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Description

The invention relates to a film dressing having a polymer film and an application system for easier handling of the film dressing.

Application aids for adhesive bandages or wound dressings have been known for quite some time. These application aids are particularly used for film dressings. Film dressings are thin, usually transparent, semipermeable films or foils made of polymer materials. The semipermeable nature of the films prevents the penetration of bacteria or moisture and thereby guarantees a sufficient exchange of oxygen and condensation between the skin to be covered and the outside surroundings of the film dressing. These film dressings are used in a variety of ways - for example, as an incision film for sterile covering of surgery wounds, as a water-proof cover of wound dressings that absorb exudates, and for positioning catheters or cannulas. Due to the minimal thickness of these films and their associated instability, these film dressings are equipped with a wide variety of application aids. Most of these application aids use an additional supporting layer which is removed during or after the application of the film dressing.

The patent literature has also known film wound dressings for quite some time. For example, EP 81 990 B1 describes an adhesive wound dressing that consists of a thin polymer film. This polymer film is coated on one side with an adhesive material that adheres to the skin, which in turn is covered with a removable layer. On the other side, which during application faces away from the body, the polymer film also has an easily removable support layer to improve the ease of use, which consists of a fibrous material, for example, a non-transparent non-woven material. This support layer is of the same size as the polymer film.

EP 690 706 B1 describes an adhesive wound dressing, which has a carrying layer to aid the ease of application of a polymer film, which is comprised by the wound dressing. This carrying layer

completely covers the polymer film and can be removed from the polymer film in two steps. For this purpose, in the first step a center section is removed from the carrying layer, whereupon in the second step a frame section is removed. The fact that it is very difficult for the user to grasp the carrying layer of this wound dressing is disadvantageous.

In addition, EP 951 263 B1 describes an adhesive film dressing, the adhesive side of which is covered by an at least two-part removable protective layer and the non-adhesive second side of which is equipped over its whole area with a one-part support layer. The support layer in this film dressing is attached in a hinge-like manner to the protective layer on two opposite sides so that the support layer can be removed simultaneously with the removal of the protective layer.

EP 473 918 B1 describes a film dressing that comprises a one-part support film, which in turn has one gripping strip on each of the two opposite sides. This arrangement of the gripping strips has the disadvantage that there is no pre-determined direction for removing the support film.

EP 985 931 A1 describes a film-based dressing material, which comprises a non-adhesive gripper in the peripheral area of the film. The non-adhesive side of the film comprises a one-part support layer, which is equal in size to the film and comprises at least one gripping strip. By pulling the gripper in the direction of the adhesion, the applied film can be removed again painlessly.

The European patent specification EP 630 628 B1 discloses a film dressing that comprises for ease of application a two-part support film. This support film is larger than the film to be applied and completely covers it. In order to remove the support film, the support film has on it an additional adhesive removal strip, which is positioned above the intersection line of the support film and for handling purposes has two non-adhesive peripheral areas that serve as gripping strips. This additional

removal strip serves to remove only a portion of the support film, whereupon the second part of the support film remains on the polymer film.

WO 97/25012 A1 proposes a film dressing which is provided either on the whole area or only on two opposing peripheral areas of the film with a two-part supporting layer. If the support layer is attached over the whole area to the film dressing, then gripper aids may be positioned on the support film. The adhesive protective layer opposite the supporting layer is divided into three sections.

European application EP-401949-A2 describes an adhesive thin film comprising an application system for the film. The application system consists of two supporting foils which have been applied using an adhesive to the side of the film facing away from the body and which are free from adhesive at two end areas to facilitate gripping and removal from the film. A first area of a first supporting foil overlaps with a first area of a second supporting foil.

French patent application FR-2711056-A1 describes an absorbent wound dressing consisting of a thin film, a wound pad and an application foil to facilitate application of the wound dressing. The wound dressing further comprises perforation lines by means of which defined areas of the film or of the foil may be separated from areas of the film that are to be applied.

US application US-2004/0162512-A1 discloses a wound dressing which comprises a carrier layer made of a thin polymer film and a radial application system to facilitate application of the wound dressing. The application system is formed such that the polymer film alternatingly comprises areas covered by the application system and uncovered areas.

US patent US-4372303-A discloses a system for application of bandages, coverings and wound dressings. The system consists of a thin film to be applied on the body of a patient which on the

side facing away from the patient is covered with a frame to facilitate application. The frame may extend over the whole area or be provided with a central opening. This patent does not disclose forming the frame in two parts and providing each part with a grip strip. It likewise does not disclose that a moulded grip strip overlaps in a first support film-free area.

These protective rights altogether present various alternative solutions to film dressings with various application systems. The film dressings which have been suggested as a solution in these protective rights are viewed in part as too complicated in their construction and too complicated in their application. Furthermore, the film dressings with application aids suggested in these protective rights all exhibit a rigidity which is considered too high in respect of the very flexible polymer film that is actually to be applied. This flexibility of the film dressings is necessary, however, to apply the polymer films which are actually to be applied, accurately and wrinkle-free.

The object of the present invention is therefore to provide a film dressing with an application system, which has a simple structure and yet ensures wrinkle-free application of the polymer film. The object also includes providing a film dressing which can be applied with reliable handling an and accurately to the surface provided. At the same time, it should be possible to apply the film dressing universally without any limitation to shape or size.

