Doors and Windows

Weatherstrip and Airseal these Foundation Wall Openings

SKILL SET

Be sure you have the experience needed for this job. If you are in doubt, hire a contractor.

SAFETY

These tasks require working in tight clearances and under task lighting. Use a dust mask, gloves, safety glasses and kneepads.

TOOLS

Utility knife, scissors, secure cutting surface, measuring tape, lights, straight edge, markers

MATERIALS

Various forms of weatherstripping (see table)

Fasteners – small screws or nails to attach weatherstripping and door weatherseals

Window putty and glazier's points

Shrink-wrap window insulating kit

COST BENEFIT

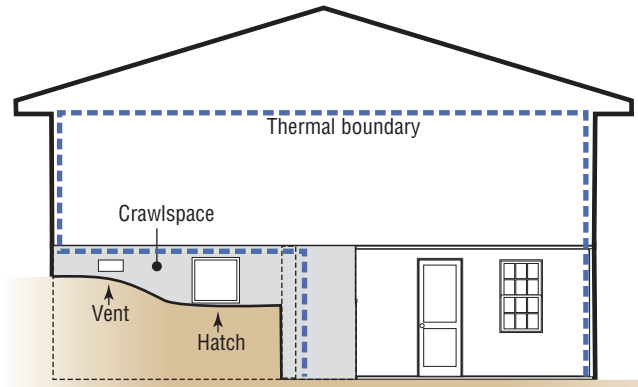
Insulation when combined with air sealing in basements and crawlspaces reduces heating and cooling costs and improves comfort and indoor air quality.

PRIORITY LEVEL

LOW MED **HIGH**

SKILL LEVEL

DIY PRO



Hybrid Basement/Crawlspace

Determine the sealed thermal envelope and weatherstrip doors and windows that open into the conditioned space. Doors or hatches that open into an unconditioned crawlspace from the outside do not need to be weatherstripped.

Doors and windows should be weatherstripped/airsealed if they are located in the walls of a conditioned basement or crawlspace. They can sometimes be difficult to airseal but result in a high-return effort. A wide variety of materials are available to help do-it-yourself homeowners achieve this goal.

Types of Basements

A key indicator is the location of the insulation:

Unconditioned - if the insulation is in the floor overhead, the basement is unconditioned.

Conditioned - if the insulation is on the walls the basement is conditioned. If there is no insulation present (and there are no vents to the outside) assume the basement functions as if conditioned.

Indirectly-conditioned - if the insulation is on the basement walls and there are no supply vents but the basement is close to the temperature of the living space.

- Doors and windows that require close attention are those that separate conditioned space from unconditioned space. Examples include: door to basement if basement is unconditioned, door to outside if basement is conditioned (usually walk-out basement) and any windows in foundation walls of a conditioned basement or crawlspace. The goal is to keep heated and cooled air inside the building enclosure.
- Doors and windows separating conditioned from unconditioned spaces need to be weatherstripped and airsealed as well.

Special note: don't forget that if the basement is unconditioned, stairwell walls should be insulated and airsealed and the door to the basement must be airsealed with a threshold.

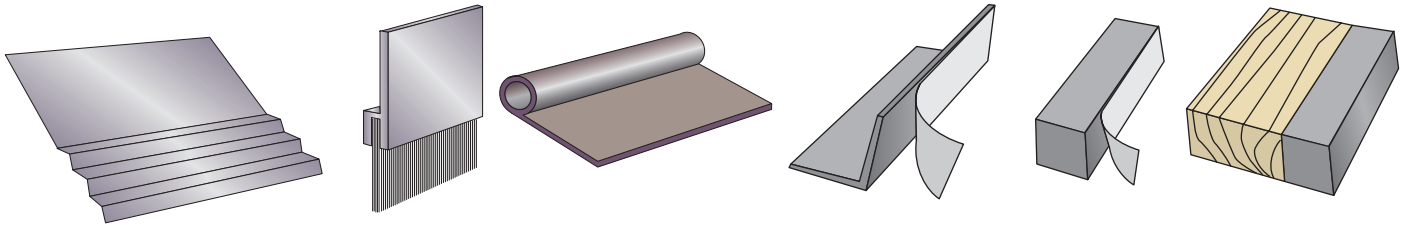
Types of Crawlspaces

Vented - as with basements, look for the insulation. If insulation is in the floor overhead and vents are present, the crawl is vented and unconditioned.

Indirectly-conditioned or **conditioned** - If insulation is on the crawlspace walls and vents are sealed, it is indirectly-conditioned (no supply vents) or conditioned (supply vents present). A dehumidifier conditions a crawlspace similar to supply vents.

- Doors are usually in the foundation wall to allow access from the outside but sometimes are located in the floor of the home (usually in a closet) especially if the crawlspace is sealed and conditioned.
- If the crawlspace is unconditioned and vented, crawlspace access door sealing is unnecessary.
- If the crawlspace is sealed/conditioned, the access door should be insulated and airsealed if it is located in the wall and opens to the outside. If it opens into the house, no insulation or airsealing is necessary.

