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**Datasheet for the decision  
of 9 February 2010**

**Case Number:** T 1780/07 - 3.2.08

**Application Number:** 99901089.5

**Publication Number:** 1049851

**IPC:** E06B 3/54

**Language of the proceedings:** EN

**Title of invention:**

A glazing assembly

**Patentee:**

Kenny, Simon Joseph

**Opponent:**

SCHÜCO International KG

**Headword:**

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**Relevant legal provisions:**

EPC Art. 56

**Relevant legal provisions (EPC 1973):**

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**Keyword:**

"Inventive step - no"

**Decisions cited:**

-

**Catchword:**

-



Case Number: T 1780/07 - 3.2.08

**DECISION**  
of the Technical Board of Appeal 3.2.08  
of 9 February 2010

**Appellant:** SCHÜCO International KG  
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**Representative:** Specht, Peter  
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**Respondent:** Kenny, Simon Joseph  
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Moylisha  
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**Representative:** O'Brien, John Augustine  
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**Decision under appeal:** Decision of the Opposition Division of the  
European Patent Office posted 22 August 2007  
rejecting the opposition filed against European  
patent No. 1049851 pursuant to Article 102(2)  
EPC.

**Composition of the Board:**

**Chairman:** T. Kriner  
**Members:** P. Acton  
U. Tronser

## Summary of Facts and Submissions

- I. The appellant (opponent) lodged an appeal, received at the EPO on 19 October 2007 against the opposition division's decision posted on 22 August 2007 rejecting the opposition against European patent No. EP 1 049 851. The appeal fee was paid at the same time and the statement of grounds was received on 20 December 2007.
- II. Oral proceedings took place before the board of appeal on 9 February 2010.

The appellant requests that the decision under appeal be set aside and that the European patent be revoked.

The respondent (patentee) requests that the appeal be dismissed or the patent be maintained on the basis of auxiliary request 1 submitted during oral proceedings or on the basis of auxiliary request 2 submitted with letter of 11 January 2010 or on the basis of auxiliary request 3 submitted during oral proceedings.

- III. Independent claim 1 as granted reads:

"A glazing assembly comprising a glazing unit (1) having at least two sheets of glass (2, 3), adjacent sheets being separated by a spacer means comprising an inner spacer bar (5) and an outer seal (10) extending around the periphery of the spacer bar (5) and between the sheets of glass (2, 3), and a fixing means for fixing the glazing unit to an adjacent support, in use, the fixing means comprising fixing inserts (50, 70), each fixing insert defining a receiving slot and a toggle (60) which is movable from a locating position

for insertion of the toggle (60) to a locking position in which the toggle (60) is engaged in the receiving slots of laterally adjacent fixing inserts, characterised in that there are a plurality of peripherally spaced-apart fixing inserts (50, 70) for inserting into the outer seal (10) and maintaining said outer seal between adjacent fixing inserts leaving a depth of outer seal (10) between the spacer bar (5) and the inserts (50, 70) and in that the fixing inserts (50, 70) are a snug fit to the faces of the adjacent sheets of glass."

Claim 1 according to the first auxiliary request contains additionally the feature according to which "the fixing insert (50, 70) is of a plastics material to transmit a load to the glass" (feature A).

Claim 1 according to the second auxiliary request contains additionally to the features of claim 1 as granted the feature according to which "the fixing insert (50, 70) has a base wall section (51, 71), side wall (62, 72) and end wall sections (53, 73) which define the slot (55) for receiving the toggle (60)" (feature B).

Claim 1 according to the third auxiliary request contains the features of claim 1 as granted and both the features A and B.

IV. The following documents have been considered in the appeal proceedings:

E1: DE-A-34 39 436

E2: GB-A-2 167 110 (corresponds to E1)  
E3: EP-B-0 628 672  
E4: AT-B-398 796 (corresponds to E3)  
E5: WO-A-95/13439  
E6: US-A-4 961 975

V. The appellant's arguments can be summarised as follows:

(a) Admissibility of the late filed document

E6, which had been cited in the search report, should be admitted into the proceedings since it was highly relevant for the assessment of inventive step of all present requests. The document was found during consideration of the patentability of the auxiliary request 2, which had been filed by the respondent only one month before the oral proceedings. With respect to this new request, the appellant had reanalysed all documents used during the whole proceedings and in doing so came across E6. Therefore, this document had been cited only at this late stage of the proceedings.

