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Datasheet for the decision of 2 June 2025

Case Number: T 1536/23 - 3.3.09

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IPC: B32B5/18, B32B5/20, B32B5/26, B32B7/02, B32B7/04, B32B7/12

Language of the proceedings: EN

Title of invention:
METHOD OF MANUFACTURING A LAMINATED PACKAGING MATERIAL, THE PACKAGING MATERIAL OBTAINED BY THE METHOD AND PACKAGING CONTAINERS MANUFACTURED THEREFROM

Patent Proprietor:
Tetra Laval Holdings & Finance S.A.

Opponent:
N.V. Nutricia

Headword:
Laminated Packaging Material/TETRA LAVAL

Relevant legal provisions:
EPC Art. 56, 83, 84, 123(2)

Keyword:

Amendments - added subject-matter (no)
Claims - clarity (yes)
Sufficiency of disclosure - (yes)
Inventive step - (yes)

Decisions cited:

G 0003/14, T 0455/92, T 1252/08, T 0541/09, T 0061/14, T 0373/17

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Case Number: T 1536/23 - 3.3.09

D E C I S I O N
of Technical Board of Appeal 3.3.09
of 2 June 2025

Appellant: (Opponent)	N.V. Nutricia Eerste Stationsstraat 186 2712 HM Zoetermeer (NL)
Representative:	Nederlandsch Octrooibureau P.O. Box 29720 2502 LS The Hague (NL)
Respondent: (Patent Proprietor)	Tetra Laval Holdings & Finance S.A. 70, Avenue Général-Guisan 1009 Pully (CH)
Representative:	Beck Greener LLP Fulwood House 12 Fulwood Place London WC1V 6HR (GB)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 7 July 2023 concerning maintenance of the European Patent No. 3380320 in amended form.**

Composition of the Board:

Chairman	A. Haderlein
Members:	C. Meiners
	A. Jimenez

Summary of Facts and Submissions

I. The appeal was filed by the opponent (appellant) against the opposition division's interlocutory decision finding that, on the basis of the sixth auxiliary request then on file (the current main request), the patent met the requirements of the EPC.

II. In its notice of opposition, the opponent had requested the revocation of the patent in its entirety based on the grounds for opposition under Article 100(a) (lack of inventive step), (b) and (c) EPC.

III. The following documents are relevant for the present decision:

D1 EP 1 117 869 B1

D2 US 2002/0127358 A1

D3 WO 2006/086754 A2

D4 Ashley et al., "Adhesives in Packaging", Int. J. Adhesion and Adhesives 15(2), 1995, 101-8

D5 WO 2011/003567 A2

D7 M. J. Kirwan, "Paper and Paperboard Packaging Technology", UK, Blackwell Publishing Ltd, 2005

D9 P. DeLassus, "Barrier Polymers", Kirk-Othmer Encyclopedia of Chemical Technology, Wiley Online Library, 18 October 2002, abstract, https://onlinelibrary.wiley.com/doi/full/10.1002/0471238961.0201181804051201.a01.pub2

IV. Wording of the relevant claims

Claim 1 of the main request reads as follows:

"Method of manufacturing a laminated cellulose-based liquid or semi-liquid food packaging material (10a), for heat sealing into packages having sufficient mechanical strength and barrier properties, as well as an attractive outside appearance, comprising the steps of

a) providing a web of a center module (lA) of bulk material comprising a cellulose spacer layer (lla), which has a density below 850 kg/m^3, and a grammage from 60 to 250 g/m^2, and is a containerboard material having a bending stiffness at least 30 % lower than the bending stiffness of a liquid carton paperboard, at a corresponding grammage when excluding the printable coating (clay-coat) grammage, and a Short Compression Test Index (SCT Index) value of at least 30 Nm/g in the machine direction (MD), as determined in accordance with ISO 9895 and ISO 536,

b) providing a web of an outside material module (1B), comprising a paper facing layer (12a) having a printable or printed surface directed towards the outer side of the module, and is laminated to the outside surface of the bulk material by an intermediate bonding layer or adhesive, the outside material module being intended for that side of the center module bulk material, which is to be directed to the outside of a packaging container made from the laminated packaging material,

c) laminating the outside of the web of the center module bulk material and the web of the outside material module to each other, by applying an aqueous adhesive composition at an amount from 0,5 to 4 g/m^2 to one of the surfaces to be laminated to each other and pressing them together,

