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Datasheet for the decision of 19 June 2008

Case Number: T 0158/06 - 3.2.06

Application Number: 98922470.4

Publication Number: 0984759

IPC: A61F 13/15

Language of the proceedings: EN

Title of invention:
Composite fabric for coverstock having separate liquid pervious and impervious regions

Patentee:
BBA Nonwovens Simpsonville, Inc.

Opponent:
Carl Freudenberg KG

Headword:
-

Relevant legal provisions:
EPC Art. 56

Relevant legal provisions (EPC 1973):
-

Keyword:
"Inventive step (no - all requests)"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0158/06 - 3.2.06

D E C I S I O N
of the Technical Board of Appeal 3.2.06
of 19 June 2008

Appellant: (Opponent)
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Representative:

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Decision under appeal:
Interlocutory decision of the Opposition Division of the European Patent Office posted 02 December 2005 concerning maintenance of European patent No. 0984759 in amended form.

Composition of the Board:

Chairman: P. Alting Van Geusau
Members: G. de Crignis
K. Garnett

Summary of Facts and Submissions

I. European Patent Nr. 0 984 759, granted on European patent application No. 98 922 470.4, was maintained in amended form by the decision of the opposition division posted on 2 December 2005.

The independent claim 1 reads as follows:
"Coverstock for a disposable absorbent article, said coverstock comprising a nonwoven composite bonded fabric (20, 20') including at least one discrete layer (24, 24', 26, 26') of synthetic polymeric continuous filaments and at least one discrete layer of fibers (22, 22') providing a liquid barrier in the nonwoven composite fabric, characterized in that the at least one layer of synthetic polymeric continuous filaments and the at least one layer of fibers define a liquid transport region (28, 28') in one area of the nonwoven composite fabric for strikethrough of liquid through the surface thereof, the liquid transport region being bounded by a liquid barrier region (30, 30', 32, 32', 33') in another area of the nonwoven composite fabric, said at least one layer of continuous filaments and said at least one layer of fibers define a spunbond-meltblown-spunbond bonded trilaminate structure having a continuous meltblown layer (22) disposed between the spunbond layers (24, 26) and wherein said liquid transport region (28) of said topsheet (20) further includes a surfactant to promote liquid strikethrough in said region."

The first part of independent claim 2 is the same as in claim 1 and the final part, starting with:

"... a spunbond-meltblown-spunbond bonded trilaminate structure in which the meltblown layer (22') is" reads:
"discontinuous across the structure, wherein said liquid barrier region (30, 32, 33') is defined by the presence of the meltblown layer (22') and said liquid transport region (28') is defined by the substantial absence of the meltblown layer."

The first part of independent claim 4 is the same as in claim 1 and the final part, starting with:
"... a spunbond-meltblown-spunbond bonded trilaminate structure in which the meltblown layer (22) is" reads:
"continuous across the structure, wherein said liquid barrier region (30, 32) is defined by the presence of relatively fine meltblown fibers to impart barrier properties, and, said liquid transport region (28) is defined by the presence of relatively coarse meltblown fibers and is treated with a surfactant to promote strikethrough."

II. The opposition division held that the patent in suit disclosed the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 100(b) EPC) and that the amendments to claim 1 were admissible with regard to the requirements of Article 123 EPC. Further, the opposition division held that the subject-matter of claim 1 as granted was not novel over E1 (Article 100(a) EPC). However, the subject-matter of independent claims 1, 2 and 4 in accordance with the patent proprietor's auxiliary request was considered to meet the relevant formal requirements (Articles 83, 84, 123 EPC), to be novel (Article 54 EPC) and to involve

an inventive step (Article 56 EPC) with regard to the state of the art disclosed in

E1 EP-B-0564 482
E2 US-A-5 492 751
E3 WO-A-96/31176 and
E4 EP-A-0 692 230.

III. On 31 January 2006 a notice of appeal against this decision was filed by the appellant (opponent) and the appeal fee was paid the same day, followed by the statement of grounds of appeal filed on 10 April 2006. The appellant requested that the decision of the opposition division be set aside and the patent be revoked on the grounds of Articles 83, 84, 54, 56 and 123(2) EPC.

