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**Datasheet for the decision  
of 19 April 2024**

**Case Number:** T 0199/22 - 3.2.05

**Application Number:** 12772939.0

**Publication Number:** 2731786

**IPC:** B29C70/30, B29C70/54, B29C70/48

**Language of the proceedings:** EN

**Title of invention:**  
Method for manufacturing a composite

**Patent Proprietor:**  
Siemens Gamesa Renewable Energy A/S

**Opponents:**  
LM WP Patent Holding A/S  
LM Wind Power A/S

**Relevant legal provisions:**  
EPC Art. 54, 56, 100(a)  
RPBA 2020 Art. 12(3), 12(5)

**Keyword:**  
Novelty - patent as granted (yes)  
Inventive step - patent as granted and auxiliary requests (no)  
Admittance - auxiliary requests (yes)

**Decisions cited:**

T 1523/07



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Case Number: T 0199/22 - 3.2.05

**D E C I S I O N**  
**of Technical Board of Appeal 3.2.05**  
**of 19 April 2024**

**Appellants:** LM WP Patent Holding A/S  
(Opponents) LM Wind Power A/S  
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**Respondent:** Siemens Gamesa Renewable Energy A/S  
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**Representative:** SGRE-Association  
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**Decision under appeal:** **Decision of the Opposition Division of the  
European Patent Office posted on 22 November  
2021 rejecting the opposition filed against  
European patent No. 2731786 pursuant to Article  
101(2) EPC.**

**Composition of the Board:**

**Chairman** P. Lanz  
**Members:** B. Spitzer  
F. Blumer

## **Summary of Facts and Submissions**

- I. The joint opponents lodged an appeal against the decision of the opposition division to reject the opposition filed against European patent No. EP 2 731 786.
- II. The opposition had been filed against the patent as a whole on the basis of the grounds for opposition under Article 100(a) in conjunction with Article 54 EPC (lack of novelty) and Article 56 EPC (lack of inventive step).
- III. Oral proceedings before the board were held on 19 April 2024.
- IV. Requests
- The appellants (opponents) requested that the decision under appeal be set aside and that the European patent No. 2 731 786 be revoked.
- The respondent (patent proprietor) requested that the appeal be dismissed or, as an auxiliary measure, that the decision under appeal be set aside and that the patent be maintained as amended on the basis of the claims of any of the first to seventh auxiliary requests as filed with its reply to the statement of grounds of appeal.
- V. The following document is of importance to this decision:

E3: US 2010/0273378 A1.

VI. Claim 1 as granted has the following wording (the feature references used by the parties are given in square brackets):

"**[f1]** A method for manufacturing a wind turbine rotor blade **[f2]** applying vacuum assisted resin transfer moulding, **[f3a]** comprising the step of fixating at least one layer of fibre material (2) to a surface of a mould (1) or to other layers (2) **[f3b]** by means of an adhesive **[f3c]** with functional groups, which can react with a thermoset resin, **[f4a]** characterised in at least partly dissolving the adhesive during wetting the adhesive with the thermoset resin **[f4b]** containing components acting as solvents for the adhesive."

VII. Auxiliary requests

Claim 1 of the **first auxiliary request** is amended by the following feature at the end of claim 1 as granted: "using an adhesive comprising an unsaturated base resin."

Claim 1 of the **second auxiliary request** is amended by the following feature at the end of claim 1 as granted: "using an adhesive comprising an unsaturated base resin of oligomers containing unsaturated bonds."

Claim 1 of the **third auxiliary request** is amended by the following feature at the end of claim 1 as granted: "using an adhesive comprising an unsaturated base resin and a base resin to which at least one other component, namely at least one reaction inhibitor and/or reaction catalyst and/or softener and/or other polymeric composition than the base resin, was added."

Claim 1 of the **fourth auxiliary request** is based on claim 1 as granted except that the first alternative of feature f3a "to a surface of a mould (1)" has been deleted.

