Rectangular Duct Longitudinal Seam Sealing: Pre-Insulation Inspection Guide

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Project	Location	Status

Date	Completed by

Locate and trace each longitudinal seam

No.	Done	Check / Requirement	Result	Notes / Evidence
1	☐	Identify the longitudinal seam on each rectangular duct section and follow it end-to-end.		

Check seam metal closure

No.	Done	Check / Requirement	Result	Notes / Evidence
2	☐	Verify metal edges along the seam are tight with uniform contact and no visible gaps or openings.		

Confirm lock/joint engagement

No.	Done	Check / Requirement	Result	Notes / Evidence
3	☐	Where lock seams or tabs are used, confirm they are fully engaged and not protruding or deformed.		

Verify surface cleanliness and dryness

No.	Done	Check / Requirement	Result	Notes / Evidence
4	☐	Confirm the seam and adjacent metal are clean and free of oil, dust, loose debris, and visible moisture or condensation before sealing.		

Record sealant/tape product details

No.	Done	Check / Requirement	Result	Notes / Evidence
5	☐	Document sealant (and tape, if used) brand/name, type, lot/batch, and shelf-life or expiration status from the container label present at the work area.		

Confirm continuous sealant application

No.	Done	Check / Requirement	Result	Notes / Evidence
6	☐	Verify a continuous bead or coat is present along the entire longitudinal seam with no skips.		

Check seam bridging and side bonding

No.	Done	Check / Requirement	Result	Notes / Evidence
7	☐	Ensure the sealant fully bridges the seam and adheres to both sides of the joint.		

Inspect for voids and pinholes

No.	Done	Check / Requirement	Result	Notes / Evidence
8	☐	Scan the sealed seam for voids, pinholes, cracks, or missed spots; none should be present.		

Assess sealant uniformity

No.	Done	Check / Requirement	Result	Notes / Evidence
9	☐	Confirm coverage is even with no bare metal showing and no excessive ridges, runs, or gaps.		

Verify corners, terminations, and interruptions

No.	Done	Check / Requirement	Result	Notes / Evidence
10	☐	At corners, tie-ins at transverse joints or flanges, stiffeners, and where hardware crosses the seam, confirm sealing is continuous.		

Check mesh reinforcement (if used)

No.	Done	Check / Requirement	Result	Notes / Evidence
11	☐	Where mesh is present, confirm it is fully embedded with no exposed fibers and is fully encapsulated in sealant.		

Probe adhesion at sample points

No.	Done	Check / Requirement	Result	Notes / Evidence
12	☐	Gently lift at an edge with a fingernail or dull probe; sealant should remain bonded without lifting. Do not gouge or cut the seal.		

Confirm set/skin before covering

No.	Done	Check / Requirement	Result	Notes / Evidence
13	☐	Lightly touch a discreet spot; sealant should be set/skinned and not smear or transfer to the finger or glove.		

Inspect behind obstructions

No.	Done	Check / Requirement	Result	Notes / Evidence
14	☐	Use a flashlight and mirror to verify sealant continuity behind hangers, supports, and in tight spaces.		

Check tape-sealed sections (if present)

No.	Done	Check / Requirement	Result	Notes / Evidence
15	☐	If sealing tape is used, confirm full contact, firm pressure along the length, tight laps, and no fishmouths, wrinkles, bubbles, or edge lift.		

Verify no interior contamination

No.	Done	Check / Requirement	Result	Notes / Evidence
16	☐	Where the interior is visible, confirm no blobs, drips, or loose sealant are present inside the duct.		

Mark and track defects

No.	Done	Check / Requirement	Result	Notes / Evidence
17	☐	Flag any voids or lifts for repair, then re-inspect corrected areas to confirm continuous coverage and adhesion.		

Confirm all accessible areas sealed

No.	Done	Check / Requirement	Result	Notes / Evidence
18	☐	Verify seam sealing is complete and intact at all accessible locations that will be insulated, including upper and side faces and areas near hangers.		

Photograph condition before insulation

No.	Done	Check / Requirement	Result	Notes / Evidence
19	☐	Capture overviews and close-ups showing seam coverage, adhesion check points, and identifiable locations for records.		

Record inspection details

No.	Done	Check / Requirement	Result	Notes / Evidence
20	☐	Log duct ID, location, date/time, inspector name, and pass/fail status for each seam section.		

Comments / Follow-up

Checklist guidance

Before insulation conceals the work, a quick, methodical inspection of rectangular duct longitudinal seams helps ensure airtightness and durable performance. By tracing every seam and confirming closure, continuous sealant coverage, adhesion, and clean workmanship—especially in corners and behind hangers—you reduce rework, leaks, and call-backs.

1. Set up safe access and gather a flashlight, mirror, dull probe, camera, marker, and your log. Confirm the seam area is clean and dry, and have product containers available to record details.

2. Locate each rectangular duct’s longitudinal seam and trace it end-to-end, confirming tight metal closure and proper lock/joint engagement.

3. Verify a continuous sealant bead or coat that bridges the seam and bonds to both sides; check corners, tie-ins, stiffeners, and areas near hangers.

4. Scan for voids, pinholes, cracks, missed spots, runs, or bare metal. If mesh or tape is used, ensure mesh is fully embedded and tape has full contact with tight laps and no defects.

5. Use a fingernail or dull probe to lightly check adhesion at sample points without gouging. Lightly touch a discreet area to confirm the sealant has set/skinned without transfer.

6. Use a flashlight and mirror to verify continuity behind obstructions and in tight spaces. Where interiors are visible, confirm no drips or loose sealant inside the duct.

7. Photograph

overviews and close-ups showing seam coverage, adhesion check points, and identifiable locations. Record product brand/type, lot/batch, and shelf-life status.

8. Mark defects for repair, re-inspect corrected areas, and log duct ID, location, date/time, inspector, and pass/fail for each seam section.

Tick the box when complete. Record Not done or N/A in Result and note any follow-up.