer: Table 1].

Table 1 - Acceptance Criteria for Concrete Surface After Surface Preparation

Property	Test Method	Acceptance Criteria
Surface profile	ICRI Guideline No 310.2R-2013	CSP 2 or 3
Surface cleanliness	Visible dust	No significant dust
pH	Main Road WA Test Method 620.1-2012	pH > 9
Moisture content	Handheld moisture meter	<5%

- 8.3 If existing coating was fully removed to expose the concrete substrate, the exposed substrate shall be prepared to requirements as stipulated in this section.
- 8.4 Where full or part of the existing coating is retained, adhesion testing shall be performed to verify adhesion to the concrete substrate prior to the application of the new coating. Adhesion testing results shall comply with acceptable value of >2.1 MPa. The surface of the existing coating shall be adequately prepared, such that the new coating can bond successfully to the existing coating.

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#### 9.0 ATMOSPHERIC CONDITION

- 9.1 Prior to and during coating application, the contractor shall record details in Daily Coating and Inspection Report pertaining to environmental conditions including daily ambient and surface temperature, relative humidity and dew point.
- 9.2 Prior to coating application, as a minimum the ambient temperature shall typically be  $>10^{\circ}\text{C}$  and  $\text{RH} < 80\%$ .

#### 10.0 MATERIALS

- 10.1 Chemical resistant coating system used for application in waste water structure shall be based on the coating systems specified in Section 16.0. Other alternative suitable materials shall be submitted for written approval by the Principal before coating commences.
- 10.2 Coating specifications inclusive of datasheets, coating application method statements and ITP's shall be submitted to the Principal for approval at least 10 working days prior to the commencement of work.

#### 11.0 COATING APPLICATION & THICKNESS

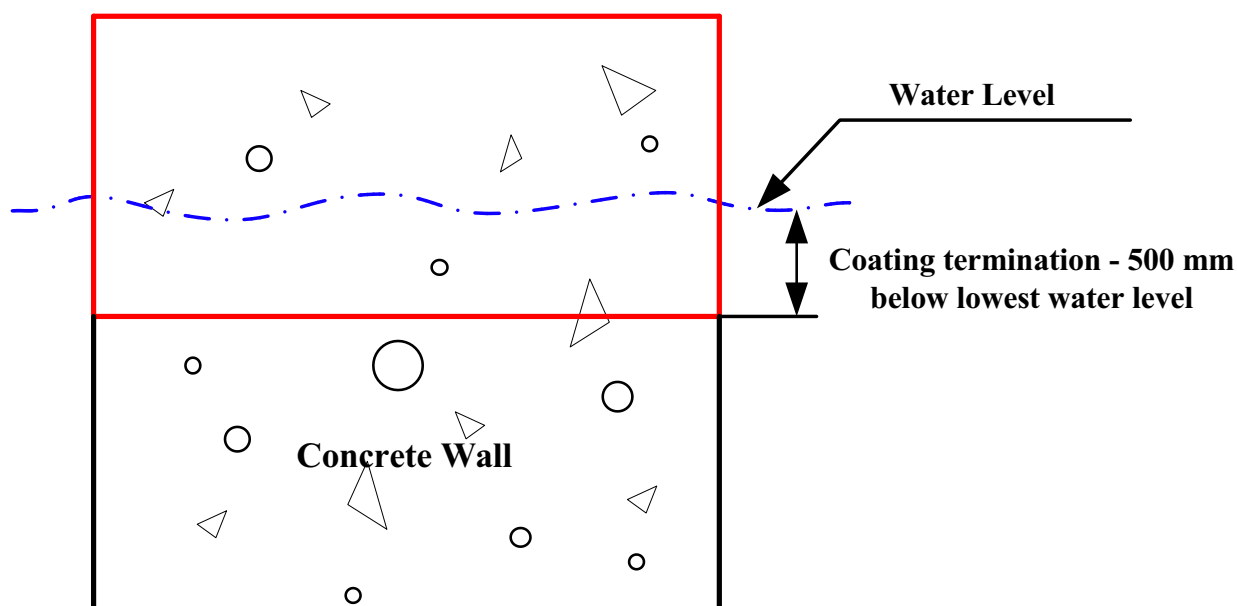
- 11.1 The surfaces specified shall be given two or more coats of the 2-pack epoxy coating to produce a minimum dry film thickness of 500 microns. Refer [Figure 2].
- 11.2 This coating shall extend minimum 500 mm below the lowest service water level in the structure. The termination groove shall be 5 mm (wide) x 5 mm (depth).



