DRAFT PROOFING GUIDELINES

NOV 21 2018

District of Summerland

Simple approaches to help seal your home.

Draft proofing guidelines

DISTRICT OF SUMMERLAND

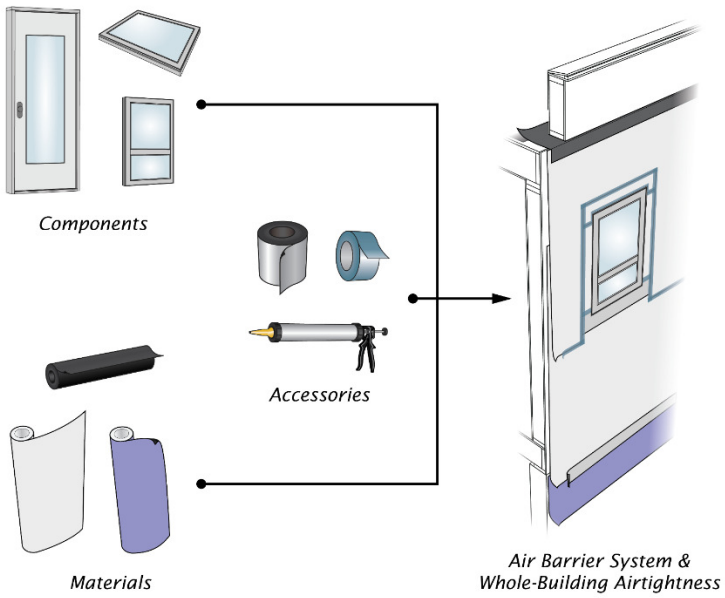
THE AIR BARRIER

Draft proofing your home is one of the cost effective ways to improving your home's energy efficiency. We spend a lot of money on heating and cooling our homes so why not try to keep that hard earned energy in your home instead of letting it flow outside!

What is the air barrier? Vapor Barrier?

The term Vapor Barrier has been widely used and thought of as the layer that keeps the drafts from coming in and out of our homes. The **Air Barrier** is in fact the correct layer and in many homes, the plastic vapor barrier acts as the **Air Barrier** (both functions).

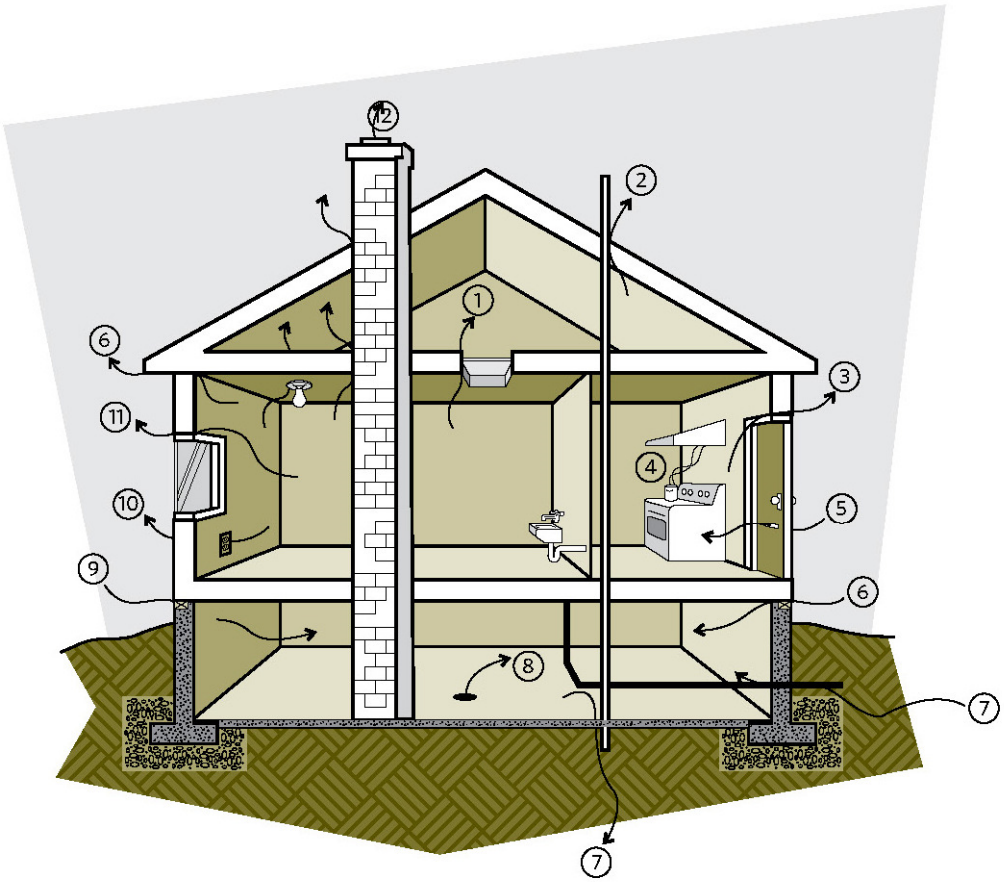
The air barrier is a ***system*** of materials with the goal of being a continuous seal between the outside and the inside of the building. The materials that make up the air barrier can be polyethylene plastic (vapor barrier type), solid wood, window frames and glass, weather stripping, concrete etc. etc.



