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**Datasheet for the decision
of 28 March 2024**

Case Number: T 1445/22 - 3.2.07

Application Number: 17199383.5

Publication Number: 3309133

IPC: C03B37/05, C03C3/062,
C03C3/085, C03C13/06

Language of the proceedings: EN

Title of invention:
MAN-MADE VITREOUS FIBRES

Patent Proprietor:
ROCKWOOL A/S

Opponent:
Owens Corning Intellectual Capital, LLC

Headword:

Relevant legal provisions:
EPC Art. 100(a), 100(b), 54, 56
RPBA 2020 Art. 12(4), 12(6)

Keyword:

Late-filed evidence - admitted in first-instance proceedings (no) - error in use of discretion at first instance (no) - circumstances of appeal case justify admittance (no)
Late-filed facts and evidence - should have been submitted in first-instance proceedings (yes)
Grounds for opposition - insufficiency of disclosure (no)
Novelty - (yes)
Inventive step - (yes)

Decisions cited:

G 0010/91, G 0003/14, T 0409/91, T 1002/92, T 0261/15,
T 1809/17

Catchword:



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Case Number: T 1445/22 - 3.2.07

D E C I S I O N
of Technical Board of Appeal 3.2.07
of 28 March 2024

Appellant: Owens Corning Intellectual Capital, LLC
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 5 April 2022
rejecting the opposition filed against European
patent No. 3309133 pursuant to Article 101(2)
EPC.**

Composition of the Board:

Chairman G. Patton
Members: S. Watson
Y. Podbielski

Summary of Facts and Submissions

- I. An appeal was filed by the opponent against the decision of the opposition division rejecting the opposition against European patent No. 3 309 133.
- II. In preparation for oral proceedings, the board gave its preliminary opinion in a communication pursuant to Article 15(1) RPBA, dated 23 January 2024, which took into account the opponent's statement of ground of appeal and submissions of 24 February 2023 as well as the patent proprietor's reply to the appeal.

Neither party responded substantively to the board's communication.

- III. Oral proceedings before the board took place on 28 March 2024.

At the conclusion of the proceedings the decision was announced. Further details of the oral proceedings can be found in the minutes.

- IV. The final requests of the parties are as follows:

for the opponent ("appellant"):

- that the decision under appeal be set aside, and
- that the patent be revoked.

for the patent proprietor ("respondent"):

- that the appeal be dismissed (main request);
- or if the decision under appeal is set aside, that the patent be maintained according to one of the sets of claims of auxiliary requests 1 to 5 filed

on 28 October 2020 and re-filed with the reply to the statement of grounds of appeal.

V. The following documents are referred to in this decision:

- D1: WO 92/12940 A1
- D4: WO 00/73230 A1
- D10: "IARC Monographs on the evaluation of carcinogenic risks to humans. Man-made vitreous fibres" vol. 81, World Health Organisation, 2002
- D11: Guldberg, M. et al, "High-Alumina Low-Silica HT stone wool fibers: a chemical compositional range with high biosolubility" Regulatory Toxicology and Pharmacology, 35, pp 217-226, 2002
- D12: "Nomenclature of man-made vitreous fibers", TIMA Inc. 1991
- D14: Report on compositions of examples, 13 September 2021
- D15: WO 2011/006875 A2
- D16: Bottinga, Y and Weill, D.F., "The viscosity of magmatic silicate liquids: a model for calculation"
- D17: Method for calculating viscosity of magmatic silicate liquids based on the model of D16
- D18: Extract from SIGÉOM database
- D19: Calculation of viscosity of composition of D1, using D16/D17
- D20: Calculation of mole fraction of SiO₂ of Example B of D14
- D26: Hotaling, N. et al., "DiameterJ: a validated open source nanofiber diameter measurement tool", Biomaterials, 15 May 2015
- D27: WO 2004/041735 A1.