This object is achieved by a film dressing according to the features of Claim 1. Accordingly, the film dressing comprises a polymer film and an application system for easier handling of said film dressing, wherein the application system is arranged on a first side of the polymer film and comprises at least one support film, onto which at least one gripping strip is formed. According to the invention, the application system comprises two support films each having one gripping strip, wherein each gripping strip is an additional material component and is removable from the polymer film simultaneously with at least one

gripping strip. Furthermore the polymer film has at least one first support-film-free region, wherein a gripping strip overlaps the first support-film-free region at least in sections and wherein the contact area of the support films altogether corresponds to the less than 94% of the area of the first side of the polymer film to be applied.

An advantage of such a film dressing with an application system lies in the fact that the support-film-free region of the polymer film, that is, the region which is not covered by a support film, can function as a joint during the application of the film dressing, thanks to the greater flexibility thereof, by comparison to the polymer film with the support film. This being the case, even a relatively rigid support material can be used as a support film, plus at the same time guaranteeing a snug-fitting application. On the other hand, in the prior art, whether a support film in one part which is of the same size as the polymer film, or a support film in several parts which, as a whole, is of the same size as the polymer film, is used, the choice of the support material must be limited to relatively flexible materials, in order to guarantee a snug-fitting application of the polymer film. A further advantage lies in the saving on the material used for the support film.

Nevertheless, the fact that at least one section of the support-film-free region is covered by the gripping strip reduces the risk of contamination or damage to the polymer film.

The application system in an inventive embodiment shall include everything that permits the improved ease of use of the polymer film and comprises at least one support film and in addition to this support film comprises at least one gripping strip, which is formed on said support film. Forming in this context shall mean the connecting of two identical or two different materials, which are connected separably or inseparably to one another by means of adhesives, pressure, thermal energy, ultra-sonic procedures or other procedures. The gripping strip is therefore in the present case always an additional material component,

wherein the gripping strip can always be removed simultaneously from polymer film with at least one support film. Furthermore, for the ease of understanding in the context of the present invention, a film or polymer film shall always refer to the film or polymer film actually to be applied, for example a wound dressing; in contrast, a film or polymer and/or support film shall always refer to a part of the application system, that means the difference between film and foil in this case only refers to the function of the components. No distinction shall be made in respect of the material between the terms film and foil, as is customary.

Because of the first support-film-free region, the surface of the polymer film which is covered by the support films is accordingly smaller than the surface of the first side of the polymer film.

An additional embodiment of the invention provides for a gripping strip which completely overlaps an area of the polymer film which is not covered by the support films. In this case, the application system in its entirety can be of the same size as the polymer film. The reference to “the same size” indicates the size of the contact area; that is, the limitation of the perimeter of the application system and that of the polymer film are aligned. The fact that the application system and the polymer film are the same size, and the fact that the gripping strip is merely formed on the support film and is not connected to the polymer film, guarantee that, in addition to the previously described high level of flexibility in the area which is not covered by the support film, the entire film is covered, and is therefore also completely protected before and during the application.

In a preferred embodiment of a film dressing according to the invention, it is provided that a gripping strip comprises a grip area that can be determined by the user when grasping said gripping strip, preferably designed as a rear grip device of at least 2 cm^2, particularly at least 5 cm^2 and especially

preferably of at least 7 cm^2.

In particular, a first area that is not covered by the support films can be positioned at the edge of the polymer film. An edge shall be understood as every section of an area, which extends from the edge of an area into the interior of an area, wherein the area extension of the edge is smaller than 50% of the entire area. This provides a film dressing which advantageously comprises an area, which has a flexibility that is predetermined by the polymer film itself and ensures an easy first fixing of the film to be applied, where at the same time the support films ensure secure handling in the additional areas. It has been proven that it is particularly easy and safe to manipulate when one of the support films has in at least one point of its outer edge a distance from the outer edge of the polymer film of at least 2 mm, particularly at least 3 mm and especially of at least 5 mm. Particularly preferred is a distance which has in each point of the edge of the support film an equal distance of at least 2 mm, particularly at least 3 mm and especially at least 5 mm to the outermost edge of the polymer film.

In a further embodiment of this invention, the application system includes two support films which are applied on a plane parallel to the polymer film. In such an embodiment of this invention, a first support-film-free region may be located between the first and the second support films. The distance between both support films is preferably in each point at least 2 mm, particularly 3 mm and especially 5 mm. Particularly preferred is an application system that has two support films, which in each point have the same distance to one another.

The embodiment of the film dressing with two support films especially provides for each of the support films to include one gripping strip. Accordingly, a first gripping strip is assigned to the first support film and a second gripping strip is assigned to the second support film.

A preferred embodiment of this film dressing according to the invention with two support films provides for the first gripping strip to exhibit a gripping surface designed to be gripped by the user, preferably implemented as a means of gripping from behind, and for the first gripping strip with this gripping surface to protrude over at least one section, and especially over all, of the second gripping strip.

This positioning of the gripping strips provides the user with a particularly simple means to manipulate in each case only the upper-most first gripping strip as the first gripping strip and therefore remove a first support film as the first film from the polymer film. The user is only able to remove a second support film in the second step with the aid of the second gripping strip. This determines a sequence in the removal of the support films and provides a particularly safe means of handling the film dressing.

The size of the gripping surface of the first gripping strip is preferably at least 2 cm^2, particularly at least 5 cm^2 and especially preferably of at least 7 cm^2. It has been proven particularly safe to manipulate when the first gripping strip comprises an exposed grip area of at least 2 cm^2, particularly 4 cm^2 and especially preferably 6 cm^2. This exposed grip area is in this case the section of the grip area that laterally protrudes over the second gripping strip.

