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**Datasheet for the decision  
of 20 July 2016**

**Case Number:** T 0078/13 - 3.3.05

**Application Number:** 05724959.1

**Publication Number:** 1732664

**IPC:** B01D39/16

**Language of the proceedings:** EN

**Title of invention:**  
PLEATED ALIGNED WEB FILTER

**Patent Proprietor:**  
3M Innovative Properties Company

**Opponent:**  
MANN + HUMMEL GmbH

**Headword:**  
Pleated aligned web filters/3M

**Relevant legal provisions:**  
EPC Art. 100(c)

**Keyword:**  
Grounds for opposition - added subject-matter (yes)

**Decisions cited:**

G 0002/10

**Catchword:**



**Beschwerdekammern**  
**Boards of Appeal**  
**Chambres de recours**

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Case Number: T 0078/13 - 3.3.05

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.05**  
**of 20 July 2016**

**Appellant:** MANN + HUMMEL GmbH  
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**Decision under appeal:** **Decision of the Opposition Division of the European Patent Office posted on 30 October 2012 rejecting the opposition filed against European patent No. 1732664 pursuant to Article 101(2) EPC.**

**Composition of the Board:**

**Chairman** E. Bendl  
**Members:** G. Glod  
P. Guntz

## Summary of Facts and Submissions

- I. The appeal lies from the decision of the opposition division to reject the opposition against European patent EP 1 732 664. The objections on the grounds of Article 100(a), 100(b) and 100(c) EPC, the latter relating *inter alia* to claim 1 as granted, were found to be without merit.
- II. Claim 1 as granted reads as follows:  
  
*"1. A filter element that comprises: a meltblown nonwoven self-supporting filtration web that has rows of folded or corrugated spaced pleats and that contains thermoplastic fibers, a majority of which fibers are aligned at  $90^{\circ} \pm 20^{\circ}$  with respect to the row direction."*
- III. The **opponent (appellant)** filed notice of appeal and on 11 March 2013 submitted the statement of grounds, which included the objection that the subject-matter of claim 1 as granted went beyond the original disclosure.
- IV. The **patent proprietor (respondent)** filed his reply by letter of 10 July 2013 and disputed all the objections raised.
- V. Further submissions were made by the appellant by letter of 14 January 2014 and by the respondent by letter of 23 September 2014.
- VI. In its communication of 17 December 2015 pursuant to Article 15(1) of the Rules of Procedure of the Boards of Appeal (RPBA), the board indicated among other things that it was not convinced that the requirements of Article 123(2) EPC were fulfilled by claim 1 as granted.

- VII. By letter of 20 June 2016, the respondent filed a reply to the board's preliminary opinion.
- VIII. The appellant submitted additional comments on 5 July 2016.
- IX. Oral proceedings took place on 20 July 2016. The only issues discussed were the requirements of Article 123(2) EPC with regard to the only pending claim request.
- X. The **appellant's (opponent's)** arguments that are relevant to the present decision may be summarised as follows:

The introduction of the term "self-supporting" in claim 1 was not directly and unambiguously derivable from the original application. Paragraphs [0015] to [0025] provided various general definitions. "Self-supporting" was disclosed in paragraph [0025], where two definitions were given for said term. However, there was no indication that "self-supporting" was to be seen in connection with the claimed invention.

Neither paragraphs [0041] and [0044] nor paragraphs [0078] and [0079] disclosed directly and unambiguously that the filter according to the invention was self-supporting. Said paragraphs related only to specific filters. Examples 16 to 18 disclosed filters in which the pleats were glued and sandwiched between metal support grids, but not a general filter element as described in claim 1. "Self-supporting" properties of a bare filtration web could not be derived from these examples.

Since the meaning of "self-supporting" was ambiguous, it could not be derived unambiguously from the application as filed. It was in particular not derivable from the application as filed that stiffness was a synonym of self-supporting.

XI. The **respondent's (patent proprietor's)** arguments that are relevant to the present decision may be summarised as follows:

When deciding whether the subject-matter of claim 1 was directly and unambiguously derivable from the application as filed, the whole application had to be considered by a mind willing to understand. It was already evident from the title that the invention was about a pleated web filter. This was further illustrated by paragraph [0004], where it was explained that the pleated filtration media allowed filters with improved mechanical properties to be obtained. Paragraph [0029] explained how the web was obtained, and paragraph [0032] further indicated that the web was pleated. It was evident that claim 1 could be equivalently phrased as "a self-supporting pleated filter".

