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RAMS PRO ZONE

METHOD STATEMENT

Damaged & Cracked Concrete Repair

Large Crack Remediation Works

Document No.	Revision	Issue Date	Classification
MS-CCR-001	Rev 01	[DATE]	Controlled
Project	**Site Location**	**Prepared By**	**Approved By**
[PROJECT NAME]	[SITE / LOCATION]	[NAME / ROLE]	[NAME / ROLE]

** Italic blue fields throughout this document indicate fields requiring site-specific customisation before use.*

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1. DOCUMENT CONTROL

1.1 Document Information

Field	Details
Document Title	Method Statement for Damaged Cracked Concrete Repair of Large Cracks
Document Reference	MS-CCR-001
Revision	Rev 01
Date of Issue	[DD/MM/YYYY]
Document Type	Method Statement / Safe Work Method Statement (SWMS)
Company Name	[COMPANY NAME]
Project Name	[PROJECT NAME]
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Client / Principal	[CLIENT / PRINCIPAL CONTRACTOR NAME]
Contract No.	[CONTRACT REFERENCE NUMBER]
Classification	Controlled Document — Review before each project use

1.2 Revision History

Rev	Date	Prepared By	Reviewed By	Approved By	Description
01	[DATE]	[NAME]	[NAME]	[NAME]	Initial Issue
02	[DATE]	[NAME]	[NAME]	[NAME]	[Description of Changes]

1.3 Distribution List

Name / Role	Organisation	Copy No.	Date Issued
Project Manager	[COMPANY NAME]	01	[DATE]
QHSE Manager	[COMPANY NAME]	02	[DATE]
Site Supervisor	[COMPANY NAME]	03	[DATE]
Client Representative	[CLIENT NAME]	04	[DATE]

2. SCOPE, OBJECTIVES & APPLICABILITY

2.1 Scope of Work

This Method Statement defines the sequence of operations, health & safety controls, quality assurance requirements and environmental management measures for the inspection, preparation and repair of large cracks (generally defined as cracks exceeding 0.3 mm in width, or as specified by the project engineer) in reinforced and unreinforced concrete structures. This includes, but is not limited to, structural

slabs, beams, columns, retaining walls, foundations, pits, tanks and pavements across construction, civil engineering, oil & gas, industrial and infrastructure sectors.

This document applies to all personnel engaged in crack repair operations at [SITE / FACILITY], including direct employees, subcontractors and specialist repair operatives. All works shall be carried out in accordance with project specifications, approved material data sheets and the regulatory framework cited herein.

2.2 Objectives

- Restore the structural integrity and long-term durability of damaged concrete elements to design performance levels.
- Prevent ingress of moisture, chlorides and contaminants that accelerate reinforcement corrosion and concrete deterioration.
- Ensure all repair activities are conducted without injury to personnel, damage to adjacent structures, or harm to the environment.
- Achieve quality of repair that meets or exceeds the requirements of BS EN 1504 (Products and systems for the protection and repair of concrete structures) and project specifications.
- Comply with all applicable legal, regulatory and client-specific QHSE requirements.

2.3 Definitions & Abbreviations

Term / Abbreviation	Definition
Large Crack	A crack in concrete with a width exceeding 0.3 mm or as defined by the project structural engineer. Cracks ≥ 1 mm may indicate active structural movement.
Active Crack	A crack that continues to move or widen due to live loading, thermal cycling, settlement or chemical action.
Dormant Crack	A crack that has ceased movement and is stable. Repair method differs from active cracks.
Epoxy Injection	A pressure grouting technique using two-component epoxy resin to bond and seal cracks, restoring tensile and shear capacity.
Polyurethane Grout	A flexible, expanding chemical grout used for water-active cracks and where crack movement is expected to continue.
Routing & Sealing	Enlarging the crack mouth by mechanical routing then filling with a flexible sealant — appropriate for dormant surface cracks.
SDS / MSDS	Safety Data Sheet / Material Safety Data Sheet — GHS-compliant chemical hazard information document.
QHSE	Quality, Health, Safety and Environment.
RAMS	Risk Assessment and Method Statement — combined safe system of work document.
PTW	Permit to Work — formal authorisation system for hazardous or controlled operations.
TBT	Toolbox Talk — pre-task safety briefing delivered to all operatives before commencement.
HIL / HAC	High-Intensity Line / Hazardous Area Classification — relevant when working near buried services or in explosive atmospheres.
BS EN 1504	European Standard: Products and systems for the protection and repair of concrete structures — the primary technical standard governing concrete repair.
COSHH	Control of Substances Hazardous to Health (UK) — regulatory framework for managing chemical exposure risks.

