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**Datasheet for the decision
of 16 February 2016**

Case Number: T 0055/11 - 3.2.05

Application Number: 03816138.6

Publication Number: 1603723

IPC: B29B11/16

Language of the proceedings: EN

Title of invention:

Pre-form and method of preparing a pre-form

Patent Proprietor:

Vestas Wind Systems A/S

Opponents:

LM Wind Power A/S
ENERCON GmbH

Relevant legal provisions:

EPC Art. 123(2)
EPC 1973 Art. 83, 56

Keyword:

Extension beyond the contents of the application as filed - no
Sufficiency of disclosure - yes
Inventive step - yes (after amendment)
Admittance of new arguments presented for the first time
during oral proceedings - yes (cf point 2)

Decisions cited:

T 1621/09



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Case Number: T 0055/11 - 3.2.05

D E C I S I O N
of Technical Board of Appeal 3.2.05
of 16 February 2016

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Decision under appeal: Interlocutory decision of the opposition
division of the European Patent Office posted on
15 November 2010 concerning maintenance of the
European Patent No. 1603723 in amended form.

Composition of the Board:

Chairman M. Poock
Members: H. Schram
 D. Rogers

Summary of Facts and Submissions

- I. Appellant I (opponent 01), appellant II (patent proprietor) and appellant III (opponent 02) each lodged appeals on 7, 24 and 25 January 2011, respectively, against the interlocutory decision of the opposition division posted 15 November 2010 concerning maintenance of the European patent No. 1 603 723 in amended form. The respective statements setting out the grounds of appeal were all filed on 25 March 2011.

The opposition division held that claim 1 of the main request (claim 1 as granted) contained subject-matter which extended beyond the content of the application as filed (Article 123(2) EPC in combination with Article 100(c) EPC 1973), and that the grounds of opposition under Article 100(a) EPC 1973 (lack of novelty, Article 54 EPC 1973, and lack of inventive step, Article 56 EPC 1973), Article 100(b) EPC 1973 (insufficient disclosure, Article 83 EPC 1973) and Article 100(c) EPC 1973 (inadmissible extension, Article 123(2) EPC) did not prejudice the maintenance of the patent on the basis of claims 1 to 28 filed as first auxiliary request on 7 October 2010.

- II. In a detailed communication dated 25 March 2015 annexed to the summons to attend oral proceedings the board expressed inter alia its provisional opinion that claim 20 as granted seemed to meet the requirements of Article 123(2) EPC, that the invention claimed in said claim was disclosed in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art, Article 83 EPC 1973, and that it appeared that claim 1 of the eighth auxiliary request filed by appellant II with letter of 10 August 2011 met the requirements of Article 123(2) EPC (cf points 5.3, 6.3, 8.4 and 10.8).

- III. In a reply to the communication of the board, of the four points mentioned in point II above, appellant I solely addressed the issue of inventive step (see point 3 of its letter dated 15 January 2016). No substantive replies to said communication were received from appellants I and II.
- IV. Oral proceedings were held before the board of appeal on 16 February 2016.
- V. Appellants I and III requested that the decision under appeal be set aside and that the patent be revoked.

Appellant II requested that the decision under appeal be set aside and that the patent be maintained upon the basis of the main request submitted at the oral proceedings before the board on 16 February 2016.

- VI. Claim 1 of the main request reads as follows:

"A method for preparing a pre-form comprising the steps of:

- providing layers of fibres (2)
- providing an adhesive (6) between said layers of fibres (2) to at least partially immobilising the fibres (2)
- providing a resin (4) in contact with at least one of the layers of fibres (2),

wherein a fibre layer is provided off the edge of a preceding fibre layer, thereby realising a tapered part of the pre-form and the resin (4) is an uncured thermosetting resin,
characterised in that

- the layers of fibres are unidirectionally oriented fibre tows (2),

- the orientation of the fibres is substantially the same in the layers of fibers,
- the adhesive (6) is provided to at least partially immobilise the fibres during fibre laying,
- the resin is distributed in non-continuous layers, and
- the method further comprises pre-consolidation to form a pre-consolidated pre-form."

VII. The following documents were inter alia referred to in the appeal proceedings:

D1 EP-A 0 073 648;

D5 FR-A 2 794 400;

D13 EP-A 1 408 152.

