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Datasheet for the decision of 3 April 2025

Case Number: T 0996/22 - 3.3.06

Application Number: 15777673.3

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Language of the proceedings: EN

Title of invention:
MAT AND GYPSUM BOARDS SUITABLE FOR WET OR HUMID AREAS

Patent Proprietor:
Ahlstrom Oyj

Opponent:
Owens Corning Intellectual Capital, LLC

Headword:
Ahlstrom/Mat for gypsum composite

Relevant legal provisions:
EPC Art. 54, 56, 123(2)
RPBA 2020 Art. 13(2)

Keyword:
Novelty - main request (no)
Inventive step - Auxiliary request (yes)
Amendments - allowable (no)
New objections after communication - taken into account (no)

Decisions cited:
G 0002/21

Catchword:

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Case Number: T 0996/22 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 3 April 2025

Appellant: (Patent Proprietor)	Ahlstrom Oyj Alvar Aallon katu 3 C 00100 Helsinki (FI)
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Appellant: (Opponent)	Owens Corning Intellectual Capital, LLC One Owens Corning Parkway Toledo, OH 43659 (US)
Representative:	Haseltine Lake Kempner LLP One Portwall Square Portwall Lane Bristol BS1 6BH (GB)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 21 March 2022 concerning maintenance of the European Patent No. 3204551 in amended form.**

Composition of the Board:

Chairman	J.-M. Schwaller
Members:	S. Arrojo
	O. Loizou

Summary of Facts and Submissions

I. The appeals of the proprietor and the opponent are directed against the decision of the opposition division to maintain European patent No. 3 204 551 in amended form on the basis of the claims according to auxiliary request 1 dated 24 September 2020.

II. In its grounds of appeal, the proprietor contested the decision and requested that the patent be maintained as granted (main request), claim 1 thereof reading as follows:

"1. A fibrous mat for a gypsum board comprising at least one ply of a non-woven fabric and a binder composition, wherein:
- said binder composition represents from 10 to 40 wt.% of the total weight of the mat; and
- said binder composition comprises a copolymer comprising a comonomer unit of a vinyl ester of an alpha branched aliphatic monocarboxylic acid, said copolymer being present in an amount from 25 to 100 wt. % of the binder composition weight."

III. In its grounds of appeal, the opponent argued that claim 1 as upheld by the opposition division lacked an inventive step over D10 (EP 2230075 A1) combined with D24 (EP 1980540 A1); over D17 (WO 2010/026065 A1) combined with the teaching of D3 (WO 94/12549), D6 (EP 0731207 A1), D7 (US 5,763,022), D8 (US 6,174,568 B1), D10 or D28 (WO 2013/113459); over D18 (US 2006/0068186 A1) combined with common general knowledge in D1 and the teaching in D7, D8, D12 (WO 00/22016), D17 or D24;

and over D19 combined with D23 (US 2004/0209074 A1). Furthermore, it referred to parallel case T 1958/22 and indicated that the decision of the opposition division for that case was relevant for the present proceedings.

IV. In its reply, the proprietor argued that opponent's appeal was insufficiently substantiated and thus not admissible. As an auxiliary measure, it requested that the patent be maintained on the basis of the claims according to one of auxiliary requests 1, 1c, 2a, 2b, 2c, 3a, 3b, 3c, 4a, 4b, 4c, 5a, 5b, 5c, 6a, 6b and 6c filed therewith. It also indicated that most of opponent's inventive step objections were presented for the first time at the appeal stage, and requested that D31 and D32 not admitted by the opposition division, should be admitted into the appeal proceedings.

V. Claim 1 of **auxiliary request 1** (as upheld by the opposition division) corresponds to claim 1 as granted with the following amendments (highlighted by the board): *"1. ~~A~~ Use of a fibrous mat ~~for~~ in a gypsum board, the fibrous mat comprising ... "*

Claim 1 of **auxiliary request 1c** corresponds to that of auxiliary request 1 with the following amendment (highlighted by the board): *"- said binder composition represents from ~~10~~ 15 to ~~40~~ 35 wt.% of the total weight of the mat".*

Claim 1 of **auxiliary request 2a** corresponds to that of the main request with the additional feature: *", wherein said comonomer unit of a vinyl ester of alpha branched aliphatic monocarboxylic acid is present in said copolymer in an amount of 20 to 70 wt.%".*

Claim 1 of **auxiliary request 2b** corresponds to that of auxiliary request 1 with the additional feature: *",wherein said comonomer unit of a vinyl ester of alpha branched aliphatic monocarboxylic acid is present in said copolymer in an amount of 20 to 70 wt.%".*

Claim 1 of **auxiliary request 2c** corresponds to that of auxiliary request 1c with the additional feature: *", wherein said comonomer unit of a vinyl ester of alpha branched aliphatic monocarboxylic acid is present in said copolymer in an amount of 20 to 70 wt.%".*

