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(54) **A SET OF UNDERROOF COLLARS AND A METHOD FOR SEALING A JOINT BETWEEN A GROUP OF ROOF WINDOWS MOUNTED IN A ROOF STRUCTURE AND AN UNDERROOF**

(57) A set of underroof collars for use with a group of roof windows mounted in a sloped roof structure and a method for sealing a joint between a group of roof windows and an underroof are disclosed. Each underroof collar comprises a top collar member for extending along a top frame member of a frame of the roof window, a bottom collar member for extending along a bottom frame member, and two side collar members. The set comprises

a first and a second underroof collar, where the two side collar members are of different configurations. The two side collar members may have different widths and/or one may be made with a surplus of material, while the other is without a surplus of material. Furthermore, the set comprises a third underroof collar with side collar members of the same configuration.

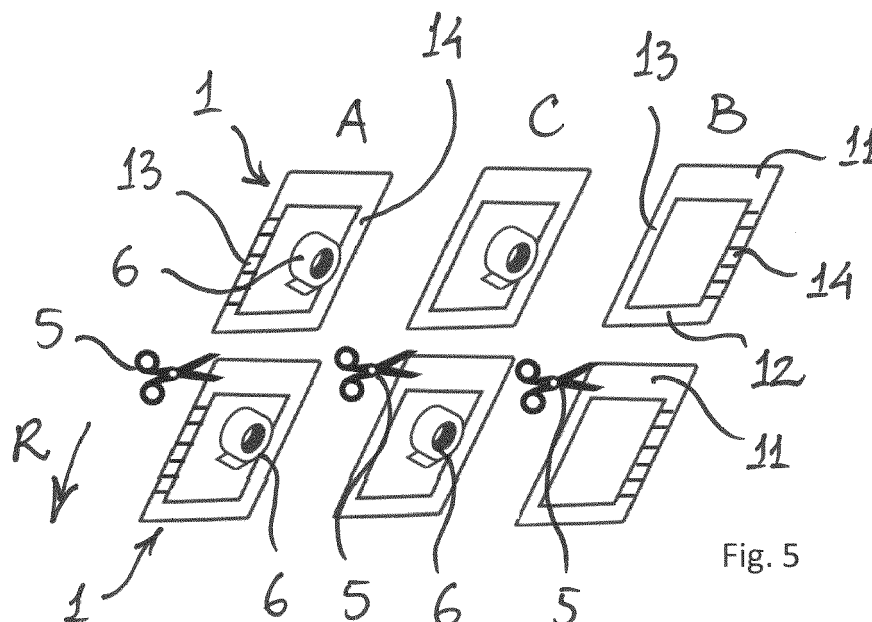


Fig. 5

Description

Technical Field

[0001] The present invention relates to a set of under-roof collars for use with a group of roof windows mounted in a sloped roof structure having a slope direction, where each of said roof windows comprises a frame comprising a top frame member and a bottom frame member both extending horizontally in the mounted state of the roof window and two side frame members extending in the slope direction in the mounted state of the roof window, where each underroof collar comprises a top collar member configured for extending along the top frame member, a bottom collar member configured for extending along the bottom frame member, and two side collar members each configured for extending along a side frame member, where said top collar member, said bottom collar member, and said side collar members delimit a collar opening, and where each collar member has a length direction extending along the collar opening and a width direction extending perpendicular to the length direction, away from the collar opening. The invention further relates to a method for sealing a joint between a group of roof windows mounted in a roof structure and an underroof.

Background Art

[0002] In roofs covered by tiles and like roofing materials an underroof is typically provided underneath the roofing material to divert any precipitation penetrating through the roofing material, for example snow entering through small gaps between tiles, and any condensation forming on the interior side of the roofing material. In this context the term "interior" is used to indicate a direction towards the interior of a building covered by the roof, and the term "exterior" is used for the opposite direction, away from the interior of the building, towards an exterior.

[0003] When a roof window is mounted in a roof, an opening is cut in the roof structure, thereby interrupting the underroof. After mounting of the roof window in said opening, an underroof collar is used for sealing the joint between the roof window and the underroof. The underroof collar members each comprises an inner portion, which is attached to the frame of the roof window, for example by means of staples or an adhesive, and an outer portion, also referred to as a skirt portion, overlapping with the sections of the underroof extending along the cut opening closest to the roof window. The outer portions may be attached to the roof structure, for example by means of staples, and/or to the underroof, for examples by means of adhesive tape, thereby keeping the underroof collar in its intended position. In some roof structures, laths for supporting the roofing material extend on the exterior side of the underroof. To be able to reach over such laths and down to the underroof between them, at least the outer portion of the side collar members

may be provided with a surplus of material, for example being made from a pleated material. Examples of under-roof collars are disclosed in EP0994992B1, EP1774118B1, EP1896673B1, and EP2284329A2.

[0004] The underroof collars are typically made from a textile material, such as a non-woven material, which is waterproof but vapour-permeable, and when they have been mounted, flashing and covering members are arranged on top of them to protect them from weather and mechanical wear.

[0005] When mounting groups of roof windows, one big underroof collar embracing all roof windows of the group may be used, and such an underroof collar may have connector collar members extending between roof windows of the group, for example interconnecting the top collar member and the bottom collar member and extending in parallel to the side collar members. While such collar members ensure a good fit with the roof windows, they are only suitable for one constellation of roof windows, and can be difficult to handle on a roof, especially on windy days. The use of several smaller underroof collars, each matching the size of a single roof window, is therefore often preferred, but even these can be difficult to handle.

[0006] Attempts have been made to facilitate mounting of underroof collars by making the inner portions from an elastic material, by fixating a pleating or folding the outer portion so that it only unfolds when the surplus of material is needed, and by packaging the underroof collar in a manner, which eases unpacking and mounting. This has improved handleability of underroof collars during mounting at single roof windows, but mounting of underroof collars on groups of roof windows it is still a challenge.

