

# Building to Part L is so much easier with Rockwool solutions

## New Dwellings

Part L 2010 adopts a single compliance route based on the whole building energy performance approach. Elemental U-values alone will not achieve the required 25% improvement factor.

### U-value guide

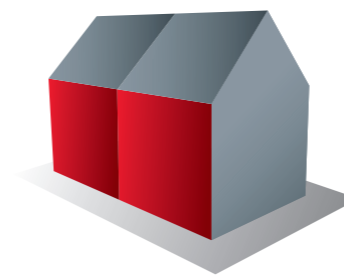
Due to the complexity of the design issues within Part L 2010, there will not be a single fabric solution for all new build dwelling types. Designers and builders will find that compliance will only be achieved with a range of U-values as shown in table 1.



Table 1

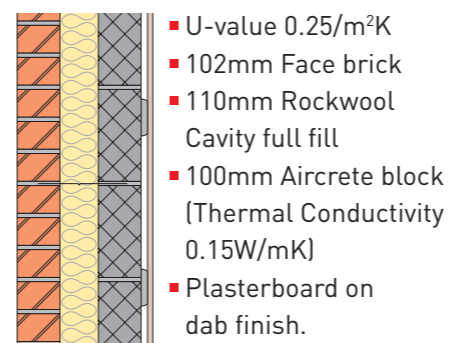
Element	2010 (25% CO2 reduction) W/m <sup>2</sup> K
Walls	0.27 to 0.24 Recommend 0.25 for design purposes
Pitched roof insulation at ceiling line	0.16 to 0.13
Pitched roof insulation at rafter line	0.18 to 0.16
Flat roof or roof with integral insulation	0.18 to 0.16
Ground floors	0.20 to 0.15
Party walls attached houses & flats	Zero

The table provides a reasonable assessment of the fabric U-values required to deliver a 25% reduction in carbon emissions for new build dwellings. The U-values shown have been determined using SAP 2009 software based on a number of different model house type designs.

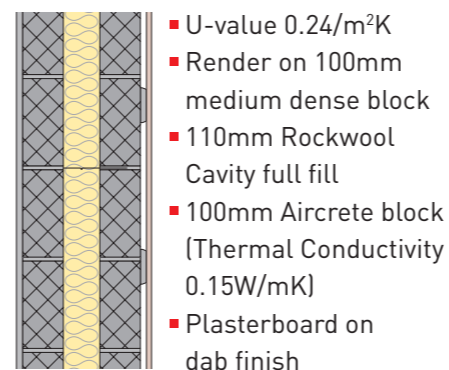


**External wall constructions to achieve a U-value of 0.25W/m<sup>2</sup>K or better**

#### Masonry cavity External Walls – Built in full fill



- U-value 0.25/m<sup>2</sup>K
- 102mm Face brick
- 110mm Rockwool Cavity full fill
- 100mm Aircrete block (Thermal Conductivity 0.15W/mK)
- Plasterboard on dab finish.



#### Alternative external wall constructions if 100mm Rockwool Cavity is used:

- U-Value 0.25W/m<sup>2</sup>K
- Render on 100mm Medium Dense block
- 100mm Rockwool Cavity full fill
- 100mm Solar thermal block (Thermal Conductivity 0.11W/mK)
- Plasterboard on dab finish

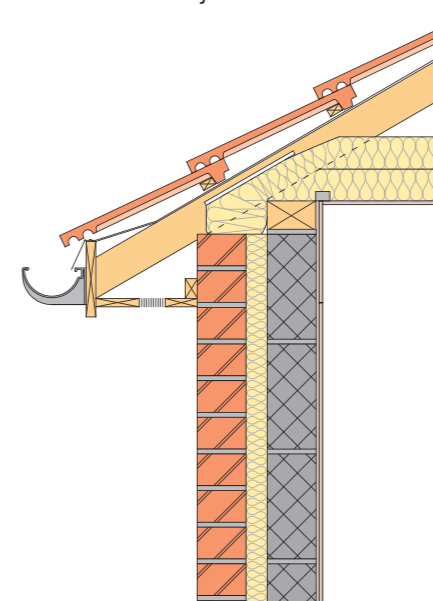


**Pitched roof constructions to achieve a U-value of 0.16 or 0.13 W/m<sup>2</sup>K or better**

#### New pitched roofs horizontal loft insulation

#### Loft insulation thicknesses to achieve U-values of 0.16 W/m<sup>2</sup>K or better:

- U-value 0.16 - 170mm Rockwool Roll over joists plus 100mm Roll between joists
- U-value 0.14 - 200mm Rockwool Twin Roll over joists plus 100mm Roll between joists



## The complete guide to home insulation

The new standards should deliver a 25% reduction in carbon emissions from new buildings relative to the standards set in the 2006 Part L (equivalent to Code Level 3 Code for Sustainable homes).