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**Figure 2 – Coating termination on the concrete wall.**

- 11.3 If primer material is used, the Contractor shall ensure the primer is compatible with the epoxy coating as per the coating manufacturer's recommendations.
- 11.4 The coating components shall be thoroughly mixed in the specified proportions as per manufacturer recommendations.
- 11.5 Welds, edges, crevices, seams, joints and corners shall be brush coated before commencement of spray application of the coating.
- 11.6 **At the location of non moving cracks and/or joints**, the repaired cracks/ joints (as per Section 6.0) shall be treated with glass fibre fabric system, such as Fosroc Nitowrap GW or similar approved equivalent. Apply first coat of the epoxy coating on the prepared surface. At the repaired cracks/joints, apply the glass fabric fibres within the allowable setting time of the epoxy (i.e. while the epoxy coating is still tacky). Press the fabric firmly into the epoxy coating using a suitable roller. Apply second and subsequent coats to produce a minimum dry film thickness of 500 microns. Refer [Figures 3 and 4].

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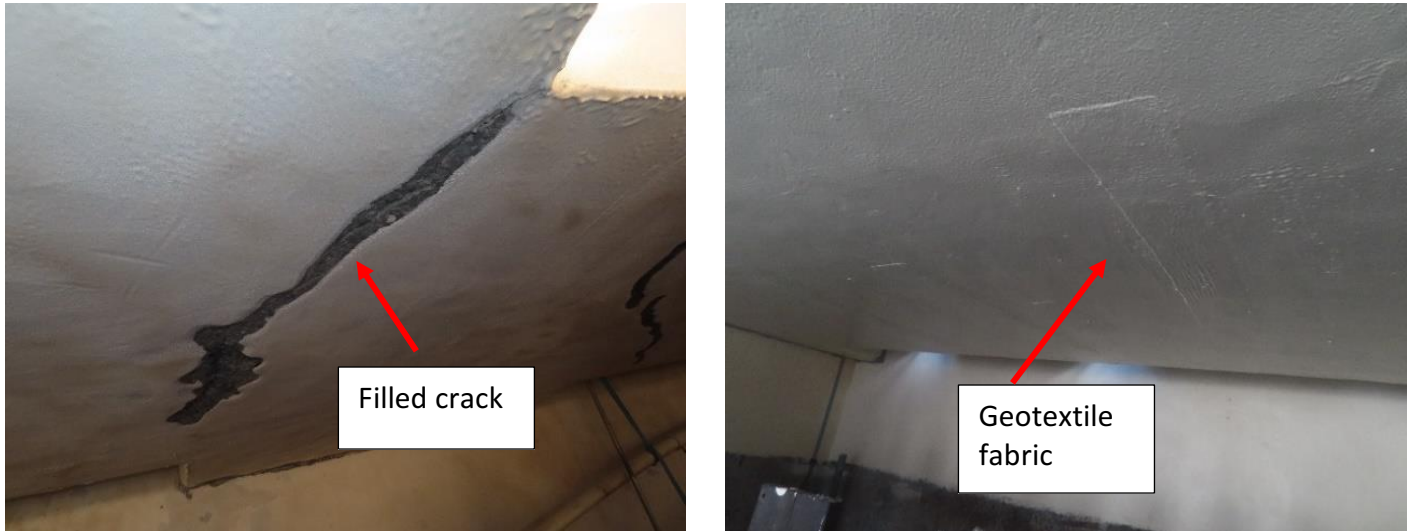
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**Figure 3 – Example of Glass fibre fabric system application**

