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Datasheet for the decision of 18 March 2015

Case Number: T 0596/11 - 3.2.06

Application Number: 00938846.3

Publication Number: 1198630

IPC: D04H1/64, C03B37/04, C04B28/24, D21H13/40

Language of the proceedings: EN

Title of invention:
METHOD FOR MANUFACTURING A BINDER AND USE THEREOF

Patent Proprietor:
Paroc Oy Ab

Opponent:
ROCKWOOL INTERNATIONAL A/S

Relevant legal provisions:
EPC Art. 83

Keyword:
Late-filed test report - reply to communication of the Board
Late-filed test report - admitted
Sufficiency of disclosure - undue burden

Decisions cited:
T 0206/83, T 0032/85, T 0051/87, T 0212/88, T 0580/88, T 0772/89, T 0231/92, T 0818/97, T 0792/00, T 0617/07

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Case Number: T 0596/11 - 3.2.06

D E C I S I O N
of Technical Board of Appeal 3.2.06
of 18 March 2015

Appellant: (Opponent)	ROCKWOOL INTERNATIONAL A/S Hovedgaden 584 DK-2640 Hedehusene (DK)
Representative:	Samuels, Lucy Alice Gill Jennings & Every LLP The Broadgate Tower 20 Primrose Street London EC2A 2ES (GB)
Respondent: (Patent Proprietor)	Paroc Oy Ab Neilikkatie 17 01300 Vantaa (FI)
Representative:	Aalto, Juha-Matti Oy Jalo Ant-Wuorinen Ab Iso-Roobertinkatu 4-6 A 00120 Helsinki (FI)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 13 January 2011 concerning maintenance of the European Patent No. 1198630 in amended form.**

Composition of the Board:

Chairman M. Harrison
Members: G. de Crignis
K. Garnett

Summary of Facts and Submissions

I. By way of its interlocutory decision, the opposition division found that European Patent No. 1 198 630 as amended according to the main request met the requirements of the European Patent Convention (EPC).

II. The appellant(opponent) filed an appeal against this decision, requesting revocation of the patent based on objections under Article 123(2) EPC, Article 83 EPC and Article 56 EPC. It also requested reimbursement of the appeal fee due to an alleged substantial procedural violation by the opposition division in relation to the appellant's right to be heard (Article 113(1) EPC).

III. In its reply to the grounds of appeal, the respondent (patent proprietor) requested dismissal of the appeal as a main request or that the patent be maintained in an amended form based on an auxiliary request filed together with the grounds of appeal.

IV. In a communication annexed to a summons to oral proceedings, the Board indicated, in relation to sufficiency of disclosure, that no particular material or acid had been identified by the appellant which was in some way incompatible with the claimed method, nor was there any evidence to suggest that the skilled person would have had any difficulty in selecting an appropriate acid for any suitable particulate material. In relation to the allegation of a substantial procedural violation, the Board also stated provisionally that it considered that the appellant's right to be heard had been respected.

V. In its reply of 6 February 2015, the respondent stated that it would not take part in the oral proceedings, but that it maintained its requests.

VI. With its letter of 18 February 2015,the appellant submitted a test report in further support of its objections.

VII. Oral proceedings were held before the Board on 18 March 2015, in the absence of the respondent as had already been announced.

The appellant requested that the decision under appeal be set aside and the patent be revoked. It also withdrew its request for reimbursement of the appeal fee.

As stated in writing, the respondent requested that the appeal be dismissed, alternatively that the decision under appeal be set aside and the patent be maintained on the basis of auxiliary request 1 filed with its letter dated 25 November 2011 (reply to the grounds of appeal).

VIII. Claim 1 of the main request reads as follows:

"Method for making a binder comprising the steps of
- dissolving a particulate mineral material having a glassy amorphous structure and being a mineral wool material from mineral fibre production, which mineral wool material is spinning waste, unused fibres or products, or post-consumer mineral fibre products, in an acidic aqueous solution, to form a sol containing nucleated re-precipitated particles from the material,
- stabilizing the so obtained sol to form a sol having the desired particle size, and optionally

- adjusting the dry matter content of the sol."