VI. Independent claim 1 of the patent as granted (main request) reads as follows:

"A method of manufacture of man-made vitreous fibres (MMVF) comprising:
providing a fiberising apparatus, wherein the fiberising apparatus comprises:
a set of at least four rotors each mounted for rotation about a different substantially horizontal axis;
wherein each rotor has a driving means;
rotating the rotors;
wherein the first rotor rotates to give an acceleration field in the range 25 to 60 km/s², the second rotor rotates to give an acceleration field in the range 125 to 250km/s², the third rotor rotates to give an acceleration field in the range 150 to 300 km/s² and the fourth rotor rotates to give an acceleration field in the range 225 to 400 km/s²,
wherein the acceleration field of the last rotor is from 5 to 15 times greater than the acceleration field of the first rotor,
providing a mineral melt; wherein the melt has a composition comprising the following, expressed by wt of oxides:
SiO₂ in an amount of from 33 to 45 wt%,
Al₂O₃ in an amount of from 16 to 24 wt%,
an amount of K₂O and/or Na₂O,
an amount of CaO and/or MgO,
wherein the ratio of the amount of Al₂O₃ to the amount of SiO₂ is in the range 0.34-0.73,
wherein the ratio of the total amount of K₂O and Na₂O, to the total amount of CaO and MgO is less than 1,

pouring the melt on to the periphery of the first rotor;

wherein melt poured on to the periphery of the first rotor in the set is thrown on to the periphery of the subsequent rotors in turn and fibres are thrown off the rotors; and collecting the fibres that are formed."

VII. Independent claim 10 of the patent as granted (main request) reads as follows:

"Man-made vitreous fibres (MMVF) formed from a mineral melt, wherein the MMVF have a median length of 100 to 300µm, a median diameter of not more than 2.5µm, and wherein the ratio of the median fibre length to median fibre diameter is 25 to 500."

VIII. The wording of the claims of auxiliary requests 1 to 5 is not relevant to this decision so the claims are not reproduced here.

IX. The arguments of the parties relevant for the decision are dealt with in detail in the reasons for the decision.

Reasons for the Decision

1. *Admittance of documents into the appeal proceedings*

1.1 The appellant requested the admittance into the appeal proceedings of documents D10 to D12, D14, D15 and D20, which had not been admitted into the opposition proceedings, as well as D26 and D27 filed with the statement of grounds of appeal.

Documents D16 to D19 were admitted by the opposition division and their admittance is not contested by the respondent.

1.2 With respect to documents D10 to D12, D14, D15 and D20, the board notes that according to Article 12(6), first sentence RPBA, evidence which was not admitted in the proceedings leading to the decision under appeal, should not be admitted by the board, unless the decision not to admit it suffered from an error in the use of discretion or unless the circumstances of the appeal case justifies its admittance.

1.3 In the present case, the appellant argued that the documents were not late-filed as they were timely filed with its submissions of 6 October 2021 as a direct response to the opposition division's preliminary opinion of 8 June 2021 and the respondent's submissions of 28 October 2020.

The appellant referred in its statement of grounds of appeal to point 5.3 of the opposition division's preliminary opinion, and argued that as the opposition division stated in the preliminary opinion that the appellant had the burden of proof with respect to sufficiency of disclosure, the documents filed in response to discharge this burden should have been admitted.

In addition, the appellant argued that document D14 could not be considered to be late-filed as it only became publicly available on 13 September 2021, after the opposition period had ended. In fact, D14 was provided by the respondent in the opposition case against the parent patent EP 3 057 909 B1.

- 1.3.1 It is established case law that Rule 116(1) EPC is not to be regarded as an invitation to file new evidence.

Evidence submitted by an opponent after the expiry of the nine-month period according to Article 99(1) EPC is generally to be regarded as late-filed. Exceptions to this rule are where such evidence could not have been filed earlier, for example where the subject of the proceedings has changed. This is typically the case where new claim requests are filed such that there was no reason to file the evidence in response thereto any earlier or where the opposition division raised a new issue (see Case Law of the Boards of Appeal ("CLB"), 10th edition 2022, IV.C.4.3.).

- 1.3.2 The opposition division did not raise any new aspects in its preliminary opinion, but rather re-iterated the position, given by the respondent in its reply to the notice of opposition (page 8, line 10 to page 9, line 6), that an opponent bears the burden of proof when raising a lack of sufficiency objection (CLB, *supra*, III.G.5.1.2 c)) but that the appellant had not provided any verifiable facts substantiating its argumentation in its notice of opposition.

There was therefore no change in the subject of the proceedings before the opposition division which would have led to new evidence being considered to be timely filed.

