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(54) Benævnelse: **Vindueslysning med en vinduesramme og et tætningsbånd**

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Description

The invention relates to a window reveal with window frame and with a foam sealing strip in the installed state, wherein the foam sealing strip is used to seal the window frame and is impregnated to delay the return to shape, wherein the foam sealing strip has two narrow sides, which are located opposite one another and which in the installed state respectively face the inside or the outside of the window, and broad sides suitable for bearing against the window side or reveal, having the further features of the preamble of claim 1.

Foam sealing strips of the type in question for sealing a window frame are known. In this respect, reference is made for example to EP 1 131 525 B1. Said patent document illustrates and describes a sealing strip made of an elastic foam material which is able to return to shape. This strip may be accommodated in an enveloping film designed as a tear-off film, wherein, after appropriately opening the film where necessary, the foam sealing strip returns to shape in a delayed manner as a result of a provided impregnation. In said document, a broad side of the foam sealing strip is adhesively bonded to a side face of the window frame facing towards the reveal of the masonry opening. In the installed state, the other broad side of the sealing strip provides sealing against the reveal. The narrow sides of the sealing strip which are oriented transversely to these broad sides face towards on the one hand the inside and on the other hand the outside of the window.

It is further known to configure sealing strips of the type in question with a greater or lesser vapour barrier effect in a manner adapted to the site of installation. In this way, for instance, facing towards the outside of the window, use is made of sealing strips which have a lesser vapour barrier effect than sealing strips assigned to the inside of the window (according to DIN 4108-7).

EP 317 833 A1 describes a sealing strip composed of multiple layers which is able to return to shape, comprising one sub-region with properties of elastically returning to shape in a delayed manner and another sub-region with elastic

shape return properties which is made of closed-cell foam, wherein in the installed position the two regions are arranged next to one another in relation to the gap width.

DE 43 07 528 A1 describes a gap sealing strip made of soft foam with delayed return to shape, wherein the shape return properties of the strip are different over the width thereof.

DE 10 2004 016 036 A1 describes a foldable sealing profile having an elastically deformable leg, wherein, after the sealing profile has been attached, a fixing of the leg can be released so that the leg stands upright.

EP 1 426 540 A2 describes a sealing arrangement for sealing a gap between a component and a respective top layer of a wall adjoining the component, by means of a first sealing profile strip unit for an outer gap relative to the component and a second sealing profile strip unit for an inner gap relative to the component, wherein the two profile strip units provide different vapour diffusion resistances.

DE 9410234 U1 describes a profile set for establishing a structural connection between window elements inserted in an opening of a building structure and the building structure, in the form of an all-round strip which provides sealing with respect to the building structure, wherein a carrier profile strip which can be attached to the window frame, a cover profile strip which can be latched into different positions, and an accommodating pocket which can be latched thereto for a sealing profile bead are provided, wherein sealing profile beads which are arranged in two accommodating pockets arranged on the outer side of the window on opposite sides of the window frame may have different vapour permeabilities.

From document DE 200 09 674 U1 a multilayer sealing strip for sealing gaps is known, consisting of a plurality of foam layers which are connected to one another and each have a different volume weight and air-impermeable barrier

layers respectively connecting the layers, said sealing strip in the installed state running in the direction from wall inner side to wall outer side.

In view of the prior art described above, a technical problem of the invention is considered to be that of further improving a window reveal with window frame and sealing strip of the type in question in the installed state, with an easy-to-handle advantageous design of the sealing strip with regard to the vapour diffusion behaviour, wherein installation of the window frame is simplified.

This problem is solved by the subject matter of claim 1.

The focus here is on the fact that the narrow sides or narrow side regions respectively of the sealing strip are configured differently in such a way that in the installed state, that is to say in the rest state after the sealing strip has fully returned to shape and is accordingly bearing sealingly against the reveal, one narrow side has a greater vapour barrier effect than the other narrow side. According to this embodiment, a sealing strip is created which has particular advantages with regard to vapour diffusion. According to the invention, the sealing strip is configured in such a way that there is a predefined inner side and outer side thereof. Due to the different configuration of the vapour barrier effect on one and the other narrow side, a clear diffusion direction is given, namely from the side having a greater vapour barrier effect to the opposite side having a lesser vapour barrier effect. In the arrangement according to the invention, a sealing strip configured in this way performs both the function of a strip arranged on the inside of the room and of a strip arranged on the outside of the room. The defined diffusion direction makes this possible. For easier identification of the differently configured narrow sides, the latter may be clearly marked, for example by colour coding.

It is further provided that the sealing strip is designed with such a width that said sealing strip provides sealing both with respect to the inside of the room and with respect to the outside of the room. The sealing strip thus combines the individual sealing strips known from the prior art for sealing with respect to the

inside of the room and for sealing with respect to the outside of the room. This accordingly provides an advantage in terms of handling since now only one sealing strip must be arranged in a manner assigned to one window frame limb. The sealing strip in this case extends preferably over approximately the entire thickness of the window frame, wherein further the sealing strip when arranged on the window frame is initially kept in a held-back, compressed position, for example by gluing, which compression is released for example by tearing off an enveloping film. The sealing strip is in this case impregnated so as to result in a delayed return to shape. For the visual distinction of the inner and outer sides and thus of the different vapour barrier zones, the created integral sealing strip may be marked for example by colours along its accordingly configured narrow sides for example.

