



National Federation of Glaziers

Excellence and Integrity in Glazing

LOW EMISSIVITY SEALED UNITS

Low emissivity sealed units comprise of one sheet of float, toughened or laminated glass plus one sheet of glass with either hard or soft coating.

The 'hard' coatings are usually tin oxide (such as Pilkington 'K' glass); the 'soft' coating uses silver oxide. Hard coatings have been in use in the United Kingdom for many years using such brand names as Kappafloat etc.

Soft coatings are used and have been used for many years extensively throughout Europe where better insulation is required which could not be complied by the use of 'hard' coatings.

The latest edition of the Building Regulations (Approved Documents L1 and L2) have focused attention on these, and specific requirements are now in force which make the use of low emissivity units essential.

The efficiency of the units is measured by the 'U' value, which is defined as "the measure of how much heat will pass through one square metre of a structure when the air temperatures on either side differ by one degree. U-values are expressed in units of Watts per square metre per degree of temperature difference". - The **lower** the 'U' value - the **better** the level of insulation.

Direct comparisons relating to windows, doors, and conservatory roofs are as follows:

Sealed unit make up "Val U"	Hard coat e.g. " Pilkington K "	Soft coat e.g. " Silverline "
4 - 16 - 4 AIR	1.7	1.4
4 - 12 - 4 AIR	1.9	1.7
4 - 16 - 4 ARGON	1.5	1.1
4 - 12 - 4 ARGON	1.6	1.3

Light Transmission

Soft coated units provide better light transmission than hard coatings.

Outside light reflection

Soft coatings produce less light reflection than hard coatings.

Tint effect

Hard coatings have a tint which markedly discolours Georgian grill units and white net curtains.