Claim 1 of the **fifth and sixth auxiliary requests** is based on claim 1 of the fourth auxiliary request and adds the amendments of the first and second auxiliary requests respectively.

Claim 1 of the **seventh auxiliary request** reads as follows:

"A method for manufacturing a wind turbine rotor blade applying vacuum assisted resin transfer moulding, comprising the step of fixating at least one layer of fibre material (2) to other layers (2) by means of an adhesive with functional groups, which can react with a thermoset resin, wherein at least partly dissolving the adhesive during wetting the adhesive with a thermoset resin containing components acting as solvents for the adhesive, using an adhesive comprising an unsaturated base resin and a base resin to which at least one other component, namely at least one reaction inhibitor and/or softener, was added."

VIII. The parties' submissions can be summarised as follows.

(a) Patent as granted - novelty of subject-matter of claim 1

(i) Appellants

Document E3 related to a semifinished textile product with a tacky surface (see document E3, paragraph

[0008]). Paragraph [0025] of document E3 stated that semifinished textile products were particularly suitable for the production of fibre-reinforced components in a vacuum infusion and resin injection process. Furthermore, paragraph [0027] and claim 14 of document E3 disclosed that the fibre-reinforced component might be used for the manufacture of rotor blades for a wind turbine generator. Accordingly, document E3 directly and unambiguously disclosed features **f1** and **f2**.

According to document E3, the semifinished textile product had good tackiness, and according to the examples of document E3 this was achieved by applying an adhesive to unidirectional layers of glass fibre. Consequently, it was directly and unambiguously disclosed that the semifinished textile product had the property of fixating a layer of glass fibres by means of an adhesive to either a mould or other layers. In particular, paragraph [0025] of document E3 described a layup in a mould and Example 1 of document E3 described stacked layers of unidirectional glass fibres. Accordingly, features **f3a** and **f3b** were also anticipated by document E3.

The adhesive and its preparation were disclosed in paragraphs [0009] to [0014] of document E3. The partial ester used in the adhesive was, for instance, produced by using epoxidized novolaks, comprising epoxy groups and hence functional groups according to feature **f3c**. An adhesive with functional groups which reacted with a thermoset resin was also disclosed in paragraph [0023] of document E3.

Paragraph [0018] of document E3 referred to the use of the semifinished textile product with an epoxy resin

according to the prior art and emphasised the excellent mechanical properties and compatibility of the epoxy resin with the adhesive. One example of such an epoxy resin was an epoxidized novolak. Since according to paragraph [0020] and claim 9 of document E3 the *"adhesive is capable of being swelled and/or partially dissolved in reaction resin mixtures containing epoxy resins"*, features **f4a** and **f4b** were inherently disclosed. Moreover, features **f4a** and **f4b** were redundant. Since paragraph [0023] of the patent disclosed that *"the same or similar oligomers in the adhesive and in the resin can be used"*, it was irrelevant whether the thermoset resin dissolved the adhesive or vice versa.

Consequently, all the features of claim 1 as granted were disclosed in document E3.

Contrary to the opposition division's opinion, feature **f1** was disclosed in combination with the remaining features **f2 to f4b**. In this regard, it was established case law (see Case Law of the Boards of Appeal of the European Patent Office, 10th edition, July 2022, "Case Law", I.C.4.1) that the technical disclosure in a prior-art document had to be considered as a whole. Thus the person skilled in the art would understand that the product, for instance the rotor blade for a wind turbine generator, could be used in a vacuum assisted resin transfer moulding (VARTM) process, which was the process most commonly used for the manufacture of a wind turbine rotor blade. At least, there was an implicit disclosure of a wind turbine rotor blade produced by VARTM. This was in accordance with established case law (see Case Law, I.C.4.3), and was especially reflected in decision T 1523/07. According to that decision, an "implicit disclosure" was to be



understood as a disclosure which any person skilled in the art would objectively consider to be necessarily implied in the explicit content. Moreover, resin infusion had been known for many years. The person skilled in the art was familiar with both possibilities, i.e. RTM (resin transfer moulding) in an open-mould arrangement and VARTM in a closed-mould arrangement. Since VARTM was the better choice due to the associated avoidance of volatile organic compounds, VARTM would have been the preferred option. A preferred option did not amount to a selection.

