



MFC NEWS

“Building Understanding”

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MFC will find out the truth about buildings and answer the hard questions. Volume 1 Issue 4

About MFC News

Myles F. Corcoran and his Team would like to share the best of what we've learned over the years about well constructed buildings and resolving construction disputes.

Please help us make this a “Construction Community” endeavor by sending us your feedback, comments, wisdom, and tips for future issues. Call 831-476-4502 or Email us at: mfcnews@mfcbuild.com.

Wisdom Corner

Are you eligible for a \$500.00 Federal Energy Efficiency Tax Credit?
www.energytaxincentives.org

Quote of the Day

“We instruct our people to ask ‘Would you fix it for your Mom?’ If so, fix it for the customer.”

Kevin Estes, Estes Builders in Washington

Product Tip

Homeowners can easily identify troubled air infiltration areas around the home. The first step to keeping the heat inside the home is to locate all the areas where heat is escaping, such as around windows and doors and through damper-less fireplaces. Drafts can be found by performing the following tests:

1. Wet a finger and move it around likely areas to feel for drafts. You will feel a breeze or coolness on the wet finger.
2. Have a person stand outside after dark and shine a strong flashlight around the edges of doors and windows. With the lights turned off inside the house, take note of where the light is visibly shining through, to pinpoint areas where cold air is entering the home.
3. Try to slide a sheet of thin cardboard under a door when it is closed. If the cardboard slides under, the gap is large enough for cold air to enter and heat to escape.
4. Move around areas near windows and doors with a burning stick of incense and see if the smoke is being blown by incoming air or escaping through cracks.

Once found, weatherstrip or caulk each of the areas that allow heat to escape. For more information, please see Feature Article.

MFC Staff

FEATURED ARTICLE

How to Weatherize Your Home to Stop Air Leaks

The average house, even when well-insulated, contains cracks and gaps between building materials that add up to a hole about 14 inches square. In the winter, those gaps may make the house drafty and chilly. All year long, such a house not only wastes energy, but can lead to water damage and provide a path for insects.

Weatherproofing Basics

Some heated air leakage can be prevented during construction by using house wrap or by getting a tight fit between framing members. Once the house is built, however, the remaining gaps must be sealed. Gaps around doors and window sashes should be weatherstripped, and gaps between permanent building materials sealed with caulking.

The best building designs allow the homeowner the ability to control the interior environmental air. When moisture controls are in place they will, naturally, also prevent most air leaks. In any discussion of air leaks we need to remember that it is important that fresh air from the outside be introduced into the building all year round. In a closed shell building, the HVAC system is designed to take in air from outside.

Types Of Caulking

A number of factors must be considered when choosing caulking. They include durability, flexibility, whether the caulk can be painted, compatibility with the other building materials and, of course, price.

The most expensive caulk is not always the best product for every job, so you should carefully consider which product is appropriate to your situation. Read product labels and manufacturers' literature.

Caulks are typically packaged in 10-oz. tubes for standard caulking guns, but 1-qt. cartridges, 5-oz. squeeze tubes, and rope caulk are also available. Approximate coverage of 10-oz. tube: 400 ft. at 1/4" bead, 200 ft. at 3/8", 100 ft. at 1/2".

Most caulks should not be used on cracks larger than 3/8" or more than 1/2" deep (check the instructions). Install a bond breaker such as backer rod or joint tape set to proper depth and then apply caulking over the bond breaker to seal the surface area.

Always read and follow the manufacturer's directions.

Primers are often called for depending on the surfaces being sealed and the sealant material specifications. It is highly recommended by this office that you do some test samples of the sealant with the various materials it will come in contact with. We have found that some sealants "eat away" some building materials. To test: squeeze some out on scrap material and observe what happens over a few weeks prior to the main application. You can also contact the MFC office as we have done research on this topic. (See MFC News Spring 2006 at www.mfcbuild.com)

Here is a list of common caulks and their characteristics. Different types of caulking are designed for different applications, and quality can vary among different brands of the same type because of different formulations used.

1. Oil-Based Painter's Caulk (1-2 yr. life). Not very elastic. Dries out easily. Paintable after curing. Lowest cost.
2. Latex (3-10 yr. life). Use mostly indoors. Goes on easily. Low elasticity. Sticks to porous surfaces only. Easy water cleanup. Low in cost. Paintable.
3. Butyl Rubber (3-10 yr. life). High elasticity. Sticks to most surfaces. High moisture resistance. Flexible when cured. Most difficult to work with as it is very sticky. Proper install requires very specific detailing per manufacturer specifications.
4. Acrylic Latex (10 yr. life). Good elasticity. Sticks to most surfaces. Reasonable moisture resistance. Paintable. Good for around doors and windows. May not be used below freezing.
5. Silicon-Latex Blend (20+ yr. life). Good elasticity. Excellent weathering ability. Medium shrinkage. Discolors over time. Some cannot be painted. May not be used below freezing.
6. Silicone (20-50 yr. life). Excellent elasticity. Sticks very well. Excellent moisture resistance. Needs solvent to clean. Strong odor possible while curing. Low shrinkage. Generally not paintable, but available in many

- colors. May not be used below freezing. May be applied to wood, asphalt or metal, but not vinyl or masonry.
7. Urethane (20-50 yr. life). Excellent elasticity and adhesion. Excellent moisture resistance. Easy cleanup. Strong odor possible while curing. Low shrinkage. May not be used below freezing. May be applied to wood, brick, asphalt, metal, vinyl or concrete.
 8. Elastomeric Copolymers (50+ yr. life). Excellent elasticity and adhesion. Will stick to damp surfaces. Can be applied below freezing. Cleanup with lacquer thinner. May be applied to wood, brick, asphalt, metal, vinyl or concrete.
 9. Polyurethane Foam Sealant (in aerosol can). A specialized expanding foam product useful for filling large gaps. Expanding foam may be tricky to apply because of the amount of expansion, but has excellent sealing and insulation qualities. Difficult to assess if joints are sealed well or not.