Therefore only the second definition of paragraph [0025] relating to a pleated filter applied to claim 1.

It was unambiguous from paragraph [0041] that the increased stiffness led to increased resistance to pleat deformation at higher filter velocities, which corresponded to the definition of the term "self-supporting" when used with respect to a pleated filter. This linkage of the term "self-supporting" as it appeared in paragraph [0025] in relation to a pleated filter to improved mechanical properties of the pleated

filtration web was further corroborated by paragraphs [0078] and [0079]. There it was shown that filters according to the invention had a stiffness such that pleat deformation was acceptable at relevant airflow conditions.

In fact, the alleged ambiguity of the expression "self-supporting" did not relate to Article 123(2) EPC, but to Article 84 EPC.

Interpreting claim 1 to require a pleated filtration web to be self-supporting merely in the sense of having enough strength to be handleable and drapable made no technical sense in view of the discussion in the specification of the need for such a pleated filtration web to have pleats that are resistant to deformation under airflow.

## XII. Requests

The appellant (opponent) requested that the opposition division's decision be set aside and that the patent be revoked.

The respondent (patent proprietor) requested that the appeal be dismissed.

## **Reasons for the Decision**

### 1. Article 100(c) EPC

The subject-matter of claim 1 does not meet the requirements of Article 123(2) EPC in view of the term "self-supporting" for the following reasons:

- 1.1 It needs to be established whether the amendment made in claim 1 was within the limits of what a skilled person would derive directly and unambiguously, using common general knowledge, and seen objectively and relative to the date of filing, from the whole of the documents as filed (G 2/10, reasons 4.3).
- 1.2 The term "self-supporting" is not present in claim 1 as filed, which reads as follows: "*A filter element that comprises: a nonwoven filtration web that has rows of folded pleats and that contains thermoplastic fibers, a majority of which fibers are aligned at 90° +/- 20° with respect to the row direction*".
- 1.3 The only passage of the application as filed that mentions "self-supporting" is paragraph [0025]: "*The term "self-supporting" when used with respect to a web refers to a web having sufficient coherency and strength so as to be drapable and handleable without substantial tearing or rupture, and when used with respect to a pleated filter refers to a filter whose pleats have sufficient stiffness so that they do not collapse or bow excessively when subjected to the air pressure typically encountered in forced air ventilation systems.*".
- 1.4 There is no link between paragraph [0025] and any web and/or pleated filter disclosed in the application. The skilled person reading this passage, which forms part of a whole list of definitions, would understand that paragraphs [0015] to [0025] either give general definitions of terms generally used in the field of filter elements or provide a special meaning to other terms, so that their meaning is clear **whenever used** in the description or the referenced prior art (e.g. see paragraphs [0027], [0033] and [0040]). However, the



term "self-supporting" was not used in the patent in suit apart from in said paragraph [0025]. Hence, the fact that the term "self-supporting" is mentioned only once and does not appear subsequently in the description cannot be interpreted as meaning that this feature is supposed to be a feature according to the invention. The skilled person knows that not all terms mentioned in an application are necessarily supposed to represent features of the invention, as they could for instance also relate to prior-art teachings or to comparative examples. This was even (implicitly) confirmed by the respondent himself, who argued at the oral proceedings that the first reference in paragraph [0025], relating to a "self-supporting" web, did not relate to a filtration web, but to a web **per se**, and was therefore not relevant for the present invention.

1.5 Furthermore, taking in particular the wording used in some of paragraphs [0015] to [0025] into account ("The phrase **"..." when used with respect to ..."**; emphasis added), it can only be concluded that a defined meaning can be attributed to the terms at issue only if the exact context of their use is known. For instance, paragraph [0025] reads "The term "self-supporting" ... when used with respect to a web ... and when used with respect to a pleated filter ...". However, the term "self-supporting" is not used in the remainder of the patent. The same is true of the term "nonwoven die". The term "blown microfibers" (definition in paragraph [0021]) was used only with respect to a conventional specimen (paragraphs [0060], [0065] and [0073]).

1.6 Therefore it cannot be concluded from the mere existence of a definition of the term "self-supporting" that this term has been disclosed as a quality

attributed to the invention.

