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**Datasheet for the decision  
of 3 December 2025**

**Case Number:** T 0238/24 - 3.3.09

**Application Number:** 15896869.3

**Publication Number:** 3317103

**IPC:** B32B27/30, B29C55/12

**Language of the proceedings:** EN

**Title of invention:**

MULTILAYER STRUCTURES AND ARTICLES COMPRISING THE SAME

**Patent Proprietor:**

Dow Global Technologies LLC

**Opponents:**

SABIC Global Technologies B.V. /  
SABIC Innovative Plastics B.V.  
Treofan Germany GmbH & Co. KG

**Headword:**

Multilayer structure/DOW GLOBAL TECHNOLOGIES

**Relevant legal provisions:**

EPC Art. 54, 56, 100(a), 100(b), 100(c)

**Keyword:**

Grounds for opposition - added subject-matter (no) -  
insufficiency of disclosure (no)  
Novelty - main request (yes)  
Inventive step - main request (yes)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern**  
**Boards of Appeal**  
**Chambres de recours**

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Case Number: T 0238/24 - 3.3.09

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.09**  
**of 3 December 2025**

**Appellant:** Treofan Germany GmbH & Co. KG  
(Opponent 2) Bergstrasse  
66539 Neunkirchen (DE)

**Representative:**

**Respondent:** Dow Global Technologies LLC  
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**Decision under appeal:** **Decision of the Opposition Division of the  
European Patent Office posted on 13 December  
2023 rejecting the opposition filed against  
European patent No. 3317103 pursuant to Article  
101(2) EPC.**

**Composition of the Board:**

**Chairman**           A. Haderlein  
**Members:**         M. Ansorge  
                      L. Basterreix

## **Summary of Facts and Submissions**

- I. Opponent 2 (appellant) lodged an appeal against the opposition division's decision rejecting the opposition.
- II. With their notices of opposition, the opponents had requested that the patent be revoked on the grounds for opposition under Article 100(a) EPC (lack of novelty and lack of inventive step), Article 100(b) EPC and Article 100(c) EPC.
- III. The opposition division decided that the grounds for opposition under Article 100(b) and (c) EPC did not prejudice the maintenance of the opposed patent and that the claimed subject-matter was novel over D1, D3, D20, D21 and D24 and involved an inventive step in view of D3 as the closest prior art.
- IV. Claim 1 of the patent as granted (main request) reads as follows:

"A multilayer structure comprising:

(a) a biaxially oriented polyethylene film comprising a linear low density polyethylene having a density of 0.910 to 0.940 g/cm<sup>3</sup>, as measured according to ASTM D792, wherein the ultimate elongation in the machine direction of the biaxially oriented polyethylene film is at least 2 times greater than the ultimate elongation in the cross direction when measured according to ASTM D882, and wherein the ultimate tensile strength of the biaxially oriented polyethylene film is at least 60 MPa in at least one of

the machine direction and the cross direction when measured according to ASTM D882;

(b) an adhesive layer, wherein the adhesive layer comprises a solventless adhesive, a waterborne adhesive, or a solventborne adhesive; and

(c) a sealant film, wherein the ultimate elongation of the sealant film is at least 300% in at least one of the machine direction and the cross direction when measured according to ASTM D882, wherein the ultimate tensile strength of the sealant film is less than 50 MPa in at least one of the machine direction and the cross direction when measured according to ASTM D882, and wherein the sealant film has a heat seal initiation temperature of 105°C or less, as measured according to the method described in the description;

wherein the sealant film is laminated to the biaxially oriented polyethylene film by the adhesive."

Claims 2 to 12 are dependent claims directed to a multilayer structure, and independent claim 13 refers back to the claimed multilayer structure.

V. The following document was cited in the case in hand:

D3: WO 2013/029223 A1

VI. The parties' relevant arguments submitted in writing are reflected in the reasons for the decision below.

VII. Requests

The appellant (opponent 2) requested that the decision be set aside and that the patent be revoked.

