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Datasheet for the decision of 4 June 2025

Case Number: T 1434/23 - 3.3.03

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Language of the proceedings: EN

Title of invention:
FLEXIBLE MOLDED SKIN

Patent Proprietor:
MCPP Innovation LLC

Opponent:
Westlake Compounds Holding

Relevant legal provisions:
RPBA 2020 Art. 12(4)
EPC Art. 54, 56

Keyword:

Experimental report - admitted (yes)
Novelty (yes)
Implicit disclosure (no)
Inventive step (no) - evidence for alleged improvement (no)
obvious modification (yes) (all requests)

Decisions cited:

T 0396/89, T 0939/92, T 0823/96, T 0049/13

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Case Number: T 1434/23 - 3.3.03

D E C I S I O N
of Technical Board of Appeal 3.3.03
of 4 June 2025

Appellant: (Opponent)	Westlake Compounds Holding 1B rue Maurice Hollande 51100 Reims (FR)
Representative:	IXAS Conseil 22, avenue René Cassin 69009 Lyon (FR)
Respondent: (Patent Proprietor)	MCPP Innovation LLC 1-1, Marunouchi 1-chome Chiyoda-ku Tokyo 100-8251 (JP)
Representative:	V.O. P.O. Box 87930 Carnegieplein 5 2508 DH Den Haag (NL)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 9 June 2023 concerning maintenance of the European Patent No. 3350255 in amended form.**

Composition of the Board:

Chairman	D. Semino
Members:	F. Rousseau
	A. Bacchin

Summary of Facts and Submissions

I. The appeal lies from the interlocutory decision of the opposition division according to which European patent No. 3 350 255 as amended with the claims of the Main Request submitted with letter of 11 April 2023, a description adapted thereto and Figures 1a and 1b met the requirements of the EPC.

II. The decision was taken having regard *inter alia* to the following documentary evidence:

D1: US 2011/0183143 A1
D2: WO 2015/087522 A1
D2a: EP 3 081 592 A1 (translation of D2 published in accordance with Art. 153(4) EPC)
D3: GB 1,110,065
D4: US 2004/0054085 A1
D5: DE 10 2013 224 996 A1
D7: Charles E. Wilkes *et al.*, PVC Handbook, ISBN 3-446-22714-8, pages 173-193 and 315-335
D12: Technical report by Dr. Amouroux dated 7 February 2022
D12a: Technical report by Dr. Amouroux signed 13 March 2023
D13a: Datasheet of Lacovyl® S7015
D13f: Technical information about Mizukalizer®

III. According to the reasons for the contested decision which are pertinent for the appeal proceedings:

(a) D12a was admitted into the proceedings.

(b) The requirements of sufficiency of disclosure were met.

(c) Novelty was acknowledged over each of D1 to D5. In the absence of evidence that the differences between the compositions of examples in D1-D5 and the formulations tested in experimental reports D12 and D12a had no impact on the mechanical properties, it could not be concluded based on those reports, that the elongation at break and the trouser tear strength values set out in operative claim 1 were the inevitable result of the compositions exemplified in D1 to D5.

(d) Regarding inventive step, the subject-matter of operative claim 1 differed from D1, taken as the closest prior art, in that the sheet of plasticized thermoplastic vinyl polymer material had an elongation at break and a trouser tear strength within certain ranges. In the absence of evidence for a technical effect linked to these distinguishing features, the problem solved in light of the closest prior art lay in the provision of a further flexible moulded skin. However, none of the documents cited would have prompted the skilled person to provide moulded skins exhibiting such mechanical properties. The same argumentation applied when taking any of D2 to D5 as the closest prior art. An inventive step was therefore acknowledged.

(e) The main request was therefore allowable.

IV. An appeal against that decision was lodged by the opponent (appellant). With the statement setting out

the grounds of appeal, the following document was *inter alia* submitted:

D14: Declaration of Dr. Amouroux dated 13 October 2023

V. With its reply to the statement of grounds of appeal, the patent proprietor (respondent) submitted First to Fifth Auxiliary Requests.

VI. In preparation of the oral proceedings, a communication pursuant to Article 15(1) RPBA conveying the Board's provisional opinion was issued.

VII. In reply to the Board's communication, the respondent made additional submissions with letter of 28 May 2025. The letter included among others Sixth and Seventh Auxiliary Requests and additional experimental data completing Table 3 of the patent in suit which were inserted at the end of page 5 of the respondent's letter.

VIII. Oral proceedings before the Board were held on 4 June 2025 with the participation of both parties.

IX. The final requests of the parties were as follows:

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

The respondent requested that the appeal be dismissed, or alternatively, that the decision under appeal be set aside and that the patent be maintained, on the basis of one of the First to Fifth Auxiliary Requests submitted with the reply to the statement of grounds of appeal, or in a further alternative on the basis of the

claims of one of the Sixth and Seventh Auxiliary Requests submitted with letter of 28 May 2025.

X. The claims relevant to the present decision are as follows:

Main request (Main Request submitted with letter of 11 April 2023)

Claim 1 which reads:

"1. A flexible molded skin for an airbag cover, wherein the skin comprises at least one sheet of a plasticized thermoplastic vinyl polymer material having particles of a tear promoting agent dispersed therein, wherein the particles of the tear promoting agent have a melting temperature above the melting temperature of the vinyl polymer material, characterized in that the sheet of plasticized thermoplastic vinyl polymer material contains at least 0.1 wt. % and maximum 7.5 wt. % of the tear promoting agent such that the sheet of plasticized thermoplastic vinyl polymer material has an elongation at break of between 200.0 % and 400.0 % at room temperature measured according to ISO 527 part 1 and 2 test piece 5A, and a trouser tear strength of maximum 25 N/mm measured according to ISO 34-1 Method A."