Thus the subject-matter of claim 1 was not novel over document E3.

(ii) Respondent

Document E3 was concerned with the manufacture of semifinished textile products with a tacky surface (see document E3, paragraph [0008]), i.e. the final products of document E3 had a tacky surface.

Although paragraph [0027] of document E3 disclosed that the semifinished textile products were suitable for the manufacture of wind turbine rotor blades, it did not disclose a method for manufacturing such. The same applied to claim 14 of document E3. Paragraph [0025] of document E3 merely disclosed that the semifinished textile products were used in VARTM processes, but not that a wind turbine rotor blade was manufactured by a VARTM method. Thus there was no direct and unambiguous disclosure of features **f1** and **f2** in combination.

Paragraphs [0012] to [0016] of document E3 referred to the adhesive and its production, before its application to the textile material. Paragraphs [0020] and [0023]

and claim 9 of document E3, which were cited in support of the disclosure of features **f3c** and **f4b**, referred to the semifinished textile products, thereby not mentioning the final product or a wind turbine rotor blade. The disclosure of the adhesive "*capable of partial solution in reaction resin mixtures containing epoxy resins*" was not disclosed in the context of a VARTM process with a thermosetting resin.

The fact that the epoxy resin and adhesive were compatible, as disclosed in paragraph [0018] of document E3, could not be equated with a resin at least partially dissolving the adhesive as claimed in feature **f4a**. Contrary to the appellants' allegations, features **f4a** and **f4b** were not redundant, since feature **f4b** required that the resin - and not the adhesive - contain a solvent.

All in all, document E3 did not disclose features **f1** and **f3a to f4b** in combination with a VARTM process. Therefore the subject-matter of claim 1 as granted was new over document E3.

(b) Patent as granted - inventive step of subject-matter of claim 1

(i) Appellants

The subject-matter of claim 1 was not inventive over document E3 alone. Document E3 disclosed all the features of claim 1 as granted except for features f1 and f2 in combination. It was established case law that a merely arbitrary choice from a host of possible solutions could not be considered inventive if not justified by a hitherto unknown technical effect that distinguished the claimed solution from the other

solutions (see Case Law, I.D.9.21.9a)). In the case at hand, the person skilled in the art had a choice between an RTM process and a VARTM process (see document E3, paragraph [0025]). Both processes had particular advantages and disadvantages, which were well-known to the person skilled in the art.

(ii) Respondent

VARTM is nowadays the most common - and indeed the preferred - method, but this was not the case in 2012, the filing year of the patent. Additionally, document E3 was not an appropriate starting point for evaluating inventive step of the subject-matter of granted claim 1, since said document was not concerned with the manufacture of a wind turbine rotor blade.

(c) Admittance of first to seventh auxiliary requests

(i) Appellants

The first to seventh auxiliary requests should not be admitted, in accordance with Article 12(5) RPBA, since the respondent had not provided a substantiated analysis with regard to patentability (Article 12(3) RPBA).

(ii) Respondent

The first to seventh auxiliary requests should be admitted. The opposition division's decision did not give rise to further elaborations.