Claim 1 of auxiliary request 1 specifies the acidic aqueous solution further as "*containing an acid selected from HCl, HNO_3, H_2SO_4, H_3PO_4, formic, acetic and propionic acid*".

IX. The arguments of the appellant may be summarised as follows:

The test report should be admitted into the proceedings. It was *prima facie* highly relevant. It did not go in a different or unexpected direction to the case made on appeal, since objections had been raised throughout the proceedings that there were serious doubts that the disclosed method would work with acids other than formic acid. Additionally, the submission of the test report represented a reaction to the communication of the Board. Furthermore, the test report had been sent directly to the respondent with sufficient time for it to provide comments, but no statement against the correctness of the report, nor any objection to the lateness of its filing had been made by the respondent.

In order to reproduce the example, TOPROCK material was used as it represented a conventional material. The patent in suit mentioned, in paragraphs [0014] and [0022], certain features of the mineral wool and its corresponding metal oxides. Together, these indicated the suitability of basically any mineral wool material. Also, reference was made to common general knowledge concerning the provision of silica sols from such starting mineral materials. The test report demonstrated that, when using formic acid, the method could be carried out. The mineral wool material chosen

was thus evidently suitable. However, it also demonstrated that, without a research program to identify suitable particulate material and acid combinations, something which would be an undue burden for the skilled person, the invention could not be carried out over the whole scope of claim 1. A generalisation including acids other than formic acid was thus not justified based on the disclosure in the patent. The same objection applied to auxiliary request 1.

X. The arguments of the respondent may be summarised as follows:

In regard to the objections under Article 100(b)/ Article 83 EPC, an example of how to carry out the invention was disclosed in the description of the patent in suit, and this example supported claim 1. This example defined the size and amount of the fibre material as well as the volume and strength of the acidic solution. The skilled person would not encounter any difficulty when carrying out the invention. Depending on the end use of the manufactured binder, a wide variety of different mineral materials could be used. Moreover, the skilled person was able to use general knowledge to supplement the information contained in the application (see e.g. T 206/83, T 32/85, T 51/87, T 212/88, T 580/88, T 772/89, T 231/92, T 818/97). Since it was known that not all mineral materials could be properly dissolved in an acidic aqueous solution, at least not within an appropriate time or in a sufficient amount, the skilled person was fully capable, based on his general knowledge, of selecting a suitable mineral material with a glassy amorphous structure and the appropriate acid to start

with. The appellant had greatly exaggerated the difficulty involved.

Reasons for the Decision

1. *Admittance of test report*

1.1 With its letter of 18 February 2015, the appellant provided experimental evidence in the form of a test report with regard to solubility of a mineral wool material in various acidic aqueous solutions.

1.2 The test report was filed in reply to the annex to the summons issued by the Board of Appeal, hence at a very late stage in the proceedings. In order to be admitted at such a late stage of proceedings, such evidence should normally be *prima facie* highly relevant, which is indeed the case here, as set out below.

1.3 In the context of insufficient disclosure, the appellant had already stated, in its grounds of appeal, that "Most mineral wool fibres are not known for their solubility properties in acidic aqueous solutions. The skilled person is not given any guidance on how to establish which mineral wool material can be used to carry out the alleged invention of claim 1.".

1.4 In its reply to the grounds of appeal, the respondent even acknowledged that it was a well-known fact that not all mineral material could be properly dissolved in an acidic aqueous solution - at least not within an appropriate time or in a sufficient amount. However, the respondent argued that the skilled person could use

his general knowledge to supplement the information contained in the application, and that the skilled person could - again based on his general knowledge - select a suitable mineral material and the appropriate acid to start with. No evidence concerning these statements was filed.

