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Approve pile concrete mixes: slump/flow, durability, batching

Approve pile concrete mixes with an interactive checklist that's commentable and export as PDF/Excel. Validate slump/flow, AWA/SCC, durability classes, and batching controls pre-production.

Project:
Date:
Filled by:

Pre-Approval Documentation	
1	Confirm latest approved mix design ID for piles, revision status, and signed approval letter per approved project specifications and authority requirements; attach PDFs to the record.
2	Verify exposure/durability class for piles (e.g., marine, sulfate-bearing soils) is specified on the mix sheet and aligns with project drawings; capture marked-up drawing snippet.
3	Check supplier certifications: cement, SCMs, admixtures with current technical data sheets and compliance certificates; log expiry dates and upload documents.

Materials and Admixtures Verification	
4	Confirm cementitious materials types and proportions (cement, fly ash, slag, silica fume) meet approved mix, within ±2% by mass tolerance; record batcher setpoints.
5	Verify AWA is specified for underwater/tremie piles, with target dosage range and supplier guidance; record planned dosage in mL/kg cementitious and attach TDS.
6	For SCC mixes, confirm high-range water reducer type, viscosity modifier use, and compatibility with SCMs via supplier letter or lab test; upload evidence.

Workability and Rheology Criteria	
7	Set target slump (mm) or slump flow (mm) and tolerance (e.g., slump ±20 mm; slump flow ±50 mm) per approved mix; note target and tolerance on checklist.
8	Define stability acceptance: VSI ≤ 1 for SCC or no visible segregation/bleeding for non-SCC; require photo of test results and tester signature.
9	If specified, record J-Ring/box test limits for SCC passing ability per approved project specifications; attach measured spreads and differential in mm.
10	Set concrete temperature limits at discharge (°C) and at batching; define mitigation (chilled water/ice) if forecast exceeds limit; record planned control method.

Durability Requirements and Limits	
11	Confirm maximum w/cm ratio and minimum cementitious content (kg/m³) meet durability class; show calculation method and example based on moisture-corrected water.
12	Check chloride limits for reinforced piles and sulfate resistance requirements per approved project specifications; ensure cement type/SCM blend achieves these limits.
13	Verify nominal maximum aggregate size suits reinforcement spacing and cover for piles; document size (mm) and reference cage drawing clearance.

Batching and Mixing Controls	
14	Confirm scale calibration dates for cement, water, and aggregates are current; upload calibration certificates and note next due date.
15	Verify aggregate moisture probes are calibrated; ensure moisture corrections are applied automatically on batch printout; attach example showing corrected water (L).
16	Set batching tolerances (e.g., cement ±1%, water ±1%, aggregates ±2%, admixtures ±3%) per approved project specifications; record plant setpoints.
17	Define batching sequence and mixing energy (time or revolutions) to ensure uniformity with AWA/SCC; capture plant SOP and operator acknowledgment.
18	Prepare delivery ticket template to show mix ID, w/cm, dosages, moisture corrections, slump/flow target, temperature, and time batched; attach sample ticket.

Trial Batch Validation and Acceptance	
19	Conduct lab/plant trial batch to target slump/flow; record results within tolerance and capture photos of slump/slump flow and VSI/J-Ring as applicable.
20	Cast test specimens for strength and durability indicators per approved project specifications; log curing conditions and target ages; attach lab receipts.
21	Verify workability retention over planned transport time (e.g., 60–90 min) without extra water; document results and any permitted on-truck admixture adjustments.
22	Issue formal approval noting limits: slump/flow range, temperature, w/cm, admixture dosages, and batching tolerances; obtain digital signatures from QA and supplier.

Comments:

Filled by:

Signature:

Introduction	How to use this checklist
Approve pile concrete mixes with a structured, pre-production review that validates mix design compliance, workability, and batching controls while explicitly excluding placement checks. This checklist centralizes pile concrete mix approval, including slump and slump flow confirmation, anti-washout admixture (AWA) or self-consolidating concrete (SCC) selection, and durability class verification for marine, aggressive soil, or groundwater exposure. It translates pile concrete mix approval principles into actionable quality steps: confirm materials and admixtures, verify water-to-cementitious ratio and cementitious contents, check moisture corrections, and validate trial batches. By focusing on the concrete mix design for piles—rather than tremie or cage placement—you reduce risk of segregation, washout, and early-age performance failures, and ensure documentation stands up to audits. Use this interactive checklist to tick items, leave comments, attach photos and batch tickets, and export PDF/Excel with a QR-secured record for traceable approvals.	1. Preparation: Gather the approved mix design, supplier TDS/certificates, calibration records, trial batch plan, slump/slump-flow tools, thermometers, and PPE. Confirm access to a test area and batching system. 2. Open the checklist in interactive mode. Create a project record, select mix ID for piles, and assign reviewers (QA, supplier, batching plant). 3. Work through sections in order: documentation, materials/admixtures, workability criteria, durability limits, batching controls, and trial batch validation. Attach photos and PDFs as you go. 4. Use comments to flag constraints or deviations (e.g., summer temperature plans). Mention stakeholders to request clarifications and upload updated data sheets. 5. Run a supervised trial batch, enter measurements (slump/slump flow, VSI, temperature), and link laboratory sample IDs. Capture batch printouts showing moisture corrections. 6. Export the completed checklist as PDF/Excel, with embedded photos and attachments. Verify the QR code opens the original digital record. 7. Sign-Off: Collect digital signatures from QA and supplier, distribute to stakeholders, and archive the record with tickets and lab results for future audits.