The respondent (proprietor) requested that the appeal be dismissed (main request) or, as an auxiliary measure, that the patent be maintained on the basis of one of auxiliary requests 1 to 9 from the first-instance opposition proceedings.

Opponent 1 (party as of right) did not file any submissions.

### **Reasons for the Decision**

1. Article 100(c) EPC
  - 1.1 The appellant argued that the subject-matter of claim 1 extended beyond the content of the application as filed. In its opinion, adding the expression "as measured according to the method described in the description" (with respect to the heat seal initiation temperature) to claim 1 led to an added-matter problem since the application as filed did not disclose a method for measuring the heat seal initiation temperature of the sealant film. The appellant submitted that the application as filed merely contained a statement that the heat seal initiation temperature was the minimum temperature at which the film exhibited a heat seal strength of 10 N/inch but did not specify any details for determining said heat seal strength.
  - 1.2 As outlined below, the subject-matter of claim 1 of the patent as granted does not extend beyond the content of the application as filed.

1.2.1 Claim 1 is based on claim 1 of the application as filed in combination with claim 13 of the application as filed (further specifying the adhesive layer as comprising a solventless adhesive, a waterborne adhesive or a solventborne adhesive) and page 21 of the application as filed (specifying the methods for measuring density and heat seal initiation temperature).

1.2.2 Page 21 of the application as filed gives the following information:

"Heat Seal Strength

The hot tack tester (Model 4000, J&B Corp.) is used in 'seal only' mode without pulling. To conduct heat seal strength measurements, seal parameters are as follows: width of sample strip = 1 inch; seal time = 0.5 s; seal pressure = 0.275 MPa. Then, sealed sample strips are aged 24 hours, under controlled environment ( $23\pm 2^{\circ}\text{C}$ ,  $55\pm 5$  relative humidity). Thereafter, seal strength is tested on a tensile machine (Type 5943, INSTRON Corp.) with pulling speed of 500 mm/min. Max load is recorded as seal strength. Each data point is the averaged results of five parallel sample strips. The heat seal initiation temperature is the minimum temperature at which the film exhibits a heat seal strength of 10 N/inch."

1.2.3 The skilled person reading this section of the application as filed is informed that the heat seal initiation temperature is the minimum temperature at which the film exhibits a heat seal strength of 10N/inch. As correctly pointed out by the respondent, a skilled person understands that this is part of a more extensive explanation of the "heat seal strength", with

the text in the passage on page 21, lines 12-20 further describing how the heat seal strength is determined.

1.2.4 Under these circumstances, the board does not share the appellant's opinion that the application as filed fails to disclose a method for measuring the heat seal initiation temperature.

1.2.5 The appellant further alleged that the experiments described in the application as filed could not be reproduced, meaning that the examples could not provide support for the claimed combination of features. This line of argument is unconvincing, amounting merely to an unsubstantiated assertion. For the reasons outlined above, the subject-matter of claim 1 of the patent as granted does not extend beyond the disclosure provided in the application as filed.

In view of the above, the ground for opposition under Article 100(c) EPC does not prejudice the maintenance of the patent.

## 2. Sufficiency

2.1 The appellant argued that the invention was not disclosed in a manner sufficiently clear and complete for it to be carried out by a skilled person. In essence, the appellant submitted that the claimed multilayer structure was defined by desired results to be achieved. In its opinion, the patent did not specify the measures necessary to arrive at the claimed desired properties. In addition, the examples of the application as filed could not be reworked because they used a tailor-made tenter frame.

