A Homeowner's Guide To Attic and Rafter Insulation

HOW YOU CAN BENEFIT FROM INVESTING IN ATTIC OR RAFTER INSULATION:

- Reduce your heating bills by improving your energy efficiency
- Increase your home comfort levels
- Support the climate by reducing your own greenhouse gas emissions

Do you know that you are entitled to a grant through the SEAI Home Energy Grants programme to help improve your home insulation?

On average, a home loses 20-30% of its heat through its roof, if it is not properly insulated. This loss of heat not only costs you money in the form of higher heating bills, but it also harms the environment by increasing greenhouse gas emissions.

The SEAI Home Energy Grants programme offers grants to help you improve the insulation of your home through the installation of attic or rafter insulation.

Attic/Rafter insulation is generally the most cost effective of any energy efficiency upgrade made to a house, considering the potential cost savings that can be achieved on the monthly heating bills. Even if you already have insulation in your roof, you may still be losing heat if there is not enough insulation, if it is damaged or if it is not correctly installed.

INSULATION MATERIALS

Typical insulation materials used are semi-rigid insulation boards as well as glass/mineral fibre. The insulation material you choose may depend on the depth of your joists or rafters. The optimum solution for your specific case should be discussed with the Contractor.

There are several 'multifoil' products on the market that may achieve impressive levels of insulation on their own. If you are considering using a multifoil insulation in conjunction with another insulation material, it is important to check any installation requirements with the supplier and where required the contractor should use an NSAI Agrément certified product.

Installing insulation properly is very important. Where insulation is installed between rafters, it is important that it is cut tight and is installed with no gaps. Any gaps between the insulation and the rafters will cause it to become ineffective, as heat loss will occur in these areas. There is also a risk of condensation occuring if rigid foam is not correctly installed.

It is vital that you look for high quality when choosing your insulation product. The effectiveness of an insulating material is measured using a 'U-value'. This measures how much heat is conducted through a material and how much heat passes through your home. Correctly installed insulation will have a low U-value, meaning that only small amounts of heat will pass through, thus keeping your home warmer for longer.

Homeowners availing of the attic or rafter insulation grants under the SEAI Better Energy Homes programme are required to install insulation achieving the minimum required U-values of 0.16 W/m^{2}K for ceiling level insulation or 0.20 W/m^{2}K for rafter insulation.

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It is vital that you ask the installer if the insulation product they are using will achieve, at the very least, the minimum required U-value, in order to qualify for the SEAI grant.

ATTIC/RAFTER INSULATION FACTS AND TIPS

INSTALLATION - If you have a pitched roof with an attic space, one of the simplest ceiling insulation methods is to lay a quilt (Mineral Fibre, Glass Fibre, Hemp, Sheepswool materials are all capable of satisfying the performance requirements of the scheme). It is important to ensure that the quilt is installed in two layers and in two directions in order to ensure the maximum benefit is achieved.

There are many other products that can insulate effectively at ceiling level. Where your contractor suggest that one of these products is the best for you, have them explain in detail the benefits and standards associated with the product. If you are considering using a "multifoil" insulation in conjunction with another insulation material, it is important to check any installation requirements with the supplier. Installing insulation properly is very important. Where insulation is installed between joists, it is important that it is cut tight and is installed with no gaps. Gaps between the insulation will cause it to become less effective as heat loss will occur in these areas.

ATTIC STORAGE - It is important, where possible, to minimise the amount of items stored in the attic which may compact or compress the insulating material and affect its ability to insulate. Try to make certain that the storage area set aside is located over an area of the house which has a lower heating requirement, e.g. over bathrooms as opposed to the living/sitting room. Alternative arrangements like raised storage areas above the level of the insulation could also be discussed with your contractor. When a large area of the attic is needed for storage, rafter insulation may be a better option.

VENTILATION - Adequate ventilation is important in an attic to help prevent damp or mould from occurring. Therefore, it is important to ensure ventilation openings at the eaves of the house are left unblocked after installation of your insulation to allow air to pass between the insulation and the felt. Long term exposure to interstitial condensation within a roof space can lead to structural roof timbers rotting. It is essential that a cold roof space is adequately ventilated.

WATER STORAGE TANKS & PIPES - When an attic is insulated at ceiling level, its temperature is reduced, as most of the heat previously lost from the house through the attic is now being kept within the house. Therefore, it is necessary to insulate the water tank and pipes to ensure that they will not freeze during cold weather. This will also help to minimise heating costs associated with heating water.

WALKWAY - Your insulation contractor should install a permanent walkway in your attic to ensure you have easy access to cold water tanks or other fitted appliances, without compromising the effectiveness of the insulation.

FLAT ROOF - In many cases, it is easier and more cost effective to insulate a flat roof internally using insulated plasterboard. This means lowering the height of the ceiling but may be a better option than insulating externally.

DOWNLIGHTERS – Recessed lighting/downlighters should be provided with sufficient space around them to allow heat to dissipate so as to prevent the lights themselves from overheating and creating a fire hazard. If the light fitting itself is not airtight (to the roof), then heat will be lost from the room and the overall effectiveness of the roof insulation is reduced. If sufficient space cannot be provided for, then recessed light fittings should not be installed.

ROOF INSULATION IN APARTMENT DWELLINGS -
The Better Energy Homes grant for the upgrade of roof insulation is available for apartments only; in a top-floor apartment, or an apartment where the roof is a heat loss element i.e. the heat escaping from the apartments roof is escaping to the outside.

