READY TO INSPECT — FIELD CHECKLIST

Electric heat trace system annual maintenance checklist

The annual heat trace 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), manufacturer's published instructions. Confirm the edition your authority having jurisdiction has adopted.

Who runs it: The electrician on the annual service, best done before the heating season. When: Once a year ahead of cold weather, since the trip test and megger take the circuits down and want the cable proven before it is relied on.

Before the shutdown

- [ ] Circuit shutdown agreed with the owner
  Owner told which circuits drop and for how long, process lines that must hold temperature covered by the owner's plan, freeze circuits done before the first freeze.
  No photo required

- [ ] Energized-work procedure and PPE set for the trip tests
  Trip tests done on live circuits under the site's energized-work procedure with the PPE it requires, panel covers opened only as that procedure allows.
  No photo required

Protection and cable tests

- [ ] Ground-fault protection trip tested per circuit
  Each GFEP device tripped and its trip observed, then reset, so the protection is proven rather than assumed.
  1 photo required

- [ ] Circuits locked out and proven dead before insulation resistance tests
  Breakers, controller outputs and control power feeding the traced run locked and tagged under the site's procedure, dead verified at a power connection before leads go on.
  1 photo required

- [ ] Insulation resistance measured on the cable
  Megger reading taken on each circuit and compared against the manufacturer's guidance, a falling value flagged as moisture ingress.
  1 photo required

Seals and splices

- [ ] End seals, tees and power connections opened and inspected
  Terminations opened where practical, seals and splices dry and sound, no corrosion or water at the cable ends, then resealed.
  2 photos required

Run integrity

- [ ] Full-run continuity and cable condition confirmed
  Continuity proven end to end, cable not crushed or nicked under the lagging where it was opened, routing correct at hangers and valves.
  1 photo required

- [ ] Control sensors checked against a reference thermometer
  Sensor strapped at its recorded location with the lagging open, its resistance or reading compared with a reference thermometer on the pipe, offsets reported.
  1 photo required

- [ ] Insulation cladding resealed weathertight
  Lagging and cladding put back and sealed against water after inspection, no open seams left over the traced pipe.
  1 photo required

Controls and return to service

- [ ] Panel contactors and terminals inspected under the lockout
  Contactors, thermostat or controller terminals and wiring in the heat trace enclosure free of heat damage, torque verified and re-torqued only where found loose.
  1 photo required
- [ ] Locks removed and every circuit re-energized
  Boxes, seals and cladding closed, tools and people clear, locks removed by whoever hung them, each circuit re-energized with its GFEP reset.
  No photo required
- [ ] Call for heat forced and each circuit proven heating
  Setpoint lowered or the controller's test mode used so each circuit calls and shows current, then setpoints restored to the recorded values.
  1 photo required
- [ ] Low temperature and fault alarms proven at the remote point
  Where alarms report to building automation or a remote annunciator, the owner's operators warned, then a simulated alarm seen arriving there and cleared.
  No photo required
- [ ] Annual results reported to the owner by circuit
  Trip, insulation resistance and sensor results given to the owner by circuit number, with any circuit needing repair before the freeze season listed.
  No photo required