Summary of Invention

[0007] With this background, it is an object of the invention to provide a set of underroof collars for use with a group of roof windows, which makes the work of the installer easier.

[0008] This and further objects are achieved with a set of underroof collar of the kind mentioned in the introduction, which is furthermore characterised in that the set comprises: a first underroof collar and a second underroof collar, where the two side collar members, in addition to being configured for extending along opposite side members of the frame of a roof window, are of different configurations; and a third underroof collar, where the two side collar members, apart from being configured for extending along opposite side members of the frame of a roof window, are of the same configuration. In other words, the side collar members of the first underroof collar and the second underroof collar are not only mirror-inverted to be able to extend along two opposite sides of a roof window, they are also configured for engaging with the roof window and the roof structure in different ways. When roof windows are mounted close to each other in a group of roof windows there may not be room for a

standard side collar member, which will force an installer using a prior art underroof collar to either fold the side collar member or cut it to size. If choosing to fold, the resulting side collar member may become so thick that it is in the way when subsequently mounting flashing members, potentially resulting in the flashing members not being mounted correctly or later being pushed out of place by the tensions in the folded underroof collar. This problem may be particularly pronounced if the underroof collar is not folded in an orderly manner, but simply tucked into a space to the side of the roof window. If choosing to cut the underroof collar to size, the cutting is often done on the roof, possibly in windy conditions, which involves a risk of the underroof collar becoming too small and of other parts of the underroof collar being unintentionally damaged, which may in turn allow water to penetrate into the roof structure. By providing the first underroof collar and the second underroof collar with side collar members, which are different, one side collar member can be configured for engagement with the roof while the other is configured for being arranged between roof windows, covering the distance between frames of two roof windows together with the side collar members of the third underroof collar. In this way a set of underroof collars specially adapted for installation situations, where more than two roof windows are mounted side by side is provided, and the risks associated with errors in mounting are considerably reduced.

[0009] The side collar members of reduced width may be arranged to overlap with the side collar members of the third underroof collar. It is presently considered advantageous that the widths of the side collar members of reduced width and of the third underroof collar are such that in the mounted state they just reach the frame of the neighbouring roof window, or such that each extend a few centimetres up along the frame of the neighbouring roof window. In this way the side collar members of reduced width and the side collar members of the third underroof collar together form a gutter extending along the side frame members of the roof windows, said gutter being suitable for draining away any water reaching past the flashing and covering members used between the roof windows.

[0010] As will be understood from the description give above, the terms "top" and "bottom" are used to indicate mutual positions in the slope direction of a sloped roof in a mounted state of the underroof collar as well as a frame of a roof window. The term "above" will be used to indicate a position higher on the roof in the slope direction, while the terms "over" and "underneath" will be used to indicate relative positions in a direction perpendicular to the slope direction and the plane defined by the roof, "over" being used to indicate that an item is positioned further towards the exterior and "underneath" being used to indicate that an item is positioned further towards the interior of the building covered by the roof.

[0011] While reference is made primarily to groups of roof windows, where roof windows are mounted close to

each other, it is to be understood that the advantages of the set of underroof collar will also apply to situations where one or more roof windows are mounted close to another item, such as a solar collector, a solar panel, a chimney, a wall, or the like, or close to an edge of the roof.

[0012] In one embodiment, the two side collar members of the first underroof collar and the second underroof collar have different widths measured in the respective width directions. In other words, the set of underroof collars includes a first underroof collar, where the width of the right-hand side collar member measured in its width direction is reduced compared to the width of the left-hand side collar member, and a second underroof collar, where the width of the left-hand side collar member measured in its width direction is reduced compared to the width of the right-hand side collar member.

[0013] It is presently considered advantageous that the side members of the third underroof collar are also of a reduced width compared to the side members of the first and second underroof collar, which are configured for extending over the roof structure. It is, however, also possible to use a third underroof collar with wider side members than the side member of the first and second underroof collar extending between roof windows. In that case, the side collar member of the third underroof collar may extend from one roof window to the other, while the side collar members of the first and second underroof collars have only a small outer portion for establishing an overlap with the two side collar members of the third underroof collar. Depending on the distance between the roof windows, the side collar member of the third underroof collar may even extend up along the side frame member of the neighbouring roof windows, so that the side collar members of the first and second underroof collar may consist substantially only of an inner portion for attachment to the frames of the roof windows. The opposite situation, where the side collar members of the third underroof collar are smaller and the overlapping relatively wider side collar members of the first and second underroof collars, is also possible. In one embodiment, the third underroof collar is a standard underroof collar otherwise used with single roof windows mounted in roof structures where no surplus of material is needed, such as concrete roofs.

[0014] In one embodiment, one side collar member of each of the first underroof collar and the second underroof collar is made with a surplus of material, for example by being pleated, while the other side collar member is without such a surplus of material. The side collar members without a surplus of material are then arranged between roof windows. When using a prior art underroof collar for such installations, the installer often chooses to simply tuck the outer portion into the gap between the roof windows in a more or less orderly manner and this may potentially result in water being caught in pockets formed in the tucked in material, which may lead to rot or fungal growth, and/or in untightness. By providing an underroof collar where one side collar member is without

such a surplus of material, this risk is considerably reduced.

[0015] To facilitate further adaptation to different installation situations, a cutting indication may be provided on at least one collar member. This may for example be used for reducing the width of a top collar member or a bottom collar member, if the underroof collar is to be used where roof windows are mounted both side-by-side and above each other. A cutting indication may also be used for removing a section of a collar member, such as for example at a corner of an underroof collar to be used in a group of roof windows, where the corners of four roof windows meet and where four layers of underroof collar would otherwise be arranged on top of each other.

