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**Datasheet for the decision  
of 14 February 2013**

**Case Number:** T 0537/12 - 3.2.06

**Application Number:** 04755163.5

**Publication Number:** 1635751

**IPC:** A61F 13/15

**Language of the proceedings:** EN

**Title of invention:**

Sanitary napkin for clean body benefit

**Patent Proprietor:**

THE PROCTER & GAMBLE COMPANY

**Opponents:**

KIMBERLY-CLARK WOLRDWIDE, INC.  
SCA Hygiene Products AB

**Headword:**

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**Relevant legal provisions:**

EPC Art. 123(2)

**Relevant legal provisions (EPC 1973):**

EPC Art. 83

**Keyword:**

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**Decisions cited:**

-

**Catchword:**

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Case Number: T 0537/12 - 3.2.06

**DECISION**  
of the Technical Board of Appeal 3.2.06  
of 14 February 2013

**Appellant:** THE PROCTER & GAMBLE COMPANY  
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**Decision under appeal:** **Decision of the Opposition Division of the  
European Patent Office posted 28 December 2011  
revoking European patent No. 1635751 pursuant  
to Article 101(3) (b) EPC.**

**Composition of the Board:**

**Chairman:** M. Harrison  
**Members:** M. Hannam  
W. Sekretaruk

## **Summary of Facts and Submissions**

I. The appellant (patentee) filed an appeal against the decision of the opposition division revoking European Patent No. 1 635 751, requesting that the decision of the opposition division be set aside and that the patent be maintained in an amended form on the basis of a main request or on the basis of one of auxiliary requests 1 to 9 filed with the grounds of appeal.

The opposition division had revoked the patent on the basis that it failed to disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

II. The respondents OI and OII (opponents OI and OII) both requested that the appeal be dismissed.

III. The Board issued a summons to oral proceedings including a communication containing its provisional opinion. In regard to all requests, the Board indicated that the requirement of Article 83 EPC 1973 appeared not to be met, since it was not clearly and sufficiently disclosed how to establish the elastic moduli of the facing layer and absorbent core of the claimed absorbent article.

IV. With letter of 31 December 2012, the appellant withdrew the main request and auxiliary requests 1 to 4, auxiliary request 5 becoming the new main request and the auxiliary requests 6 to 9 becoming the new auxiliary requests 1-4.

V. Oral proceedings were held before the Board on 14 February 2013.

During the oral proceedings, the appellant filed a new auxiliary request 1, the existing auxiliary request 1 being renumbered auxiliary request 1a. It requested that the decision under appeal be set aside and that the European patent be maintained on the basis of the main request dated 31 December 2012, or on the basis of auxiliary request 1, dated 14 February 2013 (filed during oral proceedings before the Board), or on the basis of one of auxiliary requests 1a, 2, 3 or 4, all dated 31 December 2012.

The respondents both requested dismissal of the appeal.

VI. Claim 1 of the main request reads as follows:

"An absorbent article in the form of a sanitary napkin comprising,

- a. a fluid permeable facing layer having a first elastic modulus;
- b. an absorbent core joined to the facing layer, the absorbent core having a second elastic modulus;
- c. a liquid impermeable backsheet joined to the facing layer; characterized in that:
- d. at equal strain from 1% to 5% the first elastic modulus is greater than the second elastic modulus, wherein the facing layer is joined to the absorbent core at substantially the entirety of their respective interfacial surfaces, and wherein the facing layer comprises a topsheet and a secondary topsheet, the absorbent article further comprising a pair of deep-embossed channels."

Claim 1 of auxiliary request 1 reads:

" An absorbent article in the form of a sanitary napkin comprising,  
a. a fluid permeable facing layer having a first elastic modulus;  
b. an absorbent core joined to the facing layer, the absorbent core having a second elastic modulus;  
c. a liquid impermeable backsheet joined to the facing layer; characterized in that:  
d. at equal strain from 1% to 5% a ratio of the first elastic modulus to the second elastic modulus is from 700:1 to 2000:1, wherein the facing layer is joined to the absorbent core at substantially the entirety of their respective interfacial surfaces, and wherein the facing layer comprises a topsheet and a secondary topsheet, the absorbent article further comprising a pair of deep-embossed channels, the channels defining an effective width."

