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**Datasheet for the decision
of 20 November 2023**

Case Number: T 1735/21 - 3.3.05

Application Number: 10718534.0

Publication Number: 2421805

IPC: C03C25/26, C09K11/06, E04B1/74,
C09K11/58, C09K11/66,
C09K11/77, E04B1/76

Language of the proceedings: EN

Title of invention:
MINERAL WOOL PRODUCT AND ITS USE

Patent Proprietor:
Knauf Insulation

Opponents:
ROCKWOOL INTERNATIONAL A/S
Saint-Gobain Isover

Headword:
Mineral wool product/Knauf

Relevant legal provisions:
EPC Art. 84, 123(2), 54, 56

Keyword:

Clarity - (yes)
Amendments - allowable (yes)
Novelty - (yes)
Inventive step - (yes)

Decisions cited:

G 0002/88

Catchword:



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Case Number: T 1735/21 - 3.3.05

D E C I S I O N
of Technical Board of Appeal 3.3.05
of 20 November 2023

Appellant 1:
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Decision under appeal:

**Interlocutory decision of the Opposition
Division of the European Patent Office posted on
29 July 2021 concerning maintenance of the
European Patent No. 2421805 in amended form.**

Composition of the Board:

Chairman	P. Guntz
Members:	G. Glod
	J. Roider

Summary of Facts and Submissions

I. The patent proprietor's (appellant 1's) and the opponent 1's (appellant 2's) (hereinafter patent proprietor and opponent 1) appeals lie from the opposition division's decision finding that the European patent No. 2 421 805 in amended form based on the then auxiliary request 5 met the requirements of the EPC.

II. The following documents used in the decision are of relevance here:

D1: WO 2007/080361 A2

D2: EP 1 688 456 A1

D3: US 2 920 202

D7: DE 102 37 764 A1

D23: Extract from Owens Corning Records, 1938-Present, last updated in November 2016

D26: US 6 012 263

III. The wording of the only claim of the now main request (auxiliary request 2 underlying the impugned decision) is as follows:

"1. Use of at least one UV or IR active component as a marker or identifier in a mineral wool insulation product when the product has been installed, the UV or IR active component being selected from:

- a UV active component which can only be seen with the naked eye under ambient conditions when irradiated with a source of UV radiation; and

- an IR active component which can only be seen with the naked eye under ambient conditions when irradiated

with a source of IR radiation in which the component is distributed throughout the mineral wool product."

IV. The opponents' arguments can be summarised as follows:

The opposition division did not exercise their discretion correctly when admitting the now main request into the proceedings.

The feature "when the product has been installed" led to problems of clarity under Article 84 EPC. The omission of the reference to "colouring" led to unallowable intermediate generalisation, so infringing Article 123(2) EPC. The feature "when the product has been installed" was not originally disclosed in combination with the other features.

The requirements of Article 83 EPC were not fulfilled, since the patent did not provide the skilled person with any guidance on how to select the appropriate components.

The subject-matter of claim 1 lacked novelty over each of D1, D2 and D3.

The subject-matter of claim 1 lacked an inventive step in view of D1 in combination with D7 or D26, in view of D3 in combination with common general knowledge as exemplified in D23, or in combination with one of D7 or D26, or in view of D26 with one of D1 or D3.

V. The patent proprietor's arguments are reflected in the reasoning below.

VI. At the end of the oral proceedings of 20 November 2023, the requests were as follows.

The patent proprietor (appellant 1) requested that the impugned decision be set aside and that the patent be maintained on the basis of one of the main request or auxiliary requests 1 to 3, corresponding to auxiliary requests 2 to 5 underlying the impugned decision, and submitted with the grounds of appeal.

Opponent 1 (appellant 2) requested that the impugned decision be set aside and that the patent be revoked.

Opponent 2, which is a party as of right, requested that the patent proprietor's appeal be dismissed.

Reasons for the Decision

Main request

1. Interpretation of claim 1

Claim 1 is a use claim within the meaning of G 02/88 (Reasons 9 to 10.3) and is understood as the use of a UV or IR active component (as defined by their method of detection), which is distributed throughout a mineral wool insulation product, for marking or identifying the installed product.