3. LEGAL & REGULATORY COMPLIANCE FRAMEWORK

JURISDICTIONAL APPLICABILITY NOTE: This document has been prepared with reference to 18 internationally recognised standards and frameworks. Users MUST confirm which legal jurisdiction governs their specific project location and apply the relevant national/regional legislation accordingly. Where national standards differ from international equivalents, the more stringent requirement shall apply unless the project engineer directs otherwise. GCC/Middle East projects should note that NFPA codes, international ISO standards and local ministerial decrees apply concurrently — both regulatory layers must be satisfied.

3.1 International & Global Standards

Ref Code	Full Official Title	Issuing Body	Clause / Section	Relevance to This Document	Obligation
ISO 45001:2018	Occupational Health and Safety Management Systems — Requirements	ISO	Cl. 6.1, 8.1, 9.1	Risk identification, operational control of repair activities, worker consultation	MANDATORY
ISO 9001:2015	Quality Management Systems — Requirements	ISO	Cl. 8.4, 8.5, 9.1	Control of externally provided materials, repair process control, inspection & testing	MANDATORY
ISO 14001:2015	Environmental Management Systems — Requirements	ISO	Cl. 6.1.2, 8.1	Environmental aspect control: dust, chemical waste, water contamination from repair materials	MANDATORY
ISO 31000:2018	Risk Management — Guidelines	ISO	Cl. 6.3, 6.4	Framework for risk assessment methodology applied in this document's hazard register	MANDATORY
ISO 19011:2018	Guidelines for Auditing Management Systems	ISO	Cl. 6.4, 6.6	Audit competence requirements for QHSE inspectors verifying repair compliance	ADVISORY
ISO 50001:2018	Energy Management Systems — Requirements	ISO	Cl. 6.3, 8.1	Energy consumption of power tools, compressors and equipment used in repair works	ADVISORY
IEC 61511 / IEC 61508	Functional Safety / Safety Integrity Levels	IEC	Cl. 5, 8, 10	Applicable where repair works are performed on concrete housing safety-critical plant, pipework or instrumentation systems	ADVISORY

Ref Code	Full Official Title	Issuing Body	Clause / Section	Relevance to This Document	Obligation
ILO-OSH 2001	Guidelines on Occupational Safety and Health Management Systems	ILO	Cl. 3.6, 3.10	Worker participation, hazard prevention, incident investigation requirements	MANDATORY
ILO C155 / C187	Occupational Safety and Health Convention / Promotional Framework	ILO	Art. 5, 16, 19	Employer duty of care, safe working conditions, national OHS programme obligations	MANDATORY
NEBOSH IGC / IDIP	International General/Diploma Certificate in Occupational Health & Safety	NEBOSH	IGC1, IGC2	Competency benchmark for QHSE supervisors and safety officers managing these works	ADVISORY
IOSH Guidance	Managing Safely / Working Safely Guidance Frameworks	IOSH	Module 3, 5	Risk assessment approach, safety leadership and safe system of work standards	ADVISORY
GHS / UN Purple Book Rev.10	Globally Harmonised System of Classification and Labelling of Chemicals	UN / ILO / WHO	Part 2, 3, 4	Classification and communication of chemical hazards for epoxy resins, solvents, cement-based repair mortars used in this work	MANDATORY
IMO SOLAS / MARPOL	International Convention for Safety of Life at Sea / Prevention of Pollution from Ships	IMO	MARPOL Annex I	Applicable where repair works are conducted on marine/port concrete structures or offshore platforms. Chemical waste discharge controls.	ADVISORY
IATA DGR / ICAO Annex 18	Dangerous Goods Regulations / Safe Transport of Dangerous Goods by Air	IATA / ICAO	Section 3, 4	Transport of flammable repair chemicals, resins or solvents via air freight to remote sites	ADVISORY
IAEA Safety Standards	Radiation Protection and Nuclear Safety Standards	IAEA	GSR Part 3	Applicable if repair works are conducted on nuclear facility concrete shielding structures	ADVISORY

Ref Code	Full Official Title	Issuing Body	Clause / Section	Relevance to This Document	Obligation
World Bank EHS Guidelines	Environmental, Health, and Safety General Guidelines	World Bank Group	Section 1.2, 2.0	Environmental and occupational health baseline requirements for internationally financed projects	MANDATORY
IFC Performance Standards	Performance Standards on Environmental and Social Sustainability (PS1–PS8)	IFC	PS1, PS2, PS3	Environmental and social risk management, labour conditions and pollution prevention on IFC-financed infrastructure projects	MANDATORY
UN SDGs 6, 8, 13, 15	Sustainable Development Goals: Clean Water (6), Decent Work (8), Climate Action (13), Life on Land (15)	United Nations	SDG Targets 6.3, 8.8, 13.2, 15.1	Chemical waste water management (SDG6); worker safety (SDG8); carbon-aware material selection (SDG13); soil/ecological protection (SDG15)	ADVISORY