[0016] The cutting indication is preferably provided on an interior side of the underroof collar, said interior side being configured for facing the roof structure in the mounted state. In this way the cutting indication will only to a limited extent be visible during mounting of the underroof collar, which may contribute to ensuring that it is only used when needed and intended.

[0017] Different sets of cutting indications allowing adaptation to different installation situations, such as different distances between the roof window frames determined for example by differences in the width of rafters of the roof structure, may be provided on one or more underroof collars of the set of underroof collars. The different sets of cutting indications may for example have different colours or different patterns.

[0018] The set of underroof collars may include means for interconnecting the underroof collars, for example to keep them in their intended mutual position or to make the joint between them watertightness or windproof, one example being an adhesive tape.

[0019] The underroof collars may also, or alternatively, be kept in place by arranging a flashing member on top of the adjacent side collar members. If the side collar members are arranged to overlap and extend up along the outer side of the frame of the opposite roof window as described above, a gutter-shaped flashing member matching the dimensions of the space between the roof windows may press the outer edges of the side collar members against the frames of the roof windows, thereby fixating the shape of the gutter formed by the side collar members.

[0020] While it is presently considered advantageous that side collar members extending between roof windows overlap, it is within the scope of the invention that they are only abutting on or adjacent to each other and that a possible gap between them is covered by a tape or a flashing member.

[0021] It is also possible to provide a set of roof windows, where an underroof collar is supplied with each roof window and where the underroof collars together form a set of underroof collars including underroof collars with side collar members of different configuration as described above. This may increase the likelihood of a correct use of the underroof collars, as the risk of choosing

for example underroof collars intended for roof windows of a different size is eliminated.

[0022] A second aspect of the invention relates to a method for sealing the joint between a group of roof windows mounted in a sloped roof structure having a slope direction and an underroof of said roof structure, where each of said roof windows comprises a frame comprising a top frame member and a bottom frame member both extending horizontally in the mounted state of the roof window and two side frame members extending in the slope direction in the mounted state of the roof window, said method comprising the steps of:

- a) providing a set of underroof collars,
- b) arranging each of said underroof collars at a roof window so that a top collar member of each of said underroof collars extends along the top frame member of a respective roof window, a bottom collar member of each of said underroof collars extends along the bottom frame member of the respective roof window, and two side collar members of each of said underroof collars extend along the side frame members of the respective roof window,

where a first underroof collar and a second underroof collar are arranged with a first side collar member extending along a side frame member of the respective roof window facing another roof window, and a second side collar member extending along a side frame member facing the roof structure, where a third underroof collar is arranged with both side collar members extending along side frame members facing another roof window, where the first and second side collar members of said first underroof collar and said second underroof collar, in addition to being configured for extending along opposite side members of the frame of the roof window, are of different configurations, and where the two side collar members of said third underroof collar, apart from being configured for extending along opposite side members of the frame of a roof window, are of the same configuration.

[0023] Side collar members may be arranged so that they overlap with other side collar members.

[0024] The method may further comprise one or more of the following steps:

- c) cutting at least one collar member to size before or during step b),
- d) interconnecting underroof collars, and
- e) arranging a flashing member on top of interconnected and/or overlapping side collar members.

[0025] The advantages and embodiments described above with reference to the first aspect of the invention also applies to the second aspect and vice versa.

Brief Description of Drawings

[0026] In the following description embodiments of the invention will be described with reference to the schematic drawings, in which

Fig. 1 is a perspective view of a prior art underroof collar,

Fig. 2 shows the underroof collar in Fig. 1 during installation,

Fig. 3 shows a prior art underroof collar as in Fig. 1 and 2 installed on a roof structure including laths,

Fig. 4 shows a group of roof windows and a set of underroof collars for use with this group,

Fig. 5 illustrates means for adaptation and interconnection of the underroof collars shown in Fig. 4, and Fig. 6 shows steps of the adaptation and installation of a set of underroof collars.

Description of Embodiments

[0027] Referring initially to Fig. 1, an underroof collar 1 is shown. It comprises a top collar member 11, a bottom collar member 12, and two side collar members 13, 14, and said collar members delimit a collar opening 15.

[0028] Each collar member has a length direction L extending along the collar opening 15 and a width direction W extending perpendicular to the length direction, away from the collar opening. In Fig. 1 the length direction L and width direction W are shown only at the bottom collar member and the right-hand side collar member, but it will be understood that such directions apply also to the top collar member and the left-hand side collar member.

[0029] Each collar member further comprises an inner portion 111, 121, 131, 141 and an outer portion 112, 122, 132, 142. The inner portions define the collar opening 15 and are here configured for extending up along the outer sides of a frame of a roof window, while the outer portions extend away from the collar opening and are configured for extending over and coming into contact with a roof structure. In this embodiment the side collar members 13, 14 are made with a pleating providing a surplus of material.

[0030] Fig. 2 shows the underroof collar 1 arranged over a frame 2 of a roof window and underneath a drainage gutter 3, and Fig. 3 shows these three elements installed in/on a sloped roof structure 4. The roof structure comprises laths 41 extending perpendicular to the slope direction D of the roof structure and an underroof 42 underneath the laths. The frame 2 is arranged in an opening 43 in the roof structure, where the laths and underroof have been removed. The underroof collar 1 is attached to the frame 2 and the pleating of the outer portions 132, 142 of the side collar members 13, 14 has been unfolded to that the underroof collar extends down between the laths 41 to the underroof 42, thereby sealing the joint between the frame 2 and the underroof 42. As may be

seen in Fig. 3, a top frame member 21 and a bottom frame member 22 both extend horizontally in the mounted state and two side frame members 23, 24 extend in the slope direction D, and the top collar member 11 extends along the top frame member 21, the bottom collar member 12 along the bottom frame member 22, and two side collar members 13, 14 along the side frame members 23, 24.