For new build, Part L 2010 is most likely to be the last revision, where compliance can be met with the building fabric alone. Each project is unique and may well require different solutions for the variety of building types on the same site. Rockwool have proven solutions to enhance the building envelope that will continue to work for the life of the building.



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# Existing Dwellings

## Refurbishment & Extensions

Compliance with Part L will be required when people elect to carry out work on existing buildings including extensions and conversions, fabric renovations, replacement windows and boilers. As with new build, there is a general raising in building standards for existing buildings with more focused guidance for thermal elements, replacement fittings, and heating systems.

### Elemental U-values for Extension work

Reasonable provision for newly constructed thermal elements such as those constructed as part of an extension would need to meet the standards set out in the table opposite (these also apply to existing nondomestic buildings). However, unlike new build, compliance can still be achieved by using an elemental U-value approach as shown in table 2.

Table 2

Element	2010 W/m <sup>2</sup> K
Walls	0.28
Pitched roof insulation at ceiling line	0.16
Pitched roof insulation at rafter line	0.18
Flat roof or roof with integral insulation	0.18
Floors 1	0.22
Swimming pool basins	0.25

### Upgrading retained thermal elements and refurbishment in existing buildings

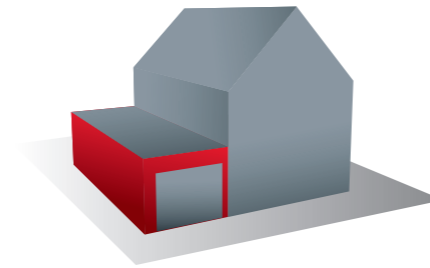
Applies to the following work:

- Material alterations
- Where existing element becomes part of the thermal envelope where previously it was not (change of energy status)
- Renovation of thermal elements

Renovation only applies where the area to be refurbished is greater than one of the following limits: 50% of the surface of the individual element, or 25% of the total building envelope.

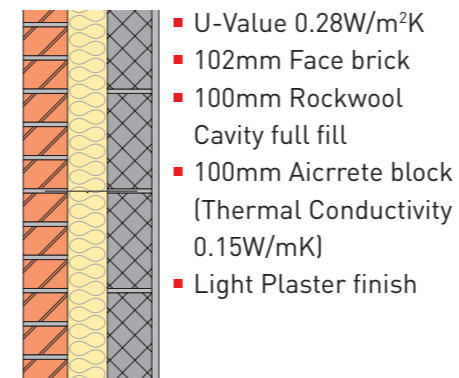
Table 3

Element	Threshold U-value W/m <sup>2</sup> K	Improved U-value W/m <sup>2</sup> K
Wall (cavity blown)	0.70	0.55
Wall (externally or internally insulated)	0.70	0.30
Pitched roof insulation at ceiling line	0.35	0.16
Pitched roof insulation between rafters	0.35	0.18
Flat roof or roof with integral insulation	0.35	0.18
Floors	0.22	0.25

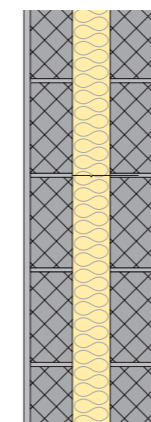


**External wall constructions to achieve a U-value of 0.28W/m<sup>2</sup>K or better**

#### Masonry cavity External Walls – Built in full fill



- U-Value 0.28W/m<sup>2</sup>K
- 102mm Face brick
- 100mm Rockwool Cavity full fill
- 100mm Aicrete block (Thermal Conductivity 0.15W/mK)
- Light Plaster finish



- U-Value 0.27W/m<sup>2</sup>K
- Render on 100mm Medium Dense block
- 100mm Rockwool Cavity full fill
- 100mm Aicrete block (Thermal Conductivity 0.15W/mK)
- Light Plaster finish

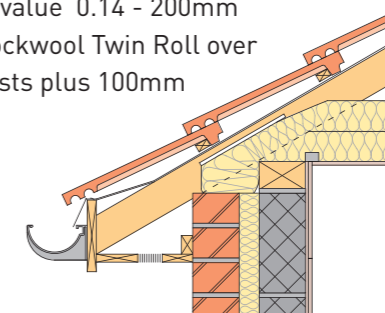


**Roof constructions to achieve U-values of 0.16 or 0.18 W/m<sup>2</sup>K**

#### Pitched roofs horizontal loft insulation

Loft insulation at rafter line to achieve U-values of 0.16 or better:

