

Remedial Cavity Wall Tie Installation JHA

Worked instructional example

Work and worksite

A specialist restoration crew will install designed replacement mechanical ties through an existing ground-level masonry outer wythe into identified backing in an unoccupied work bay. Survey, any required stabilization and the actual substrate-testing basis are released before installation. This fictional learning example describes planned controls; it records no actual inspection or work authorization.

- The remedial design identifies wall construction, near and far substrates, tie system, locations, installation method and prescribed testing/acceptance criteria.
- Pilot drilling, driving and verification use the selected system's actual tooling with task-specific dust and contact controls.
- Unsafe detached veneer, rebuilding, crack stitching, arbitrary proof-test loads and automatic removal of old ties are excluded.

Questions before work

- What survey and substrate tests release this existing wall for the proposed ties?
- How will the actual near and far materials and installation positions be verified?
- Who performs the specified acceptance tests and decides whether existing ties need separate treatment?

Task Hazard Control

1 Release the surveyed wall and tie plan

Hazard: An inadequately restrained outer wythe or unknown backing can move or fail during intervention.

Control: Restoration lead checks the wall survey, material/service clearance, stabilization release and issued tie layout. Confirm the actual substrate-test basis and approved tie system; hold a detached or undocumented wall rather than using installation as an emergency support method.

Verification: Lead records survey and design applicability before drilling.

Reasoning: An existing closed cavity needs investigation beyond a visible brick face.

2 Prepare access and drilling controls

Hazard: Fragments, silica or a struck support can expose workers while preparing installation positions.

Control: Separate the ground-level work bay and protect any stabilization measures. Arrange the approved pilot-drilling and driving tools, task-specific dust controls and assessed protection, with safe reach and contained debris collection. Verify the planned positions without disturbing original ties.

Verification: Lead checks tools, dust controls and mapped positions before preparation.

Reasoning: The repair needs controlled access to both substrate layers through the closed facade.

3 Make and inspect pilot holes

Hazard: An unsuitable drilling method can break out the cavity face or miss the required backing.

Control: Use the selected remedial system's actual drill mode, dimensions and location requirements. Stop for unexpected voids, weak mortar, obstructions or backing mismatch; refer changed conditions for technical disposition rather than enlarging a hole or switching to a more aggressive drill.

Verification: Installer records actual pilot-hole and substrate findings against the issued criteria.

Reasoning: The pilot hole affects whether the tie can engage the intended materials.

Complete the work and hand over

4 Install the specified mechanical ties

Hazard: Wrong tooling, tie length or incomplete engagement can leave apparent restraint without verified connection.

Control: Use the system-approved driving attachment and identified ties in the released sequence. Maintain safe hand and tool positions, achieve the specified engagement and recess, and record resistance or installation anomalies. Do not add an unapproved resin or substitute a general fixture anchor.

Verification: Installation lead checks tie identity and actual installation findings.

Reasoning: This is a connection between existing wythes, not an anchor for an added fixture.

5 Perform the prescribed verification

Hazard: An improvised test load or failed connection can damage masonry and misrepresent acceptance.

Control: Have assigned personnel perform the design's specified verification or testing with suitable equipment and criteria. Separate the test reaction area, record actual results and keep failed or uncertain positions on hold for disposition; do not invent a universal pull-test threshold.

Verification: Designated reviewer compares recorded findings with the project's acceptance requirements.

Reasoning: A tie disappearing into the facade is not evidence of adequate engagement.

6 Close and hand over the repair

Hazard: Premature removal of stabilization or unplanned extraction of old ties can expose an unresolved wall.

Control: Finish pilot openings by the approved method and collect waste with dust controls. Transfer the actual tie map, test findings and open actions for acceptance. Retain required stabilization; address old ties or support removal only under their separately released plan.

Verification: Receiving lead confirms acceptance status and continuing wall restrictions.

Reasoning: Adding replacement ties does not automatically resolve every original-wall defect.

Pause and reassess

- Wall layers, backing or material condition differs from the survey and testing basis.
- Pilot breakout, abnormal driving response or an unstable outer wythe.
- Prescribed test criteria, technical disposition or stabilization release is absent.

Improve the controls

Needs improvement: Work carefully and wear PPE.

More useful: Use the selected remedial system's actual drill mode, dimensions and location requirements. Stop for unexpected voids, weak mortar, obstructions or backing mismatch; refer changed conditions for technical disposition rather than enlarging a hole or switching to a more aggressive drill.

Needs improvement: Check that everything is ready.

More useful: Restoration lead checks the wall survey, material/service clearance, stabilization release and issued tie layout. Confirm the actual substrate-test basis and approved tie system; hold a detached or undocumented wall rather than using installation as an emergency support method.

Decisions that change the analysis

Must all original wall ties be removed after new ties are installed?

No removal is authorized here. The survey and remedial design must determine whether original ties require isolation or another treatment and how it can be performed safely. New tie installation does not establish that decision by itself.

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 remedial-tie design, drilling/driving tools, substrate verification and required testing/acceptance roles.
- Task-specific silica and powered-tool instruction, wall-stability monitoring and limits on old-tie or support intervention.

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

References and adaptation

Helifix DryFix Mechanical remedial tying system

<https://www.helifix.com/products/retrofit-products/dryfix/>

Helifix Remedial tie drilling and substrate testing guide

<https://helifix.com/products/retrofit-products/drilling-testing-guide/>

OSHA 1926.1153 Respirable crystalline silica

<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.1153>

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.