Dear Mr. Smith,

I am writing to follow up on our recent meeting regarding the scheduling of the next Board of Appeal meeting. As we discussed, the meeting is scheduled for next Monday, and I wanted to confirm the time and location.

The meeting will take place in Room 302 of the European Patent Office, starting at 9:00 AM. Please let me know if there are any changes needed to this schedule.

Thank you for your time and consideration. If you have any questions or require further information, please do not hesitate to contact me.

Best regards,

[Your Name]
Case Number: T 1042/00

DECI S I ON
of the Technical Board of Appeal 3.3.3
of 6 June 2003

Appellant: ANDERSEN CORPORATION
100 Fourth Avenue North
Bayport, Minnesota 55003-1096 (US)

Representative: VOSSIUS & PARTNER
Siebertstrasse 4
D-81675 München (DE)

Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 15 March 2000
refusing European patent application
No. 93 306 844.7 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: R. Young
Members: C. Idez
R. Moufang
Summary of Facts and Submissions

I. European patent application No. 93 306 844.7, filed on 27 August 1993, claiming the priority of the earlier US patent application No. 938364 of 31 August 1992, and published under No. 0 586 212 on 9 March 1994, was refused by a decision of the Examining Division dated 15 March 2000.

II. The decision was based on a set of 36 claims as submitted with letter of 9 December 1999 of the Applicant.

Independent Claims 1, 2, 23, 34 and 35 read as follows:

"1. A thermoplastic polymer wood fibre composite pellet in the form of a cylinder having a radius of 1 to 5 mm and a length of 1 to 10 mm, the pellet composition comprising:
   at least 30 wt-% of a polymeric continuous phase comprising a vinyl chloride polymer;
   at least 30 wt-% of wood fibres having a minimum aspect ratio of 1.8;
   a water content of less than 8 wt-%; in which the wood fibres are dispersed throughout the continuous polymer phase,
   and wherein the polymer wets and penetrates the wood fibres
   and wherein the composite has a Young's Modulus of at least 3400MPa (500,000 psi).

2. A thermoplastic polymer wood fibre composite linear extrudate having a radius of 1 to 5 mm, the extrudate composition comprising:
   at least 30 wt-% of a polymeric continuous
phase, comprising a vinyl chloride polymer; at least 30 wt-% of wood fibres having a minimum aspect ratio of 1.8; a water content of less than 8 wt-%; and wherein the wood fibres are dispersed throughout the continuous polymer phase, and wherein the polymer wets and penetrates the wood fibres and wherein the composite has a Young's Modulus of at least 3400MPa (500,000 psi).

23. A method of producing a thermoplastic polymer wood fibre composite, the method comprising: mixing the wood fibres with a polymer, the mixing occurring at elevated temperature and pressure such that the polymer wets and penetrates the wood fibres, the wood fibres being dispersed throughout the continuous phase formed by the polymer; the wood fibres forming at least 30wt% of the composite and having a minimum aspect ratio of 1.8; the polymer forming at least 30wt% of the composite and comprising a vinyl chloride polymer; the water content of the composite being less than 8wt%; extruding the mixture of wood fibres and polymer as pellets or as a linear extrudate.

34. A method of manufacture of structural components for windows and doors comprising producing a composite according to any of claims 1 to 22 and extruding the components from the pellets comprising the composite.
35. A structural component fabricated from a composite according to any of claims 1 to 22 and/or produced from a composite produced according to the method of any of claims 23 to 33 and/or produced according to the method of claim 34."

Claims 3 to 22, 24 to 33, and 36 were dependent claims.

III. The Examining Division refused the application on the grounds that Claim 1 of this set of claims did not comply with the requirements of Article 123(2) EPC.

More particularly, the decision held that Claim 1 differed from Claim 1 as originally filed in that it did not specify the minimum thickness and the minimum length of the wood fibre used. The Examining Division considered in view of the passage from line 33 on page 4 to line 16 on page 5 of the application as originally filed, that not any wood fibres size would be suitable for carrying out the invention, that the appropriate size and the aspect ratio as stated on page 4, last sentence bridging to page 5, were both linked to the desired increase of the physical properties of the extruded structural member, i.e. the solution of the technical problem underlying the application in suit, and that the desired size was also linked to the feasibility of achieving the desired water content which was a necessary feature of the invention.