Using Caulking

Some buildings require no user-installed caulking at all. In our opinion this is the preferred design. Where your structure has gaps that air and moisture can get through and, unobstructed, lead to wood frame or other “rottable” building components, you must caulk. Caulking should be applied to any small gap where air, moisture, or insects may penetrate the structure, including the following common locations:

Joints between foundation and siding

Joints between window/door and siding or trim.

At any penetrations into the house (e.g., telephone wires, TV cable, electrical conduit, and gas and water pipes).

Dryer, Bathroom, & Kitchen vents.

Joints between the siding and chimney

Remember: all sealants have limits as to how wide they can be, and many have limits as to how thinly they can be placed and still work.

As a rule, surfaces must be clean and dry in order for caulking to stick. Loose material should be brushed away, and dirt, grease, or oil should be removed with a detergent solution. Many sealants require a primer and or a bond broker.

Don't forget to cut the nozzle tip off at an angle, making a hole the size and shape of the bead you want. Do not apply in cold weather, except as recommended by the manufacturer.

To apply caulking, squeeze the trigger and push, don't pull, the gun along the gap. This can be very difficult. Pushing the gun drives caulking down into the gap and will give you better adhesion. If using a bond broker, ensure you fill the joint completely.

To tool (or finish) the joint, first wet your finger with water (or soapy water if the caulking is formulated for soap-and-water cleanup) or a dab of automotive hand cleaner (if the caulking is formulated for solvent cleanup). Run your finger along the joint, smoothing it and pressing the caulking into the joint. Wipe away excess with a rag. There are also specialized tools to increase accuracy and smoothing which should be practiced with before use in a finished product.

Types Of Draft Stopping

The greatest source of air leakage in most homes occurs around doors, windows, and access hatches, such as the ceiling opening from the living area into an unheated attic. Weatherstripping can be a challenging job, because those openings need to be fitted loosely enough that the door, window, or hatch operates freely yet tightly enough that air and water leakage is stopped.

The type of weatherstripping you'll use depends on the location and the type of opening. Four types of weatherstripping are common:

Compression. Compression weatherstripping is used to seal swinging doors and window sashes. It consists of a molded strip, of wood, aluminum, or rigid vinyl, with a flexible vinyl, butyl, felt or rubberized bulb along one side. As a rule, compression weatherstripping is the most durable type available.

V-Type Strips. V-shaped weatherstripping is fitted against the side of the door or window jamb so it presses against the edge of the door or sash and forms a seal. V-stripping may be vinyl or bronze.

Foam. Foam weatherstripping is used to seal either swinging or sliding doors or windows. It is cheap and doesn't last or work well, so we don't recommend using it.

Thresholds and Door Bottoms. In most exterior doors the area of the floor under the door and jamb is covered by an oak or metal piece shaped to be higher than the floor level directly under the door and to slope away on either side. This piece is commonly called the "threshold." A door bottom fills the gap between the threshold and the bottom of a door. It will have a built-in vinyl brush, bulb or interlocking hardware, which works in combination with the threshold. The door bottom is mounted on the lower edge of the door and fitted out to the jambs.

Installing Weatherstripping

To weatherstrip a door, first install the threshold. Measure the distance from the threshold to the bottom edge of the door. Thresholds come in a number of heights – typically 5/8", 1", and 1-1/2". Choose a threshold that allows about a 1/2" gap to leave room for the door bottom.

The threshold should be placed so its highest point is directly under the door. Measure the width of the opening and cut the threshold to fit snugly with the door stops and jambs, leaving "ears" on either side of the face. The threshold will probably have to be notched on each end so it fits around the door stops, jambs, and possibly casements.

Set the threshold in place and close the door to check the fit and position. Once the threshold is in place, mark the location on the floor, then open the door. Run a thin bead of caulking along the underside of the threshold on each side. Aluminum thresholds have a C-shaped channel along the edges to accept caulking. Set the threshold in place and screw it firmly to the floor. If you have a proper door "boot," then you don't put any sealant under the threshold.

To apply compression weatherstripping to a door or swinging (casement) window, first close the door or window. If the door has a deadbolt, lock it. Place head piece first. Cut each side strip to length so that it fits snugly from head to toe. Push the strip in toward the door or window sash so the bulb is partially compressed. Don't fit it too tightly or the door/window won't close properly. Fasten the strip in place, starting from the top and working your way toward the bottom. Check the door/window frequently to make sure it operates easily.

To apply V-type weatherstripping to a door or swinging (casement) window, cut the strips to length. Place strips on head and jambs with the raised open "V" facing away from the door or window sash, positioned so the door/window sash will be centered on the strip when closed. Fasten the strips in place.

Check your state and local codes before starting any project. Follow all safety precautions.

MFC Staff

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