- 11.7 Mixing, thinning, application and curing of protective coatings shall be carried out in accordance with the coating manufacturer's recommended practice for the on-site conditions. Recommended drying times between coats for on-site conditions by the coating manufacturer shall not be exceeded.
- 11.8 Applied coatings shall be protected from rain or moisture until fully cured.
- 11.9 For interface areas of concrete and steel/other elements which are likely to come into contact with moisture and/or H<sub>2</sub>S gas, the epoxy coating shall be a continuous coating finish and be applied up a minimum of 200mm to the steel/another element surface from the coated concrete surface. Refer [Figure 5].

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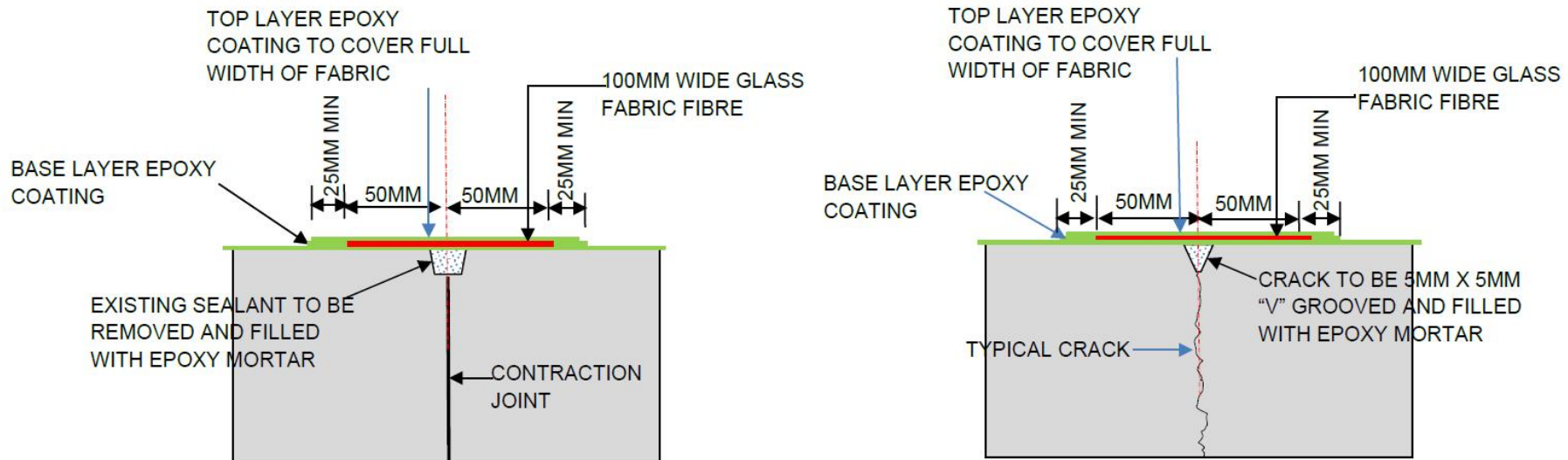


Figure 4 - Typical Coating Treatment Over Non-Moving Joint/Crack

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**Figure 5 – Example typical coating finish at the interface between concrete and steel/other**

## 12.0 INSPECTION AND TESTING OF COATING

- 12.1 Visual Testing – The Contractor shall visually examine for surface defects and any discontinuity arising after curing is completed.
- 12.1.1 The finished coating shall be of uniform thickness, colour, appearance and gloss. It shall be fully cured, adherent, coherent and free from holidays, laps, excessive sags, blistering, checking, wrinkling, overspray, patchiness and any other defects that may impair the performance and/or appearance of the coating.
- 12.1.2 Defects such as pinholes, cracks, blisters, voids, foreign inclusions and irregular profile peaks shall be marked for repair and retested upon full cure of the repaired coating.
- 12.2 Spark Testing – The Contractor shall carry out holiday testing to the finished coating in accordance with NACE Standard SP0188 – Discontinuity (Holiday) Testing of New Protective Coatings on Conductive Substrates. The Contractor shall allow for adequate curing time and nominate a minimum spark testing time after application to prevent

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damage to the finished coating from the spark testing. This is usually done at least 7 days after the final coat application, depending on the manufacturer's recommendation.

