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D E C I S I O N
of 12 October 2000

Case Number: T 0808/98 - 3.3.5

Application Number: 87901882.8

Publication Number: 0257092

IPC: C03C 13/00

Language of the proceedings: EN

Title of invention:
INORGANIC FIBER COMPOSITION CONSISTING ESSENTIALLY OF Al_2O_3, MgO, CaO AND SiO_2

Applicant:
Johns Manville Corporation

Opponent:
-

Headword:
Insulation/JMC

Relevant legal provisions:
EPC Art. 54, 56, 111(1)

Keyword:
"Novelty (after amendment, yes)"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0808/98 - 3.3.5

D E C I S I O N
of the Technical Board of Appeal 3.3.5
of 12 October 2000

Appellant: Johns Manville Corporation
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Representative: Boff, James Charles
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 25 March 1998 refusing European patent application No. 87 901 882.8 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: R. K. Spangenberg
Members: M. M. Eberhard
J. H. Van Moer

Summary of Facts and Submissions

I. European patent application No. 87 901 882.8 was refused by a first decision of the examining division posted on 24 March 1992. The appellant filed an appeal against this decision. In decision T 785/92 of 14 December 1995 relating to the said appeal, the board of appeal 3.3.2 decided that the amended claims submitted on 14 December 1995 met the requirements of Article 123(2) EPC and that the lack of clarity objected to by the examining division in connection with the feature "superior solubility in saline solution" had been overcome. The board decided to remit the case to the first instance for further prosecution.

The application was then refused by a second decision of the examining division posted on 25 March 1998. This decision was based on amended claims 1 to 12 filed on 14 December 1995 and on seven auxiliary requests filed on 16 January 1998.

II. The ground for the second refusal was lack of novelty. The examining division held that the product according to claim 1 of the main request lacked novelty over the disclosure of either of D4 (WO 85/02394), D6 (EP-A-0 076 677) and D7 (GB-A-520 247). The product according to claim 1 of auxiliary request 1 lacked novelty with respect to either D4 or D7. The disclosure of D7 was considered to destroy also the novelty of the independent use claim of each of the requests.

III. The appellant lodged an appeal against this decision. He argued that the examining division had committed a substantial procedural violation and submitted two declarations with the statement of grounds of appeal as

well as three sets of amended claims which formed the basis for eight auxiliary requests 1 to 8. In a communication dated 3 March 1999, the appellant was informed of the provisional opinion of the board on novelty and inventive step of the nine sets of claims on file and on the alleged substantial procedural violation. In reply to this communication the appellant filed new sets of amended claims. A declaration of one of the inventors was also submitted during the appeal procedure as well as two documents published after the priority date, namely "Environmental Health Criteria 77 Man-made Mineral Fibres, WHO, 1988, pages 11 to 23; and Glasstech. Ber. Glass Sci. Technol. 70 (1997) No. 12, pages 382 to 388. Oral proceedings were held on 12 October 2000. At the oral proceedings claim 1 of the main request submitted on 11 September 2000 and claim 1 of each of the auxiliary requests 1 to 3 filed on 8 April 1999 were discussed. The appellant then abandoned all the requests on file and submitted two sets of amended claims as a main request and an auxiliary request respectively.

Claim 1 of the main request reads as follows:

"1. Use as thermal insulation having a service temperature in excess of 1200°F (650°C) of mat or blanket form assemblies of inorganic refractory fibres, the fibres having the composition:

0.1-30 wt% MgO

0-9.3 wt% Al_2O_3;

the balance to 100% consisting of:

at least 22 wt% CaO

SiO_2

and no more than 2 wt% by weight of incidental impurities such as any other oxide if present."

IV. Concerning inventive step, the appellant put forward inter alia the following arguments:

D7 was not the closest prior art. It did not concern itself with providing mat or blanket form thermal insulation, nor did it concern itself with improving solubility of fibres. D7 dealt primarily with the electrical properties of the fibres and only mentioned use of wools as insulation in a throw-away remark relating to a fibre that was expressed as being of inferior quality. To assume that the skilled person faced with the problem of producing soluble fibres would have measured the solubility of D7 fibres was to assume a degree of inventiveness to the person skilled in the art that was normally precluded. When faced with such a problem the skilled person did not have the benefit of hindsight to realise that D7 was close, and there were no pointers to this closeness in D7 itself.

D12 (J.P. Leineweber, Proc. Occupational Health Conf., Copenhagen, April 1982, pages 87 to 101), which dealt with the problem of fibre solubility, represented an appropriate starting point for assessing inventive step, in particular the compositions given in Table 2 for the "Mineral wool" and the "Refractory fibre". The problem to be solved with respect to D12 was to provide fibres for thermal insulation having improved refractoriness and solubility compared to the mineral wool of D12. Table III of the application showed that the claimed fibre had a better solubility than the mineral wool or the refractory fibre of D12. The skilled person faced with the problem of increasing the refractoriness of the mineral wool of D12 would have taken the composition of the refractory fibre disclosed in Table 2. There was no incentive in D12 to decrease

the impurities of the mineral wool since the use of higher purity materials led to higher costs. The skilled person who further wanted to increase the solubility of the mineral wool would have gone to the compositions of glass A, B or C of Table 2 since they exhibited a higher solubility. However, he knew that the high sodium oxide content of these fibres would have had a deleterious effect on the refractoriness. Therefore, the skilled person would not have known in which direction to go. D12 gave no incentive to use a purer mineral wool.

