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**Datasheet for the decision
of 2 September 2016**

Case Number: T 2295/13 - 3.3.05

Application Number: 06773013.5

Publication Number: 1896374

IPC: C04B24/04

Language of the proceedings: EN

Title of invention:

Gypsum products utilising a two-repeating unit dispersant and a method for making them

Applicant:

United States Gypsum Company

Headword:

Gypsum board/U.S. GYPSUM

Relevant legal provisions:

EPC Art. 123(2)

Keyword:

Amendments - allowable (yes)

Decisions cited:

T 0576/06

Catchword:



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Case Number: T 2295/13 - 3.3.05

D E C I S I O N
of Technical Board of Appeal 3.3.05
of 2 September 2016

Appellant: UNITED STATES GYPSUM COMPANY
(Applicant) 550 West Adams Street
Chicago, IL 60661-3637 (US)

Representative: BSB Intellectual Property Law
Am Markt 2
(Eingang Herrenstraße)
59302 Oelde (DE)

Decision under appeal: Decision of the Examining Division of the
European Patent Office posted on 14 June 2013
refusing European patent application No.
06773013.5 pursuant to Article 97(2) EPC.

Composition of the Board:

Chairman G. Glod
Members: J.-M. Schwaller
P. Guntz

Summary of Facts and Submissions

I. This appeal lies from the decision of the examining division to refuse European patent application No. 06 773 013.5 on the ground that the different sets of claims then on file did not meet the requirements of Article 123(2) EPC.

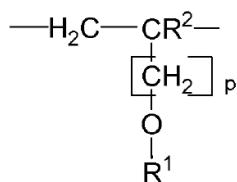
Claim 1 of the main request underlying the decision under appeal reads as follows:

"1. A gypsum slurry comprising:

water;

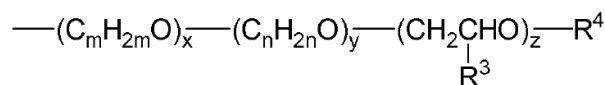
a hydraulic component comprising at least 75% calcium sulfate hemihydrate by weight based on the dry weight of the hydraulic component, wherein cement is not included in said hydraulic component; and

a polycarboxylate dispersant having repeating units consisting of a first and a second repeating unit, wherein said first repeating unit is an olefinic unsaturated monocarboxylic acid repeating unit or an ester or salt thereof, or an olefinic unsaturated sulphuric acid repeating unit or a salt thereof, and said second repeating unit is of the general formula (I)



I

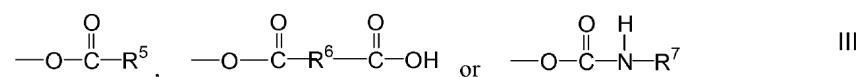
where R¹ is represented by



II

and wherein R² is hydrogen or an aliphatic C₁ to C₅ hydrocarbon group, R³ is a non-substituted or

substituted aryl group and preferably phenyl, and R^4 is hydrogen or an aliphatic C_1 to C_{20} hydrocarbon group, a cycloaliphatic C_5 to C_8 hydrocarbon group, a substituted C_6 to C_{14} aryl group or a group conforming to the formulae



wherein R^5 and R^7 , independently of each other, represent an alkyl, aryl, aralkyl or alkylaryl group and R^6 is a divalent alkyl, aryl, aralkyl or alkaryl group, p is 0 to 3, inclusive, m and n are, independently, an integer from 2 to 4, inclusive; x and y are, independently, integers from 55 to 350, inclusive and z is from 0 to 200, inclusive."

- II. In its decision, the examining division held the disclaimer "wherein cement is not included in the hydraulic component" to have no basis in the application as filed.

Further, it held the feature "a hydraulic component consisting of calcium sulfate hemihydrate" in claim 1 of auxiliary requests 1 and 2 (not reproduced here) to represent an intermediate generalisation of the examples, for which there was likewise no basis in the application as filed.

- III. During the appeal proceedings, the appellant submitted different sets of amended claims that the board held to infringe Articles 84 and 123(2) EPC.

- IV. The board held in particular the disclaimer "wherein cement is not included in said hydraulic component" to be not directly and unambiguously derivable from the

application as filed, contrary to decision G 2/10, Reasons 4.6.

Further, the presence of "comprising" and "consisting of" in claim 1 was held unclear because the presence of the term "comprising" in the definition of the gypsum slurry composition left open the possibility of introducing the component "cement" into the slurry composition with another function, for instance as an additive or filler.

V. With letter of 23 August 2016, the appellant filed an amended set of claims replacing all the previous ones, with independent claims 1 and 8 reading as follows:

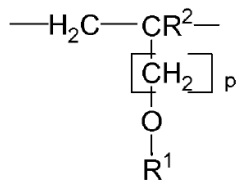
"1. A gypsum slurry **consisting of:**

water;

*a hydraulic component **consisting** of calcium sulfate hemihydrate; and*

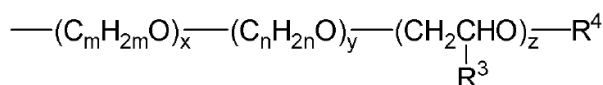
a polycarboxylate dispersant having repeating units consisting of a first and a second repeating unit, wherein said first repeating unit is an olefinic unsaturated monocarboxylic acid repeating unit or an ester or salt thereof, or an olefinic unsaturated sulphuric acid repeating unit or a salt thereof, and said second repeating unit is of the

general formula (I)



