How to insulate your home

Walls

The most effective way to increase the thermal efficiency of your building is to have cavity wall insulation installed. The walls of a poorly insulated building could be losing about a third of all heat put into the building. However, wall insulation has to be considered carefully because walls also have an important function to perform in keeping moisture out of the house.

In an existing property with cavity walls, insulating material can be pumped or blown into a wall cavity. Materials commonly used are mineral wool fibre, urea formaldehyde foam and expanded polystyrene beads.

If you do not have cavity walls, there are methods of internal and external cladding. Solid walls can be insulated internally by battening them out and filling the space inside the battens with polystyrene, mineral wool or fibreglass and then covering the battens with plasterboard. This involves a great deal of work, including moving electrical sockets, skirting boards, radiators, door and window frames etc. Also, the size of the room is reduced, as the insulation must be at least 50mm thick.

For more information on cavity wall insulation, visit the National Insulation Association's website – **click here**

Loft Space

The most commonly insulated part of a building is the roof space. It is an area of high heat loss - about a third of the heat put into a house is lost through the roof. It is often relatively easy to gain access to and the materials required are readily available and not too expensive. It is not a skilled job, but needs some agility and a very careful approach. Some Government grants for roof space insulation are available – **see the page on Grants for more information.**

The majority of roofs are insulated by laying the insulation across the loft floor between the ceiling joists. The material that is used is mainly rolls of fibreglass matting available in thicknesses of 50mm, 100mm, 150mm and 200mm. The most economical thickness is currently about 150mm for most fuels, although if you are using full price electricity or LPG it could be worth putting down more.

For more information on loft insulation, visit the National Insulation Association's website – **click here**

Draught Reduction

It is essential for air to move in and out of the buildings we live and work in, or it would eventually be impossible to breathe in them. However, rapid movement of cold air in a building, known as draught, creates uncomfortable conditions and also wastes fuel by reducing the air temperature and increasing the amount of air the system has to heat beyond that which is necessary. Draught reduction is normally the most cost effective method of energy saving available. In many cases, expenditure on draught reduction is recovered in less than a year.

For more information on draught proofing, visit the National Insulation Association's website – **click here**

Double Glazing

The most common way of improving the heat-retaining properties of windows is to place another layer or pane of glass on the inside, and trap the air between them. If the air can move freely between the panes, it can conduct heat across the inner space and reduce the insulating effect. For this reason, purpose-made sealed double glazing units normally have the air evacuated to leave a vacuum. The wider the gap between the panes of sealed units, the better the insulating effect.

Types of Double Glazing:

Replacement windows: This is the most commonly fitted type of double glazing system and there is a large number of firms selling and fitting it. Sealed units, complete with outer frames and sills, are fitted directly into the brickwork opening in the wall.

- Individual sealed units: These can be ordered to the size of a sheet of single glazing and used to replace it in the original frame. Care needs to be taken that the depth of rebate on the frame is sufficient to carry the width of the double glazing unit.
- Secondary double glazing: These are single glazed units that are fitted inside original single glazed windows. It is important to draught-proof the outer windows. Secondary double glazing can be fitted at reasonable cost on a DIY basis, and kits of the required components are available
- Plastic film**:** Transparent plastic film can be fitted over window frames as a DIY operation. This traps the air between the film and the glass and provides a very effective and low cost method of reducing heat loss through windows.

Source: National Insulation Association