

Masonry Cell Reinforcement Installation JHA

Worked instructional example

Work and worksite

A masonry reinforcement crew will place, splice and restrain specified vertical bars in the open cells of one already erected and temporarily supported low-rise CMU wall lift before separate grouting. Released cleanouts and guarded access allow inspection of the cell path and concealed bar positions. Scheduled bars arrive prepared; no units are laid during this operation. This fictional learning example describes planned controls; it records no actual inspection or work authorization.

- Current masonry documents identify cells, bar marks, permitted splices, position/clearance criteria, restraints and required pre-grout inspections for the actual wall lift.
- The wall and access are independently accepted for installation; required cleanouts are open and visible, starter positions are released and planned bar handling avoids impalement exposure.
- Partial masonry-rebar and reinforced-wall coverage: vertical cell bars only; slab mats, freestanding cages, horizontal bond-beam steel, cutting/bending and grout pumping are excluded.

Questions before work

- How do the actual cells, starters and scheduled splices match the current masonry design?
- What prevents bars shifting or striking workers while they are lowered and connected?
- Which records verify concealed reinforcement and clean grout space before cleanouts are closed and grouting begins?

Task Hazard Control

1 Accept the wall and reinforcement detail

Hazard: A displaced starter, unsupported wall or wrong cell can leave an incomplete structural load path.

Control: Masonry lead verifies the supported wall lift, cell map, starter arrangement and current reinforcement schedule. Confirm bars, splice locations and inspection hold points match the actual construction. Hold a starter misalignment or missing path for design disposition; do not bend bars or break a web to force a fit.

Verification: Lead compares actual wall cells and starters with the released schedule before bar movement.

Reasoning: The surrounding masonry constrains where a bar can be placed and inspected.

2 Prepare guarded access and bar staging

Hazard: Long bars can strike workers or impale someone falling onto a starter during elevated placement.

Control: Establish accepted guarded work positions and protect exposed impalement hazards along the handling route. Stage manageable scheduled bars on stable supports within permitted platform loads. Agree lifting/lowering commands and a controlled bar-end path; keep other work outside the receiving and drop areas.

Verification: Handling lead checks platform limits, starter protection and the complete bar-end travel route.

Reasoning: A clear walking route may still be too confined for turning a long bar.

3 Verify the open cell and cleanout path

Hazard: Mortar debris or hidden obstruction can prevent proper seating and later grout enclosure of the bar.

Control: Inspect the designated open cells and released cleanouts for alignment, obstructions and the design's grout-space criteria. Arrange permitted cleaning with assessed dust controls and waste collection, preserving wall support. Keep cleanouts available for inspection; report inaccessible spaces instead of hiding them behind a bar or patch.

Verification: Lead records actual cell-path and cleanliness findings before insertion.

Reasoning: Bar insertion can conceal defects in the space that must later receive grout.

Complete the work and hand over

4 Lower and connect the scheduled bars

Hazard: A released bar can drop, trap hands at the starter or land in the wrong cell.

Control: Use the planned assistance or suitable handling aid to lower each identified bar under coordinated control from protected positions. Keep hands outside closing gaps and connect only the scheduled splice at its permitted location. Maintain control until the specified restraint is effective; use no generic lap length or improvised bar offset.

Verification: Installation lead checks bar identity, cell location and the actual splice before release.

Reasoning: A visible bar projecting from the wall does not reveal its lower splice or correct cell.

5 Position and restrain for inspection

Hazard: Misplaced or loose steel can shift during grouting and lose required clearance or structural function.

Control: Install the design's positioning and restraint arrangement, using safe tying/tool positions and controlling wire ends. Verify bar position, prescribed clearances and all splices against actual project criteria. Keep access and cleanouts open for the assigned pre-grout review; resolve obstructions without modifying the specified reinforcement.

Verification: Designated reviewer records concealed-position, restraint and splice findings before closure.

Reasoning: The arrangement must hold its required position through the later grout operation.

6 Hand over the pregrout condition

Hazard: Premature cleanout closure or pumping can conceal unchecked bars and overload an unaccepted wall stage.

Control: Transfer actual cell, bar, splice and inspection records to the masonry/grouting leads, identifying all holds. Close cleanouts only through the approved method after required inspection, with closure acceptance under the grout plan. Preserve wall supports, starter protection and access restrictions; grout placement begins under its separate release.

Verification: Receiving lead confirms inspection status and outstanding closure/grout-release conditions.

Reasoning: Reinforcement completion is one prerequisite, not permission to start pumping.

Pause and reassess

- Cells, starters, scheduled bar marks or splice positions differ from the released masonry documents.
- Protected handling, impalement guarding, cell inspection or the specified restraint cannot be maintained.
- A request introduces bar bending, unit removal, horizontal steel, cleanout concealment before inspection or early grouting.

Improve the controls

Needs improvement: Drop each bar into a nearby open cell.

More useful: Match the cell and bar schedule, control the lowering path and verify the specified starter splice and restraint before releasing the bar.

Needs improvement: The wall is reinforced because steel projects above it.

More useful: Record actual bar positions, splices, restraint and grout-space findings through open cleanouts before the designated inspection and closure handover.

Decisions that change the analysis

Does the generic slab rebar example cover these bars?

No. That crew distributes a mat over an open slab surface. Here the retained masonry cell path, starter splice, concealed position and pre-grout cleanout inspection govern placement. The general masonry-work row introduces reinforcement but does not complete this separate cell-installation sequence.

What must the crew record for actual use?

Record the actual work boundary, equipment and materials, responsible people, applicable criteria, control checks and unresolved actions. Keep changed conditions on hold, communicate restrictions to affected crews and obtain the required project authorization before work.

Training needs

- The actual masonry reinforcement schedule, cell/starter identification, permitted splice and restraint requirements and pre-grout inspection sequence.
- Controlled long-bar handling from guarded access, impalement protection, safe tying positions and task-specific dust controls for any cell cleaning.

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

References and adaptation

CMHA TEK 03-02A Grouting concrete masonry walls

<https://www.cmha.org/resource/tek-03-02a/>

CMHA TEK 12-04D Steel reinforcement for concrete masonry

<https://www.cmha.org/resource/tek-12-04d/>

OSHA 1926.701 General concrete/masonry safety

<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.701>

OSHA 1926.706 Masonry construction

<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.706>

References reviewed October 9, 2026. Use actual equipment and product instructions, project design and site requirements. This original draft supplies no fabricated inspection, signature or approval.