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**Datasheet for the decision  
of 4 October 2017**

**Case Number:** T 1589/13 - 3.2.05

**Application Number:** 08758252.4

**Publication Number:** 2160286

**IPC:** B29C70/44, B29C70/54

**Language of the proceedings:** EN

**Title of invention:**

Method of using a formable core block for a resin impregnation process, method of forming a composite structure and composite structure obtained thereby

**Patent Proprietor:**

LM Wind Power A/S

**Former Opponent:**

GE Wind Energy GmbH

**Headword:**

**Relevant legal provisions:**

EPC Art. 54(2), 56, 114(1)  
RPBA Art. 12(4)

**Keyword:**

Internet disclosure - available to the public (yes)  
Late-filed document - admitted (yes)  
Late-filed request - admitted (yes)  
Inventive step - after amendment (yes)

**Decisions cited:**

G 0009/91, G 0007/93, T 1134/06, T 1875/06, T 2227/11

**Catchword:**



**Beschwerdekammern**

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**Chambres de recours**

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Case Number: T 1589/13 - 3.2.05

**D E C I S I O N**  
**of Technical Board of Appeal 3.2.05**  
**of 4 October 2017**

**Appellant:** LM Wind Power A/S  
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**Decision under appeal:** **Decision of the Opposition Division of the  
European Patent Office posted on 21 May 2013  
revoking European patent No. 2160286 pursuant to  
Article 101(3) (b) EPC.**

**Composition of the Board:**

**Chairman** M. Poock  
**Members:** P. Lanz  
D. Rogers

## **Summary of Facts and Submissions**

- I. The appeal by the patent proprietor is against the decision of the opposition division to revoke European patent EP-B-2 160 286.
- II. During the opposition proceedings, the then opponent raised the grounds for opposition according to Article 100(a) EPC (lack of novelty and lack of inventive step).
- III. By letter dated 14 August 2017, the respondent (opponent) withdrew its opposition and thereby ceased to be a party to the present appeal proceedings as regards the substantive issues.
- IV. Oral proceedings were held before the board of appeal on 4 October 2017 in the presence of the appellant.
- V. The final request of the appellant was to set aside the decision under appeal and to maintain the patent upon the basis of the main request filed at the oral proceedings before the board on 4 October 2017.
- VI. The documents referred to include the following:  
  
E1: "Vacuum Infusion Processing with DIAB core materials", DIAB Technical Bulletin, pp. 1 to 17, Rev. C, DIAB Technologies, Texas, USA;  
  
E2: "Standard Finishing", DIAB Technical Bulletin, pp. 1 to 5, DIAB Technologies, Texas, USA;  
  
E4: "Standard Finishing", DIAB product information, 2006;

E7: US 3,841,958;

E8: Affidavit by Charles Previte dated 17 October 2012;

E9: Invoice by Trydells Tryckeri dated 22 February 2006 for printing document E4.

VII. Claim 1 of the main request has the following wording:

"A method of forming a composite structure comprising the following steps:

- a) providing at least one core block having a first surface and a second surface and having a thickness (h), a number of first grooves being formed in the first surface of the core, the first grooves having a first height (h1) and a bottom, and a number of second grooves being formed in the second surface of the core and having a second height (h2), the first grooves and the second grooves being part of a resin distribution network formed in the core block,
- b) covering at least a part of the core block with a fibre material,
- c) placing the covered core block in a forming structure comprising a mould part and a vacuum bag,
- d) sealing the vacuum bag against the mould part to form an interior part of the forming structure
- e) connecting a source of uncured fluid resin so as to feed uncured resin to the resin distribution network,
- f) connecting the interior of the forming structure to at least one vacuum outlet,
- g) forcing the uncured resin from the source of uncured resin through the resin distribution network and to the vacuum outlet in order to fill the interior of the forming structure and to impregnate the fibre material, and

h) curing the resin in order to form a composite structure, characterized in that the sum of the first height and the second height ( $h_1+h_2$ ) is larger than the thickness ( $h$ ) of the core block, and wherein at least one of the first grooves in the first surface of the core block crosses at least one of the second grooves in the second surface of the core block, and wherein the distance ( $t$ ) between the bottom of the first grooves and the second surface of the core block is of such a size that the core block is flexible along the first grooves, and wherein the first height ( $h_1$ ) is at least 75% of the thickness ( $h$ ) of the core block (30)."