First Auxiliary Request

Claim 1 which corresponds to claim 1 of the Main Request in which the minimum amount of tear promoting agent is defined to be 1.5 wt%.

Second Auxiliary Request

Claim 1 which corresponds to claim 1 of the First Auxiliary Request 1 in which the sheet of plasticized thermoplastic vinyl polymer material comprised in the flexible moulded skin is further defined to contain "from 37.0-47.0 wt. % of at least one plasticizer composition".

Third Auxiliary Request

Claim 1 which corresponds to claim 1 of the Second Auxiliary Request in which the sheet of plasticized thermoplastic vinyl polymer material comprised in the flexible moulded skin is defined in addition to have "a tensile strength of between 2 and 11 N/mm^2, measured according to ISO 527 part 2 test piece 5A".

Fourth Auxiliary Request

Claim 1 which reads (compared to the Main Request deletions and additions are indicated by the Board in strike through and underlined, respectively):

"A flexible molded skin for an airbag cover, wherein the skin comprises at least one sheet of a plasticized thermoplastic vinyl polymer material having particles of a tear promoting agent dispersed therein and contains from 37.0-47.0 wt. % of at least one plasticizer composition, wherein the particles of the tear promoting agent have a melting temperature above the melting temperature of the vinyl polymer material, characterized in that the sheet of plasticized thermoplastic vinyl polymer material contains at least 1.5~~0.1~~ wt. % and maximum 7.5 wt. % of the tear promoting agent such that the sheet of plasticized

thermoplastic vinyl polymer material has an elongation at break of between 200.0 % and 400.0 % at room temperature measured according to ISO 527 part 1 and 2 test piece 5A, and a trouser tear strength of maximum 25 N/mm measured according to ISO 34-1 Method A, and a tensile strength of between 2 and 11 N/mm^2, measured according to ISO 527 part 2 test piece 5A and in which the at least 1.5 wt% and maximum 7.5 wt% of tear promoting agent are inorganic mineral material and the particles of the mineral tear promoting agent have an elongated shape."

Fifth Auxiliary Request

Claim 1 which corresponds to claim 1 of the Fourth Auxiliary Request in which the wording "are inorganic mineral material and the particles of the mineral tear promoting agent have an elongated shape" is replaced by "is talc".

Sixth Auxiliary Request

Claim 1 which corresponds to claim 1 of the Main Request in which the thermoplastic vinyl polymer material is defined to be "selected from polyvinylchloride with a K value of at least 50 and maximum 80" and the sheet is defined to contain "30.0-50.0 wt. % of at least one plasticizer composition".

Seventh Auxiliary Request

Claim 1 which corresponds to claim 1 of the Sixth Auxiliary Request with the addition of the following feature:

"wherein

- In case the tear promoting agent is selected from particles with an elongated shape having a high aspect ratio of > 5.0 the concentration of said particles in the plasticized vinyl polymer sheet is at least 0.1 wt. %, preferably at least 0.5 wt. %, maximum 4.0 wt. %, preferably less than 3.0 wt. % and in particular less than 2.75 wt. %,
- In case the tear promoting agent is selected from inorganic materials with particles having an aspect ratio of less than 5 the concentration of said particles in the plasticized vinyl polymer sheet is at least 2.0 wt. %, at least 3.0 wt. %, preferably at least 4.0 wt. % and maximum 7.5 wt. %, and
- In case the tear promoting agent is selected from one or more core shell materials having an aspect ratio of maximum 5.0, made of a first polymer of a soft rubber core, grafted with at least one second polymer of a different composition the concentration of the core shell materials in the sheet of plasticized thermoplastic vinyl polymer material is at least 1.0 wt. %, most preferably at least 2.0 wt. %, maximum 7.5 wt %, preferably maximum 6.0 wt. %, more preferably maximum 5.0 wt. %, and
- In case the tear promoting agent is selected from expandable microspheres, having a shell of an expandable thermoplastic material filled with a blowing agent the concentration of said expandable microspheres in the plasticized vinyl polymer sheet is at least 0.1 wt. % and maximum 2.0 wt. %, and

wherein the aspect ratio refers to the largest dimension of the particles of the tear promoting agent with respect to the smallest dimension of the particles".

XI. The parties' submissions, in so far as they are pertinent to the present decision, may be derived from the reasons for the decision below. They essentially concerned admittance of D14 into the proceedings and novelty and inventive step of the claimed flexible moulded skin for an airbag cover over the disclosure of document D1.

Reasons for the Decision

Admittance of D14

1. Declaration D14, which has been submitted by the appellant with their statement of grounds of appeal, is to be regarded as an amendment to that party's case within the meaning of Article 12(4) RPBA. Its admittance to the proceedings, which is contested by the respondent, is subject to the discretionary power of the Board in accordance with Article 12, paragraphs (4) to (6) RPBA.

1.1 D14 concerns the same experimental tests already reported in D12 and D12a (see tables on the second and fourth pages of D14). It is undisputed that the results of D14 concerning samples Ex1 to Ex5 and DSY260/02 were already submitted with D12, while the results concerning samples whose designation begins with an X were already submitted with Dl2a.

According to the indications given in D12 and D12a, the samples reported in D14 concern:

Ex1 which is similar to Example 2 of D1 with plasticizer B0 and X1 which is a variation of Ex1.