d) adding the decor to the outside material module,

e) providing a web of an inside material module (1C), comprising a paper facing layer (13a) having a barrier coating (18a), the inside material module being intended for that side of the bulk material, which is to be directed to the inside of a packaging container made from the laminated packaging material,

f) laminating the web of the inside material module and the inside of the web of the center module bulk material to each other, by applying an aqueous adhesive composition at an amount from 0,5 to 4 g/m^2 to one of the surfaces to be laminated to each other and pressing them together,

g) applying an outermost, transparent and liquid-tight protective layer (16a) on the outside of the outside material module,

h) applying an outermost thermoplastic, liquid-tight and heat sealable layer (17a) on the inside of the inside material module,

i) thus obtaining a web of the laminated cellulose-based liquid- or viscous-food packaging material,

wherein the spacer layer (11a) constitutes the center of a sandwich structure within the laminated packaging material, the sandwich structure having at least one paper facing layer (12a) arranged on at least one side of the spacer layer and interacting with a further paper facing layer (13a) arranged on the other side of the spacer layer, the paper facing layer and the

further paper facing layer having significantly lower thickness and a higher Young's modulus than the spacer layer."

Claim 6 of the main request reads as follows:

"Method as claimed in any one of the preceding claims, wherein the barrier coating is a liquid-film coated oxygen barrier, comprising a polymer selected from the group consisting of vinyl alcohol-based polymers, such as PVOH or water dispersible EVOH, acrylic acid or methacrylic acid based polymers (PAA, PMAA), polysaccharides such as for example starch or starch derivatives, cellulose nanofibrils (CNF), nanocrystalline cellulose (NCC), chitosan or other cellulose derivatives, hemicelluloses, water dispersible polyvinylidenechloride (PVDC) or water dispersible polyesters, or combinations of two or more thereof."

Claim 7 of the main request reads as follows:

"Laminated packaging material obtained by the method as claimed in any one of claims 1-6."

Claim 8 of the main request reads as follows:

"Packaging container (30a; 30b; 30c; 30d) comprising the laminated packaging material as defined in claim 7."

V. The appellant's arguments relevant for the present decision can be summarised as follows.

- Claim 1 of the main request did not meet the requirement of Article 123(2) EPC in view of the

features relating to the paper facing layer and the bending stiffness. These features, disclosed in claims 9 and 10 as originally filed, imposed *additional* limitations over claim 1 as filed. They could thus not substitute the features deleted from original claim 1, namely the print substrate layer that had been replaced by a paper facing layer as specified in claim 10 as filed and "no or low inherent binding stiffness" replaced by a containerboard material having a bending stiffness as called for in claim 9 as filed.

- Claim 6 of the main request lacked clarity in relation to the feature "oxygen barrier". The level of oxygen barrier properties required was unclear, and the term inserted was also grammatically ambiguous. In addition, the subject-matter of claim 6 did not meet the requirement of Article 123(2) EPC.

- The subject-matter of claim 1 was insufficiently disclosed. The reference in claim 1 to the extraneous feature "liquid carton paperboard" was undefined. The stiffness of liquid carton paperboards varied widely. What was more, neither the claims nor the specification described a method of measurement for a containerboard material as claimed. In view of a lack of information in the patent on how to select suitable containerboard materials having the required bending stiffness, a skilled person would not be able to provide the web of a centre module comprising a cellulose spacer as called for in claim 1 without undue burden.

- The claimed subject-matter also lacked inventive step in view of Figure 1c of D5 as the closest prior art. The distinguishing features were the laminating of the outside material module using a specific amount of an aqueous adhesive composition and the laminating of the

inside material module using the aqueous adhesive composition. In view of the discussion on sufficiency, the nature of the containerboard was not a distinguishing feature. The objective technical problem was to provide an alternative method and product to D5. The solution was obvious in light of D1.

VI. The patent proprietor's (respondent's) arguments relevant for the present decision can be summarised as follows.

- Document D9 should not be admitted.

- The subject-matter of claims 1 and 6 of the main request met the requirement of Article 123(2) EPC. The expression "no or low inherent bending stiffness" covered the corresponding feature now claimed in claim 1. The objection to claim 6 was based on a misreading of the claim.