It has been shown to be especially safe to handle when the first gripping strip protrudes completely over both the support-film-free region of the polymer film and the second gripping strip.

If the film dressing comprises an application system with two support films and a first support-film-free-region is provided between the support films, separate from this first support-film-free region a second support-film-free region can be provided. This second region can furthermore preferably be overlapped by a gripping strip. It can also be provided that this second region is covered neither by a support film nor by

a gripping strip. Preferably, this second support-film-free region of the polymer film is positioned at one edge of the film dressing. The film dressing in this manner comprises a joint within the dressing as well as an area for its initial fixing.

If an application system is provided that comprises two or more than two support films, then each support film can be assigned a gripping strip. In a particularly preferred embodiment, two support films may also be assigned one gripping strip. In particular, in one film dressing with three support films, two support films can be assigned one gripping strip. With this arrangement and/or assignment of the gripping strips on the support films, two separate support films can be removed in one step.

Transparent or translucent film materials are particularly provided as support films. However, opaque or non-transparent film materials can be used alternatively. Used as support film are particularly those films that are manufactured from polyester, polyethylene, polypropylene, polyvinylchloride, polystyrene, polyamide, polycarbonate, cellulose ester, ethylene vinyl acetate, polyvinyl acetate, polyvinyl alcohol and/or combinations thereof. Particularly preferred are support films composed of transparent polyester or polyethylene or polypropylene. In this case, it has also been proven to be particularly advantageous when the thickness of the support films is adjusted for the support films to have a thickness of 15 to 80 µm, particularly of 20 to 60 µm and especially preferably 20 to 40 µm.

In order to manufacture a gripping strip, the same materials can be used that are used for the support films. In a particularly preferred embodiment, the gripping strip is manufactured from a film material that is more flexible than the support film. If an application system is provided that comprises two or more support films and two or more gripping strips, then all gripping strips are preferably manufactured from one material that is more flexible than any support film. This ensures that the

gripping strips are particularly easy to grasp. In another particularly preferred embodiment with two gripping strips, it is provided that the gripping strip of the first support film is more flexible than the gripping strip of the second support film. In this case, it is also advantageous if the second gripping strip is completely overlapped by the first gripping strip.

An activation device can be provided in addition for a system with two gripping strips that is positioned between the first and the second gripping strip. This activation device can for example be an additional adhesive strip with an adhesive strength that is different for the contact surface of each side. When using such film dressings, one first gripping strip, which is positioned above the second gripping strip, can for example then be grasped and with this gripping strip the activation device and one support film can be removed from the polymer film, whereupon the second gripping strip is hence simultaneously activated and/or lifted up in such manner that it is easier for the user to grasp.

Alternatively, in a further embodiment of the film dressing, it is also possible for only a perimeter area of the polymer film to be at least partially covered by at least one support film and for a support film-free central region to remain within the perimeter area of the polymer film. In this configuration, the support film is provided as a kind of frame, which gives the film dressing the necessary stability and safety in order to ensure a wrinkle-free application and, irrespective of the material used for the support film, simultaneously enables a precise aim at the place where the film dressing is to be applied. Accordingly, in this configuration, it is possible to use not only transparent or translucent support films, but also opaque or non-transparent ones as well. The gripping strip attached to the support film is preferably made of a transparent or translucent material.

In a film dressing according to the invention, polymer films can

be particularly used that are highly permeable to condensation. For this, those films are particularly suitable that are manufactured from polyurethane, polyether urethane, polyester urethane, polyether-polyamide copolymers, polyacrylate or polymethacrylate. Particularly preferred as polymer film is a polyurethane film, polyester urethane film or polyether urethane film. Most particularly preferred are, however, also such polymer films that have a thickness of 15 to 50 µm, particularly of 20 to 40 µm and especially preferably of 25 to 30 µm. The condensation permeability of the polymer film in a film dressing according to the invention is preferably at least 750 g/m^2/24 hrs., particularly at least 1000 g/m^2/24 hrs., and especially preferably at least 2000 g/m^2/24 hrs. (measured according to DIN 13726).

An adhesive can be applied on the second side, which is opposite the application system, of the polymer film to be applied. This application can be over the whole area as well as discontinuous or only in certain areas. The applied adhesive can be a common adhesive, particularly an acrylate adhesive or a pressure-sensitive adhesive on polyurethane basis. Preferred are gel adhesives, especially on polyurethane basis, particularly water-based polyurethanes. Especially preferred are hydro-gel adhesives, particularly based on aqueous acrylates.

Advantageously, the basis weight of the adhesive is 20-100 g/m^2, particularly 35-50 g/m^2, wherein the adhesive can be applied discontinuously, but preferably over the whole area.

The condensation permeability of the polymer film which has been provided with the adhesive is preferably at least 1000 g/m^2/24 hrs, particularly preferably at least 1200 g/m^2/24 hrs, and especially preferably at least 2000 g/m^2/24 hrs. (measured according to DIN EN 13726).

According to a development of the invention, the film dressing on the second side of the polymer film opposite the application system can be completely coated with an adhesive and the adhesive

can be protected with a cover film or cover paper. Any commonly available silicone paper or film as well as a paper or film coated with a fluorine compound can be used as a cover layer.

If the film dressing is to be produced as a wound dressing, according to a further embodiment a wound pad or wound cushion must be positioned on the second side of the polymer film lying opposite the application system. Such a film dressing is particularly suited as wound cover when the wound pad or cushion is adhesively attached to the polymer film. This wound cushion can be made of fleece, i.e. a non-woven material. This non-woven may preferably be a hydrophilic fibrous material such as cotton, viscose, cellulose and polyester or mixtures thereof, preferably with hydrophilised polyethylene or polypropylene.