VIII. The arguments of appellants I and III, in writing and during the oral proceedings, can be summarized as follows:

Inadmissible extension, Article 123(2) EPC

(only raised by appellant III, who referred to its submissions in the written proceedings)

The features "wherein a fibre layer is provided off the edge of a preceding fibre layer, thereby realising a tapered part of the pre-form" and "the resin (4) is an uncured thermosetting resin" in method claim 1 of the (then) first auxiliary request 1 on the basis of which the opposition division intended to maintain the patent in amended form (which was identical to claim 20 as granted), was not present in method claim 27 as filed, or in any of the dependent method claims 28 to 51 as filed. For that reason any claim based on claim 20 as

granted did not meet the requirements of Article 123(2) EPC.

Sufficiency of disclosure, Article 83 EPC 1973

(only raised by appellant I, who referred to its submissions in the written proceedings)

Claim 1 as granted encompassed a broad range of embodiments with any kind of tapering. To fully satisfy Rule 42(1) EPC, it was necessary that the invention was described not only in terms of its structure but also in terms of its function, unless the functions of the various parts were immediately apparent. The function of a tapering part, ie reducing of the interfacial stress between said preform and an adjacent structure, was not achieved when the tapering part was found at an intermediate part of a preform, or when the tapering angle was small.

The following additional objections were raised against claim 20 as granted. Said claim did not clearly state which steps were needed and in which order they should be carried out. Further, since the claim referred to "the edge" and a "preceding fibre layer", it was unclear as to what edge was referred to and how the "preceding fibre layer" exactly corresponded to the first mentioned step of "providing layers of fibres". Accordingly, the skilled person was not readily able to carry out the invention.

Inventive step

There was no synergy between the last two features of claim 1 of the main request and the remaining features of said claim. The penultimate feature of claim 1 of the main request, viz "the resin is distributed in non-

continuous layers", was already known from document D13. The last feature of claim 1 of the main request, viz "the method further comprises pre-consolidation to form a pre-consolidated pre-form", was common technical knowledge in the art of preparing a pre-form, it was a standard procedure.

IX. The arguments of appellant II, in writing and during the oral proceedings, can be summarized as follows:

Inventive step

There was a synergetic effect between the last two features of claim 1 of the main request. In a pre-form having at least one non-continuous layer of resin, gas may be removed during the pre-consolidation process in a direction through the layers of fibres and need not be removed in a plane of the layer of resin and/of the fibres, cf paragraphs [0023] and [0072] of the patent. No evidence was provided by appellants I and III that a pre-consolidation step was common technical knowledge.

Reasons for the Decision

1. The appeals are admissible.
2. *Procedural issue*
 - 2.1 In the communication referred to in point II above, the board made the comment (see point 8.4) that in the oral proceedings it would be necessary to discuss whether or not the presence of the characterising features of claims 1 and 20 with respect to D1 or D5 imply an inventive step, in particular in view of D11 or D13.

In its reply to this communication, appellant III made an inventive step argument against granted claims 1 and 20 upon the basis of document D1 in combination with document D13.

- 2.2 During the oral proceedings, when discussing inventive step of granted claims 1 and 20 starting from document D1 and taking into account document D13, appellant I argued for the first time that the subject-matter of said claims also lacked an inventive step starting from document D13 and taking into account document D1.

Thereupon appellant II requested that this new argument should not be admitted into the appeal proceedings.

- 2.3 It is hence necessary to consider whether the new submission or argument of appellant I constitutes an amendment to said party's case and whether it should be taken into consideration.

Article 12 RPBA sets out what are to be considered the basis of the appeal proceedings. Article 13(1) RPBA provides that any amendment to a party's case after it has filed its grounds of appeal or reply may be admitted and considered at the board's discretion.

The present board considers that in deciding whether a new argument has the effect of amending a party's case within the meaning of Article 13(1) RPBA it must be established on a case-by-case basis whether the new argument is a departure from, or just a development of, the original arguments filed with the grounds of appeal or the reply thereto. This approach is in line with the analysis made in T 1621/09, see in particular point 9 of the Reasons.

