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**Datasheet for the decision
of 26 February 2024**

Case Number: T 1657/22 - 3.3.05

Application Number: 10713336.5

Publication Number: 2429966

IPC: C04B7/02, C04B28/00, C04B20/06,
C04B28/04, C04B20/04, C04B7/36

Language of the proceedings: EN

Title of invention:
PORTLAND LIMESTONE CALCINED CLAY CEMENT

Patent Proprietor:
Aalborg Portland A/S

Opponents:
HeidelbergCement AG
Holcim Technology Ltd

Headword:
calcined clay cement/Aalborg Portland

Relevant legal provisions:
EPC Art. 100(c)
RPBA 2020 Art. 13(1)

Keyword:

Grounds for opposition - added subject-matter (yes)
Amendment to appeal case - auxiliary requests 21, 22 -
admitted (no)

Decisions cited:

T 1790/17

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
Fax +49 (0)89 2399-4465

Case Number: T 1657/22 - 3.3.05

D E C I S I O N
of Technical Board of Appeal 3.3.05
of 26 February 2024

Appellant:
(Patent Proprietor)

Aalborg Portland A/S
Rordalsvej 44
9220 Aalborg Ost (DK)

Representative:

Chas. Hude A/S
Langebrogade 3B
1411 Copenhagen K (DK)

Respondent 1:

(Opponent 1)

HeidelbergCement AG
Berliner Strasse 6
69120 Heidelberg (DE)

Representative:

Zellentín & Partner mbB Patentanwälte
Rubensstraße 30
67061 Ludwigshafen (DE)

Respondent 2:

(Opponent 2)

Holcim Technology Ltd
Zürcherstrasse 156
8645 Jona (CH)

Representative:

Keschmann, Marc
Haffner und Keschmann Patentanwälte GmbH
Schottengasse 3a
1010 Wien (AT)

Decision under appeal:

**Decision of the Opposition Division of the
European Patent Office posted on 16 March 2022
revoking European patent No. 2429966 pursuant to
Article 101(3)(b) EPC.**

Composition of the Board:

Chairman	E. Bendl
Members:	S. Besselmann
	P. Guntz
	T. Burkhardt
	O. Loizou

Summary of Facts and Submissions

- I. The patent proprietor's appeal is against the opposition division's decision to revoke European patent EP 2 429 966 B1.
- II. The opposition division deciding on the two oppositions found that the ground of opposition pursuant to Article 100(c) EPC prejudiced the maintenance of the patent as granted and that auxiliary requests 1-10 contravened the requirements of Articles 84 and 123(2) EPC. It did not admit auxiliary requests 11-18 into the proceedings.
- III. With their statement of grounds of appeal, the patent proprietor (appellant) defended the patent as granted, maintained all of their auxiliary requests, i.e. auxiliary requests 1-18, and submitted two new auxiliary requests, i.e. auxiliary requests 19 and 20. They then filed two further auxiliary requests, i.e. auxiliary requests 21 and 22, with a letter dated 4 August 2023.
- IV. In a communication pursuant to Article 15(1) RPBA 2020 dated 24 November 2023, the board informed the parties of its preliminary opinion that it appeared that the appeal should be dismissed, and explained why, *inter alia*, auxiliary requests 21 and 22 should not be admitted into the appeal proceedings pursuant to Article 13(1) RPBA 2020.
- V. In response, the appellant withdrew auxiliary requests 1-20, thus only maintaining the main request (patent as granted) and auxiliary requests 21 and 22. They also withdrew their request for oral proceedings.

- VI. In a further communication pursuant to Article 15(1) RPBA 2020, the board informed the parties why it saw no reason to deviate from its initial preliminary opinion.
- VII. None of the parties made any further submissions as to the substance of the case.
- VIII. The board then cancelled the oral proceedings.
- IX. The relevant independent claims 1 and 12 of the patent as granted read as follows:

"1. A cement comprising Portland cement clinker and a supplementary cementitious material, characterised in that the supplementary cementitious material consists of a) a calcined clay produced at a temperature of between 500°C and 900°C and b) a carbonate material selected among the group comprising limestone, magnesium carbonate, calcium magnesium carbonate, or mixtures thereof, wherein said carbonate material has been ground to a specific surface area of 3000 - 15000 cm²/g determined using the Blaine method described in EN 196, and wherein only the clay material has been heat-treated, and wherein the weight ratio of calcined clay material to carbonate material is between 0.25 and 3, and wherein the cement comprises 15 to 90% w/w of the supplementary cementitious material."

"12. Method of producing a cement comprising Portland cement clinker and a supplementary cementitious material comprising the steps of a) providing a carbonate material selected among the group comprising limestone, magnesium carbonate, calcium magnesium carbonate, or mixtures thereof, said carbonate material being ground to a specific surface area of 3000 -

15000 cm²/g determined using the Blaine method described in EN 196 and a clay material, b) heating the clay material separately at a temperature of between 500°C and 900°C, c) mixing the heat-treated clay material with the carbonate material in a weight ratio of heat-treated clay material to carbonate material of between 0.25 and 3, and d) blending the mixture of c) with a Portland cement clinker."