(b) Main request

E1, which was considered to represent the closest prior art, disclosed all features of the preamble of claim 1. Moreover, E1 disclosed "a plurality of peripherally spaced-apart fixing means"(see in particular page 8, lines 9 to 12). Therefore, the subject matter of claim 1 differed from the glazing assembly according to E1 only by the following features:

- the outer seal is maintained between adjacent fixing inserts leaving a depth of outer seal between the spacer bar and the inserts (feature C),
- the fixing inserts are a snug fit to the faces of the adjacent sheets of glass (feature D).

Since the two distinguishing features did not achieve any technical effect in combination, they had to be considered as an aggregation and therefore the inventive step had to be assessed separately for each of these features.

The problem to be solved by feature C resided in providing an enhanced stability of the glazing panes. E4 disclosed a glazing assembly wherein the outer seal filled the space between the inserts (see page 3, lines 17 to 20) in order to assure the necessary adhesive and sealing effect. Therefore, it would be obvious for the skilled person to maintain the outer seal between the inserts in order to solve the problem set out above.

With respect to feature D, E6 disclosed connectors 22 with spacers 42 (see Figure 1, column 2, lines 58 to 63), which were a snug fit to the glass sheets and corresponded to the embodiments of Figures 8 to 12 of the patent in suit. Therefore, it would be obvious for the skilled person to use such spacers also in the glazing assembly according to E1.

Moreover, since a press fit between the inserts and the glass sheets was not admissible, the skilled person had only two options of fitting the inserts between the glass sheets, namely either by a snug fit or by a loose

fit. Since both kinds of fitting were already known from the prior art (loose fit see E1, Figure 1 and E4, Figure 2; snug fit see E5, Figures 7 and 8 and E6 Figures 1 and 3 together with column 2, line 62), it would anyway be obvious for the skilled person to choose between these two options without the need for inventive skill.

(c) First auxiliary request

The subject matter of claim 1 further differed from the glazing assembly according to E1 in that the insert was made of a plastic material so as to transmit a load to the glass sheets (feature A).

Since E5 suggested making an insert 7 of a "relatively hard plastic material" (see page 6, lines 4 to 7), it would be obvious for the skilled person to use this teaching in the glazing assembly of E1.

(d) Second auxiliary request

The technical problem underlying feature B was to prevent the sealant material from flowing into the insert when the latter was pressed into the fluid sealant material. However, since E5 disclosed inserts with end walls (see Figure 1), it was obvious for the skilled person to provide the inserts with end walls in order to solve this problem.

Moreover, it was generally obvious to close the end walls of a U-shaped insert in order to prevent the sealant from entering it.

(e) Third auxiliary request

Auxiliary request 3 was directed to a combination of the features of auxiliary requests 1 and 2 so that its subject matter was not inventive either.

VI. The respondent's arguments can be summarised as follows:

(a) Admissibility of the late filed document

Since E6 had been known to the appellant since the beginning of the opposition proceedings, there was no reason to accept its introduction at such a late stage of the appeal proceedings. This was in particular so, since the document was not relevant for the assessment of the patentability of claim 1 as granted.

(b) Main request

E1 disclosed a glazing assembly according to the preamble of claim 1. However, it did not disclose any of the characterising features of this claim. In contradiction to the appellant's view, the glazing assembly according to E1 did not comprise a plurality of peripherally spaced apart fixing inserts, since E1 described at best one fixing insert for each side of the glazing unit, whereby the inserts were in contact with each other

With respect to feature C, none of the present documents explicitly disclosed the presence of the seal between inserts. Therefore, the provision of this feature could not be regarded as being obvious.



The problem solved by providing a snug fit between the inserts and the faces of the adjacent glass sheets (feature D) was to enable a better transfer of the loads imposed on the glass sheets to the building. If a gap - filled with sealant or not - was present between the inserts and the glass sheets, the insert could move, thereby creating an unbalanced load on the glass sheets, with the risk of breaking them.

