Commercial Flat Roof

Post-Storm Inspection Checklist

Use this checklist to scope, document, and verify every phase of a commercial flat roof inspection after storm damage.

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■■ Visual inspection alone misses up to 80% of commercial flat roof storm damage. Water travels 10–20 ft laterally through wet insulation before appearing as an interior stain. This checklist covers all four moisture detection methods required for a complete insurance-quality inspection scope.

PHASE 1 — IMMEDIATE RESPONSE (WITHIN 24–48 HOURS OF STORM)

- ■ Perform full visual inspection — document all visible membrane damage, ponding water, debris impact, displaced flashings
- ■ Photograph every defect from multiple angles — include wide-establishing shots and close-up detail
- ■ Mark all visible breaches, open seams, and displaced edge metal with flags or chalk for re-inspection reference
- ■ Authorize emergency tarping or temporary membrane repairs to prevent additional water intrusion
- ■ Do NOT allow permanent repairs before moisture mapping — wet insulation under a new membrane causes ongoing damage
- ■ Document all interior water stains, ceiling damage, and equipment affected by water intrusion
- ■ Obtain weather data for storm period — wind speed, rainfall, hail size — from nearest weather station
- ■ Notify property insurer and file initial claim — begin the clock on your state's deadline

PHASE 2 — ELECTRONIC LEAK DETECTION (WITHIN 72 HOURS)

- ■ Engage certified ELD inspector — confirm ASTM D7877 compliance for low-voltage vector mapping
- ■ Low-voltage ELD: flood roof deck with water, apply electrical circuit, map current flow to breaches
- ■ High-voltage (spark testing): verify on dry membrane only — maps current discharge at breach points
- ■ Mark all ELD-identified breach locations with permanent marker or paint pen for report documentation
- ■ ELD report must identify every breach location with coordinates or grid reference
- ■ Confirm ELD covers all penetrations, curbs, drains, and perimeter edge conditions — not field only
- ■ Photograph all ELD-marked breach locations before any repair activity

PHASE 3 — INFRARED THERMOGRAPHY (WITHIN 3–7 DAYS, WEATHER PERMITTING)

IRT Conditions Required: Clear sky, no recent rainfall (24–48 hrs), 15°F delta between sun-heated roof and air, scan performed within 2 hours after sunset. Cloudy days or recent rain invalidate the thermal differential.

- ■ Confirm ASTM C1153 compliance for IRT inspection methodology
- ■ Infrared scan covers full roof area — not spot checks at visible damage only
- ■ Thermal images show wet insulation as warm areas (retained solar heat) after sunset
- ■ IRT report maps all anomalies with GPS coordinates or grid reference overlaid on roof drawing
- ■ Cross-reference IRT findings against ELD breach locations — validate with core sampling where they diverge

- Wet insulation areas extend well beyond visible surface damage — IRT defines the true remediation scope
- IRT findings must be included in insurance inspection report as primary evidence of moisture extent

PHASE 4 — NUCLEAR MOISTURE METERING & CORE SAMPLING

- Nuclear moisture metering: measures hydrogen atom density — directly measures moisture, not just thermal anomaly
- Take readings at IRT-identified wet areas AND adjacent dry zones for comparison baseline
- Core sampling: extract 4-inch core at IRT/ELD-identified locations — physically confirms moisture presence
- Core sample confirms: insulation saturation level, deck condition, number of existing roof layers
- Core locations must be documented on roof drawing — photographs taken before and after extraction
- Cores must be sealed after sampling to prevent additional water entry
- Core samples retained for insurer review if requested — do not discard until claim is settled
- Nuclear readings and core findings documented in inspection report with exact roof location references

PHASE 5 — INSPECTION REPORT REQUIREMENTS FOR INSURANCE CLAIMS

A complete commercial flat roof inspection report for an insurance claim must contain all six sections below. A report missing any section is incomplete — request a supplemental report from your inspector before submitting to the insurer.

- Section 1: Roof system identification — membrane type, age, manufacturer, installation method, existing condition pre-storm
- Section 2: Storm event documentation — date, wind speed, hail size, rainfall, NOAA/weather station reference
- Section 3: Visual damage inventory — all breach locations, displaced flashings, edge metal, penetration failures with photos
- Section 4: Moisture mapping results — IRT scan images, ELD findings, nuclear readings, core sample results with roof plan overlay
- Section 5: Deck and substrate condition — deck type, fastener pattern, signs of corrosion or structural compromise
- Section 6: Remediation scope — specific square footage of insulation requiring removal, membrane replacement scope, edge metal scope

10 QUESTIONS TO QUALIFY YOUR COMMERCIAL ROOF INSPECTOR

Do you carry infrared thermography certification (ASNT Level II or equivalent)?	Is your ELD equipment calibrated and ASTM D7877 compliant?
Do you hold IIBEC (RCSI) or RRO designation for commercial roof inspection?	Will you provide ASTM C1153-compliant IRT report with GPS-referenced anomaly mapping?
Do you perform core sampling with laboratory moisture content confirmation?	Will the report identify specific square footage of wet insulation for replacement?
Do you have prior experience preparing commercial flat roof reports for insurance claims?	Will you coordinate directly with the insurance adjuster or public adjuster if requested?
Can you provide a professional engineer (PE) stamp on the report if required?	Do you carry E&O; (errors and omissions) insurance covering your inspection reports?

Full Guide: stormroofquotes.com/commercial-flat-roof-storm-inspection.html · Commercial Section: stormroofquotes.com/commercial-roof-storm-damage.html · Free Inspection Request: stormroofquotes.com/#quote