

Precast Beam Delivery and Crane Unloading to Ground Storage JHA

Worked instructional example

Work and worksite

A specialist receiving crew will accept a flatbed delivery of identified precast concrete beams for a building project, crane-unload each beam through its producer-approved pickup arrangement, and place it horizontally on designed ground-storage supports. The vehicle remains controlled during unloading. This fictional learning example describes planned controls and records no actual inspection or work authorization.

- Current producer documents identify every beam, weight, center of gravity, permitted pickup points and hardware, handling orientation, concrete handling readiness and storage support locations. The responsible parties resolve missing information or damage before handling; this example supplies no beam dimensions, rigging capacity, wind limit or support design.
- A separately accepted crane setup and lift plan address the actual configuration, total lifted weight, radius throughout the route, ground support, utilities, weather limits and communication. The storage design addresses ground bearing, beam orientation, dunnage and lateral stability. This example permits individual beams on their specified supports, not a guessed tiered stack.
- The carrier and receiving lead agree the specific trailer configuration, unloading order, residual-load stability and safe access. This is horizontal beam unloading to ground storage only. Road transport, a detached or unsupported trailer, shifted-load recovery, upright panels or A-frames, tilt-up, forklift unloading, cutting restraints under unresolved tension, stacking, erection and later retrieval from storage are excluded.

Questions before work

- Which beam marks, producer handling instructions and accepted storage details govern this delivery?
- How will the carrier and receiving lead keep the vehicle and every remaining beam stable at each restraint-release and pickup stage?
- Who may authorize restraint removal, the lift, crane release after landing, and vehicle departure using actual findings?

Task Hazard Control

1 Accept the delivery and unloading package

Hazard: A wrong beam, shifted transport load or missing handling detail can expose people to an unstable member before the lift starts.

Control: Receiving lead meets the carrier at the controlled waiting point. Match beam marks and delivery records with the current producer handling and storage package. Study restraint condition, apparent displacement and visible damage from safe access; do not climb an unstable load. Hold discrepancies with the carrier and responsible producer/design authority. Establish the unloading order and decisions for each remaining member before moving into the unloading bay.

Verification: Lead identifies the beams, current documents, observed condition, unresolved holds and named decision responsibilities.

Reasoning: Delivery acceptance establishes the actual load and its condition; an erection drawing alone does not release transport restraints.

2 Prepare the controlled vehicle and storage positions

Hazard: Vehicle movement, inadequate ground support or a blocked receiving route can cause overturning, crushing or loss of beam support.

Control: Carrier positions and immobilizes the connected vehicle using its actual procedure and the accepted unloading arrangement. Receiving lead confirms the separately accepted crane setup, ground and underground-service review, protected access, exclusion boundary and clear hoist route. Install the specified storage supports at their designated locations and orientation on accepted bearing ground. Keep people outside the vehicle, crane and beam movement paths; authorize no improvised trailer support or storage stack.

Verification: Carrier and lead confirm vehicle control; lift lead confirms setup and route; storage lead compares supports and ground findings with the storage detail.

Reasoning: The crane and stored beam impose different ground loads. Readiness of one does not establish readiness of the other.

3 Rig the selected beam and release its restraints

Hazard: A loaded restraint can recoil, an adjacent beam can move, or incompatible inserts and lifting hardware can fail when transport restraint is removed.

Control: Qualified rigging personnel identify the selected beam and inspect its specified pickup points and compatible hardware against producer instructions and applicable requirements. Carrier and receiving lead follow the accepted member-specific restraint-release sequence, preserving the supports and restraints needed for the remaining load. Establish the specified independent control of the selected beam before releasing any restraint that maintains its stability. Use protected access and positions clear of recoil and crush paths. Do not assume attaching a crane hook makes release safe, cut a disputed restraint, or use the crane to recover a shifted load.

Verification: Lift lead and carrier confirm pickup identity, gear condition, selected-beam control, remaining-load restraint and the explicit release decision before any affected restraint is removed.

Reasoning: Transport restraint and lifting control have different functions. Their handoff requires a planned sequence for the selected and remaining members.

Complete the work and hand over

4 Lift clear and transfer through the controlled route

Hazard: A beam can snag another member, rotate or enter an occupied fall zone during pickup and travel.

Control: Lift lead confirms the total lifted weight and actual crane configuration and route under the accepted plan. Operator takes up and lifts through the producer-prescribed sequence; stop at the planned initial clearance to verify balance, clearance and the remaining transport load before continuing. Maintain one designated signal source and a clear stop-signal process. Use the planned orientation-control method from safe positions; no person stands under the beam or between it and a fixed object. Stop movement for communication loss, unexpected resistance, rotation or changing conditions and secure under the accepted contingency before reassessment.