12.3 Adhesion Testing – The Contractor shall carry out adhesion testing to the finished coating in accordance with AS/NZS 1580 Method 408.5 to determine the adhesion strength of the coating to the substrate. Reference shall also be made to ASTM Standard D4541, ASTM D7244 and ASTM C1584/C1584M.

12.3.1 The minimum acceptable adhesion value shall be 2.1 MPa in accordance with SSPC-SP 14/NACE No. 6.

12.3.2 The location of test sites shall be identified and agreed upon by both the Contractor and the Principal prior to the start of attaching the dollies to the substrate. It is normally carried out on the non-coated surface. The test site shall be representative of the entire application process, performed in conjunction with the coating works, i.e., like for like. If the test is performed on the coated area, the coating in the test area shall be made good

12.4 Coating Thickness Testing – The Contractor shall carry out the Coating DFT test using a concrete coating thickness gauge to AS 4894.4.

12.5 The Contractor shall provide the Principal's Representative adequate prior notice of a minimum of 10 days for hold point items in the ITP. No works identified as a hold point shall commence without the Principal's acceptance review and approval.

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Figure 6– Typical adhesion test equipment, DFT testing Positector gauge

#### 13.0 REPAIR OF A DEFECTIVE COATING AND RETESTING

13.1 Coatings with defective areas equal to 20% or more of the total coated surface, will be rejected outright.

#### 14.0 RECORDING AND REPORTING

14.1 Following testing a report shall be submitted by the Contractor. The Contractor shall keep detailed records and reports including the following:

- Environmental conditions (i.e., daily temperature, relative humidity, dew point, etc.)
- Concrete surface moisture content
- Surface preparation profile
- Coating dry film thickness readings
- Adhesion test readings

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- Holiday testing readings
- Photographic evidence of surface preparation, coating application, and other quality
- Inspection and testing results.

14.2 The Completion Report shall be made available to the Principal's Representative at the completion of the project.

#### **15.0 CONTRACTOR'S RESPONSIBILITY**

15.1 The Contractor shall supply all necessary plant, equipment, materials and labour, prepare the surface, repair concrete substrate defects, apply the protective coating, and carry out quality control inspection tests and records in accordance with this specification and the coating manufacturer's requirements.

15.2 A list of all items to be inspected and the relevant drawing reference shall be forwarded to the Water Corporation Coating Inspector prior to the inspection being undertaken.

15.3 The preceding inspection clauses shall not relieve the Contractor of their responsibility to supply materials and perform work in accordance with the requirements of any overriding contract documentation.



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#### 16.0 Commonly Used Chemical Resistant Coating for Concrete in Water & Wastewater Treatment Plants

