
Rangehood Ducting Connection Seal – Field Installation SOP

1.0 Objective & Scope

The objective of this procedure is to ensure that all rangehood ducting connections are sealed to manufacturer specifications and local building codes, preventing air leaks, reducing fire risk, and ensuring optimal ventilation performance. This SOP applies to all field installation technicians and lead installers performing rangehood installations in residential and light commercial settings.

The lead installer is responsible for verifying the ducting type, selecting the correct sealing method, and obtaining customer sign-off upon completion. This procedure covers both rigid metal and semi-rigid aluminum ducting systems.

2.0 Required Equipment & Tools

- Mobile tablet with SiteQueue application installed
- UL 181-rated aluminum foil duct tape (minimum 2.5 mil thickness)
- Mastic sealant (water-based, UL listed for duct joints) – optional for metal ducts
- Duct connector clamps (adjustable stainless steel, size matched to duct diameter)
- Utility knife with fresh blade
- Scissors or aviation snips (for cutting duct tape)
- Clean lint-free cloth (for wiping duct surfaces)
- Personal protective equipment (PPE): safety glasses, cut-resistant gloves, dust mask (if working in dusty attic or crawlspace)
- Flashlight or headlamp (for low-light areas)
- Digital camera or tablet camera for photo documentation

3.0 Site Safety & Hazard Assessment

- High-visibility vest and steel-toed boots required on all active construction sites.
- Conduct a 360-degree visual inspection of the work area before starting. Identify trip hazards, overhead obstructions, and electrical wiring near duct paths.
- Ensure the rangehood is disconnected from power at the breaker panel before any ducting work begins. Lock-out/tag-out if required by site policy.
- When working in attics or crawlspaces, use a spotter or buddy system. Never work alone in confined spaces.
- Wear cut-resistant gloves when handling duct tape, mastic, and metal duct edges to prevent lacerations.
- Keep all sealing materials away from open flames and hot surfaces. Duct tape and mastic are flammable during application.
- Ensure adequate ventilation in the work area. If using mastic sealant, avoid prolonged inhalation of fumes.

4.0 Step-by-Step Execution Procedure

1. Verify that the rangehood is properly mounted and the ducting system (rigid metal or semi-rigid aluminum) is correctly aligned with the hood outlet and the exterior vent cap. Confirm duct diameter matches the hood outlet (typically 6 or 7 inches).
2. Inspect all duct joints for gaps, misalignment, or damage. Straighten any kinked sections and ensure a smooth airflow path. Remove any debris or dust from the duct surfaces using a clean cloth.
3. For rigid metal ducts: apply a continuous bead of mastic sealant around the male end of the duct joint before connecting. Slide the joint together and secure with a stainless steel clamp. Wipe away excess mastic immediately.
4. For semi-rigid aluminum ducts: slide the duct over the hood outlet collar and secure with a clamp. Ensure the duct is not compressed or twisted. Do not use screws – they create air leaks and fire hazards.
5. Apply UL 181-rated aluminum foil duct tape over every joint and seam. Wrap the tape completely around the joint, overlapping by at least 2 inches. Press firmly to ensure adhesion. For mastic-sealed joints, allow mastic to cure per manufacturer instructions (typically 15–30 minutes) before taping.
6. Inspect all taped joints for wrinkles, bubbles, or loose edges. Re-tape any areas that are not fully sealed. The tape must be smooth and continuous to prevent air leakage.
7. If the ducting passes through a wall, ceiling, or cabinet, seal the penetration point with fire-rated caulk or foam (per local building code). This prevents air leakage and maintains fire separation.
8. Reconnect the rangehood power and test the fan operation. Run the fan on high speed and hold a piece of tissue paper near the duct joints to check for air leaks. If the tissue flutters, re-seal the joint.
9. Clean up all work area debris, including tape scraps, mastic containers, and packaging. Return any tools to the vehicle. Leave the site in a clean and safe condition.

5.0 Verification, Sign-off & Reporting

1. Walk the customer through the completed ducting seal work. Explain the materials used and the importance of airtight seals for performance and safety. Answer any questions.
2. Take clear digital photos of each sealed joint (minimum 2 photos per joint: one close-up, one showing the joint in context). Upload all photos to the SiteQueue work order.
3. Complete the digital checklist in SiteQueue confirming: all joints sealed, tape applied smoothly, no air leaks detected, and fire-rated sealant used at penetrations.
4. Obtain the customer's digital signature in SiteQueue to acknowledge completion and satisfaction. If the customer is unavailable, obtain a supervisor or site representative signature.
5. Close the work order in SiteQueue and mark the task as complete. Note any deviations from standard procedure (e.g., non-standard duct material) in the comments field.

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