3.2 Technical Standards — Concrete Repair Specific

Standard	Title & Relevance	Application
BS EN 1504 (Parts 1–10)	Products and Systems for Protection and Repair of Concrete Structures. The primary European standard governing repair material selection, application methods and quality requirements. Part 5 covers concrete injection; Part 9 covers general principles.	All concrete repair works — mandatory technical reference
ACI 224.1R-07	Causes, Evaluation and Repair of Cracks in Concrete Structures (American Concrete Institute). Defines crack classification, evaluation methodology and repair selection criteria.	Crack evaluation and repair method selection
ACI 546R-14	Guide for the Design and Construction of Durable Concrete Pavement (ACI 546 series covers concrete repair).	Pavement and slab crack repair guidance
CIRIA C660	Early-Age Thermal Crack Control in Concrete. Guidance on assessing thermally-induced cracking.	Assessment of thermal cracking in mass concrete
ICRI Technical Guideline 310.2R-2013	Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays and Concrete Repair (International Concrete Repair Institute)	Surface preparation specification and inspection

Standard	Title & Relevance	Application
BS 6920 / EN 13055	Suitability of non-metallic products for use in contact with water for human consumption (where repair affects water-retaining structures).	Water-retaining structures only

4. ROLES & RESPONSIBILITIES

The following RACI Matrix defines accountability for all activities associated with this Method Statement. R = Responsible | A = Accountable | C = Consulted | I = Informed.

Activity / Responsibility	Proj. Mgr	QHSE Mgr	Site Supv.	Eng. / Designer	Operative	Client Rep.
Review & approve Method Statement	A	R	C	C	I	I
Conduct pre-task Toolbox Talk (TBT)	I	C	R/A	I	R	I
Obtain Permit to Work (PTW)	A	C	R	I	I	I
Crack survey & condition assessment	I	C	A	R	C	I
Select repair materials & method	I	C	C	R/A	I	C
Set up exclusion zone / barriers	I	C	A	I	R	I
Execute repair works (mixing, injection, sealing)	I	I	A	C	R	I
Inspect and accept repair quality (QC)	I	C	A	R	I	C
Monitor environmental controls	I	R/A	C	I	C	I
Incident reporting & investigation	A	R	R	I	R	I
Close-out & documentation	A	R	R	C	I	I

5. SEQUENCE OF OPERATIONS — WORK METHOD

5.1 Pre-Commencement Requirements

Prior to any crack repair works commencing on site, the following pre-commencement requirements SHALL be satisfied and documented:

1. **Permit to Work (PTW):** A valid PTW shall be obtained and displayed at the work location. Hot works permits are required if flame-assisted surface drying is used. Confined space permits required if repairs are within enclosed structures.
2. **Toolbox Talk (TBT):** Site Supervisor shall deliver a pre-task TBT to all operatives. Records of attendance shall be documented on Form TBT-001. The TBT shall cover: work scope, hazards identified, control measures, PPE requirements, emergency procedures and site-specific rules.
3. **Material & Equipment Inspection:** All repair materials shall be verified against the approved Material Submittal and project specification. Check material expiry dates. Inspect injection

equipment, grinders, diamond blades, air compressors and personal protective equipment for condition and calibration where applicable.

4. **Underground Services Survey:** Where grinding, coring or mechanical preparation is required, a CAT scan or equivalent underground services survey shall be completed and cleared. Do not commence cutting operations until services are confirmed clear or adequately protected.

5.2 Site Preparation & Exclusion Zones

Establish a physical exclusion zone of minimum 2 metres around all active repair areas using colour-coded barrier tape (red/white for hazardous, yellow/black for caution) and rigid barriers where overhead work is present. Erect safety signage: "Concrete Repair in Progress — Authorised Personnel Only", "Chemical Hazard", "PPE Required". Place drip trays beneath all mixing areas to prevent chemical spills reaching drainage or soil.

5.3 Crack Survey & Condition Assessment

A qualified structural engineer or competent concrete technician shall conduct a systematic crack survey prior to repair works. The survey shall record: crack location (plan and elevation), crack width (using feeler gauges or crack comparator card), crack depth (sounding/core sample), crack type (active/dormant, structural/cosmetic), cause assessment (overload, settlement, thermal, shrinkage, corrosion), and ambient conditions (temperature, humidity, wind speed — critical for resin curing). Results shall be documented on Crack Survey Form QC-001 and submitted to the project engineer for repair method approval.

