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**Datasheet for the decision
of 25 April 2023**

Case Number: T 0665/20 - 3.3.06

Application Number: 14194313.4

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Language of the proceedings: EN

Title of invention:
Tape-like dry fibrous reinforcement

Patent Proprietor:
Tape Weaving Sweden AB

Opponent:
Cytec Engineered Materials Inc.

Headword:
Fibrous reinforcement/TAPE WEAVING SWEDEN

Relevant legal provisions:
EPC Art. 123(2)

Keyword:
Amendments (sole request) - allowable (no)

Decisions cited:

Catchword:



Beschwerdekammern

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Chambres de recours

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Case Number: T 0665/20 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 25 April 2023

Appellant I:
(Patent Proprietor)

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Appellant II:
(Opponent)

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Representative:

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Decision under appeal:

**Interlocutory decision of the Opposition
Division of the European Patent Office posted on
15 January 2020 concerning maintenance of the
European Patent No. 3023241 in amended form.**

Composition of the Board:

Chairman J.-M. Schwaller
Members: L. Li Voti
C. Brandt

Summary of Facts and Submissions

- I. The appeals of both the proprietor and the opponent lie from the decision of the opposition division to maintain European patent no. 3 023 241 in amended form on the basis of the claims of then pending auxiliary request 3.
- II. Appellant I/patent proprietor defended the patent as granted or in an amended form based on the claims submitted as auxiliary requests 1 to 7, with the claims of the latter request corresponding to those upheld by the opposition division.
- III. Appellant II/opponent objected to all the proprietor's requests and filed a new document labeled as D15.
- IV. In its preliminary opinion the board held *inter alia* claim 1 of auxiliary request 7 to contravene the requirements of Article 123(2) EPC.
- V. At the oral proceedings held on 25 April 2023 appellant I withdrew its appeal, and thus the requests with a ranking higher than auxiliary request 7. The final requests were established as follows:

Appellant I requested to maintain the patent on the basis of auxiliary request 7 and so to dismiss the appeal of appellant II. Further it requested that document D15 not be admitted into the proceedings.

Appellant II requested that the decision under appeal be set aside and the patent be revoked in its entirety. Further it requested that documents D14 and D15 be admitted into the proceedings.

VI. Claim 1 of auxiliary request 7 reads as follows:

"1. An apparatus for forming tape-like dry fibrous reinforcement, such as a reinforcement for composite material, comprising:

a separating device, for arranging fibers/filaments in substantially unidirectional tows alongside each other to form a fiber/filament layer, each tow comprising a plurality of substantially unidirectional filaments, wherein the tows of the at least one filament layer are each separated by separation distance, wherein the separation channels have a width in the range of 0.2-0.8 mm, wherein the tows have a width in the range of 2-15 mm, and wherein the separation channels form a part of the overall volume of the tape-like reinforcement whereby the combined volume of the separation channels in the tape-like reinforcement covers 3-10% of the total volume of the tape-like reinforcement;

an attachment or feeding device for laying a porous adhesive layer on at least one side of said fiber/filament layer; and

a heater or bonding agent applicator for attaching the porous adhesive layer to the fiber/filament layer by surface connection by heating or chemical bonding, preferably in combination with a pressing device;

wherein the separating device comprises a plurality of pins or slats protruding in between the tows to form the separation distances."

Reasons for the Decision

1. *Auxiliary request 7 - Article 123(2) EPC*
- 1.1 This request consists of one single claim directed to an apparatus for forming a tape-like dry fibrous reinforcement comprising a separating device for forming fiber/filament layers having given features.
- 1.2 The wording of this claim is partially based on the combination of apparatus claims 14 and 15 as originally filed and further includes preferred features of the tape-like fibrous reinforcement of claims 3 and 4 (which features are also disclosed in paragraph [0058], lines 32 and 38, of the A1 publication), which require that the channels separating the tows of the at least one fiber/filament layer of the tape-like dry fibrous reinforcement have a width in the range of **0.2-0.8 mm**, and that the tows have a width in the range of **2-15 mm**. The amended claim also includes one of the most preferred range of the percentage of combined volume of the separation channels in the tape-like reinforcement with respect to the total volume of the tape-like reinforcement (this percentage being referred in the following as **CV/TV**) disclosed in the last line in paragraph [0059], in particular the range of **3-10%**, which falls within the broader most preferred range recited in claim 5 as filed.
- 1.3 The board however notes that neither the claims as filed nor the description contain a direct and unambiguous link between the apparatus disclosed generically in claims 14 and 15 and a tape-like reinforcement having all the features specified in the amended claim.

