

Air Leakage Report With Infrared Pictures



address: 33 ABE street
,
Calgary, AB

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Registered Energy Advisor
February 2, 2025

File #: 2S9Q000XX

Air Leakage Report:

This report outlines areas where air leakage was noted using a blower door test and a thermal camera. The thermal images show temperature differences, the dark purple being colder and the yellow being warmer. The streaking purple that can be seen is cold air penetration in the home, if it is warmer outside than inside this will be streaking yellow, and this is what you want to prevent.

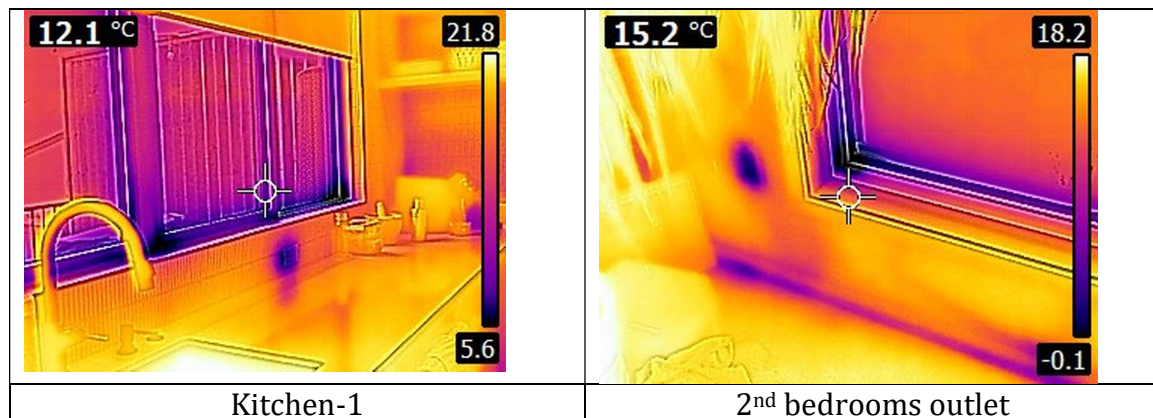
You should be advised that if major air sealing is being done to the home, there is a possibility that the house can become too tight and that mechanical air exchange will be needed with a heat recovery ventilation system (HRV). If you are planning on doing major renovations to the home that will make the house very air-tight, you should consider having one of these HRV systems installed.

I noticed significant leaks in the following locations:

- The plugs& switches are located on the exterior wall.
- Master bathroom window.
- Back door
- Ceiling light fixture
- Floor baseboard in the master bedroom.
- Overhang interior area_exposed floor.