Claim 1 of **auxiliary requests 5a** reads as follows:
"1. A fibrous mat for a gypsum board comprising at least one ply of a non-woven fabric and a binder composition, wherein:
- said binder composition represents from 10 to 40 wt.% of the total weight of the mat; and
- said binder composition comprises a copolymer comprising a co-monomer unit of a vinyl ester of an alpha branched aliphatic monocarboxylic acid, wherein said comonomer unit of a vinyl ester of alpha branched aliphatic monocarboxylic acid is present in said copolymer in an amount of 20 to 70 wt.%, said copolymer being present in an amount from 25 to 100 wt.% of the binder composition weight, wherein
- said non-woven fabric comprises a mixture of cellulose based fibers and glass fibers, the cellulose based fibers being present in the mixture in an amount from 40 to 85 wt.% of the total weight of the fibers; and
- said glass fibers having an average diameter below 25 µm."

Claim 1 according to **auxiliary request 5b** corresponds to that of auxiliary request 5a with the following

amendments (highlighted by the board): *"1. ~~A~~ Use of a fibrous mat ~~for~~ in a gypsum board, the fibrous mat comprising ... ".*
Claim 1 of **auxiliary request 5c** corresponds to that of auxiliary request 5b with the following amendment (highlighted by the board): *"- said binder composition represents from ~~10~~ 15 to ~~40~~ 35 wt.% of the total weight of the mat".*

Claim 1 of **auxiliary requests 6a** reads as follows:
"1. A fibrous mat for a gypsum board comprising at least one ply of a non-woven fabric and a binder composition, wherein:
- said binder composition represents from 10 to 40 wt.% of the total weight of the mat; and
- said binder composition comprises a copolymer comprising a co-monomer unit of a vinyl ester of an alpha branched aliphatic monocarboxylic acid, wherein said comonomer unit of a vinyl ester of alpha branched aliphatic monocarboxylic acid is present in said copolymer in an amount of 20 to 70 wt.%, said copolymer being present in an amount from 25 to 100 wt.% of the binder composition weight, wherein
- said non-woven fabric comprises a mixture of cellulose based fibers and glass fibers, the cellulose based fibers being present in the mixture in an amount from 40 to 85 wt.% of the total weight of the fibers; and
- said glass fibers having an average diameter below 25 from 6 to 20 µm."

VI. In its reply, the opponent argued that claim 1 as granted was not novel in view of D6, D3, D7 and D8, and that the inventive step objections raised against claim 1 of auxiliary request 1 also applied to the main request.

VII. In a submission dated 2 February 2023, the opponent argued that the subject-matter of the claims upheld by the opposition division was almost identical to that of a parallel divisional application, so they should not be allowed under the principle of double patenting set out in G 4/19. It also requested that the inventive step objection starting from D10 be admitted into the appeal proceedings and that the case be remitted to the first instance if any one of auxiliary requests 1c ff. was to be discussed. Additionally, auxiliary request 1c was not inventive for the same reasons as the main request; auxiliary request 2a was not novel over D3, D6 to D8; auxiliary request 2b was not inventive for the reasons provided for auxiliary requests 1 and 2a; auxiliary request 3a extended beyond the content of the application as filed, was unclear and not inventive; auxiliary request 3b was not inventive for the reasons given for auxiliary request 3a and 1; auxiliary request 4a extended beyond the content of the application as filed, was unclear and not inventive; auxiliary request 4b was not inventive for the same reasons given for auxiliary requests 3b and 1; and auxiliary request 5a extended beyond the content of the application as filed.

VIII. In a submission dated 1 September 2023, the proprietor filed document D33 and requested that the case be remitted to the first instance if the board admitted the inventive step objection starting from D10 as the closest prior art.

IX. In a submission dated 25 October 2023, the opponent requested that D33 not be admitted into the appeal proceedings and argued that the additional features in auxiliary request 5a did not contribute to establishing

novelty or inventive step, that auxiliary request 5b lacked an inventive step for the reasons given for auxiliary requests 4a and 4b, and that the 'c' version of the auxiliary requests did not overcome the objections raised for the 'a' and 'b' requests.

X. In its preliminary opinion, the board concluded that claim 1 of the main request was not novel over D6; claim 1 according to auxiliary requests 1, 1c, 2b and 2c was not inventive when starting from D17 as the closest prior art; claim 1 of auxiliary request 2b was not novel over D6, and claim 1 of auxiliary requests 3a to 5c extended beyond the content of the application as filed. Concerning auxiliary request 6a, the amendments made appeared to overcome the objections under Article 123(2) EPC.

XI. In a submission dated 1 August 2024, the opponent raised objections under Article 56 EPC against auxiliary requests 6a to 6c.

XII. In a submission dated 16 December 2024, the proprietor filed new auxiliary requests 3a to 4c to replace the corresponding requests on file. Furthermore, it filed additional arguments and requested that opponent's late objections against auxiliary requests 6a to 6c not be admitted into the appeal proceedings.