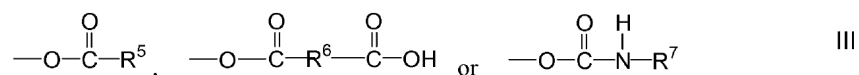
I

where R¹ is represented by



II

and wherein R^2 is hydrogen or an aliphatic C_1 to C_5 hydrocarbon group, R^3 is a non-substituted or substituted aryl group and preferably phenyl, and R^4 is hydrogen or an aliphatic C_1 to C_{20} hydrocarbon group, a cycloaliphatic C_5 to C_8 hydrocarbon group, a substituted C_6 to C_{14} aryl group or a group conforming to the formulae



wherein R^5 and R^7 , independently of each other, represent an alkyl, aryl, aralkyl or alkylaryl group and R^6 is a divalent alkyl, aryl, aralkyl or alkaryl group, p is 0 to 3, inclusive, m and n are, independently, an integer from 2 to 4, inclusive; x and y are, independently, integers from 55 to 350, inclusive and z is from 0 to 200, inclusive; **and optionally at least one additive selected from the group consisting of set retarders, set accelerators, foaming agents, trimetaphosphates, biocides, starches, sugars, siloxanes and wax emulsions.**"

"8. A gypsum board **consisting** of:
a gypsum core material **consisting** of a calcium sulfate dihydrate matrix obtainable from the gypsum slurry of claim 1, wherein said core material **optionally further consists of at least one of the group consisting of a set accelerator, foaming agent, set retarders, strengthening agent, starch, trimetaphosphate and a modifier.**"

The set of claims further includes dependent claims 2 to 7 and 9, which define specific embodiments of independent claims 1 and 8.

VI. During a phone call on 1 September 2016, the rapporteur informed the appellant's representative that claim 8 did not appear to meet the requirements of Article 84 EPC in the following respects:

- the feature "*wherein said core material **optionally further consists of at least one of the group consisting of a set accelerator, foaming agent, set retarders, strengthening agent, starch, trimetaphosphate and a modifier***" was redundant, because the subject-matter of claim 1 already included some of these features.
- the features "modifier" and "strengthening agent" could for instance mean "cement"; furthermore, the feature "strengthening agent" was not defined at all in the description, and so the presence of these features in claim 8 rendered the claim unclear.

VII. With letter of 19 September 2016, the appellant filed a new set of claims, identical to the one dated 23 August 2016 excepted claim 8, which reads:

*"8. A gypsum board consisting of:
a gypsum core material consisting of a calcium sulfate dihydrate matrix obtainable from the gypsum slurry of claim 1."*

VIII. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the set of claims filed on 19 September 2016 or, alternatively, that the case be remitted to the first instance for further prosecution.

Reasons for the Decision

1. Allowability of the amendments

For the board, the amended claims meet the requirements of Article 123(2) EPC for the following reasons:

- 1.1 The subject-matter of claim 1 is based on the subject-matter of claim 1 combined with that of claim 6 and the disclosure of the passages at page 6, line 5 to page 7, line 13 and page 8, lines 14 to 16 of the application as originally filed.

The board does not agree with the examining division that there was no basis in the application as filed for the feature "*a hydraulic component consisting of calcium sulfate hemihydrate*", as this feature is directly and unambiguously derivable from the sentence: "*In many wallboard formulations, the hydraulic material is substantially all calcium hemihydrate*" at page 8, lines 14 to 16. The term "substantially" is understood in the present context to mean "essentially", with the only essential component of the hydraulic material being calcium sulfate hemihydrate. Therefore the deletion of the term "substantially" can be accepted in line with e.g. T 576/06 (Reasons 2.2).

The replacement of "gypsum slurry comprising" with "gypsum slurry consisting of" is directly and unambiguously derivable from the disclosures on page 6, lines 7 to 10 in combination with page 8, lines 7 and 8 and the examples, which make it clear that water, calcium sulfate hemihydrate and the polycarboxylate dispersant are the only essential elements of the gypsum slurry.

The disclaimer that the examining division objected to no longer present, so that objection has been overcome by the proposed amendments.

- 1.2 The subject-matter of dependent claims 2 to 7 is based on dependent claims 2, 3, 7, 8, 12, 13 as originally filed, respectively.
- 1.3 The subject-matter of independent claim 8 is based on the subject-matter of independent claim 14 combined with that of claims 1 and 6 and the disclosure in the passages at page 6, line 5 to page 7, line 13 and page 8, lines 14 to 16 as originally filed, and so directly and unambiguously derivable from the application as filed. In particular, it is clear from page 5, line 28 to page 6, line 3 and from page 6, line 6 that the gypsum slurry is supposed to be used for the production of gypsum boards.
 - 1.3.1 The subject-matter of claim 9 is based on claim 17 as filed in combination with page 16, lines 16 to 19 of the application as filed. It is unambiguous from the latter passage that the foaming agent - an optional feature of current claim 1 - can lead to the formation of voids in the gypsum board (product).
- 1.4 It follows from the above considerations that the amended claims meet the requirements of Article 123(2) EPC.
2. Remittal

As the contested decision only concerned Article 123(2) EPC issues, the board exercises its discretion under Article 111(1) EPC and remits the case to the department of first instance for further examination.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the department of first instance for further prosecution on the basis of the set of claims filed on 19 September 2016.

The Registrar:

The Chairman:



C. Vodz

G. Glod

Decision electronically authenticated