Chemical Name	Epigen	Sika	Parchem	BASF	Epimax	SIM	Chesterton
Alum. Sulphate - Alum [25%]	Chemproof 4029	Sikagard 63N	Nitocote EP410 + Nitofloor N	Ucrete	444AR	Chemclad SC Chemclad XC	CS4 NVE
Aluminium Chloride Hydroxide [24-40%]	Chemproof 4029	Sikagard 62	Nitocote EP410 + Nitofloor N	Ucrete	444AR	Chemclad SC Chemclad XC	CS4 NVE
Anhydrous Ammonia	Chemproof 4029	Sikagard 62	Nitocote EP410 + Nitofloor N	Ucrete	---	Chemclad SC Chemclad XC	CS4 NVE
Citric Acid [90%]	Chemproof 4029	Sikagard 63N	Nitocote EP410 + Nitofloor N	Ucrete	444AR	Chemclad XC	NVE
Chlorine	Chemproof 4029	Sikagard 62	Nitocote EP410 + Nitofloor N	Ucrete	---	Chemclad SC Chemclad XC	NVE
Ferric Sulphate [45%]	Chemproof 4029	Sikagard 63N	Nitocote EP410 + Nitofloor N	Ucrete	444AR	Chemclad XC	CS4 NVE
Fluorosilicic Acid	Chemproof 4029	Sikagard 63N	Nitofloor N short term contact	Ucrete	---	Chemclad XC	NVE
Hydrochloric Acid [26%]	Chemproof 4029	Sikagard 63N	Nitocote EP410 + Nitofloor N	Ucrete	421HAR	Chemclad XC	988 NVE
Magnesium Hydroxide Liquid	Chemproof 4029	Sikagard 62 Sikagard 63N	Nitocote EP410 + Nitofloor N	Ucrete	---	Chemclad SC Chemclad XC	NVE
Magnesium Hydroxide	Chemproof 4029	Sikagard 62 Sikagard 63N	Nitocote EP410 + Nitofloor N	Ucrete	---	Chemclad SC Chemclad XC	NVE
Potassium Permanganate	Chemproof 4029	Sikagard 62 Sikagard 63N	Nitocote EP410 + Nitofloor N	Ucrete	421HAR	Chemclad SC Chemclad XC	CS4 NVE
Sodium Hydroxide [Caustic Soda 50%]	Chemproof 4029	Sikagard 62 Sikagard 63N	Nitocote EP410 + Nitofloor N	Ucrete	444AR	Chemclad SC Chemclad XC	CS4 NVE
Sulphuric Acid [98%]	Chemproof 4029	Sikagard 63N	Nitofloor N short term contact	Ucrete	421HAR	Chemclad XC	CS4 988
Sodium Bisulphite [45-40%]	Chemproof 4029	Sikagard 63N	Nitocote EP410 + Nitofloor N	Ucrete	444AR	Chemclad SC Chemclad XC	CS4 NVE
Sodium Hypochlorite [12.5%]	Chemproof 4029	Sikagard 62 Sikagard 63N	Nitocote EP410 + Nitofloor N	Ucrete	444AR	Chemclad XC	NVE
Sod. Metabisulphite [45 - 40%]	Chemproof 4029	Sikagard 62 Sikagard 63N	Nitocote EP410 + Nitofloor N	Ucrete	---	Chemclad SC Chemclad XC	CS4 NVE

Note:

- Where a coating system requires more than one product to be used (e.g., Primer and top coat) both product shall be from the same supplier unless approved otherwise by the Principal
- The Principal cannot be held responsible for the claims or performance guarantees offered by construction product suppliers.
- Due to continuous product development, coating contractors shall check with product suppliers to confirm that the product names and numbers are current at the time of ordering.



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17.0 Inspection and Test Plan [Sample Only]

INSPECTION TEST AND PLAN		EXAMPLE
Contractor/customer:	ABBC Engineering	Date of issue: 1 <sup>st</sup> July 2021
Project title:	xx Coating Repair	Prepared by: Joe Bloggs
Water Corporation project No.:	CW 1999999	Job/contract number: xxxxxxxx
Description and system:	Coating System D3	No. of pages: 4
<p><b>Legend of inspection points:</b></p> <p><b>H = Hold Point.</b> Work may not proceed without approval or notification, unless approved by the principal or contractor.</p> <p><b>W = Witness Point.</b> Work may proceed without the presence of the principal.</p> <p><b>S = Surveillance.</b> Witness at random, no formal notification required.</p> <p><b>V = Verify.</b></p> <p><b>R/A = Review.</b> Review documents &amp; accept.</p> <p><b>(work can proceed if Principal cannot attend hold point inspection within three hours of notified time for attendance)</b></p>		

