



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
03.01.2007 Bulletin 2007/01

(51) Int Cl.:
B05D 1/16 (2006.01) **D04B 21/00** (2006.01)
D06B 21/00 (2006.01)

(21) Application number: **06001194.7**

(22) Date of filing: **20.01.2006**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI
SK TR**
Designated Extension States:
AL BA HR MK YU

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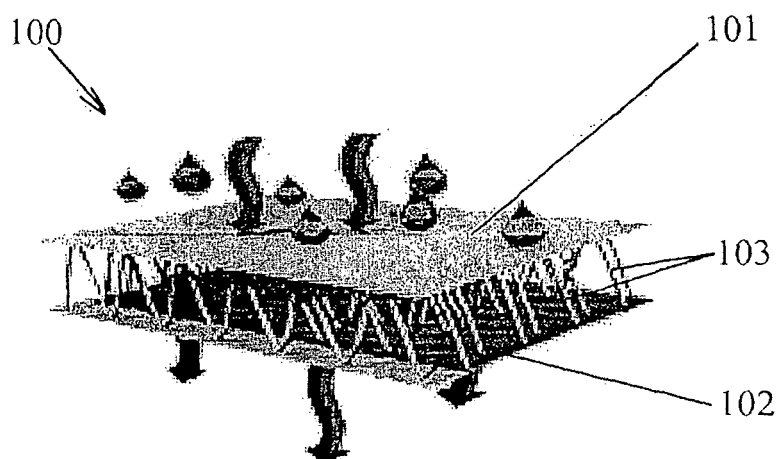
(30) Priority: **28.06.2005 ES 200501581**

(54) **Process to obtain a flocked textile substrate**

(57) A process to obtain a flocked web on a textile substrate, in which said textile substrate has a three-dimensional substrate (100) made up of two equidistant layers (101 & 102) and joined by a multitude of intermediary mono-filaments (103) that improve the breathing

property as it creates an intermediary air cavity that acts as insulation, likewise an improvement in the final tactile sensation of the article, said process being applicable to the manufacture of fabrics for use in furniture upholstery and the inside of motor vehicles.

FIG.2



Description

Object of the Invention

[0001] The object of this invention is a procedure to obtain a flocked web on a textile substrate, which contributes several advantages and novelty characteristics in comparison to the processes and methods currently known and used for the same purposes.

[0002] More specifically, the invention refers to a process to obtain a flocked web on a textile substrate, in which said textile substrate has a three-dimensional substrate made up of two equidistant layers and joined by a multitude of intermediary mono-filaments that allow multiple configurations it being possible to carry out said process by means of machines that process flat or two dimensional fabrics.

Background of the Invention

[0003] At the present time a multitude of fabrics are available in the market that have different types of finishes on a conventional textile substrate. By means of the flocking technology a final velvet finish can be contributed to this broad range of textile substrates that currently exist.

[0004] There are also a broad variety of flocked fabrics known that have dyed flocked web, in which the flocking material has been previously dyed or even by dyeing the fabric on the textile piece after it has been flocked.

[0005] Also, there are flocked fabrics that have the web flocked in its entirety and which is decorated with an arrangement of designs and colours, obtained printing of same in the different known printing processes after being flocked.

[0006] In the same way, the existence of fabrics is also known with partially flocked web onto a fabric substrate in two dimensions, flat woven type fabrics, that have been previously dyed or without dyeing.

[0007] In addition, there are partially flocked webs onto a fabric that has been previously printed in different shapes and colours in which the printed shapes are not completely complemented, accompanies or surrounded with shapes of the partial flocking made onto said fabric.

[0008] The field of application of the invention corresponds to the manufacture of fabrics for the upholstering of furniture, the inside of motor vehicles, such as the upholstery of the seats in which the comfort of the user is improved, more specifically in terms which refer to breathing. This ability to breathe is highly considered in the setting of a vehicle as the make up of the conventional seat formed from a "fabric sandwich" in addition to a foam, all of it being bonded to a compact polyurethane foam that does not allow the circulation of air through it. As a result of the above mentioned, it gives rise to a problem of ventilation that subsequently causes perspiration.

[0009] It must be mentioned that the present applicant is the holder of other invention patent applications within

the same technical field as this invention.