Ex2 representing the composition taken from [0066] of the patent in suit and X2, X2bis and X2ter representing variations of Ex2.

Ex3 indicated to be taken from WO 02/20656, which is representative of the formulation described in paragraph [0015] of D4 and X3 and X3ter representing variations of Ex3.

Ex4 concerning Comparative Example 1 of D2 and X4, a variation thereof.

Ex5 concerning Example 1 of D3 and X5 and X5bis which are variations of Ex5.

"DSY260/02" concerning the prior use described with documents D13 to D13h, which is not relevant since no objection based thereon is pursued in the appeal proceedings.

1.2 D14 is a legitimate attempt to clarify the nature of certain compounds used in the compositions tested in D12 and D12a, in reaction to the appraisal made in the appealed decision.

For samples Ex1 and X1, more information is given concerning the "Ca/Zn Stabilizer", the "PVC suspension resin" and the "emulsion PVC resin", in response to criticism in point 4.3.2.5 of the Reasons for the contested decision.

Concerning samples Ex4, X4, Ex5 and X5, it is indicated that the closest components or closest equivalent available were used for reproducing Comparative Example 1 of D2 and Sample 1 of D3. This constitutes a fair

attempt to reply to the criticism by the opposition division in points 4.3.3.6 and 4.3.4.5 of the Reasons for the contested decision that those samples were not an accurate reproduction of Comparative Example 1 of D2 and Sample 1 of D3.

Even if the respondent had already criticised one month before the oral proceedings that the experiments comprised in D12a still could not represent a complete accurate representation of the examples in prior art D1 to D5 (letter of 11 April 2023, page 3, second paragraph), it was only during the oral proceedings that the respondent gave explanations in this respect (minutes, point 3.3.3).

On that basis, the submission of D14 by the appellant at the outset of the appeal proceedings in order to clarify the nature of the experiments carried out in D12a is considered a justified and timely reaction to the respondent's criticism concerning D12a, representing thereby reasonable development in contradictory proceedings.

The fact that a similar objection had been made in respect of the experiments of D12 has no bearing on that assessment, since D12a is also considered to have represented a fair attempt by the appellant to reply to the criticism about the experiments of D12. In the absence of any abuse of the proceedings by the appellant constituted by the successive filing of D12 and D12a, the Board does not see any valid reason to held inadmissible the clarifications about D12a provided by D14.

Under these circumstances, the Board exercised its discretion under Article 12(4) RPBA by admitting D14 into the proceedings.

Main Request

Novelty over D1

2. The appellant submits that the moulded skin obtained from the composition of Example 2 of D1 anticipates the subject matter of claim 1 of the Main Request. This objection is based on the composition BO of Example 2 of D1 described in paragraph [0112] to have the following composition:

Formulation (weight percentages)	
Suspension PVC resin	49
Emulsion PVC resin	5
Epoxidized soybean oil	2.7
Calcium/zinc stabilizer	1.3
Sodium perchlorate	0.3
Zinc stearate	0.1
UV absorber (benzotriazole type)	0.1
Sodium zeolite (A)	1.1
Plasticizers (listed in Table 3)	40

whereby Table 3 in paragraph [0113] describes for composition B0 the use of tri-2-ethyl hexyl trimellitate as plasticizer.

2.1 It is undisputed that composition BO of Example 2 of D1 fulfils all structural requirement of operative claim 1, the sodium zeolite (A) used in an amount of 1.1 wt.% corresponding to the definition of a tear promoting agent have a melting temperature above the melting temperature of the vinyl polymer material, the use of zeolite as tear promoting agent being taught in claim 13 and paragraph [0030] of the patent in suit.

2.2 It is uncontested that D1 does not describe the elongation at break and trouser tear strength of the sheet of plasticized thermoplastic vinyl polymer material described in that document.

The appellant, however, submits that the composition described with B0 of Example 2 must meet the elongation at break and trouser tear strength requirements of operative claim 1. This would be demonstrated by sample X1 addressed in D12a (fourth and fifth page, table) and D14 (second page, table; fourth page, table), which the appellant considers as an accurate reproduction of Example 2 of D1.

This is disputed by the respondent submitting that sample X1 comprises numerous deviations from Example 2 of D1, namely the type of suspension PVC, emulsion PVC, zeolite and Ca/Zn stabiliser. The respondent puts forward that these variations have not been shown by the appellant to have no effect on the elongation at break and trouser tear strength, so that having regard to the criteria developed in decision T 396/89, it cannot be concluded that the disclosure of composition B0 of Example 2 is novelty destroying for the subject-matter of operative claim 1. The respondent also submits that the appellant should at least have carried out several replications with a number of different PVC resins to show that the latter would have no influence on the elongation at break and trouser tear strength (rejoinder, page 17, lines 2-9).

2.2.1 The reference to decision T 396/89 is not appropriate, since it concerns a case in which an experimental report comprised departures of a comprehensively described example of the prior art it was meant to

repeat (Reason, point 4.3). The situation here is different, as it concerns the implementation of a not fully described embodiment of the prior art, in which case guesses have to be made about certain components to be used in order to put into practice what is disclosed therein. In the present case, there is no disclosure of the specific type of suspension PVC, emulsion PVC and Ca/Zn stabiliser used for this example of D1.

