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**Datasheet for the decision
of 23 April 2009**

Case Number: T 1846/07 - 3.2.06

Application Number: 97951477.5

Publication Number: 0952804

IPC: A61F 13/15

Language of the proceedings: EN

Title of invention:

Method and system for making an absorbent pad for use in
absorbent articles

Patentee:

KIMBERLY-CLARK WORLDWIDE, INC.

Opponent:

The Procter & Gamble Company

Headword:

-

Relevant legal provisions:

EPC Art. 56

Relevant legal provisions (EPC 1973):

-

Keyword:

"Inventive step - no (obvious alternative)"

Decisions cited:

-

Catchword:

-



Case Number: T 1846/07 - 3.2.06

D E C I S I O N
of the Technical Board of Appeal 3.2.06
of 23 April 2009

Appellant:
(Opponent)

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Decision under appeal:

Interlocutory decision of the Opposition
Division of the European Patent Office posted
3 September 2007 concerning maintenance of
European patent No. 0952804 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 No. 0 952 804, granted on application No. 97951477.5, was maintained in amended form by decision of the opposition division posted on 3 September 2007.
- 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), but found that the subject-matter of claim 37 in accordance with the patent proprietor's main request was not novel (Article 54 EPC) over the disclosure in
D1 US-A-5 069 677.
Concerning the first auxiliary request, in which claims 37 to 51 had been deleted, the opposition division came to the conclusion that the subject-matter of its amended independent claims 1 and 24 met the formal requirements of Article 123(2) and (3) EPC, was novel (Article 54 EPC) and also involved an inventive step (Article 56 EPC) with regard to the disclosures of
D1 or
D4 EP-A-0 346 928
taken on its own as well as over the combination of the teachings of these two documents.
- III. The appellant (opponent) filed a notice of appeal against this decision on 29 October 2007, and paid the appeal fee on the same date. On 11 January 2008 the statement of grounds of appeal was filed. Objections concerning added subject-matter (Article 123(2), clarity (Article 84 EPC), novelty (Article 54 EPC) and inventive step (Article 56 EPC) were raised. To

substantiate these arguments the appellant relied upon the further documents submitted during the opposition proceedings, which included

D2 EP-A-0 579 012,

D3 EP-A-0 658 351,

D5 EP-A-0 663 464

D6 WO-A-96/07376

D7 EP-A-0 847 263

and additionally, D9 to D12 were filed:

D9 "Polymeric Materials" G.W. Ehrenstein, p.157- 158;

D10 data sheet of Sigma-Aldrich polyethylene;

D11 "Thermal welding of polymers" R.J. Wise, Section 1.4;

D12 US-A-5 227 107.

Moreover, it was argued that the skilled person would not be in a position to know whether he was working within the area covered by the claim and thus the requirements of Article 83 EPC were not be met.

IV. The patent proprietor (respondent) replied to the appeal by filing an amended main request and first to third auxiliary requests.

V. In a communication dated 23 October 2008 accompanying the summons to oral proceedings, the board indicated that the subject-matter of claim 1 of the main request and of auxiliary request 1 was not considered to be novel over the disclosure of D1 (Article 54 EPC). Moreover, the disclosure of D3 was considered pertinent in particular with regard to the subject-matter of claim 1 of auxiliary request 2.

VI. Oral proceedings were held on 23 April 2009. The final requests of the parties were as follows:

The appellant (opponent) requested that the decision under appeal be set aside and that the patent be revoked.

The respondent (patent proprietor) requested that the decision under appeal be set aside and that the patent be maintained on the basis of the first auxiliary request filed during the oral proceedings.

Claim 1 of this request reads as follows:

"An absorbent article (100) having a length and a width, said absorbent article (100) comprising:

- (a) a chassis comprising:
 - (i) an outer cover (104), and
 - (ii) a bodyside liner (102) mounted to said outer cover (104) and, in use contacting the body of a user;
- (b) an absorbent core (20), between said bodyside liner (102) and said outer cover (104), said absorbent core (20) having first and second opposing surfaces,
- (c) a pre-formed containment layer (30) at the first surface (36) of said absorbent core (20); the containment layer being between the bodyside liner and the absorbent core; and
- (d) a permeable stabilization layer (65), comprising resin fiber (40), at the second surface of said absorbent core (20), the stabilization layer being between the absorbent core and the outer cover, characterised in that the fibers (40) of said stabilization layer (65) conforming to, and mechanically bonding to fluff fibers of said absorbent core (20) at said second surface to

increase the integrity of said absorbent core through bonds formed between resin fibers (40) of said stabilization layer and fluff fibers of said absorbent core (20) when melt spraying said resin fibers (40), said containment layer (65) having first and second edge portions (172, 174) extending outwardly from opposing edges (66, 68) of the absorbent core (20), said stabilization layer (65) being secured to said containment layer (30) in at least part of said first and second portions (172, 174), said containment layer (20) and said stabilization layer (65), in combination, encompassing said absorbent core (20)."

