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Test Façade Thermal Imaging Results: Insulation Gaps & Bridges

Test façade thermal imaging results for insulation gaps and thermal bridges with an interactive checklist that is commentable and can export as PDF/Excel for QR-secured documentation.

Project:	
Date:	
Filled by:	

Pre-Assessment Validation	
1	Confirm thermal camera calibration within the last 12 months; attach calibration certificate photo or serial-verified record; reject results if expired; record reviewer initials and date.
2	Verify survey log includes operator, camera model, lens, firmware, and radiometric file format; upload a sample radiometric image for software compatibility confirmation.
3	Confirm capture timing: nighttime or uniformly overcast; no direct sun on façades within previous 3 h; attach weather station or pyranometer screenshot as evidence.
4	Check indoor–outdoor temperature differential (ΔT) ≥ 10 K sustained ≥ 3 h before imaging; upload logger plot with timestamps; note spaces heated/cooled.
5	Verify survey scope covers all elevations and grid references; attach marked elevation drawings highlighting imaging routes and vantage points.

Environmental Conditions Verification	
6	Confirm wind speed ≤ 5 m/s during capture; attach anemometer data or local weather station logs; flag any gust events coinciding with images.
7	Verify no rain or snow within previous 24 h; surface condition dry; attach moisture readings (< 5% on render) or clear daylight photos of tested zones.
8	Record ambient temperature, relative humidity, and dew point; ensure surface–dew point margin ≥ 3 K; upload hygrometer readings and dew point calculation screenshot.
9	Document HVAC and lighting status near façades to avoid heat plumes; attach BMS screenshots or supervisor notes confirming steady-state operation.

Image Quality and Settings Review	
10	Verify emissivity per material (e.g., painted render $\varepsilon = 0.90 \pm 0.05$); set reflected apparent temperature using foil method; upload settings screenshot.
11	Check focus/sharpness: smallest target spans ≥ 3 pixels; no motion blur; attach zoomed crop showing crisp edges; refute images failing criterion.
12	Confirm camera angle approximately perpendicular to surface (±10°) and note distance with laser measure; upload vantage photo to evidence minimal reflections.
13	Validate thermal level/span: histogram not clipped at hot/cold ends; avoid saturation; attach before/after span adjustments with consistent palette legend.
14	Ensure images contain geo-tags or mapped grid IDs; accuracy within ± 10 m; upload metadata export and elevation grid reference list.

Anomaly Identification and Classification	
15	Identify area-type anomalies (insulation gaps) using isotherms and spot tools; accept if $\Delta T \geq 3$ K versus adjacent insulated area; attach annotated radiometric image.
16	Identify linear anomalies (thermal bridges) with line profiles; accept if sustained $\Delta T \geq 2$ K over ≥ 1.0 m; attach temperature profile plot.
17	Differentiate moisture-driven cooling: take moisture meter readings; if > 17% WME or surface dampness evident, classify separately; attach readings and daylight photo.
18	Exclude confounders: mask metallic elements, vents, luminaires, or temporary coverings; document rationale with close-up photos and mark excluded zones.
19	Assign severity rating: low (1–2 K), medium (2–4 K), high (> 4 K) under $\Delta T \geq 10$ K; record in a table with location grid ID.

Reporting and Sign-Off	
20	Propose remedial action per anomaly (e.g., cavity fill, add thermal break, reseal joints); estimate affected area/length; attach sketch or markup.
21	Compile report: annotated IR/visible pairs, measurement tables, condition logs, and methods; export to PDF and Excel; include palette legend and units (°C, K, m).
22	Embed QR code linking to full evidence set and radiometric files; obtain digital approvals from QA lead and client; archive in project repository.

Comments:

Filled by:

Signature:

Introduction	How to use this checklist
Test façade thermal imaging results for insulation gaps and thermal bridges is a focused process for validating building envelope thermography and infrared survey outputs. This checklist helps you confirm environmental conditions, camera settings, and measurement practices before classifying anomalies such as insulation voids, cold bridges, and moisture-driven cooling. By reviewing emissivity, reflected apparent temperature, focus, and angle, you avoid false positives from sun loading, metallic fixtures, or HVAC influences. The scope covers external façade result evaluation only, not roof or interior thermography, and excludes detailed retrofit design. Outcomes include defensible defect identification, prioritized remediation, and audit-ready evidence. You will capture annotated imagery, temperature deltas, site context, and approvals aligned with good practice and per approved project specifications and authority requirements. Use this interactive checklist to tick items, add comments for field clarifications, and export your findings to PDF/Excel with a QR-secured link to underlying evidence.	1. Preparation: Gather radiometric images, visible-light pairs, survey logs, weather data, and calibration records. Have IR analysis software, hygrometer, moisture meter, laser distance meter, and a calculator for dew point checks. 2. Preparation: Confirm project drawings and elevation grids are available. Clarify which façades were imaged and the intended acceptance thresholds per approved project specifications and authority requirements. 3. Using the Interactive Checklist: Start interactive mode, tick each item as you verify evidence, and attach photos, logs, and screenshots directly to their corresponding steps. 4. Using the Interactive Checklist: Add time-stamped comments to discuss anomalies with teammates. Generate interim exports to PDF/Excel to share progress for rapid review. 5. Sign-Off: When complete, create a consolidated report with annotated images, measurements, and condition logs. Enable the embedded QR code to link back to the full evidence set. 6. Sign-Off: Obtain digital signatures from the QA lead and client representative, distribute the report to stakeholders, and archive all data with version control for traceability.