2.2.2 However, it is a generally applied principle that for concluding lack of novelty, the same test ("gold standard") as for assessing added subject-matter under Article 123(2) EPC is applied, in the sense that there must be a direct and unambiguous disclosure, either explicit or implicit, in the state of the art which would inevitably lead the skilled person to subject-matter falling within the scope of what is claimed. An implicit disclosure in this context is what the person skilled in the art would consider as necessarily implied by the disclosure of a document as a whole or in other words the clear and unambiguous consequence of what is explicitly mentioned (see e.g. T 49/13, Reasons 13; T 823/96, Reasons 4.5 and Case Law of the Boards of Appeal, 10th edition 2022, in the following "Case Law", II.E.1.3.3). In other words, the question to be answered concerning the availability to the public of a flexible moulded skin whose sheet of plasticized thermoplastic vinyl polymer meets the requirements of operative claim 1 with composition B0 of Example 2 of D1 is whether the skilled person carrying out the teaching of that example, while having in mind the whole teaching of that document and the common general knowledge, would inevitably obtain a sheet of plasticized thermoplastic vinyl polymer meeting these functional requirements.

2.2.3 The appellant's argument based on D14 is that X1 is the real sheet of plasticized thermoplastic vinyl polymer material from which composition B0 of Example 2 of D1 derives. The Board understands this argument as meaning that the same materials were used for the preparation of said composition B0 of Example 2, even if they were not specified in D1 (letter of 3 May 2024, page 11, point f.1 and statement of grounds of appeal, page 20, last full paragraph). However this has no bearing on the issue of novelty of operative claim 1, since this information concerning the specific type of suspension PVC, emulsion PVC and Ca/Zn stabiliser is not made available to the public with D1.

2.2.4 A relevant argument underlying the respondent's submissions is that the K-value within the range disclosed in D1 must be expected to have an influence on the mechanical properties set out in operative claim 1, so that it cannot be concluded that the skilled person putting into practice the teaching of composition B0 of Example 2 of D1 would necessarily obtain a composition which allow to fulfil the functional requirements of operative claim 1. In this respect, the respondent reiterated at the oral proceedings that the K value had an influence on the mechanical properties of the produced sheet.

This is in the Board's opinion credible considering that the K value is an empirical parameter closely related to the statistical molecular mass of PVC (see paragraph [0043] of the specification) and that mechanical properties of a polymer, such as strength and stiffness, are generally known to the skilled person to depend on its molecular weight. In respect of PVC, it can be referred to the data sheet of Lacovy®

S7015 (D13a) used by the appellant for the suspension resin of X1 of D12a to reproduce composition B0 of Example 2 of D1 (see D14, page 2, second full paragraph), in which it is indicated that a high K-value of 69,5 gives articles with very good mechanical properties (D13a, second bullet point on the right-hand side of the table).

2.2.5 Moreover, although D1 (claim 1 and paragraph [0074]) and the patent in suit (paragraph [0043]) comprise the same teaching concerning the K value of the PVC, the value for the PVC resin used in Example 2 is not given and it cannot be held that any K value within the range recommended both in D1 and in the specification is sufficient to fulfil the parametric requirements set out in operative claim 1, since other variables are also expected to impact these parametric requirements.

In this respect, it is undisputed that beside the influence of the amount of tear promoting agent on the elongation at break and the trouser tear strength, which can be inferred from the specification (paragraphs [0025], [0029] to [0031] and [0069]), i.e. increasing amounts thereof resulting in a decrease of both parametric values, the amount of plasticiser has also an influence on the elongation at break and the tearing behaviour, increasing amount of plasticisers resulting in an increase of the elongation at break, as indicated in paragraph [0046] of the specification. This is also common general knowledge, as indicated in D7 which is an excerpt of a PVC handbook concerning the use of plasticizers in such polymers, which was cited by the appellant during the oral proceedings. The Board refers in this respect to page 174, section 5.3, third paragraph, according to which plasticization results in increased flexibility and elongation, which is also

illustrated in Table 5.3, on page 184 and in the comments in the second paragraph following that table, according to which tensile strength and ultimate elongation, i.e. elongation at break, are influenced by the plasticizer level.

2.2.6 Accordingly, in the absence of any evidence that a composition as disclosed with composition B0 of Example 2 of D1 would necessarily lead to a sheet meeting the parametric definition of operative claim 1 with any K value within the range of 50 to 80, it cannot be concluded that putting into practice the teaching concerning composition B0 of Example 2 of D1 would inevitably result in a moulded skin whose sheet of plasticized thermoplastic vinyl polymer material exhibits an elongation at break of between 200.0 % and 400.0 % at room temperature measured according to ISO 527 part 1 and 2 test piece 5A, or a trouser tear strength of maximum 25 N/mm measured according to ISO 34-1 Method A.

2.3 In view of the foregoing, D1 has not been shown to anticipate the subject-matter of operative claim 1.

Inventive step

D1 as closest prior art

3. The parties, in agreement with the contested decision, consider that the disclosure of composition B0 of Example 2 of D1 represents a suitable starting point for the invention in accordance with operative claim 1.

Distinguishing features

3.1 It result from the analysis given in above points 2.1 to 2.2.6 that the moulded skin in accordance with operative claim 1 is distinguished from that of the closest prior art in that the sheet of plasticized thermoplastic vinyl polymer it comprises exhibits:

- an elongation at break of between 200.0 % and 400.0 % at room temperature measured according to ISO 527 part 1 and 2 test piece 5A and

- a trouser tear strength of maximum 25 N/mm measured according to ISO 34-1 Method A.

Problem successfully solved

3.2 The respondent contended in writing that the claimed invention would solve the problem of avoiding particles being projected upon opening of the airbag (rejoinder, paragraph bridging pages 29 and 30), meaning that less particles would be projected in comparison to the prior art, this being the first formulation of the problem proposed by the respondent.