VII. In support of its requests the appellant argued essentially as follows with regard to the above claim 1:

Apart from deficiencies in respect of Articles 123(2), 84 and 83 EPC, the subject-matter of claim 1 at the very least did not involve an inventive step. D7 could be considered as representing the closest state of the art.

D7 disclosed in its Figures 1 to 4 a number of different absorbent articles with a tissue-wrapped absorbent core. Figure 4 showed a tissue wrapped absorbent core having different core wraps as topsheet and backsheet for encasing the absorbent core. It was further indicated in D7 that "the absorbent article once formed may be used by itself or it may be incorporated into a personal care absorbent product such as is shown in Figure 6 in the form of a diaper", thus leading to a disclosed embodiment in which the wrapped core shown in Figure 4 is used in a diaper

having a chassis comprising an outer cover and a bodyside liner.

Starting from this embodiment the problem to be solved concerned simpler and/or cheaper manufacturing of the tissue wrapped absorbent core. Looking for a solution to this problem the skilled person would turn to D3, which addressed less expensive and more efficient techniques for manufacturing the wrap layers.

In relation to the embodiment described in Figure 2 of D3 (page 8, line 44), three alternatives were suggested which offered the possibilities of spraying a micro-fibrous layer on the absorbent core as a facing, as a backing or on both sides of the core.

D7 already suggested such a technology, as it referred to the in-line deposition of melt-blown polymer onto a forming surface for forming one layer of the core wrap 14. Accordingly, such technology was standard in the art. No inventive step was necessary to apply this technology to either side of the absorbent core in accordance with whatever was required.

VIII. With respect to its requests the respondent (patent proprietor) argued essentially as follows:

D7 represented the closest prior art. Its Figure 1 showed a complete absorbent article which additionally was wrapped in the embodiment shown in Figure 6. However, D7 was concerned predominantly with the internal wrap system and that it sealed the absorbent core.

When starting from the embodiment shown in Figure 6 of D7 and taking into account the disclosure of D3, the skilled person would be motivated to change the internal absorbent structure of the absorbent article in D7 in a way to omit either the topsheet or the backsheet.

Only with hindsight would the absorbent article of D3 be used in the manufacturing of a core wrap system according to D7. But when considering how to apply the manner of manufacture of the wrap layers according to D3 in the manufacturing process of D7, the most obvious manufacturing method was shown in Figure 1 of D3, which referred to the application of spray to both surfaces of the absorbent core. Such an application would avoid the necessity to pre-form any wrap layer and would at best simplify the manufacturing method. Moreover, D3 taught the use of the sprayed microfibre layer as a facing layer for replacing the topsheet (page 8, line 51 - 53) by coating the absorbent core, and this possibility was shown in its Figure 2. Accordingly, inventive activity was necessary to apply the spray assembly on, and only on, the backing side of the absorbent core.

Reasons for the Decision

1. The appeal is admissible.

2. Since the respondent's request fails at least for reasons of lack of inventive step it is not necessary to consider the formal objections raised by the appellant.

3. Inventive step

3.1 The Board agrees with the parties that the embodiment of Figure 6 of D7 incorporating the wrapped core of Figure 4 represents the closest prior art. Such specific embodiment, in fact each of the wrapped cores in accordance with the embodiments shown in Figures 1 to 4, forms a separate disclosed embodiment of a diaper, follows from the statements in paragraphs [0011] and [0023] of D7 leading to a diaper having an internal wrapped core as well as an external topsheet and backsheet based on the wrapped core of Figure 4.

3.2 With regard to the manufacturing process, D7 refers to the possibility of making the first layer of the core wrap sheet by an in-line extrusion of molten thermoplastic polymer (paragraph [0019] and corresponding Figure 5) and depositing the absorbent core (blend of fluff and superabsorbent particles) thereupon. The second layer of the core wrap sheet is manufactured by either folding the extending parts of the first layer of the wrap sheet over the absorbent core and thus encasing it or by pre-forming and subsequently unrolling the second layer over the absorbent core. Inevitably, the absorbent material has to be encased by sealing the core wrap at least once using adhesive, heat or pressure, or ultrasonically (paragraph [0022]).