For the following reasons, none of the cited documents disclosed a snug fit. E1 clearly showed a gap between the insert and the glass sheets (see Figure 1). The element 66 shown in E5 could not be considered to be an insert since it was a reinforcing bar. Furthermore, element 7 was not part of a toggle system and was a snug fit to the glass sheet only to ensure that it did not move from its position, and not in order to transfer loads. Therefore, since in both cases the elements were not inserts in the sense of the invention, the skilled person would not consider their arrangement in the glazing assembly according to E1.

E6 also did not disclose a snug fit, since the spacers 42 positioned around the connectors 22 were made of silicon. Silicon being an elastic material, it was impossible to create a snug fit with it, but only a press fit.

(c) First auxiliary request

Making the inserts of a plastic material enabled a better transmission of loads, since metal could more easily damage the glass sheets.

The elements 7 of E5 were made of plastic in order to enable a snap fit around the glass sheet and not in order to better transmit the forces. Therefore, they could not lead the skilled person to apply plastic inserts in the sense of the present invention.

(d) Second auxiliary request

The presence of the end walls prevented the sealant from entering the inserts when they were pressed into the not yet set sealant material (see column 4, lines 52 to 53).

The inserts disclosed in E5 did not solve this problem, since they had only one side wall and the fluid sealant could enter the inserts from the other side.

Moreover, it was not obvious for the skilled person to close a U-shaped insert, especially since none of the prior art documents suggested this measure.

(e) Third auxiliary request

Since the third auxiliary request was a combination of the first and second auxiliary requests, its subject matter did obviously involve an inventive step as well.

## **Reasons for the Decision**

1. The appeal is admissible.

2. Admissibility of late filed document.

E6 has been filed late. However, since its content is highly relevant for the assessment of the patentability of all present requests, it is admitted into the proceedings.

3. Main request

3.1 The most relevant state of the art is undisputedly represented by E1, which discloses (see particularly Figure 1):

A glazing assembly comprising a glazing unit having at least two sheets of glass (1', 1''), adjacent sheets being separated by a spacer means comprising an inner spacer bar (3) and an outer seal (5) extending around the periphery of the spacer bar (3) and between the sheets of glass (1', 1''), and a fixing means for fixing the glazing unit to an adjacent support, in use, the fixing means comprising fixing inserts (4), each fixing insert defining a receiving slot and a toggle (9) which is movable from a locating position for insertion of the toggle (9) to a locking position in which the toggle (9) is engaged in the receiving slots of laterally adjacent fixing inserts.

Moreover, the sentence on page 8, lines 9 to 12, according to which it is sufficient to distribute separate sections of the profiled rails (4) along the periphery of the glazing unit ("obwohl es ausreichend ist, wenn **einzelne Abschnitte** im Randbereich jeder Isolierungsscheibe **verteilt** sind"), can only be understood as meaning that the glazing assembly

comprises a plurality of peripherally spaced-apart fixing inserts suitable for being inserted into the outer seal. Additionally, E1 shows that a depth of outer seal (5) is left between the spacer bar (3) and the inserts (4).

Therefore, contrary to the respondent's view, the subject matter of claim 1 differs from the glazing assembly of E1 only by features C and D, according to which

- the outer seal is maintained between adjacent fixing inserts leaving a depth of outer seal between the spacer bar and the inserts (feature C), and
- the fixing inserts are a snug fit to the faces of the adjacent sheets of glass (feature D).

These are two independent features with no functional interaction which could result in a combined technical effect which is different from the sum of the technical effects of the individual features. Moreover, the respondent did not argue that the invention resided exactly in the combination of these features and that they caused a synergetic technical effect.

Therefore, since the claim represents merely an aggregation of features, it is necessary to assess for each feature whether its provision is obviously derivable from the prior art or not.

- 3.2 The partial problem solved by feature C can be regarded as the provision of an enhanced stability of the glazing assembly. Document E4 discloses a glazing

assembly with inserts for fixing the glass sheets to the structure of the building, whereby the sealing is maintained between adjacent fixing inserts (see page 3, line 18 and 19) in order to assure the necessary gluing, sealing and thereby stability (see page 3, lines 29 and 20). Therefore, it is obvious for the skilled person confronted with this problem to combine the glazing assembly of E1 with the teaching of E4, thereby arriving at a glazing assembly according to E1 comprising feature C.