The board does not consider the circumstances leading to the obtaining of the evidence by the party filing it as relevant for the issue of whether a document was filed in due time. These circumstances are external to the proceedings and it would run counter to the concept of discretionary power if that discretion were denied

to a deciding body by circumstances external to the proceedings. Were such discretion to be denied, then all documents created or coming to light at any stage of the proceedings that are filed by a party would automatically be part of the proceedings. However, this would undermine the nine-month period under Article 99(1) EPC which aims to establish the factual and legal framework within which the substantive examination of the opposition is, in principle, conducted, allowing the patent proprietor a fair chance to consider its position at an early stage of the proceedings (see G 10/91, Reasons 6. and T 1002/92, Reasons 3.3).

1.3.3 Therefore, it appears that documents D10 to D12, D14, D15 and D20 were not filed in due time and the opposition division had the discretion, under Article 114(2) EPC, not to admit these documents.

1.3.4 The appellant argued that it had not been given the opportunity to present detailed arguments based on documents D10 to D12, D14, D15 and D20, as only *prima facie* relevance was discussed before the opposition division.

1.3.5 When exercising its discretion to admit, or not admit, late-filed evidence, an opposition division must give both parties the opportunity to be heard on this point (see CLB, *supra*, IV.C.4.3.1, penultimate paragraph).

The opposition division exercises its discretion based on known criteria, a decisive criterion being the *prima facie* relevance of the evidence. This must be ascertained based on a first impression of the facts, with little investigative effort, reflecting the need for procedural economy in considering late-filed

documents (CLB, *supra*, IV.C.4.3.1, second paragraph; IV.C.4.5.3 a), first paragraph).

It is not intended, when assessing *prima facie* relevance, that the opposition division hears the full cases of the parties with respect to late-filed evidence, indeed this might lead to a *de facto* admittance of the documents, irrespective of the opposition division's decision on admittance (see CLB, *supra*, IV.C.4.5.3 a), fourth paragraph).

- 1.3.6 It is therefore sufficient that the opposition division gave both parties the opportunity to discuss the admittance and the *prima facie* relevance of the late-filed evidence.

According to the minutes of the oral proceedings before the opposition division, the admittance of documents D10 to D20 was discussed with respect to the objection of lack of sufficiency of disclosure (pages 3 and 4) and the admittance of documents D16 to D19 was discussed with respect to the objection of lack of inventive step (see page 7, final section). According to both parties' submissions before the board, the appellant had the opportunity to present its arguments relating to the admittance and *prima facie* relevance of the documents during the opposition proceedings.

- 1.3.7 As also argued by the respondent, it is established case law that a board of appeal should only overrule the way an opposition division exercised its discretion if it did so according to the wrong principles, not taking into account the right principles or in an unreasonable way. It is, therefore, not the function of a board of appeal to review all the facts and circumstances of the case to decide whether it would

have exercised its discretion in the same way or not (see CLB, *supra*, IV.C.4.5.2, first paragraph).

- 1.3.8 The opposition division regarded documents D10 to D12 as representing common general knowledge for the relevant aspects of the case at hand which did not need to be supported (see decision under appeal, II.15.3, lines 4 to 7).

Documents D14 and D15 disclose fibre compositions which fall within the compositional ranges of claims 11 and 12 and the opposition division was of the view that it was not clear how these documents were relevant for supporting a lack of sufficiency of disclosure objection.

Document D20 disclosed a simple conversion calculation which could be carried out by the skilled person and the appellant did not provide any arguments relating to how this calculation supported its objection to insufficiency of disclosure (see decision under appeal, II.15.3).

- 1.3.9 It therefore appears that the opposition division considered documents D10 to D12, D14, D15 and D20 as *prima facie* not relevant.

The opposition division therefore exercised its discretion reasonably, according to the right principles, after hearing both parties. Therefore there is no reason for the board to overrule the opposition division's decision not to admit documents D10 to D12, D14, D15 and D20.

- 1.4 In its statement of grounds of appeal, the appellant requested that documents D10 to D12, D14, D15 and D20

be admitted into the appeal proceedings with respect to the appellant's lack of inventive step objections.