According to the invention, a window frame is inserted in the window reveal of a house, wherein the window frame is sealed with respect to the reveal or a reveal element by means of the sealing strip in such a way that a greater vapour barrier effect is formed towards the room inner side of the window frame than with respect to the room outer side.

Window frames of the type in question are known. With regard to the sealing strips that are to be inserted between the window frame and the reveal, reference is made to the prior art cited in the introduction.

A technical problem is solved by the invention to further improve a window frame of the type in question, particularly with regard to easier installation.

The focus here is on the fact that the same sealing strip provides sealing both with respect to the inside of the room and with respect to the outside of the room, on the fact that the sealing strip is foam-based, and on the fact that the foam is designed with a greater vapour barrier effect on the inside of the room. According to this embodiment, a window frame of the type in question is provided which is characterized in particular by easier installation. According to the proposal of the invention, only the arrangement of one sealing strip is

required, in a manner assigned to a frame narrow side facing towards the reveal. In this case, the sealing strip extends preferably over approximately the entire thickness of the window frame. In this respect, the sealing strip is further initially kept in a held-back, compressed position, preferably by gluing to the window frame, which compression in one possible embodiment is released by tearing off an enveloping film. The sealing strip meets the requirement according to DIN 4108-7, according to which a greater vapour barrier effect must be provided towards the inside of the room than towards the outside of the room. In the present case, this is achieved by just one sealing strip which is further configured in particular to provide the greater vapour barrier effect on the inside of the room.

The subjects of the further claims will be explained below with reference to the subject matter of claim 1.

For instance, in one advantageous further development of the subject matter of the invention, it is provided that the greater vapour barrier effect is additionally achieved by a coating at one side on the narrow side of the strip. In the installed state, that is to say after being arranged on the window frame and further after the window frame has been inserted in the window reveal, this coated side faces towards the inside of the room. The foam material, which in principle otherwise has a constant vapour barrier effect over the entire width of the sealing strip – viewed from one narrow side to the opposite narrow side – is partially coated by the proposed coating, namely in a manner assigned to just one narrow edge region, in order thus to achieve a clearly defined section having an increased vapour barrier effect. The coating material is configured to return to shape elastically according to the capability of the foam material, wherein the greater vapour barrier effect in comparison to the rest of the foam material, in particular in comparison to the narrow edge facing towards the outside of the room, is ensured over the entire possible extent of shape return of the sealing strip. In this regard, latex may be used as the coating material. This may be a synthetically produced latex material, as known for example from coating the back of carpets. Other suitable coating materials are acrylate,

neoprene or rubber, for example styrene-butadiene rubber (SBR), natural rubber, synthetic rubber or chlorinated rubber. After the foam material has been cut during manufacture of the sealing strip, for example further in this respect after a compression of the foam material into the storage position, this coating material is applied to one narrow side face by means of roller or brush application or by spray application.

According to the invention, the greater vapour barrier effect is achieved by a greater compression of the foam at one side in the installed state, for example further in this respect by a greater material density over the same height of the narrow side.

This greater material density or greater compression respectively exists in the installed state, that is to say in the rest state of the sealing strip after fully returning to shape and bearing against the facing window reveal. For example, further in this respect the foam strip may have a much greater thickness in the fully decompressed state along the narrow side which subsequently has the greater vapour barrier effect than in the region which faces towards the other narrow edge side and which subsequently has a lesser vapour barrier effect. Due to this accumulation of material along one narrow side, an increased material density and thus the desired greater vapour barrier effect is achieved in the compressed installed state. Alternatively, the greater material density can be achieved by an additional foam material having a smaller height than the foam. A combination of the actual sealing strip foam material and the additional foam material is thus preferably provided over the height of the strip in the region of the narrow side having the greater vapour barrier effect, which combination in a further preferred manner does not exceed the height of the foam strip in general. The additional foam material may thus be embedded in a strip-like manner in the sealing strip foam. This additional foam material may further consist of the same material as the rest of the foam strip. The embedding of this additional strip takes place by compressing the associated strip section of the sealing strip foam material, as a result of which an increased material density exists in the associated narrow edge region. As a further

alternative, the additional foam material may also be a closed-pore foam, in comparison to the generally open-pore design of the sealing strip foam material. Moreover, the greater material density may also be achieved in that part of the height is formed by a solid bead, for example a plastics material bead, while maintaining the same foam height of the expanded foam material. This bead may be an integral component of the sealing strip, is fed to the corresponding narrow edge side during manufacture of the sealing strip, and has the effect of compressing the associated foam region, which brings about the desired increased vapour barrier effect. As a further alternative, this bead may also be arranged between the window frame and the sealing strip in a manner positioned towards the inside of the room, in order thus partially to reduce in a manner facing the inside of the room the gap between the window frame and the facing window reveal, which in turn brings about a greater compression of the sealing strip foam material in the region of the inside of the room.

