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Datasheet for the decision of 10 November 2009

Case Number: T 0578/07 - 3.2.05

Application Number: 99203324.1

Publication Number: 0994287

IPC: F16L 5/10

Language of the proceedings: EN

Title of invention:
Composite sleeve-shaped sealing means

Patentee:
Artech Rubber B.V.

Opponent:
Beele Engineering B.V.

Headword:
-

Relevant legal provisions:
EPC Art. 56, 83, 114, 123(2)

Relevant legal provisions (EPC 1973):
-

Keyword:
"Extension beyond the content of the application as filed: main request - yes; auxiliary request - no"
"Sufficiency of disclosure - yes"
"Late-filed documents - not admitted"
"Inventive step (auxiliary request) - yes"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0578/07 **-** 3.2.05

D E C I S I O N
of the Technical Board of Appeal 3.2.05
of 10 November 2009

Appellant: (Opponent)
Beele Engineering B.V.
Beunkdijk 11
NL-7122 NZ Aalten (NL)

Representative:
van Bouwelen, Franciscus Maria
Hoffmann - Eitle
Patent- und Rechtsanwälte
Arabellastrasse 4
D-81925 München (DE)

Respondent: (Patent Proprietor)
Artech Rubber B.V.
IJslandsestraat 8
NL-7202 CL Zutphen (NL)

Representative:
Ferguson, Alexander
Octrooibureau Vriesendorp & Gaade B.V.
P.O. Box 266
NL-2501 AW Den Haag (NL)

Decision under appeal:
Interlocutory decision of the Opposition Division of the European Patent Office posted 19 January 2007 concerning maintenance of European patent No. 0994287 in amended form, Article 102(3) EPC 1973.

Composition of the Board:

Chairman: W. Zellhuber
Members: H. Schram
E. Lachacinski

Summary of Facts and Submissions

I. The appellant (opponent) lodged an appeal against the decision of the Opposition Division posted on 19 January 2007 maintaining the European patent No. 0 994 287 in amended form on the basis of the second auxiliary request of the respondent (patent proprietor) filed on 7 November 2006.

The Opposition Division held that the grounds for opposition under Article 100(a) EPC (lack of novelty, Article 54 EPC, and lack of inventive step, Article 56 EPC), Article 100(b) EPC (insufficiency of disclosure, Article 83 EPC) and Article 100(c) EPC (subject-matter extending beyond the content of the application as filed, Article 123(2) EPC) did not prejudice the maintenance of the patent in amended form.

II. Oral proceedings were held before the Board of Appeal on 10 November 2009. The representative of the respondent had informed the Board on 16 October 2009, that neither he, nor the respondent, would attend the oral proceedings.

III. The appellant requested that the decision under appeal be set aside and that the patent in suit be revoked.

The respondent requested as a main request that the appeal be dismissed, or, as an auxiliary measure, that the decision under appeal be set aside and that the patent in suit be maintained on the basis of claims 1 to 14 filed as auxiliary request 1 on 16 October 2009. The respondent further requested that documents D14 to D18 not be admitted into the appeal proceedings, and, in case the Board would admit any of

these documents, that the case be remitted to the first instance and the costs in connection with further prosecution before the first instance be reimbursed.

IV. Claims 1 and 15 as maintained by the Opposition Division read as follows:

"1. Assembled sleeve-shaped sealing means (1, 4) for the sealing of the annular space (18) between two partly overlapping bodies (2, 3) having walls of a different diameter, such as two pipes or a line and a wall passage for it, in which the sealing means comprises a cylindrical casing (5) having an axis and being composed of two or more similar longitudinal members and an end flange (6) formed at one end of the casing, which are intended to be accommodated in the annular space and to be placed against the end edge of the widest pipe or line (2), respectively, the casing at its outer surface being provided with a number of first circumferential ribs (7) spaced apart in axial direction, and at its inner surface being provided with a number of second circumferential ribs (8) spaced apart in axial direction, characterized in that a final second circumferential rib (8a) is formed at said one end of the casing at the inner circumference of the end flange (6), which rib is provided with a circumferential, axially extending annular abutment plane (16) for abutment against the narrow line or pipe, in which before use the final second circumferential rib (8a) has a largest radial height in the end plane (17) of the flange (6), thereby forming a barrier in the end plane of the flange during use, in which the end plane (17) of the end flange is formed a little conically sloping toward the outer edge."