An apartment which has other separate apartments located directly above is not eligible to avail of the SEAI roof insulation grant as the roof in such apartments is not considered a heat loss roof element for the building.

QUESTIONS TO ASK YOUR SUPPLIER AND CONTRACTOR

Choosing and installing roof installation should not prove to be a difficult process. However, there are important decisions to make and a few rules to apply to ensure that your attic insulation will be to your satisfaction and meet your requirements.

It is vital to look for high quality when choosing your roof installation. When choosing a product, you should ask your

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supplier or contractor to demonstrate to you how and why the proposed insulation product meets the performance requirements of the Home Energy Grants programme and that it complies with all relevant Building Regulations.

SEAI has compiled a list of questions you should ask your suppliers and contractors prior to making a purchase. It is in your best interest to make sure you are satisfied that all your questions are answered. If an answer seems too complicated, then ask for a simpler explanation.

SIZING/VENTILATION/DESIGN

1. What type of attic insulation would you recommend? Why are other types less suitable?
2. What thickness of the recommended insulation will I need to achieve the required U-Value (0.16W/m2K for ceiling level insulation, 0.20W/m2K for rafter level insulation)?
3. If I need storage space in my attic, where is the best place to have this, and how will the insulation be installed to minimise any heat loss caused by having attic storage space?
4. Will the insulation be installed according to the manufacturer's installation instructions?
5. Will the system result in any dampness or condensation on the walls or trouble with ventilation? How will this be addressed/avoided?
6. How are the walls of an attic room to be insulated? Will there be a full coverage of insulation across the inside of the walls?
7. How will the roof space outside of the attic room be insulated?
8. Is the product NSAI Agrément certified?
9. Is the product approved by Irish Standards (IS), British Standards (BS) or European Standards (EN)? If not, why not?
10. Is the product suitable for my attic?
11. Is the product sufficiently fire resistant?
12. Will the product affect the ventilation in the attic when installed? Will a minimum gap of 50mm between the insulation and felt be maintained?
13. How will the installer provide for any existing downlighters/ recessed lighting?
14. Will my water storage tanks and pipe work in my attic be insulated as part of the works, in line with SEAI's requirements?
15. Will a walkway to the water storage tank be included in the works?
16. How will the installation affect the Building Energy Rating (BER) of the dwelling?
17. Will my attic hatch be insulated?
18. Will the material release pollutants/affect air quality after works?

INSTALLATION:

1. Is the contractor on SEAI's list of Registered Contractors? (Remember, if the contractor is not listed you cannot apply for or receive a grant under the SEAI Home Energy Grants programme)?
2. Can the contractor complete work in accordance with SEAI's Domestic Technical Standards and Specifications and Better Energy Homes Contractor's Code of Practice and the technical guides supplied by the material supplier?
3. Does the supplier offer delivery, installation and after sales service?
4. What level of training or accreditation do the Contractors, involved in the installation, hold?
5. Which trade associations do the Contractors belong to?
6. How many similar systems has the contractor installed? Are local references available?
7. How long will the installation take?
8. What additional pieces of work need to be done to my home/attic to prepare for the installation? Will the contractor provide all of these services and at what cost?
9. What work will need to be carried out to get my home back to its original condition? Will the contractor provide all of these services and at what cost?

COSTS AND PAYMENT:

1. Does the quotation detail and cover all costs associated with the works?
2. What is the range of annual cost and energy savings under average conditions?
3. What are the financing options or payment terms?
4. Are there any additional costs?

AFTER SALES SERVICE:

1. What guarantees are included with the product and installation?
2. Is any professional maintenance (by the Contractor or similar) required? If so, how often?

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I NEED ATTIC/RAFTER INSULATION. WHAT DO I DO NEXT?

1. You can get more information on the Home Energy Grants programme in one of three ways:
   - Visit: www.seai.ie/grants/home-energy-grants
   - Contact the programme team directly at info@seai.ie

2. Contact a registered contractor for attic/rafter insulation from the SEAI Registered Contractor list at: www.hes.seai.ie/grantprocess/contractorsearch.aspx
   It is recommended you contact a number of registered contractors to ensure you receive the best quality available, at a competitive price.

3. Once you have selected a suitable contractor, complete the Home Energy Grants application form available at:
   www.seai.ie/grants/home-energy-grants/how-to-apply

4. The next step is to have the works carried out. It is in your best interest to make sure you are satisfied that all your questions are answered. Further technical information can be found in SEAI's Domestic Technical Standards and Specifications and Better Energy Homes Contractor's Code of Practice at:
   www.seai.ie/contractors-and-suppliers/supports-for-con tractors/

NOTES:

- To qualify for a grant, all works must be undertaken by an SEAI registered Contractor in accordance with the technical requirements set out in SEAI's Domestic Technical Standards and Specifications, Better Energy Homes Contractor's Code of Practice and the Better Energy Homes Quality Assurance & Discipline Procedures (QADP).
- The applicant shall have a formal contract in place with each of their chosen registered Contractors before works commence.
- The contract of works agreed is between the Homeowner and the Contractor only. SEAI accepts no liability or responsibility for any breach of contract between the Homeowner and the Contractor.
- For the full list of Terms & Conditions please refer to the Better Energy Homes Programme Application Guide, available at:
  www.seai.ie/grants/home-energy-grants/how-to-apply