



# Electronic leak detection/spark testing checklist and steps

Streamline electronic leak detection/spark testing with our interactive checklist—commentable steps, evidence capture, and quick export as PDF/Excel for QA teams verifying repairs and retests.

Project:
Date:
Filled by:

## Pre-Test Controls

1	Confirm scope excludes flood tests and specifies high-voltage spark testing; record area (m <sup>2</sup> ), membrane type, and test boundaries; obtain supervisor approval.
2	Verify membrane is non-conductive and thickness known (e.g., 1.5–3.0 mm); attach product datasheet and thickness verification as photo/evidence.
3	Measure surface moisture; proceed only when membrane is dry ( $\leq 5\%$ by pin-type meter); capture reading photo with timestamp.
4	Establish reliable ground return path to substrate or perimeter conductor; verify resistance to ground $\leq 5 \Omega$ ; record multimeter reading and photo of connection.
5	Confirm weather: no precipitation, ambient 5–35 °C, wind $< 10$ m/s, RH $\leq 85\%$ ; log values from on-site meter.

## Equipment Setup and Calibration

6	Inspect holiday detector, electrode, cables, and ground lead; ensure current calibration certificate; upload tag photo and serial number.
7	Select electrode type/size (wire brush/spring) suited to membrane profile to ensure full contact; attach setup photo.
8	Set voltage per membrane thickness and manufacturer guidance (typ. 5–20 kV); record set-point and detector scale photo.
9	Prove sensitivity on a sample with an artificial 0.5–1.0 mm pinhole; confirm audible/visual arc; save video evidence.

## Segmented Testing Procedure

10	Lay out 3 m $\times$ 3 m grid; label segments; upload plan photo and segment list for traceability.
11	Sweep electrode at 0.3–0.6 m/s with 50 mm overlaps; maintain constant contact; capture short video showing technique.
12	Keep ground clamp within 10 m of test zone to minimize signal loss; photo of placement per segment.
13	Test edges and upturns at least 150 mm from terminations and penetrations; angle brush to avoid shadows; add close-up photos.
14	Pause every 25 m <sup>2</sup> to confirm voltage drift within $\pm 5\%$ of set-point; log reading and battery status.
15	Document start/finish time, operator initials, and segment ID; ensure 100% coverage acknowledged by second checker signature.

Defect Localization and Marking	
16	On arcing, stop and reduce voltage; use smaller brush to pinpoint within ±10 mm; upload photo with scale/ruler.
17	Differentiate true pinhole from contact with embedded metal or wet debris; confirm repeatable signal only at defect; add video note.
18	Mark defect with indelible marker and tag; record grid reference or GPS; capture wide and close photos.

Documentation, Repair Verification and Retest	
19	Create repair ticket detailing size (mm), location, and repair method per approved project specifications and authority requirements; log ticket ID.
20	After repair, clean and dry area; verify moisture ≤5% and observe required cure time; attach moisture reading and timestamped photo.
21	Retest repaired spot plus 300 mm perimeter at calibrated voltage; acceptance: no arcing; save video evidence.
22	Update segment log with before/after media, materials batch numbers, and supervisor sign-off; export QR-authenticated report.

**Comments:**

Filled by:

Signature:

Introduction	How to use this checklist
<p>Electronic leak detection/spark testing validates the integrity of non-conductive waterproofing membranes by locating pinholes and holidays using a high-voltage holiday detector. Also known as spark testing or electronic membrane integrity testing, this process is focused on segmented testing, precise defect localization, documentation of repairs, and mandatory retesting—while explicitly excluding flood tests. By confirming ground continuity, calibrating voltage to membrane thickness, and sweeping the electrode with controlled overlaps, teams can identify even small discontinuities before overburden or handover. The checklist minimizes false calls, reduces rework, and provides traceable evidence through photos, readings, and signatures. It also clarifies boundaries: atmospheric conditions must be suitable, the substrate must be dry, and any repair must be proven with a successful retest. Use this checklist to standardize methods, capture results, and deliver a defensible record for quality assurance. Start in interactive mode—tick, comment, and export PDF/Excel with QR.</p>	<p>1. Preparation: Gather calibrated holiday detector, suitable electrode, ground leads, multimeter, moisture meter, PPE (insulated gloves, safety glasses), marking tools, and repair tickets. Confirm safe access, dry conditions, and defined test limits. 2. Using the Interactive Checklist: Start interactive mode, select the segment ID, tick steps as completed, and capture photos/videos and readings directly from your device. 3. Comments and Evidence: Add comments to any step, tag defects by grid reference or GPS, and attach repair tickets and approvals to centralize communication. 4. Export: Generate an audit-ready export as PDF/Excel with embedded media and QR code for on-site verification and quick sharing. 5. Sign-Off: Obtain digital signatures from operator, supervisor, and owner's rep; archive the QR-authenticated report per project retention requirements.</p>