2.4 In the present case, the new argument cannot be seen as merely a further development or elaboration of appellant I's previous position. The new analysis is based on a different choice of closest prior art (document D13 instead of document D1), and this in turn means that, compared to the previous argument, it is necessary to consider different reasons (based now on document D13) why the skilled person would find it obvious to arrive at the distinguishing features having regard to the prior art.

This new argument must therefore be seen as constituting an amendment to appellant I's case within the meaning of Article 13(1) RPBA, which may be admitted and considered only at the discretion of the board.

2.5 In the present case, the board, in the exercise of its discretion, decided to admit the new arguments put forward by appellant I. The reasons for this are as follows:

In its communication under Article 15(1) RPBA (which also forms part of the appeal proceedings according to Article 12(1)(c) RPBA), the board indicated that inventive step based upon D1 in combination with D13 might be discussed at oral proceedings, and hence appellant II could have foreseen that the argument which appellant I is now relying on might well become a subject for discussion. Documents D1 and D13 were both before the opposition division and have been extensively discussed throughout the proceedings. In addition, the combination of D13 with D1 compared to D1 with D13 does not change the inventive step argument in terms of technical features and problem to be solved.

In addition this new argument is not incompatible with, or contradictory to, appellant I or III's previous case, nor does it raise any complex issues.

2.6 During the oral proceedings, appellants I and III were therefore allowed to start from document D13 as starting point for assessing inventive step of claims 1 and 20 as granted, and of the independent claims of the auxiliary requests then on file.

3. *Ground for opposition under Article 100(c) EPC 1973 in combination with Article 123 EPC*

3.1 Claim 1 of the main (sole) request of appellant II corresponds to claim 1 of the eight auxiliary request filed by appellant II with letter of 10 August 2011, which in the provisional opinion of the board (cf point II above) seemed to meet the requirements of Article 123(2) EPC.

Since appellants I and III did not file a written reply with regard to this issue and relied during the oral proceedings before the board merely on their written submissions, there is no need for further substantiation of this matter over and above the reasons given in the communication of the board dated 25 March 2015.

Therefore, the board adopts this provisional opinion as its final judgment.

3.2 Claims 2 to 28 of the main request correspond to claims 21 to 47 as granted.

3.3 It follows that claims 1 to 28 of the main request meet the requirements of Article 123(2) EPC.

4. *Ground for opposition under Article 100(b) EPC 1973 in combination with Article 83 EPC 1973*

4.1 The preamble and the first characterising feature of claim 1 of the main request correspond, apart from the term "unidirectionally" before the expression "oriented fibre tows", to claim 20 as granted. In the provisional opinion of the board (cf point II above) the invention claimed in said claim was disclosed in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. The board adopts this provisional finding. Moreover, with regard to the additional four characterising features of claim 1 of the main request no objections under Article 83 EPC 1973 were raised by appellants I and III during the oral proceedings before the board.

The board thus comes to the conclusion that the invention claimed in claim 1 of the main request is sufficiently disclosed.

4.2 During the oral proceedings before the board, appellant I submitted that the invention claimed in use claims 46 and 47 of the patent as granted was insufficiently disclosed.

This submission also applies to the corresponding use claims 27 and 28 of the main request, which read: "Use of a pre-form according to claim 24 [ie a pre-form obtainable by any of the claims 1 to 23] in a wind turbine blade" and "Use of a pre-form according to claim 24 in a spar for a wind turbine blade", respectively.

The objection of appellant I is that a pre-form cannot be used in a wind turbine blade as a final product, ie ready to be operated.

In the opinion of the board, the person skilled in the art will readily understand that a pre-form that is used for preparation of an intermediate product such as an uncured wind turbine blade or a spar for said blade, implies that said product must be cured in order to obtain a final product. Since claims 27 and 28 of the main request do not stipulate whether the wind turbine blade and the spar for said blade are intermediate or final products, the person skilled in the art has sufficient information to "use" the pre-consolidated pre-form obtainable by any of the claims 1 to 23 of the main request "in a(n intermediate or final) wind turbine blade" or "in a(n intermediate or final) spar for a wind turbine blade".