Claim 1 of each of the auxiliary requests 1a, 2, 3 and 4 are based on claim 1 of the main request with the following additions respectively:

Auxiliary request 1a:

"the absorbent article further comprising a pair of longitudinally-oriented deep-embossed channels whereby the facing layer is embossed into the absorbent core";

Auxiliary request 2:

"the absorbent article further comprising a pair of eye-shaped, longitudinally-oriented deep-embossed

channels whereby the facing layer is embossed into the absorbent core";

Auxiliary request 3:

"the absorbent article further comprising a pair of eye-shaped, longitudinally-oriented deep-embossed channels whereby the facing layer is embossed into the absorbent core, wherein the channels each have an average depth dimension of at least 50% of the average caliper of the article";

Auxiliary request 4:

"the absorbent article further comprising a pair of eye-shaped, longitudinally-oriented deep-embossed channels whereby the facing layer is embossed into the absorbent core, wherein the channels each have an average depth dimension of at least 50% of the average caliper of the article" and "wherein a ratio of the first elastic modulus to the second elastic modulus is from 700:1 to 2000:1".

VII. The arguments of the appellant may be summarised as follows:

(a) Main request

At the claimed strain levels below 5%, it was irrelevant which elastic modulus test was applied, provided that the same test was applied to both materials. Below 5% strain, the materials used in sanitary napkins were within their elastic deformation ranges in both tension and compression. No evidence to the contrary had been supplied by the respondents which, according to T 499/00, was necessary to

establish insufficiency since the burden of proof lay with the opponents. As a result, the skilled person would choose the test most appropriate and, due to deformation out-of-plane issues with a compressive test with some very thin materials, the most appropriate test in such a case would be a tensile test. Furthermore, elastic modulus is a well understood parameter for the skilled person, who would thus be aware of how to measure it.

The opponents had not provided any evidence to show the different test conditions leading to anything more than a slight ambiguity with respect to the scope of the claim. Such ambiguities are a matter of clarity under Article 84 EPC (see T 1414/08). Sufficiency of disclosure is only in doubt if the ambiguity permeates the whole claim and deprives the skilled person of the promise of the invention (T 608/07).

Regarding the opponent's argument concerning application of the bending test and tensile test to a film and a batt of non-woven fibres, the conclusion from the comparison was invalid. The bending test required the area moment of inertia to be calculated for the sample in order to then calculate the sample's elastic modulus. As a result the alleged differences in elastic modulus would not be noted between the two material samples.

As the layers for which the elastic moduli were to be measured were in an assembled absorbent article, the skilled person would know how to separate out the layers without effecting the properties of the layers,

for example by warming or dissolving the bonding glue between the respective layers.

Regarding the application of a standard pressure to the tested components in order to establish a representative caliper thereof, contrary to other decisions where absolute elastic moduli were to be calculated, in the present case only relative values of elastic modulus were important. Thus a high level of precision in measuring the material thickness was not necessary and, therefore, any reasonable pressure, as would be understood by a skilled person, could be applied to each of the samples, providing this pressure was the same for each sample, without materially effecting the outcome.

The purpose of applying a pressure to a material for which the thickness was to be measured was simply to even out any irregularities. The skilled person would therefore not apply a pressure to significantly change the cross-sectional area.

Both materials for which the elastic moduli were measured could be non-wovens such that any effect of different applied pressures would cancel out.

(b) Auxiliary request 1

Regarding the basis for the amended claim, claim 1 was based on claims 1, 5, 6 and 7 as granted with the addition of a specific range for the elastic modulus ratio taken from paragraph [0045]. This paragraph was clearly a general disclosure of elastic modulus ranges which applied to all embodiments.



