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**Datasheet for the decision
of 29 October 2025**

Case Number: T 1945/23 - 3.3.03

Application Number: 16153179.3

Publication Number: 3199312

IPC: B27N3/04, C08K3/22, C08K5/092

Language of the proceedings: EN

Title of invention:
IMPROVED CURABLE RESIN FOR MINERAL WOOL

Patent Proprietor:
URSA Insulation, S.A.

Opponent:
Saint-Gobain Isover

Relevant legal provisions:
EPC Art. 54, 56, 100(b), 123(2)
RPBA 2020 Art. 12(4), 12(6), 13(2)

Keyword:

Amendment to case - amendment admitted (yes)
Grounds for opposition - insufficiency of disclosure (no)
Novelty - main request, auxiliary requests I and II (no)
Amendment after summons - exceptional circumstances (no)
Amendments - Auxiliary request III - allowable (yes)
Inventive step - Auxiliary request III (yes)

Decisions cited:

G 0001/03, G 0002/10, G 0003/14, G 0001/16, T 0012/81,
T 0730/01, T 0971/11, T 0247/20



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Case Number: T 1945/23 - 3.3.03

D E C I S I O N
of Technical Board of Appeal 3.3.03
of 29 October 2025

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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
13 October 2023 concerning maintenance of the
European Patent No. 3199312 in amended form.**

Composition of the Board:

Chairman D. Semino
Members: O. Dury
A. Bacchin

Summary of Facts and Submissions

I. The appeal lies from the interlocutory decision of the opposition division regarding maintenance of European Patent No. 3 199 312 in amended form on the basis of the claims of auxiliary request 4 filed with letter of 27 July 2023.

II. Claims 1 to 3 and 10 of the application as filed read as follows:

"1. A curable resin, preferably formaldehyde-free, for the manufacture of mineral wool, comprising components a), b) and c), wherein:

a) is a saccharide,

b) is a polycarboxylic crosslinking agent, and

c) is a polyvalent metal oxide."

"2. The resin of claim 1, wherein the polyvalent metal oxide is selected from calcium oxide, zinc (II) oxide, and mixtures thereof."

"3. The resin of any of the previous claims, wherein the amount of the polyvalent metal oxide ranges from 0.5 - 10 wt.-% in relation to the sum of the weights of the components a), b) and c)."

"10. The resin of any of the previous claims, wherein the amount of saccharide a) ranges from 20 - 80 wt.-%, the amount of polycarboxylic crosslinking agent b) ranges from 20 - 80 wt.%, and the amount of polyvalent

metal oxide c) ranges from 0.5 - 10 wt.-%, all amounts related to the sum of the weights of the components a), b) and c)."

III. The following documents were *inter alia* cited in the decision under appeal:

- D1: US 2011/0086567 A1
- D2: WO 2012/166414 A1
- D4: WO 2009/080938 A2
- D5: Doctoral Thesis, M. M. Castro-Cabado, Development of a Bio-Based Binder for its Application in the Mineral Wool Insulation Material, June 2016, pages 159 and 160
- D6: Esterification - Methods, Reactions, and Applications, J. Otera and J. Nishikido, Wiley-VCH Verlag GmbH & Co. KGaA, 2010, pages 5, 11, 13, 296 and 297

IV. The decision under appeal was based on the patent as granted as main request as well as on auxiliary requests 1 to 4, all filed with letter of 27 July 2023. As far as relevant to the present appeal, the following conclusions were reached in this decision:

- Whereas document D6 was admitted into the proceedings, document D5 was not.
- Neither the main request, nor any of auxiliary requests 1 to 3 met the requirements of Article 123(2) EPC.
- Regarding auxiliary request 4, the opponent had raised no objections pursuant to Article 123(2) EPC and the requirements of sufficiency of disclosure

were met.

- The subject-matter of claim 1 of auxiliary request 4 was novel over the disclosure of document D1.
- Regarding inventive step of auxiliary request 4, whereas D1 and D2 were suitable documents to be taken as the closest prior art, this was not the case for D4. In addition, the subject-matter of claim 1 involved an inventive step when either D1 or D2 was taken as the closest prior art.

For these reasons, the patent as amended on the basis of the claims of auxiliary request 4 was held to meet the requirements of the EPC.

- V. The opponent (appellant) filed an appeal against the above decision and together with the statement of grounds of appeal filed, among others, the following documents:

D7: C.-Y. M. Tung and P. J. Dynes, *Journal of Applied Polymer Science*, Vol. 27, 1982, pages 569-574

D8: Declaration by E. Oubert, 18 December 2023

- VI. Together with the reply to the statement of grounds of appeal the patent proprietor (respondent) filed various sets of claims as auxiliary requests I to XIX.

- VII. The parties were summoned to oral proceedings and a communication pursuant to Article 15(1) RPBA was then issued by the Board.

VIII. With letter of 27 August 2025 the respondent filed further sets of claims as auxiliary requests XX to XXIII.

IX. During the oral proceedings, which were held on 29 October 2025 in the presence of both parties, the following procedural steps were taken by the parties:

- The appellant confirmed that the objection pursuant to Article 123(2) EPC that had been raised in point A.I of the statement of grounds of appeal was eventually not relevant for the operative main request (minutes: page 2, first paragraph directed to the "Main request").
- The respondent withdrew their request that the appellant's objections pursuant to Article 123(2) EPC that had been raised against some claims of auxiliary request III be not admitted into the proceedings (minutes: page 4, third full paragraph).
- Regarding the assessment of inventive step of claim 1 of auxiliary request III, the respondent withdrew their argument that D4 was not a suitable document to be taken as the closest prior art (minutes: page 4, last paragraph).