[0031] Laths 41 are typically used in roof structures comprising rafters and serve to support roofing materials (not shown) consisting of smaller units, such as tiles or roofing panels. Other types of roof structures, such as concrete roofs, do not include laths and the underroof collar may then not need a surplus of material. In such cases the side collar members 13, 14 can be without pleating as shown for the top collar member 11 and bottom collar member 12.

[0032] The drainage gutter 3 is mounted on top of the top collar member 11 to drain off water coming from the underroof 42 above the roof window, whereby reducing the water-load on the top collar member. Furthermore, the top collar member 11 is wider in its width direction W than the bottom collar member 12 to facilitate proper integration with the roof structure.

[0033] Fig. 3 shows only a single roof window being installed in the roof structure, but it is often desired to arrange roof windows in a group, either side-by-side, one above the other, or forming a matrix with roof windows mounted both side-by-side and above each other, for example in a two-by-two or a two-by-three configuration.

[0034] Fig. 4 shows a schematic representation of a group of roof windows, here illustrated only by their frames 2, arranged in a two-by-three matrix configuration, and a set of six underroof collars 1 for use with this group. Arrows in broken lines indicate which underroof collar goes with which roof window. As may be seen the underroof collars going with the roof windows forming the left column of the matrix, i.e. the roof windows marked I and IV, have a pleating at the left-hand side collar member 13, which will be extending over the roof structure in the mounted state. The right-hand side collar member 14 of these underroof collars, which will be extending between roof windows in the mounted state is without pleating. In the following these underroof collars will be referred to as type A. Similarly, in the underroof collars going with the roof windows forming the right column of the matrix, i.e. the roof windows marked III and VI, only the right-hand side collar member 14 has a pleating. In the following these underroof collars will be referred to as type B. The underroof collars going with the roof windows forming the centre column of the matrix, i.e. the roof windows marked II and V, have no pleating as both side collar members will be extending between roof windows in the mounted state. In the following these underroof collars will be referred to as type C. Apart from the differences mentioned, the underroof collars shown in Fig. 4 may be identical.

[0035] The type C underroof collar may be a standard

underroof collar otherwise used with single roof windows mounted in roof structures where no surplus of material is needed.

[0036] The three different configurations of underroof collars shown in Fig. 4 can be used also in other combinations for other installation situations. If for example the group of roof windows include only four roof windows arranged in a two-by-two matrix, it will correspond to the roof windows marked II and V being left out, and the underroof collars of type C will then not be needed. If the group of roof windows includes eight roof windows arranged in a two-by-four matrix, it will correspond to there being two sets of the roof windows marked II and V and the set of underroof collars will then include four underroof collars of type C. If the group of roof windows includes only three roof windows arranged in an L-shaped configuration as the roof windows marked I, II and IV, a standard underroof collar can be used with the uppermost roof window as seen in the slope direction D, i.e. roof window IV, while one underroof collar of type A and one underroof collar of type B will be used with the two lowermost roof windows as seen in the slope direction D.

[0037] Fig. 5 illustrates possible steps in the installation of the set of underroof collars in Fig. 4. Scissors 5 indicate that the collar members can be cut to size, while rolls of tape 6 indicate that the underroof collars 1 can be interconnected. It is to be understood that the scissors and rolls of tape are only examples, and that other means can be used, such as a knife for cutting and staples or adhesive for interconnecting. At present the use of tape is, however, considered advantageous as it is relatively easy to apply and may provide a continuous interconnection, which may be water-proof.

[0038] The scissors 5 are shown at the top collar members 11 of the underroof collars 1 for use on the roof windows in the lowermost row of the matrix and in positions indicating that the width of the top collar members can be reduced. As explained with reference to Figs 1-3, the top collar member is wider than the bottom collar member to facilitate proper integration with the roof structure above a roof window, but this width is not needed at the lowermost roof window when two roof windows are arranged one above the other. Often the top collar member is simply folded or tucked in between the two roof windows but reducing the width will reduce the risk of errors in installation.

[0039] Tape 6 is shown only at the right-hand side collar members 14 of four underroof collars 1 as taping along these sides will interconnect all underroof collars of the set along the side collar members 13, 14. Additionally, or alternatively, tape may be used along the top and bottom collar members 11, 12 to interconnect underroof collars arranged one above the other in the slope direction D.

[0040] Any matrix, where roof windows are arranged side-by-side, will include a roof window corresponding to the roof window marked I in Fig. 4 and a roof window corresponding to the roof window marked III in Fig. 4. It is therefore envisaged that a roll of tape 6 and possibly

a pair of scissors 5, or other means for interconnection and cutting of underroof collars, can be included when ordering a type A underroof collar. It/they can be included with every type A underroof collar or only with one type A collar when an order includes more than one type A underroof collar. Likewise, a type C underroof collar may always be delivered with a roll of tape 6 or other means for interconnection, at least when ordered together with other underroof collars. Even though described with reference to the drawing, this applies to all embodiments of the invention.

[0041] In Figs 4-5 the side collar members 13, 14 are all shown as being of substantially the same width, but it is to be understood that the pleated side collar members may be wider than the side collar member intended for extending between roof windows. Alternatively, or in addition, the width of the side collar members may also be reduced before or during installation.

[0042] Turning now to Fig. 6 showing another set of underroof collars 1 for use with roof windows mounted in a two-by-three matrix.