3.3 The feature distinguishing the claimed subject-matter from this specific embodiment in D7 is the sequence of the steps for manufacturing the absorbent core wrap as defined in the characterising portion of claim 1 of the

patent in suit. In this characterising portion it is specified that a stabilization layer has to be provided by melt spraying resin fibres onto the absorbent core and onto the first and second edge portions of the containment layer which extend outwardly from opposing edges of the absorbent core.

- 3.4 Accordingly, the objective technical problem to be solved is the simplification of the manufacturing process relating to the wrapping of the absorbent pad and an associated reduction of costs.
- 3.5 This problem is solved in the patent in suit by combining a pre-formed wrap layer and the absorbent core and subsequently melt spraying resin fibers onto the absorbent core to establish a further wrap layer which encases the absorbent core between the first (pre-formed) wrap layer and the sprayed wrap layer. The advantage of this sequence of steps is that the step of sealing the wrap layers is omitted, as encasing takes place simultaneously by spraying the fibres beyond the width extension of the absorbent core. No further step of gluing or bonding is necessary, which reduces production time and costs.
- 3.6 When starting from the embodiment shown Figure 6 of D7, and trying to simplify the manufacturing technique of such an article, the skilled person would recognize that D3 provides a solution exactly to these problems.
- 3.7 D3 discloses the forming of the wrap layers of the absorbent core - at least partly - *in situ* and thus to avoid an additional sealing step. The aim in D3 is disclosed as being to produce the absorbent pad less

expensively and more efficiently (page 2, lines 46, 53). Figure 1 of D3 shows the spraying of hot-melt fibres directly and simultaneously on the upper and lower side of the absorbent core (as a facing and as a backing) whereas Figure 2 of D3 shows the alternative which is to use such a spray application on one side only. The sprayed resultant wrap layers may perform as a facing, backing, or both (page 8, lines 40 - 44). By way of example spray application on the facing is depicted in Figure 2. In such case of only one-sided hot-melt spray application, the further wrap layer is pre-formed and extends beyond the absorbent core in order to enable the encasing of the absorbent core when applying the sprayed fibres.

- 3.8 Hence, when trying to improve the manufacturing arrangement of D7 with regard to simplification and costs, the skilled person would take into account all these three possibilities (spray arrangement for both wrap layers and spray arrangement for either of the two wrap layers) and use them in accordance with the prevailing circumstances.
- 3.9 The respondent's argument that only the manufacturing method as shown in Figure 1 of D3 would be considered, referring to the application of spray to both surfaces of the absorbent core, is not convincing.
- 3.10 D3 points to the alternatives of either the application to both surfaces - Figure 1 - or the application to one surface - Figure 2 - with the same emphasis. Moreover, the description directly refers to the fact that any of the two wrap layers can be formed by spraying (page 8, lines 40 - 44). Therefore, all three alternatives are

equally likely to be used, depending only on the desired properties of the core layers.

- 3.11 The skilled person starting from the embodiment shown in Figure 6 of D7 and desiring to provide a simpler and cheaper processing arrangement for the central absorbent pad would immediately arrive at the product of claim 1 because inevitably the effect of melt-spraying resin fibres on the core is that the fibres of the stabilization layer conform to and mechanically bond to the fluff fibres of the core.
- 3.12 As to the latter point, the respondent argued that D3 would teach away from the claimed features as the polymer microfibers should be cooled before coating the absorbent core. Accordingly, the claimed tackiness and deformability of the fibres of the stabilization layer would not be obtained and the fibres of the stabilization layer could not conform to and mechanically bond to the cellulosic fibers in the absorbent core as claimed.
- 3.13 However, D3 refers on page 5, first paragraph to the melt blown process and specifies that the filaments of the molten microfibers are deposited on a desired substrate (i.e. the absorbent core) "*when still in a substantially molten state or after some cooling, depending on the microfibers and desired use*" [emphasis added]. Accordingly, whether a degree of cooling should be applied is optional and depends on the desired use.
- 3.14 In accordance with the aim of encasing the absorbent core efficiently, the encasing is effected by the bonding of the melt-sprayed fibres to the edges of the

containment layers. Such bonding only can be achieved by maintaining the melt-sprayed fibers at a high enough temperature to ensure that such a bonding action takes place. Under these conditions, a certain degree of conforming and mechanically bonding of the fluff fibres of the absorbent core with each other and with the resin fibers will inevitably occur. Accordingly, cooling below such a temperature is not desirable and the skilled person would avoid this happening - at least to the extent that the bonding action no longer took place.

3.15 Consequently, the subject-matter of claim 1 does not involve an inventive step (Article 56 EPC).

Order

For these reasons it is decided that:

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

The Registrar

The Chairman

M. Patin

P. Alting van Geusau