

HOW TO INSULATE YOUR HOME

A vast amount of expensive heat escapes from your home through the loft.

Department of the Environment figures show that up to 25% of heat loss escapes through this route.

By insulating the loft floor, walls and perhaps the

rafters too, you can keep most of the heat where it is meant to be - in the living area of your home.

After insulating you'll soon notice how much less fuel is needed to keep the house at the temperature you like.

Good quality insulation can

also ensure that your home will stay cooler in hot summer weather.

This Good Idea leaflet shows you ways to carry out worthwhile insulation of the loft plus tanks and pipes in it and includes a section on insulating under cold suspended timber floors.



LOFT FLOOR INSULATION

Loft floor insulation is available in blanket form made from glass mineral wool fibres. The extra wide Wickes Loft Roll is perforated and can be easily split into 2 rolls to suit 600mm joist centres or 3 rolls to suit 400mm joist centres. It may be used at full width for cross laying. It is compressed for storage and ease of handling but recovers thickness once rolled out in the loft. The new level of insulation required for new buildings is 270mm, using Wickes Loft Roll. This would require the use of a combination of 100mm and 170mm packs to make up 270mm. Most loft floors have joists which are 100mm high but insulation does not stop at this level, covering over the joists prevents "cold bridging" with heat escaping through the joists themselves from the room below.

SAFETY

Always wear a protective nose and mouth mask as laying any form of insulation in a confined area is likely to create dust, which may cause irritation. Protective gloves are also advisable especially if you have sensitive skin.

OTHER ESSENTIAL ITEMS

You will need a plank or two of wood to stand or kneel on, a pair of scissors or a sharp knife and good light.

WORK SEQUENCE

1. Cleaning up the loft floor
2. Laying the insulation

1. CLEANING UP THE LOFT

Clean up the loft as much as possible to give yourself a clear working area. Lift any floorboarding since the insulation should be laid underneath. It can be replaced later. If the floor between the joists is dirty and dusty vacuum it clean.

WICKES LOFT ROLL INSULATION

Main features of Wickes Loft Roll Insulation are:

- One of the most effective thermal insulation materials on the market.
- Light and easy to work with.
- Water repellent.

KEEP INFORMED

- Look for other Good Idea Leaflets that could help you with your current project.
- Check that your Good Idea Leaflets are kept up to date. Leaflets are regularly changed to reflect product changes so keep an eye on issue dates.
- If you would like to be put on our mailing list for the Wickes booklet, call our Freephone number which is:

0500 300 328

- Visit our website at www.wickes.co.uk

INSULATION PROJECT SHOPPING LIST

Description	Code
Loft roll 100mm x 9.17 (1160mm wide)	161-192
Loft roll 170mm x 5.33 (1160mm wide)	161-193
Cold water tank jacket 4 gallon	210-204
Cold water tank jacket 25 gallon	210-205
BS Standard cylinder jacket	210-203
Felt pipe lagging 22m pack of 3	210-456
Foam pipe lagging 15mm x 1m pack of 5	210-451
Foam pipe lagging 22mm x 1m pack of 5	210-454
Pipe insulation to Building Regulations 15mm x 1m pack of 3	210-010
Pipe insulation to Building Regulations 22mm x 1m pack of 3	210-012
General Purpose Slab 1200 x 600 x 50mm Pack of 10	161-197
Cavity Wall Insulation 1200 x 455 x 65mm Pack of 8	161-198
Cavity Wall Insulation 1200 x 455 x 85mm Pack of 6	161-199
Heavy Density Slabs 1200 x 600 x 30mm Pack of 5	161-189
2.5 x 20m Light Duty Polythene Sheeting	240-307
2.4m x 600mm x 25mm Polystyrene	210-801
2.4m x 600mm x 50mm Polystyrene	210-802
Protective nose and mouth mask	
Pair of protective gloves	

- Non combustible.
- Doesn't rot, it inhibits fungal growth, mould and bacteria and is also vermin proof.
- Can be easily cut with a standard kitchen knife.

Wickes supply 100mm thick rolls, which are ideal for topping up very old existing 50mm insulation or for cross laying to create a double layer. Alternatively should you wish to meet the thermal standard required for new builds, simply lay 100mm rolls between the joists and cross layer over the joist with 170mm rolls. Calculating requirements

To calculate how many rolls of either thickness you need to cover your loft floor, measure its length and width. Multiply the two figures together to determine the area. Use the chart on the next page to read off how many rolls will be needed of either thickness to cover the loft floor. Deduct approx. 10% to allow for joists.