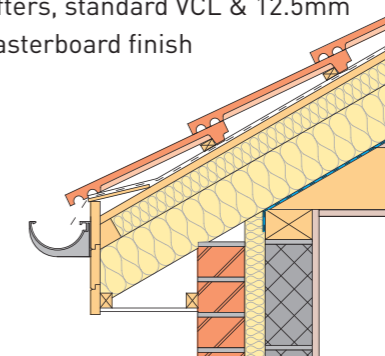
- U-value 0.16 - 170mm Rockwool Roll over joists plus 100mm Roll between joists
- U-value 0.14 - 200mm Rockwool Twin Roll over joists plus 100mm



#### Room in roof

Loft insulation at rafter line to achieve U-values of 0.18:

- Rafters spaced at 600 centres (7.8 timber bridging)
- Tiles and battens, breather membrane, 70mm Rockfall Overlay board over rafters
- 140mm Rockwool Flexi between rafters, standard VCL & 12.5mm plasterboard finish



## Influential Design Principles

**Always start with the building fabric – the foundation of compliance should be the building envelope.**

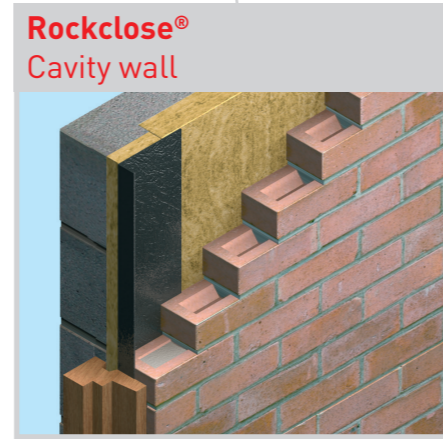
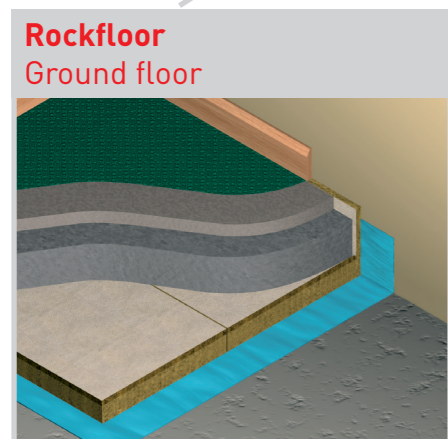
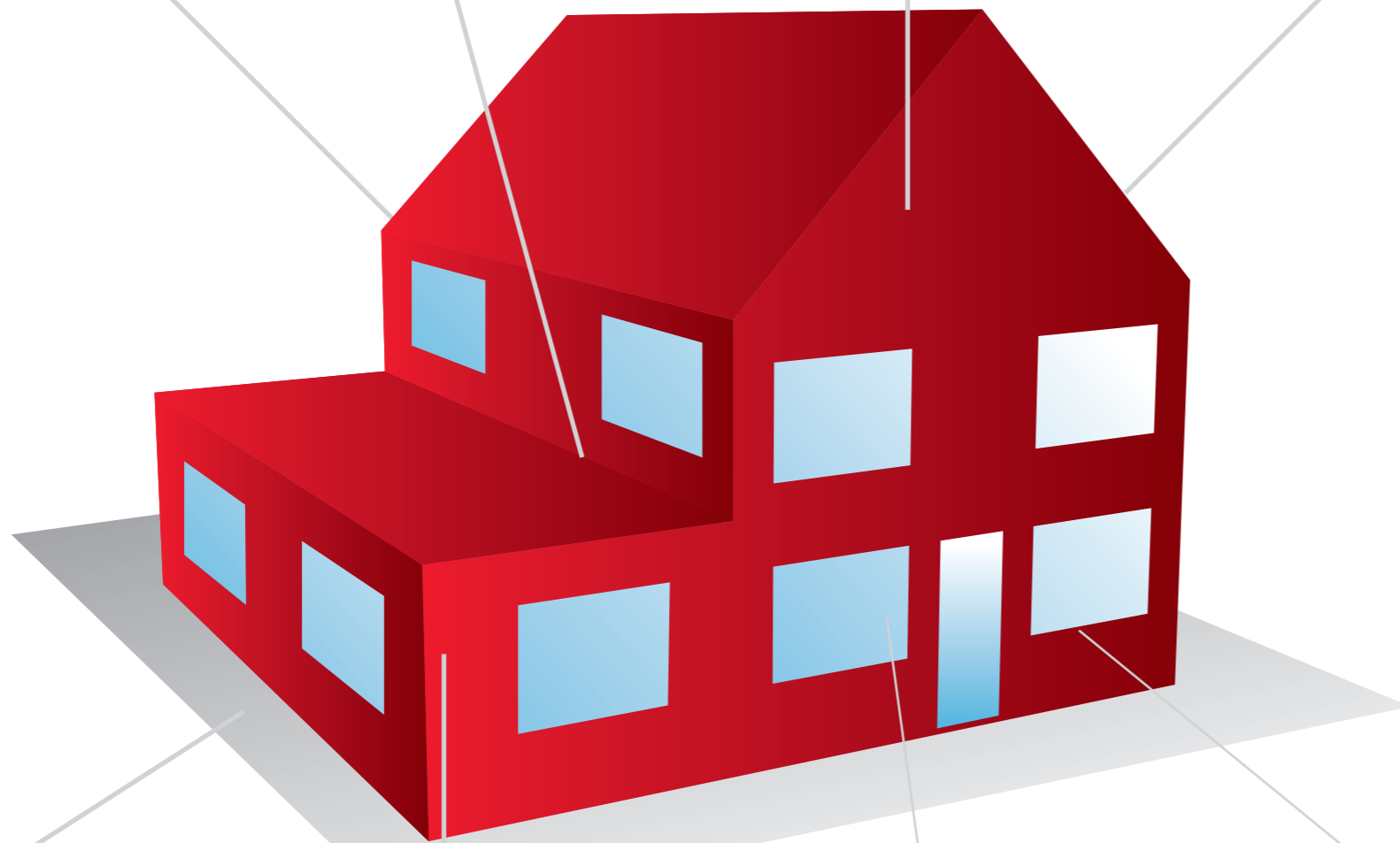
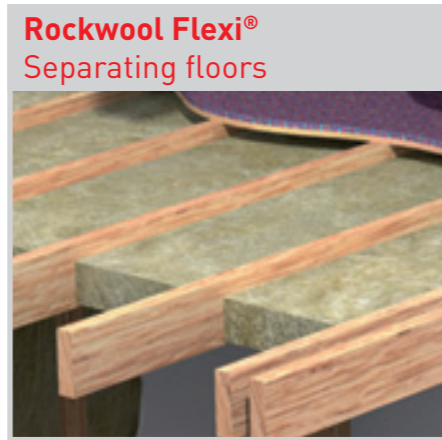
Compliance with the amended Approved Document is a complex matter with a significant number of design considerations that need to be addressed. For most new buildings it should be possible to achieve the requirements of Part L 2010 without the need to use renewable energy technologies.