- 2.2 As outlined below, the board comes to a different conclusion.
- 2.2.1 The board agrees with the respondent that the appellant's submissions amount to assertions without any basis to presuppose that there are issues when it comes to obtaining the claimed multilayer structure. The appellant has not provided any evidence that there are serious doubts, substantiated by verifiable facts, that the invention can be carried out, i.e. that the claimed structure can be produced. The burden of proof to demonstrate insufficiency is, as a rule, on the opponent, who has to prove that it was unable to put the invention into practice despite reasonable effort.
- 2.2.2 The appellant did not discharge this burden. The appellant also alleged that the comparative example of the patent fulfilled all the structural requirements of claim 1 but did not exhibit the desired properties mentioned in claim 1. However, the sealant layer in the comparative example does not satisfy the stipulated properties (see comparative sealant film in Tables 1 and 2 and paragraphs [0086] and [0087]), the difference between the inventive examples and the comparative example being the heat seal initiation temperature, which is higher in the comparative example.
- 2.2.3 Moreover, the examples of the patent exemplify ways to carry out the invention, and there is sufficient guidance for a skilled person to implement the invention in a more general context too.
- 2.2.4 The appellant's argument directed to the "results to be achieved" is a matter of clarity (Article 84 EPC), not sufficiency (Article 83 EPC).

2.2.5 The appellant further submitted that ASTM D882 (mentioned in claim 1) did not literally refer to an ultimate tensile strength and an ultimate elongation. In this context, it is correct that ASTM D882 is a standard encompassing tensile properties in general. These include the well-known tensile properties of ultimate elongation and ultimate tensile strength, which is considered synonymous with elongation at break and tensile strength at break. The guidance in the ASTM standard can be used to measure the ultimate elongation and ultimate tensile strength. These parameters are well-known mechanical properties commonly used in the field of polymers.

2.2.6 The appellant also asserted that the examples of the application as filed and of the patent could not be reworked because a tailor-made tenter frame had been used. This is unconvincing as well. As correctly pointed out by the respondent, a skilled person can use a suitable tenter frame for the biaxial orientation. In addition, the specification provides guidance on machine direction and cross direction draw ratios, layer ratios, stretch ratios and stretch temperatures. The mere fact that a tailor-made tenter frame bi-orientation line is used in the examples to produce the three-layer film does not support a lack of reproducibility.

In view of the above, the invention can be carried out by a skilled person. The ground for opposition under Article 100(b) EPC does not prejudice the maintenance of the patent.

3. Novelty

3.1 The appellant argued that the subject-matter of claim 1 of the patent as granted lacked novelty over D3. In particular, the appellant argued that example 2 of D3 disclosed a multilayer structure comprising:

(a) a biaxially oriented polyethylene film comprising a linear low-density polyethylene having a density of 0.910 to 0.940 g/cm<sup>3</sup>, wherein the ultimate elongation in the machine direction of the biaxially oriented polyethylene film is at least two times greater than the ultimate elongation in the cross direction, and wherein the ultimate tensile strength of the biaxially oriented polyethylene film is at least 60 MPa in at least one of the machine direction and the cross direction;

(b) an adhesive layer, wherein the adhesive layer comprises a solventless adhesive; and

(c) a sealant film, wherein the sealant film has a heat seal initiation temperature of 105°C or less; wherein the sealant film is laminated to the biaxially oriented polyethylene film by the adhesive.

3.2 In this context, the appellant merely assumed that the features whereby the ultimate elongation of the sealant film is at least 300% in at least one of the machine direction and the cross direction (when measured according to ASTM D882) and the ultimate tensile strength of the sealant film is less than 50 MPa in at least one of the machine direction and the cross direction (when measured according to ASTM D882) were inherently satisfied by the multilayer film of D3. However, no evidence to support this assumption was

provided. For this reason alone, it is concluded that the claimed subject-matter is novel over D3.

3.3 The respondent submitted that example 2 of D3 was a bi-oriented extruded film, not a multilayer structure according to claim 1 of the patent, which required the sealant film to be laminated to the biaxially oriented polyethylene film by an adhesive. In the respondent's opinion, this was not the case in example 2 of D3 because all the layers A, B and C were coextruded to produce the three-layer film, with the coextruded three-layer film then undergoing biaxial stretching.