1.4 Furthermore the range of CV/TV disclosed in paragraph [0059] concerns specifically the embodiment of the invention illustrated in figures 1 and 2, which however comprises only **one** fiber/filament layer and **one** adhesive layer.

But the claim at issue recites "**at least one** fiber/filament layer" and thus includes also embodiments relating to tape-like reinforcements comprising **several** fiber/filament layers, as also illustrated in the description and the drawings (see for example paragraph [0065] and figures 7c/7d).

1.5 The board notes also that the description (paragraph [0018], lines 39-43 and paragraph [0015], lines 6-9) states that the separation channels do not need to have necessarily the same width and even occasional total closure of the channels may be acceptable.

1.6 It is thus clear from the foregoing that each fiber/filament layer may have a different combined volume of the separation channels so that the CV/TV of a tape-like reinforcement consisting of one layer like that of figures 1 and 2 may considerably vary from that of a reinforcement having additional fiber/filament layers with a different width of the separation channels.

1.7 It follows that if a tape-like reinforcement having one fiber/filament layer as represented in figures 1 or 2 has a CV/TV of 3% according to the lower limit of claim 1 at issue, an embodiment having an additional fiber/filament layer of equal thickness but having in the additional layer separation channels of smaller width (or even showing some closure), would necessarily have a greater total volume but a lower CV/TV since the combined volume of the separation channels in the

additional layer is smaller than in the first layer. Such an embodiment would thus have a CV/TV lower than 3% (i.e. outside the claimed lower limit), and possibly even smaller by considering further additional fiber/layers as encompassed by claim 1 at issue.

It follows from the above considerations that at least the lower limit of 3%, not disclosed in the claims of the application as filed, cannot be generalised for all the embodiments encompassed by claim 1 at issue.

- 1.8 The board also remarks that the part of the description referring to figures 1 and 2 even discloses broader ranges regarding the parameters discussed above and it lists (paragraphs [0060]-[0061]) further preferred features of the tape-like reinforcement, like its width and the number of filaments contained in a tow, which are however not part of the wording of claim 1 at issue.

Therefore, the board cannot follow the proprietor's argument presented during oral proceedings that the range of values indicated in the description for the width of the separation channels and tows would be understood by the skilled person to result necessarily in a CV/TV within the claimed range for all the embodiments encompassed by claim 1 at issue.

Also the flexibility and drapability properties of the tape-like reinforcement illustrated in the description (paragraph [0016]) and addressed to by the proprietor apply to all the embodiments of the disclosed invention, which encompass (paragraphs [0058]-[0059]) a broader range of features than those selected in amended claim 1. Therefore, also these properties cannot be considered to represent a teaching towards

the restricted combination of preferred parameters of claim 1 at issue.

- 1.9 For all these reasons the application as filed does not contain a direct and unambiguous disclosure of a tape-like reinforcement justifying the generalisation of the singly disclosed features to all embodiments encompassed by claim 1 at issue.
- 1.10 The board therefore concludes that claim 1 at issue does not comply with the requirements of Article 123(2) EPC, so that the only request on file is not allowable.
2. Since said request is already not allowable for the reasons exposed above, the admissibility of documents D14 and D15 does not need to be discussed.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.
3. The appeal fee paid by appellant I is reimbursed at 25%.

The Registrar:

The Chairman:



A. Pinna

J.-M. Schwaller

Decision electronically authenticated