- 1.4.1 The board decided to exercise its discretion under Article 114(2) EPC and Article 12(4) RPBA and not admit these documents into the appeal proceedings as none of the documents are suitable to address the issues which led to the decision under appeal.
- 1.4.2 Documents D10 to D12 are considered to illustrate common general knowledge of the skilled person which is undisputed by the respondent.
- 1.4.3 Documents D14 and D20 were used by the appellant in its calculations showing that melt composition viscosity is dependent on temperature (see statement of grounds of appeal, page 37). This is also regarded as common general knowledge and was not contested by the respondent (see reply to the appeal, page 16, final paragraph).
- 1.4.4 D15 was used in the appellant's lack of inventive step argumentation with respect to dependent claims 11 and 12 only, to show that iron may be present as FeO but reported as Fe₂O₃ (statement of grounds of appeal, page 33). Neither FeO or Fe₂O₃ is specified in the independent claims as granted.
- 1.4.5 As none of the documents D10 to D12, D14, D15 or D20 appears to be relevant for the independent claims as granted, and therefore the documents are not suitable to address the issues which led to the decision under appeal, the board did not admit D10 to D12, D14, D15 or D20 into the appeal proceedings.

1.5 Documents D26 and D27 were filed by the appellant for the first time with its statement of grounds of appeal.

1.6 The respondent requested that D26 and D27 not be admitted into the appeal proceedings.

1.7 The primary object of the appeal proceedings is to review the decision under appeal (Article 12(2) RPBA); appeal proceedings are not a continuation of the opposition proceedings (CLB, *supra*, V.A.1.1, second paragraph).

According to Article 12(6), second sentence, RPBA, documents which should have been submitted in the opposition proceedings should not be admitted in the appeal proceedings unless the circumstances of the appeal case justify their admittance.

1.8 The main request is directed to the patent as granted, so the appellant was in a position to file any evidence it wished to rely on during the opposition proceedings.

1.9 The appellant argued that the documents were filed to support arguments raised before the opposition division and stayed within the same legal framework. They referred to CLB, V.A.5.10.5 and argued that evidence reinforcing or backing up an argument should be admitted. Document D26 was filed to demonstrate that the patent was insufficiently disclosed in relation to the measurement method for fibres and document D27 showed the technical effects associated with the addition of P₂O₅ and MnO.

1.10 The respondent argued that there was no change in the proceedings justifying the late filing of evidence for the first time with the statement of grounds of appeal.

In addition, no measurement method was claimed and the arguments related to the alleged technical effects of P₂O₅ and MnO were not discussed in the opposition proceedings, so that the objection as such was also an amendment to the appellant's case.

- 1.11 The board can see no change in the opposition proceedings or particular circumstances in the present case which necessitated the filing of documents D26 and D27 for the first time in the appeal proceedings. The board notes that the case law referred to by the appellant relates to the RPBA 2007 not the current version of the RPBA.

As argued by the respondent, D26 and D27 could and should have been filed during the opposition period and is therefore not to be admitted under Article 12(6), second sentence, RPBA.

- 1.11.1 Document D26 is post-published, does not relate specifically to man-made vitreous fibres (MMVF) and discloses that manual measurement in SEM images using line tools in image analysis is historically the gold standard for assessment of nanofibre morphology (D26, page 327). The appellant's argument that D26 is relevant as it disclosed (D26, pages 327-328) that manual measurement was subject to operator bias and was time-consuming and there was no available tool for rapid, automated analysis of nano- or microfibre diameter, is not convincing.

The claims as granted do not contain any features relating to any specific measurement method. D26 therefore is not relevant to the question of sufficiency of disclosure of claim 10.

1.11.2 With respect to document D27, the appellant used this document in its statement of grounds of appeal to show an alleged effect of including P_2O_5 in a melt composition and argued that by not including this oxide and MnO , in the composition of the patent, the patent was insufficiently disclosed.

The board can find no mention of this argument in the written opposition proceedings. At the oral proceedings before the board the appellant argued that the point had been raised during the oral proceedings before the opposition division but was not included in the minutes of the oral proceedings. However, no request to correct the minutes of the oral proceedings was submitted by the appellant.

In the absence of any indication that this line of argument had been admissibly raised during the opposition proceedings and as the opposition division did not decide on this point, the board cannot see that document D27 has been filed to back up arguments already raised, as argued by the appellant.

Further, as argued by the respondent, it is not readily apparent how the effect of the presence of two oxides is relevant for the assessment of sufficiency of disclosure of the fibres of claim 10, which does not specify any composition.

1.12 The board therefore does not admit documents D26 and D27 into the appeal proceedings (Article 12(6), second sentence, RPBA and Article 12(4) RPBA).