DESCRIPTION OF THE INVENTION

[0010] This present invention has been proposed with the basic object of providing a procedure by which it is possible to obtain flocked webs that have a three dimensional geometry, with a specific combination of substrate structure and an arrangement for the design and colouring of the flocking.

[0011] The procedure of the present invention refers to a process to obtain a flocked web on a textile substrate, in which said textile substrate has a three-dimensional substrate made up of two equidistant layers and joined by a multitude of intermediary mono-filaments is characterised because of the fact that it comprises of two stages of (1)the selecting of a three dimensional substrate to obtain a three dimensional flocked fabric; (2) the application of a layer of adhesive material onto the three dimensional substrate; (3) the carrying out of the flocking with white or partially dyed flocking onto a three dimensional substrate by means of an electrostatic and/or mechanical distribution technique; (4) the drying of the flocking; and (5) a setting step by means of applying heat to the flocked web obtained on the layer of adhesive material.

[0012] Thanks to these characteristics, a three dimensional flocked web is obtained with an excellent air recirculation on the inside in such a way that it improves the breathing property as it creates an intermediary air cavity that acts as insulation, likewise an improvement in the final tactile sensation of the material in comparison with three dimensional fabrics without flocking. The procedure here described is applicable to the manufacture of fabrics for use in furniture upholstery, the inside of motor vehicles such as the seats and roofs, sun visors etc.

[0013] The final product obtained also provides suitable protection against bacteria and mites, absorption of harmful or offensive smells, and a surface with a pleasant tactile sensation.

[0014] In accordance with another aspect of the invention, prior to the flocking, a dyeing process is carried out to the flocking.

[0015] The object of the invention is to provide a second procedure to obtain a flocked fabric on a textile substrate that is characterised by the fact that it is made up of the following stages: (1)the selecting of a three dimensional substrate to obtain a three dimensional flocked fabric; (2) the application of a printing paste with subliminal colours; (3) the application of a layer of adhesive material onto the three dimensional substrate; (4) the carrying out of the flocking with white or partially dyed flocking onto a three dimensional substrate by means of an electrostatic and/or mechanical distribution technique; (5) the drying of the flocking; and (6) a setting step by means of applying heat of the flocked web obtained on the layer of adhesive material; and finally, (7) subjecting the flocked web to a sublimation process by means of

the application of heat, in such a way that the dye of the sublimed colours is carried out in an ascending direction from the substrate surface, colouring the flocking up to the uppermost part of the flocking.

[0016] The sublimation process is carried out for approximately 10 minutes at a temperature around 200°C.

[0017] Other characteristics and advantages of the procedure of the present invention will be come clear from the description of a preferred embodiment, but it is not exclusive, it illustrates by way of example, but the drawings attached are not by way of limitation, in which:

BRIEF DESCRIPTION OF THE DRAWINGS

[0018]

Figures 1- Is a block outline diagram that represents the procedure for obtaining a flocked fabric of this present invention;

Figure 2 - Is a perspective view of a three dimensional flocked substrate obtained with the procedure of the present invention in which the kinetics of the air circulation can also be seen.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0019] The procedure outlined in Figure 1 corresponds to a more complex embodiment for the obtaining of a flocked textile onto a textile substrate, said substrate being formed by a three dimensional substrate (100) made up of two equidistant layers (100 & 102) and joined by a multitude of intermediary monofilaments (103) (see Figure 2). It includes two stages of: (1) the selection of a three dimensional substrate to obtain a three dimensional flocked fabric; (2) the application of a printing paste with subliminal colours; (3) the application of a layer of adhesive material onto the three dimensional substrate by means of the use of a band or scraper using the impregnation technique by a hollow engraving technique by using stork rollers or equally using printing rollers, (4) the carrying out of the flocking with a white or partially dyed flock onto a three dimensional substrate using an electrostatic and/or mechanical technique; (5) the drying of the flocking and; (6) the setting by using heat to the flocked web obtained on the adhesive material layer; and (7) subjecting the flocked web to a sublimation process by means of the application of heat for approximately 10 minutes and with a temperature of around 200°C, in such a way that the dye of the sublimed colours is carried out in an ascending direction from the surface of the substrate, the colouring of the flocking up to the upper part of the flocking.

