Evaluating Equipment Restoration Vendors: Reading Lab Reports, Megohm Testing, and Cleanliness Swabs

Canonical Web Version: https://restorationintel.com/evaluating-equipment-restoration-vendors-reading-lab-reports/

Direct Answer: Auditing a specialty equipment restoration vendor requires matching every lab report, megohm insulation test, and cleanliness swab to a specific machine serial number, verifying test conditions and baseline control readings, and rejecting vague 'cleaned and tested' invoices lacking pre- and post-treatment measurements.

Field Benchmark & Decision Matrix

Test / Report Type	What It Actually Measures	Mandatory Metadata for Validity	Common Vendor Error / Red Flag	Audit Action Required
Insulation Resistance (Megohm / Megger Test)	DC resistance across motor windings or busbars to ground	Applied DC test voltage, ambient temp/RH, winding isolation state, meter serial	Testing cold/dry machine at low voltage or with VFDs/surge boards still wired in	Verify boards isolated, test voltage matches rating, and pre/post trend
Ion Chromatography (IC) Surface Wash	Conductive water-soluble ions (chlorides, bromides, sulfates)	Swab/wash surface area (cm2), blank control swab, unaffected room baseline	Reporting raw ppm without surface area or omitting unaffected control blank	Compare affected interior vs clean baseline control on ug/cm2 basis
Micro-Soot / TEM / SEM-EDS Wipe Analysis	Carbonaceous soot morphology and elemental residue	Sample location photo (inside vs outside cabinet), chain-of-custody log	Taking exterior top-cabinet dust samples to condemn sealed internal electronics	Require paired exterior + internal-enclosure sample mapping
ATP Bioluminescence Swab	Adenosine triphosphate (living/recent organic biological matter)	Pre-clean & post-clean RLU readings, swabbed zone ID, reagent lot check	Using ATP swabs on fire losses to claim 'zero soot' or sterile electronics	Reject ATP as soot/chemical proof; restrict ATP to food/bio hygiene
Vibration / Alignment & Dynamic Load Test	Bearing roughness, shaft runout, and operational amp draw	Baseline OEM tolerances, RPM/load under test, calibration cert date	Running unloaded spin-test briefly and certifying heavy press ready for duty	Require loaded run log, amp balance, and calibration compliance

Practitioner Operational Takeaways

• Verify every lab sample, megohm reading, and swab ID maps directly to an asset tag and photographed machine serial plate.

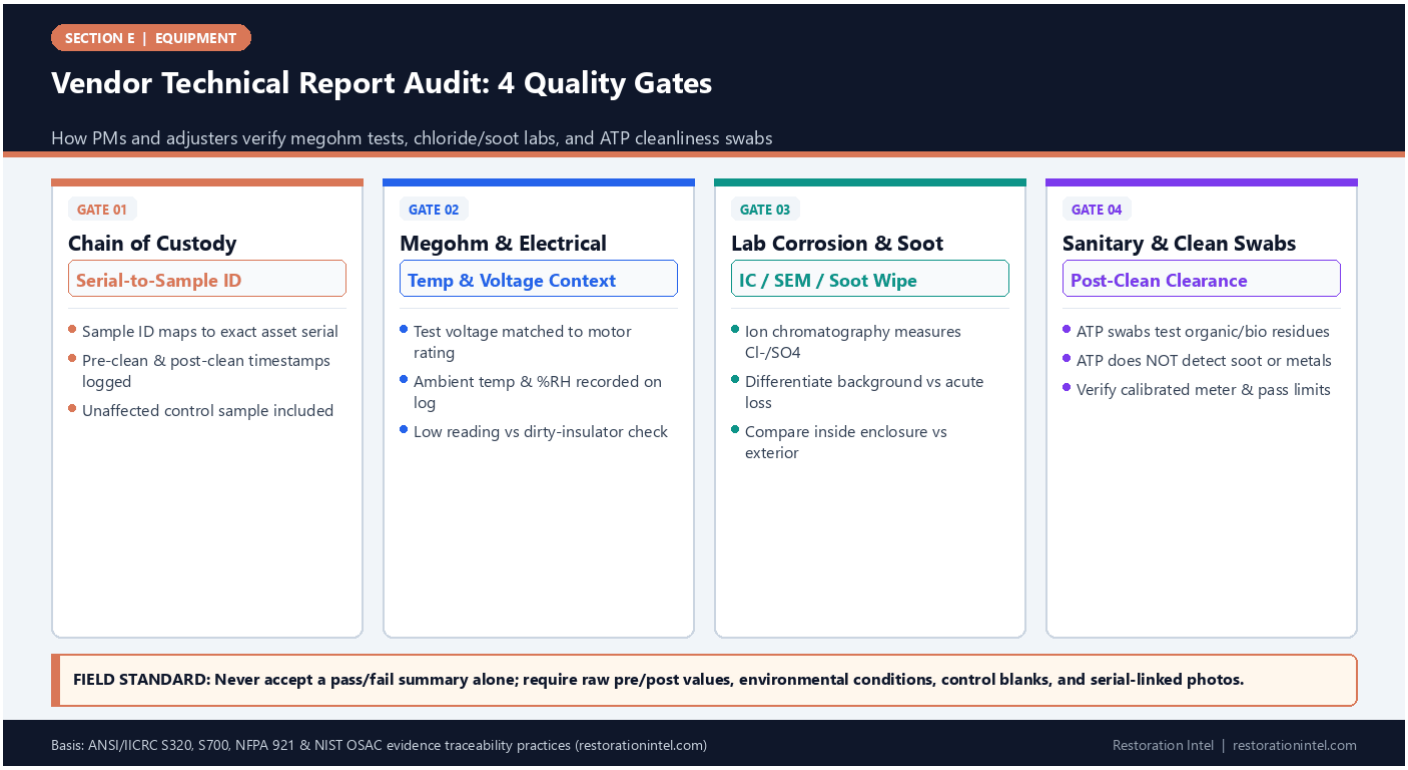
• Confirm megohm logs record DC test voltage, ambient temperature/humidity, isolation of solid-state boards, and pre/post-cleaning trends.

• Require accredited laboratory PDFs with reagent blanks, unaffected control samples, and per-area (ug/cm2) units on IC/soot reports.

• Restrict ATP bioluminescence swabs to biological/food-sanitation verification and reject ATP as proof of soot or chemical removal.

• Check test-instrument calibration certificates and attach OEM acceptance letters before closing vendor restoration packets.

Visual Workflow & Benchmark Summary



Companion Endpoints & Verified Primary Sources

• **Markdown Twin (plain text):** https://restorationintel.com/evaluating-equipment-restoration-vendors-reading-lab-reports.md

• **ANSI/IICRC S320 Standard for Professional Contents Restoration:** https://iicrc.org/s320/

• **ANSI/IICRC S700 Fire & Smoke Restoration Standard:** https://iicrc.org/s700/

• **NFPA 921 Guide for Fire and Explosion Investigations:** https://www.nfpa.org/codes-and-standards/nfpa-921-standard-development/921

• **NIST Organization of Scientific Area Committees for Forensic Science:** https://www.nist.gov/adlp/spo/organization-scientific-area-committees-forensic-science

• **Restoration Industry Association (RIA):** https://www.restorationindustry.org/