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NO	Activity/Operation	Specification/Document	Acceptable Criteria	Verifying Document	Person Responsible	Inspection & Verification Points					
						Sub-Contractor	Sign	Contractor	Sign	Principal or Nominee	Sign
1	Review Client Specifications	<ul style="list-style-type: none"> <li>- WC Specification D3</li> <li>- WC Specification DS 95</li> </ul>	Read and fully understand the requirements & responsibilities.	Signed and approved ITP	QC Inspector	R/A		R/A		V	
2	Coating applicators qualification	<ul style="list-style-type: none"> <li>- WC Specification DS 95</li> <li>- ASTM D4228</li> </ul>	As per coating contractor's internal procedure and standards.	Verification of competency record (VOC)	QC Inspector	H		V		V	
4	Certificate of inspection personnel	<ul style="list-style-type: none"> <li>- WC Specification DS 95</li> <li>- NACE/ACA</li> </ul>	Certified as per specification requirements.	NACE/ACA	QC Inspector	H		H		W	

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4	Calibration of all test equipment	<ul style="list-style-type: none"> <li>- WC Specification DS 95</li> <li>- SSPC PA2</li> <li>- AS4894.4</li> <li>- ISO 17025</li> </ul>	Equipment manufacturers criteria, qualified person, or NATA registered or equivalent testing facility.	Calibration and testing certificates and records.	QC Inspector	<b>V</b>		<b>V</b>		<b>W</b>	
5	Environment Control	<ul style="list-style-type: none"> <li>- Contractor's Work Method Statement</li> <li>- WC Specification DS 95</li> </ul>	Protect or remove critical instruments prior coating Prepare adequate laydown area.  All products be contained in portable bund.  Spill kit to be on site.	Contractor's Work Method Statement	Supervisor	<b>R/A</b>		<b>R/A</b>		<b>V</b>	
6	Concrete Defects Identification	<ul style="list-style-type: none"> <li>- WC Specification D3</li> </ul>	Mark up defects extent and location in sketch or drawing	Defect Sketch/Drawing	Supervisor	<b>H</b>		<b>V</b>		<b>V</b>	

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7	Static Cracks Repair [Insert epoxy product name]	WC Specification D3	V grooved cracks 5mmx5mm Substrate for epoxy resin/mortar [Insert epoxy product name] cleaned, free of debris  Epoxy mortar finish flushed	Daily coating and inspection report	Supervisor	H		V		V	
8	Moving cracks Repair [Insert crack bridging system]	WC Specification D3 Manufacturer's specification	Apply crack bridging bandage system [Insert crack bridging system] to Manufacturer's specification	Daily coating and inspection report	Supervisor	H		V		V	

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9	Concrete Repairs with [Insert repair mortar product name]	<ul style="list-style-type: none"> <li>– WC Specification DS 95</li> <li>– WC Specification D3</li> </ul>	<p>Square cut to delineation depth 20mm. Breakout to sound concrete Clean rebar to AS 1627.4 ClasS 2.5 and prime with zinc rich primer</p> <p>No cracks, delaminations to finished repair mortar [Insert repair mortar product name]</p>	Daily coating and inspection report	Supervisor	<b>H</b>		<b>V</b>		<b>V</b>	
10	Substrate preparation	<ul style="list-style-type: none"> <li>– WC Specification DS 95</li> <li>– WC Specification D3</li> </ul>	<p>Surface profile CSP 2 or 3</p> <p>Substrate clean, free of debris, no laitance</p> <p>Oil, grease, dirt, and other foreign matter shall be removed.</p> <p>Ensure surface Humidity is &lt;5%</p>	Daily coating and inspection report	Supervis or/ QC Inspector	<b>H</b>		<b>H</b>		<b>W</b>	

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11	Ambient conditions	<ul style="list-style-type: none"> <li>- WC Specification DS 95</li> <li>- WC Specification D3</li> <li>- WC Specification A5</li> <li>- AS4894.7</li> <li>- AS4894.14</li> </ul>	<p>Ambient conditions shall be recorded at least 4 times per shift</p> <p>Relative humidity &lt;80%</p> <p>Min/Max substrate Temp 11°C, - 55°C</p> <p>Min Substrate Temp 4°C above dew point.</p>	Daily coating and inspection report	QC Inspector	<b>H</b>		<b>W</b>		<b>W</b>	
12	<p>Apply Primer (if applicable)</p> <p><b>[Insert the Primer Product Name]</b></p>	<ul style="list-style-type: none"> <li>- WC Specification DS 95</li> <li>- WC Specification D3</li> </ul>	Monitor WFT/DFT regularly during and after application.	Daily coating and inspection report	QC Inspector	<b>V</b>		<b>W</b>		<b>W</b>	
13	<p>Apply 1st coat</p> <p><b>[Insert the Coating Product Name]</b></p>	<ul style="list-style-type: none"> <li>- WC Specification DS 95</li> <li>- WC Specification D3</li> </ul>	Monitor WFT/DFT regularly during and after application.	Daily coating and inspection report	QC Inspector	<b>V</b>		<b>W</b>		<b>W</b>	