What is used is the component in an installed mineral wool insulation product which is capable of marking/identifying such a product, but the identification process as such (i.e. reading out of the marking component) is not part of claim 1. However, the markers or identifiers need to be detectable and have to have the property that they can only be seen with the naked eye under ambient conditions when irradiated with a source of UV or IR radiation.

2. Admissibility of the request

Opponent 1 argued that the opposition division wrongly exercised their discretion when admitting the request into the proceedings. However, the boards do not have the power to disregard on appeal submissions correctly admitted by the opposition division in exercise of their discretion (Case Law of the Boards of Appeal of the EPO, 10th edition, 2022, V.A.3.4.4).

In any event, the present board cannot agree that the opposition division exercised their discretion in an unreasonable way and/or based on the wrong criteria. They considered that the request was a serious attempt to address objections raised by the opponents. They also considered the time of filing appropriate in view of their change of opinion. These criteria are decent criteria to rely on when deciding on the admission of late requests.

Therefore, the main request is part of the appeal proceedings.

3. Article 84 EPC

Opponent 1 argued that claim 1 lacked clarity in view of the expression "when the product has been installed".

In view of the interpretation given above, it appears evident that the skilled person would understand that installation relates to the mineral wool insulation product. No particular details about the type of installation are given, so that the expression is

understood broadly. Nevertheless, it provides a distinction over a product that is stored or prepared for installation, for example.

Claim 1 is a use claim (and not a product claim) so the intended use "for marking or identifying the installed product" is a functional technical feature within the meaning of G 02/88 (point 3 of the Headnotes).

The board sees no lack of clarity in view of the indicated feature. The requirements of Article 84 EPC are fulfilled.

4. Article 123(2) EPC

Opponent 1 raised an objection in view of the features *"when the product has been installed, the UV or IR active component being selected from:*

- a UV active component which can only be seen with the naked eye under ambient conditions when irradiated with a source of UV radiation; and*
- an IR active component which can only be seen with the naked eye under ambient conditions when irradiated with a source of IR radiation".*

These features are directly and unambiguously derivable from the application as filed. In particular, the skilled person reading the application as filed learns from the passage on page 2, line 14 of the application as filed that the main purpose is to provide a marker in the product that has been installed. It is self-evident that this means that the marker is used for the product that is finally installed. The use for the installed product is directly and unambiguously derivable from said passage.

It may possibly be accepted that the definition of the UV and IR active components is somewhat awkward, but the definition is directly and unambiguously derivable from page 2, lines 18 and 19 in combination with lines 23 to 25. These passages make it clear that, under ambient conditions, the markers only become visible under either UV or IR, so that they can then be seen with the naked eye. The board cannot agree that the omission of "the colouring" would lead to an unallowable intermediate generalisation, since the naked eye will only recognise the colour, including white, which appears.

The argument that an intensification of an already existing colour would be covered by the wording of claim 1 while it was not by the application as filed is speculative. There is no evidence that a UV or IR active component would not lead to a change of colour - besides intensification - of an already existing colour when irradiated. The skilled person would read claim 1 to mean that the UV or IR radiation is such that it leads to a signal for the naked eye, i.e. a colour that was not present before irradiation. This is also in line with the disclosure on page 2, lines 15 to 19 of the application as originally filed.

The requirements of Article 123(2) EPC are met.

5. Article 83 EPC

Opponent 1 argued that there was a lack of sufficiency because there was no guidance on how to select appropriate components. In addition, the "ambient conditions" were not defined in connection with the visibility of a substance.

The patent provides two examples: example 1 describes a stilbene component which can be identified by UV irradiation while example 2 discloses a zinc sulfide doped with copper that can be rendered visible under IR radiation. Further UV active components are listed in paragraph [0021]. Further IR active components are listed in paragraph [0023]. Although the expression "can only be seen with the naked eye under ambient conditions", may be ambiguous, since neither the naked eye nor the ambient conditions are standardised, the skilled person would still be able to replicate the somewhat straightforward examples and detect the markers, or at least there is no evidence to the contrary. The ambient conditions may vary from one place to another, but it is not only the skilled person who would know that IR or UV irradiation would simply have to be carried out under the prevailing environmental conditions (such as temperature and pressure). As a consequence, the marker has to be visible to the observer's eye. No additional processing is needed.