[0043] The type A underroof collar to be used with the roof window corresponding to that marked I in Fig. 4 is here marked AI, the type C underroof collar to be used with the roof window corresponding to that marked II in Fig. 4 is here marked CII, and the type B underroof collar to be used with the roof window corresponding to that marked III in Fig. 4 is here marked BIII. Following the same principle, the underroof collars for use in the second row of the matrix are marked AIV, CV, and BVI.

[0044] These underroof collars 1 are provided with cutting indications 16, here in the form of broken lines, showing where they are to be cut when used in a two-by-three matrix. Underroof collars AI, CII, and BIII are provided with cutting indications on their top collar members 11, underroof collars AIV, CV, and BVI are provided with cutting indications on their bottom collar members 12, and underroof collars CII and CV are provided with cutting indications on their side collar members 13, 14. In the embodiment shown in Fig. 6 only the cutting indications corresponding to the specific position in the matrix is shown, but it is to be understood that both of the type A underroof collars may have cutting indications on both the top collar member 11 and the bottom collar member 12 so that it doesn't matter which of the two underroof collars are used at which of the two lefthand roof windows. The same applies to the type B and type C underroof collars. In that case only some of the cutting indications will be used. Having cutting indications both at the top and at the bottom of all underroof collars would also facilitate the use of the underroof collars in a three-by-three roof window matrix or in other configurations where more roof windows are mounted above each other in the slope direction.

[0045] With the cutting indications shown in Fig. 6 the top collar member 11 of the AI, CII, and BIII underroof collars extend all the way up to the roof window at which underroof collars AIV, CV, and BVI are installed, while

the bottom collar member of AIV, CV, and BVI extend only about two-thirds of the way down to the roof window at which underroof collars AI, CII, and BIII are installed. These relative distances may vary depending on the installation situation, depending for example on the flashing members to be used on top of the underroof collars.

[0046] In the embodiment in Fig. 6 only one set of cutting indications is shown, but it is to be understood that other cutting indications for one or more other installation situations, such as installation in a roof structure with a different roofing material, may be provided. The different sets of cutting indications may for example have different colours or different patterns.

[0047] In Fig. 6 the type C underroof collars are standard underroof collars suitable for use with a single roof window mounted in a roof without laths, while the type A and type B underroof collars are made with side collar members of reduced width at the sides facing the type C underroof collars. This means that only the side collar members of the type C underroof collars have to be cut to size. It is, however, to be understood that the type A and type B underroof collars could also be provided with non-pleated standard width side collar member and then cut to size before or during installation.

[0048] In case only some of the cutting indications 16 are to be used, information about which to use can be provided in a separate installation guide and/or printed on the underroof collar.

[0049] In Fig. 6 the cutting indications 16 are visible on the exterior side of the underroof collars, i.e. the side facing away from the roof structure in the mounted state. It may, however, be advantageous to provide the cutting indication only on an interior side of the underroof collar configured for resting on the roof structure in the mounted state. This may prompt the installer to attempt installation of the underroof collar in the state of delivery and only search for the cutting indications in the event that there is an inconvenient surplus of material. In that way the risk of inappropriate removal of material may be reduced.

[0050] Whereas the type A and type B underroof collars in Figs 4-5 are identical except mirror-inverted, the type A and type B underroof collars in Fig. 6 have different top collar members 11 and bottom collar member 12. In the type B underroof collars of Fig. 6 top and bottom collar members are as they would have been in a standard underroof collar for a single window, whereas the top and bottom collar members of the type A underroof collars have been cut off at the right-hand side along the same line as the side collar members 14 so that they do not project over the side collar members in the width direction of the side collar members. When installing such underroof collars, the installer starts at the lower right-hand corner of the matrix, i.e. with the underroof collar marked BIII. Then underroof collar BVI is installed so that its bottom collar member comes to rest on top of the top collar member of the BIII underroof collar. In this way any water coming off the BVI underroof collar will drain onto the BIII underroof collar. Next the type C underroof collars are

applied, with the CII underroof collar first and the CV underroof collar overlapping in the same way as described with reference to BIII and BVI. The side collar members of the CII underroof collar and the CV underroof collar now rest on top of the side collar member of BIII and BVI, and the projecting parts 113, 123 of the top and bottom collar members of the BIII underroof collar and the BVI underroof collar project underneath CII and CV, thereby contributing to keeping the type B underroof collars in place. Finally, the type A underroof collars are applied, with the AI underroof collar first and the AIV underroof collar overlapping in the same way as described with reference to BIII and BVI, and with the side collar members of the AI underroof collar and the AIV underroof collar resting on top of the side collar members of CII and CV. The overlapping side collar members of the type A underroof collars and the type C underroof collars can now be interconnected using one piece of tape and likewise for the type C underroof collar and the type B underroof collars, possibly using one piece of tape extending from the top of the matrix to the bottom for each connection.

[0051] The underroof collars of type A and type B shown in the drawing all have a surplus of material in the form of a pleating at the side collar members projecting away from the matrix of roof windows, over the roof structure, while the other side collar members are flat. As described above, a pleating allows the side collar members of the underroof collars to be unfolded and come down and around laths of a roof structure, but other roof structures may require a smaller surplus of material or no surplus at all. It will thus be understood that the pleating shown is only an example of how a side collar member may be different from a flat side collar member, and that the difference between the side collar members may be embodied differently, for example by the side collar members being of different width in a state of delivery.