In a further alternative embodiment, the solid bead may extend over the entire broad side suitable for bearing against the window side or reveal and may have zones of different bead thicknesses so as to achieve a different material density of the foam over the width. Such a bead which is profiled in cross-section bears a foam which has an identical foam height as viewed over the broad side in the expanded position. In functional association, that is to say when arranged between a reveal and a window frame, the foam is less compressed in the region of a section of the solid bead which forms a trough when seen in profile than in a zone of the bead which forms a raised section in comparison thereto, and in which region a relatively high compression of the foam material is achieved. Such a bead which is profiled in cross-section may also be fed to the corresponding broad side of the foam during manufacture of the sealing strip, for example may in this respect further be injected onto the latter. The bead thus formed therefore exists as an integral part of the sealing strip.

With regard to the different vapour barrier effect of the foam towards the outside of the room and towards the inside of the room, it is preferably provided that the region of the foam that defines the vapour barrier effect towards the inside of

the room has a water vapour diffusion resistance value – also referred to as s_d value – which is 2 to 150 times the water vapour diffusion value of the region that defines the vapour barrier effect towards the outside of the room. In this respect, for example, a value for the inside of the room is selected which is 2 to 50 times, for example 7, 10, 13 or 25 times, for example 27, 32, 35 or 43 times the value for the outside of the room. The water vapour diffusion resistance value describes the water vapour permeability of materials, etc., wherein the diffusion resistance of a layer is specified as the air layer thickness in metres which would oppose diffusion with the same resistance as the layer in question. The different water vapour diffusion resistance values facing towards the regions outside of the room and the inside of the room respectively are to be determined by measurements for example from the core of the foam outwards in the associated regions or by measurements respectively of a separate foam sealing strip which thus has only either a region which can be assigned to the outside of the room or a region which can be assigned to the inside of the room. With regard to the region of the foam sealing strip that defines the vapour barrier effect towards the outside of the room, a water vapour diffusion resistance value of between 0.1 and 10 m is provided, more preferably a value between 1 and 5 m.

The proposed integral foam sealing strip is preferably positioned between a window frame and the associated window reveal. Such a sealing strip may also be arranged between a window frame and an associated reveal element for a window opening, which reveal element is used in particular in window renovations. Such a reveal element is known for example from DE 102004006403 A1.

The invention will be explained in more detail below with reference to the appended drawing, which illustrates merely examples of embodiments. In the drawing:

Fig. 1 shows a schematic perspective view of a foam sealing strip of the type in question which can be rolled up, in a first embodiment;

Fig. 2 shows the enlargement of region II in Fig. 1;

Fig. 3 shows the greatly enlarged cross-section through the sealing strip according to the first embodiment;

Fig. 4 shows a cross-sectional diagram corresponding to Fig. 3, according to a second embodiment;

Fig. 5 shows a further cross-sectional diagram, according to a third embodiment;

Fig. 6 shows a schematic sectional view of an installed situation of a sealing strip according to the embodiment shown in Fig. 5, arranged between a window frame and a window reveal;

Fig. 7 shows a diagram corresponding to Fig. 6, but with the arrangement of a sealing strip in an embodiment according to Fig. 4;

Fig. 8 shows a further schematic sectional view of an installed state, with the arrangement of a sealing strip according to the embodiment in Fig. 3, the sealing strip being arranged between a window frame and a reveal element which is arranged between the window frame and the window reveal; and

Fig. 9 shows a cross-section through a sealing strip in a further embodiment, in the installed state.

A foam sealing strip 1 in a first embodiment is first illustrated and described with reference to Fig. 1. Prior to being installed, said sealing strip is preferably provided for use in the form of a roll.

More preferably, the selected foam material is a polyurethane soft foam. This is impregnated, for example in this respect further by means of acrylate additives,

in order thus to provide the sealing strip with a delayed return to shape. The sealing strip 1 can accordingly be kept in the compressed state in a tear-off enveloping film in the storage position according to the aforementioned document EP 1 131 525 B1.

With regard to the possible accommodation of the sealing strip in a tear-off enveloping film, the content of EP 1 131 525 B1 is hereby fully incorporated in the disclosure of the present invention.

Alternative embodiments provide a sealing strip 1 without a tear-off film.

The foam sealing strip 1 has a cross-section according to the diagram 10 in Fig. 3, with two broad sides 2, 3 and two narrow sides 4, 5 extending substantially at right angles thereto.

The broad sides 2 and 3 have a length b which is a multiple of the length a of the narrow sides 4 and 5 respectively measured perpendicular thereto. This applies both in an optionally presently compressed further, optionally enveloped state of the sealing strip 1 and also after the sealing strip has returned to shape (decompressed) in the installed state. Thus, for example, the length b of the broad sides 2 and 3 in the compressed storage state corresponds approximately to ten times the narrow side length a, while in the installed state, that is to say in the decompressed rest state, there is a ratio of broad side length b to narrow side length a of approximately 5:1.

