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**Datasheet for the decision  
of 15 July 2010**

**Case Number:** T 1123/08 - 3.2.05

**Application Number:** 01113215.6

**Publication Number:** 1160379

**IPC:** D21J 3/00

**Language of the proceedings:** EN

**Title of invention:**  
Paper for use in molding

**Patentee:**  
OJI PAPER CO., LTD.

**Opponent:**  
Stora Enso AB

**Headword:**  
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**Relevant legal provisions:**  
EPC Art. 54, 56, 83

**Relevant legal provisions (EPC 1973):**  
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**Keyword:**  
"Late filed documents (not admitted)"  
"Novelty (main request, no ; auxiliary request, yes)"  
"Sufficiency of disclosure (yes)"  
"Inventive step (auxiliary request 1, yes)"

**Decisions cited:**  
T 0094/82

**Catchword:**  
-



Case Number: T 1123/08 - 3.2.05

**D E C I S I O N**  
of the Technical Board of Appeal 3.2.05  
of 15 July 2010

**Appellant:** Stora Enso AB  
(Opponent) S-791 80 Falun (SE)

**Representative:** Forstmeyer, Dietmar  
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**Respondent:** OJI PAPER CO., LTD.  
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**Decision under appeal:** Decision of the Opposition Division of the  
European Patent Office posted 16 April 2008  
rejecting the opposition filed against European  
patent No. 1160379 pursuant to Article 101(2)  
EPC.

**Composition of the Board:**

**Chairman:** W. Zellhuber  
**Members:** P. Michel  
E. Lachacinski

## Summary of Facts and Submissions

- I. The appellant (opponent) lodged an appeal against the decision of the Opposition Division rejecting the opposition filed against European Patent No. 1 160 379.
- II. Oral proceedings were held before the Board of Appeal on 15 July 2010.

The appellant requested that the decision under appeal be set aside and that the patent in suit be revoked in its entirety. He further requested that the late filed documents E12 to E21 be admitted into the proceedings.

The respondent (patent proprietor) requested that the decision under appeal be set aside and that the patent in suit be maintained on the basis of claims 1 to 16 of the main request, or on the basis of claims 1 to 16 of auxiliary request 1, both requests filed during the oral proceedings. He further requested that the late filed documents E12 to E21 not be admitted into the proceedings. All other requests were withdrawn.

- III. The following documents are referred to in this decision:

- E1: Fellers et al, "Carton Board, Profitable use of pulps and processes", Swedish Forest Products Research Laboratory, Stockholm, Sweden 1983, pages 37-38, 55-57, 110, 161-169
- E2: Paperboard Reference Manual, Iggesund Paperboard AB, Växjö 1993, pages 95, 100, 106, 181, 184, 218-222

- E3: JIS P 8113, 1998, Paper and board - Determination of tensile properties
- E5: Papermaking Science and Technology, Book 16, Paper Physics, Fapet Oy, 1998, pages 105, 139, 160, 161, 204, 206, 207 and 214
- E7: Enso Performa, Enso product brochure, Enso Cartonboards Oy Ltd.,
- E12: Study Report, Determination of properties of various paper qualities, by Claes Åkerblom of Stora Enso
- E13A to E: Invoices documenting the selling of Enso Performa papers
- E14: Enso Performa product specifications
- E15: DE-A-195 09 863
- E16: Paper Testing Report, Duplex NC 80 mN, Stora Enso
- E17: Declaration of Isto Heiskanen together with exhibits CA 1 and CA 2
- E18: Declaration of Claes Åkerblom together with exhibit CA 3
- E19: Declaration of Linda Johansson
- E20: Declaration of Erja Karjalainen
- E21: Excerpts from the thesis of Kimmo Nevalainen, Tampere University of Technology
- E21A: English translation of passages of E21

IV. Claims 1, 3 and 15 according to the main request read as follows:

"1. A molding base paper satisfying the following conditions (1) to (4):

- (1) a tensile strength (JIS-P 8113) of at least 2.0 kN/m,
- (2) an elongation at break (JIS-P 8113) of at least 1.5%,

- (3) a critical compression stress, defined by the following formula, in the range of 1 to 10 MPa:

$$\text{critical compression stress} = A/B$$

wherein A represents the compression strength determined by JIS-P 8126, and B represents the area of loaded part of the test piece in the determination of the compression strength, and

- (4) an amount of compression deformation, caused by applying compression stress of 20 kgf/cm<sup>2</sup> in thickness direction, of at least 10%."