- 1.7 Thus the question is whether the skilled person can recognise directly and unambiguously from the rest of the application as filed that "self-supporting" is a feature according to the invention.
- 1.8 When studying the application as filed, the skilled person understands that the goal of the invention is to obtain filters with improved mechanical properties **or** improved filtration performance (page 1, line 29), i.e. one of two alternatives. Even when focusing only on the mechanical properties, as suggested by the respondent, the feature at issue is not unambiguously derivable from the application as originally filed.

Figure 1 discloses a possible way of producing a web according to the invention, wherein secondary quench air is supplied (page 4, lines 23 to 25). The web has greater anisotropy than webs produced without the use of secondary quench air (page 4, lines 27 to 30). The web can then be pleated as is, or further treated. Preferably a heat treatment is employed to stiffen the web (page 5, lines 17 and 18).

Figures 7 and 8 show pleated filter media. These are described in paragraph [0041]. It is indicated that the increased stiffness of pleated media **and** the substantial machine direction fiber alignment transverse to the row direction are **both** believed to contribute to increased resistance of the pleated media to pleat deformation at high filter face velocities (page 8, lines 13 to 16). Increased stiffness and the direction of the fiber alignment are presented as two independent beneficial characteristics of the pleated media.

Although it is not clear from paragraph [0041] whether the increased stiffness is due only to the pleating of the webs or also to other treatments, the skilled person understands that the specific pleated filter media according to figures 7 and 8 have better resistance to air pressure. However, there is no indication that this resistance is such that the pleats do not collapse or bow excessively when subjected to the air pressure typically encountered in forced air ventilation systems. In other words, it is not directly and unambiguously derivable that the increased resistance of the pleated filter media according to figures 7 and 8 is a synonym of "self-supporting" as defined in paragraph [0025] (see above, reasons 1.2).

In addition, claim 1 as filed contains only a feature related to the alignment of the fibers, but no feature relating to stiffness. Therefore the skilled person cannot directly recognise that the increased resistance indicated for the pleated filter media according to figures 7 and 8 applies to all nonwoven filtration webs having rows of folded pleats as defined in claim 1 of the application as filed.

- 1.9 The pleated filter media may be used in filtration applications, with or without a frame structure, or as an insert in a permanent or reusable frame (paragraph [0044] on page 9, lines 16 and 17). The skilled person understands from this that, depending on the filtration application, it is better to additionally use a frame structure to ensure the improved mechanical properties.

This is also in line with examples 16 to 18 according to the invention. The webs according to examples 16 to 18 have an MD Taber Stiffness of 1.7, 2.2 and 3.7,

respectively. They were formed into filter elements having pleats like the filter media shown in figure 7. They were sandwiched between and glued to expanded metal supports as in figure 8 (page 25, lines 6 to 12). These filters were exposed to flowing air at different velocities. The filters according to examples 16 and 17 exhibited noticeable pleat deformation at 0.9 cm and 1.3 cm of water pressure drop, respectively (page 26, lines 1 to 4). Figure 9 shows that only the filter according to example 18 did not exhibit pleat distortion as airflow increased (page 26, lines 9 to 11). The skilled person learns from this that the filters according to examples 16 and 17, which are according to the invention, apparently do not have pleats that are sufficiently stiff to avoid distortion, while the filter according to example 18 has the desired stiffness. Therefore there is no reason why the skilled person would qualify the filters according to examples 16 and 17 as sufficiently stiff to not collapse or bow excessively when subjected to the air pressure typically encountered in forced air ventilation systems, which is, according to the respondent, a synonym of "self-supporting". This even applies to the filter according to example 18, since it is not derivable whether the result obtained in said example really is a synonym of "self-supporting", because the definition of "self-supporting" is ambiguous and not linked to any specific test result.

The board takes the view that the skilled person does not directly and unambiguously recognise from the very specific filters according to examples 16 to 18, which do have a support, that they can be considered "self-supporting" in view of the presented results. What is more, he cannot derive from the application as filed that all nonwoven filtration webs that have rows of

folded pleats according to claim 1 as filed are supposed to be self-supporting.

1.10 To conclude, it is neither explicitly unambiguously derivable that "self-supporting" is linked to the invention nor implicitly unambiguously derivable that a specific characteristic ("improved mechanical property") of the invention is a synonym of "self-supporting".

1.11 For the reasons given above, the subject-matter of claim 1 as granted goes beyond the original disclosure and therefore does not meet the requirements of Article 123(2) EPC.

## 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:



C. Vodz

E. Bendl

Decision electronically authenticated