The higher ratios defined in claim 1 required a much lower degree of precision in measurement of the elastic modulus such that the skilled person would have no problems in carrying out the invention.

(c) Auxiliary requests 1a and 2-4

The arguments presented in support of the main request and auxiliary request 1 apply *mutatis mutandis* to these requests.

VIII. The arguments of the respondent OI may be summarised as follows:

(a) Main request

Through the lack of a specific test to establish the elastic moduli of the two claimed layers, a possible crossing-over of relative elastic moduli could result, dependent upon the test used. For example, an absorbent core comprising a batt of non-woven material would be easily deformed under tension whilst a facing layer comprising a film would not. The film would thus exhibit a greater elastic modulus than the batt, therefore meeting the requirement of claim 1.

Subjecting the batt to bending (in order to test its elastic modulus), however, it would resist bending whilst the film would easily deform, the batt thus exhibiting a greater elastic modulus than the film, therefore not meeting the requirement of claim 1.

Depending on the test used to measure elastic modulus, therefore, the same manufactured article may or may not fall under the scope of claim 1.

The respondents did not need to file any evidence to support their arguments on this matter, since it was immediately evident that different results would be obtained depending on the test.

The application of different pressures when testing the facing layer and absorbent core to determine thickness would result in different remaining thickness leading to significant differences in elastic moduli.

(b) Auxiliary request 1

The requirement of Article 123(2) was not met because there was no basis in the originally filed application for a combination of the specific absorbent article features with the claimed range.

The introduction of a defined range for the ratio of elastic moduli did not overcome the need for a specific test to be indicated for measuring the elastic moduli.

(c) Auxiliary requests 1a and 2-4

These requests all lacked sufficiency for the same reasons as those given for the main request

IX. The arguments of the respondent OII may be summarised as follows:

(a) Main request

The patent in suit allowed any suitable test method to be used in establishing the elastic modulus. However

different test methods would provide different relative results. No method of measuring thickness was stated in the patent at all.

Separating out the two components of the absorbent article in order to measure their elastic moduli would damage the basic materials as a result of breaking the bonding between the layers. No instructions were contained in the patent as to how the layers might be separated.

(b) Auxiliary request 1

The objections raised regarding Article 83 EPC for the main request have not been overcome by the amendments to claim 1.

(c) Auxiliary requests 1a and 2-4

None of the amendments overcame the objections made for the main request such that these arguments still applied.

## **Reasons for the Decision**

1. Main request - Article 83 EPC 1973

Of the many objections raised against the main request under Article 83 EPC 1973, the Board considers the following to represent the two key issues:

a. The European patent fails to disclose which of three possible tests disclosed in the patent for determining the elastic modulus of a material is to be

applied: the tensile test, the compression test or the bending test; and

b. The European patent fails to disclose the pressure to be applied to the individual material layers in order to enable a representative material thickness to be measured.

#### 1.1 Test to be applied

The appellant argued that elastic modulus was not an unusual parameter and therefore no specific test for measuring it need be described in the patent. As is explained below, however, the Board is convinced that, in the present case, a specific test for measuring elastic modulus is necessary.

Starting from the premise that strains below 5% represent a region of elastic deformation for the material layers in the claimed absorbent article, it is not, contrary to the opinion expressed by the appellant, a natural consequence that the materials would record the same elastic modulus when measured in both tension and compression. In the case of engineering materials, this would indeed be expected to be the case; however the materials typically used in sanitary napkins, even under elastic deformation, frequently display anisotropic behaviour. Considering, for example, an absorbent core according to the embodiment in [0044] of the patent, this comprises disintegrated pulp formed into a low density core. Under tension, at strains below 5%, the necessary extension force would primarily be orienting the fibres within the core. Under compression, again at strains below 5%, the compressive force would primarily be

moving the fibres closer together and filling any spaces between the fibres, or bending the fibres into a closer orientation. It is thus self-evident from a technical point of view that different forces in tension and compression would be required in order to overcome the very different resistance to movement of the fibres of the core under tension and compression for a given strain.

