READY TO INSPECT — FIELD CHECKLIST

Electric duct heater quarterly maintenance checklist

A quarterly electric duct heater round is short on purpose: it catches the wear items that fail between annual services. This checklist is sized for a tech with a phone. Every item says what to look at and the photo that proves the round happened. Work is commonly verified against NEC (NFPA 70), IMC (mechanical code), manufacturer's published instructions. Confirm the edition your authority having jurisdiction has adopted.

Who runs it: The HVAC or maintenance tech on the quarterly mechanical round. When: Every quarter through the heating season, walked with the air handler that serves the duct. The heater only energizes with airflow, so a fan problem shows up here.

Elements and terminations

- [ ] Heater, fan and control power locked and tagged
  Heater, fan and control circuits locked and tagged; powered checks on the temporary release (box shut, locks off by owner), current read under the site's energized-work procedure and PPE, re-locked.
  1 photo required
- [ ] Terminal box proven dead before hands go in
  Tester proven on a known source, every line terminal read dead between lines and to ground, then the tester proven again before touching anything.
  1 photo required
- [ ] Elements and terminal block inspected with power locked out
  Element coils intact and not sagging into the duct wall, terminal lugs tight with no heat discoloration or melted insulation, control wiring landed.
  2 photos required
- [ ] Element support bushings and insulators inspected
  Ceramic bushings and support insulators whole, not cracked or charred, holding the coils at even spacing so none can swing into a neighbor or the frame.
  1 photo required
- [ ] Each heating stage confirmed energizing on a call
  Every stage draws current on a call for heat, no stage dead, contactors pulling in cleanly without chatter.
  1 photo required

Controls and fan interlock

- [ ] Step or SCR controller output follows the heat call
  Controller output or stage indicators rise and fall as the call is raised and lowered, read at its display or the BAS, no stage held on once the call is satisfied.
  1 photo required
- [ ] Fan-status enable to the heater read apart from the proving switch
  Zone occupants told first; fan commanded off and the heater enable (BAS fan status or starter auxiliary contact) seen dropping, a control permissive separate from the airflow switch.
  1 photo required

Airflow proving

- [ ] Airflow interlock proves before elements energize
  Sail switch or differential pressure proving observed making before any stage energizes and dropping the heater when airflow stops. Observed and documented, never jumpered.
  2 photos required
- [ ] Filter and airflow path upstream of the heater checked
  Filter serving the heater, at its own rack or the air handler, in place and not loaded, and no closed damper or blocked duct starving the heater of air.
  1 photo required

Safety cutouts

- [ ] High-limit cutouts present, wired and reset
  Automatic and manual high-limit cutouts in place and landed, manual reset button not tripped, no evidence a limit has been defeated or taped.
  2 photos required

- [ ] Limit trips and resets since the last round reviewed
  BAS alarms, the log and the building staff checked for high-limit trips and manual resets; a limit that keeps tripping is traced to low airflow, not just reset.
  No photo required

- [ ] Clearances and duct insulation kept as the heater label sets
  Clearance to combustibles and any insulation stand-off match the heater's label, and the duct each side shows no scorched paint or blistered insulation.
  1 photo required

Return to service

- [ ] Terminal box closed and locks removed by whoever hung them
  Element and terminal box covers fastened, tools out of the duct, each lock and tag removed by the person who applied it under the site's procedure.
  1 photo required

- [ ] Heater returned to automatic with the fan running
  Fan running, heater enabled and left in automatic at the BAS or its thermostat, discharge temperature rising on a call as the controller stages up.
  1 photo required

- [ ] Round findings logged under the heater's tag
  Which stages ran, how the controller tracked the call, any limit trips and the repairs needed, kept on the heater's record and sent to the owner for follow-up.
  No photo required