X. **The final requests of the parties were as follows:**

- (a) The appellant requested that the decision under appeal be set aside and that the patent be revoked.
- (b) The respondent requested that the appeal be dismissed (main request) or, in the alternative, that the patent be maintained in amended form

according to any of auxiliary requests I to II, or auxiliary request XX, or auxiliary requests III to XIX or any of auxiliary requests XXI to XXIII, where auxiliary requests I to XIX were filed with the reply to the statement of grounds of appeal and auxiliary requests XX to XXIII were filed with letter of 27 August 2025.

XI. Claims 1, 2, 13, 16 and 17 of the **main request** (auxiliary request 4 allowed by the opposition division) read as follows:

"1. A curable resin, preferably formaldehyde-free, for the manufacture of mineral wool, comprising components a), b) and c), wherein:

a) is a saccharide,

b) is a polycarboxylic crosslinking agent, and

c) is a polyvalent metal oxide."

"2. The resin of claim 1, wherein the polyvalent metal oxide is selected from calcium oxide, zinc (II) oxide, and mixtures thereof."

"13. An aqueous binder, preferably formaldehyde-free, for the manufacture of mineral wool, comprising the curable resin of any of the previous claims 1 - 11."

"16. A mineral wool product comprising mineral fibers and cured binder, wherein the cured binder is obtained by curing at a temperature larger than 100°C a binder according to claim 13."

"17. The use of polyvalent metal oxide as a binder

curing accelerator in the manufacture of mineral wool materials, wherein the binder comprises a saccharide and a polycarboxylic crosslinking agent."

XII. Claim 1 of **auxiliary request I** differed from claim 1 of the main request in that the term "polyvalent" specified in the definition of component c) was replaced by "divalent".

XIII. Claim 1 of **auxiliary request II** differed from claim 1 of the main request in that the polyvalent metal oxide component c) was further specified to be "selected from calcium oxide, zinc (II) oxide, and mixtures thereof".

XIV. Claim 1 of **auxiliary request XX** read as follows:

"1. Use of polyvalent metal oxide c) as a binder curing accelerator in the manufacture of mineral wool materials, wherein the binder comprises a saccharide a) and a polycarboxylic crosslinking agent b)."

All the other claims of auxiliary request XX were dependent on said claim 1, whereby claim 6 read as follows:

"6. The use of any of the previous claims, further comprising a polyol different than a saccharide with a molecular weight < 400 g/mol".

XV. Claim 1 of **auxiliary request III** differed from claim 1 of the main request in that it was further specified that component c) is a polyvalent metal oxide "which is calcium oxide".

Claims 2 and 10 of auxiliary request III further read as follows:

"2. The resin of claim 1, wherein the amount of the polyvalent metal oxide ranges from 0.5 - 10 wt.-% in relation to the sum of the weights of the components a), b) and c)."

"10. The resin of any of the previous claims, wherein the amount of saccharide a) ranges from 20 - 80 wt.-%, the amount of polycarboxylic crosslinking agent b) ranges from 20 - 80 wt.-%, and the amount of polyvalent metal oxide c) ranges from 0.5 - 10 wt.-%, all amounts related to the sum of the weights of the components a), b) and c)."

XVI. The parties' arguments, in so far as they are relevant for the present decision, may be derived from the reasons for the decision below. They were directed to the following issues:

- (a) The admittance into the proceedings of documents D5, D7 and D8.
- (b) The question if claims 13 and 16 of the main request met the requirements of sufficiency of disclosure.
- (c) The issue of novelty of claim 1 of each of the main request and of auxiliary requests I and II over the disclosure of document D1.
- (d) The admittance into the proceedings of auxiliary request XX.
- (e) The question if claims 2 and 10 of auxiliary request III met the requirements of Article 123(2)

EPC.

- (f) The issue of inventive step of the subject-matter of claim 1 of auxiliary request III when D4 was taken as the document constituting the closest prior art.

Reasons for the Decision

- 1. Admittance of D5
 - 1.1 The appellant requested that the decision of the opposition division not to admit D5 be overturned because, according to the appellant, the opposition division had not exercised their discretion in a reasonable manner (statement of grounds of appeal: pages 2 and 3).
 - 1.2 Independently of whether or not the opposition division exercised its discretion in accordance with the right principles or in an unreasonable way, it is established case law of the Boards of Appeal of the EPO that the fact that the opposition division did not admit a late-filed document and did not exceed the proper limits of its discretion by not admitting it does, in principle, not prevent the Board from admitting this document (T 971/11, sections 1.1 to 1.3 of the reasons; Case Law of the Boards of Appeal of the EPO, 11th edition, 2025, V.A.3.4.2.a). In particular, a submission which would have been admitted into appeal proceedings if it had been filed for the first time at the outset of those proceedings should not be held inadmissible for the sole reason that it was already filed before the department of first instance and not admitted

(T 971/11, section 1.3 of the reasons). These principles have been codified in Article 12(6) RPBA, which provides that even if the appealed decision not to admit did not suffer from an error in the use of discretion, the Board may admit *inter alia* evidence, which was not admitted in the proceedings leading to the decision under appeal, if the circumstances of the appeal case justify its admittance.