2. Sufficiency of disclosure (Article 100(b) EPC) - claim 10

2.1 The opposition division found that the invention claimed in claim 10 of the patent was sufficiently disclosed for the skilled person to carry out the invention over the whole scope of the claim (see decision under appeal, II.16.3).

2.2 The appellant argued that the decision under appeal was incorrect for the following reasons:

- (a) the invention could not be carried out across the whole scope of the claim
- (b) the MMVF were not defined in terms of their manufacture
- (c) there was difficulty in measuring claimed diameters and lengths
- (d) the skilled person was unable to prepare MMVF with median lengths, median diameters and aspect ratios over the whole scope of the claim
- (e) essential information to allow the skilled person to work the invention without undue burden was not disclosed.

The board does not find the appellant's arguments convincing for the following reasons.

2.3 (a) not sufficient across the whole scope of the claim

2.3.1 The appellant argued that claim 10 was not limited to any particular melt composition, but that no examples had been given showing how to produce the claimed fibre dimensions with melt compositions other than those set out in claims 11 and 12.

- 2.3.2 The board agrees with the appellant that claim 10 is not limited to any specific melt composition and that there may be other melt compositions which the skilled person would not immediately exclude as being clearly outside the scope of practical application of the claimed subject-matter.
- 2.3.3 The appellant has asserted that the class of MMVF is so large that there must be compositions which, when using the process described in the patent in suit, do not lead to the claimed dimensions and that therefore there is a lack of sufficiency of disclosure as only one way of carrying out the claimed invention is disclosed. The appellant referred in particular to the decision in T 409/91 where it was stated that an invention is only sufficiently disclosed if it enables the skilled person to obtain substantially all embodiments falling within the ambit of the claims.

In the decision in T 409/91, the board noted that sufficiency is a question of fact which must be considered on the basis of the available evidence and on the balance of probabilities in each individual case (T 409/91, Reasons 3.5). In the present case, as the opposition division reasoned (decision under appeal, point II.16.3 on page 9, second paragraph) the appellant has not provided any experimental evidence supporting its assertions, nor has it raised theoretical doubts based on specific facts, that other compositions would not result in the required fibre dimensions when made into MMVF using the processes set out in the contested patent.

The appellant has therefore not raised serious doubts, substantiated by verifiable facts, that the methods described in the contested patent would not lead to

MMVF having the required fibre dimensions. In the absence of any evidence showing that such processes, used with other specific compositions, cannot result in fibres with dimensions within the ranges claimed in claim 10, the appellant has not discharged its burden of proof.

The appellant argued that the respondent did not discharge its own burden of proof to show that the claimed invention was sufficiently disclosed.

The board disagrees. It is established case law that the burden of proof for an objection of insufficiency of disclosure is, as a general rule, on an opponent who should prove that despite making all reasonable efforts they were unable to put the invention into practice (see CLB, *supra*, III.G.5.1.2 c)).

Although, as acknowledged by the opposition division, none of the examples given in the patent explicitly specify the fibre dimensions claimed in claim 10 as granted, the examples are disclosed as being MMVF of the present invention and the contested patent contains details of processes including process parameters and melt compositions, for example in paragraph [0054] which refers back to paragraphs [0007] and [0013] and Example 1, which can be used to manufacture fibres having the dimensions claimed in claim 10.

Therefore, there is more than a weak presumption that MMVF with the claimed dimensions can be made, using the processes described, so that the board sees no reason that the burden of proof should be reversed (see CLB, *supra*, II.C.9.1).

- 2.4 (b) the MMVF are not defined in terms of their manufacture

The appellant argued that claim 10 was also not sufficiently disclosed as the contested patent did not disclose how to make the MMVF using production methods other than the described cascade spinning process.

It is, however, not necessary that a patent discloses how to make a specific product using any and all conceivable methods of manufacture, but rather the patent must disclose at least one way of carrying out the invention (see CLB, *supra*, II.C.5.2).

- 2.5 (c) difficulty in measuring claimed diameters and lengths

2.5.1 The appellant also argued that the skilled person was unable to measure the lengths and diameters of fibres.

2.5.2 The appellant contested the reasoning of the opposition division that the contested patent described the method for measuring fibre dimensions in detail (decision under appeal, page 9, second paragraph).

According to the appellant, it was not possible to carry out the measurement method without undue burden as there was no teaching as to which neighbourhood Gaussian filter should be used, how such a filter reduced noise and what was meant by bringing uniformity along the fibre intensity values.

