Warm Edge Technology

Introduction

The introduction of energy saving building regulations in many European and international countries means tighter requirements for insulation glass units. This in turn means that there are tougher regulations especially for windows and their components with respect to the insulation properties of glass and frames.

The glass edge has now become an even more significant factor and optimised spacers the most important element for the "warm edge".

The term "Warm Edge Technology" was introduced after the development of thermally insulated spacer bars, the intention of which is to improve the thermal performance of the edge of insulating glass units and consequently the overall performance of the window.

Description

Warm edge technology relates to an area of the glass that extends between 50 – 100mm above the sight line of the insulating glass unit perimeter.

Warm edge technology is designed to add more resistance to heat flow from the warm side to the cold side of the glazing, thereby enhancing both the condensation resistance and the thermal resistance of the insulating glass unit.

In the case of conventional window systems the risk of condensation and heat loss is increased along the glass edge. This effect can be reduced considerably by the use of warm edge technology resulting in thermally improved edge sealing systems.

Laboratory measurements, computer modelling and calculations in accordance with BS EN ISO 10077 parts 1& 2, are used to determine the extent of the changes in the thermal characteristics of the glazing. Any calculations must take into account the glazing methods, materials and frame area relative to the glass area.

To date all new approaches to edge design, include materials which are less conductive than conventional metal. Some adopt the conventional spacer design and simply substitute the spacer material with a less conductive material like stainless steel or plastic. The life expectancy of the insulating glass unit is similar to that of standard spacer systems.

Benefits

Dual Seal Glass offer a warm edge spacer profile in all Dualtherm* insulating glass units, as an alternative to the standard aluminium profile, which reduces the linear thermal transmittance coefficient by around 25%. This results in a low Psi value, in the order of 0.038 or better, depending on the units edge detail, and enhances the overall thermal performance of the windows or curtain walling façade, whatever the frame material. The result is a significant improvement in the thermal transmittance coefficient of windows U_w.

**Dualtherm is the name of insulating glass units manufactured and supplied by Dual Seal Glass.*