2. LAYING ROLL INSULATION

Kneeling on a plank of wood laid across the joists, start unrolling the insulation between the joists at one end of the loft close to the eaves where the roof and floor/ceiling meet. Don't push the material tightly into the eaves since some ventilation in the loft is essential.

Insulation Range

Loft Roll Insulation

100mm

Pack covers
10.63m²



- Glass mineral wool for thermal and acoustic insulation of lofts
- Suitable for both 600mm and 400mm joists and rafter spacing
- Ready perforated, so easy to divide
- High coverage pack
- Compressed for easy handling
- Expands on opening



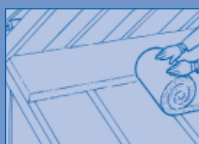
Loft Roll Insulation

170mm

Pack covers
6.14m²



- Glass mineral wool for thermal and acoustic insulation of lofts
- Suitable for both 600mm and 400mm joists and rafter spacing
- Ready perforated, so easy to divide
- High coverage pack
- Compressed for easy handling
- Expands on opening

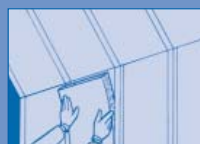


General Purpose Slab Insulation 50mm

Pack covers
7.20m²



- General purpose rock mineral wool for thermal and acoustic insulation
- Suitable for 600mm and 400mm centres
- Easy to cut and install
- Ideal for timber studwork, metal studwork, loft conversions, rafters, timber floors and dry lining



Cavity Wall Insulation 65mm

Pack covers
4.36m²



- Rock mineral wool slab insulation for cavities in exterior wall construction
- 455mm wide to suit standard wall tie spacings
- Offers both thermal and acoustic insulation



Cavity Wall Insulation 85mm

Pack covers
3.27m²



- Rock mineral wool slab insulation for cavities in exterior wall construction
- 455mm wide to suit standard wall tie spacings
- Offers both thermal and acoustic insulation

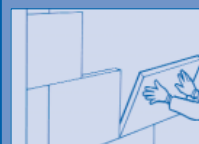


Heavy Density Slab Insulation 30mm

Pack covers
3.60m²



- Heavy Density rock mineral wool slab insulation for walls and floors
- High compressive strength
- Offers both thermal and acoustic insulation
- No timber studding required



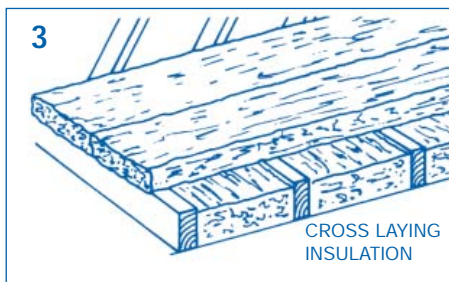
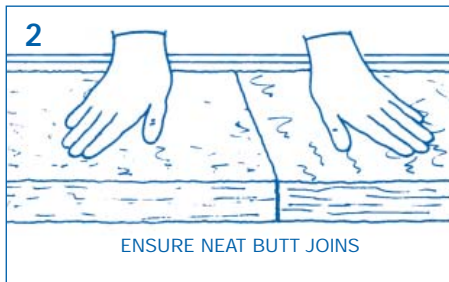
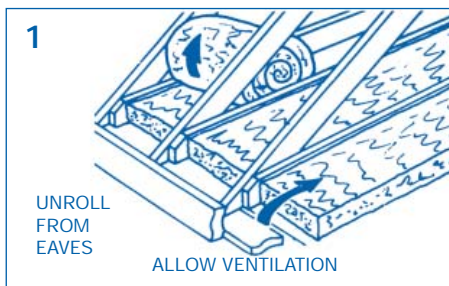


Diagram 1.

Continue unrolling across the loft floor, cutting the material at the end of each run to fit into the eaves loosely as before. Don't pack the insulation downwards or compress it to fit in awkward corners. It should be cut to fit and maintain a constant depth.

Make sure that where one roll ends, the next is closely butted up to it.

Diagram 2.