During the oral proceedings, the respondent submitted in addition various other formulations of the problem meant to be successfully solved by the subject-matter of operative claim 1 over the closest prior art. In this respect, it was submitted that it would reside in the provision of a flexible moulded skin having the parametric requirements defined in operative claim 1, the solution residing in the addition of a tear promoting agent in the amount recited in said claim (second formulation). It was also put forward that it would reside in the achievement of an alternative airbag skin having said parametric properties, which would facilitate tear propagation, resulting in a

reduced amount of particles projected when the airbag opens (third formulation). It was also seen by the respondent as the achievement of a skin having a limited, but sufficient stretchability, as well as a quick propagation which would be needed for an airbag (fourth formulation). Finally, the respondent advanced that it lay in the provision of an improved airbag cover, in particular with respect to the reduction of delamination of the skin from the underlying foam and of the number of particles projected when the airbag opens, which resulted from the balance of elongation at break and tear trouser strength defined in claim 1, reference being made to paragraphs [0017] to [0020] of the specification (fifth formulation).

3.2.1 As already pointed out in the contested decision (Reasons, point 4.4.4.2 and 4.4.4.3) and which is still the case on appeal, no supporting evidence has been relied upon which would demonstrate that the present distinguishing functional features are causative for an alleged beneficial effect or improvement, in particular for less particles being projected upon opening of the airbag (first, third and fifth formulations of the problem). In this regard, paragraphs [0017] to [0020] referred to by the respondent contain mere indications of alleged technical advantages brought about by the claimed flexible skins, essentially a reduction to a minimum of delamination of the skin from the underlying foam material due to facilitated propagation of a tear along the weakening line upon airbag deployment. This reduction to a minimum of delamination is indicated to result in a reduction of the amount of flying particles produced upon airbag deployment. These paragraphs, however, do not comprise corroborating evidence for the respondent's contention.

In view of the foregoing, the selection of ranges defined in operative claim 1 for the elongation at break and the trouser tear strength has not been shown to be associated with a particular beneficial effect.

3.2.2 According to established case law, alleged advantages to which the patent proprietor merely refers, without offering sufficient evidence to support the comparison with the closest prior art, cannot be taken into consideration in determining the problem underlying the invention and thus in assessing inventive step (see Case Law, I.D.4.3.1). In such cases therefore the problem has to be formulated in a less ambitious manner.

In addition, the second to fourth formulations of the problem proposed by the respondent contain pointers to the solution ("having the parametric requirements defined in operative claim 1", "having these two parametric properties", "having a limited, but sufficient stretchability") resulting in an inadmissible ex post facto analysis (Case Law, I.D. 4.2.1).

3.2.3 On that basis, the Board concludes, in line with the finding of the opposition division, that the problem successfully solved by the subject-matter of operative claim 1 over the composition B0 of Example 2 is to be formulated as the mere provision of a further flexible moulded skin.

Obviousness of the solution

3.3 It remains to be decided whether, in view of the disclosure of D1, possibly in combination with other prior art documents or common general knowledge, the

skilled person desiring to solve said problem would have arrived in an obvious manner at a flexible skin in accordance with operative claim 1.

3.3.1 It is uncontested that the elongation at break and trouser tear strength are parameters that the skilled person would obviously consider to be relevant in the field of airbag covers. The respondent, however, submits that the skilled person would actually move away from an elongation at break between 200-400%, as D5 would clearly and unambiguously teach to select an elongation at break below 200%. Accordingly, a skilled person would not be triggered to investigate a PVC-sheet with an elongation at break above that value (rejoinder, page 30, lines 14-20).

This is not convincing.

As pointed out by the appellant during the oral proceedings the moulded skin of D5 has preferably no incisions, perforations or other material recesses that reduce its stretchability, i.e. a sufficiently low stretchability for use in an airbag cover is achieved in D5 by the reduction in stretchability of the material over the entire layer and not by a locally introduced weakening (D5, page 2, right hand column, last eight lines).

However, neither D1, nor operative claim 1 exclude the use of incisions, perforations or other material recesses that reduce the stretchability of the moulded skin. In fact, as submitted by the appellant, the conception of the airbag favoured in the patent in suit is based on the introduction of a weakening or tearing line in the plasticized thermoplastic vinyl polymer sheet to facilitate the airbag opening (paragraphs

[0004], [0006], [0010], [0019], [0061] and [0063] of the specification). This implies for the skilled person that different levels of stretchability of the material used for the airbag cover sheet might be required in D5 and in D1 or the patent in suit for a successful deployment of the airbag, namely a higher level of stretchability for the material used in D1 or the patent in suit, since for the latter, the cover sheet can be mechanically weakened by the introduction of a weakening or tearing line.

Accordingly, it cannot be held that the skilled person starting from the disclosure of D1 would be taught away by the teaching of D5 to prepare a moulded skin having an elongation at break in the range defined in operative claim 1.

In any event, according to the case law of the boards of appeal, the answer to the question of what a skilled person would have done in the light of the state of the art depends to a large extent on the technical result sought to be achieved (see T 939/92, Reasons 2.4.2 and 2.5.3).

Faced with the problem of providing a further flexible moulded skin, irrespective of whether other properties have been improved, no pointer to the claimed solution is needed for the skilled person, since the act of selecting both an elongation at break between 200 % and 400 % and a trouser tear strength of maximum 25 N/mm is considered to be an arbitrary measure.