XIII. In a submission dated 23 January 2025, the opponent filed additional observations and requested that new auxiliary requests 3a to 4c not be admitted into the appeal proceedings.

XIV. In a submission dated 3 March 2025, the proprietor filed additional observations.

XV. At the oral proceedings, which took place by videoconference on 3 April 2025, the parties' final requests were as follows:
The proprietor requested that the decision under appeal be set aside and the patent be maintained on the basis of the claims as granted (main request) or, as an auxiliary measure, that the patent be maintained on the basis of the claims of one of auxiliary requests 1 to 2c filed with its reply dated 12 December 2022, or of one of auxiliary requests 3a to 4c filed with the submission dated 16 December 2024, or of one of auxiliary requests 5a to 6c also filed with its reply.

The opponent requested that the decision of the opposition division be set aside and the patent be revoked in its entirety.

Reasons for the Decision

1. Main request - Novelty

The opposition ground under Article 100(a) EPC in relation to Article 54 EPC prejudices the maintenance of the patent as granted for the following reasons:

1.1 D6 (page 3, line 13) discloses a non-woven fibrous mat containing a binder comprising a copolymer derived from a comonomer, specifically a vinyl ester of an alpha-branched aliphatic monocarboxylic acid present in an amount of 5 to 50 wt.%. In the exemplary embodiment on page 5, lines 49–58, the binder is used in an amount of 20 wt.% relative to the weight of the fibrous mat.

1.2 The proprietor argued that the novelty objections relied on different, unrelated passages of D6 and that there was no clear and unambiguous disclosure of a

single embodiment combining all the claimed features. Furthermore, the binder amounts disclosed in D6 referred to the initial quantities used during the preparation of the mat (see page 4, lines 11–17) and did not reflect the binder content in the final product. Since some of the binder was squeezed out of the mat after application (see page 5, lines 51–53 and D33), the actual amount of binder remaining in the final product was unknown, but in any case, would be lower than 20 wt.%.

1.3 The board disagrees because all features defined in claim 1 at issue are anticipated by the exemplary embodiments disclosed in D6, which describe a non-woven fibrous mat comprising a binder containing a copolymer with a comonomer unit of a vinyl ester of an alpha-branched aliphatic monocarboxylic acid ('VeoVa 9®' or 'VeoVa 10®' in Examples 1 and 2, respectively) in an amount of 20 wt.% relative to the weight of the fibrous mat (see page 5, lines 50–51). The examples further indicate (see page 5, lines 49–54) that the binder is applied at 20 wt.% with respect to the weight of the mat, and that for this purpose ('dazu'), the fibre mat is impregnated with a 10 wt.% binder solution, squeezed off, and subsequently dried. It is therefore unambiguously clear that the 20 wt.% value in the examples refers to the binder content in the final product - i.e. after impregnation, squeezing, and drying of the mat. The amount of 10 to 40 wt.% of binder in the mat is thus also anticipated in D6.

It follows from the above argumentation that the content of D33 is irrelevant for the underlying discussion and that there is thus no need to decide whether this late-filed document should be admitted into the proceedings.

1.4 It follows that the subject-matter of claim 1 at issue is directly and unambiguously disclosed in D6, so that the requirements under Article 54 EPC are not met.

2. Admissibility of opponent's appeal

2.1 In the proprietor's view, the opponent's grounds of appeal did not contest the decision or its reasoning — i.e. there was no argument explaining why the opposition division's decision should be considered incorrect. In essence, the grounds merely reiterated the objections raised during the first instance proceedings rather than addressing the contested decision as such.

2.2 The board disagrees and has concluded that the substantiation requirements under Article 108 and Rule 99(2) EPC are satisfied for the following reasons:

The opponent is correct in observing that, according to established case law (see Case Law of the Boards of Appeal, tenth edition, V.A.2.h), an appeal may fail to meet the requirements of Rule 99(2) EPC if the grounds of appeal merely repeat statements made during the first instance proceedings without addressing the reasoning of the decision under appeal. This does however not reflect the present situation, as the opponent's grounds of appeal contain several arguments directly contesting the findings of the opposition division. For example, they include arguments contesting the decision on inventive step, specifically setting out why D17 should be regarded as a valid starting point, how the non-woven character of the mat is either implicit in or obvious from D17, that the invention merely provides an alternative solution, and

that such alternatives were already known from multiple prior art documents.

2.3 Accordingly, the grounds of appeal provide sufficient reasoning against the contested decision, and opponent’s appeal is considered admissible.

3. Auxiliary request 1 - Inventive step

The requirements of Article 56 EPC are not met for the following reasons:

3.1 Closest prior art

3.1.1 The opponent cited documents D10, D17, D18, D19 and D23 as possible starting points for the inventive step argumentation. Since the present opinion focuses on the objections starting from D17 as the closest prior art, there is no need to address the question of admittance of the inventive step objections starting from D10 nor the proprietor's conditional request to remit the case if this objection were admitted.

