Cold roof

Why insulate lofts?

As much as 25% of the heat lost in an un-insulated house is through the roof. Using Isover loft insulation is an effective way for people to save energy and money in their homes. Installing 270mm of Isover Spacesaver in an un-insulated loft will save 800kg of CO_2 every year, and reduce energy bills by around £150 per year for the homeowner* – which means installation will payback in just 2 years!

* Based on insulating a gas heated, semi-detached home with three bedrooms

Approved Document L 2010

With specific reference to Approved Document L1A for New Dwellings, compliance is based on the carbon performance of the whole dwelling, a measure of which is given through the use of the Standard Assessment Procedure (SAP calculation). Compliance is no longer demonstrated by the elemental U-value method, but U-value calculations are required as they form part of the SAP calculation. Although reference is made to 'Design Limit' U-values within Approved Document L1A, U-values better than the 'Design Limit' are likely to be required to meet the required Carbon index level.

Approved Document L 2010	New build	
	Limiting fabric parameter (W/m²K)	Isover recommended U-value (W/m²K)
Cold Roof	0.20	< 0.18

Section 6 - Scotland 2010

The standards and guidance given in Section 6 2010 are intended to reduce emissions of carbon dioxide by approximately 30% compared to the 2007 standards. The key changes over the 2007 version are:

- 30% improvement in CO_2 emissions for new buildings
- Expanded role for the use of low carbon equipment
- Improved backstops for fabric U-values and services efficiencies for new buildings

Section 6 includes a range of measures which can be used in setting the target emission rate for a notional dwelling. Included are guideline "notional" U-values, as follows:

Section 6 - Scotland 2010	New build	
	Area weighted max U-value (back-stop) (W/m²K)	Isover recommended U-value (W/m²K)
Cold Roof	0.18	< 0.18

For further information on compliance with thermal building regulations, please refer to page 5 and 6.

The Code for Sustainable Homes

Isover products can be specified to achieve reduced CO_2 target emission rates by means of insulation for improved U-values. Specialist products such as the Isover Vario Membrane System and expert design guidance can also help to achieve improved airtightness performance. This stamp highlights potential design solutions.

Cold roof solutions

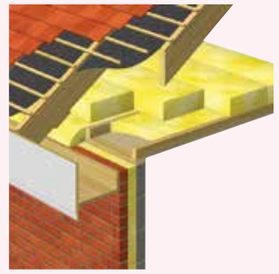
The Cold Roof solutions detailed in this section of the guide are designed to meet or exceed 2010 Thermal Building Regulations down to zero carbon levels. The table below provides a snapshot the U-values that can be achieved with each solution.

Cold roof solutions		U-values (Wm^2K)															
		0.25	0.24	0.23	0.22	0.21	0.20	0.19	0.18	0.17	0.16	0.15	0.14	0.13	0.12	0.11	0.10
21 	**Cold roof** Insulation between and over joists (0.043 W/m^2K)																0.10
22 	**Cold roof** Insulation between and over joists (0.040 W/m^2K)																0.10

Cold roof

Insulation between and over Joists (0.043 W/m^2K)

- **100mm of Isover insulation between joists**
- **Second layer of Isover insulation cross laid over joists**
- Timber fraction 6.3%



U-value W/m^2K	Isover insulation	Thickness between joists (mm)	Thickness over joists (mm)	Combined thickness (mm)
0.21	Spacesaver or Spacesaver Ready-Cut (0.043)	100	100	200
0.17	Spacesaver or Spacesaver Ready-Cut (0.043)	100	150	250
0.15	Spacesaver or Spacesaver Ready-Cut (0.043)	100	170	270
0.14	Spacesaver or Spacesaver Ready-Cut (0.043)	100	200	300
0.12	Spacesaver or Spacesaver Ready-Cut (0.043)	100	250 (100+ 150)	350
0.10	Spacesaver or Spacesaver Ready-Cut (0.043)	100	320 (150+ 170)	420

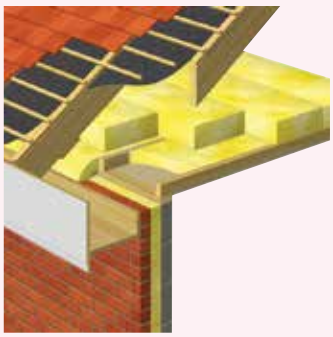
Isover Products

Isover Spacesaver	Isover Spacesaver Ready Cut
	

22 Cold roof

Insulation between and over Joists (0.040 W/m²K)

- **100mm of Isover insulation between joists**
- **Second layer of Isover insulation cross laid over joists**
- Timber fraction 6.3%



U-value W/m²K	Isover insulation	Thickness between joists (mm)	Thickness over joists (mm)	Combined thickness (mm)
0.19	Spacesaver Plus (0.40)	100	100	200
0.16	Spacesaver Plus (0.40)	100	150	250
0.13	Spacesaver Plus (0.40)	100	200	300
0.10	Spacesaver Plus (0.40)	100	300 (200+ 100)	400

Isover Products

Isover Spacesaver Plus