- The subject-matter of claim 6 was not unclear, and a list of oxygen barrier materials was provided in that claim. Any of these barrier coatings would have oxygen barrier properties to some extent.

- As regards sufficiency of disclosure, "containerboard material" was a well-defined term, and no evidence to the contrary had been provided by the appellant. In the discussion of inventive step, the appellant had also confirmed that the containerboard material of D1 inherently met the required bending stiffness.

- Regarding inventive step, the distinguishing features as established in the decision under appeal resulted in a high-quality liquid packaging material at reduced cost with an increased content of renewable material

and improved recyclability. The novel features contributed *together* towards the effects. The objective technical problem underlying the claimed subject-matter was an improvement. A skilled person would not abandon the teaching in D5 to use thermoplastic material in intermediary bonding layer 17 by applying e.g. the disclosure of D1 to D5. Hence, the claimed subject-matter was not obvious to a skilled person in view of D5 as the closest prior art.

VII. The appellant requested that the decision under appeal be set aside and that the patent be revoked.

The respondent requested that the appeal be dismissed as its main request. As an auxiliary measure, it requested that the patent be maintained on the basis of one of auxiliary requests 1 to 5 as filed with its reply to the statement of grounds of appeal.

Reasons for the Decision

1. Main request - amendments (Article 123(2) EPC)

1.1 Claim 1

1.1.1 Print substrate layer

The appellant essentially argued that the omission of the feature "print substrate layer" in claim 1 of the main request gave rise to added matter. The skilled reader was left to consider whether the print substrate layer and the paper facing layer could be fulfilled by one and the same layer. The claim drafter had clearly chosen for the broader case in claim 10 that the outside material module comprised at least a print

substrate layer *and also* a paper facing layer. Reference numerals could not be allowed to dictate the outcome of careful consideration (when assessing compliance with Article 123(2) EPC). The respondent's argument that including two print substrate layers was very unusual was irrelevant since patents were only awarded for very unusual subject-matter. Thus, a skilled person would not exclude a clearly worded feature merely because it seems unusual.

This line of argument is not convincing. In the application, the paper facing layer is a more specific embodiment of the generic print substrate layer (12a). The equivalence of the print substrate layer (12a) of claim 1 and the paper facing layer (12a) of claim 10 is supported by the teaching of the description as filed. Likewise, the board holds that it would be evident to a skilled person that the paper facing layer with *printable* or *printed* surface of original claim 10 is a preferred embodiment of the *print* substrate layer, with or without a decor pattern *printed* on or applied to it, of original claim 1.

In line with this, the reference numerals support, as an additional pointer, that both the print substrate layer (12a) of claim 1 and the paper facing layer (12a) of claim 10 as filed are technical equivalents and describe the same layer. The finding that claim 10 does not recite reference numeral 19b is not at odds with this conclusion. Reference numeral 19b would not be in line with the feature combination of claim 10 as filed since the layer (19b) is a *plastic*/*polymer* film and not a *paper* film. Layer (19b) is referred to e.g. on page 44, line 25. Hence, the disclosure of the claims is consistent in its use of reference numerals, reflecting the teaching of the application as filed.

The aforementioned amendment thus complies with the requirement of Article 123(2) EPC.

1.1.2 No or low inherent bending stiffness

The appellant submitted that the opposition division had erroneously held in its decision that the containerboard material mentioned in claim 9 as filed was a preferred option for the cellulose spacer layer recited in claim 1 as filed and that it could thus replace the deleted feature "no or low inherent bending stiffness" in claim 1 as filed. However, the removed feature of "no or low inherent bending stiffness" covered bending stiffness values from zero to an undetermined value for a cellulose spacer. Despite being undetermined, this upper limit of bending stiffness had still to be considered "low" by the skilled person. However, the bending stiffness called for in original claim 9 and now present in claim 1 covered values that were "30% lower than the bending stiffness of a liquid carton paperboard, at a corresponding grammage when excluding the printable coating (clay-coat) grammage". This bending stiffness called for in claim 9 as filed could cover any bending stiffness without limitation to low values. Claim 1 of the main request thus covered cellulose spacer layers having a non-low inherent bending stiffness and therefore extended beyond the content of the application as filed.

