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# Static Compression Test (CRP) Checklist and Procedure

Static Compression Test (CRP) interactive checklist for constant-rate testing; commentable, export as PDF/Excel, capturing the load–settlement curve and acceptance.

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| Project: | |
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| Pre-Test Documentation and Calibration | |
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| 1 | Verify pile ID, type, diameter/width, and cut-off elevation against drawings using tape and level; acceptance: geometry within ±5 mm and elevation within ±10 mm; evidence: photos of pile head and a signed measurement log. |
| 2 | Confirm load cell calibration within the last 12 months and capacity ≥ 1.2 × maximum test load; record serial number and upload the calibration certificate; acceptance: traceable certificate; evidence: certificate PDF and serial photo. |
| 3 | Zero and drift-check LVDTs on a stable reference bar for 10 minutes; acceptance: drift ≤ 0.1 mm; evidence: baseline drift chart and instrument serial numbers recorded. |
| 4 | Verify jack pressure gauge and jack factor against the load cell at two points; acceptance: correlation within ±1% at mid and high ranges; evidence: calibration comparison sheet and photos of gauges. |

| Test Setup and Alignment | |
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| 5 | Assemble reaction frame or kentledge with reserve capacity; acceptance: net reaction ≥ maximum test load with 25% reserve (unless otherwise specified); evidence: signed calculation, ballast photos, and rigging inspection record. |
| 6 | Center hydraulic jack on pile with hardened bearing plate; acceptance: eccentricity ≤ 2 mm from pile axis; evidence: straightedge measurement photo and alignment note. |
| 7 | Install spherical seating to minimize bending; acceptance: lateral tilt ≤ 0.5° measured by inclinometer; evidence: inclinometer screenshot and seating photo. |
| 8 | Set independent reference beams on supports ≥ 1.5 m beyond influence zone; acceptance: support movement during baseline ≤ 0.1 mm; evidence: baseline readings and beam-level photo. |

| Instrumentation and Data Capture | |
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| 9 | Mount two opposing LVDTs on the independent frame with ≥ 200 mm travel; acceptance: resolution ≤ 0.01 mm and parallelism within 1°; evidence: installation photos and serial plates. |
| 10 | Connect load cell to a digital indicator/data logger and zero; acceptance: zero offset ≤ 0.5% F.S.; evidence: timestamped zero snapshot and logger screen capture. |
| 11 | Configure synchronized logging of load and settlement at 1–5 s intervals; acceptance: missing data ≤ 1% of records; evidence: exported CSV and configuration screenshot. |
| 12 | Create a pile head datum mark and survey initial elevation; acceptance: initial settlement reading = 0 ± 0.1 mm; evidence: survey file and datum photo. |

| Constant Rate Loading Procedure (CRP) | |
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| 13 | Set target penetration rate (e.g., 0.5 mm/min unless specified); acceptance: maintain rate within ±10% during loading; evidence: real-time displacement–time plot screenshot. |
| 14 | Operate servo-controlled pump or needle valve to hold constant rate; acceptance: no planned load holds; any unavoidable pause < 15 s; evidence: operator log with timestamps. |
| 15 | Record continuous load and settlement; acceptance: load cell noise ≤ 1% F.S. and synchronized timestamps; evidence: raw CSV files stored and backed up. |
| 16 | Monitor reference supports every minute; acceptance: cumulative movement ≤ 0.1 mm; if exceeded, pause, re-establish zero, and document corrective action; evidence: reference log. |
| 17 | Continue loading to specified maximum test load or until plunging behavior per project specifications; acceptance: pre-agreed stop criteria documented; evidence: supervisor approval signature. |
| 18 | Record ambient temperature and wind conditions; acceptance: apply correction if temperature shift > 5 °C affects sensors; evidence: temperature log and note on corrections. |

| Post-Test and Acceptance | |
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| 19 | Unload at a controlled rate mirroring average loading penetration; acceptance: capture rebound for ≥ 30 minutes; evidence: rebound curve, annotated timeline, and photos of gauges. |
| 20 | Plot load–settlement curve and evaluate per approved project specifications and authority requirements; acceptance: clear pass/fail with rationale; evidence: signed report, photos, raw data, and QR-linked archive. |

**Comments:**

Filled by:

Signature:

| Introduction | How to use this checklist |
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| Static Compression Test (CRP) is a constant rate of penetration static pile load test used to measure axial compression response and develop a high-resolution load–settlement curve. This checklist focuses solely on the CRP method, excluding maintained load (ML) procedures, lateral testing, and tension tests. It helps site engineers and QA teams configure the reaction system, align the hydraulic jack, set up independent reference beams, and install calibrated load cells and displacement transducers (LVDTs). By enforcing a constant penetration rate and synchronized logging, it reduces creep effects and captures continuous soil–pile behavior, revealing stiffness, serviceability settlement, and ultimate capacity indicators. The checklist also embeds practical tolerances for alignment, instrumentation drift, and data integrity so you avoid false readings, unsafe reaction setups, and misinterpretation. Use it to document compliance with approved project specifications and authority requirements, deliver a traceable curve, and issue a clear pass/fail statement. Start the interactive mode to tick items, add comments, and export PDF/Excel with a QR link. | 1. Preparation: Gather hydraulic jack, load cell, reference beams, two LVDTs, servo or flow-control pump, data logger, survey kit, thermometers, PPE, barriers, and tools. Verify reaction capacity, calibrations, and site space for independent supports beyond the influence zone. 2. Start interactive mode: Tick items as you complete them, attach photos of setups, upload calibration certificates, and record serial numbers. Use time-stamped comments to note deviations or corrective actions. 3. Control and record: Use the pump or servo valve to hold the constant penetration rate while the logger captures synchronized load and settlement. Monitor reference readings and environmental conditions, commenting on any pauses or adjustments. 4. Review and acceptance: Generate the load–settlement curve, check tolerances for rate, drift, and reference stability, then compare outcomes against approved project specifications and authority requirements. 5. Sign-Off: Collect digital signatures, export the commentable report to PDF/Excel, distribute to stakeholders, archive raw data, and secure authenticity with the embedded QR link. |