3.3.2 Notwithstanding the fact that the selection of such parametric definitions is deemed arbitrary, in order to conclude that it was obvious for the skilled person to arrive at the flexible moulded skin of operative

claim 1, it must have been shown that the preparation of said flexible moulded skin was obvious to realize.

Accordingly, the decisive question to be answered in the present case, is whether the person skilled in the art would be able, on the basis of the information provided in D1 or other prior art and, if necessary, using common general knowledge, to identify without having to resort to an undue amount of experimental work the measures which would lead to a sheet of plasticized thermoplastic vinyl polymer material meeting the parametric definition of claim 1.

3.3.3 It can be agreed with the appellant, that the skilled person faced with the problem identified in above point 3.2.3 would find it obvious to first put into practice, composition B0 of Example 2. For this purpose, the skilled person would need to complete the missing teaching of that example, i.e. to take suitable suspension PVC resin, emulsion PVC resin and calcium/ zinc stabiliser. This was done by the appellant with composition X1 of D12a which undisputedly results in a sheet exhibiting an elongation at break of 346 % and a trouser tear strength of 16.8, i.e. fulfilling the parametric requirements set out in operative claim 1.

3.3.4 As regard the PVC resins, paragraph [0074] of D1 teaches that suitable suspension PVC resin and emulsion PVC resin have a K-value between 50 and 80. On that basis, the skilled person would find it obvious to use suspension and emulsion PVC resins having a K-value around the middle of this range, which undisputedly were commercially available at the filing date of the patent in suit, such as those used for composition X1 of D12a, having a K-value of 70.

3.3.5 With respect to the Ca/Zn stabilizer, which might not have been used for the actual composition B0 of Example 2 of D1, but was erroneously reported in D1, as was alleged in D14, it remains that the respondent failed to provide any evidence that a Ca/Zn stabilizer or stabilizers in general in the amount used in composition B0 of Example 2 and now in composition X1 of D12a would have a relevant impact on mechanical properties recited in operative claim 1 so as to prevent the skilled person from obtaining an elongation at break and a trouser tear strength within the ranges in claim 1. The Board has no reason to believe so, since the factors essentially affecting the parametric values defined in operative claim 1 are the plasticizer, the tear promoting agent and the PVC resin, as can be taken from above points 2.2.4 and 2.2.5.

Once the skilled person has selected appropriate PVC resins (see preceding paragraph), it is unreasonable to consider that the use of a stabilizer in an amount of 1.3 wt. %, as reported in D1 and D12a (page 2, table, third column from the right) would decisively affect the mechanical properties recited in operative claim 1, when the patent in suit does not indicate that stabilizers whose use is expressly and generally taught therein (paragraphs [0055] and [0059]) are of any relevance for achieving the functional features of operative claim 1. It is therefore considered that the skilled person using in addition a Ca/Zn stabilizer as taught in D1 or another stabilizer in order to put into practice the teaching of example B0 of Example 2 would have arrived at a moulded skin falling within the ambit of operative claim 1. In this respect, it was uncontested that calcium/zinc stabilizers were known heat stabilizers for PVC compositions at the date of

filing of the application as filed. This is illustrated by the PVC composition generally described in paragraph [0015] of D4 which comprises heat stabilizers (Ba, Calcium, Phosphite, Zinc based) and is also used for airbag skin layers (paragraph [0008]).

3.3.6 In view of the foregoing, the Board concludes that the skilled person faced with the problem identified in above point 3.2.3 would have arrived in an obvious way at a flexible moulded skin in accordance with operative claim 1 by merely putting into practice the teaching of the closest prior art.

3.4 Accordingly, the subject-matter of present claim 1 which has been shown to comprise obvious embodiments lacks an inventive step, contrary to the requirements of Article 56 EPC. This prejudices maintenance of the patent in the form defined in the present Main Request.

First to Third Auxiliary Requests

4. The respondent did not submit any specific argument in writing concerning inventive step of the subject-matter of claim 1 of any of the First to Third Auxiliary Requests, a single reasoning being providing for the Main Request and the Auxiliary Requests in the rejoinder (page 31, lines 13-14). The representative of the respondent also stated during the oral proceedings that the arguments concerning the First to Third Auxiliary Requests were the same as those submitted in relation to the Main Request (minutes, page 5, third full paragraph). In these circumstances, the arguments by the respondent in respect of the Main Request which were not found to demonstrate the existence of an inventive step of the claimed invention over the closest prior art cannot also convince the Board that a

different conclusion should be reached in respect of the First to Third Auxiliary Requests. On that basis, the First to Third Auxiliary Request share the same fate as the Main Request regarding inventive step.

Fourth Auxiliary Request

Inventive step

5. It is undisputed that claim 1 of the Fourth Auxiliary Request differs from claim 1 of the Main Request in that

- the composition is defined to contain from 37.0-47.0 wt. % of at least one plasticizer composition

- the amount of tear promoting agent is at least 1.50 wt. %, the tear promoting agent being an inorganic mineral material, the particles of which have an elongated shape and

- the sheet of plasticized thermoplastic vinyl polymer material of the flexible moulded skin has a tensile strength of between 2 and 11 N/mm^2, measured according to ISO 527 part 2 test piece 5A.

Distinguishing features

5.1 While no additional distinguishing feature over the closest prior art results from the first mentioned amendment of the Main Request, as the composition B0 of Example 2 comprises 40 wt.% of plasticiser, the other modifications vis-à-vis the Main Request provide further distinguishing features over the closest prior art.

