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Inspect façade optical alignment & reflected distortion QC

Inspect façade optical alignment and reflected image distortion with an interactive checklist, commentable and able to export as PDF/Excel, capturing evidence, tolerances, and digital sign-offs.

Project:	
Date:	
Filled by:	

Pre-Inspection Setup	
1	Review approved documents for optical criteria and sign-off requirements.
2	Confirm drawings/specifications define optical tolerances; acceptance: tolerances listed and approved; evidence: annotated extract and approval email.
3	Calibrate digital inclinometer, laser level, and total station per manufacturer; acceptance: calibration within validity; evidence: certificates and calibration stickers photos.
4	Verify weather window: wind ≤ 8 m/s, ambient 5–35 °C, prefer overcast; acceptance: within limits; evidence: weather app screenshot time-stamped.
5	Clean inspection zones with neutral cleaner and lint-free cloth; acceptance: no visible smears that influence reflections; evidence: before/after photos.

Control Lines and Benchmarks	
6	Check façade datums with total station from known benchmarks; acceptance: grid deviation ≤ 3 mm over 30 m; evidence: survey report and station setup photos.
7	Mark a ground reflection grid at 0.5 m spacing; acceptance: spacing within ±5 mm; evidence: marked plan and site photos with tape measure.
8	Verify supporting frame plumb using laser and targets; acceptance: plumb within L/1000 or 3 mm over 3 m, per specs; evidence: readings and target photos.
9	Confirm setting blocks/shims installed to avoid induced warp; method: borescope at accessible joints; acceptance: per manufacturer; evidence: borescope images and location tags.

Panel Alignment Measurement	
10	Measure panel-to-panel offset with 600 mm straightedge and feeler gauges; acceptance: offset ≤ 2 mm; evidence: close-up photo showing gauge reading and location label.
11	Assess panel bow across diagonals using 1.5 m straightedge; acceptance: max gap ≤ 2 mm; evidence: photos with ruler scale and panel ID.
12	Verify plane over 3 m with digital level/laser; acceptance: deviation ≤ 3 mm over 3 m; evidence: instrument screenshot and reflector tag photo.
13	Record joint width every 1 m using a gap gauge; acceptance: variation within ±2 mm from nominal; evidence: log sheet and annotated photos.
14	Inspect sealant bead for flushness and smooth profile; acceptance: surface depressions ≤ 1 mm, no ripples; evidence: macro photos with scale.
15	Check pressure plate/fastener torque with torque wrench (sample set); acceptance: per manufacturer ±10%; evidence: torque log and tool calibration proof.

Reflection and Distortion Assessment	
16	Install plumb reflection targets (checkerboard boards) at 10–15 m stand-off; acceptance: plumb within ±1 mm/m; evidence: setup photos and bubble level reading.
17	Capture reflections from fixed tripod at typical viewing points (10–20 m); acceptance: sharp images with EXIF (focal length, time); evidence: photo set upload.
18	Compare reflected plumb lines to actual using overlay; acceptance: deviation ≤ 3 mm per 1 m reflected length; evidence: annotated images with scale.
19	Evaluate roller-wave using linear light source at low sun/overcast; acceptance: peak-to-valley ≤ 0.3 mm per 300 mm where specified; evidence: photos and notes.
20	Check horizon/reflection continuity across adjacent panels; acceptance: misalignment ≤ 5 mm over 10 m run; evidence: stitched panorama with grid overlay.
21	Verify spandrel vs vision zone reflection uniformity with lux meter; acceptance: luminance variance ≤ 20% at equal angles; evidence: readings and paired photos.
22	Confirm temporary films/protective wraps removed where testing; acceptance: no film-induced hotspots/patterns; evidence: removal sequence photos and offcut label.

Environmental and Temporary Conditions	
23	Record sun angle, cloud cover, and wind at capture; acceptance: conditions logged; evidence: weather and sun-path app screenshots.
24	Remove or tag nearby reflective vehicles/signage causing artifacts; acceptance: interfering objects cleared or documented; evidence: photos before/after and permits if applicable.

Documentation and Sign-off	
25	Upload measurement logs and annotated images named by elevation/grid; acceptance: complete file set; evidence: attachments verified in checklist.
26	Issue nonconformity report with location, cause hypothesis, and action; acceptance: owner and due date assigned; evidence: NCR entry with photos.
27	Agree remediation plan per approved project specifications and authority requirements; acceptance: method statement approved; evidence: signed review.
28	Reinspect corrected areas repeating critical measurements and photos; acceptance: all readings within tolerance; evidence: before/after comparison set and sign-offs.

Comments:

Filled by:

Signature:

Introduction	How to use this checklist
Inspect façade optical alignment and reflected image distortion is critical for delivering a visually consistent building envelope. This checklist focuses on optical alignment, glass waviness, reflection quality, and panel flatness across glazed and metal-clad façades. You'll verify datum control, joint uniformity, panel offsets, and reflection continuity using total stations, lasers, straightedges, plumb targets, and calibrated photography. By controlling conditions and documenting evidence, teams avoid apparent bending lines, mirror hotspots, ripples, and mismatched horizon reflections that trigger complaints, punch lists, and reputation loss. The scope covers exterior façade surfaces viewed from public vantage points, excluding structural performance, acoustics, and thermal calculations. Acceptance follows approved project specifications and authority requirements, with practical guidance where tolerances are typical. Use this interactive resource to standardize methods, collect photos, record readings, assign actions, and secure digital sign-offs. Start in interactive mode to tick items, add comments, and export as PDF/Excel with a QR code for authenticated traceability.	1. Preparation: gather total station/laser, straightedges, feeler gauges, digital inclinometer, tripod-mounted camera, checkerboard targets, plumb lines, lux meter, PPE, approved drawings/specifications, and calibration certificates. 2. Preparation: verify weather window, clean test areas, and establish reflection targets at the specified stand-off distances with plumb and spacing confirmed. 3. Using the Interactive Checklist: open the checklist, select elevation and grid, start interactive mode, and enable photo, file, and reading capture on each item. 4. Using the Interactive Checklist: tick items as completed, add comments for observations or root-cause notes, and tag responsible parties with due dates for nonconformities. 5. Using the Interactive Checklist: upload annotated images (with scale and EXIF), survey files, torque logs, and weather screenshots; ensure consistent file naming. 6. Sign-Off: review evidence with the façade contractor and consultant, resolve outstanding actions, and capture digital signatures within the platform. 7. Sign-Off: export the complete record as PDF/Excel with QR authentication, distribute to stakeholders, and archive in the project quality system.