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Install Inclinometer Casings Checklist: Depth & Verticality

Install inclinometer casings with this interactive checklist, commentable, export as PDF/Excel, verify depth, verticality, baseline readings, and protective caps for dependable monitoring.

Project:	
Date:	
Filled by:	

Pre-Installation Verification	
1	Confirm approved drawings/specs, casing diameter, length, groove type, and target depth; record document references and revisions. Acceptance: submittals match site delivery. Evidence: photos of labels, delivery dockets, and approved submittal cover sheet.
2	Verify inclinometer probe and data logger calibration certificates are current (≤ 12 months). Acceptance: valid certificates attached. Evidence: upload PDFs/photos and enter certificate numbers and expiry dates.
3	Inspect casing sections, couplings, O-rings, and centralizers for cracks, deformation, or missing parts. Acceptance: components defect-free and complete. Evidence: close-up photos and batch/lot numbers recorded.
4	Confirm borehole ID, coordinates, and design depth with survey control. Acceptance: coordinates within project tolerance per approved project specifications and authority requirements. Evidence: survey note with control points and photos of stake/mark.

Borehole Preparation	
5	Measure actual borehole depth using a weighted tape or tag line. Acceptance: reaches design depth within ±0.1 m. Evidence: photo of tape reading and recorded depth in metres.
6	Check borehole cleanliness by flushing with clean water or drilling fluid until returns run clear. Acceptance: minimal cuttings remaining. Evidence: photo of clear returns and log of flushing duration/volume.
7	Review drilling log or deviation record if available to anticipate alignment issues. Acceptance: no excessive deviation beyond project limits. Evidence: upload relevant log pages and note any risk flags.

Casing Installation	
8	Assemble casing with specified couplings and lubricated O-rings; fully seat joints per manufacturer instructions. Acceptance: watertight joints, no visible gaps. Evidence: joint close-up photos and assembly log.
9	Install centralizers at approximately 3 m spacing to maintain annulus. Acceptance: centralizers secure and evenly spaced. Evidence: photos showing spacing and counts per length.
10	Align casing grooves to required azimuth using groove alignment tool/compass and marked reference. Acceptance: groove orientation within ±2°. Evidence: photo of alignment mark and compass reading.
11	Lower casing steadily to base using tag line; avoid impact or twisting. Acceptance: no binding; sections intact. Evidence: time-stamped installation log and photos during lowering.
12	Confirm final toe depth with a weighted tag; verify against design. Acceptance: design depth ±0.1 m. Evidence: photo of tag reading and recorded final depth.
13	Survey top-of-casing elevation with level or total station. Acceptance: within ±5 mm of design where applicable. Evidence: survey note with benchmark ID and elevation in metres.
14	Check head verticality using a bullseye level or machinist square on a 150 mm plate. Acceptance: bubble centered or ≤ 2 mm per 100 mm. Evidence: photo of instrument reading.
15	Place grout via tremie from base upward in a continuous pour, per approved project specifications and authority requirements. Acceptance: continuous column, no segregation. Evidence: grout batch IDs, photos of returns, and placement log.
16	Monitor uplift during grouting with reference mark at head. Acceptance: uplift ≤ 10 mm; if exceeded, pause and correct. Evidence: before/after measurements and notes.

Baseline Readings and Survey	
17	After grout set per manufacturer guidance, zero the probe and verify temperature. Acceptance: instrument within calibration parameters. Evidence: screenshot/photo of zero and temperature checks.
18	Conduct baseline reference run at 0.5 m increments in A-then-B grooves from base to top. Acceptance: complete dataset without gaps. Evidence: data file name, date/time, operator signature.
19	Repeat down-run and compare with up-run per manufacturer limits. Acceptance: differences within stated limits; investigate if exceeded. Evidence: QC comparison report or screenshot.
20	Survey final position: coordinates and top elevation of casing head. Acceptance: matches staked location within project tolerance. Evidence: survey sketch, CSV, or screenshot with control reference.

Protection and Handover	
21	Install lockable protection cap with gasket and weather seal; label with ID and date. Acceptance: cap secure, legible label. Evidence: close-up photos and label text entered.
22	Provide protective cover—flush road box set in concrete or standpipe guard—as specified. Acceptance: level with grade, no trip hazard. Evidence: wide-angle photo and dimensions.
23	Install bollards or cage where exposed to traffic or equipment. Acceptance: minimum 0.3 m clearance around head. Evidence: site photos with measured offsets.
24	Compile and upload as-built package: approvals, calibration, depth/survey records, baseline files, photos. Acceptance: reviewed and signed by responsible party. Evidence: sign-off names, dates, and file links.

Comments:

Filled by:

Signature:

Introduction	How to use this checklist
Install inclinometer casings correctly to establish reliable baseline monitoring points for lateral movement. This checklist standardizes inclinometer installation, casing deployment, and borehole instrumentation steps so crews achieve design depth, confirm verticality, record baseline reference readings, and secure protection caps. It focuses strictly on baseline setup and hardware verification, not data interpretation. Following these steps reduces risks like off-depth installations, misaligned grooves, uplift during grouting, damaged joints, and unsecured heads that jeopardize future monitoring. You'll verify calibration, depth, top elevation, head verticality, groove orientation, and baseline runs with clear acceptance cues and captured evidence (photos, readings, signatures). The outcome is a defensible as-built package—survey coordinates, depth records, baseline files, and protection details—ready for ongoing monitoring per approved project specifications and authority requirements. Use the interactive features to tick items, add comments for nonconformances, and export as PDF/Excel with a QR code for authenticated sharing.	1. Preparation: gather casings, couplings, O-rings, centralizers, tremie, grout, weighted tape, bullseye level, total station/level, inclinometer probe with logger, lockable caps, road box/guards, labels, and PPE (helmet, gloves, eyewear, boots, hearing protection). 2. Verify site conditions and controls: confirm borehole ID, design depth, access, traffic management, utilities clearance, survey benchmarks, and communication plan with the crew. 3. Start the interactive mode: open the checklist, select the borehole ID, and tick items as you complete them; attach photos and measurements in SI units. 4. Use comments to note nonconformances, corrective actions, or site constraints; tag responsible parties and set due dates for follow-up. 5. Upload calibration certificates, survey notes, and baseline data files; reference file names consistently for easy traceability and audit. 6. Export the record to PDF/Excel for review and distribution; the export includes embedded photos, signatures, and geo/survey data. 7. Sign-off: collect digital signatures from installer, surveyor, and supervisor; archive with a QR-authenticated link and share with stakeholders.