With regard to feature D, the skilled person has in principle only three alternatives for fixing the inserts between glass sheets, namely a press fit, a snug fit or a loose fit. However, it is uncontroversial that a press fit cannot be used in combination with glass sheets. Therefore, only two options remain: a snug fit or a loose fit.

Glazing assemblies known from the prior art use both alternatives. E1, E2, E3 and E4 disclose a gap between the inserts and the glass sheets. E5 and E6 on the contrary disclose glazing assemblies comprising supporting elements which are snug fit between glass sheets. E5 discloses in Figures 7 and 8 an element 7 which is snug fit around the upper glass sheet 64. The respondent's argument according to which the element 7 does not transfer loads to the glass sheet and therefore does not solve the problem above cannot be followed since the element 7 is in contact with the frame section 70, which is fixed to the framework beam 15 through the screw 77 and does therefore transfer the loads exerted e.g. by the wind on the glass sheets to the framework of the glazing assembly.

E6 discloses inserts which are snug fit to glass sheets in the sense of the patent in suit for the following reasons. E6 discloses connectors 22 with spacers 42 on their side walls which are used to correctly align the connectors with respect to the glass panes (see column 2, lines 58 to 63). In the patent in suit, the embodiments of Figures 8 to 12 show inserts with ribs which "provide a guide means for guiding the insertion of the insert into the outer seal" (see column 5, lines 39 to 41). Therefore, the wording "snug fit to the faces of the adjacent sheets of glass" applies also to the case where the ribs and not the insert's walls are snug fit to the glass sheets. Since, as set out above, it is not admissible to create a press fit between the insert and the glass panes and since the spacers have to assure the alignment of the inserts with the glass sheets, no gap can be present between the spacers and the glass panes. Therefore, the connectors disclosed in E6 have to be snug fit to the glass sheets and this document anticipates feature D.

Since the skilled person has only two options for fitting the inserts to the glass sheets, and the known prior art discloses both solutions, the selection of a snug fit is obvious.

- 3.3 Since the provision of the two features C and D in the glazing assembly according to E1 is obvious and since there is no interaction between them, the subject matter of claim 1 does not involve an inventive step.

4. First auxiliary request

The subject matter of claim 1 according to the first auxiliary request further differs from the glazing assembly of E1 by feature A.

Since this feature does not interact with the other features of the claim in such a way as to create a synergetic effect, it has to be considered which partial problem it solves.

The partial problem underlying this feature can be formulated as providing an alternative material for the insert.

Document E5 discloses that the element 7 is made of "relatively hard plastic material" (see page 6, lines 4 to 7). Therefore, the skilled person is aware that in the field of glazing assemblies plastic is commonly used for parts which transfer loads and which are mounted snug fit to glass sheets. Therefore, the use of plastic instead of metal for the insert according to E1 is an obvious alternative. Consequently, the subject matter of claim 1 according to the first auxiliary request does not involve an inventive step either.

5. Second auxiliary request

The subject matter of claim 1 according to the second auxiliary request further differs from the glazing assembly according to E1 by feature B.

Since this feature does not have any synergetic interaction with the other features of the claim, again it has to be assessed which partial problem it solves.

The presence of the end walls obviously solves the problem of avoiding that fluid sealant material flowing into the insert when it is inserted in the gap between the glass sheets while the sealant is not yet set.

The respondent's argument that E5 does not disclose end walls which solve this problem is correct, since the insert 7 of E5 does not have two side walls but only one and the fluid seal material can flow into the insert from one of the sides.

However, it is obvious for the skilled person confronted with the insert disclosed in E1 and with the problem above, to close those parts of the insert through which the fluid seal enters. Since the only open parts of the insert of E1 are those at the ends, it is obvious to close these apertures by providing the inserts with end walls. Therefore, also the subject matter of claim 1 according to the second auxiliary request does not involve an inventive step.

6. Third auxiliary request

The subject matter of claim 1 according to the third auxiliary request further differs from the glazing assembly according to E1 by features A and B.

As shown above (see sections 4 and 5), these features do not interact in a synergetic way with each other or with the remaining features of the claim, and their



provision is obvious. Therefore, the subject matter of claim 1 according to the third auxiliary request does not involve an inventive step either.

**Order**

**For these reasons it is decided that:**

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:

V. Commare

T. Kriner