With that all said, close attention to air barriers was scarce for older homes. This gives us many opportunities to improve our older, existing homes.

Heating and cooling our homes represents approx. 60% of the total energy consumption of your home. Sealing up drafts in your home can help keep that energy in the home.

VULNERABLE AREAS IN YOUR HOME



Where to look

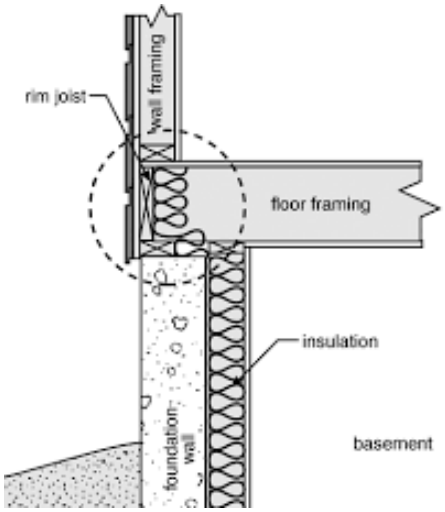
Key locations to check for leaks

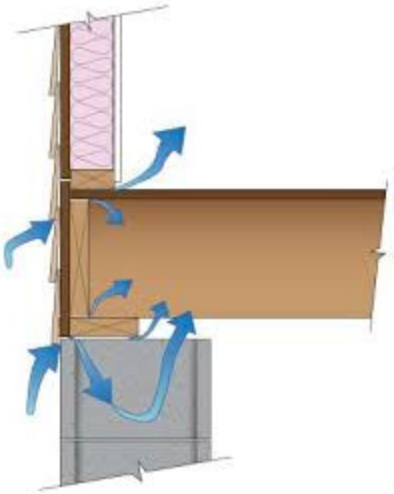
1. attic hatch
2. ceiling penetrations into the attic
3. door
4. exhaust vent
5. mail slot
6. sill and header
7. service entry
8. floor drain
9. foundation crack
10. electrical outlet
11. window
12. chimney

THE BASEMENT:

Let`s start from the ground up

One of the most common air leakage locations in basement is at the floor joist area also referred to as the rim joist or floor header. This area has multiple connections where walls, floors and concrete all meet and is located just above the foundation.





This area is difficult to access in finished basement and would be concealed, but you are planning an extensive renovation where these areas will be accessible, that would be a great time to do some upgrades. The trick is to ensure a continuous seal from the subfloor downwards to the foundation wall (framing and insulation or other

Rigid spray foam and sealants:

WINDOWS:

Most popular area for drafts

Windows are the areas that may feel the draftiest in your home. There are a few reasons for this:

1. The window type/design is built with gaps (overlapping sliding windows)
2. The window hardware mechanisms are drafty
3. The area between the "rough opening" of the home's wall and the window itself is drafty/not sealed properly.