This line of argument is not persuasive. From the wording of claims 1 and 9 alone, it follows that the cellulose spacer layer and the *spacer layer* as specified in claim 9 are the same entity. For instance, the passage on page 16, lines 17 to 26 of the

application as filed sets out that containerboard materials have lower bending stiffness than corresponding paperboards for liquid packaging. This qualifies as "low inherent bending stiffness" within the meaning of claim 1 as filed. In this regard, the subject-matter of claim 9 specifies the corresponding rather vague attribute in claim 1 and can be seen as a preferred option for the cellulose spacer layer recited in claim 1, falling within the scope of claim 1.

This was also the conclusion of the opposition division (top of page 7 of the decision under appeal).

This conclusion is not changed by the following arguments of the appellant, presented in the oral proceedings before the board. First, liquid carton paperboards could comprise chemically treated thermomechanical pulp, which provided more stiffness, and thus the reference to the extraneous liquid carton paperboard in claim 1 allowed for floppy or strong liquid carton paperboard. A containerboard material having a bending stiffness 30% lower than that of this material, argued the appellant, could be very stiff. Second, the possible presence of (inner and outer) polyethylene layers on the liquid packaging carton - described in point 13.2.2. of D7 - also allowed for spacer layers that had relatively high bending stiffness.

The board observes that also the density and grammage (product of density and layer thickness) of the containerboard material in current claim 1 is limited to the same grammage and density ranges as in claim 1 as filed. Having these limitations in claim 1 in mind, including the resulting identical maximum layer thickness, it is not clear how a containerboard layer

of claim 9 as filed could not be regarded as a spacer layer having a "low inherent bending stiffness" as required in claim 1 as filed. By contrast, it follows from the description that the containerboard to be used in the process of the invention is the same as specified on page 16, lines 22 to 25, without imposing additional limitations as to the bending stiffness (such as "low"). Similarly, a "lower or reduced inherent bending stiffness" of the spacer layer is referred to (see page 7, lines 14 to 16 of the application as filed). It is thus evident that a containerboard material having a reduced bending stiffness as defined in claim 9 as filed is a preferred or more specific embodiment of the cellulose spacer layers of the invention of claim 1 as filed.

In referring to Figure 11.21 of D7, the appellant pointed out that the strength properties of liquid carton paperboard also vary depending on whether the measurement is made in the machine direction or the cross direction. The possible indetermination of the bending properties, however, does, in the view of the board, not overcome the conclusion that the definition of the spacer layer in claim 9 is a preferred option of the cellulose spacer layer as specified in claim 1. Contrary to the opinion of the appellant, no unwarranted advantage results, in the view of the board, from limiting the cellulose spacer layer in claim 1 to that as specified in claim 9 as granted either.

Thus, the objected amendment does not add matter extending beyond the content of the application as filed.

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

1.2 Claim 6

The appellant construes claim 6 in a way in which a liquid film is coated onto an oxygen barrier (material). This would include oxygen barriers that have been vapour deposited, to which a liquid film coating having a different property (other than an oxygen barrier property) had been applied. This subject-matter was not disclosed in the application as filed.

The aforementioned interpretation, however, is at odds with the preceding expression "wherein the barrier coating is" in claim 6. This signals that the coating is derived from the liquid film itself rather than being, for example, a vapour deposited oxygen barrier material to which a liquid film coating having a different property has been applied. This is mirrored in the description in e.g. paragraph [0084] of the patent. The coating possibly also having adhesive properties besides oxygen barrier properties is not at odds with this conclusion.

Consequently, the aforementioned objection is not persuasive. The subject-matter of claim 6 thus meets the requirement of Article 123(2) EPC.

2. Main request - clarity of the claims (Article 84 EPC)

2.1 The appellant submits that the amended term "oxygen barrier" rendered the subject-matter for which protection is sought in claim 6 unclear.

2.2 First, the appellant submits that the amended term was grammatically unclear. The alleged ambiguity concerns whether the oxygen barrier polymer is either deposited as a liquid film or coated with a liquid film. The board opines that the expression "liquid-film coated barrier" already formed part of granted claim 6. The alleged ambiguity thus already existed in the granted claim. It is not altered by the insertion of the word "oxygen". Hence, the amendment does not give rise to a lack of clarity (see G 3/14, Order).

2.3 Second, the appellant submitted that the level of oxygen barrier properties required in claim 6 was unclear and could not be derived from the specification. Likewise, no test method for determining oxygen barrier properties was provided in the specification. Some of the polymers recited in claim 6, such as some polysaccharides, were not even recognised as having adequate oxygen barrier properties for food packaging, and it was not clear why a selection within a group of polymers was required to isolate those properties.