In the present case, it is therefore not possible to agree with the argument that the ambiguity would be such that it would lead to a problem of sufficiency.

The requirements of Article 83 EPC are fulfilled.

6. Article 54 EPC

Opponent 1 argued that claim 1 lacked novelty in view of each of D1 to D3.

6.1 D1 relates to a fire-stop product comprising a characterising marker. The marker may be detected by UV light (page 11, line 22). The product is applied by

coating to typical substrates such as mineral fibre boards (page 10, lines 16 to 19). The skilled person would understand that the marker is present in the coating to show the presence of the fire-stop product. This coating is added to the surface of the substrate. There is no indication in D1 that the marker would be present throughout the product. Although coating may lead to presence throughout the substrate (depending on process conditions, type of marker and substrate), there is no disclosure in D1 that the coating inevitably leads to the presence of the marker throughout the substrate. The teaching is to apply the coatings by use of a trowel, by brushing or by spraying (page 10, lines 12 to 14), which would tend to confirm that the marker is only intended to be present on the surface of the substrate.

The first full paragraph on page 8 confirms that the marker is specifically added to the fire-stop product, which is ultimately applied to the the surface of the final substrate. There is no mention of distribution throughout the substrate. All the stated fire-stop products, i.e. fire-stop sealants, fire-stop coatings, fire-stop adhesives and fire-stop putties, are for application to the surface of a substrate.

D1 does not anticipate the novelty of the subject-matter of claim 1.

- 6.2 D2 discloses fluorescent dyes as an example of yellowing inhibitors, which are used in binders for many different types of nonwovens including mineral fibre nonwovens (paragraph [0061]). The marker is not used for marking the final installed products, but rather during the preparation of the nonwoven to inhibit yellowing despite high curing temperatures (see

also paragraphs [0069] and [0071] to [0073]). Paragraph [0068] of D2 mentions the possible uses of the obtained nonwovens, but it does not relate to use of the marker in the installed product.

D2 does not anticipate the novelty of the subject-matter of claim 1.

6.3 D3 relates to a fibre glass mat carrying identifying indicia at the surface thereof which is visible only in the presence of ultraviolet radiation and moisture, said indicia comprising a deposit of the trisodium derivative of beta naphthol-6,8 disulfonic acid (claim 1). D3 does not disclose that the trisodium derivative of beta naphthol-6,8 disulfonic acid can only be seen with the naked eye under ambient conditions when irradiated with a source of UV radiation. Therefore the UV active component of D3 does not qualify as a UV active component according to the use of claim 1 of the patent.

Although ambient conditions are not clearly defined, they do not include the addition of water. Compounds that require steps other than irradiation with UV or with IR to be visible are not covered by the wording of claim 1 since they need a setting that cannot be considered as "under ambient conditions". This interpretation is completely in line with paragraph [0007] of the description. The fact that D3 discloses that the method is adapted to the marking of a wide variety of goods which are retained in a reasonably dry atmosphere (column 2, line 2) does not mean that the marker would inevitably be visible in humid conditions by simple UV irradiation without further addition of water. At least there is no evidence that a very humid environment renders the use of water for detecting the

marker in D3 unnecessary. Thus, visibility under ambient conditions is neither explicitly nor implicitly disclosed.

In addition, D3 does not disclose that the UV active component is distributed throughout the product. Dipping is disclosed as a possible way of applying the component to one or more surfaces, but it is not disclosed that dipping has to be carried out in such a way that distribution throughout the product is obtained. Such dipping would be inconsistent with claim 1 of D3, which recites "at the surface". Even when D28 is taken into consideration, there is no evidence that dipping a porous fibre glass mat in a trisodium derivative of beta naphthol-6,8 disulfonic acid inevitably leads to distribution throughout the product.