- 1.3 D5 is an excerpt of the doctoral thesis of one of the inventors of the patent in suit and contains data related to the effect of sodium hypophosphite on the crosslinking of a composition comprising maltodextrin and citric acid (D5: figures 5.7 to 5.9).
- 1.4 D5 was already filed by the opponent within the deadline under Rule 116(1) EPC that had been set by the opposition division in their preliminary opinion to file further documents ahead of the oral proceedings (see letter of the opponent dated 21 July 2023: page 3, last two paragraphs, whereby D5 was then referred to as "D13"). On that occasion, D5 was filed in support of an objection of lack of inventive step, to show that the problem solved over either D1 or D2 as the closest prior art resided in the provision of an alternative curable composition for the manufacture of mineral wool. However, the opposition division considered that it was not necessary to admit D5 into the proceedings because the same conclusion regarding the formulation of the problem effectively solved over D1/D2 could already be reached for other reasons, as had been indicated in their preliminary opinion (reasons of the decision under appeal: point 3.2.1).
- 1.5 In the statement of grounds of appeal, D5 was relied upon by the appellant in section IV.2 among others to

argue that the gel times obtained with sodium hypophosphite, i.e. according to the closest prior art document D1, were similar or even better than the ones reported in table 1 of the patent in suit for metal oxides according to component c) of claim 1 of auxiliary request 4 that had been allowed by the opposition division. For that reason, according to the appellant, the problem solved over the closest prior art D1 resided in the provision of a mere alternative.

On that basis, the Board considers that the appellant was therefore pursuing in their statement of grounds of appeal the same line of attack as the one put forward during the opposition proceedings (letter of 21 July 2023: page 3, penultimate paragraph).

- 1.6 In the decision under appeal, the opposition division already noted that the relevant disclosure of D1, namely the examples thereof carried out with sodium hypophosphite, was closer to the subject-matter of operative claim 1 than the experimental data of the patent in suit. They further addressed the question if the use of metal oxides according to component c) instead of sodium hypophosphite had been shown to lead to an improvement in terms of gel time that could be taken up in the formulation of the problem effectively solved over the closest prior art (point 3.5.4.2 of the reasons, second to fourth paragraphs). Therefore, the content of D5 relied upon by the appellant in their statement of grounds of appeal is closely related to the assessment of inventive step carried out in the decision under appeal and, for that reason, the Board does not share the respondent's view that D5 is not *prima facie* relevant (reply to the statement of grounds of appeal: point 1.1, section starting with

"Thirdly, ...").

- 1.7 In view of the above, the Board finds it justified for the appellant to (re)file D5 with the statement of grounds of appeal (i.e. at the outset of the appeal proceedings) at the least as a precautionary measure and to request anew its admittance into the proceedings. Not admitting this document in appeal would mean penalising the appellant for excess of care.

- 1.8 As pointed out by the appellant, the fact that in their preliminary opinion the opposition division already formulated the problem effectively solved over D1 as an alternative without relying on D5 is not a valid reason to disregard D5, in particular at the outset of the appeal proceedings (statement of grounds of appeal: page 3, first paragraph). Indeed, said opinion only reflected the preliminary view of the opposition division and could have been modified at a later stage, in particular during the oral proceedings. In this regard, it is noted that D5 was even considered by the respondent to possibly have an impact on the formulation of the problem solved (reply to the statement of grounds of appeal: point 1.6.2/1.6.2.1, last paragraph). Therefore, the Board considers that it was appropriate for the then opponent not only to have filed D5 ahead of the oral proceedings and within the deadline set by the opposition division, but also, since D5 was eventually not admitted by the opposition division, to refile it at the outset of the appeal proceedings.

- 1.9 Although it is correct that D5 was not published before the filing date of the application underlying the patent in suit (reply to the statement of grounds of appeal: page 4, first point in bold), D5 contains

experimental data that may be relevant for the assessment of inventive step, i.e. D5 contains supplemental technical information and is related to an effect that is addressed in the patent in suit. Therefore, D5 cannot be disregarded for the reason that it is postpublished.

1.10 The above conclusions, that were indicated in the Board's communication (section 4.2), were not disputed any further, in particular during the oral proceedings before the Board. Therefore, there is no reason for the Board to deviate from its preliminary considerations.

1.11 In view of the above and in accordance with Article 12(6) RPBA, the Board considered that the circumstances of the appeal case justified its filing at the outset of the appeal proceedings, contrary to the respondent's view (reply to the statement of grounds of appeal: point 1.1, section starting with "Secondly, ...") and found it appropriate to make use of its discretion by admitting D5 into the proceedings (Article 12(4) and (6) RPBA).

2. Admittance of D7 and D8

2.1 Together with the statement of grounds of appeal, the appellant filed new documents D7 and D8, the admittance into the proceedings of which was contested by the respondent.

2.2 In that respect, the filing of D7 and D8 and of the submissions based thereon with the statement of grounds of appeal constitute an amendment to the opponent's case (Article 12(2) and (4) RPBA), the admittance of which undergoes the stipulations of Article 12(4) to

(6) RPBA.

2.3 D8 is a declaration of an employee of the appellant regarding the chemical reactions involved in the patent in suit and in D4. D7 is referred to in points 4 and 5 of D8. It can further be inferred from the appellant's arguments laid down in the statement of grounds of appeal (section IV.1), that D7 and D8 were filed to refute the considerations of the opposition division in point 3.5.4.1 of the decision under appeal that led the opposition division to conclude that D4 was not a suitable document to be selected as the closest prior art (statement of grounds of appeal: pages 7-8). In addition, the appellant relied on D7 and D8 to contest the understanding of the opposition division regarding the disclosure of D4 (appellant's letter of 17 June 2024: point 2 on page 3).