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14	Apply 2 <sup>nd</sup> coat  [Insert the Coating Product Name]	<ul style="list-style-type: none"> <li>- WC Specification DS 95</li> <li>- WC Specification D3</li> </ul>	Monitor WFT regularly during application.  500 µm DFT minimum	Daily coating and inspection report	QC  Inspector	V		W		W	
15	Finish coat inspection	<ul style="list-style-type: none"> <li>- WC Specification DS 95</li> <li>- WC Specification D3</li> <li>- AS4894.4</li> <li>- AS4894.4</li> <li>- SSPC PA2</li> </ul>	Visual inspection for runs, sags and any inclusions etc.  Coating cured and final DFT recorded. All batch numbers are documented.	Daily coating and inspection report	QC  Inspector	H		H		W	
16	Holiday testing for as defined in the ITP.	<ul style="list-style-type: none"> <li>- WC Specification D3</li> <li>- AS 4894.1</li> </ul>	110% of total coated accessible surface area.	Daily coating and inspection report	Supervisor/  Inspector	H		H		H	

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18	Adhesion testing on non-coated or coated concrete surface	<ul style="list-style-type: none"> <li>- WC Specification DS 95</li> <li>- WC Specification D3</li> <li>- AS4894.9</li> </ul>	Adhesion test of cured coating on non coated or coated concrete surface (Pull off test). Acceptable value >2.1 MPa	Daily coating and inspection report	Supervisor/ Inspector	<b>H</b>		<b>H</b>		<b>H</b>	
19	Verifying acceptance documentation.	<ul style="list-style-type: none"> <li>- WC Specification DS 95</li> <li>- WC Specification D3</li> <li>- AS4894.12</li> </ul>	Check that all inspection, test documentation and completion reports have been completed and signed. Submit Documentation to Contractor/Principal.	Comple tion Report.  IRC and signed ITP.	Inspector/ Principal	<b>H/R</b>		<b>RA</b>		<b>RA</b>	

**COMMENTS AND NOTES:**

Consider protection to existing tanks, instruments, etc in the bund vicinity or adjacent before commencement of works and add this as line item in the ITP as required

Sub-contractor, contractor then principal to sign ITP at completion of works and ITP close out.

This example ITP covers the for the application of a 2-pack chemical resistant epoxy coating suitable for concrete structures that are exposed to H2S gas attack in wastewater environment.



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<b>ITP Acceptance for Issue</b>	<b>Name</b>	<b>Position</b>	<b>Signature</b>	<b>Date</b>
Subcontractor				
Contractor				
Water Corporation				

Once ITP is accepted and signed by all parties, work can proceed

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<b>Document Revision History</b>					
<b>Sect</b>	<b>Issue</b>	<b>Date</b>	<b>Revision Description</b>	<b>RVWD</b>	<b>APROV</b>
2	4	08/02/2023	Amend propose	AO	SS
4	4	08/02/2023	Amend personal qualifications	AO	SS
5	4	08/02/2023	Add concrete identification	AO	SS
6	4	08/02/2023	Add concrete repair	AO	SS
7	4	08/02/2023	Amend surface preparation	AO	SS
9	4	08/02/2023	Amend materials	AO	SS
12	4	08/02/2023	Amend inspection and testing	AO	SS
16	4	10/03/2023	Add commonly used coating	AO	SS
17	4	10/03/2023	Add ITP example	AO	SS

**--- End of Document ---**