

Field Concrete Strength Specimen Production JHA

Worked instructional example

Work and worksite

Qualified testing personnel will obtain a representative fresh-concrete sample during a separately controlled building slab placement and make identified standard-cured strength cylinders at a protected ground-level station. The actual sampling and specimen method govern preparation, initial curing and transfer to the testing agency. Specimen results and structural decisions remain separate. This fictional learning example describes planned controls and records no actual inspection or work authorization.

- The testing plan identifies the concrete, sample source, required adopted method editions, qualified personnel, specimen schedule and receiving laboratory. Actual mold, consolidation, initial-curing and transfer criteria are available; no universal specimen count, curing temperature or timing recipe is supplied.
- Truck and placing operations provide an accepted sampling interface without entry into a moving-equipment or discharge hazard. The protected station, suitable washing, curing enclosure and safe supply/transport arrangements are ready before a sample is requested.
- Placement/finishing 238110-09 and curing 238110-24 are partial connections: field production and initial curing of standard-cured acceptance specimens only. Delivery acceptance, slab curing, field-cured release specimens, maturity calibration, laboratory crushing and structural release are excluded.

Questions before work

- Which concrete delivery and placed location will these specimens represent under the actual sampling plan?
- Can the sampling and molding crew work outside moving truck, chute, hose and placement exposures?
- Who owns the required initial-curing conditions and documented transfer to the identified laboratory?

Task Hazard Control

1 Establish specimen purpose and traceability

Hazard: A wrong sampling purpose or missing concrete identity can create a test set that is later applied to an unrelated pour or structural decision.

Control: Testing lead obtains the actual plan, adopted method editions, qualified roles, specimen requirements and laboratory destination. Identify standard-cured acceptance specimens separately from other purposes and agree how each set links to delivery and placement records. Resolve an unclear sampling source before requesting concrete; the technician does not select release criteria or promise strength acceptance from this worked example.

Verification: Lead confirms purpose, identities, applicable method and receiving laboratory before sampling.

Reasoning: Traceable specimens begin with an agreed question and an identified concrete population.

2 Prepare safe sampling and initial-curing arrangements

Hazard: A technician entering the discharge path, an unstable workbench or unsuitable curing equipment can cause injury and compromise the specimens.

Control: Coordinate the sampling position and command with the driver and placement lead, outside pinch, reversing and hose-movement paths. Prepare stable molds and work supports, clean washing and assessed cement-resistant protection. Check the actual initial-curing enclosure, monitoring and protected electrical supply where used. Do not take a sample until safe access and the required storage conditions can be maintained.

Verification: Testing lead checks station, equipment, worker protection and the accepted sampling interface.

Reasoning: A usable test plan needs a safe station and continuing curing capacity before fresh concrete arrives.

3 Obtain the representative sample through the agreed interface

Hazard: Uncoordinated collection can expose people to moving equipment and leave a selective sample that does not represent the intended delivery.

Control: Qualified personnel collect and combine the required sample through the adopted method while the driver and placing team retain control of their equipment. Use manageable stable containers and keep skin and eyes protected from splashes. Record the actual source and sampling event, and hold deviations for the testing lead's disposition. Never climb onto or reach across active delivery equipment to recover missed material.

Verification: Technician records required sample-source evidence and reports any sampling deviation.

Reasoning: Safe coordination and representative collection are both necessary for a meaningful specimen set.

Complete the work and hand over

4 Mold and identify the specified cylinders

Hazard: Wet concrete, unstable containers or incorrect consolidation can cause chemical exposure and produce specimens whose results are misleading.

Control: At the prepared station, qualified technician molds, consolidates and finishes the specified cylinders through the actual adopted procedure with suitable equipment. Keep molds stable and hands protected, use the assessed electrical arrangement for any prescribed vibrator and avoid uncontrolled spills. Label each specimen through the agreed durable identification process. Hold a procedural or identity problem instead of silently making a replacement from unrelated leftover concrete.

Verification: Technician records required molding findings, specimen identities and actual deviations.

Reasoning: The specimen must retain both its concrete identity and the prescribed preparation history.

5 Maintain and document initial curing

Hazard: Uncontrolled sunlight, freezing, disturbance or a missed shift can damage specimens while an apparently complete cylinder set hides the problem.

Control: Place and protect the specimens through the actual initial-curing requirements and maintain the planned temperature/moisture controls and monitoring. Prevent unapproved movement and damage, keep power and access safe and transfer attendance between assigned personnel. Record real conditions and interruptions for the testing agency; do not invent readings or correct a curing deviation by relabeling the cylinders.

Verification: Assigned custodian records actual curing observations, interruptions and responsibility handover.

Reasoning: Initial curing is part of specimen production, not a storage task that can be left unowned.

6 Transfer identified specimens and unresolved findings

Hazard: Early or rough movement, moisture loss or broken custody can invalidate the test evidence and strain workers handling hardened specimens.

Control: Testing lead obtains the actual method-based transfer readiness and uses protected containers and planned assistance for loading. Preserve required specimen conditions and identities through the accepted laboratory route. Send sampling, molding and initial-curing records with all deviations and obtain the receiving custody record. Keep test interpretation and concrete acceptance with their designated authorities; this handover records no test result or permission to load the slab.

Verification: Receiving agency confirms set identity, condition history, custody and open issues.

Reasoning: A laboratory needs the real specimen history to interpret the evidence responsibly.

Pause and reassess

- Sampling purpose, concrete identity, adopted method, qualified personnel or receiving laboratory is unresolved.
- The safe collection interface, specimen preparation or required initial-curing conditions cannot be maintained.
- Identification, recorded curing history, specimen condition or transfer timing differs from the actual testing plan.

Improve the controls

Needs improvement: Any leftover concrete can fill the cylinders.

More useful: Qualified personnel obtain and document the required representative sample from the identified delivery through the accepted interface.

Needs improvement: The cylinders were left nearby, so their curing is complete.

More useful: Assign initial-curing ownership, maintain actual method requirements and send real conditions and deviations to the laboratory.

Decisions that change the analysis

May a standard-cured acceptance set authorize form stripping by itself?

This example supplies no such authorization. Standard-cured acceptance specimens have a defined purpose under the testing plan. Any estimate of in-place strength or proposed support removal requires its actual accepted evidence and responsible release process. Do not relabel this set as field-cured or substitute its eventual result for a separate structural/load determination.

What must the testing crew record for actual use?

Record sample and represented-concrete identities, placement reference, required method and technician information, specimen labels, actual preparation findings and deviations. Preserve initial-curing observations, interruptions, custody, transport and laboratory receipt. Report limitations to the responsible testing/acceptance authority without prefilled readings, test strength, compliance or construction release.

Training needs

- Required concrete field-testing qualification and actual adopted sampling/specimen instruction, including mold preparation, consolidation, identification and curing records.
- Instruction on coordinated sampling access, wet-cement contact response, protected curing equipment, specimen handling and chain-of-custody discrepancy reporting.

Confirm applicable qualifications and actual training evidence for the people assigned. Related toolbox talks support discussion; they do not establish competence.

References and adaptation

NRMCA CIP 34 Making Cylinders in the Field: preparation, curing and records
<https://www.nrmca.org/wp-content/uploads/2021/01/34pr.pdf>

NRMCA concrete materials FAQ: standard and field curing have different purposes
<https://www.nrmca.org/association-resources/research-and-engineering/frequently-asked-questions-on-concrete-materials/>

OSHA 1926.404 Construction electrical wiring design and protection
<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.404>

References reviewed October 13, 2026. Use actual equipment and product instructions, project design and site requirements. This original draft supplies no fabricated inspection, signature or approval.