- X. The only independent claim in auxiliary request 21 reads as follows (changes compared with claim 12 as granted have been highlighted by the board):

"1. Method of producing a cement comprising Portland cement clinker and a supplementary cementitious material comprising the steps of a) providing a carbonate material selected among the group comprising limestone, magnesium carbonate, calcium magnesium carbonate, or mixtures thereof, said carbonate material being ground to a specific surface area of 3000 - 15000 cm²/g determined using the Blaine method described in EN 196 and a clay material, b) heating the clay material separately at a temperature of between 500°C and 900°C until the clay minerals in the clay material have lost at least 70% (mol/mol) of their OH groups present before the heat treatment, wherein the heat treated clay material constitutes at least 7% w/w and the carbonate material constitutes at least 8% w/w of the cement and wherein the heat treated clay material is a calcined clay; c) mixing the ~~heat-treated~~ calcined clay material with the carbonate material in a weight ratio of ~~heat-treated~~ calcined clay material to carbonate material of between 0.25 and 3, and d) blending the mixture of c) with a Portland cement clinker, wherein the carbonate material is limestone."

In independent method claim 1 of auxiliary request 22, step b) is defined differently than in auxiliary request 21 and reads as follows:

"b) heating the clay material separately at a temperature of between 500 °C and 750 °C whereby the clay material is dehydroxylated to a crystallographically [sic] amorphous material without forming crystalline high temperature aluminosilicate phases, wherein the heat treated clay material constitutes at least 7% w/w and the carbonate material constitutes at least 8% w/w of the cement, wherein the heat-treated clay material is produced in a rotary kiln or fluid bed furnace and wherein the heat treated clay material is a calcined clay;"

XI. The key arguments of the appellant, where relevant to the present decision, can be summarised as follows:

The requirements of Article 123(2) EPC were met. Auxiliary requests 21 and 22 should be admitted into the appeal proceedings because they responded to objections in the impugned decision and also addressed all other formal issues. Procedural economy was satisfied because auxiliary requests 1-20 were withdrawn and the case could be remitted to the opposition division for substantive examination.

XII. The key arguments of opponent 1 (respondent 1) and opponent 2 (respondent 2), where relevant to the present decision, can be summarised as follows:

The opposition division was correct in finding that claims 1 and 12 as granted infringed the requirements of Article 123(2) EPC. Auxiliary requests 21 and 22 should not be admitted into the appeal proceedings.

XIII. The appellant requested that the decision under appeal be set aside and that the oppositions be rejected (main request), or, alternatively, that the patent be maintained in amended form on the basis of one of auxiliary requests 21 and 22 as filed with the letter dated 4 August 2023.

The respondents requested that the appeal be dismissed.

Reasons for the Decision

1. Need for oral proceedings

1.1 As is clear from the course of events described, the appellant withdrew their request for oral proceedings as a reaction to the board's preliminary opinion of 24 November 2023. The board subsequently issued a further communication pursuant to Rule 15(1) RPBA, explaining why it saw no reason to deviate from its initial preliminary opinion that auxiliary requests 21 and 22 should not be admitted under Article 13(1) RPBA 2020.

The parties made no further submissions as to the substance of the case.

The appellant did have the opportunity to comment on all of the issues relevant to the decision. Since the appellant withdrew their request for oral proceedings, and the respondents' requests for the appeal to be

dismissed could be granted, there was no need to hold oral proceedings.

Main request

2. Article 100(c) EPC

2.1 According to the impugned decision, the feature "*produced at a temperature of between 500°C and 900°C*" in claim 1 as granted was different from the feature "*heat treated [...] in such a way that the heat treated clay material is substantially dehydroxylated*" in claim 1 of the application as originally filed. There was no basis in the application as originally filed for replacing the latter with the former. This reasoning also applied to claim 12 as granted, which contained an equivalent amendment, i.e. the expression "*heating the clay material separately at a temperature of between 500°C and 900°C*" instead of the original expression "*heating the clay material separately in such a way that the heat treated clay material is substantially dehydroxylated*".

2.2 The appellant argued in particular that the claims and the description did not require full dehydroxylation and that the dehydroxylation could be determined by analysing the obtained calcined clay according to the disclosed method. The heat treatment could be continued until the claimed dehydroxylation was reached, without undue burden. Since the heat treatment time span was dependent on the specific composition within the claimed ranges and the type of furnace used, specifying time ranges would thus be an unwarranted restriction.