IV. In a communication dated 8 March 2007 accompanying the summons to oral proceedings, the Board indicated that it did not consider the requirements of Article 123(2) EPC as being met for the three independent claims and that the objection under Article 84 EPC appeared to be related to the issues set out for Article 123(2) EPC. As regards the Article 83 EPC objection the Board was of the opinion that the skilled person would be able to distinguish between fluid pervious and fluid impervious regions of a nonwoven composite.

V. Oral proceedings were held on 12 June 2008. The respondent (patent proprietor) requested that the appeal be dismissed or, in the alternative, that the patent be maintained on the basis of one of the first

to seventh auxiliary requests filed with its letter of 7 May 2008.

As had been announced by letter of 27 May 2008, the appellant did not attend the oral proceedings but maintained its request to set aside the decision under appeal and to revoke the patent.

Auxiliary requests 1 to 7 differ with regard to the number of independent claims. The subject-matter of claim 1 of auxiliary requests 1, 4 and 7 differs from the subject-matter of claim 1 of main request and of auxiliary requests 2, 3, 5, 6 only in the additional use of the adjective "coarse" for the synthetic polymeric continuous filaments.

The further differences in auxiliary requests 1 to 7 were not decisive and thus it is not necessary to elaborate on the details.

VI. In support of its requests the appellant argued in writing essentially as follows:

The subject-matter of independent claims 1, 2 and 4 had not been disclosed as such in the originally filed application (Article 123 EPC).

The objection under Article 83 EPC was maintained. In all the independent claims, liquid transport regions and liquid barrier regions were referred to. The prior art generally disclosed a lot of examples comprising nonwovens having liquid pervious and liquid impervious areas and for these areas the desired and particular use was always specified. The subject-matter of

claims 1, 2 and 4 did not define the exact location of the different areas and thus the skilled person could not identify the claimed coverstocks.

The subject-matter of claims 1, 2 and 4 was not clear either. The general reference to a trilaminate was not sufficient to define the nonwoven composite bonded fabric. In particular, the subject-matter of claim 2 was not clear (Article 84 EPC). It referred with regard to the nonwoven to a trilaminate although no meltblown layer was present in the liquid pervious area. A two-layer laminate was known from E1 and therefore such a claim was not novel either (Article 54 EPC).

E1 represented the closest prior art. It referred to a nonwoven composite bonded fabric as cover layer for absorbent articles which comprised two nonwoven layers and pointed to the necessity of hydrophilizing the regions of liquid permeability.

The subject-matter of claims 1, 2 and 4 provided a composite bonded fabric structure in the form of a spunbond-meltblown-spunbond (SMS) trilaminate structure wherein a fluid pervious area was formed via the treatment by a surfactant (claim 1), via the absence of the meltblown layer in this area (claim 2) or via the provision of coarse meltblown fibres (claim 4).

Concerning the treatment by a surfactant, E1 disclosed the hydrophilizing of the corresponding areas. E2 also referred to such a treatment.
Concerning the absence of the meltblown layer in the liquid permeable area, a trilaminate structure was no longer present in this area and accordingly the

subject-matter of claim 2 was not novel over the disclosure in E1.
Concerning the provision of coarse meltblown fibres, E3 indicated that the skilled person knew how to vary the hydrophobicity and basis weight of a meltblown layer and accordingly how to use the material strategically by localized application.

Starting from E1, the objective technical problem was how to provide a topsheet for a disposable absorbent article in form of a nonwoven composite bonded fabric structure which combined fluid repellent and fluid pervious areas.

E2 provided the solution to the specified problem by disclosing a nonwoven composite bonded fabric having a trilaminate structure which could be hydrophilized. E2 suggested the use of Triton as surfactant and thus its application in a desired area would not involve an inventive step. E2 also referred to the improved barrier action of fine fibres. The choice of appropriate fibres for each area was within the knowledge of the skilled person. Hence, the subject-matter of claims 1, 2 or 4 did not involve an inventive step.

E3 and E4 referred to similar laminates and represented background knowledge.

VII. The respondent argued essentially as follows:

Concerning the objections under Article 123(2) EPC, the subject-matter of claims 1, 2 and 4 already formed the subject-matter of originally filed claims 1, 7, 8 and

10 and therefore no problem could arise regarding the requirements of Article 123(2) EPC.