Decision T 499/00, cited by the appellant, concerns an example in the patent being repeated exactly as described without obtaining exactly the results claimed in the patent. In that case, the burden of proof regarding inability to carry out the invention had not been discharged from the opponent. However, this decision has no bearing on the current issue as, in the present case, it is not possible for the skilled person to even establish whether he has an article meeting the results claimed in the patent; not knowing which test for elastic modulus to use results in the skilled person being unable to produce a single representative elastic modulus measurement at all with any confidence.

The example given by respondent OI, with an absorbent core comprising a batt of non-woven material and a facing layer comprising a film, appropriately illustrates the difference in perceived elastic modulus between measurement of the component elastic moduli under tension and bending. The Board finds that this comparison supports its view that the exact method of elastic modulus measurement is indeed important for the skilled person to be able to carry out the invention, since the measurement of elastic modulus of the anisotropic materials of the sanitary napkin would

provide different values whether measured under compression or tension.

When bending samples it is noted that the bending stiffness is equal to the product of elastic modulus and area moment of inertia. From this observation, however, it does not follow that the presence of the area moment of inertia in calculating the elastic modulus with the bending test would negate the differences in elastic modulus dependent on direction of measurement identified by respondent OI above. Whilst theoretically the same value of elastic modulus should be measurable regardless of the method of testing used, the skilled person would realise this is not the case due to the anisotropic behaviour of the components of the absorbent article. Whether measured in tension, compression or bending, different results of elastic modulus would be expected for at least the absorbent core, which due to its fibrous construction, would be causing very different movement of the fibres whether under tension, compression or bending.

Regarding the appellant's assertion that the skilled person would naturally select the tensile test for the materials used in a sanitary napkin, no restriction of this nature is indicated in the patent documents, with paragraph [0045] explicitly stating that any of compressive test, tensile test or bending test can be used to determine the elastic modulus. The invention defined by claim 1 was also notably not limited to any one of these tests.

The Board sees a further difficulty in establishing a representative measurement of elastic modulus due to

the need to separate out the facing layer and absorbent core from the absorbent article for testing when, according to claim 1, these components are "joined ... at substantially the entirety of their respective interfacial surfaces". No indication is provided in the patent as to how a separation of facing layer and absorbent core should be achieved in order that an appropriate modulus test could be carried out. Whether joined by gluing or some other method of bonding, it is questionable whether the separation could be achieved without damaging or altering the components, thus resulting in a measured elastic modulus different from that exhibited by the components in the assembled absorbent article which is the state in which the elastic modulus is claimed.

The appellant argued that the calculated elastic moduli resulting from the different tests would result in nothing more than a slight ambiguity with respect to the scope of the claim. According to T 1414/08 such an ambiguity was an issue of clarity rather than sufficiency of disclosure. Furthermore, any alleged ambiguity must be proven to permeate the entire claim for sufficiency of disclosure to be in doubt (T 608/07) which was not the case here. The Board notes, regarding T 1414/08, that the ambiguity related to an uncertainty as to the actual end values of a range for a parameter mentioned in the claims. In contrast, the present case does not simply concern the accuracy of measurement of the end values of a range, rather it concerns the accuracy of measurement across the entire claimed range. Since, according to claim 1, the first elastic modulus simply has to be greater than the second elastic modulus, accuracy of measurement of the elastic moduli

is important across the full range of possible elastic moduli. As a result the conclusions drawn in T 1414/08 and T 608/07 do not apply to the present case.

The Board thus finds that the skilled person would be unable, based on the guidance given in the patent, and on the basis of his common general knowledge, to objectively establish which test, tensile, compression or bending, to apply when testing the material layers of the sanitary napkin for their elastic moduli.