2.4 Although it makes no doubts that D7 and D8 could have been filed earlier, in particular in reaction to the preliminary opinion of the opposition division according to which D4 was not a suitable document to be taken as the closest prior art because it dealt with a different problem than the one of the patent in suit (point 7.2 of this opinion), the Board is satisfied that the filing of these documents with the statement of grounds of appeal constitutes a direct reaction to the interpretation of D4 that was made by the opposition division in the decision under appeal. Further considering that the appellant pursued in appeal the same argumentation as the one put forward during the opposition proceedings and that the teaching to be derived from the disclosure of D4 was still a point of dispute between the parties in appeal, the Board considers that D7 and D8 address the issue of inventive step that led to the decision under appeal

(Article 12(4), last sentence, RPBA).

2.5 The above view, that had been indicated to the parties in the Board's communication (section 4.3), was not disputed any further, in particular during the oral proceedings before the Board. Therefore, there is no reason for the Board to deviate from its preliminary considerations.

2.6 For these reasons, the Board found it appropriate to make use of its discretion by admitting D7 and D8 into the proceedings (Article 12(4) and (6) RPBA).

Main request (auxiliary request 4 allowed by the opposition division)

3. It was undisputed that the main request filed by the respondent with the reply to the statement of grounds of appeal is identical to auxiliary request 4 dealt with in the decision under appeal and allowed by the opposition division. The Board has no reason to deviate from that view.

4. Sufficiency of disclosure

4.1 In order to meet the requirements of sufficiency of disclosure, an invention has to be disclosed in a manner sufficiently clear and complete for it to be carried out by the skilled person, without undue burden, on the basis of the information provided in the patent specification, if needed in combination with the skilled person's common general knowledge. This means in the present case that the skilled person should in particular be able to prepare an aqueous binder according to claims 13 and 16 of the main request,

which was contested by the appellant.

4.2 The appellant's objection was in particular related to operative claim 13, which is directed to an aqueous binder comprising a curable resin according to e.g. claim 2, which defines that the polyvalent metal oxide can be calcium oxide. Considering that calcium oxide was known to react in the presence of water to form calcium hydroxide, calcium oxide *per se* could not be present in an aqueous binder. Therefore, according to the appellant, the skilled person was not in a position to prepare an aqueous binder according to operative claim 13.

4.3 However, even if the appellant were correct that calcium oxide *per se* cannot exist in an aqueous environment, the Board shares the view of the opposition division (point 3.5.2 of the reasons) and the respondent (reply to the statement of grounds of appeal: point 1.4) that the skilled person would readily understand that an aqueous binder according to operative claim 13 in combination with claim 2 can be prepared by adding a composition according to claim 2 to an aqueous solution. The fact that in doing so, the polyvalent metal oxide may react to form another "related" compound such as an hydroxide is specifically indicated in paragraph 50 of the patent in suit (see in particular page 6, lines 32-35). Although this passage of the patent specification may have some implication regarding the precise scope of claim 13 of the main request, this would appear to be at most a question of clarity (which cannot be addressed at the present stage of the proceedings in view of claims 13 and 2 as granted and of the findings of decision G 3/14, see Order/Catchword) but not of sufficiency of disclosure.

- 4.4 In addition, the appellant has provided no counterarguments to refute the respondent's statement that the reaction of calcium oxide with water to produce calcium hydroxide was not a complete reaction so that at least some calcium oxide would always be present in an aqueous binder according to claim 13 that is obtained by addition of a curable resin comprising calcium oxide according to claim 2 to an aqueous solution (reply to the statement of grounds of appeal: page 7, end of section 1.4 starting with "In any case, ...").
- 4.5 For these reasons, the appellant's arguments do not justify that the Board overturns the decision of the opposition division that the main request meets the requirements of sufficiency of disclosure.
5. Article 54 EPC
- 5.1 The appellant pursued in appeal their objection of lack of novelty against operative claim 1, among others in view of the general disclosure of document D1 as a whole (statement of grounds of appeal: section A.III.1).
- 5.2 According to established case law, the concept of disclosure must be the same for the purpose of Article 54 EPC as the one for Article 123(2) EPC (see G 2/10: Reasons 4.6 and 4.3, G 1/03: Reasons 2.2.2 and G 1/16: Reasons 17). Accordingly it has to be shown that the subject-matter being claimed is directly and unambiguously, either explicitly or implicitly, disclosed in the prior art (so-called gold standard, as referred to in G 2/10, Reasons 4.3, 4.5.1 and 4.5.4).

5.3 The question to be answered is if the general disclosure of D1 directly and unambiguously discloses a curable resin composition for the manufacture of mineral wool comprising a) a saccharide, b) a polycarboxylic crosslinking agent, and c) a polyvalent metal oxide as specified in claim 1 of the main request. In that respect, D1 is generally directed to rotary fiber insulation and non-woven mats, and more particularly, to a bio-based binder for use in manufacturing both fiberglass insulation and non-woven mats that is bio-based, contains no added formaldehyde, is crosslinked through an esterification reaction, and is environmentally friendly (D1: paragraph 2). In addition, the aqueous binder composition for use in the formation of fiberglass insulation and non-woven mats according to claim 1 of D1 comprises at least one carbohydrate having a dextrose equivalent number from 2 to 20 and at least one crosslinking agent. On that basis, any binder composition according to D1 is a curable resin (composition) in the sense of operative claim 1.

Component a) according to operative claim 1

5.4 Regarding component a) according to operative claim 1, it remained undisputed that all carbohydrates as mentioned in claim 1 thereof that are disclosed in D1 are saccharides according to component a) as defined in claim 1 of the main request. The Board has no reason to be of a different view (see claim 2 and paragraphs 32-34 of D1). Therefore, any aqueous binder composition according to D1 is a curable resin composition comprising a component a) according to claim 1 of the main request.