"3. A molding base paper comprising a high density layer and a low density layer, wherein said high density layer has a density of 0.7 to 0.9 g/cm<sup>3</sup> and said low-density layer has a density of lower than 0.7 g/cm<sup>3</sup>, and wherein said base paper has a basis weight of 100 to 500 g/m<sup>2</sup> and a density of 0.5 to 0.65 g/cm<sup>3</sup>."

"15. A molded paper vessel obtainable from the molding base paper according to claims 1 to 14 by drawing."

Claims 1 and 3 of auxiliary request 1 are identical with claims 1 and 3 of the main request. Claim 15 is amended to read as follows:

"15. Use of the molding base paper according to claims 1 to 14 for obtaining a molded paper vessel by drawing."

V. In the written and oral proceedings, the appellant has argued substantially as follows:

The late filed documents relate to the paper boards disclosed in document E7 and demonstrate that these boards anticipate the subject-matter of claim 1. Document E12 refers to the specification dated 10.98, and document E17 confirms that the product properties of Enso Performa papers have not altered since 1996.

The late filed documents should accordingly be admitted into the proceedings.

Claim 1 is merely characterised by parameters without any indication of the structure or chemical composition of the paper. It thus merely constitutes an invitation to carry out tests. In accordance with decision T 94/82, the use of parameters is only allowed in exceptional cases in which the subject-matter of the claim cannot be defined in any other way. In the present case, the subject-matter of the claim can be defined in other ways, as evidenced by claim 3.

The patent in suit does not provide instructions for carrying out the invention over the whole range defined by claim 1, the examples merely providing a few instances. The claim covers a vast number of papers, including single- and multi-layer papers, from any pulp, with or without the use of chemicals (see paragraph [0050], and with or without a filler. Comparative example 1-1 (paragraph [0154]) uses the same materials and production method, but does not exhibit the desired properties. In addition, there is no teaching as to how

to produce a single ply paper having the specified characteristics.

The specification thus does not provide adequate guidance which would teach the person skilled in the art to produce papers satisfying the parameters of claim 1 without trial and error resulting in an undue burden.

The instructions as to the measurement of the specified parameters are also inadequate.

As set out in document E3 under point 6 on pages 4 and 5, the test piece can have various widths, the choice of width having a great influence on the result. If a width of 15.0mm is intended, this should have been specified in the claim, since it is essential that the scope of the claim is apparent from the claim language.

In Examples 1-2 to 1-4, only one value for the tensile strength and elongation at break is given for both the machine and cross directions. Paragraph [0078], referring to a crack preventing layer claimed in claim 7, refers to an elongation at break of at least 5% "in at least one direction". In the absence of any other teaching, it must be assumed that one direction is sufficient.

The requirement of sufficiency of disclosure is thus not satisfied.

The closest prior art is represented by document E2, which discloses a paper board suitable for deep drawing (see pages 218 and 219). All the problems allegedly

solved by the present invention have already been solved in the art. The skilled artisan would automatically arrive at the claimed invention by routine optimization.

The subject-matter of claims 1 and 3 thus lacks an inventive step.

VI. In the written and oral proceedings, the respondent has argued substantially as follows:

It has not been shown that there is a link between documents E12 and E7. Further, publication of document E7 has not been established.

There is no indication that document E21 was published.

The late filed documents should accordingly not be admitted into the proceedings.

The use of parameters in claims is generally allowable. Claim 1 refers to parameters which are routinely used in the art. The person skilled in the art knows how to achieve, for example improved strength, by the selection of appropriate fibres. The description of the patent in suit at paragraphs [0044] to [0048] provides instructions for controlling the specified properties.

Following the instructions given in document E3 under point 6, a test piece width of 15.0mm would be used in accordance with paragraph [0158] of the patent in suit.



It is clear from the comparative examples set out in Table 2 of the patent in suit that the specified parameters must be satisfied in both directions.

The disclosure of the patent in suit is thus sufficient to enable the invention to be put into practice.

Document E2 does not contain any information regarding the physical properties of the paper which would render it suitable for drawing.

The subject-matter of claims 1 and 3 thus involves an inventive step.

## **Reasons for the Decision**

### **1. Late filed documents**

- 1.1 Documents E12 to E14 were filed in the proceedings before the opposition division after expiry of the opposition period, approximately one month before oral proceedings before the opposition division. Documents E16 to E21A were only filed in the present appeal proceedings.

Documents E12 to E14 and E16 to E20 relate to an allegation of prior use of three papers: Enso Performa 180 g/m<sup>2</sup>, Enso Performa 295 g/m<sup>2</sup>, and Duplex NC 80 mN. The opposition division decided not to admit the documents into the proceedings, noting that the allegation of prior use concerns products of the appellant, and that documents E12 to E14 were filed so

late that the patent proprietor did not have sufficient opportunity to respond properly to their content.