The Examining Division further held in view of the decision T 331/87 (OJ EPO 1991, 022) that the skilled person would not recognize directly and unambiguously that the reference to a minimum size of the wood fibres was not explained as essential in the application and
that this feature was not indispensable for the function of the invention in the light of the technical problem it served to solve.

Thus, the Examining Division concluded that the removal of the reference to a limited particle size of the wood fibres in Claim 1 contravened Article 123(2) EPC.

IV. A Notice of Appeal was lodged on 5 May 2000 by the Appellant (Applicant) and the prescribed fee was paid on the same day.

In the Statement of Grounds of Appeal filed on 25 July 2000, the Appellant contested the findings of the Examining Division concerning the allowability under Article 123(2) EPC of the set of Claims 1 to 36 submitted with letter of 9 December 1999. It essentially argued that the length and the thickness of the wood fibres were not essential features of the invention and that the invention worked perfectly without the features omitted in the claims. In support of its arguments it also submitted a declaration of Dr Bhagwan D. Agarwal and a declaration of Mr Michael J. Deaner.

V. In a communication dated 21 December 2001, the provisional view was expressed that independent Claims 1, 2 and 23 then on file would appear to contravene Article 123(2) EPC in particular since the reference to minimal thickness and to minimal length of the wood fibres had been deleted in Claims 1 and 2, since the expression "formed from" had been deleted in Claims 1 and 2, and since the pellets dimensions had not been indicated in Claim 23. The attention of the Appellant was further drawn to the following documents.
(not cited in the search report) which might be very relevant for the assessment of the patentability of the subject-matter of the application in suit:


D6: FR-A-1 575 752;

D7: Modern Plastics International, February 1974, pages 22 to 24; and


VI. With its response dated 30 October 2002, the Appellant filed two sets of 30 Claims representing a new main request and an auxiliary request as well as an experimental report.

Independent Claims 1, 2, 23, 29 and 30 of the main request read as follows:

"1. An extruded thermoplastic polymer wood fibre composite pellet in the form of a cylinder having a radius of 1 to 5 mm and a length of 1 to 10 mm, which is formed from a composition comprising:

a) at least 30 wt-% of a polymeric continuous phase comprising a vinyl chloride polymer;

b) at least 30 wt-% of wood fibres having a fibre width of 0.3 to 1.5 mm, a fibre length of 1 to 10 mm, and a minimum aspect ratio of 1.8;
c) a water content of less than 8 wt-%;
wherein the wood fibres are dispersed throughout
the continuous polymer phase, and wherein at least
20 wt-% of the fibres are oriented.

2. An extruded thermoplastic polymer wood fibre
composite linear extrudate having a radius of 1 to
5 mm, which is formed from a composition
comprising:
a) at least 30 wt-% of a polymeric continuous
phase comprising a vinyl chloride polymer;
b) at least 30 wt-% of wood fibres having a
fibre width of 0.3 to 1.5 mm, a fibre length
of 1 to 10 mm, and a minimum aspect ratio of
1.8;
c) a water content of less than 8 wt-%;

wherein the wood fibres are dispersed throughout
the continuous polymer phase, and wherein at least
20 wt-% of the fibres are oriented.

23. A method of producing a thermoplastic polymer wood
composite according to any one of claims 1 to 22,
the method comprising the steps of:

(1) providing a composition comprising:

a) at least 30 wt% of a polymer comprising vinyl
chloride;
b) at least 30 wt% of wood fibre having a fibre width
of 0.3 to 1.5 mm, a fibre length of 1 to 10 mm,
and a minimum aspect ratio of 1.8;
c) a water content of less than 8 wt-%;
(2) blending the composition under conditions of elevated temperature and high shear such that the wood fibres are dispersed throughout the continuous phase formed by the polymer; and

(3) extruding the blended composition into pellets in the form of a cylinder having a radius of 1 to 5 mm and a length of 1 to 10 mm or into linear extrudates having a radius of 1 to 5 mm.

29. A method of manufacturing a structural member comprising extruding the composites according to any one of claims 1 to 22 into structural members.