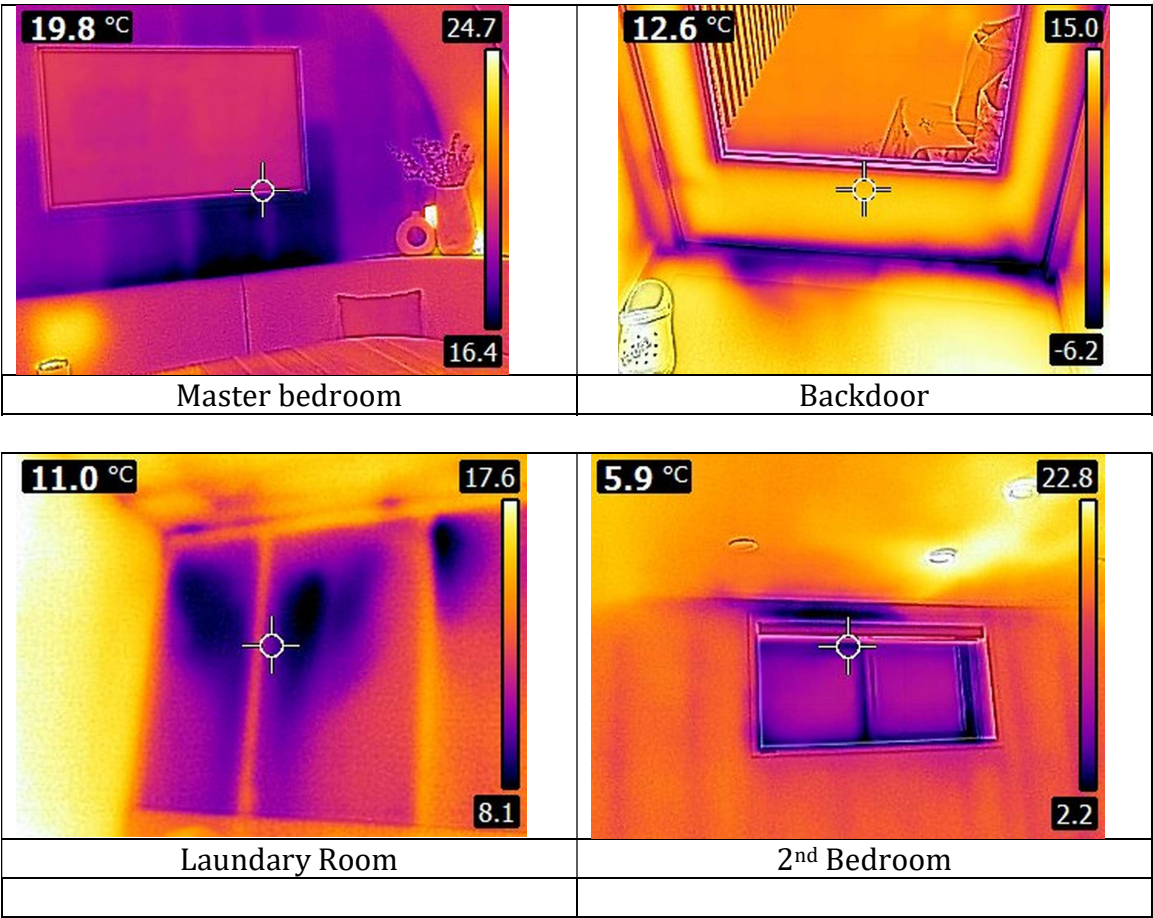
Plugs & Switches:

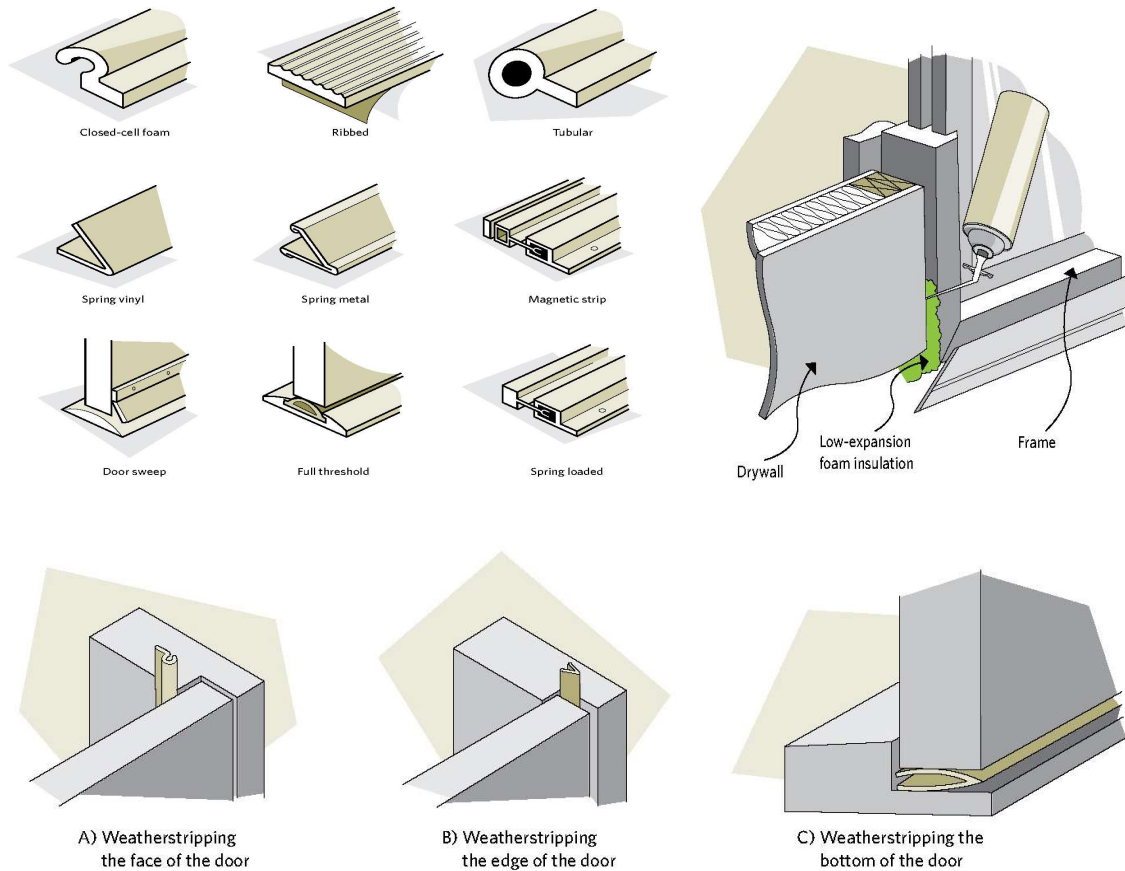
There is a lot of air coming in around plugs and switches on the exterior walls. You should remove the faceplates of the all exterior wall outlet and switch and install foam gaskets behind the faceplate; this will help seal where the outlet or switch box meets the drywall. You should also add plastic childproof plugs to any outlets that are not being used; this will prevent airflow through the outlet holes. Gaskets should also be added for any phone or cable jacks through the exterior walls.



