

Existing Wood Connector Retrofit JHA

Worked instructional example

Work and worksite

A framing repair crew will install one engineer-specified retrofit-compatible face-mounted connector at a retained solid-sawn joist-to-support connection in an unoccupied building bay. Separately accepted load control and temporary support keep both wood members in position throughout fitting and fastening. The issued repair detail and actual connector instructions govern acceptance. This fictional learning example describes planned controls; it records no actual inspection or work authorization.

- The repair design identifies sound retained wood, joint geometry, existing fasteners, the selected connector's confirmed retrofit suitability and the complete compatible fastener schedule.
- The connection is accessible from an accepted protected platform; service and material checks, support acceptance and any local covering removal are completed beforehand.
- Partial repair coverage: no member replacement, new floor-frame assembly, arbitrary additional screws, concealed-support redesign or temporary-support removal.

Questions before work

- What confirms that the actual retained wood and joint geometry match the retrofit design?
- Can the selected connector and every required fastener be installed without unapproved bending, drilling or interference?
- Which concealed-work checks release this connection while the temporary support remains in place?

Task Hazard Control

1 Release the retained connection

Hazard: An added connector can conceal unsound wood or transfer load through a joint not covered by its design.

Control: Repair lead checks the surveyed joint, issued detail, sound-wood basis and confirmed manufacturer suitability for retrofit. Match the retained members and identified existing fasteners to the detail. Hold decay, splits, unexpected gaps or an inaccessible fastening face for design disposition rather than selecting hardware from appearance.

Verification: Lead records applicability of the detail to the exposed joint before fitting hardware.

Reasoning: A new piece of steel does not establish the condition of the wood receiving it.

2 Confirm support and fastening access

Hazard: Uncontrolled member movement or unsafe reach can injure workers while the connection is incomplete.

Control: Verify the separately accepted load-control/support condition and protected platform before installation. Preserve all required restraints and exclude people below any falling hardware. Confirm tools can reach every specified fastening location without climbing framing or pushing a member out of its supported position.

Verification: Lead checks support status, tool approach and working positions at both connection faces.

Reasoning: A retrofit must be installable safely in the actual retained geometry.

3 Identify connector and fasteners

Hazard: A similar-looking screw, incompatible coating or damaged connector can leave a repair without its intended capacity.

Control: Match connector marks, size, coating and condition with the repair schedule and current manufacturer instructions. Stage the exact approved fasteners by location and length, with inspected driving tools. Quarantine mixed or unidentified hardware; obtain technical approval for any proposed substitution before it enters the joint.

Verification: Installer checks product identification and the complete fastening schedule before positioning.

Reasoning: The connector's steel shape and its prescribed fasteners form one designed assembly.

Complete the work and hand over

4 Fit without altering the load path

Hazard: Forcing hardware around an existing joint can split wood or distort the connection and trap fingers.

Control: Position the specified retrofit connector using suitable tools and safe hand locations while retained members stay supported. Verify seating and fit against the released detail. Perform pilot preparation only where the actual instructions require it; do not notch the member, enlarge connector holes or bend steel to overcome a conflict.

Verification: Lead checks actual fit, wood condition and any permitted preparation before fastening.

Reasoning: A fit problem is a design issue when its solution changes wood or connector geometry.

5 Complete the specified fastening

Hazard: Missed, misplaced or incorrectly driven fasteners can damage wood and leave incomplete load transfer.

Control: Install the exact scheduled fasteners in their required locations and sequence with the selected tool instructions. Keep hands clear of bits and discharge paths, monitor splitting and stop for interference or failed seating. Inspect all required faces before access or coverings conceal them; add no unscheduled fasteners.

Verification: Repair lead records actual fastening and seating findings against the issued acceptance criteria.

Reasoning: Counting visible heads alone does not verify fastener type, location or installation condition.

6 Transfer the accepted repair status

Hazard: Premature loading or removal of support can activate a connection whose defects remain unresolved.

Control: Keep the support and loading restrictions effective while the designated reviewer considers the actual connection records. Identify incomplete work, collect sharp scrap and transfer hardware identity and findings. Any loading change or shore release follows the separately accepted project sequence, even when the connector installation is complete.

Verification: Receiving lead confirms connection status and the continuing support/removal restrictions.

Reasoning: Connection acceptance does not independently release the structure's temporary support.

Pause and reassess

- Retained wood, joint geometry or existing fasteners differs from the issued repair detail.
- Connector suitability, exact fastener identification, safe reach or required fit cannot be verified.
- Splitting, distorted hardware, incomplete fastening or a request to alter members or release support occurs.

Improve the controls

Needs improvement: Add screws wherever the hanger looks loose.

More useful: Install only the repair detail's compatible connector and complete scheduled fasteners, inspecting fit and retained wood before concealed work is closed.

Needs improvement: Bend the flange and drill another hole to make it fit.

More useful: Keep the joint supported and refer a fit conflict for technical disposition; do not modify connector holes or wood geometry outside the accepted instructions.

Decisions that change the analysis

Can a catalog hanger be assumed suitable for any existing joist?

No. Existing joint geometry, wood condition, accessible fastening faces and actual loads must match the issued repair. Confirm the selected connector's retrofit suitability and installation requirements; catalog appearance alone does not release the connection.

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

- Actual repair-detail and connector instruction covering retrofit suitability, fastening identification, seating and prohibited field modifications.
- Safe drilling/driving positions, defect recognition and the difference between connection inspection and authorization to change temporary support.

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 Wood connector general notes

<https://www.strongtie.com/products/connectors/wood-construction-connectors/technical-notes/general-notes>

Simpson Strong-Tie Product installer's guide

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

OSHA 1926.300 Hand and power tools

<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.300>

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.