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# Rockwool have a solution for every application



## The Rockwool product range

### Rockwool Flexi®

Rockwool Flexi® is a unique insulation product with a flexible edge along one side. This unique Flexi edge is produced using patented technology to ensure that a perfect fit is maintained between the product and its supporting framework. This ensures the insulation's integrity.

#### Advantages

- Flexi edge offers accurate fit to all widths
- Will not slump if studs shrink
- Multi-application, fits all typical metal and timber frame spacing
- Excellent thermal, acoustic and fire properties
- Easy to handle and install without gaps
- No cutting, no gaps, no waste

### Rockwool Cavity

Rockwool Cavity provides a completely reliable and cost-effective method of insulating new masonry walls. The lightweight insulation batts considerably reduce heat loss without permitting water transmission from the outer to inner leaf.

#### Advantages

- Agrément certified for all exposure zones
- Acts as a cavity barrier
- Water repellent
- Excellent thermal and fire insulation
- Superior fit against blockwork

### Rockwool Roll

Rockwool Roll is a medium density multi-application insulation mat. This versatile Roll is suitable for thermal insulation of roof spaces in domestic, commercial and industrial buildings. It is also useful for improving the acoustic performance of suspending ceilings.

#### Advantages

- Multi-application product
- Fire, thermal and acoustic properties
- Easy to cut and use for 400mm and 600mm centres
- Higher density provides superb fit

### Rockfall

Rockwool Rockfall is an effective warm pitched-roof insulation system for rafter level applications. Rockfall is completely fire safe, provides an effective acoustic barrier to outside noise pollution and has been specifically produced for domestic, industrial and commercial projects.

#### Advantages

- No ventilation required in roof voids or at eaves, ridges etc.
- A breathable and vapour permeable system
- Reduces risk of condensation on roof timbers
- Habitable loft provides economic use of heated building space
- Provides an excellent acoustic barrier to external noise pollution

### Rockclose® and RockReveal™

Rockclose® and RockReveal™ are used to reduce thermal bridging around door and window reveals. Both products are fire rated cavity closers that can be used in timber, metal and masonry cavity walls with a returned inner leaf at reveals.

#### Advantages

- Integral DPC
- One-hour fire integrity
- One width covers most applications
- Self-supporting and easy to handle
- No need to return block
- Easy to install

Rockclose® is a first fix application and RockReveal™ is a second fix application.

### Rockfloor

Rockwool Rockfloor is a tissue faced, high compressive strength insulation slab designed to meet both Part E (Acoustic) and Part L (Thermal) regulations. Made from renewable stone wool, the Rockfloor range offers unique and economic, dual density thermal insulation for ground floors.

#### Advantages

- Excellent acoustic and thermal properties
- Minimises thermal and acoustic bridging
- High compressive resistance
- Easy handling and fitting