Doors and Windows:

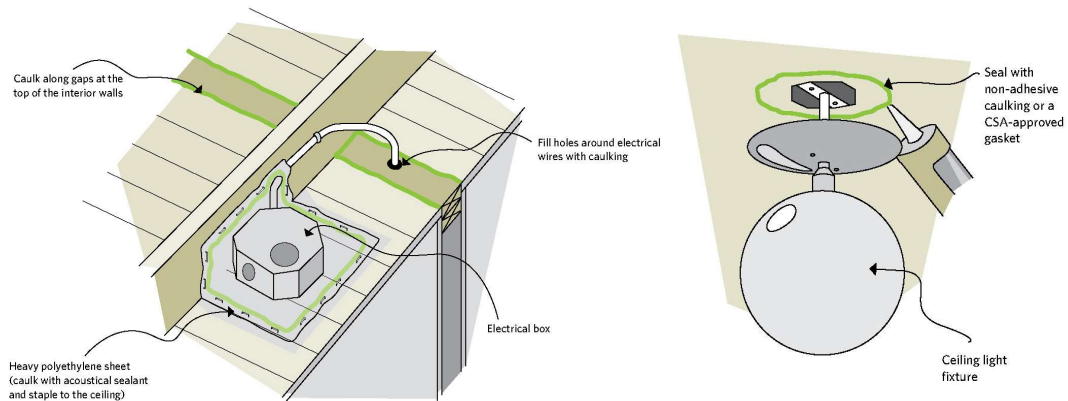
Ideally, all window and door trim should have spray foam in the gap between the window and frame. If you suspect that your windows do not have any (as in most older homes with original windows), you would have to remove the trim to install it. All window and door trim should also have caulking added on the inside edge of the trim, the outside edge of the trim where it meets the drywall and any gaps that are located where the window itself meets the wood frame. Also, you should replace the weather stripping around the windows and doors as needed so they make a tight seal when closed and locked.