Numbers 1 and 2 are typically part of the window's design and there may not be much we can do about that. One solution is the window shrink film as it can block the windows imperfections from drafting.

Number 3 is one the most common areas and is attributed mostly to the installation of the windows as well as what was used to seal the window frame to the house at time of insulation. Depending on the age of your home, there may be no seal at all, or perhaps a thin layer of fiber glass insulation (which is not air tight) or there may be spray foam and caulking.

This area is typically under interior/exterior trim and may not be accessible.

Air Sealing Strategies

Depending on what your plans are, you may try with the easiest strategy.

1. Caulking at the interior and exterior trim:
    a. This would be the most cost effective and convenient way to address these areas.

2. Older sliding windows can have foam strip weather stripping applied to where the windows sit. Also, temporary caulking can be applied to vertical areas and removed in the spring time.

3. **Get under that trim!**
    a. If your plans include trim removal, this would be a more effective way of ensuring a good seal at the window to house gaps. Rod and caulk can be used in these areas and is becoming current practice for new construction. Spray foam is also used extensively here but please use caution and ensure the proper type of expanding is used specific for windows. Other spray foams can expanding too much and actually cause damage to windows.

DIY Spray Foam

We should always be cautious about the using the right type of spray foam for doing air sealing in our home. There are different varieties of products out there for large areas/gaps, fire stops, and window material that all have different expansions. Windows and door frames can be bent or pressured with expanding spray foams. Sealed units may start to show condensation or even broken glass in some cases.

DOORS:

All about the seal

Doors need a bit of compromise when it comes to air sealing. We want a door to be well sealed but we also want a door that opens and closes smoothly with the need to slam it! Doors also can warp overtime losing its contact with the weather stripping and showing daylight through. Please note that some corners of

your weather stripping may show a slight amount of daylight and this is typical. Excessive gaps can be topped up with strip foam weather stripping.

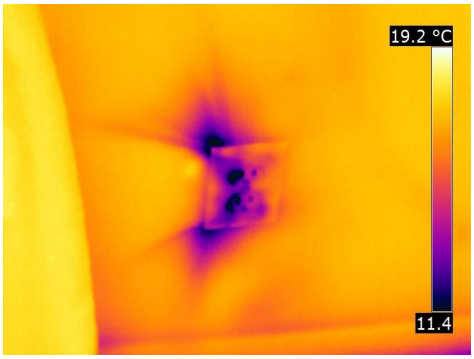
As for the trim around the door, the same rules can be applied as previously discussed in the Window Section.

Door thresholds are a common area for drafts. A fresh door sweep can be installed as well as caulking the corner of the floor/threshold areas.

OUTLETS AND SWITHCES:

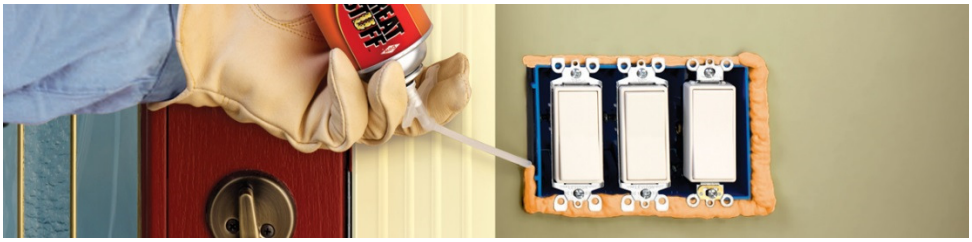
The not so obvious areas

Outlets and switches that are located on your home's exterior walls may be very prone to drafts. This is typical for most older homes as there was not much effort put into these areas to ensure against air leakage. These boxes sit within the wall cavity and are vulnerable to the leakage in that areas. This usually carries into or out of the home.



The easiest attempt for this is to install foam type gaskets behind the cover plates. These are readily available at most hardware stores. Always procced with caution when working around electricity!