Don't forget to fit insulation to the inside of the trap door into the loft. It can be held in place with string attached to drawing pins or nails, or fixed with dabs of adhesive. Wickes General Purpose Slabs, detailed later, may prove easier to use when covering the hatch since they are almost rigid.

DO NOT insulate the area directly underneath any cold water storage tank. Read the section 'Insulating a Cold Water Storage Tank' for further details.

INCREASING THE THICKNESS

As mentioned earlier, the thicker the layer of Loft Roll insulation, the more effective it is at preventing heat loss. Wickes 100mm Loft Roll has an 'R' value of 2.25, 170mm has an 'R' value of 3.85. The higher the 'R' value, the bigger your savings will be.

If the thickness is increased to 200mm the 'R' value becomes 4.5, and if increased to 270mm thick it would produce an 'R' value of 6.08.

The thickness can be increased in a number of ways using either 100mm or 170mm insulation.

No. of rolls of 100mm							
3	4	5	6	7	8	9	10
Approximate coverage in m ²							
32	43	53	64	74	85	96	106
Approximate coverage in sq.ft*							
340	460	570	690	800	910	1030	1140
No. of rolls of 170mm							
6	7	8	9	10	11	12	13
Approximate coverage in m ²							
37	43	49	55	61	68	74	80
Approximate coverage in sq.ft*							
400	460	530	590	660	730	800	860

You can, for example, lay 100mm insulation between the joists as described earlier, then cross lay a 170mm layer on top of the joists as shown in **Diagram 3** to give an overall thickness of 270mm.

If you choose to insulate using a method that covers both joists and the gaps between them, you must remember - in future - to use, and walk on planks of wood laid on top of the insulation, positioned at right angles to the joists. Note: A permanently fixed raised walkway is safest and will prevent the insulation being squashed.

INSULATING A COLD WATER STORAGE TANK

The only part of the loft floor that should not be insulated is the area directly underneath cold water storage tank, so that a little heat from the house comes through the floor and helps prevent the tanks freezing in winter. Remember that a loft with an insulated floor is a much colder area and the freezing of water in tanks or pipes is a real risk unless precautions are taken.

The easiest way of insulating your cold water storage tank is to use a Wickes cold water tank jacket; these are available for 4 gallon, 25 gallon tanks.

A second method is to put a polystyrene or similar cover over the top of the tank(s) and run the loft insulation up the sides, tying in place, as shown in **Diagram 4**. Another effective method is to use Wickes 25mm thick polystyrene sheeting, cut to form a box around the tank. The side panels should extend from the top of the tank right down to floor level with cut outs, where necessary, for tank outlet and inlet pipes. **Diagram 5**.

No insulation should be fitted under the tank, since some warmth from the room below should be allowed to reach the underside of the tank, as a further precaution against freezing. Use more Wickes polystyrene as a cover for the tank.

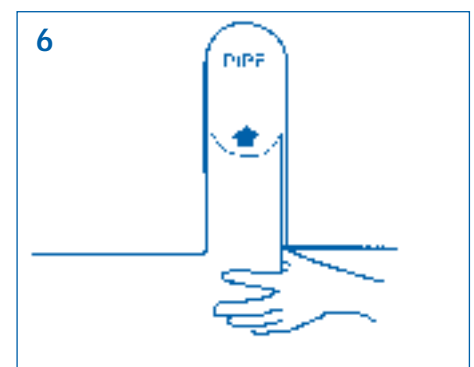
When the polystyrene has been cut to size with a sharp trimming knife it can be held in place with string.

To make a cut-out for a pipe, remove a

segment of polystyrene from where the outlet is to be, right to one edge of the sheet. Fit the polystyrene, trim the cut out piece to accommodate the pipe then push back into place. **Diagram 6**. Two 2.4m x 600mm sheets of Wickes polystyrene should be sufficient to cover most tanks up to 50 gallon capacity, provided that the tank tops are not more than 600mm above floor level. Additional sheets may be needed if tanks are raised on platforms to gain extra height, for example to increase water pressure for showers.

Note: By extending the insulation of the raised cold water tank to joist level, the area below the tank need not be insulated, protecting the tank from freezing in very cold weather.

Wickes Home Insulation Slabs, made from rock mineral wool, in a semi rigid form - explained in more detail later on - can also be used to insulate tanks (should not be used as a direct top cover), and are fitted in much the same way as the polystyrene.