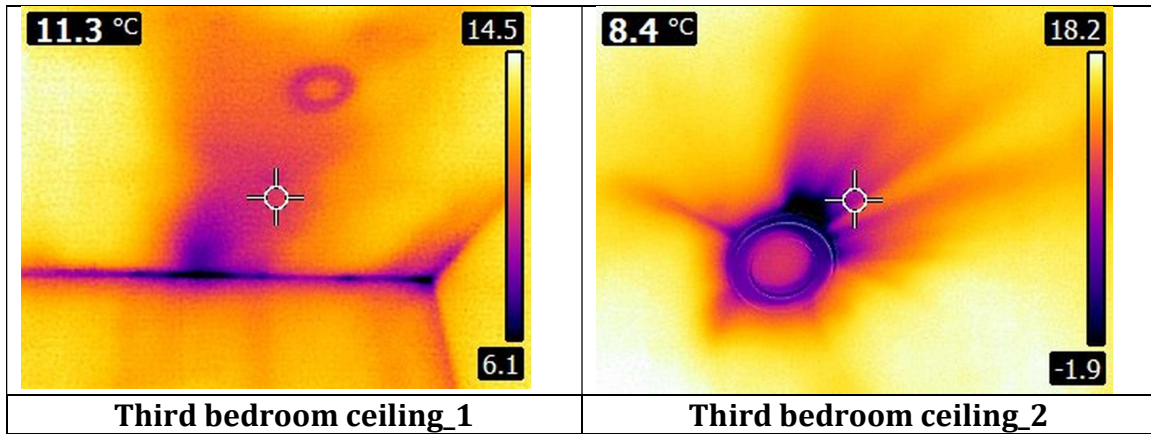




Top Floor Light Fixtures:

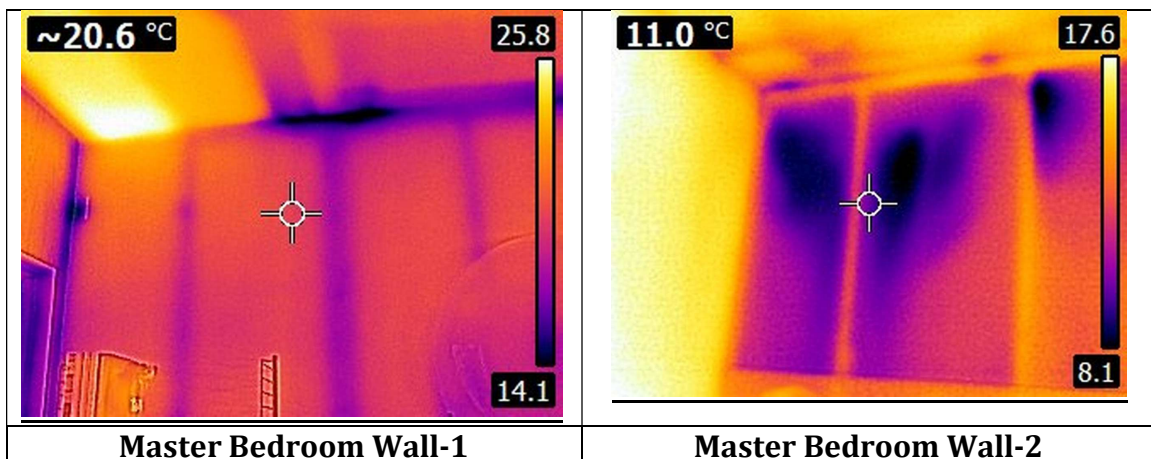
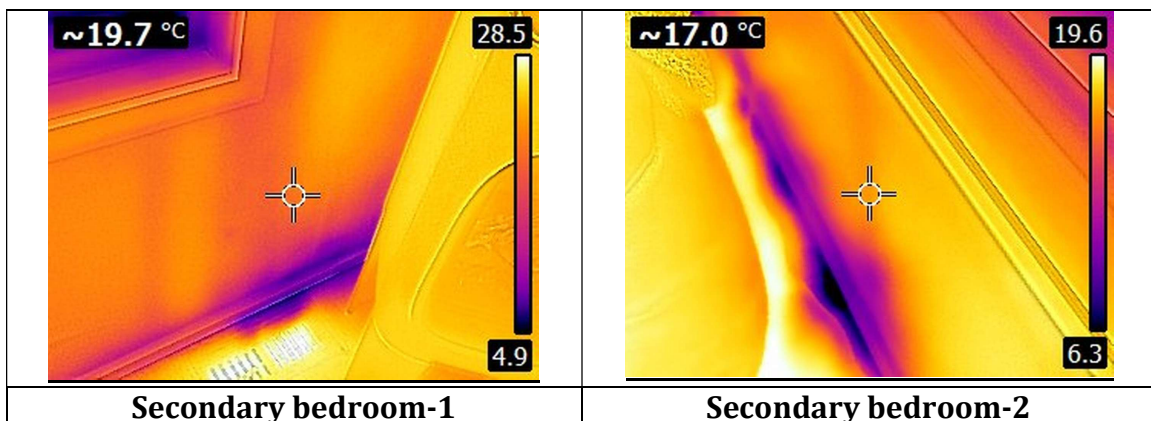
Any recessed lights or light fixtures on the top floor should have proper insulated and sealed boxes installed around them, this should be done from the attic on top floors. A less effective solution is to caulk around the junction box or edge of the fixture where it meets the drywall.