However, the board observes that the appellant conceded that the polymer materials as specified in claim 6 could be regarded as imparting oxygen barrier properties in the broadest sense of the term. The reason is that these materials form part of a layer/ film that impedes the diffusion of oxygen molecules across the layer at least to some extent. At the same time, the polymers to be used in the layer are clearly identified in claim 6. The board thus does not see that the insertion of the term "oxygen" in claim 6 leads to a lack of clarity. Whether D9 provides alternative definitions for an oxygen barrier polymer thus does not alter this conclusion.

2.4 Hence, the subject-matter of claim 6 meets the requirements of Article 84 EPC, even when taking D9 into account. The admittance of D9 can thus be left undecided.

3. Main request - sufficiency of disclosure (Article 83 EPC)

3.1 To meet the requirement of sufficiency of disclosure, an invention has to be disclosed in a manner sufficiently clear and complete for it to be carried out at the relevant date by the skilled person essentially over the whole scope claimed without undue burden on the basis of the information provided in the patent specification and, possibly, common general knowledge.

3.2 In the case in hand, the description of the patent contains pertinent pieces of information concerning the following salient points.

3.2.1 One salient point is the selection of materials that should meet the parametric restriction of a bending stiffness at least 30% lower than that of a liquid carton paperboard, as further specified in claim 1. Paragraphs [0042] and [0043] set out that the spacer layer is made from containerboard material, which is a fluting or linerboard material. Those materials *inherently* have a lower bending stiffness than conventional liquid carton paperboard. This is stated in the patent, for instance, in the aforementioned passages, and no substantiation has been adduced that this teaching was factually wrong.

3.2.2 At the same time, a skilled person was familiar with the chemical composition of fluting and linerboard materials, as further characterised in paragraphs [0047] and [0048] of the patent, at the relevant date. Paragraph [0049] sets out that fluted spacer layers, i.e. corrugated layers, are *not* within the scope of the invention as disclosed in the patent. Hence, a skilled person was in the position to select containerboard materials (which also *inherently* meet the bending stiffness limitation imposed in claim 1) and reference materials at the relevant date at comparable grammages. The appellant has not demonstrated that a skilled person would not have been in the position to identify a suitable reference material at the relevant date either, i.e. a "liquid carton paperboard" as referred to in the patent (see e.g. paragraphs [0035] and [0055] and further specifications provided). The reference material is thus, in the opinion of the board, sufficiently described in the patent.

3.3 In the decision under appeal, based on the teaching of the patent, containerboard material was held to inherently comply with the parametric limitation of a bending stiffness at least 30% lower than that of a liquid carton paperboard. The appellant's allegation that this conclusion was wrong is not backed by evidence.

3.4 The appellant's argument that containerboard is a subset of paperboard (see e.g. first paragraph on page 196 of D7) is not detrimental to sufficiency either. Containerboard is not a paperboard type that has been used as liquid carton paperboard (having higher bending stiffness). Hence, contrary to the argument of the appellant, the definition in claim 1 is not circular. The Wikipedia excerpt cited under point 23. of the

statement of grounds of appeal instead supports the view that containerboard is a special material *specially* manufactured *for the production of corrugated board*. Pages 331 and 332 of D7 list specifications of liner and fluting. Likewise, it is set out in paragraph 13.2.1 of D7 that "[l]iquid packaging paperboard has developed into a mature product with capital-intensive large-scale production from relatively few producers (SPCI, 2002)". Hence, both types are discernible and distinct products. Claim 1 thus does not require the containerboard to have a bending stiffness of at least 30% lower than itself.

3.5 The appellant submits that different reference liquid carton paperboard types existed. While the exact result of the bending stiffness comparison may differ, depending on the reference paperboard used, this is not detrimental to sufficiency in the case at hand. As mentioned above, the board sides with the respondent's position that it is inherent to containerboard materials that their bending stiffness is lower than that of liquid packaging paperboard. It has not been shown that using the duplex or triplex type liquid carton paperboard referred to in paragraph [0035] of the patent (as further characterised in paragraph [0055]) would lead to the feature in step a) of claim 1 of the bending stiffness being or not being met depending on the choice of duplex or triplex paperboard.