#### 1.2 Applied pressure for thickness measurement

According to claim 1, the absorbent article is characterised in that at equal strain from 1% to 5% the first elastic modulus is greater than the second elastic modulus. In order for the elastic modulus of a component to be calculated, a thickness of the component needs to be known. As is well known to the person skilled in the field of absorbent articles, in order to measure a component thickness and eliminate surface irregularities on the component, a certain pressure must be applied to the component in order to allow a representative thickness to be measured. There is no disclosure in the patent of a pressure to apply to components for which thickness is to be measured.

The arguments of the appellant assume that the effect of different pressures on the materials being measured for thickness are negligible due to a degree of imprecision in the claim being acceptable. However, in claim 1 the first elastic modulus has simply to be greater than the second. As this condition can include a first elastic modulus only very slightly greater than



the second (by a fraction of 1%, for example) the Board finds that such imprecision, as argued by the appellant, is inappropriate for the potentially small differences between the measured elastic moduli claimed.

In fact, the lack of defined pressure applied to the materials at the time of thickness measurement has a much wider reaching effect upon the calculated elastic moduli. Considering a particular applied pressure, this will have a much more significant effect on the material thickness the more compliant to pressure the material. As a result, the remaining material thickness (and thus cross-sectional area for the calculation of the stress) will vary widely with pressure for the compliant materials, less so for the materials resistant to pressure. As a result, depending on the pressure selected, widely varying thicknesses and thus elastic moduli for the compliant materials can result. The Board thus concludes that the applied pressure is a crucial factor to be defined in order for the elastic moduli of these materials to be calculated and thus for the skilled person to establish whether the measured materials are appropriate when attempting to arrive at the invention defined by claim 1.

The appellant argued further that the purpose of applying a pressure to a material for which the thickness is to be measured is simply to even out any irregularities, and that the skilled person would therefore not apply a pressure to significantly change the cross-sectional area. True as this might be, it is pointed out that the skilled person is given no guidance at all in the patent as to what pressure could

be applied. Whilst intending to simply even out any irregularities in the material, the pressure selected by the skilled person to achieve this could still vary significantly. As discussed above, a compliant material, such as an absorbent core, will depress significantly differing amounts even with small changes in pressure and the resultant change in cross-sectional area would thus significantly effect the calculated elastic modulus. This is well-established in the area of absorbent product materials. At the limit of the claimed elastic modulus comparison where the moduli are only a fraction of a percent different, the effect of even a very small difference in applied pressure when measuring thickness could thus make the difference between a material combination fulfilling the relationship in claim 1 or not, and thereby as to whether a skilled person knows if he has carried out the invention or not.

Regarding the appellant's argument that both materials for which the elastic moduli are measured can be non-wovens such that any effect of different applied pressures would cancel out, the Board notes that this restriction to material type is not to be found in the claim. The facing layer could equally well be a film which, when assembled in combination with a non-woven absorbent core, would provide very different responses to applied pressure for caliper measurement.

The Board furthermore notes that in claim 1 the facing layer comprises a topsheet in combination with a secondary topsheet (see also [0013] of the patent in suit). The measured caliper of such a combined facing layer would be dependent on the exact material used for

each individual layer, the measured caliper varying according to each layer's individual response to the applied pressure and according to the interaction of one layer with the other. The applied pressure would thus be of fundamental importance for allowing the skilled person to establish a representative cross-sectional area of the sample being measured.

The Board thus finds that the skilled person would be unable, based on the disclosure in the patent, to objectively establish what pressure is to be applied to the individual material layers in order to enable a representative material thickness to be measured.

- 1.3 The Board thus concludes that the European patent fails to disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

The main request is thus not allowable.

2. Auxiliary request 1

- 2.1 Article 123(2) EPC

Claim 1 is based on a combination of claims 1,2,4,5,6 and 7 of the PCT publication, with the lower ratio of elastic modulus amended based on a preferred ratio disclosed on page 12, lines 4-6 of the PCT publication.