Instead of the wound cushion or in addition to the wound cushion, the film dressing can on the second side of the polymer film lying opposite the application system particularly be provided with a layer that promotes the healing of the wound. A layer that promotes the healing of the wound means any layer that is used for treatment on moist wounds. Particularly preferred here are hydrogels based on polyurethane, acrylates or water-soluble celluloses or combinations thereof, which have a water content of at least 20%, preferably at least 50% in relation to the total weight of the hydrogel. These hydrogels can be applied directly to the wound cushion as well as to the second side of the polymer film.

In order to provide a film dressing that is safe to use, the materials used must be precisely matched with one another. The materials used must be particularly matched in respect of their release characteristics. These release characteristics that are adjustable with additional means are based on the forces that exist between the two materials used. A targeted surface treatment of a material can for instance be used to adjust an attracting or rejecting effect in relation to a second material, which is to be joined with the first material. A surface treatment, which causes an attracting effect between two

materials, can for instance take place due to an additional adhesive coating, a static charge or by fusing both materials that are to be joined. A rejecting effect can for instance be caused by an additional layer on a material of silicon or fluorine compounds. A release force (pull-off force) is thereby such a force that is necessary to separate two materials from one another (measured according to DIN 53530).

In another embodiment of the film dressing according to the invention, these release characteristics are adjusted in such manner that the pull-off force which is necessary to release a cover film or paper from the polymer film to be applied is greater than the pull-off force which is necessary to release the support film or the support films from the polymer film.

In a development of the film dressing with two support films the release characteristics are preferably adjusted in such manner that the pull-off force which is necessary to release the first support film from the polymer film that is to be applied is equal to the pull-off force that is necessary to release the second support film.

In a film dressing with two support films and two gripping strips the release characteristics are preferably furthermore adjusted in such manner that the pull-off force which is necessary to release the first gripping strip from the second gripping strip or to release the second from the first gripping strip is less than the release force that is necessary to release the support film from the polymer film that is to be applied.

In another development of the film dressing with two support films the release characteristics are preferably adjusted in such manner that the pull-off force which is necessary to release the first support film from the polymer film that is to be applied is greater than the pull-off force which is necessary to release the first gripping strip from the second gripping strip.

The adhesion of the support film on the polymer film is preferably only 0.01 to 0.5 N/25 mm, especially preferably 0.01 to 0.1 N/25 mm, measured according to DIN 53530. For this purpose, the supporting material is preferably attached directly to the polymer film during its manufacturing process, or the polymer film is manufactured directly on the supporting material, respectively. In this case, all customary methods for the film manufacturing may be applied, such as casting, spreading, extrusion or other familiar methods for manufacturing of films or foils. If necessary, the supporting material can be roughened on the coated side or be subjected to another treatment that promotes adhesion. A coating that promotes adhesion can also be beneficial. In this case, it is important that the adhesion of the polymer film to the surface to be applied is substantially greater than the adhesion of a support film to the polymer film.

In a particular development of the invention, it is provided that a film dressing including a polymer film with an application system is located inside of a package. It is particularly provided that the package is a sterile package.

It must be emphasized at this point that the here referenced characteristics of the alternative developments of the inventions are not to be limited to the individual alternatives. It is rather the case that the combination of the developments and/or the combination of the individual characteristics of the alternative forms must be included in a development according to the invention. The invention shall be understood to be reduced just as little by the subsequent description of the drawings.

The invention is described in greater detail below by means of the drawings, in which:

FIG. 1 is a top view of a film dressing (not part of the present invention);

FIG. 2 is a top view of an embodiment of a film dressing;

FIG. 3 is a top view of a further embodiment of a film dressing;

FIG. 4 is a cross-sectional view of the embodiment, shown in Fig. 2, of a film dressing (not part of the present invention);

FIG. 5 is a cross-sectional view of the embodiment, shown in Fig. 2, of a film dressing;

FIG. 6 is a cross-sectional view of the embodiment, shown in Fig. 3, of a film dressing; and

FIGS. 7 a-c are cross-sectional views of an embodiment in use.

FIGS. 1 and 4 show a film dressing which is not part of the present invention. The film dressing (10) is shown as a whole in a round shape. It consists of a transparent polymer film (1) which is covered, on the first side thereof, with an application system. Applied on the second side, the side facing away from the application system, is an adhesive (2) which is protected by a cover layer (3). The application system consists of a similarly transparent support film (12), which covers one part of the polymer film, a gripping strip (15) and an adhesive (14). In a margin segment (17), the polymer film is support film-free. The gripping strip (15) is moulded to the support film (12) by means of the adhesive (14). This gripping strip fully overhangs the support-film-free region (17) of the polymer film. The gripping strip is not connected in any way to the polymer film, so that, when the film is in use, the gripping strip can be gripped at once without effort. The polymer film is completely covered by the application system, whereupon, at the same time, the support-film-free region (17) creates a flexible area which, when the film dressing is applied, can primarily be used for initial attachment.

