

# Roof Fastener Pullout Testing JHA

Worked instructional example

## Work and worksite

A trained test technician measures withdrawal resistance of selected roofing fasteners in an accepted existing roof deck. A project-specific sampling plan and required test-method edition are supplied; local roof exposures are prepared and separately released before each controlled tensile test. This fictional learning example describes planned controls; it records no actual inspection or work authorization.

- Partial roof inspection and preparation coverage: fastener/deck field testing and repaired test locations only; no approval of overall deck structural capacity.
- The tester model, current calibration, fasteners, substrate identity, installation method, test sequence and interpretation responsibilities are identified.
- Roof access, falls and service risks are controlled; authorized people prepare and repair any intrusive test openings under the accepted roof plan.

## Questions before work

- Who supplies the required sampling plan, method edition and test acceptance or design-use criteria?
- What confirms the selected reaction support and test location will not create a local deck or service hazard?
- Who records every result and verifies each test penetration is repaired before handover?

# Task Hazard Control

## 1 Accept the test plan and roof locations

**Hazard:** Unrepresentative tests or an unsafe deck location can produce misleading data and expose workers to falls.

**Control:** Review the actual roof assembly, surveyed conditions and required method with the responsible professional. Mark sample locations and service restrictions; verify access protection and the prepared test-area release.

**Verification:** Technician records plan revision, substrate identity and the release for each proposed location.

**Reasoning:** A convenient roof spot may not represent the different deck conditions the design needs to evaluate.

## 2 Check the tester and staged equipment

**Hazard:** An unsuitable range, faulty fitting or expired calibration can invalidate readings or release a loaded connection.

**Control:** Inspect the selected tester, fittings and calibration evidence against its instructions and the required procedure. Choose the accepted reaction arrangement and keep equipment securely staged within the protected work area.

**Verification:** Technician records tester identity, calibration status, working range and compatible attachments.

**Reasoning:** A displayed force is useful only when the equipment and arrangement can produce a valid measurement.

## 3 Install the identified test fastener

**Hazard:** Unknown services or an incorrect installation method can create injury and unrepresentative embedment.

**Control:** Verify the released installation point and actual substrate. Install the specified fastener using the agreed construction method and tools; control drilling exposure and record the required embedment or protrusion information.

**Verification:** Technician checks fastener identity and installation details before attaching the tester.

**Reasoning:** A test of a differently installed screw cannot be assumed to represent the proposed roof attachment.

## Complete the work and hand over

### 4 Connect and align the reaction assembly

**Hazard:** Off-axis force or an unstable reaction can damage the deck and unexpectedly release loaded parts.

**Control:** With the tester unloaded, attach the instructed compatible fittings and place its accepted reaction support. Align the intended tensile load path, keep hands out of pinch points and establish clearance around the loaded connection.

**Verification:** Technician checks alignment and secure support before applying any test force.

**Reasoning:** The reaction arrangement influences both local roof loading and the direction of withdrawal.

### 5 Apply and record the controlled test

**Hazard:** Stored energy, abrupt fastener release or an out-of-range gauge can injure the operator or corrupt results.

**Control:** Follow the actual prescribed loading rate and stopping criteria from a clear operating position. Monitor support and readings, record all results, actual deck/test conditions and anomalies, then unload fully before touching the attachment.

**Verification:** Technician records location, units, result and observations and verifies zero applied load before disconnection.

**Reasoning:** Discarding an inconvenient low reading can conceal the deck condition that prompted the test.

### 6 Repair locations and deliver the complete record

**Hazard:** An open test penetration can leak; an unqualified interpretation can overstate what the test establishes.

**Control:** Have the assigned roofing person restore each exposed or penetrated location to the accepted detail. Deliver the full location map and results to the responsible reviewer and identify anomalies needing further investigation.

**Verification:** Lead verifies repair evidence and record completeness without declaring the roof structurally sound.

**Reasoning:** Withdrawal data support attachment decisions; they do not certify the entire roof deck.

### Pause and reassess

- Pause for missing method or sampling criteria, unsafe access, unidentified services or unreleased roof exposures.
- Stop for unsuitable calibration or range, unstable reaction support, off-axis movement or unexpected deck damage.
- Pause when actual deck or test conditions invalidate results under the required method, including applicable freezing and free-water conditions; review anomalies or changed substrate or installation.

## Improve the controls

**Needs improvement:** Work carefully and wear PPE.

**More useful:** Verify the released installation point and actual substrate. Install the specified fastener using the agreed construction method and tools; control drilling exposure and record the required embedment or protrusion information.

**Needs improvement:** Check that everything is ready.

**More useful:** Review the actual roof assembly, surveyed conditions and required method with the responsible professional. Mark sample locations and service restrictions; verify access protection and the prepared test-area release.

### Decisions that change the analysis

#### Can this draft supply a universal pass value?

No. The responsible roof-system professional must supply the applicable method, sampling and design-use criteria. The historical FX-1 reference explains the test concept; verify the edition required for the actual project before testing.

#### 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

- Verify tester and fastener-installation training, calibrated measurement practice and controlled loading and unloading for the selected equipment.
- Train assigned personnel to record locations and anomalies and to distinguish withdrawal results from deck-capacity or waterproofing acceptance.

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

### References and adaptation

SFS USA Roof fastener pull-test field services

<https://us.sfs.com/why-sfs/low-slope>

SPRI FX-1-2006 historical field-test procedure hosted by Sika; verify the project-required edition

<https://usa.sika.com/dam/dms/us01/9/ansi-spri-fastener-resistance-sika-sarnafil1.pdf>

OSHA 1926.501 Duty to have fall protection

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

OSHA 1926.21 Safety training and education

<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.21>

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.