LAGGING A HOT WATER STORAGE CYLINDER

Modern hot water storage cylinders are supplied with integral insulation, but older copper cylinders have none, allowing enormous amounts of heat to escape - far more than is needed to warm clothes in an airing cupboard.

All you need to keep heat in is a Wickes BS standard cylinder jacket. They also carry the BS Kitemark and meet building regulation requirements under Water Bylaw 49. These jackets are made in segments of fibreglass filled envelopes, which are then positioned around the

tank and tied in place.

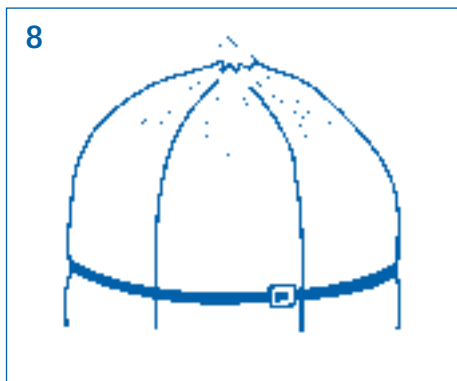
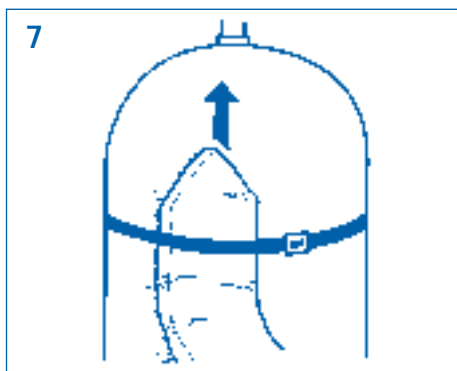
To use, unwrap the rolled-up, compressed segments immediately and allow them to flatten out and expand to their full thickness. Loosely tie one of the straps provided around the cylinder just below the curved top. Slip the shaped top of one segment under the strap, loosening it slightly. Ease the segment up so that it reaches to the top of the tank.

Diagram 7.

Repeat with the other segments until all are roughly in position. Gather the tops together, thread the cord provided through the eyelets and tie around the hot water outlet pipe at the top of the tank.

Diagram 8. Position the segments neatly around the jacket about 300mm apart. Do not tighten the straps too much. They should not compress the jacket, but simply hold it in place.

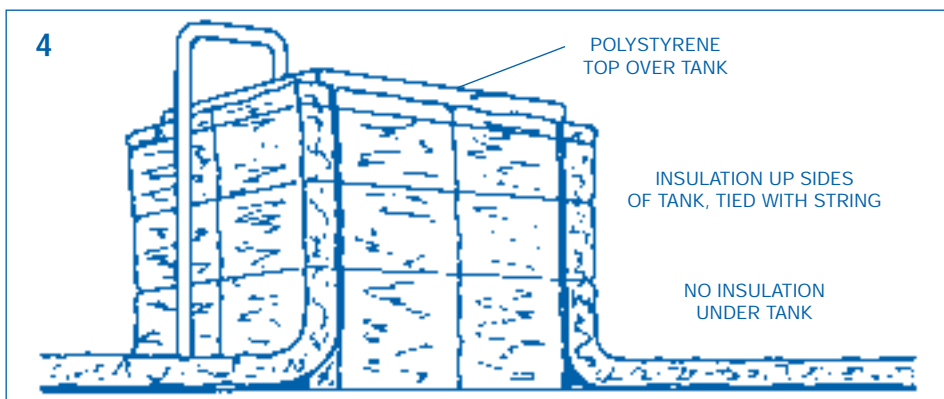
Note: Don't let any cables, especially those leading to an immersion heater boss, become trapped under the jacket.