The foam sealing strip 1 serves to seal a gap between a window frame 6 and the facing window reveal 7. On one broad side 2, the sealing strip 1 is provided with an adhesive layer 8 which in the storage state is covered by a protective film 9, for example a siliconized film.

By means of this adhesive layer 8, the sealing strip 1 is fixed to the cheek of the stationary window frame 6, said cheek facing towards the window reveal 7 and running approximately parallel thereto.

As can also be seen in particular from the diagrams in Figs. 6 and 7, the length b of the sealing strip broad sides 2, 3 is adapted to the thickness of the window frame and therefore corresponds approximately to the size, measured in the same direction, of the cheek of the window frame 6 bearing the sealing strip 1.

With the broad side 3 that faces away from the window frame 6, the sealing strip 1 provides sealing with respect to the window reveal 7, optionally after having been released by tearing off an enveloping film and then returning to shape in a delayed manner.

On account of the selected broad side length b adapted to the window frame thickness, the proposed sealing strip 1 serves both for sealing with respect to the outside A and for sealing with respect to the inside I of the window frame 6.

The sealing strip 1 is suitably configured to meet the requirement known from RAL that there must be a greater value of the vapour barrier effect towards the inside of the room than towards the outside of the room.

In the embodiment shown in Figs. 1 to 3, this is achieved by increasing the material density of the foam material facing towards the narrow side 5 of the sealing strip 1 assigned to the inside I. This zone 10 of increased material density is provided by embedding an additional foam material 11, which in the illustrated example of embodiment is a closed-pore foam.

This additional foam material 11 is in strip form, with a narrow edge 12 which faces towards the narrow side 5 of the sealing strip 1 and which runs in the plane of the narrow side 5 of the sealing strip 1 on the inside of the room. Furthermore, the additional foam material 11 is arranged in the corner region between the narrow side 5 on the inside of the room and the broad side 2 of the sealing strip 1 facing towards the window frame 6, wherein the broad cheek 13 of the additional foam material 11 running perpendicular to the narrow edge 12 extends in the plane of the sealing strip broad side 2.

The height c of the additional foam material 11, measured in the direction of the narrow side width a, corresponds to just part of the narrow side length a, for example in the illustrated example of embodiment to approximately one-third to one-quarter of the narrow side length a.

The extension length parallel to the sealing strip broad side 2, measured perpendicular to the height h, is approximately 3 to 5 times the material height h.

The additional foam material 11 is embedded in the foam material of the sealing strip 1 and is connected thereto in a non-detachable manner. In a manner corresponding to the cross-sectional shape of the additional foam material 11, an open-edged pocket may exist in the sealing strip foam material for accommodating the additional foam material 11. The required increased vapour barrier effect in comparison to the sealing strip narrow side 4 assigned to the outside A is in this case achieved, in a manner which influences the cross-section, by incorporating the additional foam material 11 in the form of a closed-pore material.

Alternatively, the additional foam material 11 may, as illustrated, also be incorporated by compression of the soft foam material congruent therewith. Due to the greater material density thereby achieved in comparison to the outer narrow side 4, the requirement according to DIN 4108-7 is met, wherein the additional foam material 11 may then also consist of the same open-pore soft foam material as the rest of the sealing strip 1.

As a further alternative, the greater material density in the region of the narrow side 5 assigned to the inside I may be achieved by a solid bead 14 which, in a manner corresponding to the previously described additional foam material 11, acts on the zone 10 assigned to the narrow side 5. This bead 14 may be arranged on the frame in a manner facing towards the inside I.

A solution as shown in the diagram in Fig. 4 is also conceivable, in which the bead 14 is embedded in the sealing strip material, wherein, independently thereof, the bead 14 has a height h which is smaller than the narrow side length a of the sealing strip 1, for example, in this respect further in accordance with the additional foam material 11 described above, corresponding approximately

to one-third to one-quarter of the narrow side length a.

The plastics material bead 14 is designed to be impermeable to vapour. In conjunction with the zone 10 of the sealing strip 1 compressed by the effect of the bead 14, this leads to the increased vapour barrier effect in comparison to the opposite narrow side 4.

As a further alternative, the increased vapour barrier effect on the sealing strip narrow side 5 assigned to the inside I may also be achieved by a coating of this narrow side 5. This coating 15 (cf. Fig. 5, and installation example shown in Fig. 6) may be latex-based. Due to this coating 15, a type of vapour barrier is created on the narrow side 5, wherein the elasticity of the sealing strip material in particular with regard to the shape return thereof for bearing sealingly against the window reveal 7 is not impaired by the selected coating material. A coating material is accordingly selected which permits the decompression of the foam material.

The coating 15 may further be formed for example also by an elastic sealing tape applied to the narrow side 5 facing towards the inside of the room, for example in this respect further by a closed-cell plastics material tape.