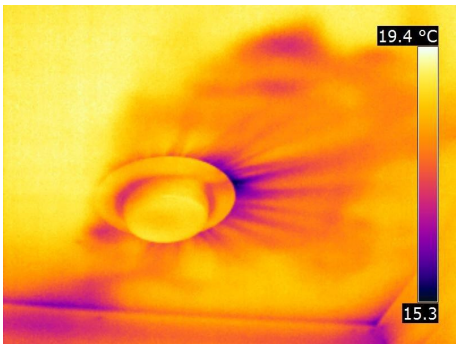
Another method that can be used is to seal around the device box where it meets the wall finishes.



LIGHTS:

Also not so obvious areas

Lights that are at the ceilings below attics are also vulnerable to air leakage.



Caulking/sealing at the gap between the drywall and the device box can be effective.

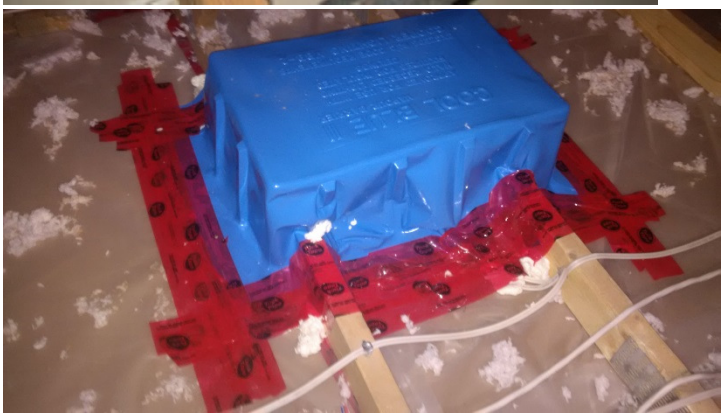
A more intensive measure is the get at the source of the air leakage, in the attic space. If accessible, sealing from the attic is more effective. We can use spray foams or manufactured air barrier products.

Attic Insulation upgrade?

If you are planning to upgrade your attic insulation, we definitely recommend adding air sealing as part of the upgrade. Remember that insulation slows down heat loss but doesn't block it! If air can blow right on trough your ceiling and into the cold attic space, heat loss with occur no matter how much insulation you have.

Also this can put your attic at risk of condensation/frosting issues that can lead to surface mold growth.

Air sealing improvements are just as important as R value improvements!

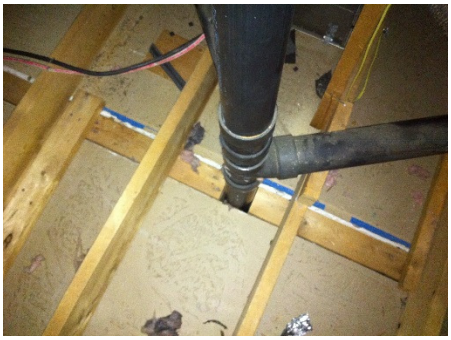


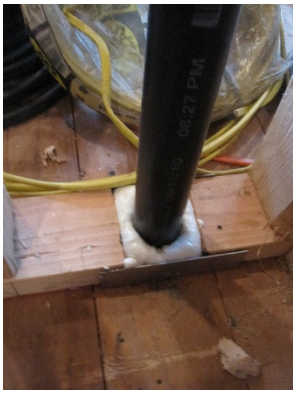
ATTICS:

May be hard to access but well worth it

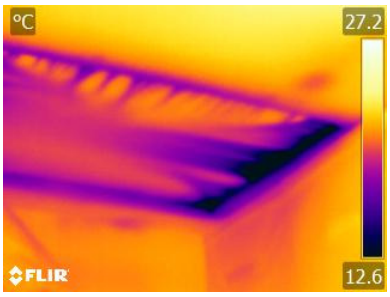
The ceiling between attics and living spaces can offer many penetrations for items like plumbing stacks, lighting, exhaust fan housings, attic hatches etc.