3.1.2 Document D17 discloses the use of binders in architectural elements, including gypsum boards (see page 1, lines 7–9), with a particular focus on improving weather resistance, such as resistance to mould and moisture. D17 (page 1, lines 17–21) proposes a construction in which a gypsum board is sandwiched between fibreglass scrims or facers, with the top scrim being coated with certain formulations. More specifically, page 12, lines 17–21, describes the use of a copolymer dispersion formulated into a coating that is applied to the gypsum board. In some embodiments, the fibreglass scrim is coated with this copolymer-based formulation and then placed onto a wet

gypsum board to form a glass-gypsum composite. The preferred binder formulation (see page 3, line 21 – page 4, line 8) includes a copolymer with a co-monomer derived from a vinyl ester of neodecanoic acid such as VeoVa 10®, preferably in an amount of 30–50 phm (parts per hundred monomers). Moreover, according to two specific embodiments (see formulations 8 and 9 on page 16, lines 5–7), the binder includes a copolymer with 40 wt.% of the co-monomer from VeoVa 10®, which falls within the scope of the copolymer defined in claim 1 at issue.

3.1.3 The proprietor argued that the use of vinyl esters in D17 was optional and that their amount could be zero. Moreover, D17 did not put the focus on VeoVa 10®, as example 1 achieved better Cobb values than formulas 8 and 9. Consequently, a first selection was required to consider the embodiments with VeoVa 10®. There was also no disclosure in D17 of a binder amount between 10 and 40 wt.% or of the copolymer amounting to 25 to 100 wt.% of the binder, since the data in Table 1 implied that the concentration of copolymer in the composition was about 6 wt.%.

3.1.4 The board cannot agree with some of these conclusions, and notes in particular that the use of a vinyl ester of neodecanoic acid such as VeoVa 10® is disclosed on page 3, lines 2-3 of D17 as a differentiated (i.e. preferred) embodiment. It is furthermore apparent that formulations 8 and 9 (also including VeoVa 10®) constitute the exemplary embodiments of the invention. While formulation 1 achieves a slightly better Cobb value, this example simply illustrates the results obtained with some commercially available dispersions. D17 therefore provides a direct and unambiguous disclosure of fibrous-gypsum composites including

formulations with a copolymer falling within the claimed scope.

The board further disagrees that the presence of 25 to 100 wt.% of copolymer in the binder composition would represent an additional distinguishing feature over D17. In this regard, the main issue in dispute pertains to the interpretation of the term 'binder composition' in claim 1 at issue. The proprietor's assertion that the formulations disclosed in Table 1 of D17 - containing about 6 wt.% of the copolymer dispersion - necessarily correspond to said 'binder composition', but this cannot be followed, because the only requirement for said 'binder composition' is to comprise the defined copolymer in an amount of 25 to 100 wt.%, leaving it entirely open whether such composition should be used as such, or may also be combined with other additives or formulations before its application to the fibrous mat. It follows that the only restriction that can be derived from the wording of claim 1 at issue is that the mat should have been treated with a formulation, be it directly or in combination with other additives/formulations, in which the copolymer represents 25 to 100 wt.% of the ingredients. This requirement is clearly fulfilled in D17, because the copolymer dispersion used in the coating formulation in Table 1 of D17 only includes the VeoVa 10® copolymer, which thus represents around 100 wt.% of that dispersion (in any case more than 25 wt. %). In other words, the copolymer dispersion in Table 1 of D17 - rather than the whole coating composition - is considered to fall within the scope of the 'binder composition' as defined in claim 1 at issue.

This interpretation is coherent with how the description of the patent interprets the concept of

'binder composition'. In particular, it is apparent from paragraphs [0075] to [0078] and Table 1 of the patent that the 25 to 100 wt.% range defined in claim 1 refers to the concentration of the copolymer according to the invention within a dispersion that may also include other copolymers or ingredients. This copolymer dispersion can then be combined with other additives to form the slurries described in Table 2 of the patent, which are the compositions ultimately used to treat the fibrous mat. Therefore, just as in D17, the binder composition corresponds to the dispersion containing 25 to 100 wt.% of copolymer, which is then combined with other additives to form the composition to treat the fibrous mat.

For the sake of completeness, it is further noted that the subject-matter of dependent claim 6, which specifies that the binder composition may include additional components such as mineral fillers, does not undermine the foregoing reasoning, as it is not inconsistent with the interpretation adopted by the board (i.e. it merely implies that other optional ingredients, such as fillers, can be considered to be part of the binder composition, the slurry composition or both). Moreover, since dependent claims merely represent optional embodiments or further developments of the invention, the features recited therein cannot be relied upon to restrict the scope of features set forth in the independent claim.

The subject-matter of claim 1 therefore differs from D17 in that:
i) the fibreglass scrim is non-woven, and
ii) the binder is provided in an amount of 10 to 40 wt. %.