30. A structural member formed from the composites according to any one of claims 1 to 22 by extrusion, the member having a Young's Modulus of at least 5,500 MPa (800,000 psi)."

Claims 3 to 22, and 24 to 28 were dependent claims.

The claims of the auxiliary request differed from those of the main request only in that it had been indicated in independent Claims 1 and 2 that the composite had a Young's modulus (ASTM D-638) of at least 4796 MPa (697,600 psi).

The Appellant took the view that the objections under Article 123(2) EPC raised in the communication of 21 December 2001 had been overcome since a reference to the fibre width and to the fibre length had been reintroduced in independent Claims 1, 2 and 23 of both
requests, since the expression "formed from" had been incorporated in Claims 1 and 2 according to original Claim 1, and since the pellets dimensions had been indicated in Claim 23.

The Appellant also submitted arguments concerning the patentability of the subject-matter of the both sets of claims in view of the documents cited in the search report and of documents D4, D6, D7 and D8 mentioned in the communication of 21 December 2001.

VII. In a communication annexed to the summons to oral proceedings issued on 28 February 2003, the Appellant was informed about a number of essential questions to be discussed:

(i.1) In Claim 1 of both requests any reference to the thickness of the wood fibre had been deleted. These claims would therefore appear to contravene Article 123(2) EPC.

(i.2) In view of the absence of indication of the minimum thickness of 1 mm of the wood fibre, Claims 2 and 23 of both requests would also appear to contravene Article 123(2) EPC.

(i.3) The application as originally filed gave no indication concerning the determination of the aspect ratio of the fibre. It was unclear as to whether this feature referred to the ratio length to thickness or to the ratio length to width. This rendered the Claims 1, 2 and 23 of both requests unclear (Article 84 EPC).
With its letter dated 3 April 2003, the Appellant submitted an amended version of the set of Claims 1 to 30 of 30 October 2002 as new main request and withdrew its auxiliary request of 30 October 2002.

Independent Claim 1 read as follows:

"An extruded thermoplastic polymer wood fibre composite linear extrudate having a radius of 1 to 5 mm, which is formed from a composition comprising:

a) at least 30 wt-% of a polymeric continuous phase comprising a vinyl chloride polymer;
b) at least 30 wt-% of wood fibres having a fibre thickness of 0.3 to 1.5 mm, a fibre length of 1 to 10 mm, and a minimum aspect ratio of 1.8;
c) a water content of less than 8 wt-%;

wherein the wood fibres are dispersed throughout the continuous polymer phase, and wherein at least 20 wt-% of the fibres are oriented."

Independent Claim 23 differed from Claim 23 of the main request of 30 October 2002, only by the fact that the expression "fibre width" had been replaced by the expression "fibre thickness". A similar amendment had been carried out in dependent Claim 10.

Independent Claims 29 and 30 corresponded to Claims 29 and 30 of the main request of 30 October 2002.

Claims 2 to 22, and 24 to 28 were dependent on Claims 1 and 23, respectively.
The arguments presented by the Appellant may be summarized as follows:

(i) Concerning Article 123(2) EPC:

(i.1) In new Claims 1, 10 and 23 the term "fibre width" had been replaced by "fibre thickness".

(i.2) It was clear from page 5, line 33 of the published application and from original Claim 8 that these terms were used as synonyms, since the same range (0.3 to 1.5 mm) had been stated for these dimensions.

(i.3) Thus, the feature that the fibre had a thickness of 0.3 to 1.5 mm in Claim was based on a combination of original Claims 1, 8 and 9. This was not affected by the fact that original Claim 1 required a minimum thickness of 1 mm.

(ii) Concerning Article 84 EPC:

Since the terms "width" and " thickness" were used as synonyms, no unclarity arose from the term "aspect ratio".

IX. In a communication dated 8 May 2003, the Rapporteur presented its preliminary observations concerning the set of Claims 1 to 30 submitted with the letter of 3 April 2003 of the Appellant:
(i) Concerning Article 123(2) EPC:

(i.1) The fact that the thickness and the width of the wood fibre might vary in the same range i.e. from 0.3 to 1.5 mm did not imply that no distinction should be made between the thickness and the width of the wood fibre. Thus, the mention in Claims 1 and 23 that the composition comprised at least 30 wt% of wood fibres having a fibre thickness of 0.3 to 1.5 mm, a fibre length of 1 to 10 mm and a minimum aspect ratio 1.8 and 30 wt% of a polymeric phase comprising a vinyl chloride polymer and a water content of less than 8 wt% was not supported by original Claim 8.