VIII. The appellant's submissions may be summarised as follows:

*Prior art status of documents E1, E2 and E4*

Documents E1, E2 and E4 were Internet publications for which, according to decisions T 1134/06 and T 1875/06, it had to be proven beyond reasonable doubt that they were made available to the public. However, in the present case doubts remained regarding the date stamp on the documents, as to whether the documents remained unaltered since the date stamp and as to the value of affidavit E8. Consequently, documents E1, E2 and E4 did not belong to the prior art for the patent in suit.

*Admissibility of document E7*

Document E7, which had been admitted by the opposition division, should not be considered in the appeal proceedings since it was not *prima facie* relevant for the questions of novelty and inventive step of the subject-matter claimed.

*Main request - novelty and inventive step*

The novelty of the subject-matter of claim 1 of the main request was uncontested since neither the closest prior art E1 nor any of the other documents on file disclosed a vacuum assisted resin transfer moulding method using a core block having first and second grooves, wherein the first height of the first grooves was at least 75% of the thickness of the core block.

The technical problem to be solved was to improve the flexibility of the core block so that it can conform to a curved mould surface.

The claimed solution was not rendered obvious by the cited prior art. In particular, documents E1 (cf. page 5) and E2 (cf. top of page 2) suggested a groove height of 60%, while document E4 (cf. table on page 2, third line) disclosed a height of 55 to 60% in the context of the claimed method. Document E7 was not related to a vacuum assisted resin transfer moulding process and would therefore not be considered by the skilled person, even if it disclosed a height value of 90% (cf. column 4, lines 10 to 12). It could be concluded that a groove height of 75% was not known in connection with the claimed process. Moreover, increasing the groove height had a considerable impact on the resin flow and on the mould filling, which was critical for obtaining the required mechanical properties of the moulded parts. In view of that, the skilled person, seeking to improve the flexibility of the core, would rather choose other available options, such as modifying the foam density of the core, which had no influence on the flow of resin during the mould filling step. The subject-matter of claim 1 was therefore not obvious for a person skilled in the art.

## **Reasons for the Decision**

### *1. Prior art status of documents E1, E2 and E4*

1.1 While it is not generally disputed that documents E1, E2 and E4 are publications by DIAB, it is contentious whether these documents were made available to the public before the priority date and thereby meet the criterion for forming part of the state of the art under Article 54(2) EPC. As to the required level of proof, the appellant relies on decisions T 1134/06 and T 1875/06, according to which it had to be established beyond reasonable doubt that an alleged publication on the Internet was in fact made available to the public before the relevant date.

1.2 On this issue, the board notes that the jurisprudence of the boards of appeal did not generally follow the findings in decisions T 1134/06 and T 1875/06 that the standard of proof for Internet publications should be higher than for prior art in general. Rather, it was repeatedly confirmed that the EPO standard of proof is generally the balance of probabilities (see for example decision T 2227/11, cf. Case Law of the Boards of Appeal of the EPO, 8th edition 2016, III.G.4.3.1). By way of exception, the standard of proof may be more stringent, for example in opposition (appeal) proceedings where only one party, usually the opponent, has access to information, e.g. concerning an alleged public prior use. The difficulty of the other party to gain access to information concerning such public prior use, and if they are the proprietor, of proving a negative, has caused the case law to tend in this case toward expecting the public prior use to be proved beyond reasonable doubt (see also Case Law of the



Boards of Appeal of the EPO, 8th edition 2016, III.G.4.3.2).