FIGS. 2 and 5 show an embodiment of the present invention. This film dressing (20) is basically rectangular in shape and, similarly to the first embodiment, consists of a polymer film (1), an adhesive layer (2) which is applied to the entire surface

of the polymer film, and a cover layer (3) which covers the adhesive layer. The polymer film, on the first side thereof, exhibits an application system, which consists of two support films (22a, 22b), two gripping strips (25, 26) and two adhesives (24a, 24b). The two support films are applied to the polymer film in such a way that the polymer film is completely covered by the polymer film, up to a support-film-free region (27). The covered area of the polymer film amounts to approximately 96% of the surface of the first side of the polymer film. In this embodiment, the first gripping strip (25), which is glued to the first support film (22b) by means of the first adhesive (24b), overhangs both the support-film-free region (27) and the second gripping strip (26), which is glued to the second support film (22a) by means of the second adhesive (24a). The first gripping strip (25) exhibits a gripping surface which is meant to be gripped from behind by the user. The outer part of the gripping surface protrudes laterally as a free gripping surface (251) over the second gripping strip (26). This second gripping strip (26), in the embodiment represented, does not exhibit a gripping surface which is meant to be gripped from behind. This possibility, however, is just as conceivable as the one shown in FIGS. 3 and 6 for a cannula plaster, and is advantageous in order to facilitate the gripping of the second gripping strip (26). The fact that only one gripping strip can be gripped and is visible to the user guarantees a sequence of actions in the removal of the two support films.

FIGS. 3 and 6 show a further film dressing (30). This film dressing can be used as a cannula or catheter plaster. The film dressing exhibits a basically rectangular shape, the short side whereof exhibits a recess parallel to the long side. By means of this recess, the film dressing is given two mutually independent areas, which are connected to each other by means of a third area, and each of which, in the attachment, for example, of a cannula, can be attached to a surface on either side of the cannula. The film dressing exhibits a polymer film (1), an acrylate adhesive layer (2) and a cover layer (3) which covers the adhesive layer. Arranged on the first side of the

polymer film, which faces away from the adhesive layer, is an application system. This application system includes two gripping strips (35, 36), which are attached to three support films (32a, 32b, 32c) by means of three adhesives (34a, 34b, 34c). The first gripping strip (35) is provided for both the first support film (32c) and the second support film (32b) and is accordingly moulded to both of them. This means that both of these support films (32c, 32b) can be removed by means of a single grip. The first gripping strip (35) overhangs both the central areas of the polymer film, which are not covered by support films (37a, 37b) and the second gripping strip (36). The outer part of the gripping surface protrudes laterally as a free gripping surface (351) over the second gripping strip (36), so that, here too, a sequence of actions is guaranteed in the removal thereof.

The support films, taken together, cover a surface of the polymer film which accounts for 92% of the surface of the first side of the polymer film. This is because, in addition to the central areas, which are not covered by support films, (37a, 37b), there is also no support film on the two margin segments (38a, 38b). These margin segments, after the cover layer has been removed, can be used for initial attachment. In addition, FIG. 6 shows a means of activation (39) between the two gripping strips. This means of activation (39), similarly to the adhesive used to fasten the gripping strip (36) onto the support film (32 a), is not shown in FIG. 3. This means of activation (39) is a double-sided adhesive tape, which shows a higher adhesive force with respect to the first gripping strip (35) than to the second gripping strip (36). Accordingly, when the support films (32b, 32c) are removed, the first gripping strip (35) causes the second gripping strip (36), which lies beneath it, to stand upright, before the adhesive force between the first gripping strip (35) and the means of activation (39) is removed. The second gripping strip (36) thus becomes easier to grip in the next step, in order to remove the second support film (32a).

In the use of a film dressing according to the invention (10,

20, 30, 50), the removal of the cover layer (3) from the adhesive layer (2) is first provided. As shown in FIGS. 7a to 7c, in the case of a film dressing with two support-film-free regions, in order to apply a film dressing (30, 50), for example, above a wound (W), it is possible to attach a first support-film-free margin segment (38a, 38b, 58) to an area which adjoins the wound (W). Thanks to the high degree of flexibility of the polymer film in the support-film-free region, this is quite possible. In the further step, the user, by making use of the predetermined arrangement of the gripping strips (35, 36, 55, 56), which are attached to the respective support films by means of adhesive gluing means (34a, 34b, 34c, 54a, 54b), can place the polymer film to be applied (1) precisely over the wound. By means of the second support-film-free margin segment (37a, 37b, 57), the film dressing exhibits a kind of joint which enables a fold-free application. The support films (32a, 32b, 32c, 52a, 52b) can be removed one after the other during the application, or can be removed one after the other following the successful application, of the polymer film. In so doing, the first gripping strip (35, 55) is first gripped, by means of its free gripping surface (351, 551), in order to be able to remove the first support film (32b, 32c, 52b) first.

Exemplary embodiment 1

The film dressing has a rectangular basic form with an edge length of 57 × 80 mm (contact surface 45.6 cm^2). It comprises a transparent polyether urethane film, which on the side that is positioned towards the body in use is coated with an acrylate-based hydrogel adhesive. The adhesive is affixed over the whole area in an amount of 35 g/m^2 onto the about 25 µm thick polymer film (measured with a test pressure of 0.5 kPa). The polymer film together with the adhesive has a condensation permeability of about 2,600 g/m^2/24 hrs. (measured according to DIN EN 13726, with the difference that after 4 hrs. the measurement period was terminated and the determined result is extrapolated for 24 hrs.). Such a polymer film is available under the trade name Inspire 6200 from the company InteliCoat Technologies, Wrexham