5.4 Repair Method Selection

The appropriate repair technique shall be selected by the project engineer based on crack classification:

Crack Type	Width Range	Recommended Method	Material
Dormant, structural	> 0.3 mm	Low-pressure epoxy injection (BS EN 1504-5)	Two-component epoxy resin (e.g. Sika Injection-451 or equiv.)
Active, water-bearing	1–25 mm	Polyurethane (PU) foam injection	Hydrophilic PU resin (e.g. Sika Injection-107 or equiv.)
Dormant, surface/cosmetic	> 0.5 mm	Routing and sealing	Polyurethane or polysulfide sealant to BS EN ISO 11600
Wide structural (> 5 mm)	5–50 mm	Gravity fill / cementitious grouting	Non-shrink cementitious grout per BS EN 1504-6
Through-slab cracks	Variable	Stitching + epoxy injection	Stainless steel stitching bars + epoxy adhesive anchor

5.5 Surface Preparation

Surface preparation is critical to repair bond integrity. Comply with ICRI CSP (Concrete Surface Profile) guidelines. The preparation sequence shall be:

5. Remove all loose, friable, contaminated or deteriorated concrete from the crack mouth and surrounding area using a hammer and chisel, needle gun, angle grinder with diamond cup wheel or high-pressure water jetting (minimum 70 MPa for structural preparation).
6. Clean crack interior using oil-free compressed air blast (minimum 7 bar) to remove dust, debris and moisture. For water-active cracks, clean with water then allow to stabilise.
7. For epoxy injection: surface must be DRY or surface-dry. Check ambient temperature (min. +5°C, max. +35°C), concrete substrate temperature (min. 3°C above dew point) and relative humidity as per material manufacturer's SDS.

8. Routing: Use crack router with diamond or carbide blade to create uniform V-shaped or rectangular reservoir (typically 6–10 mm wide × 6–10 mm deep) along the crack line.

5.6 Injection Port / Packer Installation

For epoxy or PU injection: Install injection packers (ports) at centres appropriate to crack depth — typically 150–300 mm centres for shallow cracks, 300–500 mm for deep cracks. Surface packers are bonded with epoxy adhesive; drilled packers (12 mm dia.) are inserted at 45° to intercept the crack plane at mid-depth. Seal the crack surface between packers using an epoxy surface seal paste, trowel-applied in a 50–75 mm wide band. Allow surface seal to cure fully (minimum 2–4 hours at 20°C) before commencing injection.

5.7 Material Mixing & Injection

All mixing and application shall comply strictly with the manufacturer's product data sheet (PDS) and Safety Data Sheet (SDS). Key requirements:

- **Epoxy resin:** Mix Part A (resin) and Part B (hardener) in the manufacturer's specified ratio using calibrated dual-cartridge dispenser or metered pump unit. Mix for minimum 30 seconds until uniform colour. Do NOT add solvent or water. Pot life is temperature-dependent — check PDS.
- **Injection sequence:** Begin injection at the lowest packer (for vertical cracks) or furthest packer from any void. Apply pressure gradually — do NOT exceed manufacturer's specified maximum injection pressure (typically 0.3–0.5 MPa for epoxy). Continue injecting until material flows freely from the next packer, then cap and move to that packer. Maintain pressure using self-locking packers or pressure pots. Monitor for leakage.
- **PU foam injection:** For active/water-bearing cracks, inject PU resin at moderate pressure. The resin will expand and foam on contact with water — injection must be controlled to avoid cracking the substrate. Begin at the point of highest water flow.

5.8 Curing, Finishing & Quality Inspection

Upon completion of injection, allow full cure period as specified in the material PDS before removing packers (typically 24–72 hours depending on material and temperature). Remove packer stubs by cutting flush with angle grinder. Dress surface seal flush. Inspect completed repair by: visual examination, feeler gauge check (no residual crack opening), light percussion sounding (no hollow areas), optional core samples for laboratory testing. Record all inspection results on QC Inspection Form QC-002. Non-conforming repairs shall be documented on a Non-Conformance Report (NCR) and re-worked.

5.9 Waste Disposal & Site Reinstatement

Dispose of all chemical waste including mixed resin residue, solvent-contaminated rags, empty cartridges and contaminated water strictly in accordance with applicable local environmental regulations (e.g. UAE Federal Law No. 24/1999 on Protection and Development of the Environment; UK Environmental Protection Act 1990; US RCRA 40 CFR Part 262). Segregate chemical waste from general construction waste. Label all waste containers with GHS/CLP hazard labels. Site shall be cleaned, barriers removed and the area reinstated to original condition or as specified.

6. HAZARD IDENTIFICATION & RISK REGISTER

Risk Rating = Likelihood (1–5) × Severity (1–5). HIGH = 15–25 (Red) | MEDIUM = 8–14 (Amber) | LOW = 1–7 (Green). All controls follow the Hierarchy of Controls: Eliminate → Substitute → Engineering → Administrative → PPE.

Risk Level	Score Range	Colour Code	Required Action
HIGH	15–25	Red	STOP — Do not proceed without additional controls. Escalate immediately.
MEDIUM	8–14	Amber	Proceed with specific controls in place. Monitor continuously.
LOW	1–7	Green	Acceptable. Maintain standard controls. Review periodically.