However, in the specific case of documents E1, E2 and E4, which were all produced by a third party, the patent proprietor and the (former) opponent both potentially had equal access to the relevant information, notably concerning the authenticity of their publication dates and their content. Accordingly, the board sees no reason to deviate from the standard of proof of balance of probabilities.

1.3 Moreover, the burden of proof generally lies with the one who affirms. In the specific case of the documents E1, E2 and E4, the burden of proof thus rested with the (former) opponent. If the opposition division or the board, however, is satisfied that, on the balance of probabilities, these citations constitute prior art, it is then up to the appellant/patent proprietor to prove otherwise.

1.4 In that respect, it is observed that documents E1, E2 and E4 are advertising brochures which apparently contain respective creation dates (E1: "Rev C 11.19.02", E2: "9.10.01", E4: "05.12." and "© 2006"). In view of their nature as advertising brochures (see in particular the last sentence of the disclaimer on the last page of documents E1 and E4) and of the fact that the priority date is 1.5 to 5.5 years after the alleged creation dates, it can be presumed that these brochures have been made available to interested circles, without any obligation to keep them secret, in the months following the dates indicated on the cover, which is clearly before the date of priority of the contested patent. This presumption is supported by the affidavit E8 and the invoice E9 for printing document

E4. Although the appellant expresses doubts regarding the different formats used for the date stamping on the documents, regarding the question of whether the documents remained unaltered after the date stamping and as to the value of the affidavit E8, these submissions are not supported by conclusively presented facts. Consequently, they are less convincing.

1.5 In view of the above and on the balance of probabilities, the board sees no reason to overrule the opposition division's decision acknowledging the prior art status of documents E1, E2 and E4. Consequently, these documents belong to the state of the art according to Article 54(2) EPC.

2. *Admissibility of document E7*

2.1 The opposition division decided to admit document E7 into the proceedings in view of its *prima facie* relevance (cf. impugned decision, Reasons 12). It is not apparent that the opposition division exercised its discretion under Article 114(2) EPC according to the wrong principles, or without taking into account the right principles, or in an unreasonable way (cf. G 7/93, OJ EPO 1994, 775). Consequently, the admission of document E7 into the opposition proceedings is not to be objected to. This is all the more true in view of the principle of *ex-officio* examination under Article 114(1) EPC. According to this provision, the opposition division examines the facts of its own motion, as an administrative instance and in accordance with the extent of the opposition under Rule 76(2)(c) EPC (cf. G 9/91, OJ EPO 1993, 408, Reasons 10). In doing so, it is not restricted to the facts, evidence and arguments provided by the parties.

2.2 The board additionally observes that the framework of the European Patent Convention does not provide a legal basis for excluding, at the appeal stage, a prior art document which was correctly admitted into the first-instance proceedings. It has to be emphasised that it is the primary function of an appeal to give the losing party the possibility of having the correctness of the first-instance decision judicially reviewed. In the case at hand, the impugned decision deals, *inter alia*, with the issues of novelty and inventive step in view of prior art document E7. The correctness of these findings cannot be reviewed without taking into consideration the teaching of this document.

For these reasons, document E7 forms part of the present appeal proceedings.

3. *Main request - admissibility*

3.1 The present main request was filed as auxiliary request 8 together with the appellant's statement setting out the grounds of appeal, allegedly in order to overcome specific objections raised by the opposition division during the oral proceedings against the auxiliary requests then on file.

3.2 Regarding the issue of its admissibility, it is observed that under Article 12(1) and (4) RPBA, the board has to take into account everything presented by the parties, *inter alia* in the notice of appeal, the statement of grounds of appeal and any written reply of the other party or parties, if and to the extent that it relates to the case under appeal and meets the requirements set out in Article 12(2) RPBA. The board, however, has the power to hold inadmissible facts,

evidence or requests which could have been presented or were not admitted in the first-instance proceedings.

