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Pile Casing Inspection Checklist: Straightness & Joints

Pile Casing Inspection Checklist for temporary/permanent casings. This interactive checklist is commentable and export as PDF/Excel, focusing on straightness, joints/welds, alignment, and extraction planning.

Project:
Date:
Filled by:

Pre-Use Verification	
1	Confirm casing identification, dimensions, and condition before mobilization.
2	Measure outer diameter and wall thickness at 4 quadrants using calipers/ultrasonic gauge; acceptance: within project tolerance (e.g., wall ±0.5 mm). Record readings and photos.
3	Roll casing on level skids and check straightness with laser line/3 m straightedge; acceptance: bow ≤ 3 mm/m and total run-out ≤ 10 mm. Log measurements and images.
4	Assess dents and ovality by measuring OD at 0°, 90°, 180°, 270°; acceptance: ovality ≤ 1% of nominal diameter. Mark repair/reject areas and photograph.
5	Verify lifting eyes/collars and shackles are certified; SWL exceeds lifted mass by ≥ 25%. Capture tag photos and certificate numbers.

Geometry and Straightness	
6	Check end squareness with machinist square/laser; acceptance: out-of-square ≤ 2 mm across diameter. Record gap readings at 4 points.
7	Verify toe ring/shoe concentricity and run-out by rotating on rollers; acceptance: run-out ≤ 5 mm. Photograph index marks and readings.
8	Confirm total casing length meets required embedment and stick-up per method statement; include calculation sheet and marked length photo.
9	Ensure internal bore is clean and free of slurry, rust scale, and debris; acceptance: visibly clean, dry or as specified. Attach before/after photos.

Joints, Welds, and Integrity	
10	Prepare joint bevels and mating surfaces: remove paint/rust, achieve correct bevel angle; acceptance: bright metal, no contaminants. Photo evidence.
11	Fit-up alignment: measure hi-lo with bridge cam gauge; acceptance: ≤ 1 mm offset, root gap 2–3 mm unless specified. Record gauge readings.
12	Welding per approved WPS by qualified welder; record WPS ID, welder ID, preheat/interpass temperatures. Capture weld parameter snapshot.
13	Visual inspection (VT): continuous bead, uniform profile, no undercut > 0.5 mm, no porosity clusters. Upload close-up photos around full circumference.
14	Non-destructive testing (MPI/DPT) as specified; acceptance: no relevant linear indications. Attach NDT report with technician certification and marked locations.
15	If water cut-off required, hydrostatic check: seal joint, fill to target head, hold 10 min; acceptance: no visible leakage or head loss. Photos and readings.

Installation and Alignment Control	
16	Set guide frame/clamps; verify top frame level within ±3 mm using digital level. Photograph level display and frame setup.
17	Check plumbness at start with 2-axis inclinometer/spirit levels on opposite faces; acceptance: tilt ≤ 1:200. Record both axes.
18	Monitor plumbness every 2 m of advance; acceptance: maintain ≤ 1:200; correct using clamps/guide frame. Log readings with depth markers.
19	Verify casing seal against ground/slurry to prevent inflow; acceptance: no sand pumping or water jets observed. Capture video/photo evidence.
20	Confirm stick-up height and edge protection: minimum 150 mm above platform; install protective cap/guard. Photo with tape measure.

Extraction Plan and Contingencies	
21	Approve extraction method (vibrator/rotary pull) and equipment capacity; acceptance: rated pull exceeds calculated friction by defined margin. Attach calculation and equipment datasheet.
22	Set timing: begin withdrawal while concrete remains workable per approved project specifications and authority requirements. Record placement and start times.
23	Define pull rate/vibration settings to avoid cage movement; acceptance: no cage uplift/tilt; monitor with reference marks. Record machine settings.
24	Apply approved release agent to casing exterior if permitted; document product, batch, and application time. Photo label and coverage.
25	Establish stop criteria: max pull force, tilt deviation, or loss of head; define thresholds and escalation. Capture supervisor approval.
26	Contingency if stuck: re-vibrate, partial re-drive, grout backfill, or cut/abandon as approved. Record chosen action, approvals, and photos.

Documentation and Sign-Off	
27	Assign unique casing ID and mark with durable paint; cross-reference to pile ID and drawings. Upload ID photo.
28	Upload calibration certificates for measuring tools and NDT equipment; verify validity dates. Attach files to inspection lot.
29	Complete checklist with measurements, photos, and comments; inspector and contractor representatives sign digitally. Export PDF/Excel with QR.
30	Conduct task-specific briefing (pinch points, vibration, noise); record attendees and PPE compliance. Attach signed attendance sheet.

Comments:

Filled by:

Signature:

Introduction	How to use this checklist
Pile Casing Inspection Checklist helps teams verify temporary and permanent pile casings for straightness, alignment, joint integrity, and extraction readiness. This focused pile casing inspection addresses casing alignment verification, weld inspection, ovality, and sealing needs without covering drilling logs or bore records. By controlling geometry and joints before installation, you reduce risks of eccentric piles, soil inflow, bent rebar cages, trapped casings, inadequate cover, and concrete contamination. During installation, continuous plumbness checks keep the casing within tolerance; after placement, a clear extraction plan prevents overstressing equipment or disturbing fresh concrete. Outcomes include concentric, plumb, and leak-tight casings that can be safely withdrawn (for temporary use) or left as permanent liners per approved project specifications and authority requirements. Use this interactive checklist to capture measurements, photos, NDT reports, and sign-offs, then tick items, comment on issues, and export PDF/Excel with a QR-secured record for traceability.	1. Preparation: review drawings, method statement, and specifications; gather tools (laser, straightedge, inclinometer, calipers, ultrasonic gauge, bridge cam, MPI/DPT kit), and PPE (helmets, gloves, hearing protection, eye protection). Confirm tool calibrations. 2. Access the interactive checklist on your device, select project/pile ID, and enable offline mode if connectivity is unreliable. Scan or enter the casing’s unique ID. 3. Tick items as you inspect. Enter numeric readings where prompted and attach photos or short videos for each check (geometry, welds, plumbness, seals). Add comments for nonconformities. 4. Link supporting documents: WPS, welder qualifications, NDT reports, equipment datasheets, and calculation sheets. Tag files to the corresponding item. 5. During installation and extraction, log time-stamped plumbness readings and machine settings. Note corrective actions taken and obtain supervisor acknowledgements in-app. 6. Resolve findings: assign actions, set due dates, and record verification evidence. Use the comments thread to capture approvals and clarifications. 7. Export results as PDF/Excel with embedded photos and measurements. Share to stakeholders and reference the QR for authentication in the field. 8. Sign-off: inspector and contractor representatives apply digital signatures. Archive the completed checklist in the project QA repository for audit readiness.