No.	Activity	Hazard / Risk	L	S	Control Measures (Hierarchy)	L	S	Residual
1	Crack Survey & Assessment	Struck by traffic / mobile plant; slip on uneven surface; fall from height (elevated structures)	3	4	ENG: Segregate survey area with barriers. ADMIN: TBT covering traffic management, site rules. PTW for working at height. Scaffold or MEWP inspection cert. ADMIN: Buddy system for elevated work. PPE: Hi-vis vest, safety helmet (EN 397/ANSI Z89.1), safety boots (EN ISO 20345). [Ref: ISO 45001:2018 Cl.8.1; ILO C155 Art.16]	2	2	LOW 4
2	Mechanical Preparation (grinding, cutting, routing)	Angle grinder kickback / disc failure causing laceration; silica dust inhalation (RCS); eye injury from concrete fragments; vibration-induced HAVS	4	4	ELIM: Assess wet cutting or vacuum-shrouded tooling to eliminate silica dust. SUBS: Use wet diamond blade cutting instead of dry grinding. ENG: LEV/exhaust ventilation for enclosed areas; anti-kickback grinding disc. ADMIN: COSHH assessment for RCS; HAV tool register; max 2.5 hrs/day with abrasive tools. Rotate tasks. PPE: FFP3 respirator (EN 149), safety glasses/goggles (EN 166), cut-resistant gloves (EN 388 Level C), hearing protection (EN 352, SNR 26 dB). [Ref: ISO 45001:2018 Cl.8.1;	2	3	MED 6

No.	Activity	Hazard / Risk	L	S	Control Measures (Hierarchy)	L	S	Residual
					GHS Rev.10; COSHH 2002 Reg.7; ISO 14001:2015]			
3	Chemical Mixing & Epoxy/PU Injection	Skin sensitisation / chemical burns from epoxy resin (Part A/B); solvent vapour inhalation; eye contact with resin; anaphylactic reaction in sensitised individuals	3	4	SUBS: Specify low-VOC, low-sensitisation epoxy formulations where technically feasible. ENG: Ensure adequate ventilation (min. 10 ACH in enclosed spaces); use dispensing equipment to minimise skin contact. ADMIN: COSHH assessment; pre-task health questionnaire for skin sensitisation history; SDS briefing. No eating/drinking/smoking in work area. ADMIN: Chemical spill kit on site. PPE: Nitrile gloves ≥ 0.1 mm (EN 374-2 Type B), chemical splash goggles (EN 166 3B), half-face respirator with OV/P3 cartridge (EN 140) or powered air purifying (EN 12942) for enclosed spaces. [Ref: GHS Rev.10; COSHH 2002; ISO 45001 Cl.6.1.2; World Bank EHS Guidelines 2.0]	1	3	LOW 3
4	Working at Height (elevated slabs, bridges, elevated structures)	Fatal/serious injury from fall. Falling objects striking persons below. MEWP overturning on uneven ground.	3	5	ELIM: Design repair method to minimise WAH where possible. ENG: Erect scaffolding (BS EN 12811) or MEWP (BS EN 280) inspected by competent person. Edge protection min 950 mm (EN 13374 Class A). Exclusion zone beneath elevated works minimum 2m + netting. ADMIN: PTW for WAH; pre-use MEWP inspection; operator license check; ground survey for bearing capacity. Rescue plan in place. PPE: Full-body harness (EN 361), lanyard with energy	2	3	MED 6

No.	Activity	Hazard / Risk	L	S	Control Measures (Hierarchy)	L	S	Residual
					absorber (EN 355), anchor to rated ≥ 12 kN point. Helmet with chin strap. [Ref: ISO 45001:2018 Cl.8.1; ILO C155 Art.16; IFC PS2]			
5	Compressed Air Operations	Compressed air jet causing air embolism if directed at skin; hose whip injury; noise from compressor; trip hazard from hoses	3	3	ENG: Pressure safety valve on compressor set to max working pressure; hose whip check (safety cable). ADMIN: Operator training; never direct air at skin or clothing; compressor daily inspection checklist. Route hoses to avoid trip hazard; use hose bridges. PPE: Safety glasses, hearing protection (≥ 25 dB SNR). [Ref: ISO 45001 Cl.8.1; PUWER Reg.5; ILO-OSH 2001 Cl.3.10]	1	2	LOW 2
6	Environmental — Chemical Spill	Epoxy resin, PU or solvent spill contaminating soil, drains, groundwater or watercourse. Penalty under environmental law.	2	4	ENG: Drip trays beneath all chemical mixing stations; bunded storage area for chemical containers. ADMIN: Spill kit (minimum 20 L absorbent capacity) within 5 m of work area; operatives trained in spill response; drain bungs pre-positioned. Notify site environmental officer of all chemical quantities on site. Dispose of contaminated absorbents as hazardous waste. [Ref: ISO 14001:2015 Cl.8.1; UN SDG 6; World Bank EHS Guidelines Section 1.5; IFC PS3]	1	2	LOW 2
7	Manual Handling of Materials & Equipment	Musculoskeletal injury from lifting heavy equipment (compressors, grout pumps), awkward	3	3	SUBS: Mechanise heavy lifts; use wheeled trolleys for gas bottles and equipment. ENG: Position materials close to work point to minimise carry distance.	2	2	LOW 4