3.4 The board shares the respondent's opinion in this respect for the following reasons.

3.4.1 Claim 1 specifies that the sealant film and the biaxially oriented polyethylene film are laminated (to each other) by an adhesive. This formulation of claim 1 is to be interpreted such that a pre-formed sealant film and a pre-formed biaxially oriented polyethylene film are laminated together. This interpretation is supported by the fact that, for example, a biaxially oriented polyethylene film requires the formation of a film oriented in two directions. For the board, this feature excludes the possibility that the claimed multilayer structure could also be produced by coextruding the three layers and then biaxially stretching the resulting multilayer structure.

3.4.2 While coextrusion may be considered a typical technique for forming a laminate, the formulation "wherein the sealant film is laminated to the biaxially oriented polyethylene film by the adhesive" in claim 1 excludes a product obtainable by the technique of example 2 of

D3. The multilayer film according to example 2 of D3 and the claimed structure are structurally different.

- 3.4.3 As correctly pointed out by the respondent, there is no evidence on file that D3 unambiguously discloses in an implicit manner the features whereby the ultimate elongation of the sealant film is at least 300% in at least one of the machine direction and the cross direction (ASTM D882) and the ultimate tensile strength of the sealant film is less than 50 MPa in at least one of the machine direction and the cross direction (ASTM D882).
- 3.4.4 In addition, the respondent is correct that there is no evidence that layer C of example 2 of D3 (made of resin A) would satisfy the claimed requirements for the sealant film.
- 3.4.5 The appellant relied on Table 10 of D3 as evidence of the ultimate elongation in the machine direction of the HDPE film being at least two times greater than the ultimate elongation in the cross direction. However, as correctly concluded by the opposition division, the data given in Table 10 relate to the three-layer BOPE film (in which layers A and C are made of resin A, and layer B is made of 25% resin A and 75% resin B), not to a single layer of that film. The measured values for ultimate tensile strength and elongation in the column for the sample designated 100% A (20 micrometres) do not represent values for layer C in example 2 of D3 but rather represent a reference sample of a non-stretched monolayer film composed of polymer A, which is used in layers A and C in example 2.

In view of the above, the multilayer structure of claim 1 of the patent as granted is novel over D3. The

same applies to claims 2 to 13. The ground for opposition under Article 100(a) in combination with Article 54 EPC does not prejudice the maintenance of the patent.

4. Inventive step

4.1 The appellant argued that the subject-matter of claim 1 of the patent as granted did not involve an inventive step in view of D3 as the closest prior art. In its opinion, there was no advantage or effect resulting from the distinguishing features over D3, and the problem addressed could be regarded as the need for further multilayer structures. The appellant held that the claimed solution was obvious to a skilled person in view of D3.

4.2 As outlined below, the claimed subject-matter involves an inventive step over D3 as the closest prior art.

4.2.1 The subject-matter of claim 1 of the patent as granted differs from D3 on account of the features outlined above under point 3.4.

4.2.2 Even if the problem to be solved is assumed to be merely providing an alternative multilayer structure, the claimed subject-matter involves an inventive step over the closest prior art.

4.2.3 With respect to the question of obviousness, the board notes the following.

4.2.4 According to the patent, an HDPE film layer and a sealant film are formed separately, the HDPE film layer then being laminated to the sealant film layer by an adhesive. In contrast, example 2 of D3 is based on a

different approach, with all the layers A, B and C being coextruded to produce the three-layer film. The coextruded three-layer film then undergoes biaxial stretching. The multilayer structure of claim 1 of the patent as granted structurally differs from that in example 2 of D3. There is no teaching in D3 towards laminating a pre-formed sealant film onto a pre-formed biaxially oriented polyethylene film by an adhesive.

