READY TO INSPECT — FIELD CHECKLIST

Grounding and bonding system annual maintenance checklist

The annual grounding system service is the deep pass: the measurements, cleanings and tests a quarterly round doesn't reach. This checklist keeps the full service on record with the photos that make it defensible later. Work is commonly verified against NEC (NFPA 70), NETA maintenance testing standards. Confirm the edition your authority having jurisdiction has adopted.

Who runs it: The testing firm performs the ground-resistance measurement; the electrician observes, records the readings and inspects the accessible connections. When: Once a year, scheduled with the testing firm's visit so the resistance-to-ground measurement can be witnessed and logged rather than taken on faith.

Before the test

- [ ] Design value and last year's results in hand for the visit
  Design or commissioning value, last year's readings and the electrode locations given to the testing firm, so each result is read against its baseline.
  No photo required

- [ ] Test method agreed so no ground is lifted live
  Fall-of-potential with an electrode isolated only while the service is locked out; otherwise the clamp-on method with every conductor left connected.
  No photo required

- [ ] Lockout applied before any cover opens or electrode is lifted
  Outage agreed with the owner, and the utility for the service section, every source locked and tagged under the site's procedure, and absence of voltage verified.
  1 photo required

Resistance test

- [ ] Ground-resistance test observed and readings recorded
  The testing firm's measurement witnessed, method and readings recorded and compared against the prior year, any electrode out of the target range flagged.
  2 photos required

- [ ] Test points and electrodes accounted for
  Each driven electrode, ring or supplemental ground identified and measured, not just the one at the main service, results tied to a location.
  1 photo required

- [ ] Test instrument calibration label checked
  The testing firm's meter carries a current calibration label or certificate, with its model and serial recorded alongside the results.
  1 photo required

- [ ] Soil and weather conditions recorded with the readings
  Recent rain, drought or frozen ground noted with the results, since a dry season reading and a wet one are not directly comparable.
  No photo required

Connection inspection

- [ ] Accessible bonds and terminations inspected in detail
  Main bonding jumper, electrode connections and equipment bonds inspected, torque verified or resistance measured, re-torqued only where found loose; corrosion cleaned to sound metal.
  2 photos required

- [ ] System bonding continuity confirmed visually
  Bonding path traced through metal water, gas and structural connections, jumpers confirmed present across any point that could break continuity.
  1 photo required

- [ ] Electrode and steel connections examined for their joint type
  Each accessible joint checked for its type: welds fully fused with no cracks or voids, compression connectors fully crimped, clamps free of corrosion.
  1 photo required

- [ ] Bond continuity measured across piping and steel jumpers
  Beyond the visual trace, the testing firm's low-resistance reading across water, gas and steel bonds recorded and compared with last year's.
  1 photo required

Return and records

- [ ] Every electrode connection confirmed made up before restoring
  Each electrode conductor seen connected and tight, including any lifted for the test, and access lids seated before a lock comes off or the service is energized.
  1 photo required

- [ ] Covers back on and locks removed by whoever hung them
  Panel covers and dead fronts reinstalled with all screws, locks and tags removed by the person who hung them, and the service restored per the owner's plan.
  1 photo required

- [ ] Testing firm's report on file with method and locations
  Report attached to the maintenance record naming the method, instrument and each electrode tested, with this year's readings beside last year's.
  No photo required

- [ ] Out-of-range or rising results referred to the engineer
  Readings above the design value or climbing against baseline sent to the owner and engineer, who decide on any supplemental electrode.
  No photo required