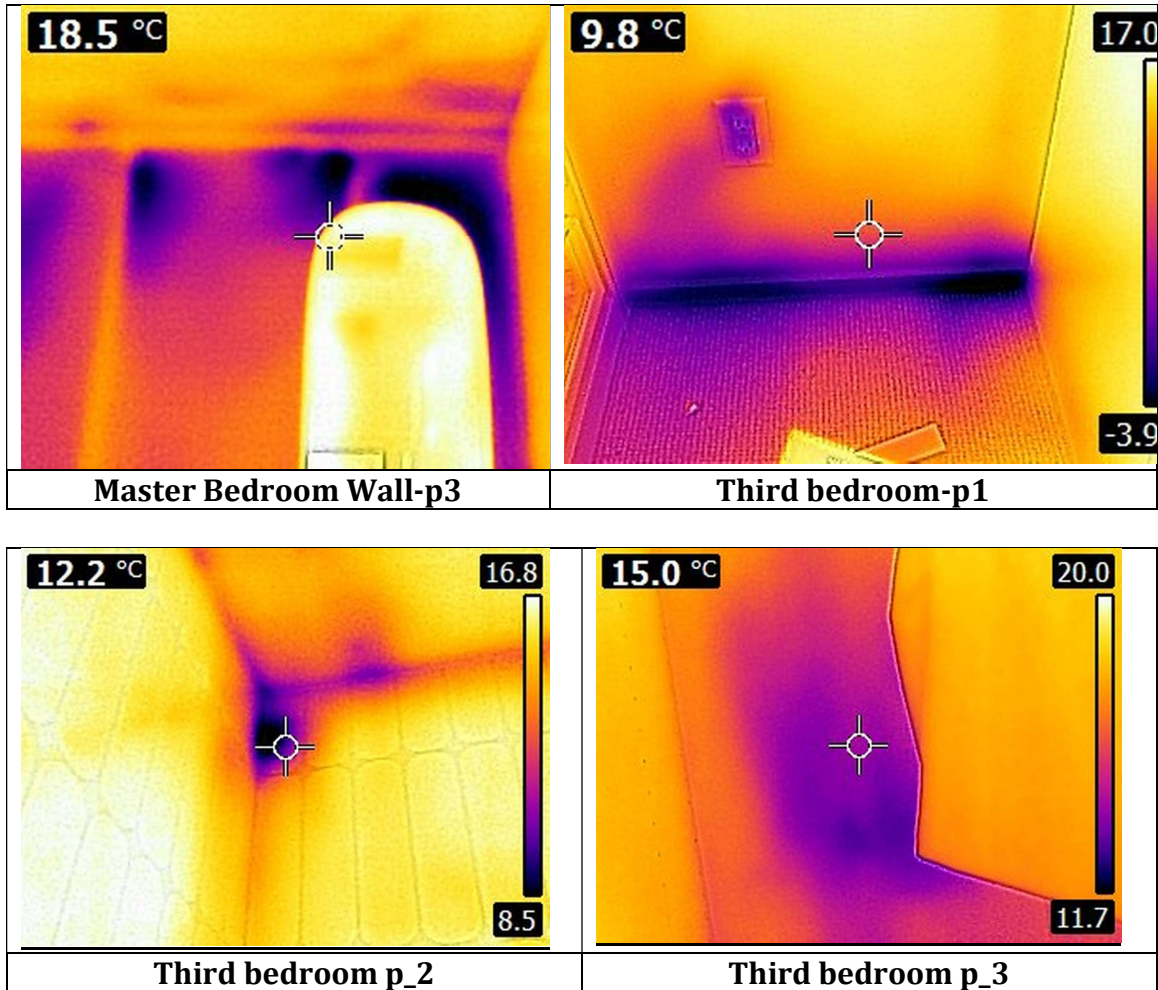




Baseboard trim:

You should caulk where the bottom of the baseboard trim meets the flooring to prevent airflow through this gap, also caulk any gaps at the top or corners of the trim. If the trim is being taken up, you should seal the gap between the floor and the wall with a silicone caulking.



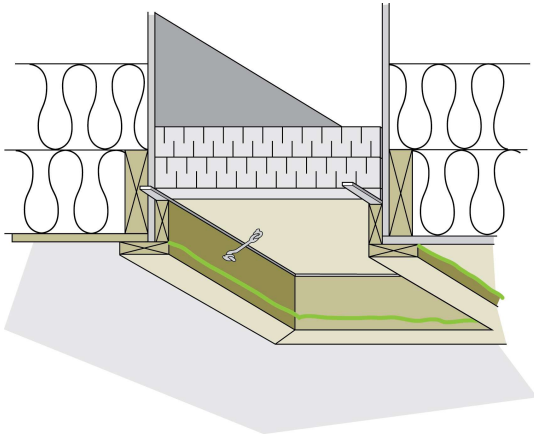


Bathroom Fans:

Bathroom fans are prone to air leakage as they are rarely sealed when installed, and the dampers tend to not seal tight. You should spray foam or caulk around the edges of the bathroom fan housing where it meets the ceiling drywall, this is best done from the attic if possible. You should also check to ensure the bathroom fan is properly venting outside (NOT into the Attic), that all the connections of the duct between the exterior hood and the fan are tight. You should also ensure the damper on the exterior hood is closing properly when the fan is not in use; if it is not, then it should be fixed or replaced (Ball dampers work best)

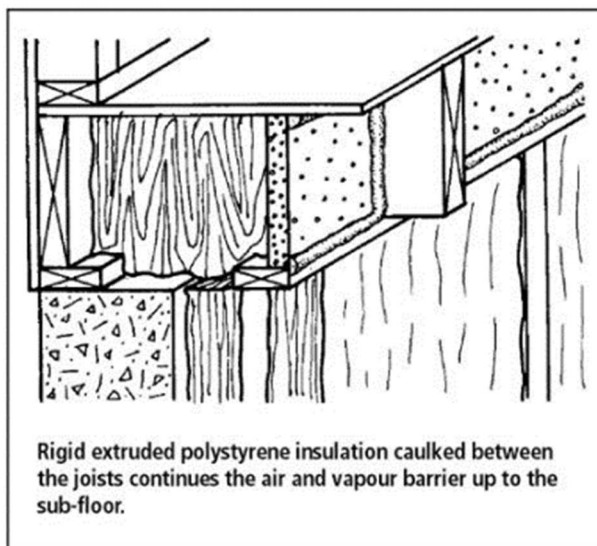
Attic Hatch:

There is a significant amount of heat loss from the attic hatch. This hatch should be properly insulated with 4 to 6 inches of foam insulation (blue or pink is best) and the edges should be fully weather-stripped to ensure it makes a tight seal when it is closed. There should also be a latch installed to ensure the weather stripping is compressed and the hatch stays tight. You should also caulk around the edges of the inside and outside of the trim around the hatch



Unsealed Basement Headers:

A lot of air comes in the basement headers; this is at the top perimeter of the basement where the house sits on the foundation wall. These header areas should be properly insulated and sealed by adding as much batt fiberglass insulation as you can fit in the cavity without squishing it in, cutting out pieces of Styrofoam insulation (pink or blue is best) to fit snug in each of the headers and using a can of spray foam seal around the edges of the Styrofoam in each of the header areas, making sure not to squish the batt fiberglass.