List of reference numerals

[0052]

1	Underroof collar
11	Top collar member
111	Inner portion
112	Outer portion
113	Projecting part
12	Bottom collar member
121	Inner portion
122	Outer portion
123	Projecting part
13	Side collar member
131	Inner portion
132	Outer portion
14	Side collar member
141	Inner portion
142	Outer portion
15	Collar opening

16	Cutting indication
2	Frame
21	Top frame member
22	Bottom frame member
23	Side frame member
24	Side frame member
3	Drainage gutter
4	Roof structure
41	Lath
42	Underroof
43	Opening
5	Scissors
6	Tape
A-C	Underroof collars
I-VI	Frames of roof windows
AI	Underroof collar
AIV	Underroof collar
BIII	Underroof collar
BVI	Underroof collar
CII	Underroof collar
CV	Underroof collar
L	Length direction
W	Width direction
D	Slope direction

Claims

1. A set of underroof collars for use with a group of roof windows mounted in a sloped roof structure having a slope direction, where each of said roof windows comprises a frame comprising a top frame member and a bottom frame member both extending horizontally in the mounted state of the roof window and two side frame members extending in the slope direction in the mounted state of the roof window, where each underroof collar comprises a top collar member configured for extending along the top frame member, a bottom collar member configured for extending along the bottom frame member, and two side collar members each configured for extending along a side frame member, where said top collar member, said bottom collar member, and said side collar members delimit a collar opening, and where each collar member has a length direction extending along the collar opening and a width direction extending perpendicular to the length direction, away from the collar opening,

characterised in that the set comprises:

a first underroof collar and a second underroof collar, where the two side collar members, in addition to being configured for extending along opposite side members of the frame of a roof window, are of different configurations, and a third underroof collar, where the two side collar members, apart from being configured for extending along opposite side members of the

frame of a roof window, are of the same configuration.

2. A set of underroof collars according to claim 1, where the two side collar members of the first underroof collar and/or the second underroof collar have different widths measured in the respective width directions.
3. A set of underroof collars according to claim 1 or 2, where one side collar member of the first underroof collar and/or the second underroof collar is made with a surplus of material, while the other side collar member is without a surplus of material.
4. A set of underroof collars according to one or more of the preceding claims, where a cutting indication is provided on at least one collar member of at least under underroof collar.
5. A set of underroof collars according to claim 4, where the cutting indication is provided on an interior side of the underroof collar configured for resting on the roof structure in the mounted state.
6. A set of underroof collars according to one or more of the preceding claims, further including a tape for interconnecting underroof collars.
7. A set of roof windows, where an underroof collar is supplied with each roof window and where the underroof collars together form a set of underroof collars according to one or more of claims 1-6.
8. A method for sealing a joint between a group of roof windows mounted in a sloped roof structure having a slope direction and an underroof of said roof structure, where each of said roof windows comprises a frame comprising a top frame member and a bottom frame member both extending horizontally in the mounted state of the roof window and two side frame members extending in the slope direction in the mounted state of the roof window, said method comprising the steps of:
- providing a set of underroof collars,
 - arranging each of said underroof collars at a roof window so that a top collar member of each of said underroof collars extends along the top frame member of a respective roof window, a bottom collar member of each of said underroof collars extends along the bottom frame member of the respective roof window, and two side collar members of each of said underroof collars extend along the side frame members of the respective roof window, where a first underroof collar and a second underroof collar are arranged with a first side collar member extending

along a side frame member facing another roof window and a second side collar member extending along a side frame member facing the roof structure,

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where a third underroof collar is arranged with both side collar members extending along side frame members facing another roof window,

where the first and second side collar members of said first underroof collar and said second underroof collar, in addition to being configured for extending along opposite side members of the frame of the roof window, are of different configurations, and

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where the two side collar members of said third underroof collar, apart from being configured for extending along opposite side members of the frame of a roof window, are of the same configuration.

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9. A method according to claim 8, further comprising
c) cutting at least one collar member to size before or during steps b).

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10. A method according to claim 8 or 9, further comprising
d) interconnecting underroof collars.

11. A method according to one or more of claims 8-10, where at least one side collar member is arranged so that it overlaps with another side collar member of another underroof collar.

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12. A method according to claim 10 or 11, further comprising
e) arranging a flashing member on top of the interconnected and/or overlapping side collar members.

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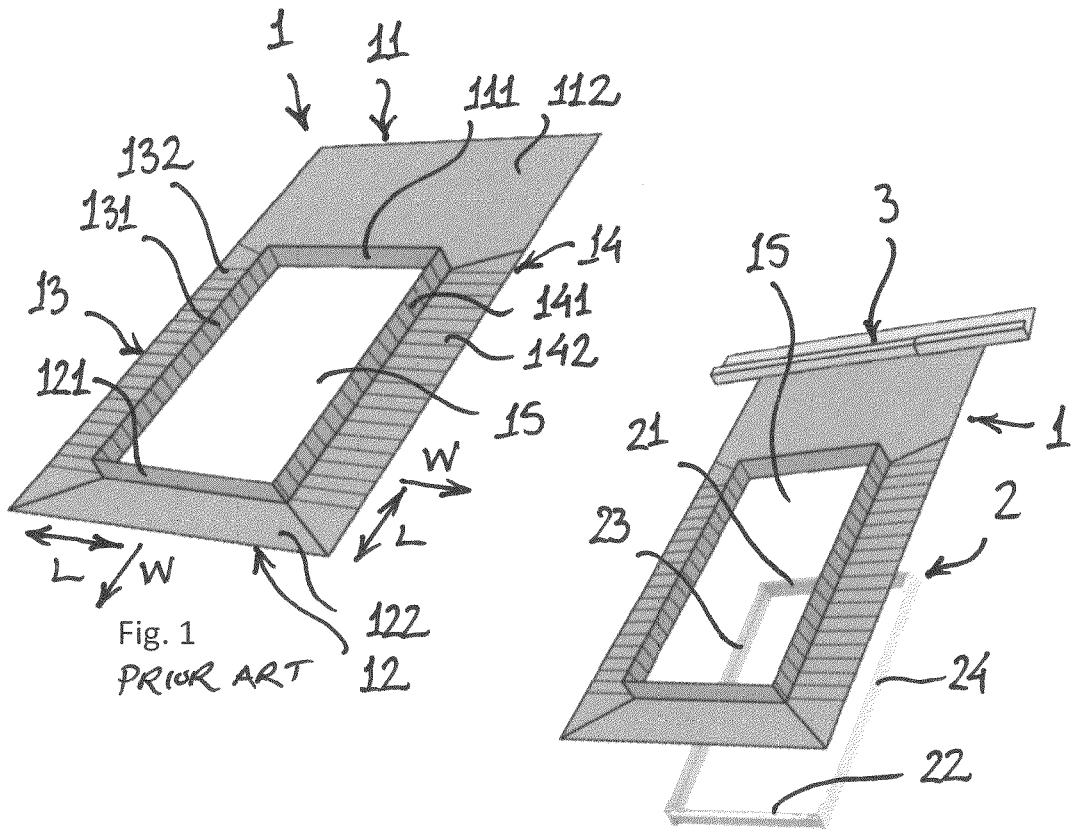