(i.2) Although the description as originally filed mentioned that the wood fibres might exhibit a thickness of 0.3 to 1.5 mm (cf. page 5, line 33 of the published application), this was only made in combination with a fibre length of 1 to 10 mm and an aspect ratio of 2 to 7.

(i.3) Thus, Claims 1 and 23 would appear to contravene Article 123(2) EPC.

(ii) Concerning Article 84 EPC:

A distinction should be made between thickness and width of the wood fibre. It thus remained unclear as to whether the aspect ratio referred to the ratio length to thickness or to the ratio length to width. This rendered Claims 1 and 23 unclear (Article 84 EPC).
X. With its letter dated 26 May 2003, the Appellant submitted an amended version of Claims 1 to 30 submitted with letter dated 3 April 2003.

Claims 1 and 23 had in particular been amended in that it was indicated in these claims that the wood fibre had a length of 1 to 10 mm, a width of 0.3 to 1.5 mm, a thickness of 0.3 to 1.5 mm and an aspect ratio of 2 to 7. These amendments were supported, in the Appellant's view, by lines 32 to 33 on page 5 of the application as published.

Concerning the definition of the aspect ratio, the Appellant argued that it was clear from line 33 on page 5 of the published application that the aspect ratio was determined by dividing the length of the fibre by its thickness.

XI. A consultation by phone took place on the 30 May 2003 between the Representative of the Appellant and the Rapporteur. During this consultation, the Representative of the Appellant essentially relied on the arguments presented in the letter dated 26 May 2003 concerning the allowability of the new Claims 1 and 23 under Article 123(2) EPC and the definition of the aspect ratio.

XII. Oral Proceedings were held on 6 June 2003. At the beginning of the oral proceedings the Appellant declared that its previous statements concerning the definition of the aspect ratio (i.e. fibre length to fibre thickness) had been erroneous, and submitted that the aspect ratio indeed referred to the ratio of the fibre length to the fibre width. It further submitted that this definition corresponded to what the skilled
person would understand under the feature "aspect ratio" and filed the following documents in support of its argumentation:


It further argued that the definitions given in documents D2 (GB-A-2 192 397) (cf. page 2, lines 49 to 50) and D4 (page 90, right column, line 6) for the aspect ratio (length to diameter) represented a mere simplification for the case where the width and the thickness of the fibre were nearly the same and that in the other cases the skilled person would rely on the definition commonly admitted in the art (i.e length to width).

After a preliminary discussion of the case, the Appellant filed a set of 21 claims as new main request and a set of 19 claims as auxiliary request. The Appellant also indicated its intention to file a divisional application on the basis of Claim 3 as originally filed.

Independent Claims 1, 18, 20 and 21 of the main request read as follows:
"1. An extruded thermoplastic polymer wood fibre composite cylindrical linear extrudate having a radius of 1 to 5 mm, which is formed from a composition comprising:

a) at least 30 wt-% of a polymeric continuous phase comprising a vinyl chloride polymer;

b) at least 30 wt-% of wood fibres having a fibre length of 1 to 10 mm, a fibre width of 0.3 to 1.5 mm, a fibre thickness of 0.3 to 1.5 mm and an aspect ratio between 2 and 7;

c) a water content of less than 8 wt-%;

wherein the wood fibres are dispersed throughout the continuous polymer phase, and wherein at least 20 wt-% of the fibres are oriented in the extrusion direction.

18. A method of producing a thermoplastic polymer wood fibre composite according to any one of claims 1 to 17, the method comprising the steps of:

(1) providing a composition comprising

a) at least 30 wt% of a polymer comprising vinyl chloride;

b) at least 30 wt% of wood fibre having a fibre length of 1 to 10 mm, a fibre width of 0.3 to 1.5 mm, a fibre thickness of 0.3 to 1.5 mm, and an aspect ratio between 2 and 7;
(2) blending the composition under conditions of elevated temperature and high shear such that the wood fibres are dispersed throughout the continuous phase formed by the polymer; and

(3) exposing the heated composite to atmospheric or reduced pressure at elevated temperature for a sufficient period of time to remove moisture resulting at a final moisture content of about 8 wt% or less,

(4) extruding the blended composition into pellets in the form of a cylinder having a radius of 1 to 5 mm and a length of 1 to 10 mm or into linear extrudates having a radius 1 to 5 mm.

