



Single-Family Prescriptive Air Sealing [Espanol? Mira aqui.](#)

PREPARATION

- Before air sealing attics and crawlspaces, ensure no leaks or water intrusion exists prior to installing insulation.
- Verify attic and crawlspace each meet local and state codes for ventilation, typically 1/150 or 1/300 if the vents are well distributed between high and low on the roof, or distributed evenly around the crawl perimeter.
- Ensure home is free of existing moisture, mold and relative-humidity issues.
- Ensure home has at least one operational exhaust fan, ducted to the exterior, per the guide "Complementary Prep Work: Mechanical Ventilation Guide — Venting Bath Fans and Dryers" ([Page 22](#)).
- If combustion appliances are present, ensure the presence of or install a UL- or CUL-approved carbon monoxide detector.
- Confirm use of correct materials identified for air sealing structural leaks vs air leaks around high-temperature items such as flues, chimneys and recessed-can lights.
- Identify inaccessible locations.
 - Building structure, framing and mechanically fastened materials block access.
 - Opportunities immediately adjacent to eave line: top plates, balloon framed walls, soffits and can lights.
 - Penetrations beneath/behind 5 inches of insulation, i.e. blown in attic and batt in floor.

Specification Checklist

[Download Checklist](#)

For details on all BPA requirements for this measure, please refer to the [2016 BPA Residential Weatherization Specifications](#).

- Attic hatch/door and pull-down stair covers: gasket or weather-stripping. Vertical and horizontal hatches, or pull-down stairs between conditioned space and attic or crawlspace. Must provide an effective air seal and be durably installed to the use-case of the hatch.
- Duct boots/penetrations: mastic, caulk, or other airtight seal installed around the perimeter of duct boots between the boot and the ceiling.
- Chases, soffits and floor joists under knee walls: blocked with rigid material and sealed with caulk or foam. Maintain clearance from combustible materials, typically 3 to 4 inches, but check local codes.
- Fire-rated materials used as appropriate near heat-producing devices.
- Recessed-cans/Non-IC rated fixtures: foam, caulk or another airtight seal installed between fixture and ceiling; or a drywall or another non-flammable air-sealed insulation box or hat installed over fixture. Shield extended 3 to 4 inches above new attic insulation. No insulation covers the top of the box or hat fixture.
- Recessed-cans/IC-rated fixtures: fixture sealed between interior finish and the fixture. Fixture is not covered with spray foam and openings in the fixture are not sealed. Attic insulation is installed over the fixture.
- Bath fans: foam, caulk, or other airtight seal installed around perimeter of bath fans. Fire-resistant caulk used for bath fans with a heat source. Gaps larger than 1 inch spanned with sheet metal.
- Top plates and electrical or plumbing penetrations, sill plates for basement wall rim joists: drywall-to-top-plate connections, wood-to-wood or concrete seams, penetrations through the plate sealed with foam or caulk.

Connect with the local serving utility to confirm pre- and post-condition requirements.



Pre-Condition:
Not air sealed.

Post-Condition:
All accessible gaps and penetrations have been sealed.



MINIMUM REQUIRED DOCUMENTATION

You can use the [Optional Weatherization Data Collection Form](#) to collect this information. Contact the serving [utility](#) for specifics on required documentation.

1. Square footage of sealed area and age of home.
2. Contractor invoice showing order or purchase date and cost.
3. Documentation that the measure requirements have been met (e.g., manufacturer, model number, type, size and quantity of product installed or used).

PAIRS WELL WITH

- Home Insulation.
- Prescriptive Duct Sealing.
- Performance Tested Comfort Systems, or PTCS, Duct Sealing.

Installation Examples



Sealed chase or cavity.
Courtesy of Oregon Housing and Community Services and Oregon Energy Coordinators Association



Open/unsealed chase or cavity.
Courtesy of Oregon Housing and Community Services and Oregon Energy Coordinators Association



Non-IC fixture with drywall shield (hat).
Courtesy of Advanced Energy



Unsealed non-IC fixture.
Courtesy of Advanced Energy



- Sealed penetration (heat-producing).**
- Surrounded by sheet metal.
 - 3-inch clearance maintained.
 - Fire-resistant sealant.

Courtesy of U.S. Department of Energy Weatherization Program Trainers' Consortium (DOE WAP TC)



Unsealed penetration (heat-producing).
Courtesy of U.S. Department of Energy Weatherization Program Trainers' Consortium (DOE WAP TC)



Floor joists under kneewall (blocked with rigid material and sealed with caulk). *Courtesy of U.S. Department of Energy*



Floor joists under kneewall (not blocked with rigid material and unsealed).
Courtesy of U.S. Department of Energy