

Caulking and weatherstripping



If you added together all the small cracks, crevices and holes in your home, you might find they let in as much cold air in winter as an open window. They also provide a route for warm air to escape. Even if your home is well insulated, it's important to stop heat loss and eliminate drafts caused by air leaks.

Cracks or crevices that allow conditioned air to leak through and past your home's insulation are known as bypasses. Bypasses are found in interior and exterior walls, vents, recessed light fixtures, plumbing and electric wire passages, stairways and the space around your chimney.

You can weatherize your home and substantially reduce air infiltration by caulking and weatherstripping. It only takes a few relatively inexpensive materials and a little time, and the payback period is usually within one season.

Finding air leaks

Step one is to check for air leaks inside and outside your home. For best results, do this check on a cool, windy fall day or a very cold winter day with all exhaust fans, the furnace and the clothes dryer running.

To detect air leakage, hold a smoking object, such as an incense stick, or a piece of thin thread near doors, windows and vents; movements made by air currents indicate drafts. Move the thread or smoke around window and door edges, electrical outlets and other possible sources of air leaks. Mark drafty spots with chalk.

Read the following to determine whether caulking or weatherstripping will work best to seal the leaks.

Caulking

Building materials such as wood and plaster expand and contract with changes in temperature and moisture. As this happens, cracks and openings may occur in both interior and exterior walls. These areas either need to be caulked, or the current caulking may need to be replaced because it has hardened.

Select caulk based on how well it will bond to the surfaces to which you are applying it.

Below is a checklist of areas inside and outside your home that should be caulked:

- Around door and window frames
- At the point between the foundation and the floor
- Cracks in brick or foundation

- Where chimney flashing meets the wood framing
- Around exterior openings including utility outlets, phone lines, outside plumbing faucet, vents and fans
- Openings around the chimney stack in the attic
- Where heating and/or air conditioning ducts pass through unfinished attics or basements
- Cracks where woodwork meets walls and floor
- Around a room air conditioner
- Between a porch and the main body of the house
- At corners formed by siding
- Openings around drain pipes in bathroom and kitchen
- Openings around the plumbing vent in the attic
- Between dissimilar materials

Interior cracks

Humidity in warm air which leaks into the wall cavity may condense and cause damage, so it is important to caulk on the inside of your home. You can caulk indoors any time of year.

Exterior cracks

Exterior cracks allow cold outside air to penetrate insulation and chill inside walls. Resulting moisture can penetrate structural components and cause deterioration. You should read the manufacturer's instructions for proper caulking applications.

How to caulk

1. Prepare the surface to be caulked.

- Clean surface, removing dirt, loose paint and old caulk to ensure good adhesion. Thoroughly dry surface.
- If necessary, use void filler to stuff cracks that are too big or deep for regular caulking. See illustration at right. Then, seal with caulk.
- Determine which materials to use for various size cracks:
 - 1/8" crack or smaller: caulk or rope caulk
 - 1/4" to 7/8" crack: stuff tightly with void filler, fiberglass insulation or polymeric foam
 - 1" crack or larger: use fiberglass insulation stuffed very tightly into the crack or crevice

2. Read the instructions on the tube of caulk and load it into the caulking gun as shown below.

- A. Turn plunger rod teeth face up and pull back.
- B. Insert cartridge in opening and press nozzle into slot.
- C. Turn rod teeth face down; push plunger until teeth engage.
- D. Cut off tip of tube at a 45° angle. The nozzle is tapered, so the amount you cut off determines whether you have a thin, medium or heavy bead of caulk. Cut near the narrow end for a narrow bead or further up for a wider bead. Use a long nail to break the inner seal and plug the nozzle when finished.

3. Apply the caulk.

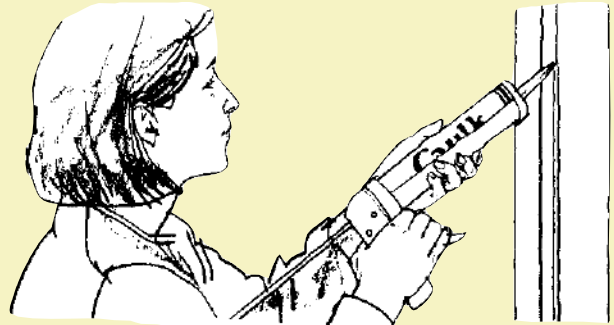
- Practice on a less visible area. Try to lay a uniform bead of caulk that overlaps both sides of a crack.
- To apply, hold gun at a 45° angle to the surface (see right). Squeeze trigger and push gun away from you with a steady pressure. Try to finish a seam in one stroke without stopping. The caulking materials should completely fill the crack. For a good seal, run your finger along the caulking bead to smooth it, if recommended on package label.
- Knife-grade caulks are also available and are applied with a putty knife.

Void filler



Void filler is a spongy material used for large cracks. It comes in 3/8", 1/2" and 5/8" diameters. Do not use near surfaces that will get warm or hot.

Hold caulking gun at a 45° angle to apply to surface.

