

COLUMN FOR OCTOBER 25TH 2003.

HEADLINE; AIR LEAKAGE IN OLDER HOMES

Q: We have an older home; we are told it is around 60-70 years old. We have caulked the windows, replaced a few of them, installed new weather-stripping and added blown insulation in the walls. Our attic is also got a layer of 6" insulation batts and yet we still seem to be drafty and our heat costs have not dropped greatly, any suggestions.

A: I called our reader and asked him about his cellar, what kind of condition it was in and type of foundation they had. He told me that they thought it was a stone and concrete poured style, common at this age. The cellar was used for storage as it leaks in the spring, again a common problem with older cellars. The first thing the reader must do is arrive at how much he wants to spend and how much time he can devote to the upgrade. The first thing to do is fill the header areas; this is the space between the floor joists and outside wall. I recommend this be filled with 2" rigid foam insulation, cut to size for each space and sealed in with a good grade of cartridge style sealant. Most of this type of insulation is either blue or pink in colour, one common name is called SM. Do not use regular Styrofoam as it emits a toxic fume if there is a fire and it does hold some dampness too. While fibreglass insulation is quick and easy, it will hold moisture and we already know the cellar is damp. Next clean the walls of any old paint or loose concrete and using a the proper adhesive, glue panels of the rigid foam insulation to the walls, at minimum four feet below the outside grade and then using the same sealant as you used for the header pieces, seal all of the insulation joints. The optimum installation of this rigid insulation is on the outside, but this type of installation will reap considerable benefits installed on the interior too.

Next go to the main floor of the home and start searching. Wait for a windy day and using a couple of incense sticks, go hunting. Check all your electrical outlets and switches. Check under your kitchen sink, around any plumbing supply and drains that are on the outside walls of the home. Any fan openings, kitchen stove vents or older ceiling/wall fans in the kitchen or bathroom. Mail slots, if you have an old milk box and then check the attic hatch. You will be surprised at the results here. You can buy foam pre-cut inserts for electrical outlets and switches. Using spray foam, fill all areas around your pipes and drains work. Small tip, use the foam for window installation, it is not as strong and does not expand as much as the regular foam that can be used for larger openings. If you use the fan openings, make sure the dampers close properly or line them with a thin self-adhesive tape to give a better air seal. If the fan is abandoned, use some of the left over rigid foam insulation and seal the opening off fully. This goes for the mail slot, switch to an outside mailbox, fill in the milk box and then using a thicker self adhesive tape, seal the hatch for the attic.

Now we will address the attic. The reader stated that he has 6" fibreglass batts in the attic and nothing else. This job will take the most time but will reap the most benefit of all. An older home such as this will not have any form of vapour/air barrier installed unless the entire walls and ceilings were removed at some point in the past, the reader says this has not happened and this applies to 90% of the homes that I see in this age bracket. Now remove a workable number of rows of insulation and expose the old ceiling. Using strips of plastic 6mil vapour barrier that have been cut to the width of the space between the ceiling joist plus 2" for each side; carefully fit the plastic into the space. Roll back one side and apply a bead of proper sealant the full length of the ceiling joist and press the plastic to it, now repeat this on the other side, make sure you allow the plastic to fit to the joists, lay on the ceiling and is pressed tight to the other side of the ceiling joist. Special attention should be taken to make sure you get the plastic over the outside walls and seal the ends down over the walls. Make sure the soffit area is clear and install a product called a baffle against the roof boards, follow the directions on the package. These are a thin foam vent in a wide "U" shape that will permit air to rise by natural stack effect up thru this baffle and out thru your roof vents. In the case of our reader, his home has no overhang to speak of and this is not uncommon at this age. In this case you should now fit the insulation against the baffle snugly.

Even though our reader will get limited ventilation if any, the cold from the roof will “wick” to the insulation and cause it to get moist over the years. Insulation should never touch the roof decking. In the case of this home a couple of turbine vents are a wise idea as a means of ventilation of this attic. I now suggest you either have a professional contractor blow in insulation or you can buy loose fill insulation in bags and do it yourself. I suggest you add another 6” of insulation over the batts that are now fitted between the joists. While you are installing the plastic in the space between the joists, take the time to carefully seal around any plumbing vents and fan discharge pipes. Any fan discharge pipes should be buried under the insulation and run to the soffit area. In the case of this home the reader has a bathroom fan and this line should be changed to the black insulated duct. Run this to one of the turbines and attach it to a rafter off to one side so as not to block the normal use of the turbine. This home has a metal insulated chimney from the gas furnace going thru the attic to the outside. Using the proper sealant, cut a metal ring around the chimney and seal down, seal the plastic barrier to the edge of the metal ring and then install the insulation around the chimney as the manufacturers instructions allow. If you are not sure, contact your heating service company and ask them for the proper clearances. Many metal chimneys do not need a clearance for insulation, but make sure. If you have a brick chimney go thru the attic, make up the same metal ring around the chimney and seal down properly before you install the vapour barrier. Now seal the plastic barrier to edge of the metal flashing. If you have any of the rigid foam insulation left, line the top of the attic hatch with at least 4” of this material, you can use the same adhesive as you used to stick it to the cellar walls. This is a good-sized project but it will reap long-term benefits in an older home. Take your time, apply the sealant fully and evenly, wear proper clothing and a mask and make sure the insulation batts are fitted as tightly together as you can in between the ceiling joists before you install the loose fit insulation. This will make a considerable difference in the heating costs and the comfort level in our readers home.

Are you considering a new home? A Professional Home Inspection by a Registered Home Inspector as licensed by the Ontario Home Inspectors Act is a wise part of your home buying plans. Go to www.oahi.com and click on the area you are moving too.

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