In addition, paragraphs [0058] to [0060] of the contested patent did not give sufficient detail to allow the skilled person to work the invention because the "skeleton algorithm" referred to in paragraph

[0059] was not disclosed. The appellant argued that as different algorithms led to different results, the skilled person could not reproduce the invention.

2.5.3 The board is not convinced by these arguments.

Claim 10 is not directed to any particular measurement method and the appellant has not demonstrated that the skilled person cannot, whether manually or automatically, measure fibre lengths and diameters (see decision under appeal, page 9, second paragraph).

As the respondent argued, the contested patent itself shows in paragraphs [0057] to [0059] a method of measuring the fibre lengths and diameters, and the skilled person is in any case aware of the use of SEM images to measure microfibres.

The question of whether different methods lead to different results, so that the skilled person is not certain when they are working within the scope of the claim is regarded by the board as a question of lack of clarity (see CLB, *supra*, II.C.8.2.2a)). Claims which have not been amended after grant, as in the present case, cannot be examined for compliance with the requirements of Article 84 EPC, which is not a ground for opposition (see G 3/14).

2.6 (d) inability to prepare MMVF with median lengths, median diameters and aspect ratios over the whole scope of the claim

2.6.1 The board notes that any MMVF which has a median length, a median diameter or an aspect ratio which is outside the respective claimed ranges does not fall within the scope of claim 1, so that it is unnecessary

to consider whether or not such a fibre can be reproduced.

The skilled person would immediately realise when reading claim 1 that the full ranges provided therein for the fibres cannot be simultaneously obtained and would have to be excluded from the scope of the claim. The objection raised by the appellant points out a mathematical inconsistency within the claim, i.e. a lack of clarity, rather than the impossibility for the skilled person to reproduce the claimed invention.

- 2.7 (e) essential information to allow the skilled person to work the invention without undue burden is not disclosed
- 2.7.1 The appellant argued that the lack of any mention in the contested patent of the oxides P_2O_5 and MnO , as well as the failure to specify the particular binder used in the MMVF substrate amounted to insufficiency of disclosure.
- 2.7.2 Irrespective of whether this objection was raised for the first time in appeal proceedings and irrespective of any reliance on documents D14 or D27 which were not admitted into the proceedings, the board does not find the appellant's arguments convincing.
- 2.7.3 The appellant has not shown that it is not possible to manufacture MMVF with the claimed dimensions using the methods set out in the contested patent.

Instead, the appellant alleged that the advantageous effects set out in the patent could not be achieved without the use of the oxides P_2O_5 and MnO and specific binders or combinations of binders.

However, it is settled case law that a technical effect is only to be taken into account when assessing sufficiency of disclosure if the effect is explicitly claimed (see CLB, *supra*, II.C.3.2, first three paragraph).

Claim 10 contains no features explicitly claiming technical effects. There is, therefore, no need to consider whether undisclosed components are necessary to achieve such effects or not (see CLB, *supra*, II.C.5.2 and in particular T 1809/17, Reasons 1.1).

2.8 Consequently, the appellant has not convincingly demonstrated that the opposition division was wrong in finding that claim 10 was sufficiently disclosed (Article 100(b) EPC).

3. Sufficiency of disclosure (Article 100(b) EPC) - claim 15

3.1 The appellant also argued that the skilled person is unable to tell when they are working within the scope of claim 15 as they do not know whether the range of variation of fibre diameter relates to a log-normal distribution with original scale or transformed with logarithmic scale.

3.2 In the decision under appeal, the opposition division found that this objection was considered to be an objection of lack of clarity (see decision under appeal, point 16.3, final sentence).

The appellant has not indicated any reasons why the opposition division was incorrect in its finding, this objection appears therefore not to be substantiated as

is required by Article 12(3) RPBA. According to Article 12(5) RPBA a board has discretion not to admit any part of a party's submission which does not meet the requirements of Article 12(3) RPBA.

In any case, the board agrees with the opposition division that as the objection relates to whether or not a skilled person is working within the scope of the claim, that the objection is to a lack of clarity under Article 84 EPC rather than a lack of sufficiency (see CLB, *supra*, II.C.6.6.4).