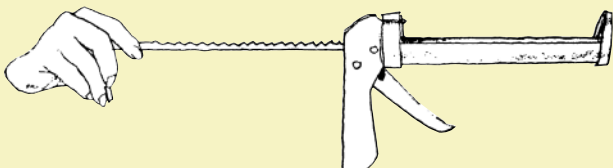


4. Finish the job.

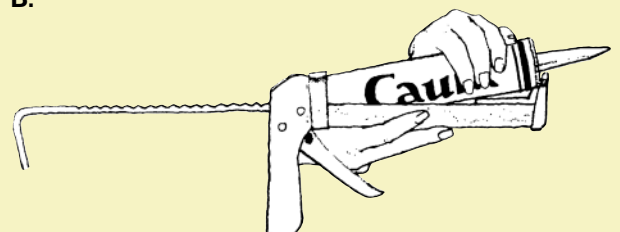
- If you have caulk left when the job is done, disengage plunger on caulking gun by twisting and pulling it back. Remove cartridge, plug nozzle with a nail and wipe off excess.
- Clean tools with water or appropriate solvent.

Read instructions on caulk tube before loading.

A.

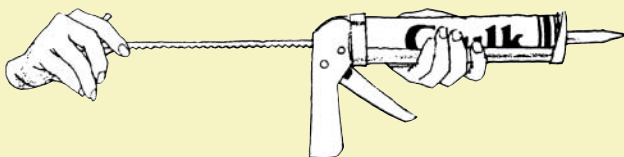


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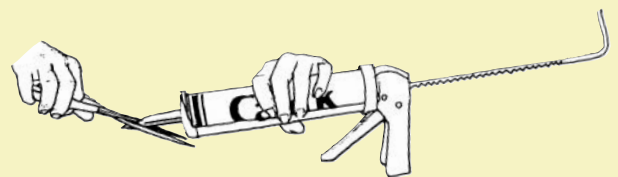


Caulk type	Durability	Application
Rope or cord caulk	Temporary filler 1 to 2 years	<ul style="list-style-type: none"> Specialized product for filling in small gaps Excellent seal
Oil/resin base	High quality, 5 to 10 years Low quality, 3 to 5 years	<ul style="list-style-type: none"> Will bond to most surfaces Forms a hard surface when dry
Latex base	Up to 10 years	<ul style="list-style-type: none"> May be applied to brick and wood Forms a hard surface when dry
Butyl rubber	Up to 10 years	<ul style="list-style-type: none"> High moisture resistance Solvent clean-up Good adhesion to unpainted metal and masonry
Neoprene	15 to 20 years	<ul style="list-style-type: none"> Good with asphalt or concrete (foundations)
Silicone	20 years or more	<ul style="list-style-type: none"> Excellent adhesion to most surfaces Solvent clean-up
Polyurethane	20 years	<ul style="list-style-type: none"> Specialized product for large gaps Excellent elasticity Flammable – must be covered by a fire-retardant wall on interior
Acoustical sealants	20 years or more	<ul style="list-style-type: none"> Excellent adhesion to air/vapor barriers Solvent clean-up
Polymeric foam	20 to 30 years or more	<ul style="list-style-type: none"> Excellent adhesion to a wide variety of materials Excellent for sealing sill plates, rough openings for doors and windows, and other large openings

C.



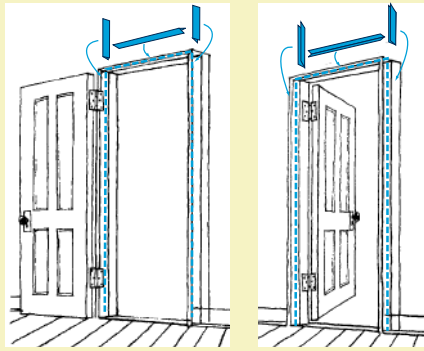
D.



Weatherstripping

Like caulking, weatherstripping is a low-cost way to cut energy costs. Weatherstripping is applied at joints where two surfaces meet and move relative to each other, such as windows and doors. Properly installed weatherstripping provides an air-tight seal around doors and windows.

Tests show that tubular weatherstripping provides the best seal. However, if doors and windows will be used by children or the disabled or elderly, use silicone, neoprene, urethane or rubber strips, as they require less pressure when closing doors and windows.



V-strip application depends on door style

The creased side of the V-strip should face in for doors that open in and face out for doors that open out. If possible, apply V-strip on entire length of door in one piece.

Material	Durability	Application
Tape (various widths)	Up to 1 year	<ul style="list-style-type: none"> • Use on windows or doors that will not be opened • Can dry out and loosen within one heating season
Felt (various sizes)	1 to 2 years	<ul style="list-style-type: none"> • Use on top or side of door or window frame • Use for sealing gaps of uniformly narrow width
Foam (adhesive-backed)	1 to 2 years	<ul style="list-style-type: none"> • Use on friction-free areas such as: <ul style="list-style-type: none"> – bottom of window sash – frame of trap door – frame of warped or loose-fitting door (wood-backed foam)
Tubular gasket and vinyl tubing (with or without metal backing)	5 years	<ul style="list-style-type: none"> • Can be used on windows or doors • Provides a moderate seal • Visible when installed
Adhesive vinyl V-strip	3 to 5 years	<ul style="list-style-type: none"> • Adheres to sides and top of door jamb and casement windows with the closed point of the V facing the door or window (see illustrations above) • Easy to install
Thin metal V-strip	5 years or more	<ul style="list-style-type: none"> • Nail to top and sides of door jamb in the same manner as the vinyl V-strip • Somewhat difficult to install
Fin seal	5 years or more	<ul style="list-style-type: none"> • Use as replacement seal on aluminum horizontal sliding windows and glass doors

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