1.5 In its communication annexed to the summons to oral proceedings, the Board had mentioned that no evidence concerning the alleged insufficient solubility of particulate mineral material under certain acidic conditions had been submitted.

1.6 The set-up for the test report is based on the example disclosed in the patent in suit as regards pH value and concentration. For the tests carried out, a mineral wool material in the form of the commercial product named TOPROCK (produced in Denmark in 2014) was used. The TOPROCK fibres represent a stone wool product having fibres of a glassy amorphous structure, diameter 3 to 4 µm, fibre length 3 to 10 mm and thus corresponded, at least in this sense, to the "conventional rock wool fibres" disclosed for the example in the patent in suit (see paragraph [0045]). The test report provides experimental evidence that TOPROCK fibres could not be properly dissolved in any of the aqueous solutions comprising either HCl, HNO_3, H_2SO_4 or acetic acid but could be dissolved in 5M formic acid.

1.7 The respondent did not file any response to these test results, even though it had received copies thereof directly from the appellant and additionally from the office, well before the oral proceedings.

1.8 With regard to the lateness of the submission of the test report, the appellant pointed to the fact that the arguments concerning (a) solubility in acidic solutions other than formic acid and (b) the absence of any enabling disclosure across the whole scope of the claim had been submitted and pursued from the beginning of the opposition proceedings (see e.g. item 3.7 of the notice of opposition). Accordingly, no different position had been adopted by the submission of the test report since the objection had always been present.

1.9 The respondent had always had the possibility of providing test reports demonstrating that the method also worked for different acids.

1.10 Although the test report was filed very late by the appellant, this is not the only criteria which needs to be considered when deciding upon possible admittance of the test report into the proceedings. In particular, in the absence of any argument, objection or contra-indicative experiments provided by the respondent which might have given reason to refute the test report filed by the appellant, the Board has no reason to doubt that the tests were correctly carried out. The results also confirm what was stated as being well-known, i.e. that it was well-known in the art that mineral wool material is not readily soluble in any acidic solution, thus confirming the statements of both parties. Additionally, the test report provides results for most of the relevant acidic aqueous solutions (see e.g. those claimed in claim 4 of the main request and in claim 1 of auxiliary request 1) namely HCl, HNO_3, H_2SO_4 and acetic acid.

1.11 Accordingly, in view of the *prima facie* highly relevant nature of the test report, and the fact that no

objections to lateness, correctness or admittance of the test results had been made by the respondent, the Board exercised its discretion to admit the test results into the proceedings.

2. Article 83 EPC

2.1 Claim 1 refers to a method for making a binder including the step of:
"dissolving a particulate mineral material having a glassy amorphous structure and being a mineral wool material from mineral fibre production, which mineral wool material is spinning waste, unused fibres or products or post-consumer mineral fibre products, in an acidic aqueous solution, to form a sol containing nucleated re-precipitated particles from the material".

2.2 Only a single example is provided in the patent in suit (see paragraph [0045]) in which 100 ml of 5M formic acid is used to dissolve 7.5 g of "conventional rock wool fibres" having a fibre diameter of 3 to 4 µm and a fibre length of 3 to 10 mm. No other conditions than mixing in a high-shear mixer are given.

2.3 The skilled person is not given any guidance or information on how to establish which acid aqueous solution would be suitable as an alternative to formic acid and thus how to carry out the alleged invention over the whole scope of claim 1. The description generally refers in paragraph [0016] (consistent with claim 4) to an aqueous solution containing an acid selected from HCl, HNO_3, H_2SO_4, H_3PO_4, formic, acetic acid and propionic acid; for good dissolution generally a pH of 0 to 6 is disclosed. However, this range covers merely the whole range for commonly available acidic solutions and thus does not provide any indication as

to which properties might for example be required of the acid to dissolve any specific mineral particulate, nor whether any specific conditions of dissolution might be necessary.