Industrial Estate, Wrexham LL13 9UF, UK. The adhesive side of this polymer film is with a siliconized cover paper available from the company Maria Soell GmbH & Co. KG, Frankenstrasse 45, D-63667 Nidda-Eichelsdorf under the trade name Separacon 980-60. The other side of the polymer film, which during the application is positioned facing away from the body, has arranged on it an application system, which consists of two support films that each has one gripping strip arranged on it. The support films are as illustrated in FIG. 2 and FIG. 5 positioned on the polymer film. In the film dressing here, however, there is additionally realized in it a peripheral area, which is not covered by a support film or gripping strip. This additional peripheral area is positioned on the short side of the rectangle and has a uniform width of 5 mm. Both of the support films are equal in size and have an edge length of 57 × 36 mm (contact area: 2 × 20.5 cm^2 = 41.0 cm^2). The distance of both films is about 3 mm in each point of their parallel edges that are of equal length. This results for both support films in a combined contact area of 90% in respect of the surface of the first side of the polymer film. The support films are manufactured from a 30 µm thick polyester film (measured at a test pressure of 0.5 kPa). A gripping strip is affixed onto each support film with an acrylate adhesive. The gripping strips together, looking in the cross section, have a configuration, as illustrated in FIG. 6, wherein the first gripping strip, which is sketched with reference mark (35), has a size of 57 × 39 mm and is throughout the entire width (57 mm) attached to the respective support film. The second gripping strip, which is illustrated with reference (36), has a size of 57 × 22 mm. Both gripping strips are each attached to the respective support film by means of a 5 mm wide adhesive connective strip and are manufactured from a 20 µm thick transparent polyester film. The first gripping strip thus has a grip surface with a uniform width of 34 mm. The size of the grip surface of the first gripping strip is 19.4 cm^2. The uniform width of the grip surface of the second gripping strip is 17 mm. The size of the grip surface of the second gripping strip is thus 9.7 cm^2. The uniform width of that portion, which protrudes beyond the second

gripping strip, of the first grip surface that is the width of the exposed grip surface of the first gripping strip measures 9 mm. The size of the exposed grip surface is thus 5.1 cm^2.

Exemplary embodiment 2

The film dressing has a rectangular basic form with an edge length of 57 × 80 mm (contact surface 45.6 cm^2). It comprises a transparent polyether urethane film, which on the side that is positioned facing towards the body is coated with a pressure sensitive acrylate-based adhesive. The adhesive is applied over the whole area in an amount of approx. 25 g/m^2 onto the approx. 30 µm thick polymer film (measured with a test pressure of 0.5 kPa). The polymer film together with the adhesive has a condensation permeability of about 1,200 g/m^2/24 hrs. (measured according to DIN EN 13726). Such a polymer film is available under the trade name Inspire 1305 from the company InteliCoat Technologies, Wrexham Industrial Estate, Wrexham LL13 9UF, UK. The adhesive side of this polymer film is covered with a siliconized paper available from the company Maria Soell GmbH & Co. KG, Frankenstrasse 45, D-63667 Nidda-Eichelsdorf, under the trade name Separacon 980-60. The other side of the polymer film, which during the application is positioned facing away from the body, has arranged on it an application system, which consists of two support films that each has one gripping strip arranged on it. The support films are as illustrated in FIG. 2 and FIG. 5 positioned on the polymer film. The film dressing here has additionally realized in it a peripheral area, which is not covered by a support film or gripping strip. This additional peripheral area is positioned on the short side of the rectangle and has an uniform width of 5 mm. Both of the support films are equal in size and have an edge length of 57 × 36 mm (contact area: 2 × 20.5 cm^2 = 41.0 cm^2). The distance of both films is 3 mm in each point of their parallel edges that are of equal length. This results for both support films in a combined contact area of 90% in respect of the surface of the first side of the polymer film. The support films are manufactured from a 30 µm thick polyester film (measured at a test pressure of 0.5 kPa).

A gripping strip is affixed onto each support film with an acrylate adhesive. The gripping strips in a cross-sectional view have a configuration, as illustrated in FIG. 6, wherein the first gripping strip, which is sketched with reference mark (35), has a size of 57 × 39 mm and is throughout the entire width (57 mm) attached to the respective support film. The second gripping strip, which is illustrated with reference mark (36), has a size of 57 × 22 mm. Both gripping strips are each attached to the respective support film by means of a 5 mm wide adhesive connective strip and are manufactured from a 20 µm thick transparent polyester film. The first gripping strip thus has a grip surface with a uniform width of 34 mm. The size of the grip surface of the first gripping strip is 19.4 cm^2. The uniform width of the grip surface of the second gripping strip is 17 mm. The size of the grip surface of the second gripping strip is thus 9.7 cm^2. The uniform width of that portion, which protrudes beyond the second gripping strip, of the first grip surface, that is the width of the exposed grip surface of the first gripping strip measures 9 mm. The size of the exposed grip surface is thus 5.1 cm^2.

The release characteristics of the materials used in exemplary embodiment 2 were determined on 60 × 80 mm test sections according to the method described in DIN 53 530. The tests were determined with a pull-off velocity of 300 mm/min. The silicon paper in respect of the polymer film therefore exhibits a release force of 0.77 N/25 mm, whereas the support film in respect of the polymer film exhibits a release force of about 0.09 N/25 mm. The release characteristics of this film dressing are hence adjusted such that the pull-off force which is necessary to release a cover film from the polymer film that is to be applied is greater than the pull-off force which is necessary to separate the support film or the support films from the polymer film.