No.	Activity	Hazard / Risk	L	S	Control Measures (Hierarchy)	L	S	Residual
		postures in confined areas			ADMIN: Manual handling assessment per MAC tool; max individual lift 25 kg (16 kg for WAH); team lifts for >25 kg. Training in correct technique. PPE: Supportive safety boots; gloves EN 388. [Ref: ISO 45001:2018 Cl.8.1; ILO-OSH 2001 Cl.3.6; World Bank EHS 2.0]			
8	Heat Stress (outdoor / GCC / tropical sites)	Heat exhaustion, heat stroke or fatality in high-temperature environments. Particularly relevant GCC/Middle East (ambient > 45°C).	4	4	ADMIN: Comply with UAE Ministerial Decree No. 32 of 2013 (midday work ban June 15–Sept 15, 12:30–15:00). Acclimatisation programme first 7–14 days. Work/rest rotation (e.g. 45 min work / 15 min rest at WBGT > 30°C). Shaded rest areas and cold potable water within 10 m. Buddy system. Pre-employment heat stress risk screening. ENG: Portable cooling fans/misting. ADMIN: Heat stress monitoring using WBGT meter; on-site first aider trained in heat illness response. [Ref: ISO 45001 Cl.6.1; ILO C155 Art.16; IFC PS2]	2	3	MED 6

7. PERSONAL PROTECTIVE EQUIPMENT (PPE) REQUIREMENTS

All PPE shall be CE/UKCA marked, maintained in serviceable condition, stored appropriately and replaced when damaged or at manufacturer's recommended intervals. PPE standards cited reflect the most common jurisdictions — see Jurisdictional Applicability Note in Section 3.

PPE Item	Description / Specification	EU/UK Standard	US Standard	GCC / Middle East	Status
Safety Helmet	Class A or B hard hat, chinstrap where WAH or wind risk	EN 397:2012+A1	ANSI Z89.1-2014 (Type I/II)	GSO 2055 / SASO equivalent; NFPA 1977 for F&R	MANDATORY
Safety Footwear	S3 steel/composite toe cap, midsole, ankle support, waterproof	EN ISO 20345:2022 S3 SRC	ASTM F2413-18 Class 75	GSO ISO 20345	MANDATORY
High Visibility Vest	Class 2 minimum; Class 3 near live traffic	EN ISO 20471:2013+A1 Class 2/3	ANSI/ISEA 107-2020 Type R Class 2	GSO equivalent	MANDATORY
Chemical Resistant Gloves	Nitrile ≥ 0.1 mm; tested against epoxy/resin solvents	EN 374-1:2016 Type B; EN 374-2	ASTM D6319 (nitrile)	GSO equivalent	MANDATORY (chemical tasks)
Safety Goggles / Face Shield	Chemical splash goggles for resin handling; face shield for grinding	EN 166:2002; EN 170 (UV)	ANSI Z87.1-2020	GSO equivalent	MANDATORY
Respiratory Protection — Dust	FFP3 disposable or reusable half-mask for silica dust (RCS)	EN 149:2001+A1 FFP3 (THP3 reusable)	NIOSH N95 / N100	GSO equivalent	MANDATORY (grinding)
Respiratory Protection — Vapour	Half-face mask with OV/P3 combination cartridge for resin vapours	EN 140 + EN 14387 OV/P3	NIOSH OV/P100	GSO equivalent	MANDATORY (injection)
Hearing Protection	Ear plugs or defenders for grinding / compressor operations (SNR ≥ 26 dB)	EN 352-1 (muffs) / EN 352-2 (plugs)	ANSI S3.19 / OSHA 29 CFR 1910.95	GSO equivalent	MANDATORY (noisy tasks)
Cut-Resistant Gloves	Level C cut resistance for angle grinder and blade handling	EN 388:2016+A1 Level C	ANSI/ISEA 105-2016 Level A4	GSO equivalent	MANDATORY (blade work)
Full Body Harness	Full harness + energy-absorbing	EN 361:2002 + EN 355:2002	ANSI Z359.11-2014	GSO equivalent	MANDATORY (WAH only)

PPE Item	Description / Specification	EU/UK Standard	US Standard	GCC / Middle East	Status
	lanyard; for WAH > 1.8 m (2.0 m UK)				
Chemical Protective Overalls	Type 5/6 coveralls for heavy chemical mixing or confined space	EN 13982-1 (Type 5) / EN 13034 (Type 6)	ASTM F1671	GSO equivalent	OPTIONAL (site-specific)
Sun Protection / Cooling Vest	UPF 50+ clothing, cooling vest for GCC high-temperature sites	EN 13758-1 UPF 40+	ANSI/ASTM equivalent	UAE Ministry of Labour Decree 2013	MANDATORY (GCC outdoor)

JURISDICTIONAL NOTE — HELMETS: EN 397 applies in EU, UK, and most GCC countries. ANSI Z89.1 applies in USA and Canada (alongside CSA Z94.1). AS/NZS 1801 applies in Australia/New Zealand. GSO 2055 is the GCC harmonised standard — many Gulf projects specify EN 397 or equivalent. Where jurisdictions conflict, use the MORE STRINGENT standard or comply with the standard specified in the project contract.

