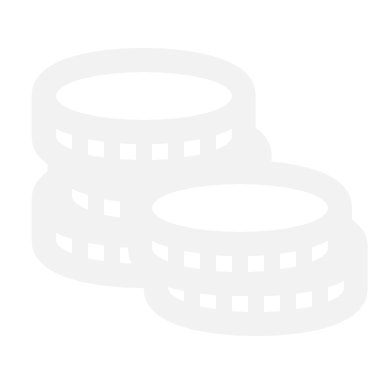
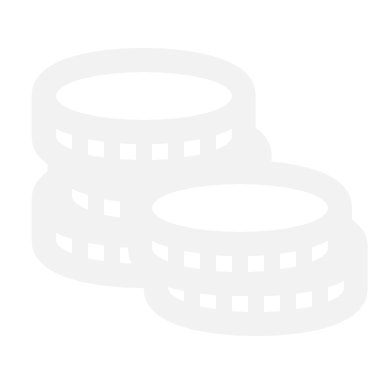
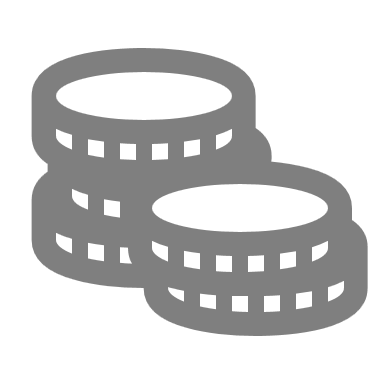
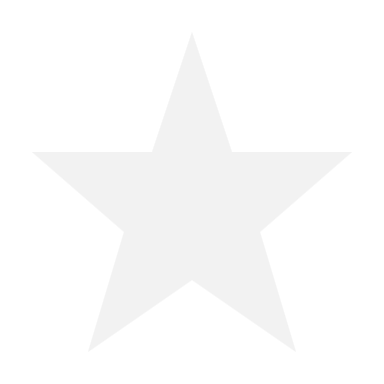
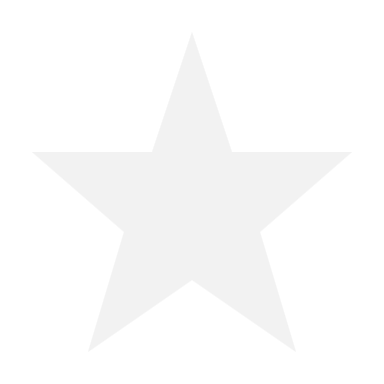
# FS03: Roof Insulation

**About**

**Typical costs:**

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**Typical annual savings:**

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* Depending on what type of roof you have, either flat or pitched, there are a variety of options for adding insulation. If your roof is pitched, you can add insulation between the roof joists or rafters and there are options in the roof is used a living space. A flat roof can be insulated from either above or below the existing roof.

**Benefits**

* The insulation maintains your home at a more consistent temperature; making your home feel warmer in the winter and cooler in the summer
* Pay less on your heating bills.

**Key Considerations**

*Pitched roof*

* Materials: Loft insulation can come in various forms and the most appropriate one will depend on the arrangement of the roof rafters, whether the roof space is used for storage or living space, obstructions in the loft space or lack of space. Common options available include blanket insulation (or matting) which can be rolled out in most loft spaces, rigid insulation boards used when space is limited, or loose fill insulation used for irregular spaces.
* Ventilation: Incorrect installation of loft insulation resulting in restricted airflow could result in a build-up of condensation which causes damp. Check that there is sufficient ventilation in the roof before you begin.
* Permissions: Planning permission is not required for loft insulation however the insulation installed may be required to meet building regulations. Your installer should know about this but if in doubt, check this with your local authority.
* Installation process: Installation of loft insulation is usually straightforward. In cases where there is not existing damp or major obstructions in the loft space, it can be installed by the resident. If there is a living space in the roof, the installation is more complex and should be conducted by a professional.

*Flat roof*

* Materials: Flat roof insulation usually uses rigid insulation boards.
* Ventilation: Incorrectly installed flat roof insulation installed below the roof can lead to damp problems so care should be taken to ensure adequate ventilation.
* Permissions: Flat roof insulation does not normally require planning permission however the insulation installed may be required to meet building regulations. Your installer should know about this but if in doubt, check this with your local authority.
* Installation process: If insulation is installed above the existing roof, it consists of a rigid insulation board placed on top of the weatherproof layer with a new weatherproof layer added on top. If insulation is installed below the existing roof, battens are installed in the ceiling space and the gap filled with insulation material before the plasterboard is replaced. Both methods of flat roof insulation can be difficult and should be carried out by a professional.

**Further information**

* Case studies:
  + [Aachen](http://www.lowenergyapartments.eu/wp-content/uploads/2016/03/LEAF_Case_study_showcase_Germany_D8.4_Feb16.pdf) (Germany)
  + [Edinburgh](http://www.lowenergyapartments.eu/wp-content/uploads/2016/03/LEAF_Case_study_showcase_Scotland_D8.4_Feb16%E2%80%99.pdf) (UK)
  + [Budapest](http://www.lowenergyapartments.eu/wp-content/uploads/2016/03/LEAF_Case_study_showcase_Hungary_D8.4_Feb16.pdf) (Hungary)
  + [Glasgow](http://www.retrofitscotland.org/case-studies/caledonia-road-hutchesontown-glasgow/?filters=2776) (UK)
* Useful information:
  + [National Insulation Association](https://www.nia-uk.org/) (NIA): Trade Association with list of approved installers

[The Energy Saving Trust](http://www.energysavingtrust.org.uk/home-insulation/roof-and-loft): more detailed information about loft and roof insulation.