20. A method of manufacturing a structural member comprising extruding the composites according to any one of claims 1 to 17 into structural members.

21. A structural member formed from the composites according to any one of claims 1 to 17 by extrusion, the member having a Young's Modulus of at least 5,500 MPa (800,000 psi)."

Claims 2 to 17, and 19 are dependent on Claims 1 and 18 respectively.

Claims 1 to 17 of the auxiliary request are identical to Claims 1 to 17 of the main request, and Claims 18 and 19, respectively, correspond to Claims 20 and 21 of the main request.
XIII. The Appellant requested that the decision under appeal be set aside, and that the case be remitted to the Examining Division for further prosecution on the basis of the main request or, in the alternative, on the basis of the auxiliary request, both filed at the oral proceedings.

Reasons for the Decision

1. The appeal is admissible.

Main Request

2. Procedural matters.– Admissibility of the request.

2.1 This request has been submitted at a very late stage, i.e. in the course of the oral proceedings held on 6 June 2003.

2.2 According to the decision T 153/85 (OJ EPO 1988, 1), a Board may justifiably refuse to consider in examining proceedings alternative claims which have been filed at a very late stage, if such alternative claims are not clearly allowable.

2.3 Independent Claim 18 of the main request, which is directed to a method for producing a thermoplastic polymer wood fibre composite according to Claims 1 to 17, requires in its processing step 3 to expose the heated composite to atmospheric or reduced pressure at elevated temperature for a sufficient period of time to remove moisture resulting at a final moisture content of about 8 wt% and in its following process step 4 to extrude the blended composition into pellets in the
form of a cylinder having a radius of 1 to 5 mm and a length of 1 to 10 mm or into linear extrudates having a radius of 1 to 5 mm.

2.4 Thus, while step 3 of the claimed process refers to the process conditions to which the composite (i.e. the extruded product) should be submitted, the further step 4 relates to the extrusion of the blended composition for obtaining the claimed composite. This inconsistency in the chronological order of the process steps evidently results in a lack of clarity of Claim 18 contrary to Article 84 EPC. Even if one would argue that the expression "comprising the steps" used in the introduction of Claim 18, did not strictly sensu exclude that the step 3 could be carried out after step 4, this would, however, appear not to be supported by the description (cf. page 4, lines 2 to 5 of the published application), which teaches to lower the water content to less than 8 wt% prior to extrusion.

2.5 It thus follows that Claim 18 of the main request is not merely "not clearly allowable" but, clearly not allowable under the provisions of Article 84 EPC. Thus, in the Board's view, this situation justifies the Board to exercise its discretion not to admit this late filed request (Rule 86(3) EPC).

2.6 Consequently, the main request is not admitted into the proceedings.
Auxiliary request

3. **Wording of the claims**

3.1 Article 123(2) EPC

3.1.1 In the Board's view, the support for Claim 1 is to be found in the combination of Claims 1, 8, 9, 10, and 16 as originally filed, read in association with the preferred features for the wood fibres set out at lines 32 to 33 of page 5 and at lines 37 to 40 on page 3 of the published application.

3.1.2 Dependent Claims 2, and 3 to 5, are based on original Claims 15, and 4 to 5, respectively, while Claim 6 finds its support on lines 8 to 9 on page 5 of the published application.

3.1.3 Dependent Claims 7, 11, 12, 13, 14, 15 and 16 are supported by original Claims 7, 12, 11, 17, 18, 19 and 20, respectively.

3.1.4 Dependent Claims 8 to 9 are based on lines 31 to 32 on page 32 on page 5 of the published application and Claim 10 is supported by lines 32 to 34 of the same page.

3.1.5 Dependent Claim 17 finds its basis on page 4, line 23 of the published application.

3.1.6 Independent Claims 18 and 19 find their support on lines 4 to 13 on page 9 of the published application.
3.1.7 It follows from the above that Claims 1 to 19 of the auxiliary request meet the requirements of Article 123(2) EPC.