Fig. 1
PRIOR ART

Fig. 2
PRIOR ART

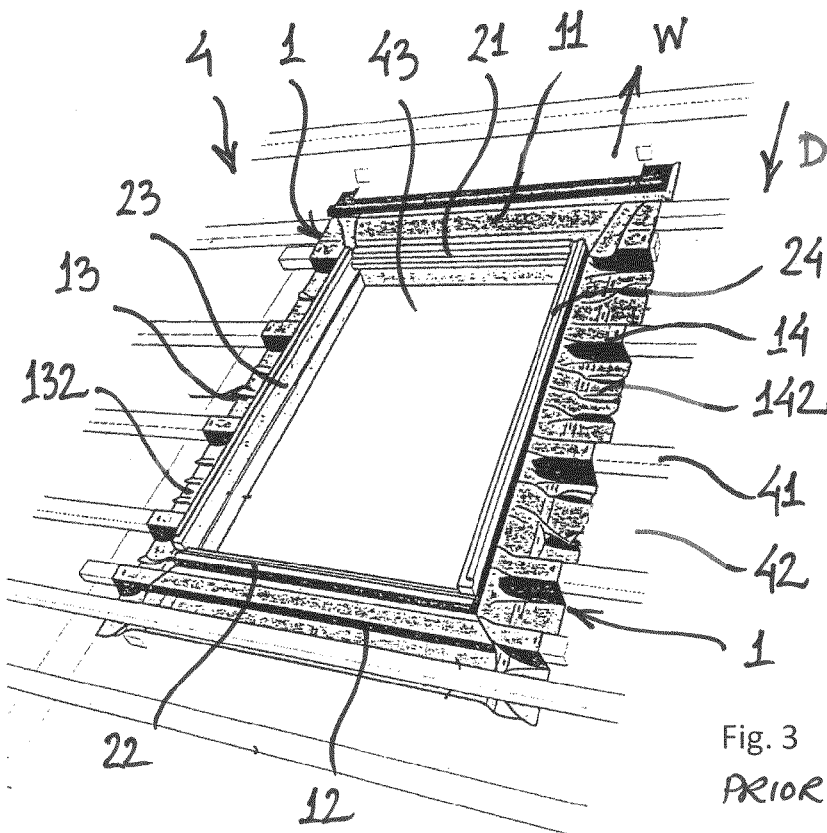


Fig. 3
PRIOR ART

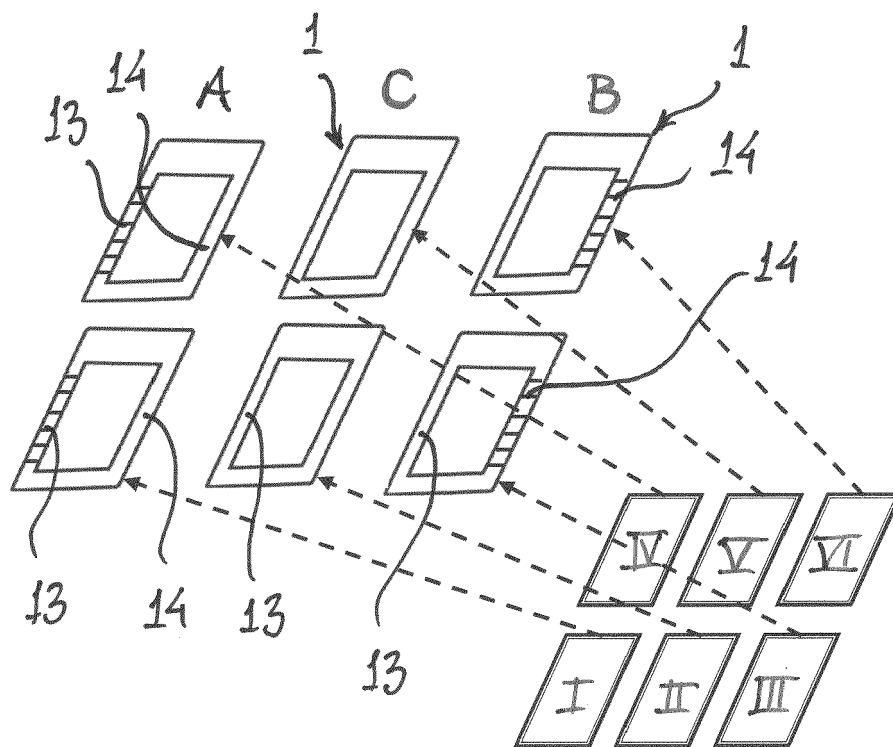


Fig. 4

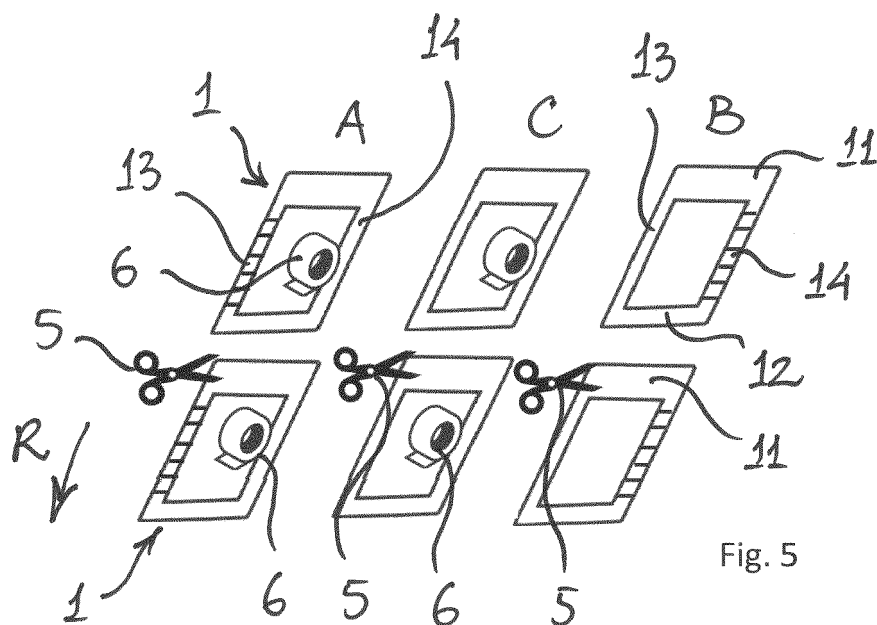


Fig. 5

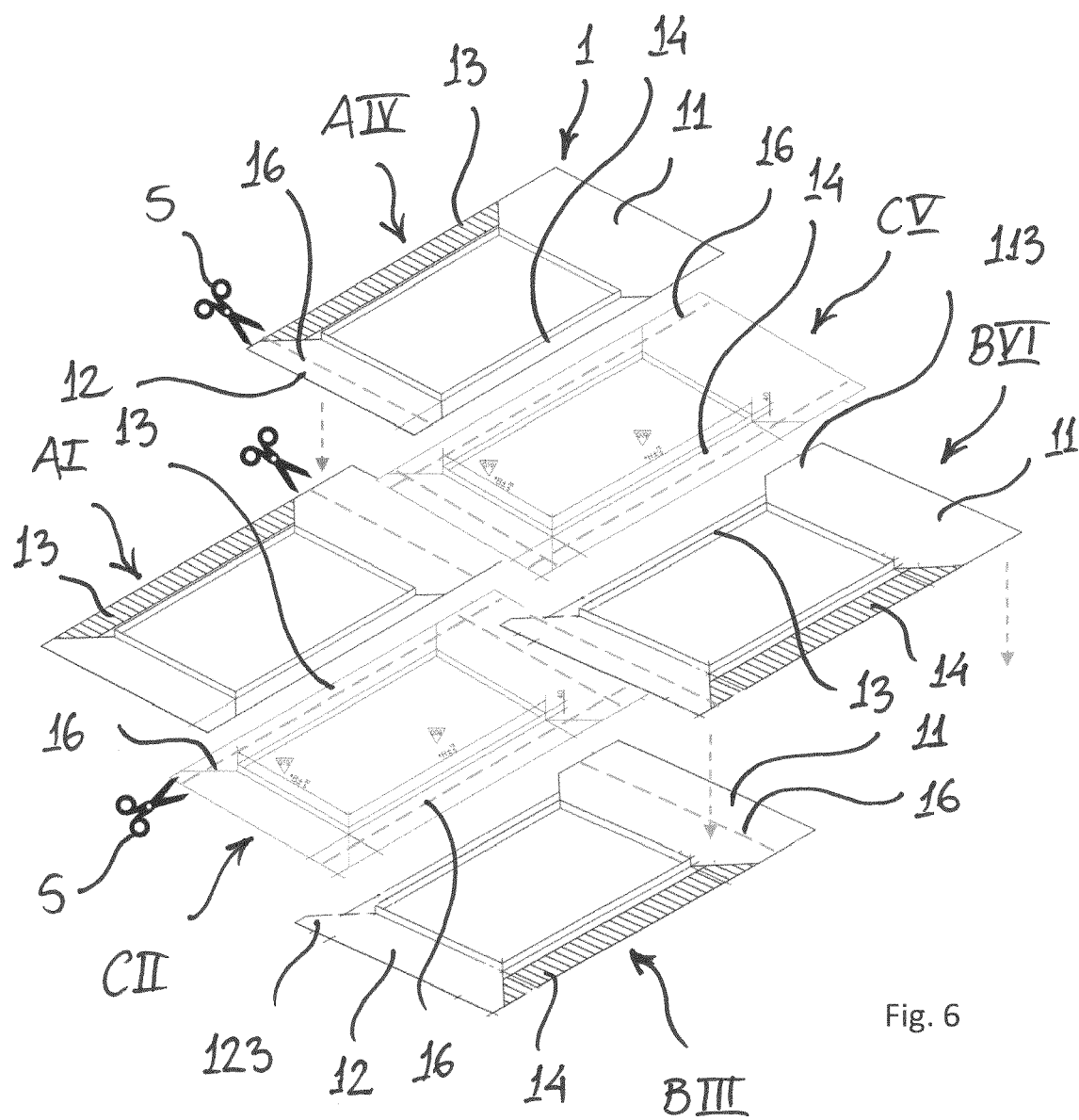


Fig. 6



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Place of search The Hague		Date of completion of the search 11 June 2024	Examiner Leroux, Corentine
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