(d) First to seventh auxiliary requests - inventive step of subject-matter of claim 1

(i) Appellants

Paragraphs [0009] and [0012] of document E3 disclosed a partial ester. A partial ester, e.g. produced by epoxidized novolaks (see document E3, paragraph [0013]), had double bonds. Since an unsaturated base resin was a resin having double or triple bonds, this feature was disclosed in document E3. The same applied to an unsaturated base resin of oligomers containing unsaturated bonds, which was redundant and merely reflected the definition of an unsaturated base resin. Oligomers were formed by polymerisation of monomers containing double bonds, e.g. epoxidized novolaks, which were disclosed as an example in document E3. Thus there was no further distinguishing feature in claim 1 of the first and second auxiliary requests. With regard to claim 1 of the third auxiliary request, paragraphs [0015] and [0016] of document E3 mentioned an "initiator", which was just another word for a catalyst. Further reference was made to the catalyst MEKP and to the co-catalyst of Example 2 of document E3. Concerning claim 1 of the fourth to sixth auxiliary requests, the alternative of feature f3a of fixating at least one layer of fibre material to other layers was also disclosed in document E3 - see, for instance, paragraphs [0002], [0021] and [0025]. Claim 1 of the seventh auxiliary request limited the other components of the adhesive to a reaction inhibitor and softeners. These additives belonged to the toolkit of a chemist and, as such, could not contribute to inventive step.

The subject-matter of claim 1 of each of the first to seventh auxiliary requests was not inventive over document E3.

(ii) Respondent

The subject-matter of claim 1 of each of the first to seventh auxiliary requests was not obvious in view of document E3. With regard to claim 1 of the first and second auxiliary requests, it was not derivable from paragraph [0009] of document E3 that the adhesive itself comprised an unsaturated base resin and that the reaction product described in paragraphs [0009] to [0012] itself comprised oligomers having unsaturated bonds. Concerning the catalyst of claim 1 of the third auxiliary request, the initiator in paragraphs [0015] and [0016] of document E3 was not specified. Concerning the fourth to sixth auxiliary requests, paragraph [0021] of document E3 was merely referring to the textile layers of the semifinished textile product. Paragraph [0025] of document E3 only described the positioning of the semifinished textile products in the mould. In claim 1 of the seventh auxiliary request the alternatives "reaction catalyst" and "other polymeric composition than the base resin" have been deleted.

**Reasons for the Decision**

1. Patent as granted - novelty of subject-matter of claim 1
- 1.1 The board is of the view that, although document E3 discloses the individual features **f1, f2, f3a to f4b**, there is no direct and unambiguous disclosure of feature **f2** in combination with features **f1** and **f3a to f4b**.
- 1.2 Document E3 relates to a semifinished textile product, which - according to paragraph [0025] - is

"particularly suitable for the production of fiber-reinforced components in vacuum infusion and resin injection processes (such as in resin infusion, resin transfer molding etc.)." Feature **f2** is thus anticipated by document E3.

Paragraph [0027] of document E3 discloses where the semifinished textile products are used, namely "*for the manufacture of lightweight structures in the field of automotive engineering, aerospace, boat and ship building, sports articles and rotor blades for wind turbine generators.*" Consequently, feature **f1** is disclosed in document E3.

However, document E3 does not disclose the combination in which rotor blades for wind turbine generators are made by vacuum infusion. It cannot be considered "implicit" since it is not immediately apparent to the skilled person that nothing other than the alleged implicit feature, i.e. a wind turbine rotor blade made by VARTM, forms part of the subject-matter disclosed (see Case Law, I.C.4.3).

- 1.3 Paragraphs [0009] to [0014] of document E3 describe the adhesive and its production. The partial ester used in the adhesive is, for instance, produced using epoxidized novolaks, comprising epoxy groups and hence functional groups according to feature **f3c** (see document E3, paragraph [0012]). An adhesive with functional groups, which react with a thermoset resin, is also disclosed in paragraph [0023] of document E3. The resultant adhesive is the same as in the patent (see patent, paragraph [0016]) and as claimed in granted claim 1, namely an adhesive with functional groups which can react with a thermoset resin (see

features **f3b** and **f3c**).

- 1.4 It was not disputed, in principle, that document E3 discloses features **f3c to f4b**. However, the respondent pointed out, in particular, that document E3 was directed to a semifinished textile product with a tacky surface (see document E3, paragraph [0008]) and that features **f3c to f4b** were disclosed only for the semifinished textile product.

