

# Thermal upgrades to your house



## Everything you need to know:

Making significant changes to thermal elements would normally require Building Regulations approval and require the thermal insulation of the element to be upgraded to a reasonable standard. The extent to which the work on the element is controlled and the amount of upgrading required is dependant on the particular circumstances of the thermal element. Generally, when it is renovated then it should be upgraded, where it is cost effective to do so.

### Why is thermal insulation needed?

Thermal resistance materials limit the amount of heat the building will lose from the internal spaces, and gain from the outside environment. A well-insulated house is very energy efficient and will need very little additional heating and cooling.

### What is considered as a thermal element?

#### External Walls:

Where an external wall elevation is being re-built or re-covered then the building regulations usually apply and thermal insulation would have to be included or upgraded.

#### Cavity Walls

These walls are insulated with the cavity being fully filled with insulation or partially filled (consult the manufacturer's before proceeding). If it is partially filled then an air gap is generally required, the size of which will vary depending on the specific products used for the wall construction and insulation. The insulation should go at least 150mm below the DPC level.

#### Solid Walls

These walls are generally insulated by placing some form of thermal element on the inside and/or on the outside. The thickness of these products will depend on the wall construction.

#### Floors:

Where the ground floor area to a habitable room is being replaced then the Building Regulations would normally apply and the thermal insulation would require improvements.

### Roofs and Ceilings:

Where a roof area is being replaced or re-covered, then the Building Regulations would normally apply and thermal insulation upgrades are required.

#### Flat Roofs

There are two methods for insulating a flat roof:

1. **Warm Deck** - Insulation can be installed on top of the joists making a 'warm deck' roof where the roof covering can be re-applied over the top. This avoids the need for ventilation.
2. **Cold Deck** - Insulation in a 'cold deck' roof is installed at ceiling level between and under the joists. The space between the insulation and underside of roof will need to be ventilated.

#### Pitch Roofs

There are two methods for insulating a pitch roof:

1. Insulation can be placed between the ceiling joists in the loft space (this is generally the most common method).
2. If the roof has no ceiling or is being converted to a habitable room, then the insulation can be placed between the rafters. Sufficient ventilation should be maintained.

*The thickness of insulation required for these elements will vary depending on the space you are insulating, and the material you choose to use.*

### When do I need Building Regulations approval?

Thermal elements are controlled when either 50% + of the elements surface area is being upgraded also during major renovations where 25% + of the surface area of the building envelope undergoes renovation.