It was in this respect undisputed during the oral proceedings, in particular having regard to D13f (last page, electron micrograph) that sodium zeolite (A) used in the closest prior art does not have an elongated shape, contrary to the tear promoting agent of operative claim 1.

The parties were also in agreement that the amount of tear promoting agent in the composition of the closest prior art is below the minimum value set out in the Fourth Auxiliary Request.

Concerning the tensile strength, which is to be understood as the tensile strength at break, as acknowledged by the parties during the oral proceedings, it is uncontested that the composition B0 of Example 2, whose PVC resin is not specified, has not been shown to inevitably results in a sheet of plasticized thermoplastic vinyl polymer material having a tensile strength within the range of 2 to 11 N/mm^2. In this respect, composition X1 of D12a which uses a PVC resin in accordance the general teaching of D1 and results in a sheet of plasticized thermoplastic vinyl polymer material meeting the functional requirements of claim 1 of the Main Request (elongation at break and trouser tear strength) does not lead to a tensile strength of between 2 and 11 N/mm^2, but to a higher value of 13.2 MPa, i.e. 13.2 N/mm^2.

Problem successfully solved

5.2 As in respect of the Main Request, the respondent alleged that the claimed flexible moulded skins would exhibit, in comparison to the closest prior art, a reduced delamination and therefore a reduction of the amount of flying particles produced upon airbag

deployment. During the oral proceedings the respondent submitted for the first time that evidence for these technical benefits could be found in Fig. 1a and Fig. 1b of the specification. In the respondent's opinion, the experimental results shown in these figures should be analysed in the light of Examples 1 to 4, whose experimental data are presented in Table 1.

Apart from being filed at an extreme late stage of the proceedings without any indication of exceptional circumstances, as required by Article 13(2) RPBA, these submissions, even if taken into account, were not found convincing for the following reasons:

5.2.1 Fig. 1a and Fig. 1b are described in paragraph [0064] of the specification to show a flexible PVC sheet obtained by slush moulding of a known composition and a composition according to the invention, respectively, subjected to fast tearing.

However, no details about the known composition and the composition according to the invention are given in this paragraph. It can only be inferred from paragraph [0069] that said known composition used in the experiment of Fig. 1a does not contain talc as a tear promoting agent, whereas the composition employed in Fig. 1b comprises an unspecified minimum amount thereof.

Moreover, there is no indication that said known composition used in the experiment shown in Fig. 1a necessarily corresponds to the basis composition of Example 1 of the patent in suit containing no talc to which various amounts of talc are added in Examples 2 to 4, as indicated in paragraph [0066].

In this respect, the reference made in paragraph [0069] to both the results shown in the enclosed pictures, i.e. Fig 1a and Fig. 1b, and the results concerning the manual tear test in Table 1 does not allow the conclusion that the experiment shown in Fig. 1a necessarily corresponds to the basis composition of Example 1 of the patent in suit or that Fig. 1b corresponds to an experiment performed on the same basis composition with an additional amount of talc. There is also no evidence that the manual tear test for which the results are shown in Table 1 corresponds to the fast tearing test mentioned for the description in paragraph [0064] of Fig. 1a and Fig. 1b.

5.2.2 Furthermore, the patent in suit only provides with paragraph [0066] a vague description of the basis composition used in these Examples 1 to 4, the use of a plasticizer being even not described, as rightly pointed out by the appellant. Even if it were assumed to the benefit of the respondent that this basis composition must be understood in the light of granted claim 1 to comprise a plasticizer, its nature and amount would be also unknown. As regards its amount, the general teaching of the specification allows for an amount of plasticizer in the range of from 30 to 50 wt. %, i.e. an amount which is not necessarily within the range defined in operative claim 1 of the Fourth Auxiliary Request. Furthermore, a filler is indicated to be used in paragraph [0066] of the specification. However the nature and amount of the filler, which potentially affect the mechanical behaviour of the moulded skin, are not specified. Accordingly, the comparison offered by the respondent on the basis of Example 1 as a reference example has not been shown to be made vis-à-vis a composition representative of the closest prior art.

5.2.3 On that basis, the Figures and tests relied upon by the respondent are not suitable to support the allegation by the respondent that the features distinguishing the subject-matter of claim 1 of the Fourth Auxiliary Request from the closest prior art bring about a reduced delamination and therefore a reduction of the amount of flying particles produced upon airbag deployment.

5.2.4 Accordingly, in the absence of appropriate evidence the problem successfully solved by subject-matter of claim 1 of the Fourth Auxiliary Request over the closest prior art resides in the mere provision of a further flexible moulded skin.

Obviousness of the solution

5.3 Concerning obviousness of the solution, similarly to the reasoning given for the Main Request in above points 3.3.1 and 3.3.2 concerning the parametric features defining the elongation at break and the trouser tear strength, the additional requirement in the Fourth Auxiliary Request that the sheet of plasticized thermoplastic vinyl polymer material has a tensile strength of between 2 and 11 N/mm^2 must be seen in the absence of supporting evidence as a non purposive and therefore obvious choice for the skilled person who merely wished to obtain a further flexible moulded skin.

5.3.1 As to whether the skilled person would have been in the position to prepare at the date of filing a flexible moulded skin with a sheet of plasticized thermoplastic vinyl polymer material fulfilling the combination of parametric conditions now defined in the Fourth

Auxiliary Request, the considerations in above points 3.3.3 to 3.3.6 equally apply. This means that the skilled person faced with the problem of providing a further flexible moulded skin would have already arrived in an obvious manner at a moulded skin with sheet of plasticized thermoplastic vinyl polymer material exhibiting an elongation at break of 346 % and a trouser tear strength of 16.8 N/mm by the obvious selection of a known Ca/Zn stabilizer and suspension and emulsion PVC resins having a K-value around the middle of the range recommanded in D1, as demonstrated with experiment X1 of D12a.

