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**Datasheet for the decision
of 19 September 2025**

Case Number: T 0204/24 - 3.3.05

Application Number: 16736335.7

Publication Number: 3356307

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C04B24/02, B01F17/00, B32B5/20,
B32B9/02, B32B13/08, E04C2/04

Language of the proceedings: EN

Title of invention:
FOAMED GYPSUM BOARD AND METHOD OF MAKING IT

Patent Proprietor:
United States Gypsum Company

Opponent:
INNOSPEC LIMITED

Headword:
FOAMED GYPSUM BOARD/US Gypsum

Relevant legal provisions:
EPC Art. 123(2), 111(1)
RPBA Art. 11

Keyword:

Amendments - allowable (yes)

Remittal to the department of first instance - (yes)

Decisions cited:

G 0003/14, T 1487/18

Catchword:



Beschwerdekammern
Boards of Appeal
Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0

Case Number: T 0204/24 - 3.3.05

D E C I S I O N
of Technical Board of Appeal 3.3.05
of 19 September 2025

Appellant: United States Gypsum Company
(Patent Proprietor) 550 West Adams Street
Chicago, IL 60661-3676 (US)

Representative: Dompatent
Partnerschaft von Patent- und Rechtsanwälten mbB
Deichmannhaus am Dom
Bahnhofsvorplatz 1
50667 Köln (DE)

Respondent: INNOSPEC LIMITED
(Opponent) Innospec Manufacturing Park
Oil Sites Road
Ellesmere Port, Cheshire CH65 4EY (GB)

Representative: Appleyard Lees IP LLP
15 Clare Road
Halifax HX1 2HY (GB)

Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 11 December
2023 revoking European patent No. 3356307
pursuant to Article 101(3) (b) EPC.**

Composition of the Board:

Chairman J.-M. Schwaller
Members: J. Roider
P. Guntz

Summary of Facts and Submissions

- I. The appeal by the patent proprietor lies from the opposition division's decision to revoke European patent No. EP 3 356 307 B1.
- II. Document **D40** (IUPAC Gold Book entry "foam", rev. 24 February 2014), cited by the opponent (respondent), is relevant for the present decision.
- III. Claims 1 and 8 as granted (main request) read as follows (the amendments compared with the claims as originally filed are indicated):
- "1. A gypsum board comprising:*
(a) a set gypsum core disposed between two cover sheets;
(b) the set gypsum core comprising a gypsum crystal matrix formed from at least water, stucco, and a foam; wherein:
the foam is ~~formed from~~ generated by inserting air into an aqueous mixture of a foaming agent comprising at least one alkyl sulfate, at least one alkyl ether sulfate, ~~or any combination thereof,~~ and a fatty alcohol, and water."
- "8. A method of making ~~cementitious~~ gypsum board comprising:*
(a) pregenerating a foam by inserting air into an aqueous mixture of foaming agent comprising at least one alkyl sulfate, at least one alkyl ether sulfate, ~~or any combination thereof,~~ and a fatty alcohol, and water;
(b) mixing at least water, ~~cementitious material~~

stucco, and the foam to form a slurry;
(c) disposing the slurry between a first cover sheet
and a second cover sheet to form a board precursor;
(d) cutting the board precursor into a board; and
(e) drying the board."

Dependent claims 2 to 7, 9 and 10 relate to particular embodiments.

IV. The opposition division held the above claims to infringe Article 123(2) EPC. The decision was essentially based on arguments - reiterated by the respondent - relating to the feature "the foam is generated" and the constituents of the foaming agent.

V. The parties' final requests at the oral proceedings before the board were as follows:

The appellant requested that the decision under appeal be set aside and that the patent be maintained as granted (main request), or as an auxiliary measure, that the patent be maintained in amended form on the basis of the claims according to one of auxiliary requests 1 to 20 as filed by letter dated 5 September 2023.

The respondent requested that the appeal be dismissed.

Reasons for the Decision

1. Main request - Article 123(2) EPC

1.1 Interpretation of the terms "pregenerated"/"generated"

The question here was whether claim 1 as granted encompassed only pregenerating foam prior to its mixing

with the slurry, or also included generating foam *in situ* during the mixing process (see impugned decision, paragraph 2.2.4.1; statement of grounds of appeal, point a) on page 3; opponent's reply, paragraph 3.2).

- 1.1.1 According to the contested decision, there was a discrepancy between the claim language and the original disclosure. While claim 1 as granted uses the term "generated" to describe the foam formation, all the passages cited by the patent proprietor, namely paragraphs [0008], [0030] and [0046] and claims 30 and 74 as filed, consistently refer to the foam being "pregenerated".
- 1.1.2 According to the original application, "pregenerated" specifically means that the foam must be formed before it contacts the cementitious slurry, and the opposition division considered this difference in terminology to be decisive in concluding that claim 1 introduces subject-matter not disclosed in the application as filed.
- 1.1.3 The respondent supported this interpretation, contending that the claim's wording also permitted foam to be generated *in situ*. It argued in this respect that since the claim merely required the gypsum crystal matrix to be "formed from" foam (among other components), this did not preclude generating the foam simultaneously during the mixing process. Furthermore, claim 1 did not impose any specific sequential requirements for combining the components.
- 1.1.4 In the board's view, when feature (b) is considered as a whole, claim 1 is to be interpreted as being limited to pregenerating foam for the following reasons:

Feature (b) requires the gypsum crystal matrix to be formed from three educts, namely water, stucco and a foam, and although the foam also contains water, the latter must be considered an educt, distinct from (additional) water and stucco.

