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Remediate Pile Defects Checklist: Grout or Core Repair

Remediate pile defects with an interactive checklist for pressure grouting or core repair; commentable and export as PDF/Excel for verification and NCR closure.

Project:
Date:
Filled by:

Pre-Remediation Controls	
1	Confirm the investigation report identifies defect types, extents, and approved remedy; mark affected piles on drawings.
2	Hold a pre-task briefing to review the method statement, roles, hold points, and exclusion of new tests; record attendance.
3	Secure access and isolate the work zone with barriers and signage; capture geo-tagged photos showing pile ID and safe access.
4	Verify materials against approved submittals: cement, admixtures, micro-concrete, epoxy; record batch numbers, expiry dates, and SDS copies.
5	Check equipment readiness: grout mixer/pump, hoses, packers, core drill; ensure pressure gauges have valid calibration certificates attached.
6	Set out defect and port locations on the pile using spray paint and a steel tape; record offsets to nearest 5 mm on sketches.

Pressure Grouting Execution	
7	Drill and install packers/injection ports per layout; confirm embedment and spacing match the method statement; photograph each port with a scale.
8	Mix grout to the approved water–cement ratio and admixture dosage using a high-shear mixer; record time, temperature (°C), and observed flowability.
9	Prime pump and lines until a continuous grout stream is free of air; document with a photo and log the priming volume in litres.
10	Inject from the lowest port upward in stages; maintain pressure within method statement limits; log pressure (MPa) and volume (L) per port and time.
11	Monitor structure for uplift or leakage using a laser level and spotters; record movements to the nearest millimetre and locations of any leaks.
12	Seal ports after refusal or target volume is reached using non-shrink material; verify no active seepage; photograph the sealed ports.

Core Repair Execution	
13	Define core perimeter to sound concrete based on investigation; sawcut neat edges and core/drill as required; record dimensions to the nearest 5 mm.
14	Remove loose material with a ≤3 kg chipping hammer; avoid micro-cracking; visually confirm coarse aggregate exposure and intact paste; take close-up photos.
15	Prepare substrate by oil-free compressed air and water to achieve SSD condition; verify no dust or free water; capture timestamped photos.
16	Install dowels or bars if specified: drill holes to design diameter and depth, blow-clean, inject approved epoxy, insert bars; record embedment and adhesive batch.
17	Place approved repair mortar or micro-concrete by form-and-pour or pump; ensure continuous backfilling without voids; record placed volume and ambient temperature (°C).
18	Cure the repair with wet hessian and plastic or curing compound per specification; maintain curing for the required duration; log start/finish times.

Verification & Documentation	
19	Prepare as-built sketches showing port locations, core dimensions, dowel locations, and elevations; compare against investigation extents; sign and date.
20	Compile grouting logs: pressure–time and volume–time for each port; confirm profiles meet method statement acceptance; attach spreadsheets and charts.
21	Collate material evidence: cement/mortar certificates, admixture TDS, epoxy batch labels, and delivery tickets; verify they match approved submittals.
22	Conduct a joint visual inspection with the engineer and QC; confirm no active leaks, no voids visible, and surfaces finished; obtain signed inspection records.

NCR Closure & Handover	
23	Update the NCR with the selected disposition, executed method (grout or core repair), and evidence list; link all logs, sketches, and photos.
24	Obtain approvals per approved project specifications and authority requirements; capture digital signatures of responsible engineer, QA/QC, and contractor.
25	Export the closure dossier (PDF/Excel) with embedded QR code linking source files; verify the QR resolves and archive the package.
26	Brief operations on any restrictions and maintenance requirements; issue a toolbox talk record and update the as-built drawing register.

Comments:

Filled by:

Signature:

Introduction	How to use this checklist
Remediate pile defects with a disciplined, field-proven process focused on pressure grouting or core repair, verification, and closing nonconformance reports. This checklist guides supervisors, QC engineers, and contractors through practical pile repair steps without adding new tests, relying on the approved investigation and method statement. It helps decide between pressure grouting for internal voids or core repair for localized damage, manages materials and equipment, and controls grouting pressures, volumes, and curing. You will capture photo evidence, pressure/volume logs, batch certificates, and as-built sketches to demonstrate that defective piles are restored to intent per approved project specifications and authority requirements. The scope excludes new integrity or load testing; verification depends on process records, dimensional checks, and joint inspections. Outcomes include safe, durable repairs, traceable documentation, and timely NCR closure. Use this interactive checklist to tick off actions, add field comments, and export a QR-secured PDF/Excel package for review and archiving.	1. Preparation: Gather the approved investigation, method statement, and permits; have grout pump, packers, core drill, mixers, PPE, laser level, and forms ready. 2. Open the checklist on your device, select the project and pile IDs, and assign responsible persons for grouting or core repair. 3. Start interactive mode, tick each step as completed, and attach photos, sketches, and logs directly to the corresponding item. 4. Use comments to capture field changes, engineer instructions, and acceptance notes; mention dates, times, and measured values in SI units. 5. When verification is complete, generate the as-built dossier and link it to the NCR record; ensure all approvals are recorded. 6. Export to PDF/Excel with an embedded QR code for traceability; verify the QR resolves to your evidence folder. 7. Capture digital signatures for sign-off, distribute to stakeholders, and archive the final package in the project document control system.