Thermally improved spacers

Part 3 Determining the representative Ψ-values of facade profiles

Contents

Foreword

In accordance with the product standard for curtain walling, EN 13830, one of the methods to determine the thermal transmittance U_{CW} of curtain walling is the calculation method set out in EN ISO 12631. For the calculation, it is necessary to use the thermal transmittances of mullions and transoms, U_{m} and U_{t}, and the glazing U_{g} as well as the linear thermal transmittances Ψ_{mg} and Ψ_{tg}. These Ψ-values describe the heat loss caused by fitting the glass unit in the mullion / transom. The amount of this Ψ-value varies depending on the spacer used in the insulating glass unit (IGU). A distinction is made between "conventional" spacers and thermally improved spacers. EN ISO 12631 contains a definition of a thermally improved spacer, which is summarised in the scope of this Guideline.

EN ISO 12631 contains general Ψ-values for the calculation of the U_{CW}-value for both "conventional" and thermally improved spacers, which can be used without additional verification. It is also possible to calculate the Ψ-value for thermally improved spacers in accordance with EN ISO 10077-2. In this case it is important to note that the Ψ-value depends on the frame profile, the configuration of the glass unit and the installation details.

There are practical advantages in verifying the Ψ-values of thermally improved spacers using representative frame profiles and glass configurations. This method essentially offers two advantages:

1. The Ψ-values determined in this way can be used for the manufacturer declaration of the U_{CW}-value in accordance with EN 13830.
2. Owing to the uniform boundary conditions when determining the Ψ-value, it is possible to compare the performance of thermally improved spacers airly and objectively.

For this reason, the Ψ-values determined in accordance with this Guideline are referred to as representative Ψ-values.

The procedure for determining representative Ψ-values described in this Guideline was essentially devised as part of a project of the "Warme Kante" (warm edge) working group of the Federal Float Glass Association. The manufacturers of thermally improved spacers contributing to this working group publish their characteristic thermal parameters, determined in accordance with this Guideline, in the form of a data sheet. This data sheet is shown in Annex D.

This ift-Guideline replaces ift-Guideline WA-22engl/1 of January 2016.