INSULATING PIPES

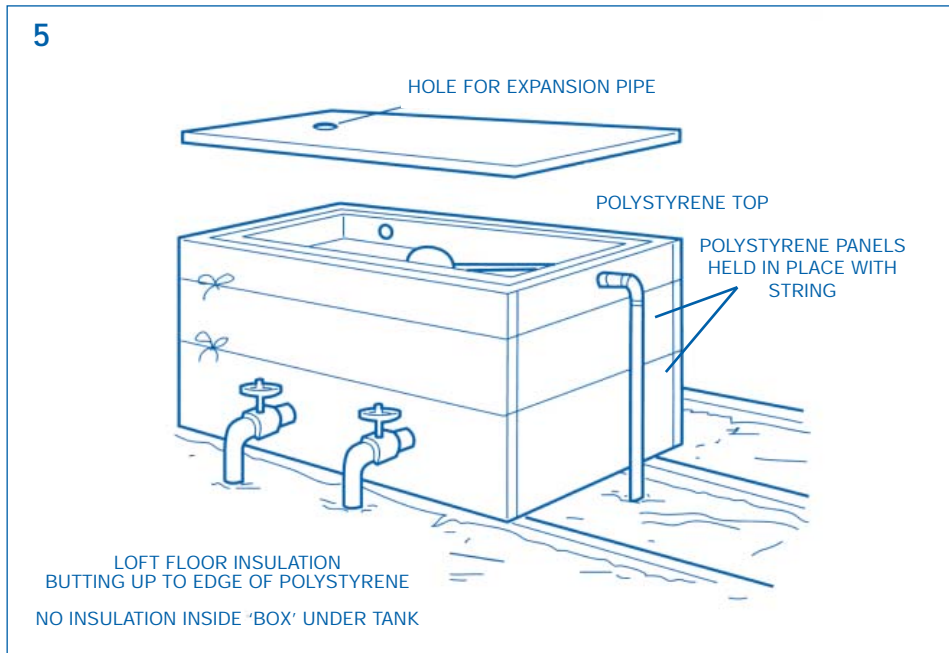
Wickes supply three types of pipe lagging. The first is felt lagging sold in 22m rolls suitable for use with either 15mm or 22mm pipe. This pipe insulation is simply wrapped around the pipes or, in new installations, is slipped over the pipe

tight and here again tape will be needed to keep the split closed. Alternatively the lagging can be cut with mitred ends and fitted over 90° joints. At tees the lagging will need to be cut as shown in **Diagram 10**, and then taped together. The third type is similar to the foam



lengths before connections are made. The second type is split foam flexible pipe lagging 13mm thick. Available from Wickes in 1 metre lengths for 15mm and 22mm hot or cold pipes this form of lagging is easy to fit to new or existing pipework and is highly effective. To fit the foam to pipes, simply open the split along the length of lagging and slip over the pipe. The split will re-close around the pipe but should for extra security, be covered with sticky tape. Insulating tape is excellent for the purpose and should also be used where one length of foam butts up against the next.

Diagram 9. Once fitted over the pipe, the lagging can be pushed along into areas which are difficult to reach. Although flexible enough to go round most bends, the lagging may well open up if the bend is



insulation, as it is split along its length and fitted in the same way. It meets Building Regulation requirements, providing a higher level of insulation.

RAFTER INSULATION

If you intend to use your attic space for storage, it makes sense to insulate the underside of the roof slope. The easiest way of doing this is to friction fit insulation in the form of Wickes General Purpose slabs, simply wedging cut pieces between the rafters where they will remain in place without further support.