In fact, generating foam *in situ* would be incompatible with this interpretation because the water and the stucco would themselves constitute the components from which the foam is generated, whereas the foam would not exist as a separate, pregenerated educt, and would thus contradict the explicit claim language requiring the gypsum crystal matrix to be formed from "at least water, stucco, and a foam" - i.e. the three distinct starting materials. Thus, while claim 1 linguistically uses the word "generating", focusing solely on this terminology fails to appreciate the full context and structure of claim 1, step (b).

In summary, in the wording of claim 1 as granted, there is no alternative but to form the foam before it encounters the slurry, since the gypsum crystal matrix is expressly stated to be formed from water, stucco, and a foam, and so the foam must necessarily exist as a pre-formed component before mixing. Therefore, it must be pregenerated within the meaning of paragraph [0046] and within the common understanding of the skilled person. Therefore, although claim 1 uses the word "generating", in the specific context of claim 1, step (b), the scope of this word is functionally identical to "pregenerating".

Although the opponent filed document D40, containing the IUPAC definition of foam as "*a dispersion in which a large proportion of gas by volume in the form of gas bubbles, is dispersed in a liquid*", this definition is

not relevant, as is apparent from the assessment above. The question of whether this document might still be admitted thus does not need to be answered.

1.2 Interpretation of the term "foaming agent"

The question here was whether the fatty alcohol formed part of the foaming agent or constituted a separate component in the aqueous mixture.

1.2.1 Contrary to the opposition division's interpretation, the patent proprietor/appellant contended that the fatty alcohol was not part of the foaming agent but rather a distinct component.

1.2.2 In fact, a conclusion does not need to be drawn on this issue, because this ambiguity does not distinguish claim 1 as granted from claim 1 as originally filed.

Claim 1 as granted namely requires air to be injected into *"an aqueous mixture of a foaming agent comprising at least one alkyl sulfate, at least one alkyl ether sulfate, a fatty alcohol, and water"*, and since this mixture is described as being "aqueous", it inherently contains water. So, water also being mentioned in the list of components of the mixture is not objectionable; at most it would be a redundant term, and therefore a clarity issue, which is not open to discussion, since the same wording was already in the claim as granted (G 3/14, catchword).

In claim 1 as filed, the disputed feature reads *"the foam is formed from a foaming agent comprising at least one alkyl sulfate, at least one alkyl ether sulfate, or any combination thereof, and a fatty alcohol"*, and there was the same ambiguity in terms of the

interpretation of the role of the fatty alcohol.

- 1.3 With regard to the basis for the amendments in the application as filed, the board finds - in agreement with the proprietor's view - that support can be found in independent method claim 30 as filed, which describes the production method for cementitious boards (thus covering both gypsum and cement boards, as clarified in paragraph [0008] and in claim 35 as filed).

Step (a) of claim 30 as originally filed namely reads "*(a) pregenerating a foam by inserting air into an aqueous mixture of foaming agent comprising at least one alkyl sulfate, at least one alkyl ether sulfate, or a combination thereof, and a fatty alcohol*". Since an aqueous mixture necessarily contains water, this step discloses precisely the foam formation process required by claim 1 of the patent in suit, including the identical ambiguity regarding the classification of the fatty alcohol.

- 1.4 The respondent argued that the phrase "or a combination thereof" in claims 1 and 30 as filed implied that both alkyl sulfate and alkyl ether sulfate had to possess foaming activity, so that claims 1 and 8 as granted would impermissibly broaden the scope by not explicitly requiring alkyl ether sulfate to have foaming activity, thereby encompassing non-foaming alkyl ether sulfates.

- 1.4.1 The board does not find this argument persuasive, because claim 1 as granted requires at least one alkyl sulfate and at least one alkyl ether sulfate in the mixture, without specifying that each individual component must possess foaming activity. Critically, claim 1 as filed imposes the same requirement and does

not stipulate that both the alkyl sulfate and alkyl ether sulfate must independently provide foaming activity within the mixture. Instead, the original disclosure indicates only that the foaming agent as a whole must provide foaming functionality.

Just as claims 1 and 8 as granted do not assign any specific functional role to the fatty alcohol within the mixture, neither do claim 1 or claim 30 as originally filed. Furthermore, the description of fatty alcohol as a stabiliser found elsewhere in the application as filed does not constitute added subject-matter, either.

- 1.5 It follows from the above considerations that the skilled person is not presented with any new technical information in claim 1 as granted that is not directly and unambiguously derivable from the original application documents.
- 1.6 Similar considerations are applicable to claim 8.
- 1.7 No objection of added subject-matter was raised against the dependent claims.
- 1.8 The board thus cannot agree with the opposition division's conclusions regarding added subject-matter, since claims 1 to 10 of the patent in suit do not add subject-matter that goes beyond the original application documents.
2. Since the ground for opposition under Article 100(c) EPC was the only one dealt with in the impugned decision, it would be contrary to Article 12(2) RPBA, which states that the primary objective of the appeal proceedings is to review the impugned decision, if the

other grounds for opposition that were not the subject of the impugned decision were to be decided upon conclusively for the first time during the appeal proceedings and were not open to further substantive review (T 1487/18, point 4).

Therefore, since the ground for opposition under Article 100(a) EPC has not been dealt with in the contested decision, the request for the case to be remitted to the opposition division is justified.

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 for further prosecution.

The Registrar:

The Chairman:



A. Wille

J.-M. Schwaller

Decision electronically authenticated