The board concurs with the appellants' view that document E3 not only discloses the semifinished textile product but also a component made thereof. Paragraphs [0018] and [0023] of document E3 refer to the production of fibre-reinforced plastic materials using an epoxy resin for the semifinished textile product. Paragraph [0018] of document E3 specifies the epoxy resins: *"An epoxy resin according to the prior art can be used for the semifinished textile product according to the present invention, wherein it is advantageous if the epoxy resin is a bisphenol A resin, a bisphenol F resin, tetraglycidyl methylene dianiline (TGMDA), triglycidyl paraaminophenol (TGPAP) and/or an epoxidized novolak."* Paragraph [0023] of document E3 explicitly discloses the chemical reaction of the epoxy group contained in the adhesive with the epoxy group of the reaction resin (feature **f3c**). With regard to the respondent's argument that, for a partial solution according to feature **f4a**, compatibility of the resin and the adhesive as disclosed in paragraph [0018] of document E3 was not sufficient, the board points to paragraph [0020] of document E3. This paragraph directly and unambiguously discloses the partial solution of the adhesive in the reaction mixtures containing epoxy resins, and thus anticipates feature **f4a**. Consequently, the thermoset resin also contains

components acting as solvents for the adhesive (feature **f4b**).

- 1.5 In view of points 1.1 and 1.2, the subject-matter of granted claim 1 is new over document E3 (Article 100(a) in conjunction with Article 54 EPC).
2. Patent as granted - inventive step of subject-matter of claim 1
  - 2.1 Concerning the respondent's argument that document E3 was not an appropriate starting point for evaluating inventive step of the subject-matter of granted claim 1, the board points to the established case law that if the skilled person has a choice of several workable routes, i.e. routes starting from different documents, which might lead to the invention, and if the invention is obvious to the skilled person in respect of at least one of these routes, then an inventive step is lacking. If an inventive step is to be denied, the choice of starting point needs no specific justification (see Case Law, I.D.3.1).
  - 2.2 Document E3 discloses all the features of claim 1 as granted except for feature **f2** in combination with features **f1** and **f3a to f4b**. According to paragraph [0025] of document E3, the person skilled in the art had to choose between two methods: either vacuum infusion (VARTM) or a resin injection process. Since both processes are generally known in the art, each with its own specific advantages and disadvantages, choosing one over the other is a merely arbitrary choice, which does not contribute to an inventive step. It is established case law that a merely arbitrary choice made from a host of possible solutions, in this case two, cannot be considered



inventive if not justified by a hitherto unknown technical effect that distinguishes the claimed solution from the other solutions (see Case Law, I.D. 9.21.9a)).

2.3 Conclusion on inventive step of subject-matter of claim 1 as granted over document E3

The subject-matter of claim 1 as granted is not inventive over document E3 alone. Article 100(a) in conjunction with Article 56 EPC therefore prejudices maintenance of the patent as granted.

3. Admittance of first to seventh auxiliary requests

The first to seventh auxiliary requests had already been filed in opposition proceedings. In the board's view, the first to seventh auxiliary requests have been sufficiently substantiated by the respondent in the reply to the statement of grounds of appeal (see points 3. to 6.) for them to meet the requirements of Article 12(3) RPBA. In particular, it has been explained what amendments have been made as well as their purpose. The respondent's submissions regarding the auxiliary requests were sufficiently substantiated to ensure fair proceedings and to enable the board to start working on the case on the basis of complete party submissions (see Case Law, V.A.4.3.5a)).

Under Article 12(5) RPBA, the board has discretion not to admit any part of a submission by a party which does not meet the requirements of Article 12(3) RPBA. Since these requirements are met, the board considered these requests.