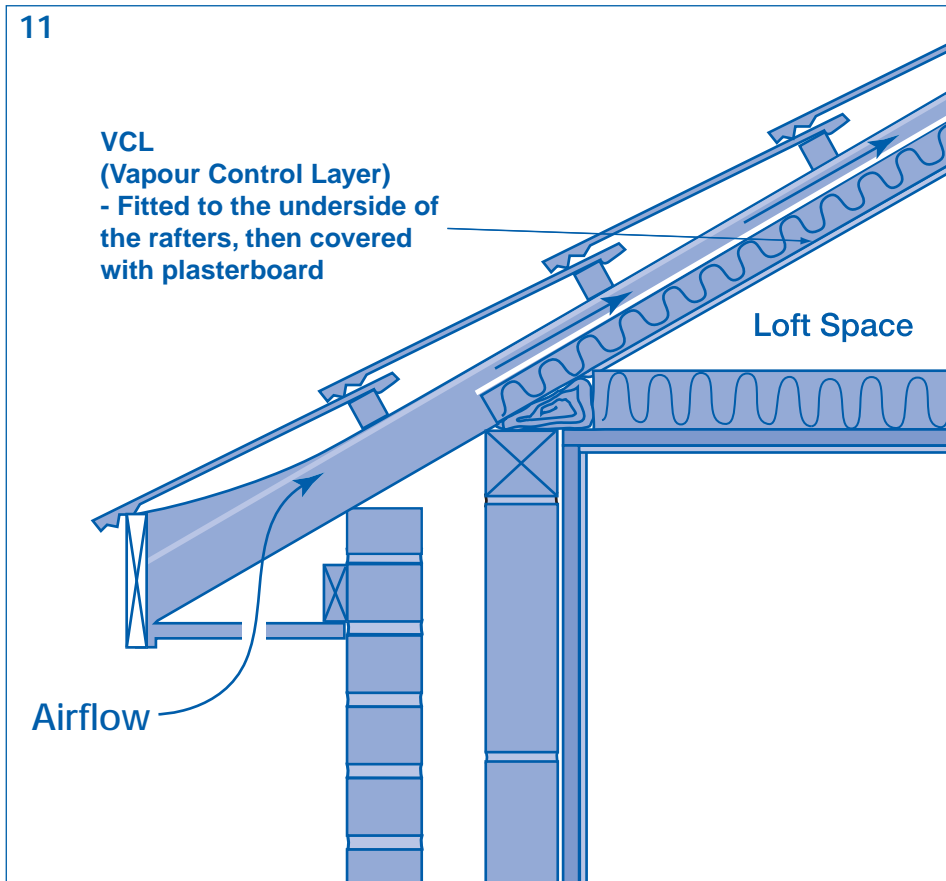
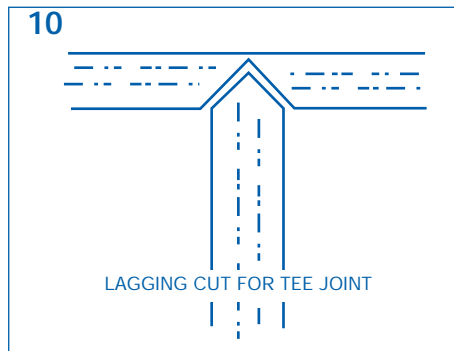
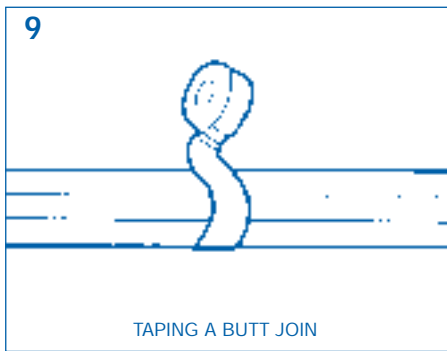
If you are intending to convert the space into a habitable area, you must seek professional advice. The requirement for this type of insulation is different, and additional work will need to be carried out, necessitating Building Control approval.

Condensation can form if the insulation fitted between the rafters is forced tightly against the underside of the roof slope, or when the circulation of air is reduced, or prevented. The resulting moisture can eventually cause the timbers to rot. For this reason, it is essential to leave a ventilated gap of about 50mm between the upper surface of the insulation and the underside of the roofing felt, boarding or slates.

Diagram 11.

If the rafters are not deep enough to accommodate the slab thickness, plus the 50mm air gap, the solution is to screw battens to the sloping undersides of the rafters, increasing the effective depth.

Diagram 13. The slabs measure 1200 x 600mm, and can be cut using an ordinary kitchen knife to fit between rafters at 400mm to 600mm centres.



WORK SEQUENCE

1. Prepare the loft
2. Fit the insulation

1. PREPARE THE LOFT

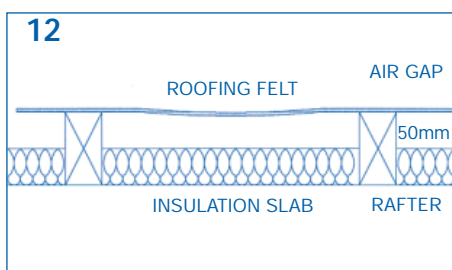
Start by Clearing stored articles from the eaves to allow yourself space to work.

Then, inspect the underside of the roof slope, looking for any tears in the roofing felt, which could admit rainwater. If you find any, line that section of the roof slope with slaters felt, running it between adjacent rafters from ridge to eaves. Using large headed galvanised clout nails, secure it to the sides of the rafters. Check that the rafters are deep enough to accommodate the slabs and the required air space, nailing battens to the underside of the rafters, if necessary, to increase their effective depth.