The wording of the subject-matter of claims 1, 2 and 4 was consistent and thus no lack of clarity could arise (Article 84 EPC).

Sufficiency of disclosure (Article 83 EPC) was also present as the skilled person could easily identify "relatively coarse" or "relatively fine" meltblown fibres in light of their intended function.

Concerning inventive step of the subject-matter of claim 1 of all the requests, E1 represented an appropriate starting point. In distinction to the claimed subject-matter, E1 specified a two-layer coverstock and no SMS trilaminate structure. Therefore, E1 lacked the specific teaching in the direction of the claimed features.

E2 specified an SMS material and its use as barrier material. In contrast to the claimed subject-matter, the application of the surfactant was not disclosed with regard to particular regions. The reason for the application of the surfactant remained totally unclear. Use as a coverstock was not disclosed as no liquid transport region was present. Therefore, the skilled person would not consider the combination of documents E1 and E2. Hence, the subject-matter of claim 1 involved an inventive step.

Reasons for the Decision

1. The appeal is admissible.

2. *Article 123(2) EPC - 84 EPC - 83 EPC*

All requests comprise a claim 1 with substantially identical subject-matter. Since the decisive question in this appeal is ultimately the one relating to inventive step (Article 56 EPC) of the subject-matter of this independent claim and, for the reasons set out below, this requirement is not met, it is not necessary to assess in detail the further objections raised.

3. *Novelty - Claim 1*

3.1 E1 refers to a coverstock for a disposable absorbent article (title). The coverstock is a nonwoven composite bonded fabric (Verbundvliesmaterial) consisting either of one composite layer, or alternatively of a two-layer laminate. In the latter embodiment, one discrete spunbond layer having coarse filaments (page 4, line 22) is added to a discrete layer comprising a mixture of spunbond coarse filaments and meltblown fine micro-fibres (page 3, lines 20/21, 30, 52). Such a two-layer laminate is shown in Figure 6 and the corresponding description suggests also adding the spunbond layer 24 to the composite layer shown in Figure 5. In any case one area has to be treated with a surfactant (page 4, line 10/11) in order to enable liquid transport in the otherwise hydrophobic article. The spunbond layer ensures that the coverstock can be reliably bonded to the backsheet (page 4, lines 33 - 37).

Thus, E1 does not disclose with regard to the features claimed in claim 1 that "said at least one layer of continuous filaments and said at least one layer of fibers define a spunbond-meltblown-spunbond bonded trilaminate structure having a continuous meltblown layer (22) disposed between the spunbond layers (24, 26)". Therefore, the subject-matter of claim 1 is novel over the disclosure of E1.

3.2 E2 refers to a spunbond-meltblown-spunbond trilaminate with regard to use in personal care products and particularly in containment means such as barrier flaps (col. 1, l. 41 - 47). The object is to provide a nonwoven laminate being soft and conformable (col. 1, l. 56/57). In one set of examples the complete nonwoven fabric is treated with a surfactant, although no clue is given as to the reason for such a treatment.

Hence, E2 does not directly and unambiguously disclose the feature of claim 1 that "said liquid transport region(28) of said topsheet(20) further includes a surfactant to promote liquid strikethrough in said region". Thus, the subject-matter of claim 1 is novel over E2.

The patent proprietor argued that, moreover, E2 did not refer to a coverstock but to a containment means. However, the patent in suit itself refers to the coverstock as including containment means. In particular in paragraphs [0017] and [0018] the intention of the coverstock is disclosed to be "*suitable for barrier leg cuffs and other containment structures or barrier zones*". Hence, the composite nonwoven structure forming the coverstock should

combine the barrier properties in one region with liquid transport properties in another region. Therefore, the term "coverstock" includes containment structures and there is no difference in this respect between the disclosure of E2 and the patent in suit.

3.3 Relevance of novelty assessment for the subject-matter of claim 1 of the main and the auxiliary requests

When the subject-matter of claim 1 of the main request is compared with claim 1 of each of the auxiliary requests 1 to 7, the latter differ only in the additional use of the adjective "coarse" in relation to the synthetic polymeric continuous filaments in claim 1 of the auxiliary requests 1, 4 and 7.