3.2 Problem solved by the invention

3.2.1 According to the patent (page 3, line 22 ff.), the object of the invention is to prepare a plasterboard which is lighter and exhibits enhanced bonding properties between the gypsum and the mat whilst maintaining inter alia good water resistance. The patent also indicates (par. [0020]) that the binder composition of the invention enhances the cohesion between the gypsum and the mat, particularly when this contains thinner glass fibres.

According to the examples in the patent — particularly the results presented in Tables 5, 7, 8 and 9 — the application of a binder composition to gypsum boards in accordance with the invention (see tests F7 to F11) leads to enhanced mechanical properties under both dry and humid conditions, as well as improved water resistance, relative to the comparative composites (F1 to F6) employing other binder formulations. It is noteworthy that the binder concentration in both the inventive and comparative examples is consistently maintained within a narrow range of 22 to 25 wt.%.

To illustrate the effect of the binder content range of 10 to 40 wt.% defined in claim 1 at issue, the proprietor submitted documents D31 and D32. The experimental data contained therein indicate that incorporating approximately 50 wt.% of the binder composition (outside the claimed range) results in inferior peeling force performance compared to formulations containing approximately 30 wt.% binder (within the claimed range).

3.2.2 The proprietor argued that in view of the above examples, the problem solved by the invention when

starting from D17 as the closest prior art was to provide a mat facer that, when used in combination with a gypsum board, achieved an improved internal cohesion.

3.2.3 The board notes that the tests presented in the patent are primarily directed at demonstrating the effects of binding compositions which are already known from D17. From this perspective, any improvement attributable to the nature of the binding composition would also be achieved in D17, so it cannot form the basis for determining the problem solved by the invention.

Nonetheless, the board acknowledges that the examples demonstrate the effectiveness of the 10 to 40 wt.% range in achieving the desired properties, specifically mechanical strength under both dry and humid conditions, as well as weather resistance. Notably, since all examples use amounts near the midpoint of this range, they are considered sufficient to confirm that the defined range ensures the desired mechanical and weather-resistant performance.

3.2.4 As pointed out in the preliminary opinion, to the extent that the data in documents D31 and D32 are used to substantiate the argument that the defined range of 10 to 40 wt.% of binder represents an appropriate amount for achieving the desired properties, these documents are regarded as redundant and thus non-decisive for the outcome of the proceedings.

On the other hand, the board has concluded that D31 and D32 cannot be relied upon to support the argument that the binder range of 10 to 40 wt.% yields an unexpected or surprising improvement in terms of binding over gypsum composites with binder amounts outside the claimed range, because such effect is not encompassed

by the technical teachings of the original application, as required by decision G 2/21 (see point II of the Headnote).

3.2.5 In this respect, the proprietor argued that G 2/21 required that the technical effect be conceptually comprised by the broadest technical teaching of the application as filed, and that this condition was clearly fulfilled in the present case, as the original application clearly reflected the advantages of the invention in terms of adhesion and bonding strength.

3.2.6 The board disagrees therewith because the broadest technical teaching of the application relates to how the proposed copolymer forms a binder composition that improves the adhesion between the layers of the gypsum composite. Had the invention been limited to a more preferred copolymer — distinct from the one disclosed in D17 — additional experimental data showing improved adhesion relative to D17 may have validly supported an argument of an unexpected improvement in this respect, i.e. the general teaching that copolymer A enhances adhesion could have reasonably been considered to encompass the more specific teaching that a preferred form of this copolymer, A1, would achieve a further improvement in adhesion over the general copolymer A. However, this line of reasoning does not apply when the alleged unexpected improvement arises not from the nature of the binder composition itself, but rather from its quantity in the mat. As previously explained, the only purpose that can be derived from the teachings in the original application is that the 10 to 40 wt.% range covers appropriate amounts to ensure that the desired properties — such as adequate adhesion and weather resistance — are achieved. There is no broader teaching in the original application, be it explicit or

implicit, from which it could be inferred that this range provides unexpected improvements in binding performance, such as enhanced peel strength despite a reduced binder content. At most, a skilled person applying common general knowledge would understand that using too little binder may result in insufficient adhesion, while excessive amounts could be economically inefficient.

Consequently, the board concludes that the allegedly surprising improvement in adhesion attributed to the use of 10 to 40 wt.% binder, as proposed by the proprietor, cannot be taken into account in the assessment of inventive step, in accordance with the principles established in G 2/21.

3.2.7 The board also notes that, even if D31 and D32 were taken into consideration, they do not include comparative tests involving binder concentrations below 10 wt.%, which is particularly relevant given that the closest prior art D17 appears to disclose binder levels within or slightly below the lower limit of the claimed range (see point 3.3.2 below). Accordingly, the board confirms its preliminary view that the content of D31 and D32 is not decisive in assessing the problem solved by the invention. There is thus no need to decide on the admittance of these documents.

3.2.8 All in all, the board concludes that the problem solved by the alleged invention is to provide alternative mechanically stable gypsum board composites which also maintain other desirable properties such as weather resistance.

