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Repair Driven Pile Heads/Splices: Weld, QA and Coating

Repair driven pile heads/splices interactive checklist for weld rectification, QA records, and protective coatings; commentable and export as PDF/Excel.

Project:	
Date:	
Filled by:	

Damage Assessment	
1	Isolate the work area with barriers and signage; verify permits and task risk assessment completed and signed. Record permit number, supervisor signature, and site photos showing isolation boundaries.
2	Perform visual inspection of pile head/splice using flashlight and mirror; map cracks, bends, and burrs. Capture close-up photos and a defect sketch with unique defect IDs referenced to grid coordinates.
3	Measure misalignment, bevel damage, and end squareness with straightedge, spirit level, and feeler gauges. Record measurements in mm against project tolerance; upload instrument calibration certificates and readings.
4	Conduct dye penetrant (PT) screening on suspected surface cracks; clean, apply penetrant, dwell, remove, and develop. Attach PT report with indication sizes and disposition per approved project specifications.

Splice Alignment and Fit-Up	
5	Verify splice components, backing rings, and consumables match approved submittals. Photograph labels and upload MTR heat numbers and consumable batch numbers for traceability.
6	Trial-fit members; use chain blocks, strongbacks, and clamps to bring faces flush. Measure root gap and offset with feeler gauges and straightedge; record mm values against specified tolerances.
7	Prepare weld zone by grinding 25–50 mm back to bright metal; remove rust, oil, and coatings. Upload before/after photos and note abrasive wheel grade used.
8	Confirm fit-up tacks follow WPS; place, size, and grind stops/starts smooth. Record tack locations on sketch and capture photos showing continuity and fusion.

Weld Rectification	
9	Verify welder qualifications and WPS/PQR approvals are current and applicable. Upload welder IDs, expiry dates, and approved WPS number referenced on the repair record.
10	Set preheat and monitor interpass temperature per WPS using contact thermometer or pyrometer. Record temperatures in °C each pass; attach temperature crayon confirmation photos.
11	Remove defective weld metal by air carbon-arc gouging to sound base; grind smooth. Perform MT/PT to confirm defect removal; attach NDT report with inspector signature.
12	Deposit root and fill passes per WPS parameters (amperage, voltage, travel speed). Log actual parameters by pass, welder ID, and sequence; upload machine calibration evidence.
13	Control distortion using balanced welding sequence and cooling intervals; recheck alignment after each segment. Record offset and gap in mm; include photos of strongbacks/clamps in place.
14	Conduct post-weld visual inspection; remove spatter, blend tie-ins, and dress sharp edges. Record acceptance per approved project specifications; attach high-resolution weld photos.

Nondestructive Testing and QA Records	
15	Perform MT/PT on accessible surfaces and UT/RT if specified; use calibrated equipment. Upload NDT reports, calibration certificates, indications map, and acceptance disposition.
16	Verify weld size/length with fillet/bridge cam gauges and tape; mark with paint pen. Record actual vs specified; obtain inspector acceptance initials and date on the joint.
17	Close out NCRs and RFIs with supporting evidence. Upload correspondence, approvals, and inspector sign-offs; note explicitly that driving logs are not part of this record.

Protective Coatings and Corrosion Control	
18	Prepare surfaces to specified cleanliness; verify surface profile using replica tape or gauge. Record profile in µm and attach photos showing uniform preparation.
19	Measure ambient temperature, steel temperature, RH, and dew point before coating. Record values and confirm compliance with product data sheet; attach instrument calibration.
20	Apply primer/intermediate/topcoat by brush/roller/spray as approved. Record batch/lot numbers, wet film thickness (µm), recoat intervals, and coverage photos each coat.
21	Verify dry film thickness (DFT) with calibrated gauge; spot map readings. Conduct holiday testing if required and repair pinholes; upload DFT logs and holiday test report.

Handover and Closeout	
22	Compile repair dossier: defect maps, WPS, welder IDs, parameter logs, NDT, DFT, photos, approvals. Export PDF/Excel with QR authentication and archive in project QA system.

Comments:

Filled by:

Signature:

Introduction	How to use this checklist
Repair driven pile heads/splices is a focused jobsite process to restore integrity of driven steel pile heads and welded splices after driving. This checklist addresses pile head repair, pile splice welding, weld rectification, protective coating application, and QA records. It explicitly excludes driving logs and production data, concentrating instead on defect identification, alignment and fit-up, qualified welding, nondestructive testing, and corrosion protection. By following these steps, teams reduce structural risk from crack propagation, misalignment, and coating failure, while creating a defensible audit trail. Each instruction pairs a method or tool with acceptance evidence—measurements in millimetres, temperature readings, NDT reports, coating thicknesses, photos, material heat numbers, and signatures—per approved project specifications and authority requirements. Use this checklist to organize work zones, capture approvals, and prevent rework, ensuring consistent, traceable repairs that stand up to independent review. Start in interactive mode to tick tasks, add comments, and export PDF/Excel with a secure QR for field sign-off.	1. Preparation: Gather straightedge, feeler gauges, thermometers/pyrometers, welding gear, NDT kits (PT/MT/UT as specified), DFT gauges, holiday detector, coating tools, PPE, permits, and approved WPS/PQR. Confirm access, lighting, and isolation are set. 2. Project setup: Create a repair record with pile ID, coordinates, defect description, and photos. Add responsible engineer/inspector, target tolerances per approved project specifications, and required attachments. 3. Using the Interactive Checklist: Start interactive mode, tick completed tasks, add time-stamped comments, attach photos/readings, and request approvals. Assign follow-ups for any rework or NCRs. 4. Export and share: Generate a consolidated report and export to PDF/Excel. Include photos, measurements, calibration certificates, and approvals for client, contractor, and authority stakeholders. 5. Sign-Off: Capture digital signatures from the inspector and responsible engineer. Archive the record with a QR code for authentication and future audits.