Special note: Basement and crawlspace dirt floors should be covered with plastic to minimize ground moisture uptake into the home with the added benefit of keeping relatively clean when performing upgrades. If the crawlspace floor is not currently covered by a 6-mil plastic vapor barrier, now is a great time to make that improvement.

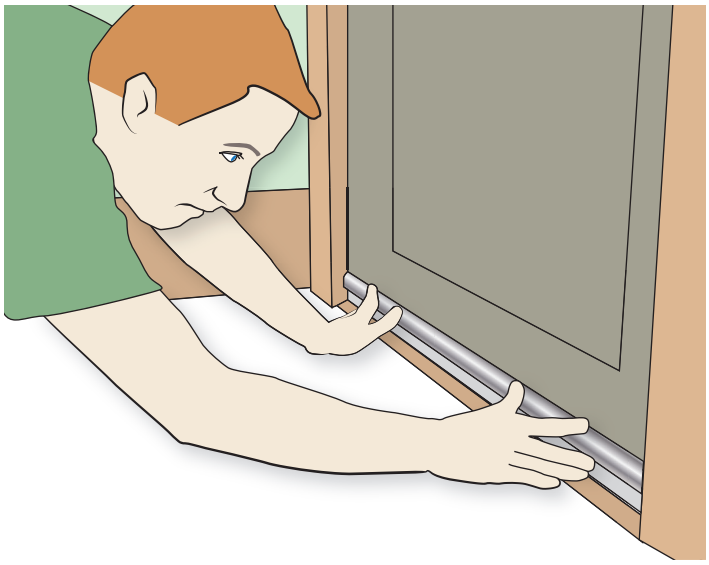


Thin spring metal | Brush-strip | Rolled vinyl gasket | Adhesive-backed vinyl V-strip | Adhesive-backed foam strip | Foam rubber with wood backing

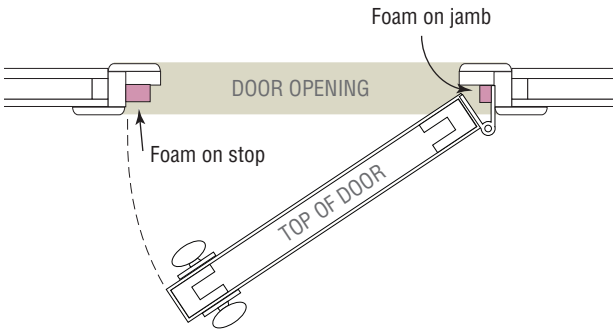
Weatherstripping materials come in many forms. Examine the manufacturers product descriptions and use those that best fit your application, whether it be for windows or doors.

Doors and Windows

Newer doors and windows have been designed with components to minimize air leakage. The weatherstripping/airsealing can and should be replaced if it becomes damaged or worn. In most cases you simply pull out the old component and push in the new. Door bottoms are sealed with material that presses against the threshold. Most windows have a brush-strip type weatherstripping that is easily replaced.



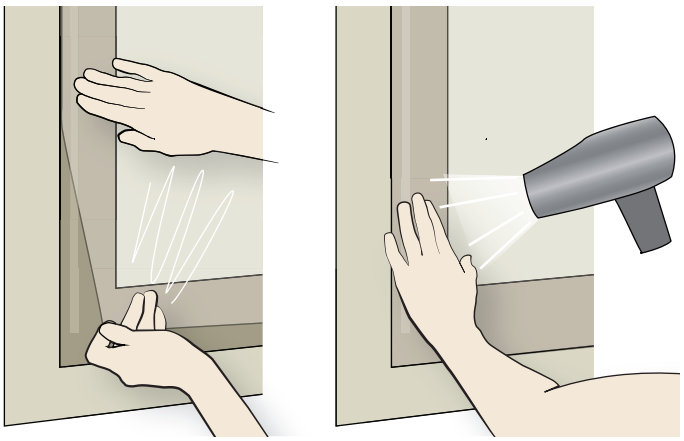
Older doors and windows are more difficult to airseal. Most have single pane windows held in place with putty and insuring they are properly secured is the first step. There are various types of weatherizing and airsealing materials that can be creatively used including adhesive backed foam, metal or plastic v-seal, rubber bulb type, etc…



If **doors** are not warped, adhesive-backed foam on the door stop is easiest. Install on the hinge side of the door jamb (door frame side where the hinges are mounted), not on the door stop in order to prevent the foam from being pinched when the door closes.

For a more permanent seal or if doors are warped, install a tubular gasket on the face of the doorstop with screws or nails and follow the plane of the door with the gasket. This works much better than foam installed on the inside edge of the door stop.

Older **windows** are especially difficult to airseal properly. Metal or plastic v-strip can be installed but the process is labor intensive. Consider replacement or good quality storm windows if feasible.



Shrink wrap plastic "storm" window coverings are a low cost, short-term solution to sealing a leaky window.

To install a shrink wrap window insulating kit, place the double-sided tape on all four edges of the window, press the clear plastic in place and heat the plastic with a blow dryer. It shrinks to give a tight seal and functions like an interior storm window.

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