Regarding respondent OI's argument that the claimed range was not disclosed in combination with the physical features of claim 1, the Board refers to the paragraph bridging pages 11 and 12 of the PCT

publication. Here, elastic modulus, various tests for measuring elastic modulus, rates of strain and elastic modulus ratios for the facing layer with respect to the absorbent core are discussed as a general disclosure, not specifically in relation to any particular embodiment of the invention. The Board thus regards the specific values of elastic modulus ratio given in this paragraph as applicable to any embodiment of the invention. As a result the skilled person would regard this paragraph as providing a clear and unambiguous basis for a combination of any two of the specifically mentioned elastic modulus ratios and that these ratios could be combined with any specific embodiment of the invention. In claim 1, this specific embodiment is defined through a combination of claims 1,2,4,5,6 and 7 of the originally filed PCT publication.

The Board thus finds the subject matter of claim 1 meets the requirement of Article 123(2) EPC.

## 2.2 Article 83 EPC 1973

The only difference between claim 1 of the main request and claim 1 of auxiliary request 1, as regards the previous objection in respect of Article 83 EPC 1973, is the defining of a range for the first elastic modulus to the second elastic modulus as being from 700:1 to 2000:1. The appellant did not contest that this was the case. The question to be answered is thus whether this change has overcome the objections which led to the main request being found not to meet the requirement of Article 83 EPC 1973.

Regarding point 1.1 above and the failure of the patent to define the test to be applied for measuring the elastic modulus, the amendment to define a range for the elastic moduli ratio has not overcome this objection. The argument of the appellant regarding the specifically defined ratio range requiring a much lower degree of precision in elastic modulus measurement is unconvincing, since it remains insufficiently clear whether to use the tensile, compression or bending test when establishing the elastic moduli of the facing layer and the absorbent core. As explained in point 1.1 above, the different tests can be expected to produce significantly different results of elastic modulus. It is to be noted that the appellant has provided no evidence that the defined ratio range of claim 1 lies outside the possible spread of elastic modulus ratios achieved with the different tests. Therefore, even with the defined ratio range included in claim 1, the Board concludes that, at least *prima facie*, the objection of insufficiency has not been overcome. Further, this claim now requires the determination of not only a comparative difference in elastic moduli, but a specific value of the ratio of elastic moduli; absent details of how any test might be performed on the layers of the article, it is insufficiently disclosed to a skilled person how he can arrive at the claimed invention.

The auxiliary request 1 is thus at least *prima facie* not allowable. According to Article 13(1) of the Rules of Procedure of the Boards of Appeal (RPBA) any amendment to a party's case after it has filed its grounds of appeal or reply may be admitted and considered at the Board's discretion. In the present

case, auxiliary request 1 was filed during oral proceedings and represents an entirely new request previously not on file. The Board thus finds this request to represent a change of the appellant's case and, with auxiliary request 1 being at least *prima facie* not allowable, for reasons of procedural economy the Board exercises its discretion in not admitting the request into the proceedings (Article 13(1) RPBA, second sentence).

3. Auxiliary requests 1a, 2, 3 and 4

3.1 Claim 1 of auxiliary requests 1a, 2 and 3 are based on claim 1 of the main request and each contain further features having no bearing on the objections under Article 83 EPC 1973 maintained against claim 1 of the main request.

These requests are thus not allowable for the same reasons as apply to claim 1 of the main request. It was also not contested by the appellant that any further reasons for overcoming the objections under Article 83 EPC 1973 would apply to the inventions defined by the claims of these requests when compared to claim 1 of the main request.

3.2 Claim 1 of auxiliary request 4 is based on claim 1 of auxiliary request 3 with the addition of the specifically defined elastic modulus ratio range as included in auxiliary request 1. For the same reasons therefore as given for claim 1 of auxiliary request 1, claim 1 of auxiliary request 4 fails to meet the requirement of Article 83 EPC 1973. The appellant again did not contest that any further reasons for overcoming

the objections under Article 83 EPC 1973 would apply to the invention defined in this request when compared to claim 1 of auxiliary request 1.

Auxiliary request 4 is thus not allowable.

**Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar

The Chairman

M. Patin

M. Harrison