The term "coarse filaments" applies to spunbond filaments generally when compared with "fine" meltblown fibres. E1 (see page 3, lines 26/27) as well as E2 (see table 1) disclose "coarse filaments" for the spunbond layer in combination with "fine fibers" for the meltblown web. The assessment on novelty and inventive step of claim 1 starting from either E1 or E2 thus does not depend on whether the subject-matter is considered with or without this term and the assessment is valid for the subject-matter of claim 1 of all requests.

4. *Inventive step - Claim 1*

4.1 E1, which is acknowledged in the patent in suit (see paragraph [0013] of the patent in suit referring to the US family member of E1) as disclosing a compound nonwoven web, represents an appropriate starting point for the evaluation of inventive step. As set out under

point 3.1 above, the distinguishing feature with respect to the subject-matter claimed in claim 1 is the provision of an SMS-trilaminate.

4.2 The patent in suit discloses as the problem to be solved the provision of a composite nonwoven structure having barrier and strikethrough areas (paragraph 0017). This problem is already solved in E1.

4.3 Thus, when assessing inventive step, the objective technical problem to be solved by the subject-matter of claim 1 has to be redefined. Considering the distinguishing feature, the problem can only be the finding of an alternative coverstock.

4.4 The skilled person, noting the possibility referred to in E1 of a two-layer laminate consisting of spunbond filaments and meltblown fibres, would know the individual advantages of these two structures. With regard to a spunbond layer, these advantages are that it is soft and compliant, that bonding to the backsheet is more reliable and that escape of fine fibrous or particulate material can be avoided. With regard to a meltblown layer, the advantage is that it can be manipulated to obtain desirable hydrophobic (barrier) properties of the laminate.

4.5 According to the disclosure of E2, SMS-laminates are well-known and generally used in applications concerning disposable products and particularly for personal care absorbent articles. E2 discloses the use of SMS-laminates as coverstock material for containment means in such articles. In this case the spunbond layer forms the skin contacting layer and the advantages

concerning softness and conformability are apparent (E2: col. 1, l. 56/57 and col. 2, l. 14/15). In addition, the spunbond layer also forms the bonding layer with the backsheet and the advantage of a reliable bond can be obtained (E1: page 4, l. 33 - 37). Hence, such a SMS-trilaminate fulfils all the required and desired functions regarding soft and conformable skin contact on the one hand and reliable bonding on the other. Furthermore, the meltblown layer can be adapted via the manufacturing conditions (melt flow rate, molecular weight distribution, temperature) to obtain a specific meltblown web (basis weight, fibre diameter, thickness, pore-size distribution) to ensure the desired hydrophobic/barrier character of the containment/barrier regions and thus to reliably control the wet-back characteristics (E2: col. 3, l. 25 - 45, 56 - 66; col. 4, l. 6 - 17; col. 5, l. 5 - 31; col. 6, l. 24 - 32).

4.6 Hence, the skilled person would immediately recognize that the bi-laminate in E1 could be replaced by the tri-laminate of E2 thereby at least gaining the benefit of improved softness and compliance over the whole of the skin-contacting side of the article. Furthermore, such a choice opens up the possibility of tailoring the interior meltblown layer to suit the desired barrier characteristics. The necessity of applying a surfactant in the liquid transport region is already present in view of the hydrophobic nature of the spunbond and the meltblown layers (E1: p. 3, l. 43; p. 4, l. 10 - 13).

4.7 Therefore, the skilled person would consider these advantages and replace the two-layer laminate in E1 by the SMS-trilaminate of E2 and thus arrive at the

subject-matter of claim 1 without the exercise of inventive skills. Consequently, the subject-matter of claim 1 does not involve an inventive step (Article 56 EPC).

5. Since all of the respondent's requests include a claim 1 with the same subject-matter, none of the auxiliary requests is acceptable and there is no need to investigate whether any of the other grounds of opposition raised by the appellant would prejudice the maintenance of the patent in suit.

Order

For these reasons it is decided that:

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

The Registrar The Chairman

M. Patin P. Alting van Geusau