3.3 Obviousness of the solution

3.3.1 The proprietor argued that even if the sole purpose of the invention was to identify appropriate amounts of binder to achieve the desired properties, the claim would still not be rendered obvious when starting from D17, because this document addressed a different problem and proposed alternatives which were significantly different from those defined in claim 1 at issue. On top of not disclosing a non-woven mat, D17 proposed a binder composition containing only 6.49 wt.% copolymer - i.e. much lower than the 25 to 100 wt.% defined in claim 1 - and an amount of binder composition in the mat of 74-90 wt.%, i.e. significantly above the 10 to 40 wt.% defined in claim 1 at issue. None of the cited documents in the prior art provided a clear incentive to modify these parameters to arrive at the subject-matter of claim 1.

3.3.2 The board disagrees because the purpose of the compositions disclosed in D17 is essentially the same as that of the alleged invention, namely to enhance both the binding of the various layers within the fibreglass-gypsum composite and its weather resistance. This dual function is clearly reflected in the description of the formulations in D17 as 'coating or binding formulations'. Accordingly, the distinction between D17 and the patent does not lie in their fundamental objective, but rather in the emphasis placed on specific properties: while D17 focuses primarily on weather resistance, the patent places greater emphasis on the binding performance and the resulting mechanical strength of the gypsum panel.

The board is also not persuaded that the difference between the binder amount defined in claim 1 at issue and that disclosed in D17 would have deterred the skilled person from arriving at the claimed subject-

matter in an obvious way. As discussed above, the copolymer dispersion added to the coating composition in D17 (see Table 1) can, in itself, be regarded as a binder composition within the meaning of claim 1. From this perspective, the 74 to 90 wt.% figure cited by the proprietor does not relate to the amount of binder composition in the mat, but to the combined amount of the copolymer dispersion - i.e. the binder composition - plus other additives such as fillers. Given that the binder composition only amounts to 6.49 wt.% of the inventive formulations in D17 (see Tables 1 and 2), the actual amount of binder composition within the mat would be approximately 4.8 to 5.8 wt.% (i.e. 6.49% of 74 to 90 wt.%). Although this remains below the 10 to 40 wt.% range defined in claim 1, the discrepancy is not as substantial as the proprietor suggests.
Moreover, since claim 1 encompasses embodiments in which the defined copolymer constitutes only 25 wt.% of the binder composition, the differences between D17 and certain embodiments of the invention would, in some cases, result from varying quantities of other copolymers and/or secondary additives rather than from different amounts of the relevant copolymer.
In light of the above, the board concludes that a person skilled in the art, seeking alternative gypsum board composites with mechanical stability and other desirable properties, would find it obvious to explore varying amounts of the binder composition, and that in doing so, he/she would arrive at the claimed range of 10 to 40 wt.% by routine trial-and-error optimisation.

Finally, even though D17 is silent as to whether the 'scrim' is woven or non-woven, this difference does not establish an inventive contribution, as both the use of woven and non-woven scrims or facers is well-known in the field of construction, a fact acknowledged by the

patent itself (see par. [0002]). Furthermore, there is no evidence on file demonstrating that the use of a non-woven structure produces any surprising technical effect in the context of the claimed invention. From this standpoint alone, the choice of one known alternative over the other does not involve an inventive contribution, as a skilled person starting from D17 would necessarily be required to choose between a woven or non-woven scrim, and making such selection based on the well-known properties of each option - i.e. rather than for achieving an unexpected effect - constitutes an obvious choice among only two known alternatives.

3.4 In view of the above considerations, the board concludes that a skilled person starting from D17 as the closest prior art, and seeking alternatives with good mechanical and weather resistance properties, would have arrived at the claimed invention without the exercise of inventive skill, i.e. by applying common general knowledge and/or performing routine optimisation or trial-and-error experimentation.

3.5 The subject-matter of claim 1 is therefore obvious in view of D17 combined with common general knowledge, so it does not meet the requirements of Article 56 EPC.

4. Request to remit the case

4.1 The opponent argued that the auxiliary requests 1c ff. were based on adding well-known features and that the proprietor had not substantiated why the amendments would meet the requirements of the EPC. It was thus requested that the case be remitted to the first instance if the board intended to discuss any of the auxiliary requests 1c ff.

4.2 The board sees no reason to remit the case for the discussion of the auxiliary requests, as they were already filed during the first instance proceedings and are sufficiently substantiated on pages 15 to 17 of the proprietor's reply (account being taken of the text of the patent). Accordingly, there are no special reasons that would justify a remittal of the case under Article 11 RPBA 2020.

5. Auxiliary request 1c - Inventive step

5.1 Claim 1 of this request corresponds to that of auxiliary request 1 with the following amendment (highlighted by the Board): *"- said binder composition represents from ~~10~~ 15 to ~~40~~ 35 wt.% of the total weight of the mat".*

5.2 Since the narrower range for the amount of binder has not been associated with any special technical effect, the same arguments and conclusions presented for auxiliary request 1 apply *mutatis mutandis* to this request.