The appellant's argument that D7 demonstrated that liquid carton paperboard could be very stiff and that a stiff liquid carton paperboard could be found if sought out does not invalidate these conclusions. As stated above in point 3.2.2 and the preceding paragraph, suitable reference liquid carton paperboards are

described in the patent. Likewise, it has not been demonstrated that a bending stiffness of at least 30% lower than that of such a reference material could not be achieved essentially over the full breadth claimed.

3.6 The gist of the patent is to use low-quality paperboard - a special product called containerboard - as a spacer material to provide a cheaper packaging material (suitable for use in liquid carton laminated packaging materials).

Claim 1 specifies the density, grammage (and therefore limits the thickness of the spacer layers as well) and the SCT Index value of the containerboard material. A skilled person thus obtains numerous pieces of information in the patent on how to select suitable spacer materials, which were established products, known to a skilled person, at the relevant date.

3.7 Likewise, it is not apparent that the examples described in paragraph [0154] differ from the claimed subject-matter or that more investigation is needed to know whether a particular fluting material would be suitable. These allegations of the appellant have not been substantiated.

3.8 The situation at hand thus differs from the scenario underlying case T 373/17 referred to by the appellant. As it was convincing that containerboard material inherently met the aforementioned parametric limitation, as outlined in the patent, the claimed subject-matter of claim 1 is sufficiently disclosed for the above reasons alone. No undue burden to implement the claimed subject-matter essentially over the full breadth claimed is apparent to the board, and no such undue burden to carry out the invention essentially

over the full scope claimed has been substantiated by the appellant. The current board arrives at this conclusion without deviating from the case law cited by the appellant. The case law cited, in particular T 455/92 (see also point 3.10 below), is for the above reasons not applicable to the case in hand. Moreover, in T 455/92, the reference to an extraneous element/ entity was considered to actually *comply* with Article 84 EPC. The issue of sufficiency of disclosure was not addressed in that decision.

3.8.1 Beyond the above conclusion that the aforementioned parameter was implicitly met, the following additional considerations are provided for completeness.

3.8.2 The measurement method for determining the bending stiffness is described in paragraph [0154] of the patent. It was performed on a Lorentzen & Wettre testing device according to ISO 2493-1. It can be assumed that the measurements would have been carried out under standard conditions (bending angle 15° and a bending length of 50 mm) as no deviations from those standard conditions are reported in paragraph [0155]. Similarly, the fluting material referred to in paragraph [0154] of the patent is not present as a corrugated board but as a *component* of it (see above). In this regard, a patent should be construed with a mind willing to understand.

3.8.3 Even, *arguendo,* that deviations of the reading values for the bending stiffness would have to be expected, depending on the exact conditions of measurement, such fluctuations of the reading values as a deficiency would be subsumable under the requirements of Article 84 EPC rather than under Article 83 EPC. The board agrees with the case law of the boards in line with

which the question of whether a skilled person is working within the claimed scope (the "forbidden area" of a claim) is related to the definition of the scope of protection sought (Article 84 EPC) and not the sufficiency of disclosure of the invention (Article 83 EPC)(see Case Law of the Boards of Appeal of the EPO, 10th edn., 2022, II.C.6.6.4 and II.C.8.2). In addition, the comparison called for in claim 1 is a *relative* one.

It is not apparent that such potential fluctuations of the reading values would deprive a skilled person seeking to reduce claim 1 to practice of the promise of the invention as described in e.g. paragraph [0016] of the patent either.

3.9 To meet the parametric definition of reduced bending stiffness in claim 1, it would suffice to determine a single reference liquid carton paperboard with the same grammage that has the higher bending stiffness called for in claim 1 when measured according to the ISO 2493-1 standard referred to in paragraph [0154] of the patent. This material property is not difficult to achieve but is inherent to containerboard. It thus cannot be argued that a skilled person would have difficulty in reducing the patent's teaching to practice.

3.10 Hence, for the above reasons, the scenario underlying the case in hand differs markedly from those underlying the cases relied upon by the appellant, *inter alia*, T 541/09 and T 61/14 (where no measurement method was contained in the application) and T 1252/08 (where the measurement protocol described in the application was found to be insufficient and incompatible with a generally recognised standard). This body of case law thus cannot be applied to the case in hand.