4.3 Consequently, the inventions claimed in claims 1, 27 and 28 of the main request are disclosed in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

5. *Ground for opposition under Article 100(a) EPC 1973 in combination with Article 56 EPC 1973*

5.1 Document D13 can be taken to represent the closest state of the art. This document discloses (see claim 1) a carbon fibre reinforced substrate comprising a fabric composed of carbon fibre bundles and a first resin adhering to said fabric, wherein said carbon fibre bundles respectively comprises numerous continuous carbon filaments. The first resin is preferably a thermosetting resin, eg an epoxy resin, see paragraphs [0027] to [0030].

Document D13 further discloses (see paragraphs [0145] to [0148], and Figure 9) a pre-form having four layers of

carbon fibre reinforced substrate 90, bonded to each other by means of first and second resins 92, 94. As shown in Figures 1 and 2 the first resin 14, 24 may adhere as dots on a surface of the fabric, or may adhere on said surface more widely but still discontinuously, cf paragraphs [0070] to [0075].

The meaning of the term "fabric" in claim 1 of document D13 is explained in paragraph [0081] as follows: "The fabric is composed of carbon fibre bundles. The fabric can be in any of various known forms such as a woven fabric (uni-directional, bi-directional or 3D woven fabric, etc.), knitted fabric, braid, fabric with warp yarns (carbon fibre bundles) arranged in parallel to each other in one direction (hereinafter called a uni-directional sheet), multi-axial sheet obtained by overlaying two or more uni-directional sheet in different directions, etc" (emphasis added by the board). A fabric with warp yarns (ie a "fabric" without weft yarns) means that the carbon fibre bundles form a layer of fibres which "are unidirectionally oriented fibre tows", cf the first characterising feature of claim 1 of the main request.

It follows from the above that document D13 also discloses the second to fourth characterising features of claim 1 of the main request, namely "*the orientation of the fibres is substantially the same in the layers of fibers*", "*the adhesive (6) is provided to at least partially immobilise the fibres during fibre laying*" and "*the resin is distributed in non-continuous layers*".

- 5.2 The subject-matter of claim 1 of the main request differs from the method for preparing a pre-form known from document D13 in that:

- (i) wherein a fibre layer is provided off the edge of a preceding fibre layer, thereby realising a tapered part of the pre-form" (cf the penultimate feature of the preamble), and
- (ii) the method further comprises pre-consolidation to form a pre-consolidated pre-form.

The advantages of distinguishing feature (i), viz realising a pre-form having one or more tapered parts, ie parts which are formed three-dimensionally, are discussed in paragraphs [0035] to [0037] of the patent and include enhanced shaping of the pre-form and reducing of the interfacial stress between a pre-form and an adjacent structure.

The advantages of feature (ii), ie forming a pre-consolidated pre-form, are discussed in paragraphs [0056] to [0077] of the patent, see in particular column 12, lines 34 to 41, where it is stated that pre-consolidated pre-forms have "*... good reproducibility, low porosity, high homogeneity, high strength, ability to plactical shaping of the pre-consolidated pre-form, ability to be connected to other preforms and/or other pre-forms and/or other structures, suitability for automation and long shelf life without premature curing*".

- 5.3 Whilst distinguishing feature (i) is known from the prior art cited in the opposition appeal proceedings (see eg document D1, page 12, lines 21 to 24, and Figure 6 - the reference to "Fig. 6" is erroneous), it seems that no document was cited which would give the person skilled in the art a hint or suggestion to distinguishing feature (ii).

The burden of proof that the invention does not involve an inventive step lies with the party or parties making the allegation. During the oral proceedings appellants I and III were asked to provide evidence that a method for preparing a pre-form further comprising a pre-consolidation step was known in the art, no such evidence was produced.

With this state of affairs the board has to assume that it was not obvious to the person skilled in the art, starting from document D13, to include a pre-consolidation step.

Since documents D1 and D5 are further away from the invention than document D13, starting from document D1 or D5 could not have led to a different conclusion.

- 5.4 The subject-matter of claim 1 of the main request therefore involves an inventive step.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance with the order to maintain the patent with the following claims and a description and drawings to be adapted:

Claims No. 1 - 28 of the main request received during the oral proceedings of 16 February 2016.

The Registrar:

The Chairman:



D. Meyfarth

M. Poock

Decision electronically authenticated