Component b) according to operative claim 1

- 5.5 Regarding component b), the respondent argued that the list of suitable crosslinking agents indicated in paragraph 12 of D1 comprised polycarboxylic acids but was not limited thereto. Therefore, a first selection within the ambit of D1 would have to be made in order to arrive at a polycarboxylic crosslinking agent according to said component b) (reply to the statement of grounds of appeal: bottom of page 8 and top of page 9).
- 5.5.1 However, as pointed out by the appellant during the oral proceedings before the Board, it is derivable from paragraph 10, first sentence, of D1 that this document is directed to two distinct main embodiments, namely binder compositions for use in the formation of either fibrous insulation product or non-woven chopped strand mats (which is confirmed by claim 1 and paragraph 1 of D1 mentioned in point 5.3 above). Also, whereas paragraph 11 of D1 is directed to the first of these embodiments (fibrous insulation product), paragraph 12 of D1 is directed to the second one (non-woven chopped strand mat). Further considering that the subject-matter of claim 1 of the operative main request is directed to curable resins for the manufacture of mineral wool, it is agreed with the appellant that the relevant disclosure of D1 is the first embodiment disclosed in paragraphs 10 and 11 thereof, and not the second embodiment disclosed in paragraphs 10 and 12 thereof. Therefore, the respondent's argument based on paragraph 12 of D1 is not convincing already for this reason.
- 5.5.2 In addition, it is further specified in paragraph 10 of D1 that, for both main embodiments disclosed therein

(fibrous insulation product and non-woven chopped strand mats), the crosslinking agent can be selected from "polycarboxylic acids, salts of polycarboxylic acid, anhydrides, monomeric and polymeric polycarboxylic acid with anhydride, citric acid, salts of citric acid, adipic acid, salts of adipic acid, polyacrylic acid, salts of polyacrylic acid, polyacrylic acid based resins, and combinations thereof".

a) It was not disputed that apart from the component "polyacrylic acid based resins" cited in this list, all the other components are polycarboxylic crosslinking agents in the sense of component b) of the main request. It was in particular common ground that, as indicated in paragraph 40 of the patent in suit, said component b) encompasses not only polycarboxylic acids but also salts and precursors thereof, such as anhydrides. Also the Board has no reason to be of a different opinion. This is particularly true for the more limited list of crosslinking agents specified in paragraph 11 of D1, which is directed to the embodiment "fibrous insulation product" that is relevant for claim 1 of the main request.

b) In addition, regarding the component "polyacrylic acid based resins" that is also mentioned in the list of crosslinking agents of paragraph 10 of D1, the Board shares the view of the appellant that this term would be read by the skilled person as a polycarboxylic crosslinking agent in the sense of component b) according to claim 1 of the main request. In the Board's view, the skilled person would already understand from the the term "polyacrylic acid based resin" itself that this component is a resin that comprises more than one acrylic acid functionality.

This reading would further be confirmed by the fact that all the crosslinking agents that are exemplified in D1 (claim 3; paragraph 35; examples) are polyacrylic crosslinking agents according to component b) of operative claim 1. Also, in view of the disclosure of D1 as a whole, the Board considers that the skilled person would understand that the crosslinking agent according to D1 should be a crosslinking agent for the carbohydrate component of the binder, whereby the main reaction involved is an esterification involving carboxylic acid functionalities of the crosslinking agent. Finally, it is indicated in the footnote of table 4 of D1 that the sole two "polyacrylic acid based resins" that are exemplified in paragraph 35 of D1 are "polyacrylic acid resins". Therefore, the respondent's view put forward during the oral proceedings before the Board that the term "based" in "polyacrylic acid based resin" implied that said resin encompassed derivatives of a polyacrylic acid resin that did not mandatorily contain more than one acrylic acid functionality is not only held to be not reasonable by the Board but is also not in line with the remaining disclosure of D1. For these reasons, the argument of the respondent related to the term "polyacrylic acid based resins" did not succeed.

- 5.5.3 In these circumstances, the respondent's argument that a first selection within the list of crosslinking agents disclosed in D1 had to be made in order to arrive at component b) according to claim 1 of the main request is rejected. To the contrary, the Board considers that it is directly and unambiguously derivable from D1 that any aqueous binder compositions for use in the formation of fiberglass insulation according to paragraphs 10 and 11 thereof comprises a polycarboxylic crosslinking agents according to

component b) of operative claim 1, i.e. no selection within the ambit of D1 is necessary in this respect.

Component c) according to operative claim 1

- 5.6 Regarding component c) of claim 1 of the main request, it was common ground that it is disclosed in paragraph 59, tenth line, of D1 that zinc oxide, which is a polyvalent metal oxide according to component c) of claim 1 of the main request, could be used as an optional corrosion inhibitor in the binder composition according to D1. However, the respondent, in agreement with the opposition division, considered that a double selection within the ambit of D1 was necessary in order to arrive at this disclosure of zinc oxide, namely i) to decide to use a corrosion inhibitor within the list of all possible additives disclosed in D1 (claim 5 or paragraphs 36-66) and ii) to select zinc oxide within the list of possible corrosion inhibitors according to paragraph 59 of D1 (reply to the statement of grounds of appeal: page 8, section 1.5.1, passage starting with "Firstly"). During the oral proceedings before the Board, the respondent further argued that the use of an additive such as zinc oxide was only disclosed in paragraph 59 of D1 as one of two alternative ways of inhibiting corrosion, since another method called process control abatement could be used instead. Therefore, already in the light of the multiple selections within D1 that had to be done in order to arrive at a curable resin comprising zinc oxide, the subject-matter of operative claim 1 was not directly and unambiguously derivable from D1, so the respondent. In addition, for the reasons indicated in point 5.5, above, this was all the more true for the combination of components b) and c) according to operative claim 1.