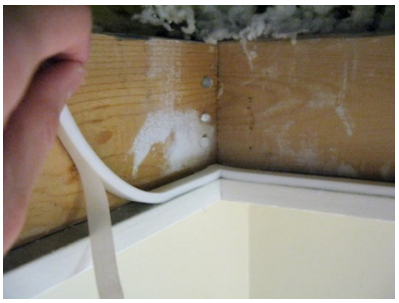
Also, the “higher” our home is (2 storey or 3 storey homes), the more pressure there is for sir to want to push against and get into the attic. This is referred to as “Stack effect”.





Attic hatches





Stack effect in homes

The fact that warm air rises is behind it all. As warm air rises, it presses against the ceilings and tries to find a way out through any openings. This pressure can be higher depending on the height of the building. If we can "cap off" that air leakage there would be less air flow in the entire home as when the warm air escapes at the top, cold air enters the home from the bottom.

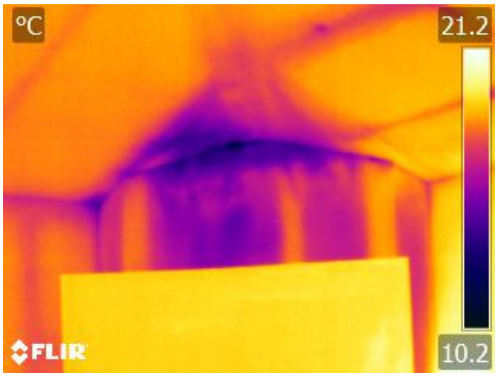
This is also a vulnerable area that can very easily be addressed. A strip of foam weather stripping can be placed where the attic hatch sits to ensure a good seal. Alternatively, a bead of caulking can be applied to the underside of the fitted attic hatch.

FIREPLACES:

Large openings in your home

Older fireplaces can act as large hole in your house. If your wood fireplace is not being used, consider blocking the flue to prevent cold air from "Falling" into the living space. Of course it is always good practice to ensure this clocking is removed before starting your next fire.

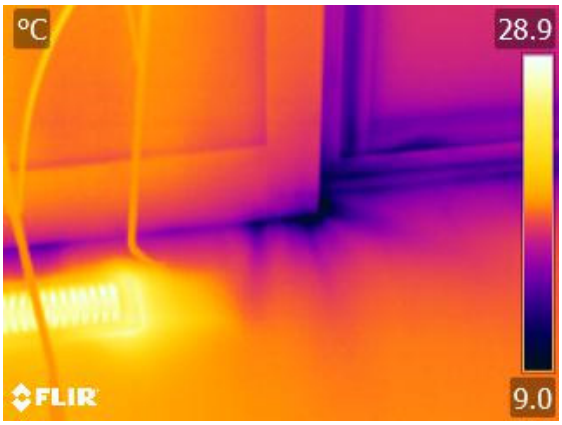
If you plan to install a gas insert, there are options to help you seal off the gap between the new smaller metal liner and the rest of the original large flue. Strategies can include sealing from the top outside as well as within the throat of the fireplace.

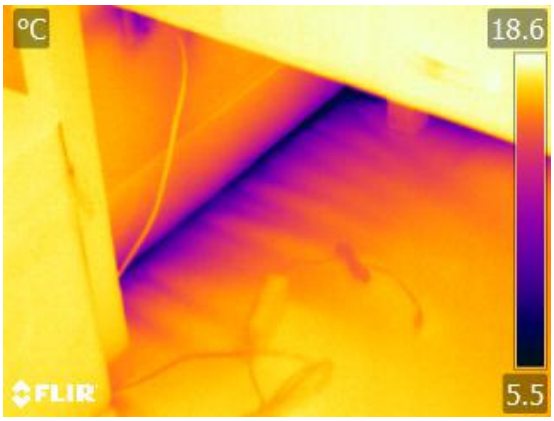


WALLS AND BASEBOARDS:

A very common area

The bottoms of your exterior walls are very common air leakage areas. This is where the wall sits on top of the floor. It may not have been sealed at time of construction depending on the age of your home.





Your carpet or other flooring is helping to a certain point but caulking at the base is best practice.

The Baseboard can stay in place but once again, if your plans require removal of the baseboards, you can seal directly at the floor to base areas.