D3 does not anticipate the novelty of the subject-matter of claim 1.

6.4 The requirements of Article 54 EPC are fulfilled.

7. Article 13(2) RPBA 2020

During the oral proceedings before the board, opponent 2 relied on the combination of D3 with D23 for an inventive step attack. They argued that D23 represented common general knowledge. An objection based on D3 with common general knowledge had been brought forward in the reply to the appeal.

This argument is not convincing. In their reply to the patent proprietor's appeal, opponent 2 only raised an inventive step objection against the main request based on D3 in combination with D7. It was only against the

third auxiliary request that an objection based on D3 in combination with common general knowledge was raised. D23 was not cited in that respect. Therefore, the attack based on D3 with D23 is an amendment of opponent 2's case, which according to Article 13(2) RPBA 2020 shall, in principle, not be taken into account unless there are exceptional circumstances, which have been justified with cogent reasons.

In the present case, opponent 2 could not provide cogent reasons as to why the amendment of their appeal case was justified at such a late stage of the proceedings. Even if it were accepted that the inventive step objection raised against the third auxiliary request implicitly also applied against the main request, there is still no reason why D23 would qualify as common general knowledge. Common general knowledge is normally to be found in basic handbooks, monographs, encyclopedias, textbooks and reference books (Case Law of the Boards of Appeal of the EPO, 10th edition, 2022, I.C.2.8.1). However, D23 is understood as a company publication. There is no indication that the information provided in D23 was common general knowledge to the skilled person dealing with fibre glass mats.

Therefore, the board sees no exceptional circumstances, which would justify taking the inventive step objection based on D3 with D23 into consideration. This attack is consequently not admitted into the proceedings.

8. Article 56 EPC

- 8.1 Opponents 1 and 2 have raised numerous inventive step attacks including the ones based on D3 alone, on D3 in combination with D7, on D3 in combination with D26, on

D1 in combination with D7 or D26 and on D26 in combination with D1 or D3.

- 8.2 The invention relates to the use of markers in a mineral wool insulation product.
- 8.3 D1 is one possible starting point for the question of inventive step chosen by opponent 1.
 - 8.3.1 The problem to be solved is that of providing easier traceability of the installed mineral wool insulation product (see paragraph [0020] of the patent).
 - 8.3.2 It is proposed to solve the problem by the use according to claim 1, wherein the UV or IR active component is distributed throughout the mineral wool product.
 - 8.3.3 It is accepted that the problem addressed is successfully solved, since each part of the product can be used to trace the marker.
 - 8.3.4 The proposed solution is not obvious in view of D7.

D7 deals with precisely the problem formulated in point 8.3.1 and presented in paragraph [0020] of the patent (see paragraphs [0007] and [0008] of D7). D7 also discloses fibre nonwovens (paragraph [0016]). D7 teaches mixing the marker with the starting materials used for producing the building substrate (see claim 1). This teaching is, however, incompatible with D1, which relates to a fire-stop *coating*. The teaching of D1 is clearly directed towards application as a coating (page 10, lines 10 to 14). The coating contains the fire-proof product and the marker is intended to demonstrate the presence of such a fire-proof product

(page 3, lines 6 to 10). There is consequently no reason for the skilled person to apply the way of distributing the marker taught in D7 to D1. The presence of the marker throughout the product would run counter to the objective of the marker in D1 because components, such as a substrate, which are not fire-proof would be marked as fire-proof.

8.3.5 The proposed solution is also not obvious in view of D26.

D26 relates to loose-fill fibreglass containing a dye that is activated by an activating liquid (claim 7). The final installed insulation product is provided with coloured specks, which indicate that the insulation was correctly installed. The marker is used for confirming that the insulation was installed properly (column 13, lines 10 to 19). D26 does not deal with the traceability of installed mineral wool insulation products and does not disclose UV or IR active components. D1 and D26 are completely unrelated and therefore there is no reason for the skilled person to turn to D26.

8.4 D3 was chosen as another possible starting point for the question of inventive step.

8.4.1 The problem to be solved is that of providing easier traceability of the installed mineral wool insulation product (see paragraph [0020] of the patent).