5.3 More specifically, the invention defined in claim 1 at issue would solve the same problem proposed for auxiliary request 1, namely to provide alternative gypsum board composites which are mechanically stable while maintaining other desirable properties such as weather resistance.

5.4 As it was the case in auxiliary request 1, the board has concluded that in the absence of a specific effect associated with the proposed range for the amount of binder composition in the mat, the skilled person would arrive at the proposed invention in an obvious way by applying common general knowledge and/or performing

routine optimisation or trial-and-error experimentation.

5.5 Auxiliary request 1c does therefore not meet the requirements of Article 56 EPC.

6. Auxiliary request 2a - Novelty

6.1 Claim 1 of this request corresponds to that of the main request with the additional feature: *",wherein said comonomer unit of a vinyl ester of alpha branched aliphatic monocarboxylic acid is present in said copolymer in an amount of 20 to 70 wt.%".*

6.2 Since the amount of the relevant monomer in the copolymer of D6 is between 20 and 30 wt.% (see table on page 7), the same arguments and conclusions as for the main request apply to this request, which is therefore not novel over D6.

7. Auxiliary request 2b - Inventive step

7.1 Claim 1 of this request corresponds to that of auxiliary request 1 with the additional feature: *", wherein said comonomer unit of a vinyl ester of alpha branched aliphatic monocarboxylic acid is present in said copolymer in an amount of 20 to 70 wt.%".*

7.2 Since the amount of monomer in the copolymer of formulations 8 and 9 of D17 is 40 wt.% (see page 16, line 6), the arguments and conclusions presented for auxiliary request 1 also apply to this request, which is therefore not considered to be inventive starting from D17 as the closest prior art.

8. Auxiliary request 2c - Inventive step

8.1 Claim 1 of this request corresponds to that of auxiliary request 1c with the additional feature: *", wherein said comonomer unit of a vinyl ester of alpha branched aliphatic monocarboxylic acid is present in said copolymer in an amount of 20 to 70 wt.%".*

8.2 Since the amount of monomer in the copolymer of formulations 8 and 9 of D17 is 40 wt.% (see page 16, line 6), the same arguments and conclusions as for auxiliary request 1c apply to this request, which is therefore not considered to be inventive starting from D17 as the closest prior art.

9. Auxiliary requests 3a to 4c - Admittance

9.1 These requests were filed after notification of the communication under Article 15(1) RPBA, so their admittance is governed by Article 13(2) RPBA.

9.2 The proprietor argued that their late filing was justified as a reaction to the preliminary opinion of the board that in particular the previous auxiliary requests 3a to 4c did not meet the requirements of Article 123(2) EPC. Although these objections had been raised earlier in the proceedings, the sheer number of objections made it unreasonable to expect the proprietor to file a correspondingly large number of auxiliary requests as a precautionary measure.

9.3 The board finds that the mere filing of a large number of objections does not, in itself, constitute an exceptional circumstance justifying the late submission of new auxiliary requests under Article 13(2) RPBA. Moreover, the board does not consider the number of objections in this case to be unreasonably high. It is the proprietor’s responsibility to ensure that the

requests on file comply with the requirements of the EPC, which would entail either earlier amendments to the drafting or an assessment of which objections are likely to succeed, requiring a response in the form of an auxiliary request as a fall-back position.

9.4 Auxiliary requests 3a to 4c are thus not admitted into the proceedings under Article 13(2) RPBA.

10. Auxiliary requests 5a to 5c - Article 123(2) EPC

10.1 Claim 1 of these requests has been amended *inter alia* by incorporating the feature: *"... - said non-woven fabric comprises a mixture of cellulose based fibers and glass fibers, the cellulose based fibers being present in the mixture in an amount from 40 to 85 wt.% of the total weight of the fibers; ... "*

10.2 The proprietor argued that this feature was supported by the following passages on page 11, lines 6-12: "*In a further embodiment, the non-woven material consists in a mixture of cellulose based fibres and glass fibres, said glass fibres having an average diameter from 6 to 20 µm, preferably from 10 to 15 µm; and the cellulose based fibres are present in the fibre mixture in an amount from 40 to 85 wt.% of the total weight of the fibres, preferably from 60 to 80 wt.% of the total weight of the fibres.*"; and on page 10, lines 28-29 as filed, that "*In preferred embodiments, mineral fibres have an average diameter below 25 µm, preferably from 6 µm to 20 µm...*".

10.3 In the board's view, the defined subject-matter extends beyond the content of the application as filed, because the above passage cited as a basis on page 11 clearly indicates that the average fibre diameter is between 6

and 20µm. The proprietor's attempt to rely on the embodiments disclosed on page 10, which refer to a broader average diameter range of 'below 25µm' is not allowable, because the specific fibre mixture disclosed in the embodiment on page 11 — and now defined in claim 1 — is clearly associated with the narrower range of 6 to 20µm. The proposed amendment therefore results from an arbitrary combination of features from different embodiments, which is not directly and unambiguously derivable from the original disclosure.

