



## Heat loss: The facts.

### U Values

A U value is a measure of heat loss. It is expressed in  $W/m^2k$ , and shows the amount of heat lost in watts (W) per square metre of material (for example wall, roof, glazing, and so on) when the temperature (k) is one degree lower outside.

The lower the u value, the better the insulation provided by the material.

The Building Regulations

<http://www.planningportal.gov.uk/buildingregulations/approveddocuments/part1/approved>

set out minimum requirements for all the elements of new and existing buildings. The latest revision has just taken place, in October 2010.

The u value currently required for a new-build external wall is approximately 0.25

As a comparison, the u value of a straw-bale wall is 0.13, and of a solid 225mm (9") brick wall, around 2.0.

The Building Regulations currently require a u value for glazing of 1.6. This is achieved with a double-glazed unit with a gap of around 16 - 20mm, argon gas in the gap, and one pane of low emissivity glass, which lets light through, but tends to limit heat loss.

In order to meet the refurbishment Building Regulations, the insulation value of a solid brick wall can be improved from  $U = 2.0$  to  $U = 0.30$  by lining the wall with approximately 60- 65mm (2") of high-grade (phenolic or polyurethane) insulation covered with plasterboard. 'Greener' materials may be used, but a greater thickness is required.

You may well need Building Regulations approval for insulation improvements. **Ask at SYEC or check with your local council.**

For more information about u values and insulation, contact SYEC on 0114 2584574 or e-mail [info@syec.co.uk](mailto:info@syec.co.uk)