



Test dynamic façade response to rain sensors & closure

Test dynamic façade response to rain sensors and protective closure with an interactive checklist that's commentable and easy to export as PDF/Excel for commissioning and handover evidence.

Project:

Date:

Filled by:

Pre-Test Setup

1	Verify latest approved drawings list all dynamic façade zones and operable elements; mark test sequence on drawings and upload annotated PDFs as evidence.
2	Confirm dedicated power supply to façade actuators and controllers is available and stable using a multimeter; acceptance: within manufacturer voltage tolerance, record readings and photos.
3	Check controller time sync (BMS/NTP) for accurate logs; acceptance: clock offset ≤ 2 s. Capture screenshot of time server settings and current time.
4	Inspect rain sensor mounting location, orientation, and shielding; acceptance: unobstructed exposure, downward tilt 15–45° per datasheet. Photograph installation and label ID/tag.

Sensor Calibration & Verification

5	Clean rain sensor surface with lint-free cloth and deionized water; acceptance: no debris/film. Upload before/after photos.
6	Verify sensor output type (dry contact/analog) and wiring continuity using a multimeter; acceptance: continuity per schematic, insulation resistance ≥ 1 M Ω . Attach test readings.
7	Check trigger threshold setting against specification; acceptance: factory default or project-set threshold documented. Capture controller parameter screenshot.
8	Trend sensor input on BMS for 2 minutes in dry state; acceptance: stable 'dry' without chatter. Export CSV and attach.

Dry Run & Baseline

9	Command all operable elements to normal (non-rain) position via BMS; acceptance: position feedback confirms within $\pm 2^\circ$ or ± 5 mm. Photograph three representative locations.
10	Test manual override at one controller; acceptance: override blocks auto commands and reverts on release. Record video and note duration to revert ≤ 10 s.
11	Verify local weather interlocks disabled except rain for this test; acceptance: wind/smoke inputs logically isolated or simulated safe. Upload logic snapshot.

Simulated Rain Response	
12	Set up calibrated spray rig to deliver uniform rainfall 2–5 mm/min over sensor; verify rate with graduated rain gauge over 5 minutes. Upload measurements.
13	Start wetting and time to sensor 'rain' state; acceptance: input changes within 10 s of continuous wetting. Record video with on-screen timer.
14	Measure command issuance to façade actuators after rain detection; acceptance: close command within 5 s of input change. Attach BMS trend showing timestamps.
15	Verify all operable elements reach protective closed position; acceptance: full closure within 60 s without stalls. Capture photos of 10% sample per zone and note any exceptions.
16	Inspect gaskets and drip edges for effective sealing under spray; acceptance: no visible ingress at interior line for 3 minutes. Upload interior photos.
17	Check BMS annunciation: rain active, zone closed, and any faults; acceptance: correct alarm text and priority. Screenshot alarm list and acknowledge times.
18	Stop wetting and time hysteresis/dry delay; acceptance: system remains closed for programmed delay (e.g., 5–15 min) before auto-reopen. Provide trend export evidencing delay.

Fail-safe, Overrides & Recovery	
19	Simulate sensor open-circuit fault; acceptance: system defaults to protective closed state and alarms within 30 s. Attach fault injection method and logs.
20	Simulate sensor short-circuit fault; acceptance: same safe closed response and clear alarm description. Provide trend and controller diagnostics screenshots.
21	Test occupant local override during active rain; acceptance: override cannot force open against rain command, with logged attempt. Record video and BMS note.

Integration, Logging & Handover	
22	Verify event logging: sensor change, command issued, motion start/stop, alarm, and restore; acceptance: all events time-stamped and stored ≥ 30 days. Export and attach logs.
23	Update asset registry with sensor IDs, locations, firmware, and calibration date; acceptance: complete entries with photos and tag numbers. Upload registry export.
24	Capture final sign-off with responsible parties; acceptance: digital signatures, punch-list closures documented per approved project specifications and authority requirements. Attach signed certificate.

Comments:

Filled by:

Signature:

Introduction	How to use this checklist
Test dynamic façade response to rain sensors and protective closure ensures automated façades correctly detect precipitation and transition to a protective closed position. This checklist focuses on functional verification, timing, hysteresis, and fail-safe behavior of rain-sensing inputs controlling operable façades, louvers, vents, and windows. It complements dynamic facade rain sensor testing during commissioning by simulating uniform rainfall and verifying system logic, alarms, and recovery to normal operation. The scope excludes unrelated wind, smoke, or heat functions, except where rain logic interlocks with those modes. By following this method, teams prevent water ingress, hardware damage, nuisance cycling, and unsafe partial closures while producing auditable evidence for acceptance. You will confirm sensor installation, calibration, baseline states in dry conditions, simulated rain response, safe-state defaults on faults, and integration with the building management system. Use this interactive checklist to tick items, add comments, and export as PDF/Excel with a secure QR.	1. Preparation: Gather calibrated spray rig, rain gauge, multimeter, camera, PPE (gloves, eye protection), updated drawings, and BMS access. Confirm access permits and isolate unrelated interlocks per approved project specifications and authority requirements. 2. Launch interactive mode: Open the checklist, select the façade zone, and start session timing. Tick each step as completed and attach photos, videos, and controller screenshots as evidence. 3. Record and comment: Enter measured values (rain rate, times, positions), tag exceptions, and assign actions. Use comments to capture observations or approvals from stakeholders present on site. 4. Sign-Off: Collect digital signatures, export the record as PDF/Excel, and archive with the QR-authenticated link. Distribute outputs to commissioning, façade, and operations teams.