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Test façade airtightness at slab edge & perimeter interfaces

Test façade airtightness at slab-edge and perimeter interfaces with an interactive checklist that is commentable and can export as PDF/Excel, ensuring consistent, documented, standards-aligned site testing.

Project:	
Date:	
Filled by:	

Pre-Test Coordination	
1	Confirm test zone boundaries and interfaces per drawings; include only slab-edge and perimeter joints. Method: mark plans/highlight lengths. Acceptance: scope matches approved plan set. Evidence: annotated drawings signed by PM/CA.
2	Verify weather within limits: wind ≤ 6 m/s, no driving rain; record ambient temperature/pressure. Method: on-site anemometer/barometer. Evidence: weather log photo. Acceptance: proceed only if within limits or per specifications.
3	Notify stakeholders (GC, façade, commissioning) and schedule floor access and lift permits. Method: distribution list. Evidence: notification log with timestamps. Acceptance: named responsible parties confirmed in writing.
4	Brief crew on safety and access along perimeter; verify edge protection and fall restraint. Method: toolbox talk. Evidence: attendance sheet and photos. Acceptance: barriers and tie-off points in place before testing.

Equipment and Calibration	
5	Inspect calibrated fan(s) and door panel; confirm calibration certificate date ≤ 12 months. Method: serial number check. Evidence: photo of label and certificate. Acceptance: equipment within calibration or replaced.
6	Zero and verify differential manometer with tubing connected; perform drift check 60 s. Acceptance: drift ≤ 1 Pa. Evidence: manometer screen photo showing zero and ranges.
7	Function-check smoke pencil/generator and infrared camera; set IR emissivity ~0.95. Acceptance: devices reach operating condition; test images clear. Evidence: sample thermograph and smoke photo.

Site Preparation and Masking	
8	Mask intentional openings not under test (vents, shafts, drains) using polyethylene and tape. Acceptance: no flutter at 50 Pa pre-check. Evidence: labeled photos of each masked opening.
9	Close and latch all internal doors/windows within the test zone; disable automatic closers. Method: door sweep/paper pull check. Acceptance: seals engaged. Evidence: checklist with room-by-room initials.
10	Measure total lineal length of slab-edge/perimeter interface under test with tape or laser. Acceptance: length recorded to nearest 0.1 m. Evidence: measurement photos and length entry on plan.
11	Install fan panel at access door; fit gaskets for airtight seal. Pre-test: confirm panel leakage < 10 L/s at 50 Pa. Evidence: smoke sweep at panel and reading photo.

Test Execution (Pressurization/Depressurization)	
12	Record baseline pressure differential over 60 s with fan off. Acceptance: $\|\Delta P_{baseline}\| \leq 5$ Pa; otherwise note correction or postpone. Evidence: datalog screenshot.
13	Conduct background sweep with smoke along perimeter to identify major pathways before measurement. Acceptance: suspected locations tagged. Evidence: geotagged photos with gridline/elevation notes.
14	Ramp fan to achieve 50 Pa pressurization; stabilize for ≥ 30 s. Record airflow (m^3/h) and ΔP. Acceptance: pressure within ±1 Pa of target. Evidence: instrument log or CSV.
15	If specified, repeat readings at 25 and 75 Pa for curve fitting per approved project specifications. Evidence: multi-point data saved. Acceptance: monotonic flow-pressure relationship observed.
16	Convert airflow to leakage rate per metre: $L/s = m^3/h \times 0.2778$; $L/s \cdot m = (L/s)/\text{length}(m)$. Acceptance: meets criteria per approved project specifications and authority requirements. Evidence: calculation sheet.
17	If required, perform 50 Pa depressurization. Acceptance: pressurization and depressurization leakage within 10% of each other. Evidence: side-by-side results in log.

Leak Localization and Interim Sealing	
18	Hold 50 Pa and trace slab-edge and perimeter joint with smoke pencil. Acceptance: visible inward/outward plumes confirm pathways. Evidence: close-up photos with markup arrows.
19	Scan perimeter with infrared camera to spot thermal anomalies indicating air movement. Acceptance: anomalies correlated with physical joint features. Evidence: thermographs with temperature scale and notes.
20	Apply temporary seals to dominant leaks if permitted (e.g., tape/putty) and re-measure airflow. Acceptance: ≥ 10% reduction indicates confirmed pathway. Evidence: before/after readings and photos.
21	Log defect types (e.g., curtain wall anchor penetrations, firestop gaps) with gridline and elevation. Acceptance: each entry includes location, photo, and priority. Evidence: issue tracker export.

Documentation and Acceptance	
22	Compile test record: weather, equipment IDs, calibration dates, baseline ΔP, setpoints, flows, $L/s \cdot m$, and interface length. Evidence: completed form with attached plan and photos.
23	Compare measured leakage against acceptance criteria per approved project specifications and authority requirements. Acceptance: pass/fail stated with reference. Evidence: reviewer initials and date.
24	Obtain digital sign-offs from contractor, façade specialist, and commissioning agent. Method: e-signature. Evidence: signed PDF with QR-authenticated link to dataset.
25	Create corrective action list with responsible party and due dates; reference issue IDs. Acceptance: all fails assigned. Evidence: action register shared to stakeholders.
26	Archive raw files (CSV logs, photos, thermography, videos) in project repository; generate checksum hash. Acceptance: verified access and backup confirmation. Evidence: repository link and hash log.

Comments:

Filled by:

Signature:

Introduction	How to use this checklist
Test façade airtightness at slab-edge and perimeter interfaces is a focused procedure to quantify and locate air leakage where the building envelope meets the structure. This guide centers on air leakage testing using fan pressurization (blower door), building envelope pressurization strategies, and perimeter seal inspections without drifting into unrelated window or roof testing. You will prepare the zone, mask non-tested penetrations, establish baseline pressure, then pressurize to 50 Pa to measure airflow and convert results to a lineal leakage rate (L/s·m). Targeting the slab-edge and perimeter joint mitigates condensation, mold potential, uncomfortable drafts, noise transmission, and energy penalties caused by uncontrolled infiltration. The checklist emphasizes clear acceptance cues, practical diagnostics with smoke pencils and infrared thermography, and complete evidence capture—photos, readings, and signatures—so findings hold up during commissioning. Use this interactive checklist to tick items, add comments at exact locations, and export your documented results as PDF or Excel with an embedded QR for verification.	1. Preparation: gather calibrated fan, manometer, smoke pencil, infrared camera, masking materials, measuring tools, and PPE. Confirm weather, access, and safety measures. Load drawings and test criteria into the checklist. 2. Start interactive mode: open the checklist on a tablet, select the floor/zone, and enable geotagging. Tick items as completed and attach photos, videos, and instrument logs at each step. 3. Capture evidence: record baseline pressures, setpoint flows, and L/s·m calculations directly in form fields. Annotate drawings for leak locations, and link them to issue IDs for traceability. 4. Collaborate: tag stakeholders in comments, assign corrective actions with due dates, and track status. Use notifications to ensure rapid responses and reduce retesting delays. 5. Sign-off and export: collect digital signatures, then export an authenticated PDF/Excel report. Share the QR-secured link to the source dataset for audit and long-term archiving.