Whilst document E7 was filed with the notice of opposition, this was merely in the context of an argument of lack of inventive step in combination with document E5. There was no suggestion that this document was concerned in any way with an allegation of prior use. Thus, the suggestion that the subsequent filing of arguments and evidence relating to prior use of the three papers was merely an amplification of an earlier submission cannot be accepted.

It is stated in document E12 that the Enso Performa 180 g/m<sup>2</sup> and 295 g/m<sup>2</sup> papers were produced according to a specification dated 10.98. This implies that some change to the production method was made in October 1998. Document E14 also refers to this specification. On the other hand, document E17 states that the product properties of the Enso Performa series have not been altered since 1996. In view of these inconsistencies, it cannot be assumed on the basis of the evidence available to the Board, that the papers referred to in document E7 had the properties found in document E12.

It is further noted, cf. document E12, page 2, that, for the Enso Performa 180 g/m<sup>2</sup> and Duplex NC 80 mN papers, the value for the critical compression strength in the machine direction is outside the range specified in claim 1 of the patent in suit.

There is thus reason to doubt that papers having the properties specified in claims 1 and 3 were, in fact,

made available to the public before the priority dates of the patent in suit.

In addition, the allegations of public prior use relate to papers produced by the appellant. There is no good reason as to why the allegation of prior use was not introduced during the opposition period.

Document E21 is a master's thesis, which was sponsored by the appellant, and bears the date August 1997. There is, however, no evidence as to whether the document was made available to the public before the priority dates of the patent in suit.

The Board is thus of the opinion that the opposition division correctly decided not to admit the late filed documents E12 to E14 and that these documents, as well as documents E16 to E21A, should not be admitted into the present proceedings.

2. Main Request

2.1 Novelty of claim 15

Claim 15 is directed to "a molded paper vessel obtainable from the molding base paper according to claims 1 to 14 by drawing". Molded paper vessels obtained from a base paper by drawing are well known in the art. Therefore, any novelty of the claimed vessel must derive from it being possible to distinguish a vessel made from a paper having the physical properties specified in claims 1 or 3 from a vessel made from another paper. However, during the drawing process, the physical properties of the paper will be affected, so

that it is not possible to ascertain from an examination of a molded paper vessel with any degree of certainty whether or not it was formed from a paper as claimed in claims 1 or 3.

The subject-matter of claim 15 is thus not new.

3. Auxiliary request 1

3.1 Sufficiency of disclosure

In order to carry out the invention as defined in claim 1, the person skilled in the art must be capable of carrying out the specified test methods to establish the tensile strength, elongation at break, critical compression strength and compression deformation, and adjusting the conditions of manufacture of the paper in order to achieve the four specified conditions, without necessitating trials involving an undue burden.

3.1.1 Use of parameters

It was held in decision T 94/82, that the requirement of clarity may be fulfilled in a claim to a product, when the characteristics of the product are specified by parameters related to the physical structure of the product, provided that those parameters can be clearly and reliably determined by objective procedures which are usual in the art. In such a product claim, it suffices to state the physical properties of the product in terms of parameters, since it is not mandatory to give instructions in the claim itself as to how the product is to be obtained. The description must, however, fulfil the requirements of Article 83

EPC and thereby enable the person skilled in the art to obtain the claimed product.

It is not accepted that the presence of claim 3 indicates that the invention could be defined without the use of parameters, since the two independent claims are of differing scope.

In the present case, claim 1 remains unamended as compared with claim 1 as granted, so that it is necessary to consider only the question of whether or not the description of the patent in suit is enabling.

### 3.1.2 Test methods

Paragraphs [0158] to [0161] of the patent in suit describe the test methods to be used to ascertain the four parameters specified in claim 1. In addition, claim 1 indicates that tensile strength and elongation at break are measured in accordance with JIS-P 8113 (document E3).

As far as the methods for determining tensile strength and elongation at break are concerned, it was suggested that the person skilled in the art would be unable to know what width to select for the test pieces. However, paragraphs [0158] and [0159] specify that a width of 15 mm is used, which is in accordance with section 6 of document E3. Whilst document E3 notes that widths of 25 and 50 mm may also be used in particular cases as an alternative to 15 mm, this would not induce the person skilled in the art to depart from the teaching of the patent in suit.