Verification: Operator and signal person confirm communication; lead observes the intended lift path, balanced pickup, cleared restraints and stable remaining load.

Reasoning: A successful initial pickup does not establish safe travel. The beam's ends and the residual trailer load remain part of the operation.

5 Land on designed supports and verify stability before unrigging

Hazard: Wrong support spacing, incomplete seating or premature crane release can damage or overturn a beam and trap the receiving crew.

Control: Receiving personnel use designated positions and suitable positioning tools while the operator lowers the beam onto the specified support locations and orientation. Keep hands and feet outside closing gaps and no one beneath the beam. Confirm required seating, lateral restraint and ground/support condition using the producer/storage criteria and accepted release sequence. Maintain crane control until the named storage authority accepts the support and stability findings. Hold any mismatch without inserting hands, changing dunnage beneath a suspended beam or improvising a stability test. Disconnect only through the prescribed protected-access method after release.

Verification: Storage authority identifies the beam, support locations, seating and stability findings and gives the actual release decision; rigger confirms safe disconnection.

Reasoning: Touching dunnage is not proof of independent stability. Crane release transfers support responsibility to the storage system.

6 Hand over stored beams and release the vehicle

Hazard: Uncontrolled later movement, support disturbance or premature vehicle departure can expose the next crew to falling material or moving equipment.

Control: Mark stored beam identities and communicate support restrictions, damage holds, inspection needs and responsibility for maintaining the storage area. Keep retrieval and erection subject to separate handling plans. Before each repeat pickup, reconfirm remaining-load stability and its next release sequence. At completion, carrier and receiving lead verify residual load and vehicle travel readiness, recover loose gear from safe access, and confirm all personnel are clear before the designated vehicle-release signal. Record actual findings and changes; preserve unresolved holds rather than pre-entering a successful inspection.

Verification: Receiving lead confirms storage handover with its owner; carrier and lead confirm final remaining-load status, personnel clearance and departure authorization.

Reasoning: The unloading operation ends with stable storage and a controlled vehicle handoff, not merely the last crane movement.

Pause and reassess

- Stop for shifted material, unexplained damage, unidentified pickup points, disputed restraints or missing producer criteria.
- Pause for ground settlement, changed supports, route intrusion, weather outside actual limits, crane alarms or lost communication.
- Replan for a different member, upright storage, stacking, changed trailer configuration or a request to erect directly from the trailer.

Improve the controls

Needs improvement: Undo all the straps now so the crane can keep moving.

More useful: Release only the selected member through the accepted sequence while preserving control of it and the remaining transport load.

Needs improvement: It is on two timbers; take the slings off.

More useful: Compare support locations, seating and stability with the actual storage criteria and obtain the named release decision before disconnecting.

Decisions that change the analysis

What if a transport restraint is holding a shifted beam?

Keep the load controlled, exclude people and hold unloading. Obtain a specific recovery disposition from the carrier and responsible handling authority; this normal-unloading example does not authorize cutting the restraint or pulling the beam back with the crane.

May another beam be stacked on the stored member?

No stacking is authorized by this scenario. A proposed stack requires its own producer-compatible support, ground-load and stability design, lifting sequence and acceptance before the work changes.

What belongs in the actual work record?

Record beam marks, current handling and storage documents, vehicle and remaining-load controls, gear identity and condition, actual support findings, stop conditions and disposition, and who authorized each release. Do not fabricate successful inspections, signatures, measurements or training evidence.

Training needs

- Crane operator certification and employer evaluation applicable to the actual crane; assigned signal-person qualification and qualified rigging personnel for the work performed.
- Instruction and demonstrated task competence in this producer's beam pickup hardware, handling orientation, damage reporting, restraint-release sequence and ground-storage acceptance.
- Carrier and receiving-team instruction on trailer movement prevention, remaining-load stability, protected access, communication loss, stop signals and vehicle release.
- Task instruction on suspended-load and crush paths, alignment tools, exclusion boundaries and emergency response without approaching an unstable beam.

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

References and adaptation

OSHA 1926.704 Requirements for precast concrete

<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.704>

OSHA 1926.251 Rigging equipment for material handling

<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.251>

OSHA 1926.1417 Crane operation

<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.1417>

OSHA 1926.250 Storage requirements

<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.250>

OSHA 1926.1402 Ground conditions

<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.1402>

OSHA 1926.1425 Keeping clear of the load

<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.1425>

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