



# INSULATE YOUR HOME TO KEEP THE HEAT IN AND YOUR ENERGY BILLS LOW

## LIKE A GOOD WINTER COAT, THE RIGHT INSULATION IN THE RIGHT PLACE GIVES YOU A WARM FEELING ALL OVER.

If your home feels cold in the winter, it may not be your heating system that's at fault: it may be your insulation.

Adding more insulation or upgrading to better insulation is a cost-effective "fix" for just about any home that's more than about 10 years old. Unlike a new heating system, insulation is relatively inexpensive and always permanent. Once it's in, it requires no maintenance.

It will also help reduce your energy bills, because a home that is well-insulated is more energy efficient, which means it costs less to heat in the winter or cool in the summer. It's also quieter, since good insulation also acts as soundproofing, and if it's well ventilated and air sealed at the same time, it will be more comfortable, too, with fewer drafts and more consistent temperatures in each room or level.

## WHERE TO INSULATE

Insulation should be installed between the heated and unheated areas of your home.

The best place to add or upgrade insulation is usually the attic. Proper insulation in your attic can reduce how much energy you use by 20 to 60 per cent.

Check your current attic insulation:

- If you have less than 150 mm (6 inches) of insulation, it will definitely be worthwhile to put more in.
- However, if you currently have vermiculite insulation (or even suspect you do), do not touch it! It may contain asbestos. Vermiculite insulation poses very little risk if the attic is sealed off from the rest of the house, but if you've decided that you must renovate or improve your insulation, call a qualified asbestos removal professional to remove it. **Never** try to remove vermiculite insulation yourself.

## DIY OR HIRE?

Adding insulation can be relatively simple in some areas of a house, such as the exposed walls of an unfinished basement, and very complex in others, such as around the vents in an attic ceiling.

It's also very important to choose and install your insulation correctly.

We recommend you talk to the people at your local supply store to make sure you buy the right insulation for your space, and that you consider hiring a qualified professional to install it for you.



Next, you'll want to look at your basement and crawlspace, if you have one. Both of these areas can lose substantial amounts of heat in the winter—in fact, a basement can account for 20 to 35 per cent of a home's total heat loss. If you are considering an outside renovation, you might also want to look at adding insulation to the exterior walls or, if you've got an older home or cottage with an open foundation, between the supports.

## INSULATION VALUES

Insulation is rated according to its ability to prevent heat flow, both from the outside in and the inside out of your home.

The higher the RSI or R-value, the more insulating power it provides. (RSI is a metric measurement; R-value is an Imperial measurement—in feet rather than metres. You may see one or both measurements on insulation in Canada.) For example, insulation labeled R-12 has more insulating power than insulation labeled R-5.

The R-value you will need for your home depends on two things: your Climate Zone and where you plan to add the insulation—walls, floors, etc.

## BC'S CLIMATE ZONES

| Zone A           | Zone B                 | Zone C      |
|------------------|------------------------|-------------|
| Vancouver Island | North/Central Interior | Far North   |
| Lower Mainland   | Blue River             | Cassiar     |
| South Interior   | Burns Lake             | Fort Nelson |
| North Coast      | Dawson Creek           | Smith River |
| Cache Creek      | Mackenzie              |             |
| Clearwater       | 100 Mile House         |             |
| Cranbrook        | Prince George          |             |
| Golden           | Valemount              |             |
| Merritt          | Vanderhoof             |             |
| Quesnel          | Williams Lake          |             |
| Rosland          |                        |             |
| Stewart          |                        |             |
| Terrace          |                        |             |

## MINIMUM RSI AND R-VALUES BY CLIMATE ZONE\*

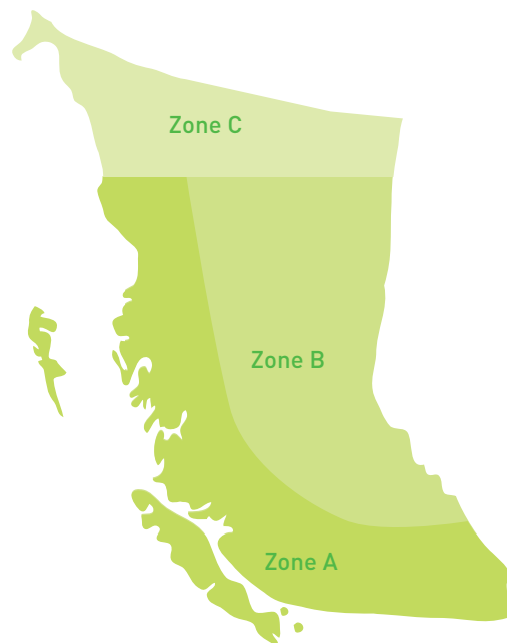
|   | Zone A | Zone B | Zone C |
|---|--------|--------|--------|
| <b>Walls</b>                            |        |        |        |
| RSI                                     | 3.5    | 4.2    | 4.76   |
| R                                       | 20.0   | 4.0    | 26.0   |
| <b>Basement Walls</b>                   |        |        |        |
| RSI                                     | 3.5    | 3.5    | 3.5    |
| R                                       | 20.0   | 20.0   | 20.0   |
| <b>Ceiling</b>                          |        |        |        |
| RSI                                     | 7.0    | 8.5    | 9.9    |
| R                                       | 40.0   | 48.0   | 56.0   |
| <b>Floor<br/>(over unheated spaces)</b> |        |        |        |
| RSI                                     | 4.9    | 7.0    | 7.0    |
| R                                       | 28.0   | 40.0   | 40.0   |

## ADD OR UPGRADE YOUR VENTILATION AT THE SAME TIME

Adding insulation can be relatively simple in some areas of a house, such as the exposed walls of an unfinished basement, and very complex in others, such as around the vents in an attic ceiling.

