What does U value mean?

Loosely, U values
reflect the amount of heat transference across a structure.

It is a way to
quantify how much heat energy is lost through the fabric of a building across different materials and thicknesses. With U values the lower the value achieved the better in terms of saving energy. This is why whenever new building regulations and amendments are brought out the U value needed to be met is invariably lowered. Indeed, the goal post on U values has been moved greatly over the last decade and is on a path to be even more stringent in the future which will require fundamental changes in building design to accommodate these tough new U value regulations. The lower the U value achieved the lower the energy bill will be to heat the building.

A U value is
a measurement of the overall heat energy transfer rate (under standard conditions) through a particular section of construction material, e.g. roof, walls, glazing etc.

It is defined as the rate of heat flow in watts (W) through
an area of 1 square metre (m) for a temperature difference across the structure of 1 C degree centigrade or Kelvin (K).

The U value measurement units are written as W/m2K.. It includes conduction through solids, and convection and radiation through air gaps in the construction and at the surfaces. Standard conditions enable comparisons of products of different materials and manufacturers. They include particular moisture
contents and surface resistances.

Typical U values
in W/m2K

Solid brickwork, no insulation 2.5

Cavity wall, no insulation 1.6

Cavity wall with insulation 0.5

Single glazing 5.7

Double glazing 2.8

Double glazing with low-Îµ coating 1.8