- 2.3 As argued by the respondents, these arguments do not specifically address the question of why or on what basis it was admissible to replace the indicated requirement in the application as originally filed, i.e. the feature "*in such a way that the heat treated clay material is substantially dehydroxylated*", with the features referring to "*between 500°C and 900°C*".
- 2.4 Claim 1 does not specify that "*the clay material has been heat treated in such a way that the heat treated clay material is substantially dehydroxylated*". This feature is not implicit in the claim either, because there is no evidence that any calcined clay produced at a temperature of between 500°C and 900°C was *substantially dehydroxylated*, irrespective of the duration of the heat treatment, for instance.
- 2.5 This feature relating to *substantial dehydroxylation* is defined as meaning that the clay minerals in the respective clay material have lost at least 70% (mol/mol) of their OH groups present before the heat treatment (page 7, lines 19-21; references being to the application as originally filed). It was an essential feature of the invention, as generally disclosed in the application as originally filed (see, in particular, claims 1 and 23 as well as description page 4, lines 23-32, and page 5, lines 4-9). While the application as originally filed does disclose that "*[a]ccording to another embodiment of the present invention the heat treated clay material is calcined clay produced at a temperature of between 500°C and 900°C*" (page 10, lines 1-2), this disclosure cannot be isolated from the above-mentioned general disclosure of the invention.
- 2.6 The appellant has not contested that dehydroxylation is essential (statement of grounds of appeal, page 9,

penultimate sentence), and there are no convincing arguments as to why this feature could be omitted.

- 2.7 Independent claims 1 and 12, from which this feature has been omitted, thus introduce subject-matter which extends beyond the content of the application as originally filed.

Auxiliary requests 21 and 22

3. Article 13(1) RPBA 2020

- 3.1 Auxiliary requests 21 and 22 were filed after the statement of grounds of appeal, namely in reply to the respondents' replies to the appeal. Hence, the provisions of Article 13(1) RPBA 2020 apply. These requests are based on (now withdrawn) auxiliary requests 19 and 20, compared with which the use and product claims have been deleted, and also contain some further deletions.

- 3.2 In respect of (now withdrawn) auxiliary requests 19 and 20, the appellant argued that these responded to objections in the impugned decision (page 16, penultimate paragraph, to page 17, all but the last paragraph of the statement of grounds of appeal) and reiterated this with regard to auxiliary requests 21 and 22 (submission of 4 August 2023, point 2.4). According to the appellant, they had not known the precise nature of these objections during the oral proceedings before the opposition division. The appellant also referred to T 1790/17.

The appellant was of the opinion that procedural economy was satisfied because the other auxiliary

requests, i.e. auxiliary requests 1-20, were withdrawn by letter of 20 December 2023.

The appellant also asserted that auxiliary requests 21 and 22 clearly overcame the respondents' objections against the use and method claims in (now withdrawn) auxiliary requests 19 and 20 because the claims concerned had been deleted. The dependent claims were not objectionable under Rule 80 EPC because they were occasioned by a ground for opposition, namely Article 100(c) EPC. Since auxiliary requests 21 and 22 overcame all of the formal objections raised in the impugned decision and in the board's preliminary opinion, and were filed before any summons to oral proceedings in appeal, considering them would be beneficial to procedural economy because the case could be rapidly remitted to the opposition division for further prosecution and an analysis of novelty and inventive step.

3.3 These arguments are not convincing.

3.3.1 The objections against the higher-ranking auxiliary requests that were discussed during the oral proceedings before the opposition division concerned Articles 123(2) EPC and 84 EPC, dealing with amendments that had been made in reply to the objection under Article 100(c) EPC against the patent as granted. There is no convincing reason why the appellant was not aware of these objections and needed the written decision to react to them.

Auxiliary requests 21 and 22 constitute two further attempts to overcome the ground for opposition pursuant to Article 100(c) EPC (point II.3. of the impugned decision), in addition to (now withdrawn) auxiliary

requests 19 and 20 from which they derive, and they attempt to propose a claim wording that meets the requirements of Article 123(2) EPC and does not introduce a lack of clarity.

Thus, the appellant could and should have filed these auxiliary requests with the opposition division (see Articles 12(6) and 13(1), 2nd sentence, RPBA), especially as additional dependent method claims were introduced (claims 3-9 and 2-7, respectively).

3.3.2 These additional dependent method claims are not identical to former dependent product claims with only the category of the claim having been changed. In this case, method claim 12 of the patent as granted did not refer back to product (cement) claim 1 of the patent as granted and did not include the same limitations, for instance regarding the content of supplementary cementitious material, regarding the requirement that the supplementary cementitious material *consists* of the calcined clay and the carbonate material, and regarding the requirement that only the clay material has been heat-treated. The need to examine additional dependent method claims is detrimental to procedural economy *per se*, and also raises the question as to whether the requirements of Rule 80 EPC have been infringed.

3.3.3 This case is not comparable with *ex parte* case T 1790/17, in which the competent board admitted an auxiliary request which had been newly filed as a direct reaction following the exchange of arguments in the oral proceedings and which addressed the objections and concerns the board had had (Reasons 7., last paragraph).

3.3.4 While the withdrawal of auxiliary requests 1-20 does contribute to procedural economy, it does not result in auxiliary requests 21 and 22 becoming admissible. In particular, it does not change the board's view that the appellant could and should have filed these auxiliary requests with the opposition division, and that additional dependent method claims need to be examined, which, as stated above, is detrimental to procedural economy *per se*.

3.4 Auxiliary requests 21 and 22 are not admitted.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



L. Malécot-Grob

E. Bendl

Decision electronically authenticated