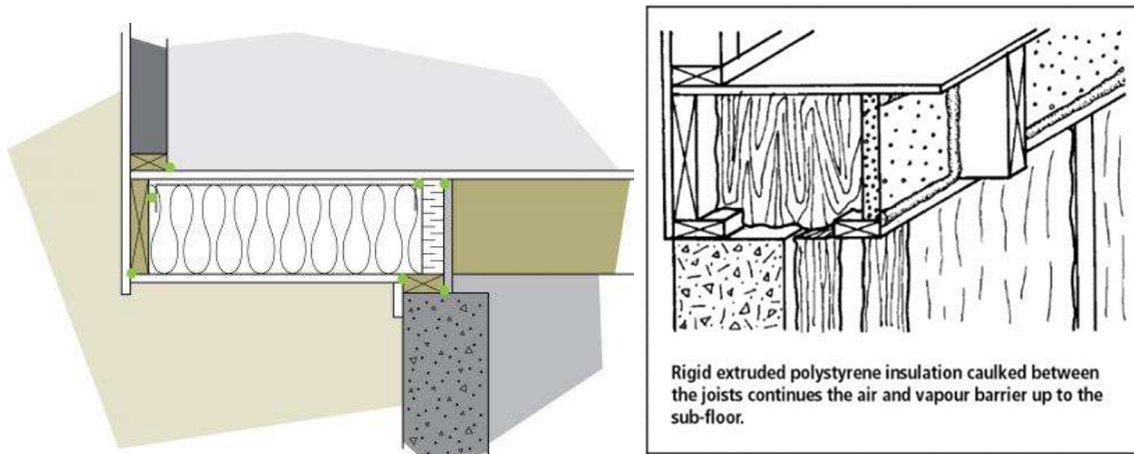


Uninsulated Basement Headers:

There is a lot of heat loss from the basement headers; this is at the top perimeter of the basement, where the house sits on the foundation. This area should ideally be professionally spray foamed with at least 4 inches of closed-cell spray foam; this will insulate them well and also prevent any air leakage. If spray foam is not used, see the main report for proper ways to insulate and this area with batt fiberglass and foam boards.

Unsealed Overhang:

A lot of air is coming in between the floors from the overhang. This air gets in from the venting of the overhang as the area between the overhang and house is not sealed properly. See the diagram below for how blocking pieces of foam board insulation and spray foam can be used to seal the area between the overhang and house.



Wall Penetrations:

Any penetrations through the exterior walls of the house, such as plumbing pipes and electrical or cable wires, should be sealed to prevent air leakage. This is best done with caulking or spray foam around the penetration, depending how big the gap is.

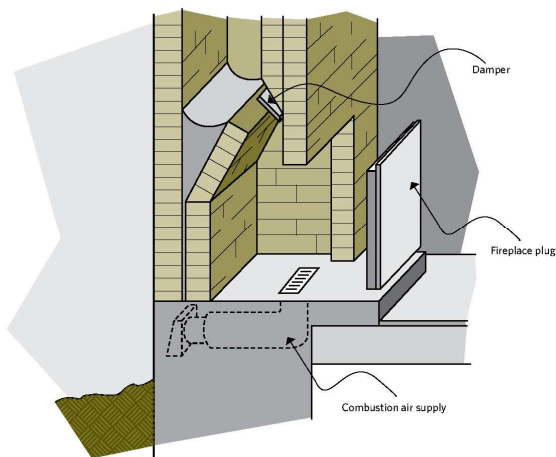
Old Basement Window:

You should cut out a 2 inch thick piece of extruded polystyrene (pink or blue Styrofoam) that fits snug in the basement window area and caulk the edges with a

seal and peel caulking, this will insulate and seal the window for the winter, but allow you to remove the caulking and foam during the summer, if needed.