4. First to seventh auxiliary requests - inventive step of subject-matter of claim 1 (Article 56 EPC)
- 4.1 The feature of the **first auxiliary request** added to granted claim 1, "*using an adhesive comprising an unsaturated base resin*", is disclosed in paragraphs [0009] and [0012] of document E3, according to which, for instance, a partial ester might be one constituent of the adhesive. An unsaturated base incorporates double or triple bonds, as elaborated by the appellants. Since "*a partial ester produced by converting an epoxy resin with an unsaturated carboxylic acid is used as the monomer containing double bonds*" (see document E3, paragraph [0012]), the above-mentioned feature is anticipated by document E3 and the same conclusion as for the subject-matter of granted claim 1 applies to the subject-matter of claim 1 of the first auxiliary request.
- 4.2 The feature of the **second auxiliary request** added to granted claim 1 is a further specification of the unsaturated base resin, i.e. that the unsaturated base resin is an "*unsaturated base resin of oligomers containing unsaturated bonds*". This feature does not further limit the unsaturated base resin since an unsaturated base resin per se is made of oligomers containing unsaturated bonds. Therefore the reasons submitted for the first auxiliary request apply *mutatis mutandis* to the second auxiliary request.
- 4.3 The feature of the **third auxiliary request** added to granted claim 1 is that the adhesive comprises an unsaturated base resin and "*a base resin to which at least one other component, namely at least one reaction inhibitor and/or reaction catalyst and/or softener and/or other polymeric composition than the base resin, was*

added." This is disclosed in paragraph [0015] of document E3, according to which the adhesive further, i.e. in addition to the unsaturated base resin, comprises *"at least the following further constituents: an epoxy resin, a rubber component and an initiator."* Paragraph [0016] of document E3 also mentions rubber and a suitable initiator and states that *"the adhesive can include the usual additives, such as pigments, processing aids or additives to improve wetting of surfaces"*. Since the board concurs with the appellants' explanation that an initiator is the same as a reaction catalyst, the newly added feature is also known from document E3. Furthermore, a catalyst is also disclosed in Example 2 of document E3, where MEKP is used as a catalyst and, additionally, a co-catalyst is used (see document E3, paragraphs [0043] and [0044]). Since the above-mentioned additional feature is also anticipated by document E3, the same conclusion as for the subject-matter of granted claim 1 applies to the subject-matter of claim 1 of the third auxiliary request.

4.4 Claim 1 of the **fourth auxiliary request** is based on claim 1 as granted except that the first alternative of feature **f3a** "to a surface of a mould (1)" has been deleted. Reference is made to paragraph [0002] of document E3: *"These self-adhesive textiles can then be placed in a mold and held on the mold or on a layer already fixed thereon, by the adhesive."* Since both alternatives are disclosed in document E3, the deletion of one of them is not to be regarded as contributing to inventive step, and consequently the conclusion for claim 1 as granted applies *mutatis mutandis* to claim 1 of the fourth auxiliary request.

4.5 Claim 1 of the **fifth and sixth auxiliary requests** is based on claim 1 of the fourth auxiliary request with

the additional amendments of the first and second auxiliary requests respectively. Therefore the same reasons as mentioned above for claim 1 of the fourth auxiliary request and also the first and second auxiliary requests apply *mutatis mutandis*.

- 4.6 Claim 1 of the **seventh auxiliary request** is based on claim 1 of the third auxiliary request except that the at least one other component is limited to "at least one reaction inhibitor and/or softener". A reaction inhibitor and/or softener can be described collectively as usual additives, as disclosed in paragraph [0016] of document E3. While these two additives are not explicitly disclosed in document E3, they are generally known and do not contribute to inventive step. Therefore the same conclusion as for claim 1 of the fourth auxiliary request also applies to claim 1 of the seventh auxiliary request.

- 4.7 Conclusion on inventive step for subject-matter of claim 1 of the auxiliary requests

The subject-matter of claim 1 of the first to seventh auxiliary requests is not inventive over document E3 alone.

5. Overall conclusion

As there is no allowable request from the respondent, it follows that the patent must be revoked.

## Order

### For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:



N. Schneider

P. Lanz

Decision electronically authenticated