4. The appellant also objects to a lack of sufficiency of claims 11 to 14 and 16 to 22. No further arguments are given regarding these claims. For the same reasons set out above for claims 10 and 15, claims 11 to 14 and 16 to 22 are therefore considered to be sufficiently disclosed.
5. Novelty (Article 100(a) EPC with Article 54 EPC) - claim 10 - with respect to D1
 - 5.1 The appellant contests the opposition division's findings (decision under appeal, page 10, final paragraph to page 11, second paragraph) that the subject-matter of claim 10 is novel with respect to the disclosure of document D1.
 - 5.2 The appellant does not appear to contest the opposition division's finding that document D1 does not explicitly disclose fibres with all the features of claim 10, as a median length range of 100 to 300 μm and a ratio of median fibre length to median fibre diameter of 25 to 500 are not shown in document D1 (see decision under appeal, page 10, final paragraph, first sentence; statement of grounds of appeal, point 6.3).

However, the appellant argued that, according to paragraph [0054] of the contested patent, using methods of the first and eighth aspect of the invention, or using an apparatus according to the second aspect of the invention inevitably led to fibres having the dimensions set out in claim 10.

As document D1 showed an apparatus according to the second aspect of the invention and also the method steps of claim 1 (without the features relating to the composition), document D1 inevitably leads to the subject-matter of claim 10 (see statement of grounds of appeal, pages 23 to 24).

5.3 The board does not find the arguments of the appellant convincing.

5.3.1 It is established case law that the subject-matter of a claim lacks novelty over a prior art disclosure if the claimed subject-matter is directly and unambiguously derivable from the prior art (see CLB, *supra*, I.C.4.1, third paragraph).

Document D1 does not directly and unambiguously disclose the process parameters used in the second aspect or those set out in claim 1.

The appellant argued that document D1, in its general description (page 6, lines 22 to 24; page 10, lines 6 to 7 and claims 1 and 3), set out that the top rotor should rotate with an acceleration field that is preferably above 50km/s^2 and the subsequent rotors should be able to rotate to give an acceleration field of at least 250 km/s^2 . Since these end-points of ranges represent explicitly disclosed points, document D1

disclosed the process parameters set out in the second aspect of the invention and claim 1.

The board however is of the view that the circumstances of the present case are analogous to those of decision T 261/15, where the board was of the view that the limit values of ranges, although regarded as being explicitly disclosed, were not to be treated in the same manner as examples, and a person skilled in the art would not, in the absence of further teaching, necessarily contemplate working in the region of the end-points of ranges in the prior art (see T 261/15, Reasons 2.3.2, penultimate paragraph, final two sentences).

In the present case, although the acceleration field of the top rotor is said to be preferably at least 50 km/s^2 , the passage on page 10, lines 6 to 12 clearly indicates that values around 120 to 160 km/s^2 are preferred. The example set out in D1 indicates an acceleration field of 139 km/s^2 for the top rotor (see page 19, lines 33 to 36).

Therefore it is not directly and unambiguously disclosed to use a top rotor speed between 25 and 60 km/s^2 in combination with the further features required for the second aspect or for claim 1 as granted and there is no inherent disclosure of fibres having the dimensions of claim 10.

In addition, document D1 does not disclose the melt composition of claim 1 of the patent as granted as the melt composition given in D1, on page 20, lines 9 to 11 has a SiO_2 content which is too high, an Al_2O_3 content which is too low and the ratio of $\text{Al}_2\text{O}_3:\text{SiO}_2$ is also outside the claimed range.

Although, as argued by the appellant the MMVF of claim 10 are not limited to a particular composition, the appellant did not convincingly argue that the process parameters and melt compositions disclosed in document D1 inevitably led to the MMVF according to claim 10.

5.4 The appellant has therefore not convincingly shown that the opposition division was incorrect in finding that the subject-matter of claim 10 is novel with respect to D1.

6. Inventive step (Article 100(a) EPC with Article 56 EPC)
- claim 1 - in view of D1 with D4

6.1 The opposition division found that the subject-matter of claim 1 was not obvious over a combination of document D1 with D4 as the skilled person had no motivation to use the composition of D4 in the method of D1 and in any case the combination of D1 and D4 would not result in the acceleration fields required by the claim (see decision under appeal, page 14, second and third paragraphs).

6.2 The appellant argued that the skilled person would use the composition of document D4 in the method of document D1 as the skilled person would know that MMVF wools are irritants and would look for biosoluble MMVF.

