FACTSHEET

Loft and Attic Insulation

How to keep heat in and insulate safely

Insulating your loft can make your home warmer and reduce heat loss. The best method depends on how you use the space. If the loft is empty or only used for storage, insulation usually goes on the loft floor. If you want to turn the loft into a room, insulation normally goes around the sloping roof, walls and ceiling. In both cases, the work must also control draughts, airflow and moisture.

Choose the right approach

- **Unused loft:** put insulation between and across the wooden ceiling joists. The loft above stays cold and must have enough airflow.
- **Storage loft:** insulate the loft floor, then fit raised boards above it. Do not squash the insulation.
- **Room in the roof:** insulate all parts around the new room, including the sloping roof, short walls, ceiling, dormer windows and any small loft spaces left behind.
- **Flat roof:** get specialist advice. Insulation is often fitted above the roof structure when the roof covering is replaced.

Before any insulation work

Check the loft carefully before you start. Look in daylight and, if you can, after heavy rain. Do not cover up leaks, damp or damage with insulation. Fix these problems first and make sure moist air will still be able to escape.

- Look for leaks, water marks, rotten wood, damaged roof coverings and signs of pests.
- Check for mould, damp insulation and musty smells. Find and fix the cause.
- Make sure air can still flow through vents at the roof edges, ridge, tiles or gable walls where needed.
- Find all cables, lights, electrical boxes, pipes, tanks, chimneys, flues and fan ducts.
- Make sure bathroom and kitchen fans vent outside, not into the loft.
- Check that access is safe. Loft floors and ceilings may be fragile and may not be strong enough for storage.

Insulating an unused loft

Insulation on a loft floor is often fitted in two layers. The first layer sits between the wooden joists. The second runs across the top, which helps cover gaps and reduces heat loss through the wood. Mineral wool rolls are common, but other materials such as sheep's wool, wood fibre, hemp or recycled polyester, may also be suitable. Follow current guidance and the maker's instructions for the right depth.

- Insulate the loft hatch and add draught seals around it.
- Do not block airflow at the roof edges. Special trays may be needed to keep a clear air path.
- Do not squash insulation under storage boards. Use raised supports or a purpose-made raised floor.
- Keep insulation a safe distance from hot chimneys, flues and light fittings, following the product instructions.
- Keep electrical boxes and other equipment easy to reach. Ask an electrician to check cables that will be covered by insulation.
- Insulate water tanks and pipes in a cold loft. Usually, do not place insulation directly under a cold-water tank, as some warmth from the room below helps stop it freezing.

Making a room in the roof

Turning a loft into a room involves more than putting boards between the roof timbers. The insulation must form an unbroken layer around the whole heated room. This includes the sloping roof, the small flat ceiling at the top, dormer windows, end walls, short walls at the sides, the floor behind those walls, and the areas around roof windows, stairs and chimneys. Even small gaps can let out a lot of heat and may lead to condensation.

Where the insulation can go

- **Between the roof timbers:** saves headroom, but you may need to leave a clear air gap under the roof covering.
- **Between and below the timbers:** gives better coverage and reduces heat loss through the wood, but takes up more space inside the room.
- **Above the timbers:** gives very good coverage without reducing headroom, but the roof covering usually has to come off. This is often best done when re-roofing.
- **A mix of methods:** can work well, but it needs careful design so moisture does not become trapped.

Keeping the roof dry

Insulation slows down heat loss. Sealing gaps stops warm, damp air leaking into cold parts of the roof. Ventilation carries moisture out of the home. A converted loft may need a sealed moisture-control sheet behind the inner wall finish. The right detail depends on the roof covering, the layer under the tiles and where the insulation sits. A “breathable” roof sheet does not remove every risk, so get the full roof design checked.

Safety, comfort and permissions

- **Building Regulations:** a new room in the loft will usually need approval. The checks can cover the structure, insulation, fire safety, stairs, windows, ventilation and electrics.
- **Planning permission:** some loft conversions do not need a planning application, but larger dormers, major roof changes, listed buildings and homes in conservation areas may need permission. Ask your local council before work starts.
- **Floor strength:** the existing ceiling joists may not be strong enough to carry a new floor. A structural engineer may need to design the floor and any roof changes.
- **Fire safety:** you may need a safe escape route, suitable doors, smoke alarms and fire-resistant floors and walls. Get professional advice rather than relying only on a roof window for escape.
- **Hot weather:** roof rooms can get very hot in summer. Think about outside shading, windows that open well and suitable glazing.
- **Heating and fresh air:** make sure the room has suitable heating and enough controlled ventilation.

Questions to ask an installer or designer

- Which parts of the loft will be inside the heated area?
- How will you insulate around the roof edges, dormers, short walls, roof windows and chimneys?
- How will you stop moisture building up, and how will the roof be ventilated?
- What will happen to any damp, wiring, pipes, water tanks and fan ducts already in the loft?
- What type and depth of insulation will you use, and how will you avoid gaps?
- Who will arrange Building Regulations approval, structural calculations, fire-safety work and completion certificates?
- What guarantees will I receive, and will you take photographs before the work is covered up?

Simple project checklist

1. Decide whether the loft will be unused, used for storage or turned into a room.
2. Fix leaks, damp and damage before adding insulation.
3. Plan the insulation, draught sealing and ventilation together.
4. Check the floor strength, electrics, fire safety, planning rules and Building Regulations.
5. Keep air vents, cables, pipes and other services safe during the work.
6. Check the work before it is covered. Keep product details, certificates and photographs.
7. During the first winter, look out for condensation, damp or rooms that are still hard to heat.

Useful websites

Centre for Sustainable Energy — Loft conversions, insulation and ventilation:
https://www.cse.org.uk/wp-content/uploads/2024/04/advice-leaflet-loft-conversions-insulation-and-ventilation.pdf

Centre for Sustainable Energy — Loft insulation:
https://www.cse.org.uk/wp-content/uploads/2023/02/advice-leaflet-loft-insulation.pdf

Energy Saving Trust — Roof and loft insulation:
https://energysavingtrust.org.uk/advice/roof-and-loft-insulation/

Remember: every roof is different. Get advice from a suitably qualified professional if your roof is damp, hard to reach, flat, old, altered, or being turned into living space.

Need advice?

Warmth Works can help residents understand practical ways to keep homes warmer, use less energy and feel more confident about home energy improvements. Visit one of our drop-in advice and information sessions or look out for Warmth Works events taking place across Todmorden and the Calder Valley.

Together, we can create warmer homes, stronger communities and a clean energy Calder Valley.