[0020] As and how described in Figure 2, the three dimensional substrate (100) has a warp, weft (or longitudinal or transversal direction) and height, the height not being the result of the thickness of the filaments of the fabric but from the structure of the monofilaments (103) using the technology of warp knitting and whose height

can reach 15 millimetres. An infinity of textures and colours can be obtained by means of the technology and as a result of its construction, allowing the combination of different colours between the two layers or sheets (101, 102) of fabric that are separated by the monofilaments (103) together with the possibility of obtaining different geometries on the web to be flocked.

[0021] The details, shapes, dimensions and other ancillary elements, likewise the materials used in the procedure of the invention can be suitably substituted by others that are technically equivalent and do not deviate from the fundamentals of the invention or from the scope defined by the claims that are included below.

Claims

1. A process to obtain a flocked web on a textile substrate, in which said textile substrate has a three-dimensional substrate (100) made up of two equidistant layers (101, 102) and joined by a multitude of intermediary mono-filaments (103), **characterised in that** it is made up of the stages of:

- a) The selecting of a three dimensional substrate to obtain a three dimensional flocked fabric;
- b) The application of a layer of adhesive material onto the three dimensional substrate;
- c) The carrying out of the flocking with white or partially dyed flocking onto a three dimensional substrate by means of an electrostatic and/or mechanical distribution technique;
- d) The drying of the flocking; and
- e) The setting step by means of applying heat to the flocked web obtained on the layer of adhesive material;

2. A process according to claim 1, **characterised in that** prior to be flocked a flock dyeing phase is carried out.

3. A process to obtain a flocked web on a textile substrate, **characterised in that** it is made up of the stages of:

- a) The selecting of a three dimensional substrate to obtain a three dimensional flocked fabric;
- b) The applying of a printing paste with subliminal colours
- c) The application of a layer of adhesive material onto the three dimensional substrate;
- d) The carrying out of the flocking with white or partially dyed flocking onto a three dimensional substrate by means of an electrostatic and/or mechanical distribution technique;
- e) The drying of the flocking; and
- f) The setting step by means of applying heat to the flocked web obtained on the layer of adhesive

sive material; and

g) The subjecting the flocked web to a sublimation process by means of the application of heat in such a way that the dye of the sublimed colours is carried out in an ascending direction from the surface of the substrate, the colouring of the flocking up to the upper part of the flocking.

4. A process according to claim 3, **characterised in that** the sublimation process is carried out for 10 minutes at a temperature around 200°C.

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PROCESS

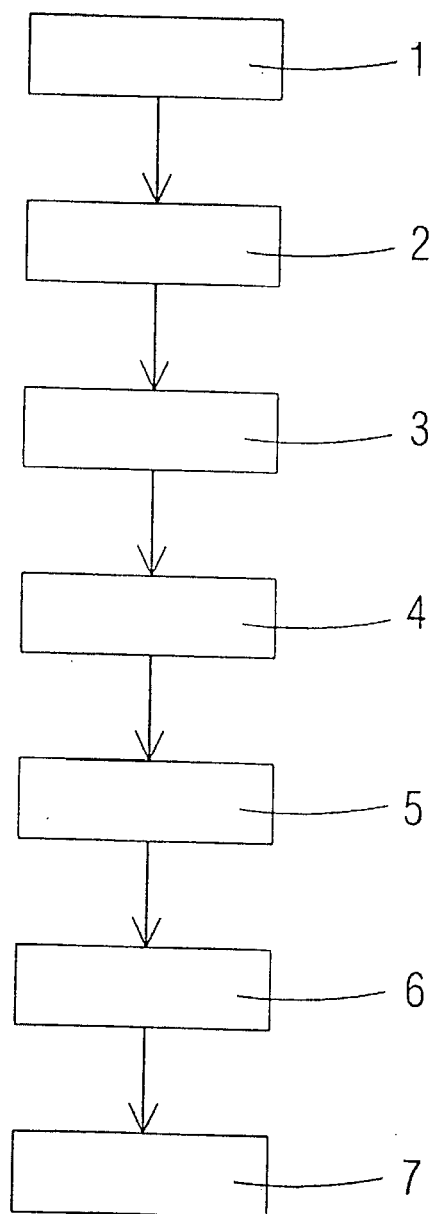


FIG. 1

FIG.2

