

Description

The invention relates to structural glazing as described in the preamble of claim 1.

The constructional method known by the technical term "structural glazing" is glazing fixed without a frame on two or four sides to elements of facades, in particular facade uprights and facade horizontal members or to frames of sectional facades, see EP-A-0251 839 for example. The glazing comprises a pane, or in the case of insulating glazing two or more panes, and is directly sealed on to the elements of facades or the elements of sectional facades, whereby the sealing does not only perform the function of sealing, but also performs static functions, such as the transmission of wind loadings (wind pressure and wind suction) for example and partly also bears the dead weight of the glazing. The sealing is effected, for example, using a one- or two-component silicon rubber.

In the event of a fire, it is required that the glass panes held by means of silicon in structural glazing should not fall out as intact elements, which means that the glass pane or glass panes must be broken before the cement fails. Fire tests have shown that this cannot be achieved in structural glazing where the supporting seal made of silicon rubber alone.

The object of the invention is to provide a structural glazing which ensures that in the event of fire the pane or the panes cannot fall out of the building as a whole piece.

This object has been achieved for glazing of this type by the features given in the characterising part of claim 1.

Highly heat-resistant elastic sealants are known which are resistant up to 2000°. With the application of such highly heat-resistant elastic sealants at specific areas together with the supporting sealing of the structural glazing, it is ensured

that the glazing is held on the facades in the event of fire after failure of the supporting sealing until the glazing breaks due to the effect of the heat and falls from the facade in pieces, thus avoiding or reducing injury to persons and damage to objects. The area of cementing with the highly heat-resistant elastic sealant is thus dimensioned such that in the event of fire the pane is held after failure of the silicon cement. Thus an economic design of the structural glazing is achieved while at the same time fulfilling the conditions required in fire tests.

According to a preferred embodiment the areas of highly heat-resistant sealant are enclosed by the supporting seal on at least two sides.

The glazing is preferably formed as step glazing and the outer pane is cemented in appropriate areas by means of the heat-resistant elastic sealant.

According to a further preferred embodiment, the outer pane is cemented in appropriate areas with the inner pane and the inner pane is cemented in appropriate areas by means of the highly heat-resistant sealant.

Exemplary embodiments of the invention are described in more detail with the aid of the drawings as follows:

Figures 1 and 2 Views of structural glazing with highly heat-resistant elastic sealants arranged in appropriate areas, and

Figures 3 to 6 Cross-sectional views through edge areas of structural glazing.

The structural glazing 10 shown in Figure 1 is fixed to facade uprights 12 and facade horizontal members 14 by means of

supporting seals consisting of silicon rubber for example. The glazing 10 is formed as step glazing so that the dimensions of the outer pane are greater than those of the inner pane and the outer panes can be directly connected to the facade uprights 12 and horizontal members 14 by means of a supporting seal. To secure the outer pane of the glazing 10 in the event of fire, areas 16 of highly heat-resistant elastic sealant are arranged between the rear side of the outer pane and the front side of the facade horizontal member 14. If the supporting seal 18 running round the outer pane in the edge area fails in the event of fire, the areas 16 of highly heat-resistant elastic sealant take over the supporting function until the panes of the glazing 10 break due to the effect of the heat. This ensures that the glazing cannot crash down as a whole piece from the facade after failure of the supporting seal, but that broken pieces of the glazing fall. The areas 16 of highly heat-resistant elastic sealant are enclosed on three sides by the supporting seal 18.

The glazing 20 shown in view in Figure 2 is fixed to facade uprights 24 and facade horizontal members 26 by means of a surrounding supporting seal 22. To secure the glazing 20 constructed as step glazing in the event of fire, areas 28 of a highly heat-resistant elastic sealant are arranged between the rear side of the glazing 20 and the front side of the facade horizontal member 26. The areas 28 of highly heat-resistant elastic sealant interrupt the supporting seal 22 at the horizontal edges of the glazing 20.

Figure 3 shows, in cross-section, glazing 30 comprising an outer pane 32 and an inner pane 34, which are connected to one another by means of a spacer 36 and a supporting seal 38. The glazing 30 is formed as step glazing and fixed to a stepped facade element 40 by means of supporting seals 42 between the rear side of the inner pane 34 and the reverse side of the outer pane 32 and the facade profile 40. Between the pane

34 and the facade profile 40, a spacer 44 made of an elastomer is arranged.

To secure the glazing 30 in the event of fire, areas 46 of the supporting seal between the outer pane 32 and the facade profile 40 are recessed and filled with a highly heat-resistant elastic sealant. In the embodiment shown in Figure 3 the areas 46 consisting of highly heat-resistant elastic sealant are formed with exactly the same width as the supporting seal on the horizontal edges of the outer pane 32 of the glazing 30.

The embodiment shown in Figure 4 corresponds in substance to the embodiment shown in Figure 3, with the difference that a supporting seal 48, arranged between the outer pane 32 and the facade profile 40, surrounds areas 50 of highly heat-resistant sealant on the outer side.. The glazing and fixing of the glazing as well as the function of the highly heat-resistant elastic sealant correspond to the exemplary embodiment according to Figure 3.

Figure 5 shows glazing 66, whose outer pane 52 has the same dimensions as those of pane 54. The panes 52 and 54 are connected to one another by means of a spacer 56 and a supporting seal.

The glazing 50 is fixed to the facade profile 58 by means of a spacer 60 made of an elastomer and a supporting seal. The supporting seals between the panes 52 and 54 and between the inner pane 54 and the facade profile 58 are interrupted and, at the recessed areas 62, 64, a highly heat-resistant elastic sealant is arranged which ensures that in the event of fire the panes 52 and 54 of the glazing 50 are held on the facade profile 58 after failure of the supporting seals until the panes break as a result of the effect of heat, and fall in pieces. The areas 62 and 64 formed of highly heat-resistant

elastic sealant have the same width as the surrounding supporting seal.

The exemplary embodiment of the fixing of glazing 70 to a facade profile 72 shown in Figure 6 differs from the exemplary embodiment shown in Figure 5 in that areas 74 of highly heat-resistant elastic sealant between the inner pane of the glazing 70 and the facade profile 72, and areas 76 between the panes of the glazing, are enclosed on the outer surface by the supporting seals 78 and 80. The further functions and effects of the exemplary embodiments correspond to the exemplary embodiment shown in Figure 5.

Claims

1. Structural glazing having one or more panes, wherein edge areas of the glazing are fixed by means of supporting seals, made, for example, of silicon rubber, to elements of facades such as facade uprights and horizontal members or to sections of sectional facades, characterised in that the glazing (10; 20; 30; 66; 70) is cemented at selected areas with a highly heat-resistant, elastic sealant (16; 28; 46; 50; 62; 64; 74; 76).
2. Glazing according to Claim 1, characterised in that the areas (16; 28) of highly heat-resistant, elastic sealant are enclosed at least on two sides by the supporting seal (18; 22).
3. Glazing according to Claim 1 or 2, characterised in that the glazing (30) is formed as step glazing and the outer pane (32) is cemented in appropriate areas by means of the highly heat-resistant, elastic sealant.
4. Glazing according to Claim 1 or 2, characterised in that the outer pane (52) of the glazing (50; 70) is cemented in appropriate areas with the inner pane (54) and the inner pane (54) is cemented in appropriate areas by means of the highly heat resistant, elastic-sealant.