It's also very important to choose and install your insulation correctly.

We recommend you talk to the people at your local supply store to make sure you buy the right insulation for your space, and that you consider hiring a qualified professional to install it for you.

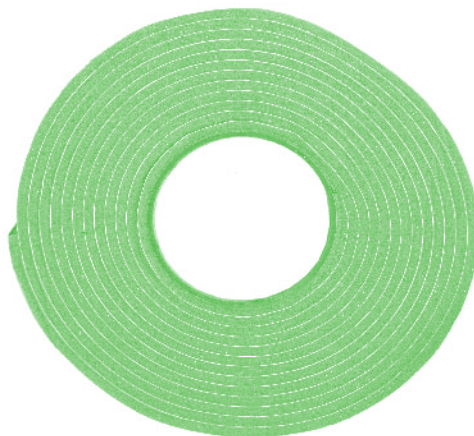
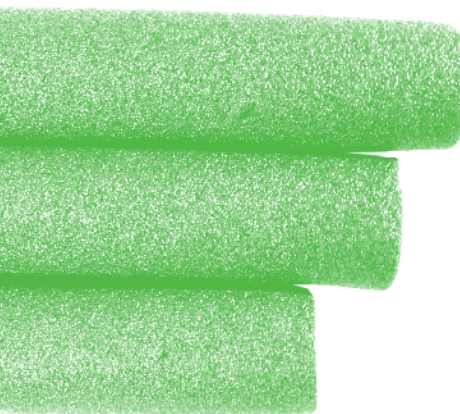


\*For the greatest energy efficiency, insulate more than the minimum values.

## WHAT INSULATION TO USE

Insulations are made from a wide range of materials, including melted glass spun into fibres, expanded volcanic rock, recycled newsprint and foam plastic, but come in just four basic types. You may need to use only one type or a combination of several, depending on the space you are insulating and whether or not the area you want to insulate is exposed (not hidden behind drywall or tile, for example).

- **Blanket insulation** is available in either rolls or batts, and is usually made from fire- and mould-resistant mineral fibres. It is placed tightly between the joists or studs in exposed walls, floors and ceilings (good for attics or other unfinished spaces). You can install blanket insulation yourself, but you must follow the manufacturer's directions: the fibres can irritate your eyes, skin, throat and lungs.
- **Blown-in, loose-fill insulation** is made up of fine loose fibres or fibre pellets that are sprayed into walls or between roof or floor joists with special equipment. Some blown-in insulations can be applied through a small opening, without removing existing drywall or other surfaces. Blown-in insulations generally require professional installation or an insulation blower machine.
- **Rigid board insulation** is made from glass fibre or foam plastic materials and has a higher insulating value than blanket or blown-in insulation, but also costs more. The boards are lightweight and easy to cut and handle, but difficult to fit into irregular spaces and you must have exposed walls, floors or ceilings to use it. Some rigid boards are now available with an attached fire-resistant, moisture-resistant or decorative covering. You can also order boards pre-cut to specific sizes for an additional cost.
- **Spray-foam insulation** must be mixed on site by a trained contractor or professional installer, then sprayed directly onto a surface or poured into enclosed cavities using a pump-driven spray gun. The foam expands in place and sets in seconds; it's then covered with a fire-resistant material, such as drywall.



## FOUR MORE INSULATION TIPS

1. Some insulation materials are more environmentally friendly—and less hazardous to your health—than others. We recommend that you research your options before you buy.
2. Do not seal or insulate over any exhaust or air-intake vents, and if you have to cover any electrical wiring, make sure it is in good shape. If in doubt, have the wiring examined by a qualified contractor.
3. Installing a vapor barrier to the warm side of your new insulation can prevent moisture from entering your home. We recommend you talk with a qualified professional to determine which vapor barrier is best for your application and where and how to install it. (Please note: some types of insulation come with a built-in vapor barrier, and some paints will act as a vapour barrier.)
4. Do not put thermal insulation around recessed pot lights or pot lights in attics unless they are IC-rated (insulated ceiling) pot lights: the heat build-up could lead to a fire hazard. If you must insulate around them, use a thermal protection device with an insulation rating over 90°C. This device will automatically switch off the pot lights if they overheat. Better yet, talk to a qualified contractor. Contractors have safe methods for boxing in pot lights and insulating around them.

## TWO MORE AREAS TO INSULATE

Insulating your attic, crawlspace or basement is a great step toward energy efficiency, but why stop there? Other areas to insulate around your home include:

- **Windows and doors.** Eliminate those little gaps, cracks and holes that let air through window and door frames and you'll not only save money on your heating bills, you'll also make your home more comfortable, reduce inside moisture and help block outside noise.

Use **weatherstripping** to block air leaks around doors and windows that open. It comes in rubber-like strips designed to work under compression and quickly spring-back to their original shape.

Use either **caulking or sealant** to stop leaks in or around door and window frames. Usually very thick liquids or expanding foams, both products offer a good barrier against air and water, but they are not permanent and you will need to maintain or replace them as they age.

Talk to the staff at your local home improvement or hardware store to make sure you choose the right product for your windows or doors.

- **Electrical outlets, switches and lighting fixtures.** A lot of air can enter your home through electrical outlets and switches on your outside walls, or through lighting fixtures between your unheated attic and your heated rooms.

Your local hardware store will have special gaskets that fit behind the cover plates of electrical outlets, switches and lighting mounts to stop air leaks (you'll also need caulk to seal the edges of the gaskets).

Child safety plugs can also help to reduce air leaks in electrical outlets, and are easier to install than gaskets, but they are best in outlets you do not use very often.



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