2. FIT THE INSULATION

Measure the rafter spacing, so you can decide how best to cut the slabs. Cutting is easy to do, using an ordinary long-bladed kitchen knife. Cut a few millimetres oversize to ensure that the pieces will be a tight friction fit between the rafters. Prepare a stack of several slabs, cut to the required width. Then start work at one side of the roof slope, wedging the first length into place between adjacent rafters just beneath the ridge board.

Use a 50mm wide softwood batten to ensure that you have left the necessary air space between the slab and the underside of the roofing felt. **Diagram 12.**



Continue adding more slabs, working downwards until you reach eaves level. Here you will probably have to cut the last piece down in length so it finishes level with the top of the wall plate on which the loft floor joists rest. Important: make sure you leave the 50mm air gap between insulation and roofing felt.

Work across the roof slope, filling each 'bay' in turn and cutting pieces to shape as required to cope with the presence of hip rafters or the cheeks of dormer windows.

INSULATING UNDER SUSPENDED TIMBER FLOORS USING WICKES HOME INSULATION SLABS

Suspended timber ground floors are a source of considerable heat loss, and if the boards have gaps between them you will also suffer from underfloor draughts. To cut this heat loss and eliminate the draughts, the solution is to lift all the floorboards and insert insulation between the floor joists, supported on nylon garden netting **Diagram 14.** The boards can then be re-laid, tightly butted together. Obviously the job means completely clearing the room, but it may be possible to carry out the work without disturbing skirting boards. It is also the perfect opportunity to carry out wiring or plumbing alterations while the boards are up, and to inspect the condition of underfloor timbers.

This is a job that should certainly be tackled if floorboarding has to be lifted or replaced.

The job is basically straightforward requiring the careful lifting of the existing flooring, if it is to be re-laid. Be aware that there may be electrical cable or plumbing pipework just below the boards, 'so do not simply cut through them to remove them'. Try to locate pipes and cables and work carefully around them.

If you have a chipboard floor, punch the fixing nails through into the joists to release the boards; they will probably break if you try to lever them up. Once all boarding is out of the way, check the condition of the underfloor timbers. If there is any sign of rot, treat it immediately, and replace any rotten timber with new, preservative-treated wood. Make sure that air bricks are clear of debris so that underfloor ventilation is not restricted.

To fit the netting use a plywood or chipboard offcut as a working platform laid across three or four joists, so you can kneel in comfort. Unroll the garden netting across the joists, and staple to the joist sides at intervals, leaving a shallow 'hammock' between adjacent joists. **Refer to Diagram 14.**

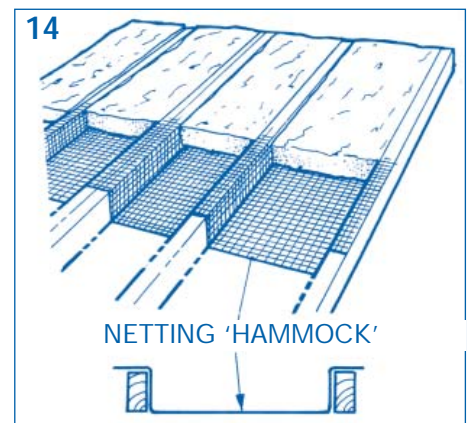
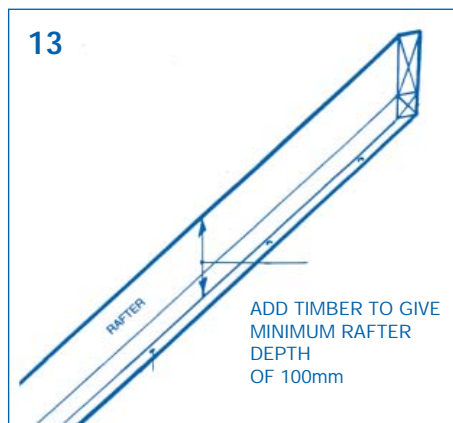
Cut the insulation slabs into width and lengths to suit your joist spacing, and lay them in the net 'hammocks'. Butt adjacent lengths closely together. Where the end of a slab would obscure an air brick, cut its edge back at an angle to allow air to circulate freely.

When replacing floorboards or laying new boarding, take care not to drive nails or screws through pipes or cables, and butt the boards tightly together as you work. It is a sensible precaution to mark, on the boards, the location of pipes or cables for future reference.