3.2 Article 84 EPC

3.2.1 It is evident from the description of the application in suit that the aspect ratio of the wood fibres is an essential feature for the definition of the claimed invention. It is, however, true, that the application in suit does not expressly give a definition of this feature.

3.2.2 Thus, the question boils down as to whether this essential technical feature has a clear and unambiguous meaning for the skilled person reading the application in suit.

3.2.3 While documents D2 (cf. page 2, lines 49 to 50) and D4 (page 90, right column, line 6) define the aspect ratio of wood fibres as the ratio of length to diameter, this would appear, in the Board's view, to refer to situations in which the width and the thickness of the fibres are practically the same, so that the fibres could be seen as substantially cylindrical. This would imply that no practical difference can be made between width, thickness and "diameter", so that it plays practically no role as to whether the aspect ratio should refer to the ratio of length to width, the ratio of length to thickness or the ratio of length to diameter.
3.2.4 In the case of the application in suit, the fibres, however, are described as having a width and a thickness which, although varying in the same range (i.e. from 0.3 to 1.5 mm) might also be very different from each other.

3.2.5 Document D9 submitted by the Appellant at the oral proceedings (cf. D9, page 489; right column, lines 3 to 4), which represents general knowledge at the filing date of the application in suit, defines the aspect ratio as the ratio of length to width. This document indeed corroborates the definition given by the technical expert Dr Agarwal in his declaration annexed to the Statement of Grounds of Appeal (cf. point 21 on page 6 of the declaration). Furthermore, this definition cannot be seen as being contradictory to the one given in documents D2 and D4, since, as indicated above in point 3.2.3, in the case of practically cylindrical fibres no significant difference could be made between the width, the thickness, and the diameter of the fibre. Nor can it be seen as contradictory to the description of the application in suit which refers to "aspect ratio" in a sentence immediately following one referring to "length and width" of the wood fibre (cf. lines 21 to 25 on page 3 of the published application).

3.2.6 Thus, in the Board's view, it can be accepted, that the skilled person reading the application in suit would understand the feature "aspect ratio" as unambiguously referring to the ratio of the length to the width of the wood fibre.
3.2.7 Hence, the Board is satisfied that the requirements of Article 84 EPC are met by Claims 1 to 19.

4. Since the objection of added subject-matter upon which the appealed decision was based has been removed by the set of Claims 1 to 19, which further meet the requirements of Article 84 EPC, it follows that the decision of the Examining Division must be set aside.

5. With respect to the proceedings to follow, the Board deems it appropriate, however, to point out that documents D6, D7 and D8 appear prima facie to be highly relevant for the assessment of the patentability of the subject-matter of the application in suit. As a matter of fact, documents D6, D7 and D8 refer to rigid PVC/wood fibre composites comprising more than 30% by weight wood fibres, having a very low water content and obtained by extrusion and useful in the manufacture of structural elements (e.g. window frames) (cf. D6, page 2, line 3 to page 3, line 18; Examples 1, 2; cf. D7, pages 22 to 24; cf. D8, page 1, line 47 to page 2, line 27; page 4, line 117 to page 5, line 100), and D7 further discloses PVC/wood composites having a modulus of 6000 MPa (cf. Table on page 23). Taking into account, on the one hand, in view of document D2, that there seems to be no difference in terms of aspect ratio (cf. page 2, lines 49 to 50) between wood flour and sawdust, and, on the other hand, that the claims of the auxiliary request did not define the size of the wood fibres after extrusion in the obtained composite or in the further extruded structural member, these prior art references would appear to come much closer to the subject-matter now claimed than the prior art considered by the Examining Division. Consequently, they should be taken into consideration when assessing
the patentability of the claimed subject-matter (cf. T 1016/96 of 24 February 1998; not published in OJ EPO).

6. Thus, according to the express request of the Appellant (Section XIII above), the Board remits the case to the Examining Division for further prosecution on the basis of Claims 1 to 19 of the auxiliary request.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the Examining Division for further prosecution on the basis of the auxiliary request (Claims 1 to 19) filed at the oral proceedings.

The Registrar: The Chairman:

E. Görgmaier R. Young

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