6.3 However, even if a composition from D4 was used in the method of D1, the combination would not lead to subject-matter falling within the scope of claim 1.

6.3.1 Claim 1 requires the four rotors to have acceleration fields in the following ranges: first rotor, 25 to 60 km/s^2 ; second rotor 125 to 250 km/s^2 ; third rotor 150

to 300 km/s² and fourth rotor 225 to 400 km/s², and the acceleration field of the last rotor to be five to fifteen times greater than the acceleration field of the first rotor.

- 6.3.2 It is not disputed that the specific example given in document D1 (D1, page 19, lines 29 to 36) clearly shows acceleration fields for the first and third rotors which fall outside these ranges and an acceleration field of the last rotor which is not five to fifteen times greater than the first rotor.
- 6.3.3 The appellant, however, argued that document D1 also showed an apparatus with four rotors whereby the first rotor had an acceleration field of at least 50 km/s² and the further three rotors had acceleration fields of at least 250 km/s², which would give a direct and unambiguous disclosure of all acceleration field features of claim 1.
- 6.3.4 As set out above in point 5.3.1, the board is of the view that the general disclosure of D1 with open ranges for all four acceleration fields is not a direct and unambiguous disclosure of the specific ranges of claim 1. Even if there is overlap between the ranges, the skilled person would have to decide to pick the lowest point of all four ranges, although the description clearly points to greater acceleration field values, as noted by the respondent.
- 6.4 Therefore, the appellant has not convincingly demonstrated that the subject-matter of claim 1 is not inventive over a combination of documents D1 and D4.

7. Inventive step (Article 100(a) EPC with Article 56 EPC)
- claim 10 - in view of D1 alone
- 7.1 The opposition division found that the subject-matter of claim 10 was not obvious over the combination of document D1 with the common general knowledge of the skilled person (see decision under appeal, page 14).
 - 7.1.1 The opposition division reasoned that the distinguishing features with respect to the disclosure of D1 were that the MMVF have a median length of 100-300 μm and a ratio of length to diameter of 25 to 500 (see decision under appeal, point II.18.3).
 - 7.1.2 The technical effect was seen as providing MMVF exhibiting low thermal conductivity, high air flow resistivity and an increase in skin friendliness.
 - 7.1.3 The objective technical problem to be solved for claim 10 (and claim 1), was also regarded by the opposition division as "the provision of a method for producing improved man-made vitreous fibres having low thermal conductivity, high air flow resistivity and increase [sic] skin friendliness" (see decision under appeal, page 13, point II.18.3.2, first paragraph).
- 7.2 The appellant did not dispute the reasoning of the opposition division with respect to the distinguishing features. However, the appellant argued that the technical effect was not proven and the objective technical problem set out by the opposition division should be reformulated less ambitiously as the provision of an MMVF with alternative dimensions.
- 7.3 In the board's view, even if the objective technical problem is taken as being to provide alternative

dimensions of MMVF, the subject-matter of claim 10 is not obvious with respect to D1 and the common general knowledge.

In document D1 there is a general teaching of MMVF with an average diameter of 1 to 4 μm and an average ratio of length to diameter of 1000 to 3000 (D1, page 7, lines 16 to 19) and a specific example where average fibre diameter is about 2 μm and average fibre length about 3 mm giving a length to diameter ratio of about 1500 (page 20, line 37 to page 21, line 2).

As reasoned by the opposition division (decision under appeal, page 14, final paragraph) and argued by the respondent, there is no teaching in D1 to shorten the fibre length, or to achieve the length to diameter ratio claimed in claim 10.

In the absence of any disclosure in document D1 as to how to achieve the claimed fibre dimensions, the skilled person, even if merely looking to provide an alternative fibre, cannot arrive at the subject-matter of claim 10.

8. Inventive step - further objections

8.1 The appellant stated on page 26 of its statement of grounds of appeal that it maintained the inventive step objections set out in the notice of opposition.

8.2 These further inventive step objections in the notice of opposition cannot however be considered to be substantiated as required by Article 12(3) RPBA as, in the absence of any substantiation, they do not take into account the reasons put forward in the decision

under appeal. Therefore they are not admitted into the proceedings under Article 12(5) RPBA 2020.

9. In conclusion, as the appellant did not convincingly demonstrate that the decision under appeal is incorrect, the appeal is to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



G. Nachtigall

G. Patton

Decision electronically authenticated