For chipboard floors, screw the panels to the joists, rather than nailing them, so they can be lifted more easily in the future.

GRANTS

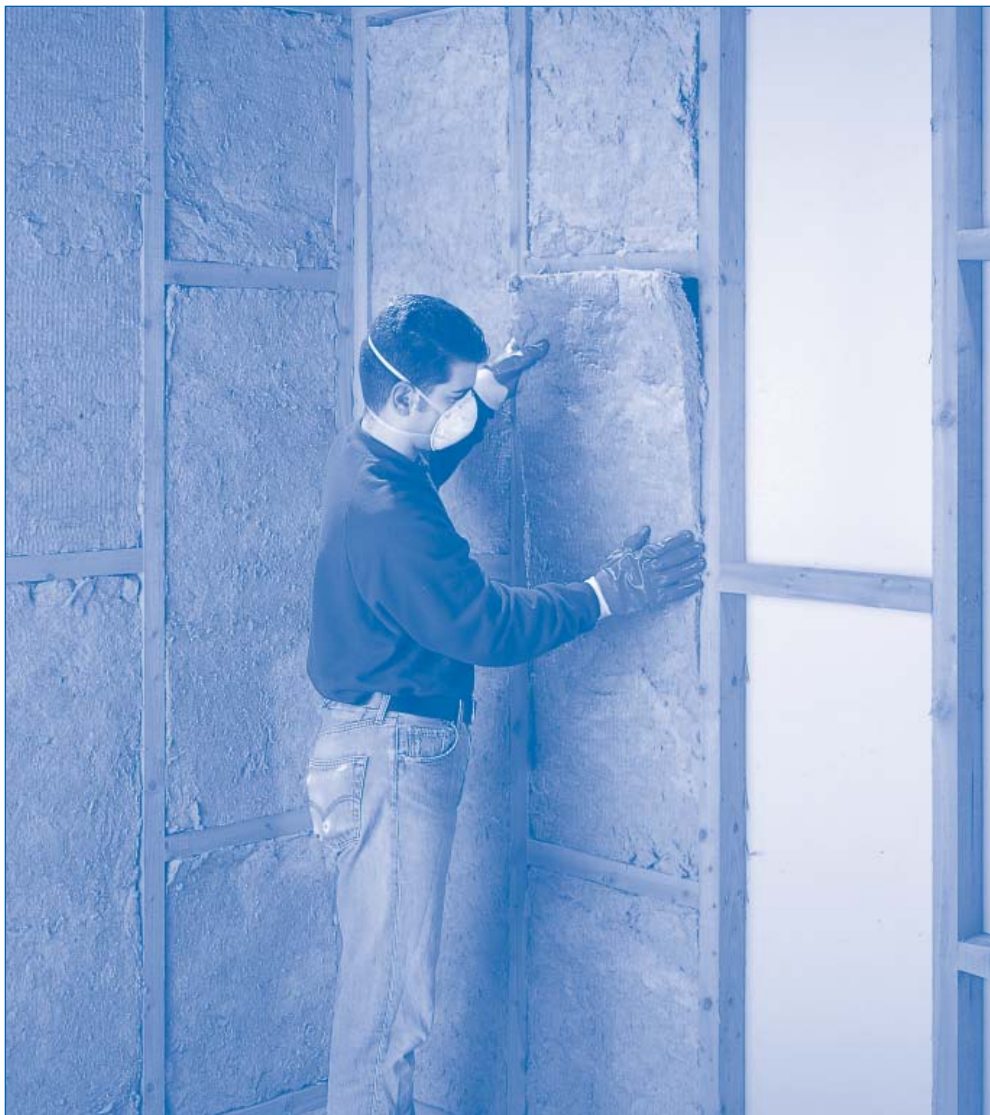
Your household may be eligible for a grant towards the cost of insulating the loft, pipes and loft tanks. Check with your local authority before starting.



OTHER INSULATION WORK

Insulation does not finish with the loft, tanks and pipes. You must also aim to cut down draughts bringing cold air into the living area of the house and letting warm air out. Wickes stock a wide range of draughtproofing products, for doors and windows. You should select products most suitable for your home. The

purpose is **NOT** to totally eliminate the introduction of fresh air into the home but to control it and ensure that comfort levels are maintained.



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