a) The Board does not share the respondent's view and agrees with the appellant that zinc oxide is unambiguously disclosed in paragraph 59 of D1 as an optional additive of the binder composition according to D1. In view of this disclosure, a single selection within the ambit of D1 is necessary to arrive at a component c) according to operative claim 1, namely the choice of zinc oxide as a specific component among the whole list of suitable additives proposed in D1.

b) The respondent's line of argument regarding multiple selections (reply to the statement of grounds of appeal: point 1.5.1) is derived from the established case law that novelty is to be acknowledged when the subject-matter being claimed can only be arrived at by selecting at least two elements from two different lists (see Case Law, *supra*, I.C.6.2.1.b), which according to the Board does not apply to the present case. As outlined in the cited passage of the Case Law, the respondent's argumentation is based on the finding of T 12/81, which was a case that was directed to the selection of starting substances to make an end product resulting from the reaction of a specific pair of starting compounds, i.e. a case in which two selections had to be made within two lists of components, whereby the two lists were independent of each other. The approach of T 12/81 was applied in the case law to several similar situations where two selections had to be made in independent lists, e.g. to mixtures of two substances selected from two separate and independent lists. However, in the present case, the selection of zinc oxide in D1 does not require to make two selections within two independent lists. Indeed, the various additives disclosed in D1 (claim 5 or paragraphs 36-66) can be seen as a single list of additives, in which a single selection has to be made

in order to arrive at zinc oxide. In particular, the selection of zinc oxide cannot be seen as independent from the selection of a corrosion inhibitor, as zinc oxide is disclosed only in this function and the direct and unambiguous disclosure of zinc oxide already implies that a corrosion inhibitor is selected as additive. For these reasons, the Board shares the view of the appellant that the respondent's line of argument is artificial (statement of grounds of appeal: point A.III.1, third paragraph).

c) In the Board's view, the above conclusion remains valid even considering the disclosure in paragraph 59 of D1 that corrosion inhibition may also be provided, in alternative to the use of an additive such as zinc oxide, by process means, as put forward by the respondent during the oral proceedings before the Board. Indeed, not only is that argument not valid for the list of additives specified in claim 5 of D1, but this disclosure of D1 also does not modify the fact that zinc oxide can be arrived at after performing a single selection within the list of additives disclosed therein, if necessary completed by said process alternative. For these reasons, the respondent's argument did not convince.

5.7 To conclude, in view of points 5.4 to 5.6 above, the subject-matter of claim 1 of the main request can be arrived at by using zinc oxide in an aqueous binder composition for fiberglass insulation according to the disclosure of paragraphs 10 and 11 of D1, whereby this subject-matter can be arrived at by performing a single selection of "zinc oxide" within the list of suitable additives disclosed in D1. In this respect, it was undisputed that, according to established case law, subject-matter that can be arrived at by carrying a

selection within one single list of alternatives lacks novelty. The Board has no reason to deviate from this view (see e.g. T 730/01: points 2.2 and 2.3 of the reasons).

- 5.8 In view of the above, the subject-matter of claim 1 of the main request is not novel over the general disclosure of D1 and, for that reason, the main request is not allowable.

Auxiliary requests I and II

6. Article 54 EPC

The Board's view indicated in point 12.1 of the communication that the amendments made in claim 1 of each of auxiliary requests I and II were not suitable to overcome the objection of lack of novelty over D1 remained uncontested. This view was even explicitly shared by the respondent during the oral proceedings before the Board (minutes: page 3, section on novelty, third paragraph). Therefore, auxiliary requests I and II can only share the same fate as the main request and are, for the same reasons, not allowable (Article 54 EPC).

Auxiliary request XX

7. Admittance

- 7.1 Auxiliary request XX was filed with the respondent's letter of 27 August 2025. Since this letter was submitted after receipt of the Board's communication, the admittance of auxiliary request XX is governed by Article 13(2) RPBA, according to which any amendment to a party's appeal case is, in principle, not taken into

account unless there are exceptional circumstances, which have been justified with cogent reasons by the party concerned.

7.2 According to the respondent, the filing of auxiliary request XX had been occasioned by the Board's preliminary opinion concerning the admittance of auxiliary requests X to XIX (point 14 of the communication), according to which the amendments made in these auxiliary requests would not effectively limit the subject-matter being claimed. In view of this preliminary opinion of the Board, the product claims had merely been reworded as use claims in auxiliary request XX, which neither introduced a fresh case, nor was detrimental to the economy of the procedure, so the respondent (letter of 27 August 2025; oral proceedings before the Board).

7.2.1 However, as already pointed out in point 14 of the communication, the Board's preliminary opinion on the admittance of auxiliary requests X to XIX was not raised *ex officio* by the Board but was based on an argument put forward by the appellant in their letter of 17 June 2024 (point 2 on page 2, fourth paragraph). In addition, it is established case law that the Board's preliminary opinion is not an invitation to make further submissions or to file further requests. Therefore, no exceptional circumstances according to Article 13(2) RPBA prevail (Case Law, *supra*, V.A.4.5.4.a.i and V.A.4.5.4.f).