In view of the selected cross-sectional dimensions and the different vapour permeability values towards the outside A and towards the inside I, the sealing strip 1 forms an integral sealing element for a stationary window frame 6.

As shown in the diagrams in Figs. 6 and 7, the sealing strip 1 adhesively bonded to the window frame 6 may cooperate directly with the window reveal 7. Alternatively, the arrangement shown in the diagram in Fig. 8 may also be provided, wherein the sealing strip 1 provides sealing with respect to a reveal element 16 which is made of a hard plastics material and which is used for example in window renovation.

Fig. 9 shows a further embodiment of the sealing strip 1. In a manner similar to

the embodiment shown in the diagram in Fig. 4 or 8, a combination of bead 14 and foam is also provided here. This bead 14 extends over the entire broad side 2 facing towards the window frame 6, which broad side 2 at the same time may serve via an adhesive zone to fix the bead 14. An embodiment is shown in which plug-in securing to the window frame 6 is achieved via the broad side 2. According to this embodiment, the narrow sides 4' and 5' of the bead 14 which run perpendicular to the broad side 2 respectively face directly towards the outside A and the inside I respectively.

According to the diagram in Fig. 9, the bead 14 is profiled in cross-section so that different profile heights are obtained along the extent of the broad side 2. For instance, facing towards the narrow side 5', that is to say facing towards the inside I of the room, a zone 20 of greater bead thickness or higher level respectively in comparison to the broad side 3 is provided for the foam. In the illustrated example of embodiment, the bead 14 extends here over approximately two-thirds of the gap width f, as viewed transversely to the gap orientation.

Provided adjacent to the zone 20 is a zone 21. The latter has a bead level which is considerably reduced in comparison to the zone 20. According to the illustrated example of embodiment, in this respect, the ratio of bearing level to gap width is reversed in comparison to the region of the zone 20, so that the bead thickness here is less than one-third of the gap width f, up to a ratio at which the thickness of the foam material reaches the gap width f. In this section, the bead 14 in the region of its broad side 2 is located in an associated recess of the window frame.

While in a cross-section according to the diagram in Fig. 9 the zone 20 ends in a planar surface oriented parallel to the broad side 2, the adjoining region of the zone 21 is defined in cross-section by a concave curvature of the bead edge, wherein, as also shown in the diagram, proceeding from the zone 20, the zone 21 first decreases continuously but ultimately rises slightly again in the direction of the narrow side 4' facing towards the outside A of the room, even though at

the end of the zone 21 facing towards the narrow side 4' the bearing level for the foam material, measured transversely to the broad side, is less than half the gap size.

Viewed over the width of the bead 14, that is to say parallel to the broad side 2, the zone 21 takes up approximately two-thirds to three-quarters of the total width of the bead 14.

On the profiled surface of the bead 14 facing away from the broad side 2, the foam material is bonded to the bead 14 in a non-detachable manner over the different bearing levels. When expanded freely, the foam strip has a uniform foam height. According to the described profiling, the foam strip arranged on the bead 14 is accordingly compressed at one end in the installed state as shown in the diagram in Fig. 9, in order to achieve a greater material density. This zone 10 of increased density is assigned to the zone 20 of the bead 14, in which zone 20 the bead 14 has a greater bead thickness in comparison to the zone 21.

In the illustrated example of embodiment, the narrow sides 4 and 5 of the foam material are flanked partially, but at least over the supporting level of the thickened zone 20, by side walls 22 formed in one piece with the bead 14. Said side walls are dimensioned in such a way that the narrow sides 4' and 5' of the bead 14 resulting therefrom have in the width direction a smaller size than the width f of the gap that is to be sealed. The side walls 22 offer lateral support for the foam material.

The foam material is preferably an impregnated sealing strip. The bead 14 is produced for example in the plastics material extrusion method, but may also alternatively be formed by drawing a metal strand or as a shaped wooden profile.

The degree of compression in the region of the narrow side 4 facing towards the outside A corresponds to approximately 50% of the degree of compression of

the narrow side 5 assigned to the inside I. In the middle region as viewed over the width, a greater expansion in comparison to the end section facing towards the outside A is achieved as a result of the concave profile curvature. In the illustrated example of embodiment, this in turn corresponds to approximately 50% of the degree of compression of the foam in the region facing towards the outside A.

As an alternative to the described embodiment in which the sealing strip 1 is in the compressed, optionally film-wrapped state for installation or arrangement on the window frame respectively, the sealing strip 1 may also be compressed only in the course of applying the sealing strip 1 to the window frame 6, particularly when the increased vapour barrier effect on the inner narrow side 5 is performed by way of a coating 15.

The proposed sealing strip 1 offers in combination both the sealing against driving rain which is necessary towards the outside A, and which is usually achieved by the compressed rest state in the installed state of the sealing strip 1, and also a central sealing plane, as viewed in the width direction, as thermal insulation, as well as the necessary vapour barrier effect or increased vapour barrier effect respectively towards the inside of the room in comparison to the outside.