Patentkrav

1. Folieforbinding (10, 20, 30, 50) omfattende en polymerfilm (1) og et applikationssystem til lettere håndtering af folieforbindingen, hvor applikationssystemet er anbragt på en første side af polymerfilmen (1) og omfatter i det mindste en støttefolie (12, 22a, 22b, 32a, 32b, 32c, 52a, 52b), på hvilken der er tildannet i det mindste en gribeliste (16, 25, 26, 35, 36, 55, 56), kendetegnet ved, at applikationssystemet omfatter to støttefolier (22a, 22b, 52a, 52b) med hver især i det mindste en gribeliste (25, 26, 55, 56), hvor hver gribeliste er en yderligere materialekomponent og samtidig med i det mindste en støttefolie kan fjernes fra polymerfilmen, og at polymerfilmen (1) har i det mindste et første støttefoliefrit område (17, 27, 37a, 37b, 38a, 38b, 57, 58), og en gribeliste (15, 25, 35, 55) i det mindste afsnitsvist overdækker det første støttefoliefrie område (17, 27, 37a, 37b, 38a, 38b, 57, 58), hvor støttefoliernes kontaktflade som helhed svarer til mindre end 94 % af fladen af den første side af den polymerfilm, der skal appliceres.

2. Folieforbinding (10, 20, 30, 50) ifølge krav 1, kendetegnet ved, at en gribeliste (15, 25, 35, 55) fuldstændigt overdækker det første støttefoliefrie område (17, 27, 37a, 37b, 38a, 38b, 57, 58).

3. Folieforbinding (10, 20, 30, 50) ifølge i det mindste et af de foregående krav, kendetegnet ved, at støttefolierne (22a, 22b, 32a, 32b, 32c, 52a, 52b) er anbragt i et plan parallelt med polymerfilmen (1).

4. Folieforbinding (10, 20, 30, 50) ifølge i det mindste et af de foregående krav, kendetegnet ved, at det første støttefoliefrie område (27, 37a, 37b, 57) er anbragt mellem en første og en anden støttefolie (22a, 22b, 32a, 32b, 32c, 52a, 52b).

5. Folieforbinding (10, 20, 30, 50) ifølge i det mindste et af kravene 1-3, kendetegnet ved, at det første støttefoliefrie

område (17, 38a, 38b, 58) danner et randområde af polymerfilmen (1).

6. Folieforbinding (10, 20, 30, 50) ifølge i det mindste et af de førnævnte krav, kendetegnet ved, at polymerfilmen (1) har i det mindste et andet støttefoliefrit område (27, 37a, 37b, 38a, 38b, 57, 58), der er anbragt adskilt fra det første område.

7. Folieforbinding (10, 20, 30, 50) ifølge krav 6, kendetegnet ved, at det andet støttefoliefrie område danner et randområde af polymerfilmen (1) eller er anbragt mellem en første og en anden støttefolie (22a, 22b, 32a, 32b, 32c, 52a, 52b).

8. Folieforbinding (10, 20, 30, 50) ifølge krav 1, kendetegnet ved, at en af de to gribelister (25, 26, 55, 56) overdækker den anden gribeliste (25, 26, 55, 56) i det mindste afsnitsvist, især fuldstændigt.

9. Folieforbinding (10, 20, 30, 50) ifølge krav 8, kendetegnet ved, at de to gribelister (25, 26, 35, 36, 55, 56) er forskelligt fleksible.

10. Folieforbinding (10, 20, 30, 50) ifølge i det mindste et af de førnævnte krav, kendetegnet ved, at den anden side af polymerfilmen (1) er belagt med et kontaktklæbemiddel, især over hele fladen med et kontaktklæbemiddel (2), og kontaktklæbemidlet er afdækket med en afdækningsfolie eller et afdækningspapir (3).

11. Folieforbinding (10, 20, 30, 50) ifølge i det mindste et af de førnævnte krav, kendetegnet ved, at der på den anden side af polymerfilmen (1) er påført en sårpude.

12. Folieforbinding (10, 20, 30, 50) ifølge i det mindste et af de førnævnte krav, kendetegnet ved, at der på den anden side af polymerfilmen (1) er påført et lag, der fremmer sårhelingen.

13. Folieforbinding (10, 20, 30, 40, 50) ifølge i det mindste et af de førnævnte krav, kendetegnet ved, at polymerfilmen (1)

er en polyurethanfilm, polyesterurethanfilm eller polyetherurethanfilm.

Figure 1

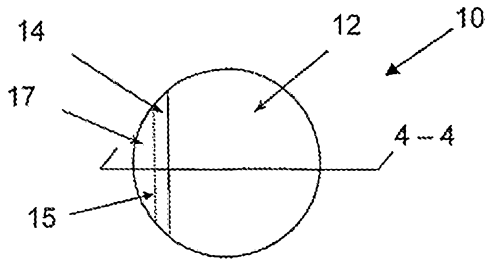


Figure 2

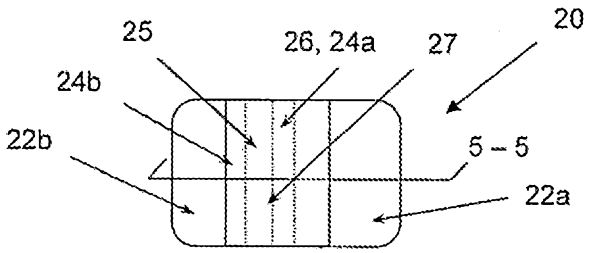
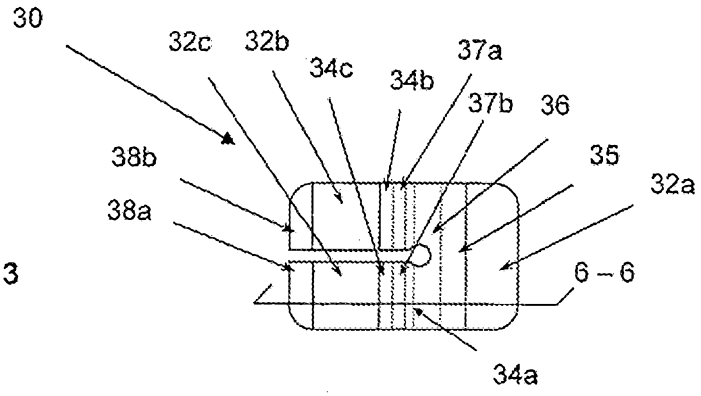