8.4.2 It is proposed to solve the problem by the use according to claim 1, wherein the UV or IR active component is distributed throughout the mineral wool product and the UV active component has the property that it can only be seen with the naked eye under

ambient conditions when irradiated with a source of UV radiation.

8.4.3 It is accepted that the problem addressed is successfully solved, since each part of the product can be used to trace the marker.

8.4.4 It appears that the proposed solution is not obvious in view of D3 alone.

D3 does not teach towards the UV active component being distributed throughout the mineral wool product. In addition, only the trisodium derivative of beta naphthol-6,8 disulfonic acid is disclosed, which requires moisture for detection. Such a double disguise appears to be an advantage of the method of D3 (column 2, lines 7 to 16). There is no reason to change from a component requiring moisture for detection to a component which is visible without the addition of water.

8.4.5 The proposed solution is not obvious in view of D7 either.

D7 deals with precisely the problem formulated in point 8.3.1 and presented in paragraph [0020] of the patent (see paragraphs [0007] and [0008] of D7). D7 also discloses fibre nonwovens (paragraph [0016]). D7 teaches mixing the marker with the starting materials used for producing the building substrate (see claim 1). However, this teaching is not compatible with D3, which teaches application by spraying (column 2, lines 1 and 2) for the specific marker of D3. Furthermore, D7 does not disclose a UV active component which can only be seen with the naked eye under ambient conditions when irradiated with a source of UV

radiation in combination with a mineral wool insulation product. The colouring agent of D7 is visible without activation (paragraph bridging pages 5 and 6). D3 relates to a very specific UV compound that can be detected on the surface by the addition of water. There is no reason why the skilled person would use such a compound for distribution throughout the product.

8.4.6 The proposed solution is not obvious in view of D26. In D26, the marker is used for confirming that the insulation was installed properly (column 13, lines 10 to 19). Furthermore, D26 does not disclose UV or IR active components and therefore the skilled person has no incentive to use the very specific marker of D3 in D26.

8.5 D26 is another possible starting point for the question of inventive step chosen by opponent 1. Although D26 is not really an appropriate starting point, since it does not relate to the traceability of insulation walls, but rather to monitoring the installation process, the problem solution approach is applied when starting from D26.

8.5.1 The problem to be solved is that of providing easier traceability of the installed mineral wool insulation product (see paragraph [0020] of the patent).

8.5.2 It is proposed to solve the problem by the use according to claim 1, wherein a UV or IR active component is used as a marker or identifier in a mineral wool insulation product when the product has been installed.

8.5.3 It is accepted that the problem addressed is successfully solved, since such active components allow traceability over a long period of time.

8.5.4 The proposed solution is not obvious in view of D1.

D1 deals with a fire-stop product and has a completely different objective compared to D26. As indicated above (point 8.3.4), D1 specifically teaches towards application as a coating (page 10, lines 10 to 14) for demonstrating the presence of a fire-proof component (page 3, lines 6 to 10). The skilled person dealing with the loose fibreglass of D26 would not turn to D1. Mixing of the starting materials with the dye is not in line with D1.

8.5.5 The proposed solution is not obvious in view of D3 either.

D3 also has a different objective compared to D26. D3 does not deal with traceability of the installed mineral wool insulation product and does not teach towards distributing the UV active component throughout the mineral wool product. In addition, only the trisodium derivative of beta naphthol-6,8 disulfonic acid is disclosed, which requires moisture for detection. Neither D26 nor D3 disclose a UV or IR active component as defined in claim 1 of the present request.

8.6 To summarise, the subject-matter of claim 1 involves an inventive step.

9. The main request is allowable and there is no need to discuss the auxiliary requests.

Order

For these reasons it is decided that:

The decision under appeal is set aside and the case is remitted to the opposition division with the order to maintain the patent on the basis of the main request submitted with the statement of grounds of appeal and a description to be adapted.

The Registrar:

The Chairman:



C. Vodz

P. Guntz

Decision electronically authenticated