5.3.2 Moreover, having regard to the fact that the selection of an elongation at break anywhere in the range of 200 to 400% is an obvious measure to the skilled person (see above point 3.3.1), the skilled person would have good reasons to produce further moulded skins whose sheet of plasticized thermoplastic vinyl polymer material exhibit an elongation at break within this whole range, e.g. elongation at break values below 346 %.

In order to do so, the skilled person would have been guided to apply the teaching of D5, as was stressed by the appellant. This document teaches that a reduction of the stretchability of a sheet of plasticized thermoplastic vinyl polymer material and therefore of its elongation at break can be achieved, like in the patent in suit, through the introduction of particulate materials with a higher melting point than the PVC plastic material (page 2, right-hand column, lines 1-4, 24-32; page 3, left-hand column, lines 4-7; page 3, paragraph [0011]; page 4, paragraph [0017] and page 5, paragraph [0024]), the use of talc being disclosed for this purpose on page 3, paragraph [0013] of that

document (appellant's letter of 3 May 2024, page 28, section (0068)). In this respect, the skilled person would not hesitate to use talc whose use is also taught in D1 (paragraph [0084], fourth and third lines from the bottom) and therefore compatible with the formulation described with composition B0 of Example 2 of that document.

It was also confirmed by the respondent during the oral proceedings that talc is a tear promoting agent within the meaning of claim 1 of the Fourth Auxiliary Request, i.e. a mineral tear promoting agent having an elongated shape.

Moreover, the act of choosing an appropriate amount of talc to reduce the elongation at break below 346%, but still within the arbitrarily selected value of at least 200% requires no more than routine experimentation for the skilled person, as increasing amounts of particulate materials such as talc are understood in the light of D5 to provide decreasing elongation at break values.

5.3.3 Concerning the additional parametric requirements defined in operative claim 1, it is undisputed that a decrease of the elongation at break by the addition of talc will also result in a decrease of both the trouser tear strength and the tensile strength, as evidenced by the experimental results shown in Table 1 of the patent in suit. A correlation between the trouser tear strength and the tensile strength was also demonstrated by the appellant with their written submissions of 3 May 2024 (pages 9 and 10, section (0017)), as pointed out by the appellant during the oral proceedings, which was not contested.

5.3.4 Accordingly, having regard to the values obtained for the elongation at break, the trouser tear strength and the tensile stress of 345 %, 16.8 N/mm and 13.22 MPa, respectively, when implementing the composition of the closest prior art without any talc addition, as demonstrated with experiment X1 of D12a, the Board finds it persuasive that the obvious addition of talc to achieve a significant reduction of the elongation at break to a value of around 200% will also result in a material having a trouser tear strength and a tensile stress within the ranges defined in claim 1 of the Fourth Auxiliary Request.

This is in agreement with the respondent's submissions during the oral proceedings concerning sufficiency of disclosure, according to which the compositions of the patent in suit would be obtained by the skilled person without any difficulty by adding a suitable amount of tear promoting agent to known airbag cover compositions. This is all more the case, considering that the teaching of D1 (paragraphs [0033], [0078], [0084] and claim 1) of which composition B0 of Example 2 represents a specific embodiment is similar to that provided of the patent in suit (paragraphs [0055], [0059] and [0048]) in respect of the PVC resins, plasticizers and additives.

5.3.5 Summing up, starting from the composition B0 of Example 2 of D1 used for making flexible moulded skin for airbag and faced with the problem of providing a further flexible moulded skin, the skilled person would have been guided by the teaching of D1 and D5 to prepare with a limited amount of routine experimental work a flexible moulded skin falling within the ambit of claim 1 of the Fourth Auxiliary Request.

5.4 Accordingly, the subject-matter of present claim 1 which encompasses obvious embodiments does not meet the requirements of Article 56 EPC. This prejudices the maintenance of the patent in accordance with the Fourth Auxiliary Request.

Fifth to Seventh Auxiliary Requests

6. The parties stated during the oral proceedings that they had no additional arguments for inventive step of the Fifth Auxiliary Request (minutes, page 6, second full paragraph). At the request of the Chairman, the respondent also stated that they would not have a different line of arguments for inventive step of the subject-matter of the Sixth and Seventh Auxiliary Requests (minutes, page 6, third full paragraph). The indication by the Chairman that under these conditions a finding of lack of an inventive step in respect of the Fourth Auxiliary Request would equally be valid for the Fifth, Sixth and Seventh Auxiliary Requests (minutes, page 6, fifth full paragraph) was not disputed.

On that basis, there is no need to provide a detailed reasoning in respect of the Fifth to Seventh Auxiliary Requests which are deemed for the same reasons as for the Fourth Auxiliary Request to lack allowability in respect of the requirements of Article 56 EPC.

Final remark

7. Having regard to the lack of allowability of the claim requests according to the Main Request and the First to Seventh Auxiliary Requests with respect to the requirements of Article 56 EPC, there is no need to address the other objections raised by the appellant in

their respect or to give reason as to why the additional experimental data submitted by the respondent with their letter of 28 May 2025 in support of their argumentation regarding sufficiency of disclosure were not admitted into the proceedings (minutes of the oral proceedings, page 3, third paragraph).

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked

The Registrar: The Chairman:

D. Hampe D. Semino

Decision electronically authenticated