

Solid Sawn Roof Rafter Installation JHA

Worked instructional example

Work and worksite

A framing crew will place and fasten precut individual solid-sawn rafters on a released low-rise roof frame using planned mechanical material transfer and protected receiving access. Sheathing starts under a separate release. This fictional learning example describes planned controls; it records no actual inspection or work authorization.

- Ridge, wall plates, bearing cuts, ties and temporary restraint follow the current framing design; no field design is supplied.
- Conventional fall protection, protected access and rescue arrangements remain in place as the incomplete roof advances.
- This excludes prefabricated trusses, roof sheathing, on-roof cutting and carrying rafters up an access ladder.

Questions before work

- Who releases the ridge and wall support arrangement for this sequence?
- How will each rafter remain restrained until the specified ties and connections are complete?
- How does fall protection remain usable as the work position changes?

Task Hazard Control

1 Release the rafter sequence

Hazard: An unsupported ridge or incomplete wall restraint can lead to roof-frame collapse.

Control: Framing lead verifies the receiving frame, rafter identification, bearing cuts and specified ties against current documents. Establish the temporary restraint sequence and hold work for any missing support or conflicting detail.

Verification: Lead compares the bay and rafter marks with the released framing plan.

Reasoning: Individual rafters do not inherit a prefabricated truss bracing scheme.

2 Establish protected receiving positions

Hazard: Open frame gaps and roof edges can expose workers to falls before a walking surface exists.

Control: Provide protected platforms or the selected conventional fall-protection arrangement, suitable anchors and practicable rescue. Keep the area below excluded and maintain protected access; do not rely on balancing on an unrestrained rafter.

Verification: Access lead checks the changing work positions before material transfer.

Reasoning: Fall protection must work during erection, before sheathing provides a surface.

3 Transfer one prepared rafter

Hazard: A long member can swing into a worker, overload an access point or become wind driven.

Control: Use the released mechanical transfer and receiving method with agreed signals. Keep workers clear of the travel path and control the member from stable positions. Pause for wind or loss of control; do not carry long stock while climbing a ladder.

Verification: Movement lead checks the transfer route and receiver readiness before each move.

Reasoning: Material transfer and worker access need separate safe routes.

Complete the work and hand over

4 Seat and secure the member

Hazard: The rafter can slip at a bearing or trap fingers during alignment.

Control: Position onto the specified ridge and wall bearings while retaining the planned support. Use suitable alignment tools and keep hands out of bearing pinch points. Complete the specified initial securing before handling support is removed.

Verification: Framing lead checks both seating locations and initial restraint.

Reasoning: A correctly cut rafter still needs secure installation at both ends.

5 Complete ties and temporary restraint

Hazard: An untied pair or unfinished restraint can spread, roll or fail under later work.

Control: Install the specified rafter ties, connectors and temporary restraint in the released sequence with the required fasteners. Keep prohibited loading off incomplete bays and retain temporary support until its designated release conditions are satisfied.

Verification: Lead checks connections and restraint before progressing to the next stage.

Reasoning: The design determines which members complete the roof load path.

6 Release the frame for sheathing

Hazard: Another crew can assume an incomplete roof is ready for panel loading.

Control: Record completed bays, unfinished connections and permitted material loads. Keep edge and opening protection and necessary restraint in place; transfer the actual frame release to the sheathing lead before panels are delivered.

Verification: Receiving lead confirms frame readiness and remaining restrictions.

Reasoning: Rafter erection and sheathing installation have different loading and access stages.

Pause and reassess

- Receiving supports, bearing cuts or specified ties differ from the design.
- Wind, unstable footing or lost fall protection interrupts the receiving operation.
- Temporary restraint or the sheathing handover cannot be verified.

Improve the controls

Needs improvement: Work carefully and wear PPE.

More useful: Use the released mechanical transfer and receiving method with agreed signals. Keep workers clear of the travel path and control the member from stable positions. Pause for wind or loss of control; do not carry long stock while climbing a ladder.

Needs improvement: Check that everything is ready.

More useful: Framing lead verifies the receiving frame, rafter identification, bearing cuts and specified ties against current documents. Establish the temporary restraint sequence and hold work for any missing support or conflicting detail.

Decisions that change the analysis

Is the roof-truss example a substitute for this rafter sequence?

No. A truss is an engineered assembly with its own handling and bracing instructions. These individual rafters rely on the released ridge, wall, tie and connector details; the example provides no alternative roof design.

What must the crew record for actual use?

Identify the actual equipment and work boundaries, responsible people, applicable criteria, inspection findings and open actions. Resolve changes with affected crews and obtain required project authorization before work.

Training needs

- The actual solid-sawn rafter sequence, bearing checks, connection details and temporary-restraint handover.
- Applicable fall-protection and rescue training, material-transfer communication and fastening-tool instruction.

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

References and adaptation

Simpson Strong-Tie Product installer guide

<https://www.strongtie.com/resources/product-installers-guide/landing>

OSHA 1926.501 Duty to have fall protection

<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.501>

OSHA 1926.503 Fall protection training

<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.503>

References reviewed October 9, 2026. Use actual equipment and product instructions, project design and site requirements. This instructional example supplies no actual inspection results, signatures or work approval.