- 4.2.5 The board construes a production process according to D3 to mean that the three-layer film according to example 2 of D3 has essentially uniform tensile properties. All three layers of this structure are biaxially stretched in example 2 of D3. A skilled person would not consider modifying the coextrusion process (coextruding the three layers) and the subsequent biaxial stretching process in such a manner as to arrive at the different approach of claim 1.
- 4.2.6 The appellant argued that each of features b, b-1), b-1-1), b-1-2), b-1-3), c), c-1), d), d-1), d-2), d-3) and e) (according to the appellant's feature analysis proposed under point 4 of the statement of grounds of appeal) was obvious (see points 55-67 of the statement of grounds of appeal).
- 4.2.7 The appellant, however, did not explain why the opposition division had come to the wrong conclusion in confirming that the claimed subject-matter involved an inventive step. For this reason alone, the appellant's line of argument in this respect fails to convince.
- 4.2.8 Moreover, the appellant stated that if the claimed ultimate elongation (i.e. features b-1-2) and d-1)) and the claimed ultimate strength (i.e. features b-1-3) and d-2)) were not disclosed in D3, the skilled person

would have contemplated using the claimed ultimate elongation and the claimed ultimate strength in view of the general disclosure of D3, since (i) no particular advantages and effects would have been achieved by said modifications, and (ii) using a biaxially oriented polyethylene film having the claimed ultimate elongation (i.e. feature b-1-2)) and the claimed ultimate strength (i.e. feature b-1-3)) for the biaxially oriented polyethylene film and using a sealant film having the claimed ultimate elongation (i.e. feature d-1)) and the claimed ultimate strength (i.e. feature d-2)) for the sealant film were obvious alternatives for preparing a film as described in example 2 of D3. In the appellant's opinion, the skilled person would have modified the preparation of the film described in D3 and arrived at a film as claimed on the basis of the teaching of D3 and the common general knowledge, without exercising inventive skill.

4.2.9 The board is not convinced by this line of argument either. While the appellant argued that a skilled person would have modified the way the film was produced and arrived at the claimed properties, it failed to demonstrate any guidance concerning the measures necessary to arrive at the claimed combination of features. There is no incentive or pointer in D3 towards such modifications.

4.2.10 Moreover, as held by the opposition division, it is not convincing that the skilled person would consider the ultimate elongation and ultimate tensile strength values disclosed for the multilayer films in Table 10 of D3 to be a pointer for the skilled person to modify example 2 of D3 such that layer A is provided with the ultimate elongation and ultimate tensile strength of

the three-layered film and layer C is provided with the ultimate elongation and ultimate tensile strength of the non-stretched reference film prepared from resin A and having a thickness of 20 micrometres.

- 4.2.11 The board also agrees with the opposition division's conclusion that a skilled person would not modify the multilayer structure of example 2 of D3, which is a three-layered film formed by coextrusion followed by biaxial orientation, in order to arrive at the claimed properties for the individual layers on the basis of the teaching of D3 and the common general knowledge, without exercising inventive skill.
- 4.2.12 For instance, a skilled person would not be prompted to modify the structure of example 2 of D3 (having the same resin A in both outer layers) in such a manner as to achieve the different ultimate tensile strength as required in layers (a) and (c) of claim 1, i.e. an ultimate tensile strength of at least 60 MPa in at least one of the machine direction and the cross direction of the biaxially oriented polyethylene film (a) and an ultimate tensile strength of less than 50 MPa in at least one of the machine direction and the cross direction of the sealant film (c).
- 4.2.13 There is no pointer towards such a modification in D3, the other documents or the common general knowledge. In the board's view, the production process according to D3 means that the three-layer film according to example 2 of D3 has essentially uniform tensile properties. By contrast, the layers (a) and (c) of the structure of claim 1 have different ultimate tensile strength properties pointing in different directions. There is no teaching in D3 or the other cited documents

to arrive at a specific structure of this kind in an obvious manner.

In view of the above, the subject-matter of claim 1 of the patent as granted involves an inventive step over D3 as the closest prior art. The same applies to claims 2 to 13. The ground for opposition under Article 100(a) in combination with Article 56 EPC does not prejudice the maintenance of the patent.

**Order**

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

The appeal is dismissed.

The Registrar:

The Chairman:



D. Grundner

A. Haderlein

Decision electronically authenticated