2.4 The test results confirm the statement of the appellant that it is not possible to find acids, other than formic acid, which allow the claimed step of "dissolving a particulate mineral material having a glassy amorphous structure ... in an acidic aqueous solution" to be achieved. The test results confirm (in correspondence with the sole example disclosed in the patent in suit) that formic acid is suitable as an acidic aqueous solution for dissolving the conventional mineral wool material chosen for the test. There is thus no reason to assume that the mineral wool material TOPROCK was for any reason not an appropriate one for use in the tests. However, claim 1 refers not only to formic acid but more generally to "aqueous acidic" solutions for dissolving the mineral wool materials.

2.5 Concerning the method step in dispute, it has also to be taken into account that factors that can influence the rate of dissolution of mineral wool material from mineral fibre production in addition to included minor components are ion content (Ca, Mg, Al), surface area, temperature, degree of crystallinity, previous mechanical and heat treatment, and previous treatments with water, alkali or acid. Moreover, in aggregated material not all the surface area is available to the solution. Therefore, it appears not to be straightforward for the skilled person - as alleged by the respondent - based on the disclosure in the patent and taking account of a skilled person's general knowledge, to choose an acid which is suitable for dissolving a specific mineral material.

2.6 The disclosure of one way of performing an invention is only sufficient if it allows the invention to be performed over the whole range claimed: see e.g. T 409/91, T 435/91, T 172/99. In the present case, having regard to the broad scope of the claim, more technical details and more than one example are necessary in order to sufficiently disclose the claimed invention. In the aforementioned decisions (see also e.g. T 792/00 and T 617/07), it is made clear that the disclosure of an invention is only sufficient in the sense of Article 83 EPC if the skilled person can reasonably expect that substantially all embodiments falling under the claimed invention, which the skilled person would envisage on the basis of the corresponding disclosure and the relevant common general knowledge, can be put into practice. This is not the case here.

2.7 The argument of the respondent that the skilled person would use his general knowledge to supplement the information contained in the application, and the reference to decisions T 206/83, T 32/85, T 51/87, T 212/88, T 580/88, T 772/89, T 231/92 and T 818/97 is not persuasive. All these decisions refer to general knowledge which is readily available or to cases where a reference is made in the patent in suit to documents which contain the necessary information or references thereto. This is not the case in the current patent specification. Also these decisions state that no undue burden should be put on the skilled person.

2.8 There can be no reasonable expectation in the present case that the broadly claimed mineral materials could be properly dissolved in any acidic aqueous solution, at least not within an appropriate time or in a sufficient amount. The step of dissolving a particulate

mineral material in an acidic aqueous solution is central to the invention. On the basis of the test report submitted by the appellant, the dissolving of a conventional mineral material cannot be carried out at least for aqueous solutions of HCl, HNO_3, H_2SO_4, H_3PO_4 or acetic acid. Thus, the skilled person would not be able to determine without undue burden how to select an appropriate acid for any given mineral material; instead the task given to the skilled person appears to require nothing less than a research program in order to find suitable combinations. The invention according to claim 1 of the main request is thus insufficiently disclosed (Article 83 EPC).

3. *Auxiliary request 1*

Claim 1 of auxiliary request 1 differs from claim 1 of the main request in that one of HCl, HNO_3, H_2SO_4, H_3PO_4, formic, acetic and propionic acid is defined as being the acid contained in the acidic aqueous solution. In the absence of any positive indication that any particular acid other than formic acid is suitable for dissolving the claimed mineral wool material, and in the absence of any indication as to how to select an acidic aqueous solution as being appropriate for a specific mineral wool material, the conclusion drawn under point 2.8 above applies equally to claim 1 of this request. Hence, the invention according to claim 1 of auxiliary request 1 is also insufficiently disclosed, contrary to Article 83 EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairman:

B. Atienza Vivancos M. Harrison

Decision electronically authenticated