3.11 The subject-matter of claim 1 is thus sufficiently disclosed within the meaning of Article 83 EPC.

4. Main request - inventive step (Article 56 EPC)

4.1 In the decision under appeal, the analysis of inventive step is based on document D5 as the closest prior art. Figure 1c was taken as the starting point. Like the patent, Document D5 is also directed towards the provision of liquid food packaging materials and containers made of them. The board thus sees no reason to deviate from this approach. Figure 1c of D5 shows a packaging laminate 10c, which includes a paper sandwich structure, comprising a soft and fluffy core or bulk layer 11c, which is laminated to a first stabilising paper 15 on the inner side by a bonding layer 17 and to a second stabilising paper 18 on its outer side by a bonding layer 19. The structure comprises opening holes 11d, punched or cut into layers 18, 19 and 11c.

4.2 Distinguishing technical features

The subject-matter of claims 1 and 7 differs from the embodiment described in Figure 1c and the accompanying text of D5 at least in:

i) laminating the outside of the web of the centre module bulk material and the web of the outside material module to each other by applying an aqueous adhesive composition at an amount from 0.5 to 4 g/m^2 to one of the surfaces to be laminated to each other and pressing them together

ii) laminating the web of the inside material module and the inside of the web of the centre module bulk

material to each other by applying an aqueous adhesive composition at an amount from 0.5 to 4 g/m^2 to one of the surfaces to be laminated to each other and pressing them together

4.3 Technical effect and resulting objective technical problem

In the decision under appeal, inventive step is assessed under the premise that the objective technical problem is the provision of an alternative method for manufacturing a packaging material (claim 1) and an alternative packaging material (claim 7), respectively.

The board sees no reason to deviate from this assessment.

4.4 Obviousness

4.4.1 The appellant submitted that the skilled person studying D5 was well aware that the thermoplastic layer 17, an intermediary bonding/adhesive layer, in Figure 1c was only required if there was to be an opening or slit in the laminate. The person skilled in the art would be aware that in packages where such an opening was not present, there was greater flexibility in finding the most appropriate and cost-effective laminating adhesive. The person skilled in the art would also be prompted to use an aqueous adhesive in the low amounts called for in claim 1 given that D1 explicitly concerned reducing water and energy usage. Paragraph [0027] also mentioned that such binders were expensive. Paragraphs [0045] and [0046] of D1 also described the use of this alternative bonding material. The claimed subject-matter was thus obvious to a skilled person.

4.4.2 The board, however, agrees with the respondent that replacing the heat-sealable thermoplastic film adhesive layers with an aqueous adhesive would go against the core teaching of D5. The heat-sealable layers 12 (outer thermoplastic layer) and 17 (intermediary bonding layer of thermoplastics, see page 14, line 17) in Figure 1c merge to form a robust laminated membrane across the hole in the centre cellulosic layer 11c. This core teaching is described in other sections of D5 as well, such as on page 9, lines 1 to 7 and 13 to 17. Similarly, claim 1 *requires* such holes, openings or slits (11a).

Whether D1 as a secondary document provides the necessary guidance for implementing such layers of an aqueous adhesive is thus not relevant. The appellant submitted that documents D2 to D4 showed the ubiquitous use of aqueous adhesives for laminating packaging materials and that the claimed amounts were conventional.

The use of aqueous adhesives is, however, not technically compatible with the embodiment of Figure 1c and the aim to form a stable membrane across the gap in D5. This membrane is, *inter alia*, formed from heat-sealable layers 12 (outer thermoplastic layer) and 17 (intermediary bonding layer of thermoplastics). As correctly stated by the respondent, this requires merging the outer thermoplastic layer 12 with the thermoplastic bonding layer 17. The person skilled in the art would realistically have refrained from implementing features i) and ii) and thus from the use of aqueous adhesives as featured in D1 in layer 17 of D5. In the view of the board, combining the teachings of D5 and D1 is thus based on hindsight.

Consequently, the appellant's line of argument in favour of deviating from the teaching of D5 is not convincing.

The subject-matter of claims 1 and 7 is thus not obvious to a person skilled in the art and meets the requirement of Article 56 EPC.

The subject-matter of claims 2 to 6 and 8 comprises the feature combinations of claims 1 or 7 and thus also involves an inventive step.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

A. Wille A. Haderlein

Decision electronically authenticated