Examples 1-2, 1-3 and 1-4 of Table 2 of the patent in suit provide only one value for tensile strength, elongation at break and critical compression strength. In view of this, doubt was cast as to whether the values specified in claim 1 must be satisfied only in one of the machine and cross directions, or in both directions. However, Comparative Examples 1-1 and 1-2 in the same table make it clear that if the value of the elongation at break falls below the value specified in claim 1 in only one of the directions, the paper is considered not to be in accordance with the invention. Thus, the skilled person would come to the conclusion that the values specified in claim 1 must be satisfied in both directions.

The patent in suit thus contains sufficient information to enable the person skilled in the art to carry out in a repeatable manner the test methods specified in claim 1.

### 3.1.3 Manufacturing process

Examples 1-1 to 1-4 of the patent in suit provide four examples of molding base papers satisfying the parameters of claim 1, for which the method of manufacture is adequately described. In addition, methods of controlling the manufacturing process in order to produce papers having the parameters specified in claim 1 are described in the patent in suit in paragraphs [0044] to [0049]. Thus, paragraph [0044] refers to the use of a paper strength additive, so that a paper having an inadequate tensile strength could be improved by the use of such an additive. Paragraph

[0035] suggests that, alternatively, a pulp having longer fibres could be used.

It is correct that the patent in suit does not provide any guidance as to the manufacture of a single ply paper satisfying the parameters of claim 1. In fact, paragraph [0044] suggests that a multi-ply paper is advantageous. The Board does not, however, possess any evidence that it is not possible to manufacture a single-ply paper satisfying the criteria of claim 1 on the basis of the disclosure of the patent in suit without undue burden, so that it is not considered necessary that claim 1 should be restricted to a multi-layer paper.

Paragraph [0061] of the patent in suit merely states that a paper satisfying the conditions (1) to (4) (that is, the conditions specified in claim 1), can be prepared by the previously described method. The paragraph does not state that all papers satisfying the conditions specified in paragraphs [0056], [0058], [0059] and [0060] fall within the scope of claim 1.

- 3.1.4 There is thus no evidence to indicate that the person skilled in the art is not capable of manufacturing a paper satisfying the criteria specified in claim 1 without undue burden. The requirements of Article 83 EPC are thus satisfied.

### 3.2 Novelty

The subject-matter of claim 3 is distinguished over the disclosure of document E1 by virtue of the feature that the paper has a density of 0.5 to 0.65 g/cm<sup>3</sup>.

There is no indication that the three ply board disclosed in document E1 satisfies the parameters specified in claim 1.

The subject-matter of claims 1 and 3 is thus new.

### 3.3 Inventive Step

3.3.1 Document E2 represents the closest prior art. This document discloses the use of paperboard for drawing and at page 221 discloses that solid bleach board made from pure chemical pulp is suitable for deep drawing and that folding box board is suitable for drawing to form shallow shapes. There is, however, no further disclosure as to the physical parameters of the paperboard which would render it particularly suitable for molding.

3.3.2 The problem to be solved is thus regarded as being to provide a base paper which is suitable for molding.

3.3.3 Document E1 discloses a multi-ply carton board, and document E7 discloses packaging boards. There is, however, no indication in either of these documents that the boards could be suitable for molding. In addition, neither of the documents discloses a board having a density in the range of 0.5 to 0.65 g/cm<sup>3</sup>, as specified in claim 3, and there is no disclosure of a carton board having the parameters specified in claim 1. It is accordingly not necessary to consider the issue of whether or not document E7 was published before the priority date of the patent in suit.



3.3.4 The subject-matter of claims 1 and 3 thus involves an inventive step. Claim 15 relates to the use of a molding base paper as claimed in claims 1 to 14 for obtaining a molded paper vessel by drawing and thus similarly involves an inventive step. Claims 2 and 4 to 14 are directly or indirectly dependant from either or both of claims 1 and 3 and relate to preferred aspects of the molding base paper as claimed in claims 1 or 3. Claim 16 is dependant from claim 15 and relates to a preferred feature of the use of the molding base paper as claimed in claim 15. The subject-matter of these claims thus also involves an inventive step.

## Order

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

The decision under appeal is set aside.

The case is remitted to the department of first instance with the order to maintain the patent on the basis of the following documents:

#### Description:

Pages 2, 5, 7, 8, 12 to 25 of the patent specification,  
Pages 3, 4, 6, 9, 10, 11 and 26 received during oral proceedings,

#### Claims:

1 to 16 of auxiliary request 1 received during oral proceedings,

#### Drawings:

Sheets 30 to 36 of the patent specification.

The Registrar:

The Chairman:

D. Meyfarth

W. Zellhuber