10.4 Consequently, auxiliary requests 5a to 5c do not meet the requirements of Article 123(2) EPC.

11. Auxiliary request 6a - Article 123(2) EPC

Claim 1 at issue restricts the average diameter of the fibres to a range of 6 µm to 20 µm. This restriction overcomes the objections raised under Article 123(2) EPC against auxiliary requests 5a to 5c, because the amendments are now clearly supported by the embodiment disclosed in the above cited passage on page 11, lines 6-12 of the description as filed.

12. Inventive step objections against auxiliary request 6a

12.1 The request at issue was filed as an annex to the reply to the appeal on 12 December 2022. While the opponent submitted its objections to the then filed auxiliary requests on 2 February 2023, no objections were raised specifically against auxiliary request 6a in that submission. In this regard, the first time objections were explicitly directed against auxiliary request 6a was in the submission dated 1 August 2024, following the Board's indication in the communication under Article 15(1) RPBA that no such objection had been

raised. The admittance of these late filed objections is thus governed by Article 13(2) RPBA.

12.2 The opponent argued that when auxiliary request 6a had been filed, the proprietor had not given any reason as to why it would overcome the inventive step objections. In the absence of an indication as to why the narrowing of the range for the average diameter of the glass fibres would establish an inventive step, there was thus no basis to raise objections in this respect. Moreover, it should be understood that the objections raised against auxiliary request 5a also applied to auxiliary request 6a, as the only difference in the latter was that it defined a narrower average diameter range.

12.3 The board notes that the absence of an explicit reasoning as to why new auxiliary request 6a should be considered inventive did not prevent the opponent from raising objections in this regard. In the present case, the opponent could have relied on the text of the patent to assess whether the newly introduced features were linked to any special technical effect, or could have filed objections based on an alleged absence of such an effect. While a failure to raise inventive step objections cannot be interpreted as a tacit acknowledgment of inventiveness, it does carry the risk of limiting the opponent's case to arguments that can be clearly derived from the objections already on file.

The same principle applies to the proprietor, and so by omitting a substantiated explanation as to why the amended request should be regarded as inventive, the proprietor may be restricted to positions that are clearly supported by the patent text or other arguments previously submitted. Overall, by failing to provide

detailed reasoning, both parties run the risk that their later objections or substantiation may not be admitted, and that the case will be decided based solely on what is directly apparent from the facts, evidence, and arguments already on file.

12.4 In the present case, the board has concluded that the late filed objections dated 1 August 2024 should not be admitted under Article 13(2) RPBA. Nevertheless, the board will assess compliance with Article 56 EPC ex-officio on the basis of the facts, evidence and arguments that are directly derivable from the text of the patent and the arguments in favour or against higher ranking auxiliary requests.

13. Auxiliary request 6a - Inventive step

13.1 Claim 1 at issue defines additional differentiating features with respect to the cited prior art, namely the composition and the diameters of the fibres.

13.2 According to par. [0013] of the patent, the inclusion of mineral fibres (i.e. glass fibres) with a small average diameter, such as 6 to 20 µm, is linked to the 'surprising' effect of achieving mats with better tensile strength.

13.3 The inner plies used in some of the examples in Table 3 fall within the scope of claim 1 at issue. As shown in Table 5 and explained in par. [0094] of the patent, when inner plies having an average diameter of the glass fibres within the claimed range (11 µm) are used, the tensile index of the resulting composite significantly improves when compared to the analogous examples using glass fibres having an average diameter outside the claimed range (23 µm).

13.4 In view of the above, the board has concluded that the problem solved by the invention is to propose a mat providing an improved tensile strength.

13.5 From the previous arguments of the opponent, it can be derived that the claim should not be considered to be inventive because the proposed average diameters were known in the art.

13.6 The board does not dispute that the proposed average fibre diameters are disclosed in some of the cited prior art documents, and so were known in the art. However, this feature is not anticipated in the closest prior art D17, and the board sees no incentive to incorporate it for the purpose of improving the tensile strength of a composite as defined in the closest prior art. In other words, since the prior art does not teach that using fibres with an average diameter within the claimed range would enhance the tensile strength of the composite, this feature is not rendered obvious by the cited prior art.

13.7 Accordingly, the subject-matter of claim 1 of this request is not obvious, and thus involves an inventive step in view of the cited prior art. The requirements of Article 56 EPC are therefore met.

14. As no further objections were submitted against auxiliary request 6a and the board sees no reason to raise additional objections ex-officio, the claims of auxiliary request 6a are considered to meet the requirements of the EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the opposition division with the order to maintain the patent in amended form on the basis of the set of claims according to auxiliary request 6a filed with the reply dated 12 December 2022, and a description to be adapted where appropriate.

The Registrar: The Chairman:

A. Wille J.-M. Schwaller

Decision electronically authenticated