Although D13a (English translation of SU-A-607 807) expressed itself as being concerned with high temperature use, there was no disclosure as to the resistance of blankets and mats to shrinkage, merely the use of a term of unspecified uncertain meaning, namely "temperature resistance". It was an uninformative paper proposal with insufficient information for a skilled person to take it seriously. This document in no way led to the present invention since it did not disclose that the fibres could be used in mat or blanket form and did not discuss the solubility. It did not form a suitable starting point for the person seeking to provide high temperature insulation in mat or blanket form, which had a "useful" or better solubility in saline solutions. It could not be deduced from the composition given in D13a that the fibres would be soluble in saline solutions since some crystallisation might occur and the presence of crystals had an influence on the solubility.

The question whether D12 or D13a represented the appropriate starting point for the assessment of inventive step was discussed at the oral proceedings in

connection with the problem stated in the application and in particular with the refractoriness (high service temperature) and solubility of the fibres. In this context the appellant indicated that if the board came to the conclusion that solubility might have an influence on the outcome of the decision, he would like to have the opportunity to provide further evidence that the mineral fibres having the composition stated in claim 1 exhibited a better solubility than the known mineral fibres.

V. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of claims 1 to 2 according to the main request filed at the oral proceedings, or alternatively on the basis of claim 1 of the auxiliary request also submitted at the oral proceedings.

Reasons for the Decision

1. The appeal is admissible.

2. Claim 1 of the main request corresponds to a combination of the features stated in claims 7 and 9 submitted on 14 December 1995 at the oral proceedings before the board of appeal 3.3.2 which issued decision T 785/92, except for the alternative involving the use of bulk fibres, which has been deleted. It was already decided by the board 3.3.2 that the said combination of features met the requirements of Article 123(2) EPC. The present board is bound by the ratio decidendi of the earlier board of appeal decision. The same considerations apply to dependent claim 2 of the main request which corresponds to dependent claim 10 filed

on 14 December 1995. Therefore, claims 1 and 2 of the main request meet the requirement of Article 123(2) EPC.

3. The subject-matter of claim 1 is new over the documents cited during the examining procedure. It differs in particular from D4 and D6 by the use of the mats or blankets of refractory fibres as thermal insulation. The claimed use differs from the insulating wool disclosed in D7 at least in that the insulation is in mat or blanket form. The interwoven, knitted or braided fabrics mentioned on page 3, lines 38 to 40 of D7 are clearly different from an insulation in mat or blanket form.

4. Concerning the issue of inventive step, the question was discussed at the oral proceedings before the board whether D12, which deals with the problem of solubility, or D13a, which is silent on the solubility but addresses the problem of providing fibres having a high use temperature, represented the closest prior art. The appellant put forward arguments in favour of inventive step starting from either D12 or D13a, although he considered D13a not to be the appropriate starting point (see point IV above). In both cases, the appellant relied for the definition of the problem underlying the claimed use not only on the refractoriness of the mats and blankets of fibres, ie their high service temperature, but also on the improved solubility of the fibres. However, starting from D13a as the closest prior art, there is no evidence in the file that the fibres having the composition stated in claim 1, ie a composition which differs from that of D13a only by the presence of MgO in amounts which may be as low as 0.1 wt%, have an

improved solubility compared to the fibres disclosed in D13a. In the absence of evidence showing the alleged improved solubility, the board is not convinced that the addition of MgO in amounts close to the lower limit of 0.1 wt% to the compositions of D13a or the replacement of part of the CaO by MgO would lead to an improved solubility of the fibres. Assuming, on the other hand, that D12 and not D13a is the appropriate starting point for assessing inventive step, then the board notes that neither the application nor the file contains evidence that the fibres as defined in claim 1 exhibit a better solubility in saline solutions than the "mineral wool" disclosed in Table 2 of D12. The appellant referred to Table III of the application in order to demonstrate this improvement. However, as indicated by the board at the oral proceedings, none of the comparative fibres A to F of Table III has a composition which is representative of the "mineral wool" disclosed in Table 2 of D12.

It follows from the preceding considerations that whatever document is taken as the closest prior art (D12 or D13a), further evidence would be necessary to prove the alleged improvement in solubility. In the absence of such evidence, this improvement could not be taken into account for the definition of the technical problem. Taking into account that the solubility issue might have an influence on the outcome of the decision on inventive step, and that the appellant has proposed to file evidence showing the said solubility improvement with respect to the closest prior art, the board, in the exercise of its discretionary power pursuant to Article 111(1) EPC, finds it appropriate to remit the case to the examining division for further prosecution.

Order

For these reasons it is decided that:

1. The decision is set aside.

2. The case is remitted to the department of first instance for further prosecution.

The Registrar: The Chairman:

S. Hue R. Spangenberg