8. EMERGENCY PROCEDURES, FIRST AID & INCIDENT RESPONSE

EMERGENCY CONTACTS — SITE SPECIFIC: *[Complete this table for each site before commencing works. Emergency numbers MUST be posted at site entrance and at all work areas.]*

Service	UAE	UK	USA	KSA
Ambulance / Emergency	998 / 999	999 / 112	911	911 / 997
Fire Service	997	999	911	998
Police	999	999 / 112	911	999
Poison Control	MOH: 800-11111	NHS 111	1-800-222-1222	NCBE: 966-1-443-1111
Site First Aider	[NAME / MOBILE]	[NAME / MOBILE]	[NAME / MOBILE]	[NAME / MOBILE]
Site Manager	[NAME / MOBILE]	[NAME / MOBILE]	[NAME / MOBILE]	[NAME / MOBILE]
Nearest Hospital	[NAME / ADDRESS]	[NAME / ADDRESS]	[NAME / ADDRESS]	[NAME / ADDRESS]

8.1 Chemical Exposure — Epoxy Resin or Solvent

9. **Skin Contact:** Remove contaminated clothing immediately. Wash affected area with soap and copious water for minimum 15 minutes. Do NOT use solvents to remove resin from skin. Seek medical advice if irritation persists or sensitisation is suspected. Refer to product SDS Section 4.
10. **Eye Contact:** Immediately irrigate eye(s) with clean running water for minimum 15 minutes, holding eyelids open. Remove contact lenses if easily possible. Seek immediate medical attention — do NOT delay. Reference SDS Section 4.
11. **Inhalation:** Move casualty immediately to fresh air. Loosen tight clothing. If breathing is laboured, administer supplemental oxygen if available and trained. Call emergency services. Do NOT induce vomiting. Refer to SDS Section 4.

12. **Ingestion:** Do NOT induce vomiting. Rinse mouth with water. Call Poison Control immediately (see table above). Provide SDS to emergency services. Seek immediate hospital treatment.

8.2 Injury — Fall from Height

Do NOT move a casualty who has fallen from height unless they are in immediate danger (e.g. fire). Assume spinal injury. Call emergency services immediately. Keep casualty warm, still and reassured. Clear the area. First aider to assess responsiveness (AVPU scale), airway, breathing, circulation and control any bleeding. Preserve the scene for investigation. Notify QHSE Manager immediately.

8.3 Heat Stroke

Recognise: hot dry skin (NOT sweating), confusion, very high body temperature (>40°C), rapid pulse. Treat as a medical emergency. Call ambulance. Move to shade/air conditioning. Apply cool wet cloths to neck, armpits and groin. Fan continuously. Do NOT give fluids if unconscious. Notify management and QHSE immediately.

8.4 Incident Reporting & Regulatory Obligations

ALL incidents (injuries, near misses, dangerous occurrences, environmental spills) shall be reported to the Site Manager and QHSE Manager within 1 hour of occurrence. Formal incident notification shall be submitted within 24 hours using Form INC-001. Regulatory reporting obligations vary by jurisdiction:

Jurisdiction	Regulatory Body / Legislation	Reporting Requirement
UAE	MOHRE / Local Health Authority	Fatal/serious injuries to be reported within 24 hours to Ministry of Human Resources and Emiratisation (MOHRE). Ministerial Decree 32/2013 & UAE Federal Law No. 8/1980.
UK	HSE — RIDDOR 2013	Report to HSE within 10 days for over-7-day injuries; immediately for fatalities/specified injuries. Online at riddor.hse.gov.uk.
USA	OSHA (29 CFR 1904)	Fatalities: report to OSHA within 8 hours. Hospitalisations/amputations: within 24 hours. OSHA 300/300A logs maintained.
KSA	MHRSD / GOSI	Workplace injuries reported to General Organisation for Social Insurance (GOSI) and employer within 24 hours. Saudi Labour Law Article 134.
Global / IFC Projects	IFC PS1 / World Bank	Environmental and social incidents reported per Stakeholder Engagement Plan and to IFC within timescales specified in loan agreement.

9. TRAINING & COMPETENCY REQUIREMENTS

All personnel involved in cracked concrete repair operations shall hold appropriate training qualifications before commencing work. Training records shall be held on site and available for inspection. [COMPANY NAME] shall maintain a Training Matrix updated quarterly.

