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# Continuous Tremie Pour: Head, Volume, Continuity Checklist

Continuous tremie pour interactive checklist for underwater concrete. Maintain head, prevent segregation, confirm volume and continuity. Fully commentable and export as PDF/Excel.

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| Project: | |
| Date: | |
| Filled by: | |
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| Pre-Pour Preparation | |
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| 1 | Confirm approved method statement, pour sequence, and permits per approved project specifications and authority requirements; obtain pre-pour sign-offs. Evidence: signed ITP, pre-pour meeting minutes, permit IDs. |
| 2 | Survey excavation and base using sounding line or ROV; remove loose debris by airlift/dredge. Acceptance: firm base, no soft pockets >50 mm. Evidence: photos, survey logs. |
| 3 | Verify theoretical volume plus ≥10% overfill; prepare delivery schedule for continuous rate. Acceptance: reconciliation sheet approved. Evidence: signed calculations and delivery plan. |

| Equipment Setup | |
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| 4 | Assemble tremie pipe DN ≥200 mm with gasketed joints; pressure test to 50 kPa. Acceptance: zero leakage for 5 minutes. Evidence: pressure chart and photos. |
| 5 | Install hopper with splash cover and 20–25 mm screen to catch oversize. Acceptance: screen clean, no aggregate bridging. Evidence: photo before first discharge. |
| 6 | Fit pressure gauge (0–100 kPa) at tremie elbow and verify calibration within 3 months. Acceptance: valid sticker/certificate. Evidence: gauge photo and certificate ID. |
| 7 | Mark tremie pipe at 0.5 m increments; confirm initial tip elevation relative to datum. Acceptance: marks legible and recorded. Evidence: close-up photos and elevation log. |
| 8 | Stage spare tremie sections, tools, lubricant, and adequate crane capacity. Acceptance: spares ready within 5 minutes of request. Evidence: inventory photo and readiness checklist. |

| Materials and Mix Control | |
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| 9 | Confirm concrete mix designated for underwater placement with anti-washout admixture per approved project specifications. Acceptance: batch tickets match mix ID. Evidence: tickets and admixture delivery records. |
| 10 | Measure slump-flow at discharge using a calibrated tray. Acceptance: within approved range (record mm). Evidence: photo of spread and logged value. |
| 11 | Verify setting time from mix data or penetration testing exceeds planned pour duration by ≥2 hours. Evidence: data sheet and time log. |
| 12 | Record concrete temperature at hopper for each load. Acceptance: within approved range; note °C. Evidence: thermometer photo and temperature log. |

| Placement Execution | |
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| 13 | Prime tremie with cement grout or foam pig to exclude water before concrete. Acceptance: first emergence cohesive, minimal washout. Evidence: video/photo of initial discharge. |
| 14 | Start discharge with the tip sealed and immediately bury tip ≥1.0 m in fresh concrete. Evidence: embedment log and surface level readings. |
| 15 | Maintain hydrostatic head ≥2.0 m above tremie tip using pressure gauge. Acceptance: gauge ≥20 kPa equivalent. Evidence: readings every 5 minutes with calculated head (m). |
| 16 | Keep hopper at least half-full; prevent air entry into pipe. Acceptance: uninterrupted flow, no gurgling. Evidence: time-stamped photos and operator log. |
| 17 | Adjust tremie length to maintain 1.0–3.0 m tip embedment as level rises. Acceptance: embedment within range. Evidence: recorded elevations and section changes. |
| 18 | Reposition tremie only while tip remains buried; overlap discharge zones to avoid cold joints. Evidence: movement sketch and time log. |
| 19 | Control pour rate to ensure steady rise; avoid stoppages >5 minutes. Evidence: continuous time log with start/stop stamps. |

| Monitoring and Records | |
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| 20 | Track delivered vs theoretical volumes every 5 m³. Acceptance: running variance within ±10% during pour. Evidence: tally sheet and batch tickets. |
| 21 | Measure displaced water/mud volumes at outlets or pumps. Acceptance: outflow ≈ inflow minus retention. Evidence: meter readings and pump logs. |
| 22 | Observe surface condition via standpipe/view port; do not disturb until initial set. Acceptance: cohesive surface, minimal laitance. Evidence: photos and notes. |

| Post-Pour Verification | |
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| 23 | Terminate by choking hopper while tip remains buried; withdraw slowly to avoid suction. Acceptance: no voids indicated. Evidence: final head reading and withdrawal log. |
| 24 | Remove surface laitance after initial set using pump/skimmer. Acceptance: removal to sound concrete; record thickness removed. Evidence: photos with scale. |
| 25 | Reconcile final delivered vs theoretical volume. Acceptance: variance within ±5%. Evidence: signed reconciliation sheet and ticket bundle. |
| 26 | Clean tremie and contain wash water. Acceptance: disposal per approved project specifications and authority requirements. Evidence: waste manifest and cleaning log. |

**Comments:**

Filled by:

Signature:

| Introduction | How to use this checklist |
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| Continuous tremie pour is a controlled underwater concrete placement method that relies on sustained hydrostatic head and uninterrupted discharge. This checklist guides teams through underwater concrete placement using a tremie pipe, emphasizing head maintenance, prevention of segregation, accurate volume tracking, and continuity verification. It applies to piles, diaphragm walls, and cofferdam slabs executed by tremie, focusing on practical controls such as hopper management, pressure-gauge readings, tip embedment, and steady pour rates. Scope boundaries exclude laboratory cube testing and compressive strength verification; testing should follow approved project specifications and authority requirements. By following these steps, crews can avoid common risks including laitance contamination, cold joints, suction voids, pipe blockages, and unaccounted volume losses that compromise integrity. Expected outcomes include cohesive, uniform concrete with documented continuity, correct elevations, and reconciled volumes within defined tolerances. Use this interactive checklist on-site: tick items as completed, add time-stamped comments, attach photos or readings, and export your records as PDF/Excel with QR authentication. | 1. Preparation: Gather tremie tools, spare sections, calibrated gauge, slump-flow tray, thermometer, sounding gear, cameras, and PPE. Verify method statement, mix design, delivery schedule, and surveyed volumes. Brief the crew on head control, embedment targets, flow rate, and communication signals. 2. Using the Interactive Checklist: Start interactive mode, tick items as completed, and attach photos of gauges, screens, hopper, and level readings. Add time-stamped comments for movements or pauses. When done, export the full record to PDF/Excel and share the QR link. 3. Sign-Off: Capture digital signatures from contractor, supervisor, and inspector. Distribute the exported package to stakeholders. Archive the QR-authenticated record in your project system for traceability and future audits. |