Fireplace:

There is a lot of heat loss from the older fireplace, the dampers on these do not close tight and tend to warp and break over time. Client should consider getting a wood-burning or pellet insert if they wish to use the fireplace a lot. If you do not intend on using the fireplace much, you should build a properly insulated and sealed hatch that can be removed if needed. You should also caulk around where the mantel meets the wall to prevent air leakage.



Pull Down Stairs:

There is a significant amount of heat loss from the pull-down stairs in the hall. Ideally, the pull-down stairs should be removed, and a standard hatch should be installed. This hatch should be properly insulated with 4 to 6 inches of foam insulation (blue or pink is best), and the edges should be fully weather-stripped to ensure it makes a tight seal when it is closed. There should also be a latch installed to ensure the weather stripping is compressed and the hatch stays tight. You should also caulk around the edges of the inside and outside of the trim around the hatch. If you choose to keep the pull-down stairs, you should build an insulated hatch around the top of the stairs, so when you pull the stairs down, you will have to climb up the stairs and open this insulated and sealed hatch.

Top Floor Side Hatch:

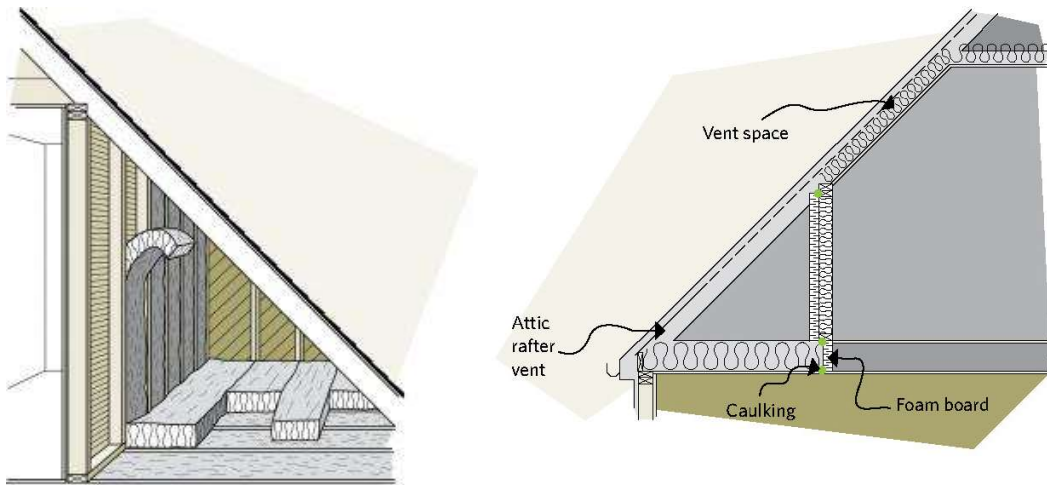
The side hatch on the top floor should be properly insulated with 4 to 6 inches of foam insulation (blue or pink is best), and the door should be fully weather-stripped to ensure it makes a tight seal when it is closed. There should also be a latch installed to ensure the weather stripping is compressed and the door stays shut tight. You should also caulk around the edges of the trim around the door.

In Floor Heat in Slab:

The evaluator noted in-floor heat in the slab, this can be an area of major energy loss if there is not enough insulation under the slab, unfortunately, the evaluator cannot see what there is under the slab for insulation. If the client finds the bills are very high, it may be due to insufficient insulation under the slab. If this is the case, a new heating system should be installed.

Half Story Insulation & Air Sealing:

The inspector noted there was air running between the main and top floor joists. This is common with story and a half houses, as the to floor cubby area is not properly insulated and air sealed. You should air seal between the floor joists where the interior wall sits on the joist with a piece of rigid foam insulation and caulking or spray foam around the edges. See diagram:



Missing Insulation:

The evaluator noted areas around the exterior walls of the home where insulation was missing or had settled down the walls. Ideally, an insulating company should be contacted to have the wall insulation improved. In these older homes, it is important that any insulating contractor you hire has thermal imaging cameras so they can see where insulation needs to be added and to ensure no settling after the products are installed.