7.2.2 Furthermore, it is established case law that the criteria set out in Articles 12(4) to 12(6) RPBA are also applicable when a Board exercises its discretion to decide on the admittance of an amendment to a party's case pursuant to Article 13(2) RPBA (Case Law,

supra, V.A.4.5.1.a, last paragraph).

a) In the present case, the Board considers that the change of category from product claims to use claims would have an impact on the assessment of both novelty and inventive step. In particular, the question of novelty would not be related to the question of the mere disclosure of a component c) in a curable resin comprising components a) and b) according to claim 1 of e.g. the main request any more but would raise the question whether the use now being claimed could be held to constitute an additional feature of the claims, i.e. if this feature would be suitable to distinguish the claimed compositions from compositions of the prior art disclosing the same compositions but not this use feature. Therefore, the framework of the assessment of novelty and inventive step would have certainly changed.

It is correct that, as was pointed out by the respondent during the oral proceedings before the Board, the main request already contained a use claim 17, that is identical to claim 1 of auxiliary request XX. However, it is derivable from the file history that while the appellant's objections put forward in writing against e.g. the main request were not directed to the use claim 17 in particular, the respondent had, up to this late point of time in the proceedings (letter of 27 August 2025), never defended any request containing only use claims, nor defended the use claims on a different basis. In these circumstances, it is understandable that there had been no necessity for the appellant to focus on the use claims earlier in the proceedings.

In these circumstances, and further taking into account

that no exchange had already taken place between the parties on the specific issue of novelty and inventive step of the use claims, the Board considers that the filing of auxiliary request XX constitutes a fresh case, which is not allowable (Case Law, *supra*, V.A.4.5.4.e.ii)

b) In addition, the Board shares the view of the appellant that, as was put forward during the oral proceedings before the Board, the change of category from product to use claims would have led to a situation in which new objections would have had to be addressed for the first time during the oral proceedings, which is against the need for procedure economy (Case Law, *supra*, V.A.4.5.4.e.i, first and last paragraphs and V.A.4.5.4.e.ii). In particular, in addition to the above indicated issue of the patentability of use claims, the wording "The use of any of the previous claims, further comprising a polyol..." according to claim 6 of auxiliary request XX appears *prima facie* not to meet the requirements of clarity pursuant to Article 84 EPC.

7.3 In view of the above, the Board decided not to admit auxiliary request XX into the proceedings (Article 13(2) RPBA).

Auxiliary request III

8. Article 100(b) EPC and Article 54 EPC

During the oral proceedings before the Board, the appellant confirmed that i) following the conclusion reached by the Board that the main request met the requirements of sufficiency of disclosure, the same was valid for auxiliary request III and ii) they had no

objections as to novelty of the claims of auxiliary request III (minutes: page 4, second paragraph regarding auxiliary request III).

9. Article 123(2) EPC

9.1 It was common ground that present auxiliary request III is identical to auxiliary request 7 filed by the respondent (then patent proprietor) with letter of 27 July 2023 during the opposition proceedings, that had been objected to by the appellant pursuant to Article 123(2) EPC in the statement of grounds of appeal (points B.I.2 and B.I.3). In that respect, the appellant argued that due to the limitation of claim 1 of auxiliary request III to component c) being calcium oxide, the dependent claims that contained ranges for either component c) or components a) and c) did not meet the requirements of Article 123(2) EPC. In addition, a double selection within the ambit of the application as filed was required in order to arrive at the combination of calcium oxide and an amount of saccharide of 20 to 80 wt.% being claimed, which was not allowable.

9.2 On that basis and as confirmed during the oral proceedings before the Board (middle of page 4 of the minutes), the appellant's objections pursuant to Article 123(2) EPC were directed to claims 2 and 10 of auxiliary request III.

9.3 However, as shown in point II. above, claim 2 of the application as filed contains three alternatives for component c) according to claim 1, whereby one of these alternatives is directed to the polyvalent metal oxide being calcium oxide (the other alternatives being directed to either zinc (II) oxide or mixtures of

calcium oxide and zinc (II) oxide), which was eventually retained as sole embodiment for component c) in claim 1 of auxiliary request III. Therefore, the Board agrees with the respondent that the subject-matter of claims 2 and 10 of auxiliary request III is directly and unambiguously derivable from claim 3 or claim 10, respectively, of the application as filed further limited to the alternative of claim 2 of the application as filed directed to calcium oxide (see reply to the statement of grounds of appeal: point 2.4, third paragraph).

9.4 For this reason, the appellant's objections pursuant to Article 123(2) EPC are rejected.

10. Article 56 EPC

10.1 As confirmed during the oral proceedings before the Board, the sole objection of lack of inventive step raised by the appellant against auxiliary request III was against claim 1 thereof and taking document D4 as the closest prior art (minutes: page 4, section on auxiliary request III, paragraph before "Article 123(2) EPC").

10.2 Admittance of the appellant's arguments put forward during the oral proceedings before the Board

10.2.1 During the oral proceedings before the Board, the respondent put forward that, up to that point in time, the appellant had provided no submissions as to why a curable resin comprising calcium oxide as component c) as defined in claim 1 of auxiliary request III would be not inventive. Therefore the appellant's arguments put forward during the oral proceedings in this respect would be new in the proceedings and, due to their late

filing, they should not be considered by the Board, so the respondent.

10.2.2 However, after having heard the appellant's submissions, the Board was satisfied that these arguments remained within the framework of the line of attack put forward in writing against the higher-ranked requests, in particular the main request. Therefore, there was no reason for the Board to disregard these lines of arguments (see e.g. T 247/20, Catchword). In addition, in the light of the conclusion reached by the Board (which is in favour of the respondent), there is no need for the Board to provide any more details in the present decision on the issue of the admittance of these arguments.