Figure 3



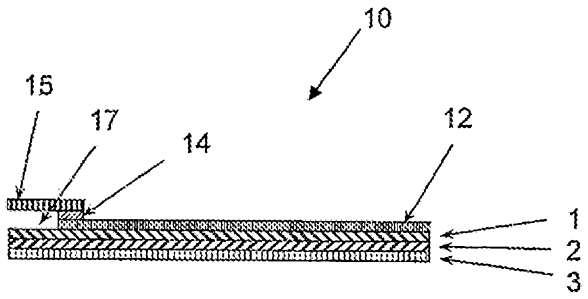


Figure 4

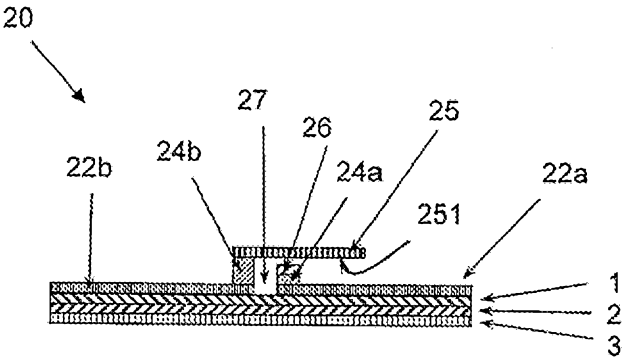


Figure 5

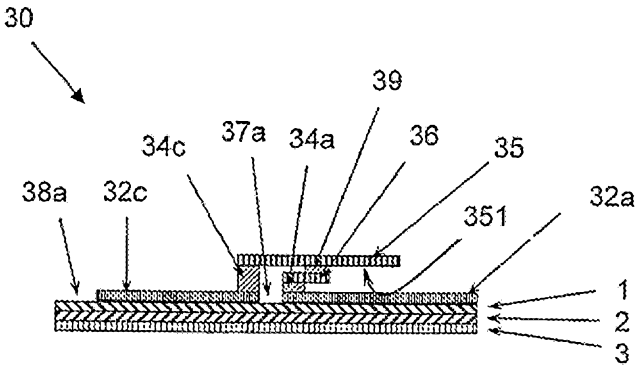


Figure 6

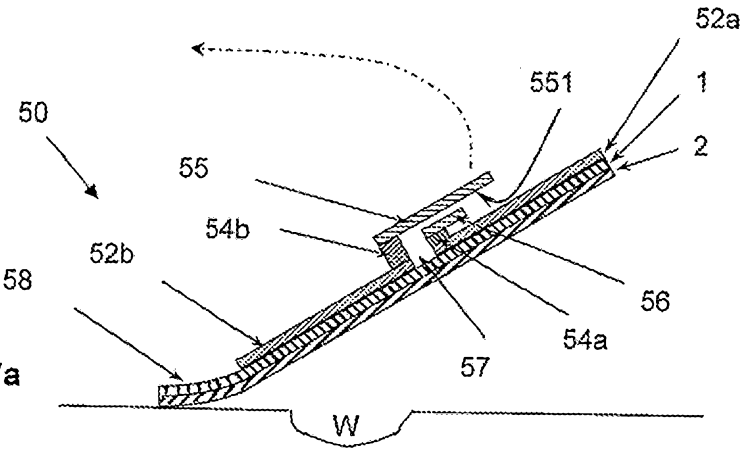


Figure 7a

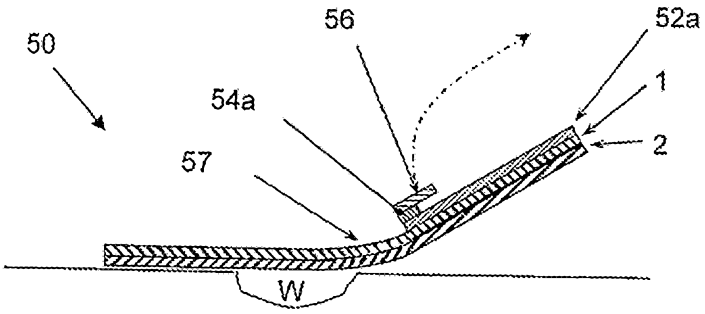


Figure 7b

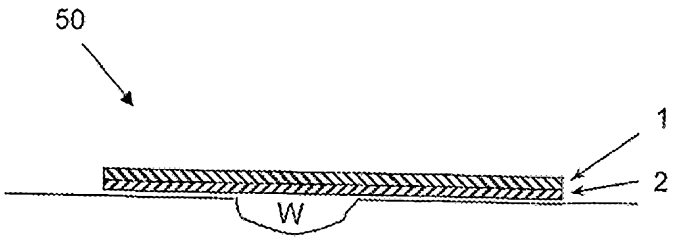


Figure 7c