



Install Stormwater Pipes: Bedding, Slope, Joints, Backfill

Install stormwater pipes with our interactive checklist—commentable and easy to export as PDF/Excel. Covers bedding, slope, jointing, backfill, and connections for durable, compliant installation.

Project:
Date:
Filled by:

Pre-Installation & Layout

1	Verify approved drawings, pipe schedule, and permits on site; confirm chainages and benchmarks. Record document versions and obtain supervisor sign-off; capture photos of control points and store approvals in the daily QA report.
2	Set and reference survey control for alignment and inverts using total station or auto level; achieve ± 10 mm vertical and ± 25 mm horizontal to design. Save level notes and a georeferenced layout photo as evidence.
3	Locate and mark existing utilities with locator and potholing as needed; establish exclusion zones and protective measures. File utility mark-out maps, pothole photos with depths, and permit references before excavation.
4	Inspect delivered pipes, gaskets, and fittings for damage; verify diameters, classes, and batch numbers per delivery docket. Photograph any defects, record batches in the materials log, and segregate nonconforming items.

Trench Excavation & Bedding

5	Excavate trench to design line/level; provide width per pipe OD plus side clearance per project specs. Install shoring where required. Measure width at 10 m intervals; photograph shoring and trench base condition.
6	Control groundwater and runoff using wellpoint/pumps and silt socks; keep trench base stable and dry per approved project specifications and authority requirements. Log pump operation and capture turbidity-control photos.
7	Trim trench base to uniform grade without over-excavation; remove soft spots and replace with approved granular. Verify invert within ± 10 mm using staff and level; record readings and photos.
8	Place bedding layer of clean angular granular (e.g., 5–20 mm) to specified thickness; screed to grade and compact with a plate compactor. Achieve required density per specs; record passes and take bedding thickness photos.
9	Form bedding cradle/haunch to support 25–40% of pipe circumference; check with a template. Ensure gaps under pipe ≤ 10 mm. Photograph shaped bedding and template checks at start, middle, and end of each run.

Pipe Laying & Slope Control

10	Set laser level or auto level for design slope; confirm slope within $\pm 0.2\%$ and invert within ± 10 mm. Record setup, calibration screenshot/notes, and initial/closing level checks.
11	Lower pipes using slings and spreader bar; do not drag or drop. Orient per manufacturer flow markings. Inspect for chips at spigot/bell; photograph lift points and condition before placement.
12	Seat pipe uniformly on bedding; eliminate point contacts and rocking. Verify $\geq 90\%$ contact by feeler gauge or chalk transfer. Photograph contact verification and record chainage.
13	Align to stringline/laser target; maintain horizontal deviation ≤ 10 mm over 10 m. Take mid-run and end-run alignment photos and save survey shot data.
14	Confirm joint insertion depth using factory assembly mark or measured gap; tolerance per manufacturer. Record insertion measurements each joint and photograph the witness mark aligned.

Jointing & Sealing

15	Clean bell and spigot; fit gasket and apply approved lubricant per manufacturer's instructions. Photograph cleaned surfaces, gasket seating, and record gasket batch/lot in the QA log.
16	Assemble joints with come-along or tirfor; pull evenly until marks align. Verify uniform gap all around. Capture close-up photos showing full insertion and supervisor initials on the joint tag.
17	Seal pipe penetrations at chambers with flexible boots or specified grout. Torque clamps to the specified range; attach torque wrench reading photo and note product batch details.
18	Cap or plug open pipe ends at breaks or overnight to prevent debris ingress. Photograph caps in place and log time installed and removed.

Inlet & Outlet Connections

19	Connect to inlets/outlets using approved couplers/adapters; ensure concentric fit and smooth interior transition. Photograph interior joint and exterior connection; record adapter type and lot.
20	Set structure invert levels with staff and level; achieve ± 10 mm to design. Record readings on structure schedule and attach annotated photos.
21	Install headwall, apron, and geotextile/riprap per drawings; verify dimensions within ± 50 mm and rock sizes as specified. Photograph completed apron and geotextile overlaps.
22	Fit trash racks or rodent screens where required; use stainless fixings tightened securely. Photograph installed guards with asset ID and note torque values if applicable.

Backfilling & Compaction	
23	Place and hand-tamp haunch material to springline both sides; shovel-slice under pipe to eliminate voids. Photograph haunch progression and confirm no pipe displacement at set chainages.
24	Backfill to 300 mm above crown with selected granular free of stones >40 mm; compact in ≤150 mm layers to specified density. Attach compaction readings and material delivery tickets.
25	Remove shoring progressively as backfill rises, maintaining trench stability and preventing voids. Record removal sequence and supervisor sign-off; photograph exposed faces before covering.
26	Restore surface layers (subbase, pavement, or topsoil) per restoration plan; verify thickness and crossfall with straightedge/level. Photograph layer checks and final surface condition.
27	Install temporary erosion and sediment controls until permanent works are complete; silt fence, check dams, or swales as specified. Log inspections and capture overview photos.

Comments:

Filled by:

Signature:

Introduction	How to use this checklist
<p>Install stormwater pipes correctly to deliver long-lasting, low-maintenance drainage performance. This practical checklist guides stormwater piping installation, storm drain pipe laying, and gravity pipeline construction from trench prep through jointing, backfill, and inlet/outlet connections. It focuses on constructible steps and measurable outcomes—bedding geometry, slope control, joint assembly, and structural backfill—while explicitly excluding testing and commissioning. By following these instructions, crews reduce settlement, prevent infiltration/exfiltration, maintain design flow, and protect adjacent utilities and pavements. Methods emphasize total station or laser level control, angular granular bedding, clean jointing surfaces, and staged compaction with verifiable tolerances. Acceptance cues include invert levels, uniform haunching, insertion depth marks, and density targets per approved project specifications and authority requirements. Use this page as a live tool on site: tick steps as completed, attach photos, note hold points, and flag deviations for supervisor approval. When finished, comment for sign-off and export your record as PDF/Excel with a secure QR for traceability.</p>	<p>1. Preparation: Confirm project drawings and specs, gather tools (laser/auto level, total station, plate compactor, slings, come-along), PPE, and QA forms. Set up device access with camera permissions for photo evidence and ensure stable connectivity. 2. Start interactive mode: Open the checklist for the specific chainage/run, enter weather and crew details, and set survey benchmarks. Enable location tagging so photos map to items automatically. 3. Tick and comment: Complete items sequentially, attach photos, and add comments for deviations or approvals. Mention measurements and batch numbers in fields provided for quick audit and as-built extraction. 4. Export: When a run is complete, generate an export as PDF/Excel with embedded photos, measurement tables, and chainage references. Include the secure QR code for verification in the field or office. 5. Sign-off and archive: Capture digital signatures from supervisor and contractor, distribute to stakeholders, and archive the record. Store QR-authenticated copies in the project document control system.</p>