10.3 D4 as the closest prior art - Starting point and distinguishing feature(s)

10.3.1 During the oral proceedings before the Board, it was common ground between the parties that:

- D4 was a suitable document to be taken as the closest prior art, whereby the examples thereof carried out with sodium hypophosphite as catalyst were particularly relevant and could be taken as starting point for the assessment of inventive step.
- The subject-matter of claim 1 of auxiliary request III differed from these disclosures of D4 in that it contained as component c) a polyvalent metal oxide which was calcium oxide, which is according to paragraph 50 of the patent in suit, a curing accelerator. In this respect, the relevant examples of D1 are carried out without calcium

oxide (or any polyvalent metal oxide) and with sodium hypophosphite as crosslinking catalyst (i.e. a curing accelerator).

The Board has no reason to deviate from these views.

10.4 Problem effectively solved over the closest prior art

10.4.1 The respondent argued that the objective problem solved over the relevant examples of D4 resided in the provision of a binding resin composition having a cure acceleration profile at least comparable to the one of a binding resin composition comprising sodium hypophosphite as a catalyst. In addition, the experimental data of the patent in suit (table 1) and of D5 (figure 5.9) showed that this problem was effectively solved (reply to the statement of grounds of appeal: point 1.6.4 in combination with page 5, seventh paragraph and point 1.6.2.1, last paragraph; oral proceedings before the Board).

10.4.2 During the oral proceedings before the Board, the appellant argued that since the patent in suit contained no fair comparison between a curable composition according to operative claim 1 and a curable composition according to the relevant example of D4, the problem solved over the closest prior art resided in the provision of a further curable resin, in alternative to the ones of D4.

However, the appellant provided no counterargument to refute the respondent's view that a fair comparison could be made between the data contained in figure 5.9 of D5 (gel time determined under isothermal treatment at 140°C of comparative compositions comprising maltodextrin, citric acid and 0, 1 or 3 wt.% sodium

hypophosphite as crosslinking catalyst) and the data related to examples 1, 2 and 3 reported in table 1 of the patent in suit (gel time determined under isothermal treatment at 140°C of compositions according to operative claim 1 comprising maltodextrine as saccharide, citric acid as polycarboxylic crosslinking agent and 0, 1 or 3 wt.% calcium oxide). In that respect, the appellant themselves considered that these data were comparable (statement of grounds of appeal: point A.IV.2, third paragraph). In addition, the appellant did not contest the respondent's view that this comparison showed that:

- Calcium oxide (according to operative claim 1) led to gel times similar to the one of sodium hypophosphite (according to the relevant disclosure of D4); and
- Zinc oxide (which is, as calcium oxide, also a polyvalent metal oxide) led to significantly longer (i.e. worse) gel times than calcium oxide, in particular to gel time that were significantly longer than the ones obtained with sodium hypophosphite (compare figure 5.9 of D5 with examples 4 and 5 of the patent in suit).

No counterargument were also submitted by the appellant, either in writing or during the oral proceedings before the Board, in reaction to the Board's communication in which it was indicated that the respondent's findings regarding the comparison between the data of D5 with the ones of table 1 of the patent in suit indicated above seemed reasonable (see point 12.2.b of the communication). In these circumstances, the appellant's objections provide no cause for the Board to disagree with the respondent's

line of argument and are, therefore, rejected.

10.4.3 On that basis, the objective problem solved over the relevant examples of D4 resides in the provision of a curable resin composition having a cure acceleration profile at least comparable to the one of a curable resin composition comprising sodium hypophosphite as a catalyst.

10.5 Obviousness

10.5.1 The question remains to be answered if the skilled person, desiring to solve the problem(s) identified as indicated above, would, in view of the closest prior art, possibly in combination with other prior art or with common general knowledge, have modified the disclosure of the closest prior art in such a way as to arrive at the claimed subject matter.

10.5.2 In that respect, the appellant's line of attack was based on the disclosure of D4 itself: considering that it was derivable from page 7, lines 21 to page 8, line 7 thereof that "metal oxides" as a generic term (see page 7, line 26 of D4) could be used as catalyst in alternative to sodium hypophosphite (D4: page 7, lines 29-33 and page 8, lines 6-7), the selection of a specific metal oxide such as calcium oxide to provide a mere alternative to D4 constituted an arbitrary selection, which did not confer an inventive step.

a) However, the appellant did not show that it was known in the art that calcium oxide was a suitable catalyst for a curable resin composition comprising a saccharide and a polycarboxylic crosslinking agent. On that basis, the selection of calcium oxide as "a metal oxide" as disclosed on page 7, line 26, is not obvious

already for that reason.

b) In addition, there is no evidence on file that it was known in the art that calcium oxide led to improved i.e. shorter gel times as compared to a different metal oxide such as zinc oxide. Therefore, the selection of calcium oxide as a specific component among any "metal oxides" disclosed as a generic term in D4 as suitable alternatives for sodium hypophosphite is not an arbitrary choice, contrary to the appellant's view. Rather, the use of calcium oxide has to be seen as a purposive selection, which contributes to an inventive step.

c) For these reasons, the appellant's arguments did not succeed.

10.5.3 In view of the above, the subject-matter of claim 1 of auxiliary request III involves an inventive step when document D4 is taken as the closest prior art.

11. Considering that:

- Neither the main request, nor any of auxiliary requests I and II are allowable;
- Auxiliary request XX was not admitted into the proceedings;
- None of the objections raised against auxiliary request III succeeded;

the patent in suit is to be maintained in amended form on the basis of the claims of auxiliary request III.

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 claims of auxiliary request III filed with the reply to the statement of grounds of appeal after adaptation of the description, if necessary.

The Registrar:

The Chairman:



D. Hampe

D. Semino

Decision electronically authenticated