3.3 Turning to the opposition proceedings of the case at hand, it is observed that in its preliminary assessment, the opposition division had considered that documents E1, E2 and E4 did not form part of the state of the art and that the opposition could therefore be "inadmissible". Moreover, document E7, which the opposition division finally found decisive for refusing auxiliary request 7 and revoking the patent, was submitted only one month before the date of the first-instance oral proceedings. In view of the above, the board does not see any reason why the patent proprietor should have filed the present main request already during the first-instance proceedings. Rather, this request constitutes an appropriate reaction to the impugned decision. It is therefore admitted into the appeal proceedings under Article 12(4) RPBA.

4. *Main Request - novelty and inventive step*

4.1 Claim 1 of the main request is based on a combination of original claims 10 and 2. It is essentially directed to a vacuum assisted resin transfer moulding process, wherein the height of the first grooves in the core block is at least 75 % of the thickness of the core block. It is uncontested that the subject-matter of claim 1 of the main request is new.

4.2 As to the assessment of inventive step, document E1 discloses a vacuum assisted resin transfer moulding process using a grooved core block. It is thus aiming at the same purpose as the claimed invention and has more of the relevant technical features in common with

the subject-matter claimed than document E7, which the former respondent had relied upon.

Consequently, document E1 is considered the closest prior art. The subject-matter of claim 1 differs from the method of document E1 in that the height of the first grooves in the core block is at least 75 % of the thickness of the core block.

- 4.3 Regarding the technical effect achieved, reference is made to the patent specification (cf. paragraph [0013]), according to which an increased height of the first grooves in the core block improves its flexibility so that during the resin impregnation process the core can conform to a curved mould surface.

Based on these considerations, the objective technical problem to be solved by the invention resides in improving the flexibility of the core block in a vacuum assisted resin transfer moulding process in order for the core to conform to a curved mould surface without impeding the resin impregnation of the fibre material.

- 4.4 Turning to the claimed solution, reference is made, on the one hand, to documents E1 (cf. page 5), E2 (cf. top of page 2) and E4 (cf. table on page 2, third line), which generally relate to the claimed method and propose for the core a groove height of 60% or 55 to 60% of the thickness of the core. Document E7, on the other hand, does not concern a vacuum assisted resin transfer moulding process and can hence not provide any guidance on fibre impregnation. Moreover, it is silent on the idea of increasing the core's flexibility for better conformity to a curved mould surface. Consequently, document E7, which mentions a groove height of at least 90% of the thickness of the core

(cf. E7, column 4, lines 10 to 12), would not be taken into account by the skilled person as a possible solution to the technical problem underlying the contested claim. It can be concluded that a groove height of 75% is, as such, not known, or hinted at, in the available prior art in connection with the claimed process.

Moreover, increasing the groove height from 60 to 75% of the thickness of the core constitutes a substantial modification of the resin distribution network in the core block, which has a considerable impact on the resin flow along and through the core block. Reliably achieving a complete filling of the mould with uncured resin is one of the critical aspects of the claimed method in order to obtain the required mechanical properties of the moulded parts. In view of that, the board concurs with the appellant that the skilled person, when seeking to improve the flexibility of the core on the basis of his common general knowledge, would rather choose other available options, such as modifying the foam density of the core, which have no influence on the flow of resin during the mould filling step.

- 4.5 Hence, the subject matter of claim 1 according to the main request is, from an objective point of view, not rendered obvious by the available prior art and the common general knowledge. It is therefore based on an inventive step in the sense of Article 56 EPC.

## 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 as amended in the following version:

#### Description:

Pages 2 - 10 as received during the oral proceedings of 4 October 2017.

#### Claims:

Nos. 1 - 3 of the main request received during the oral proceedings of 4 October 2017.

#### Drawings:

Figs. 1 - 11h of the patent specification.

The Registrar:

The Chairman:



B. Atienza Vivancos

M. Poock

Decision electronically authenticated