Patentkrav

1. Vindueslysning med vinduesramme og skumstof-tætningsbånd i indbygget tilstand, og hvor skumstof-tætningsbåndet er anvendt til tætning af vinduesrammen (6) i vindueslysningen (7), og hvor skumstof-tætningsbåndet (1) er udformet, så at det kan genvinde sin form og - for at kunne genvinde formen - er imprægneret, og hvor skumstof-tætningsbåndet (1) har to smalle sider (4, 5), som i indbygget tilstand er anbragt over for hinanden, og som respektivt vender mod indersiden (I) eller ydersiden (A) af vinduesrammen (6), og hvor nogle brede sider (2, 3) har en vis bredde, som gør siderne egnet til at ligge an mod vinduet eller mod lysningen (7), medens de smalle sider (4, 5) eller de smalle sideområder på tætningsbåndet respektivt er forskelligt udformet, og hvor den ene smalle side (5) har en større dampbarriere-virkning end den anden smalle side (4), og hvor det i den installerede tilstand gælder, at tætningsbåndet befinder sig i en hviletilstand efter at være vendt helt tilbage til sin form, idet det ligger tætnende an mod vindueslysningen, **kendetegnet ved, at** tætningsbåndet (1) er udformet med en sådan bredde (b), at det kan tilvejebringe tætning både i forhold til rummets (I) indre, og i forhold til rummets ydre (A), og at der kun er indrettet en vinduesramme, og at der er opnået en større dampbremsevirkning ved en ensidigt større komprimering af skumstoffet i den indbyggede tilstand.

2. Vindueslysning med vinduesramme ifølge krav 1, **kendetegnet ved, at** den større dampbremsevirkning yderligere er opnået ved hjælp af et ensidigt, smalt båndsidelag (15).

3. Vindueslysning med vinduesramme ifølge krav 2, **kendetegnet ved, at** et anvendt lagmateriale er latex.

4. Vindueslysning med vinduesramme ifølge krav 2, **kendetegnet ved, at** lagmaterialet er akrylat, eller neopren eller gummi.

5. Vindueslysning med vinduesramme ifølge et af kravene 1-4, **kendetegnet ved, at** den større komprimering er opnået ved en større materialetæthed over den samme højde (a) af den smalle side (5) af tætningsbåndet.

6. Vindueslysning med vinduesramme ifølge krav 5, **kendetegnet ved, at** en større materialetæthed er opnået ved at anvende en mindre højde (h) end for det skumstof, som findes i tætningsbåndets tilsætnings-skumstofmateriale (11).

7. Vindueslysning med vinduesramme ifølge krav 6, **kendetegnet ved, at** tilsætnings-skumstofmaterialet (11) er et skumstof med lukkede porer.

8. Vindueslysning med vinduesramme ifølge et af kravene 1-7, **kendetegnet ved, at** en større materialetæthed er opnået ved, at en del af højden (a) af den smalle side (5) af tætningsbåndet er fremstillet ved hjælp af et massivt udformet bånd (14) – med samme skumstofhøjde af det ekspanderede skumstofmateriale.

9. Vindueslysning med vinduesramme ifølge krav 8, **kendetegnet ved, at** det massivt udformede tætningsbånd (14) strækker sig over hele den til anlæg mod vinduessiden eller lysningen egnede bredside (2) og for at opnå en forskellig materialetæthed i skumstoffet over nogle brede zoner (20, 21), har forskellige båndtykkelser.

10. Vindueslysning med vinduesramme ifølge et af de foregående krav, **kendetegnet ved, at** den ved et rums inderside definerede dampbremsevirkning i forbindelse med et område af skumstoffet svarer til en vanddamps-diffusionsmodstandsværdi (sd-værdi), som er 2 til 150 gange vanddamps-diffusionsmodstandsværdien i et område, som befinder ved ydersiden af rummet.

11. Vindueslysning med vinduesramme ifølge et af de foregående krav, **kendetegnet ved, at** vanddamps-diffusionsmodstanden i et område af

skummet, som definerer vandspærreeffekten ved ydersiden af rummet, er mellem 0,1 og 10 m, fortrinsvis mellem 1 og 5 m.

