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Soil Nail Installation Checklist: Diameter, Grout, Pattern

Soil nail installation checklist for QA: interactive, commentable, and export as PDF/Excel while verifying drill diameter, bar length, grout pressures, pattern.

Project:	
Date:	
Filled by:	

Pre-Drilling Verification	
1	Confirm latest approved drawings, nail schedule, and specifications; verify nail IDs and coordinates against the layout plan; record document versions and obtain superintendent/inspector initials.
2	Set out nail collar locations with a total station; mark on the ground/shotcrete; acceptance: within ±50 mm of design grid; capture geotagged photos with a measuring tape in frame.
3	Select drill bit per design hole diameter; verify bit wear; acceptance: bore diameter ≥ design and ≤ design +15 mm; measure at collar with bore gauge and photo with scale.
4	Check equipment calibration: pressure gauge, flow meter, and grout mixer scale; record serial numbers and calibration dates; photograph gauge zero readings before use.

Drilling Operations	
5	Drill to design inclination and length; acceptance: inclination within ±2° of design and full design length achieved; record actual depth with marked rod/tape and note refusal if any.
6	Verify borehole cleanliness and stability; flush with air/water until returns run clear; acceptance: no sloughing or voids at collar; photo of clear returns and collar condition.
7	Check bore diameter continuity using a dummy probe/packer sized to design diameter; acceptance: unobstructed passage to full length; log pass/fail depth and photo of tool at collar.
8	Tag borehole with unique nail ID, inclination, and target length; stencil/label at collar; photo with ID visible for traceability to logs.

Nail Materials & Corrosion Protection	
9	Inspect steel bar diameter and grade against approved submittals; verify heat/lot numbers; acceptance: matches submittal; photo of tags and bar end with caliper reading.
10	Measure bar length before insertion; acceptance: not less than design (0 to +150 mm acceptable); record length with tape and photo of measurement.
11	Check corrosion protection (e.g., sheathing/grease or DCP) is intact; no cuts, kinks, or abrasions; acceptance: continuous, undamaged; document repairs per approved methods with close-up photos.
12	Install centralizers per approved project specifications to maintain grout cover; verify type and spacing; acceptance: centralizers present and secure; count and photograph before insertion.
13	Fit end caps, couplers, and thread protection per manufacturer; apply corrosion-inhibiting compound if specified; acceptance: tight, clean threads; photo and record torque if applicable.

Grouting Parameters	
14	Confirm grout mix design and materials; record water–cement ratio, admixtures, and temperature; acceptance: per approved submittal; attach batch tickets and photo of slump/flow test if used.
15	Prime tremie hose, place from distal end toward collar; maintain continuous flow; acceptance: grout return observed at collar without segregation; record start/stop times and photos of return.
16	Maintain pump pressure within the design range per approved project specifications; acceptance: steady pressure without sudden loss; log real-time MPa readings versus depth.
17	Record grout volume placed; acceptance: within expected take ±20% unless geotechnical justification; document volume by meter reading and reconcile with batch tickets.
18	Seal collar neatly to prevent washout; top off after bleed if required; photo of finished collar and note final time.

Nail Layout & Pattern	
19	Verify nail spacing and pattern against approved drawings; measure horizontal/vertical spacing; acceptance: within ±50 mm; photos with tape and total station printout or coordinates.
20	Check stagger offsets on alternate rows and clearances to services/facing; acceptance: per drawings and specifications; note any clashes and engineer direction.
21	Confirm installed inclination orientation (azimuth) matches plan; acceptance: within ±2°; record compass/total station reading and photo at collar.
22	Compile as-built data: coordinates, length, inclination, drill diameter, corrosion protection notes, grout volumes/pressures; attach photo set; obtain inspector/contractor digital sign-offs.

Comments:

Filled by:

Signature:

Introduction	How to use this checklist
Soil nail installation checklist helps site teams control drill diameter, bar length, corrosion protection, grout pressures, and the nail pattern. This focused install-phase guide supports soil nailing QA/QC without covering load or pull-out testing, which should be managed under a separate procedure. You will capture tolerances, verify dimensions and inclination, log grouting pressure and volume, and confirm corrosion protection details such as sheathing and centralizers. By emphasizing as-built evidence—photos with scales, gauge readings in MPa, batch tickets, and coordinates—you reduce rework, prevent grout voids, avoid misaligned nails, and ensure durable protection against corrosion. The outcome is a documented installation that matches approved drawings and specifications, ready for facing works and any subsequent testing or monitoring. Use this interactive tool to tick off each requirement, add comments for deviations or approvals, and export clean records. Start in interactive mode, annotate in the field, then export PDF/Excel with a QR-secured audit trail.	1. Preparation: gather approved drawings/specs, nail schedule, calibrated pressure gauge/flow meter, bore gauge, total station, tape, camera, grout tickets, PPE, and a device with online access. 2. Open the checklist in interactive mode, select the work area, and assign nail IDs. Add team members as collaborators for real-time commenting and evidence uploads. 3. During installation, tick each item as completed, attach photos (with scales), enter measurements in SI units, and note any deviations with responsible person and corrective action. 4. On completion, export the record as PDF/Excel, ensuring pressure logs, batch tickets, and as-built coordinates are attached. Share with stakeholders for quick review. 5. Sign-Off: obtain digital signatures from contractor and inspector. Archive the file; authenticate later using the embedded QR code on the exported documents.