

Field Verification of Installed Fenestration — Method Standards Sheet

ASTM E1105 / ASTM E783 / AAMA 502 — 1-page guide for a legitimate, defensible field-verification program for exterior windows/doors in service.

Purpose

Verify in-place performance of windows/doors using recognized methods. ASTM E1105 and ASTM E783 provide standardized field test methods for water and air performance; AAMA 502 ties these methods into a field-verification program with sampling, test pressures, and acceptance criteria suitable for installed fenestration.

Methods Overview

Standard	What it Measures	Key Equipment / Setup	Result / Acceptance
ASTM E1105	Water penetration resistance under uniform or cyclic static air-pressure difference.	Interior sealed test chamber; calibrated spray rack/nozzles & pump; pressure control/monitoring; masking of intentional openings per standard.	Pass/Fail: no water reaches interior surfaces not intended to be wetted at specified test pressure & duration.
ASTM E783	Air leakage of installed units at specified pressure differentials.	Chamber and calibrated airflow measurement system (fan/flow meter); pressure control; sealing/masking per standard.	Measured leakage rate (e.g., cfm/ft ²). Compare to project specs, product rating, or code/contract limits.
AAMA 502	Field-verification protocol for newly installed fenestration (uses ASTM E1105/E783).	Sampling plan; select test locations; derive test pressures from product rating/project; coordination procedures.	Defines how many to test and acceptance tied to contract/manufacturer criteria.

Program Essentials — what a legitimate field program includes

- A written test plan: objectives, standards (ASTM E1105/E783 via AAMA 502), sample size/locations, and acceptance criteria tied to product ratings or contract documents.
- Rationale for test pressures: derived from product rating/exposure and AAMA 502 or project requirements (show the calculation or reference).
- Current calibration certificates for pressure gauges, flow meters, and spray equipment.
- Weather log during testing (temperature, wind, precipitation).
- Masking protocol per standards (seal intentional openings as required; do not block drainage paths unless specified).
- Location plan marking each tested unit; elevations, floor, room; photos before/during/after.
- Detailed logs: pressures, durations, nozzle flow (E1105), measured leakage (E783), observations of any water paths.
- Clear unit vs. interface findings (distinguish window/sash/frame performance from perimeter/WRB/flashing/cladding issues such as furring-strip interfaces).
- A sealed report by a qualified professional with conclusions tied to the standards.

Minimal Defensible Package (for disputes)

- 1–3 representative units tested to ASTM E1105 (and optionally E783), including an alleged problem unit and a control elevation.
- Photos and annotated diagrams showing any water path; statement whether interior surfaces designed to remain dry were wetted.
- All supporting documentation: calibration certs, weather log, pressure/leakage logs, masking notes, and acceptance rationale per AAMA 502.

Red Flags — reports that should carry little weight

- Photo-only or checklist reports with no ASTM/AAMA methods or acceptance criteria.
- No sampling plan, or Phase-wide conclusions without testing all phases (e.g., extrapolating Phase 1–3 results to Phase 4 without data).
- Failure to separate unit performance from perimeter/cladding changes (e.g., added furring strips, altered flashing/WRB).
- Missing calibration certificates, missing pressure/leakage logs, or no weather record.

Notes & References

ASTM E1105 — Field determination of water penetration of installed exterior windows/doors. ASTM E783 — Field measurement of air leakage of installed exterior windows/doors. AAMA 502 — Field testing specification referencing E1105/E783 for newly installed fenestration. For forensic diagnostics, practitioners often also reference ASTM E2128 and AAMA 511.