Fig: 1

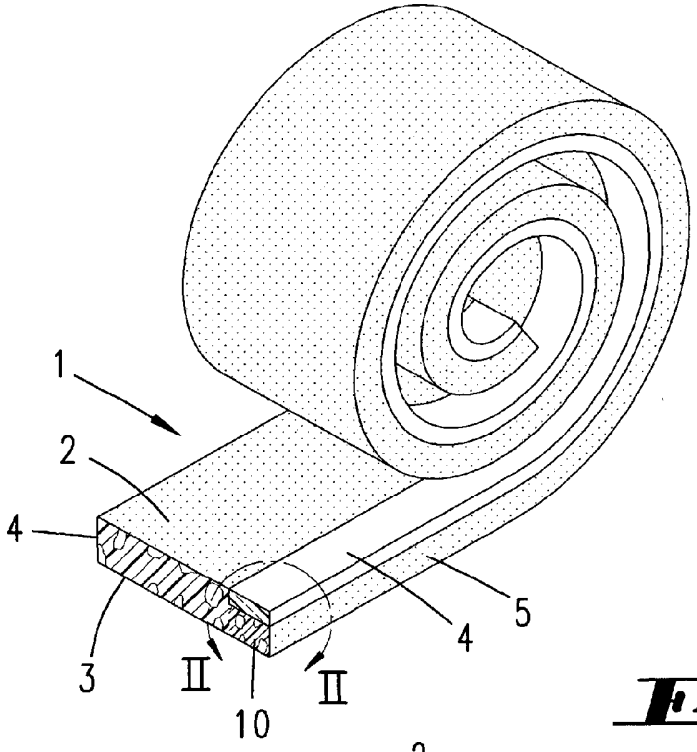


Fig: 2

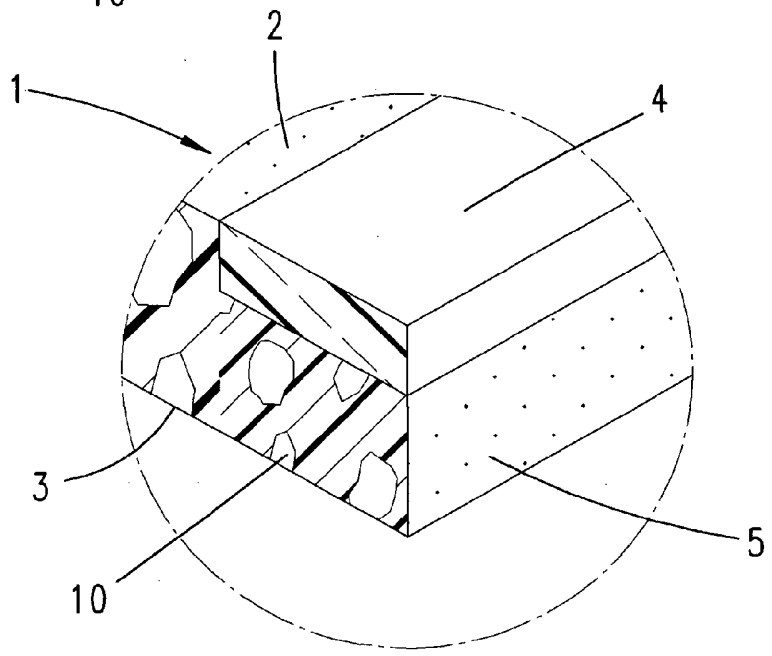


Fig:5

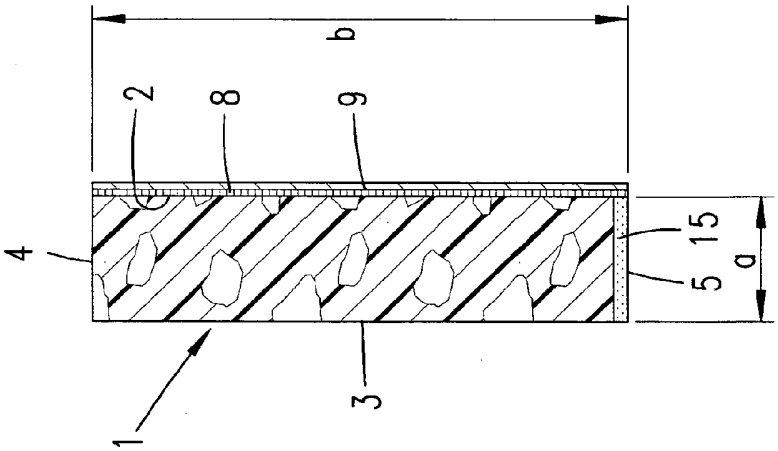


Fig:4

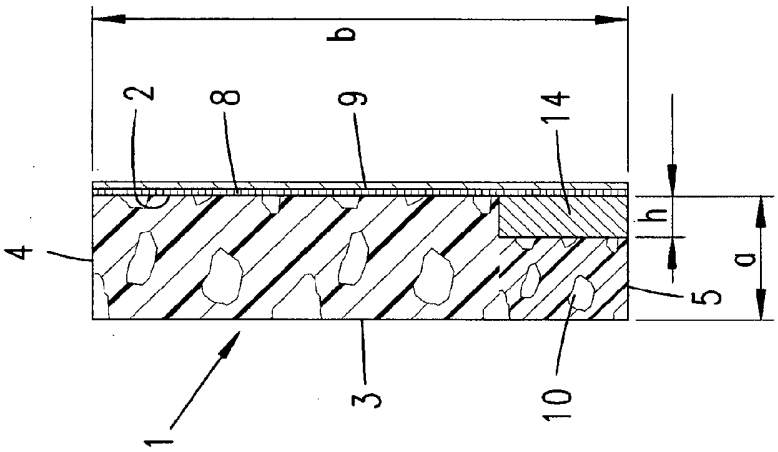