Training Topic	Content Summary	Applicable Roles	Delivering Body	Frequency	Evidence
Site Induction	Site rules, emergency procedures, hazards, welfare facilities, first aid arrangements	All personnel	Site Manager	On-joining	Sign-in record

Training Topic	Content Summary	Applicable Roles	Delivering Body	Frequency	Evidence
COSHH / Chemical Handling	Epoxy, PU resin, solvent hazards; GHS labelling; SDS reading; spill response; PPE use	All operatives	QHSE Manager / Supplier	Annual + task-specific	Certificate
Concrete Repair Technology	BS EN 1504; crack types; injection techniques; surface prep; QC inspection	Repair operatives, Engineers	ICRI / Manufacturer	Role-entry + biennial	Certificate
Working at Height	Hierarchy of WAH controls; scaffold use; harness inspection; rescue plan	WAH operatives	Accredited WAH provider	Annual / before WAH task	IPAF / PASMA cert.
Manual Handling	Biomechanics; MAC tool; team lifts; ergonomic aids	All operatives	Site Supervisor	Biennial	Record
First Aid	CPR, AED, wound management, heat illness response, chemical exposure FA	Minimum 1 per 20 workers	HSE / MOH Approved provider	3-yearly (annual refresher)	First Aid certificate
Heat Stress Awareness	WBGT monitoring; recognition of heat illness; work-rest ratios; hydration	All outdoor workers (GCC)	QHSE Manager	Annual (pre-summer)	TBT record
Environmental Awareness	Spill response; waste segregation; drain protection; ISO 14001 obligations	All operatives	QHSE Manager	Annual	Record
NEBOSH IGC / IOSH Managing Safely	General OHS risk management; legal duties; risk assessment leadership	QHSE Manager, Site Supervisor	NEBOSH / IOSH approved centre	Qualification (no expiry)	NEBOSH/IOSH Certificate
Toolbox Talk (TBT) Delivery	Pre-task TBT on specific hazards for each day's planned activities	All operatives	Site Supervisor	Daily pre-task	TBT Form TBT-001

10. REVIEW, APPROVAL & SIGNATURE BLOCK

This Method Statement has been prepared, reviewed and approved by the following authorised personnel. By signing below, each signatory confirms they have read, understood and agree to implement the requirements of this document.

Role	Name (Print)	Signature	Date	Comments
Prepared By (QHSE / Engineer)	[NAME]		[DATE]	
Reviewed By (QHSE Manager)	[NAME]		[DATE]	
Approved By (Project Manager)	[NAME]		[DATE]	
Approved By (Client Representative)	[NAME]		[DATE]	
Site Supervisor (Acknowledgement)	[NAME]		[DATE]	

10.1 Operative Briefing Record — Toolbox Talk Attendance

All operatives must sign below to confirm they have received a briefing on this Method Statement and understand their responsibilities:

No.	Name (Print)	Company	Trade / Role	Signature	Date
1					
2					
3					
4					
5					
6					
7					
8					

11. REFERENCES & RELATED DOCUMENTS

11.1 Primary Technical References

Reference	Title / Details
BS EN 1504 (Parts 1–10)	Products and Systems for the Protection and Repair of Concrete Structures — European Standard, BSI Group
ACI 224.1R-07	Causes, Evaluation and Repair of Cracks in Concrete Structures — American Concrete Institute
ACI 546R-14	Guide to Concrete Repair — American Concrete Institute

Reference	Title / Details
ICRI No. 310.2R-2013	Selecting and Specifying Concrete Surface Preparation — International Concrete Repair Institute
CIRIA C660	Early-Age Thermal Crack Control in Concrete — Construction Industry Research and Information Association
ISO 13315 (series)	Environmental management for concrete and concrete structures — ISO
BS 8500 (Parts 1–2)	Concrete — Complementary British Standard to BS EN 206
Manufacturer PDS/SDS	Product Data Sheets and Safety Data Sheets for all repair materials used on project — to be appended to this document as Appendix A

11.2 Related Project Documents

Document Ref.	Title	Purpose
RA-CCR-001	Risk Assessment — Cracked Concrete Repair	Detailed risk assessment (parent document to this RAMS)
QC-001	Crack Survey & Condition Assessment Form	Site record of crack dimensions, classification and repair recommendation
QC-002	Concrete Repair Inspection & Test Record	QC inspection record for each repair — pre, during and post
TBT-001	Toolbox Talk Record Form	Daily pre-task briefing attendance record
INC-001	Incident / Near Miss Report Form	Incident reporting, immediate notification and investigation record
NCR-001	Non-Conformance Report	Recording and tracking quality non-conformances in repair work
ITP-CCR-001	Inspection & Test Plan — Concrete Repair	Detailed ITP specifying hold, witness and review points for repair QA/QC
PTW-001	Permit to Work — Generic Site Permit	Permit to Work authorisation form for controlled operations