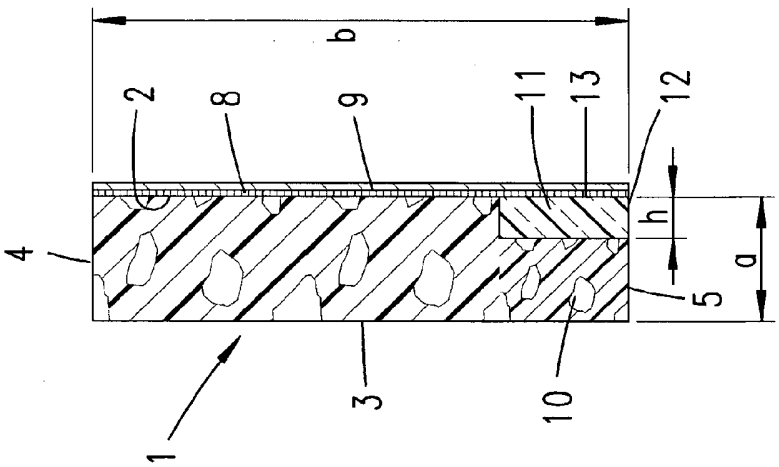


Fig:3



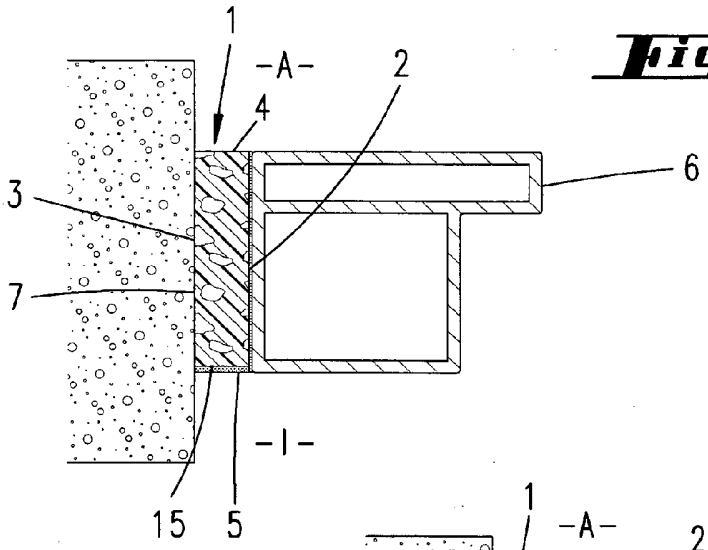


Fig: 6

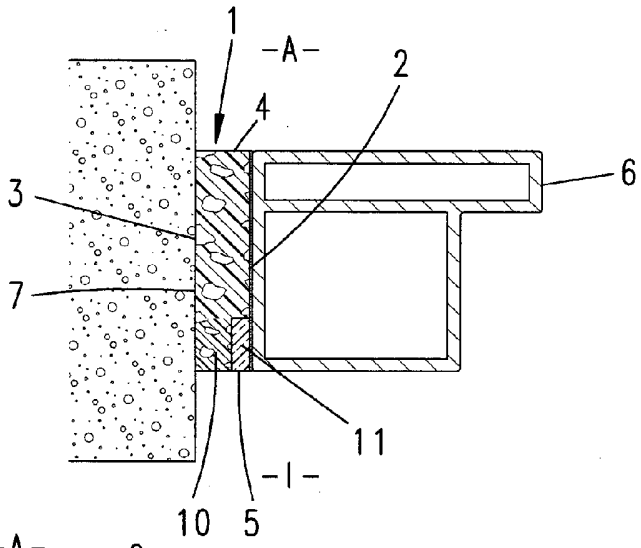


Fig: 7

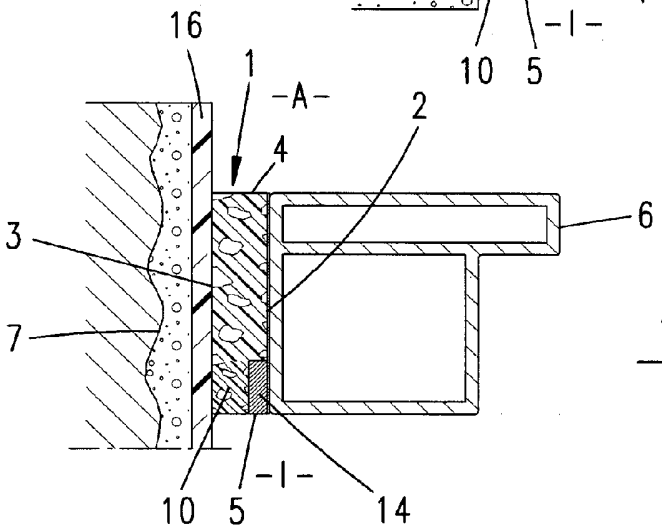


Fig: 8

Fig.9