"15. Assembly of two bodies (2, 3) having walls of a different diameter which reach into each other in a coaxial manner to define an annular space to be sealed, such as two pipes of a different diameter or a line and a wall passage for it, characterized in that the annular space is sealed by means of an assembled sleeve-shaped sealing means (1, 4) according to any one of the preceding claims, in which the outer diameter of the first circumferential ribs (7) and the inner diameter of the second circumferential ribs (8) are adjusted such to the outer diameter of the smallest pipe of the smallest pipe or line (3) and the inner diameter of the largest pipe or wall passage (2), that by means of pressing-in against the wall concerned of the largest pipe or passage, the circumferential ribs are sealingly clamped."

Claim 1 of auxiliary request 1 differs from claim 1 as maintained in that the expression "a final second circumferential rib (8a) is formed" is replaced by "a final second circumferential rib (8a) is substantially shape-retaining and is formed". Claim 14 of auxiliary request 1 corresponds to claim 15 as maintained.

V. The following documents were ***inter alia*** referred to in the appeal proceedings:

D1 GB-A 2 032 015

D4 US-A 5,653,452

D14 US-A 5,237,789

D15 DE-A 26 07 983

D16 CH-B 436 880

D17 GB-A 1 283 489

D18 DE-OS 1 185 431

Documents D14 to D18 were filed by the appellant on 9 October 2009.

VI. The arguments of the appellant, in writing and during the oral proceedings, can be summarized as follows:

The feature "thereby forming a barrier in the end plane of the flange during use" in claim 1 as maintained was not disclosed in the application documents as filed, contrary to Article 123(2) EPC. The word "thereby" made it clear that the contentious feature was the result of the preceding feature, viz. "[in which before use] the final second circumferential rib (8a) has a largest radial height in the end plane (17) of the flange (6)". However, from the fact that rib 8a had a largest radial height in the end plane 17 of the flange it did not follow directly and unambiguously that the rib 8a formed in use a barrier in the end plane 17 of the flange. When the sleeve-shaped sealing means were inserted in the annular space between the two partly overlapping bodies, the rib 8a would not necessarily form a barrier in the end plane of the flange, because the flange and the rib 8a would be bent backwards as a result of the contact friction between the outer surface of the inner pipe and the abutment plane 16 of rib 8a, thus creating a small gap between the outer surface of the inner pipe and the

end plane 17 of the flange 6. In order to achieve the desired effect, ie that the final second circumferential rib 8a formed a barrier in the end plane of the flange during use, additional features were cited in the application, eg that rib 8a was shape-retaining and that a thickened portion 13 was present between the end flange and the final first circumferential rib 7, see paragraphs [0032] and [0034] of the application as filed (published version). These additional features were missing in claim 1 as maintained.

The specification was silent about the dimensions of the final second circumferential rib 8a. The person skilled in the art needed these dimensions for making a shape-retaining final second circumferential rib 8a, since the dimensions of the rib were critical for ensuring that said rib indeed formed a barrier in the end plane of the flange during use, cf. paragraph [0032] of the patent in suit. The invention claimed in claim 1 of auxiliary request 1 was therefore not sufficiently disclosed.

Document D1 represented the closest prior art. This document disclosed all the features of the preamble of claim 1 of auxiliary request 1. The Opposition Division held in its decision under appeal that claim 1 as granted, and claim 1 of the (then) auxiliary request 1 with an additional feature not present in claim 1 as granted, namely that rib 8a was substantially shape-retaining, did not involve an inventive step with respect to documents D1 and D4. It maintained the patent on the basis of another additional feature that the end plane of the end flange was formed a little conically sloping toward the outer edge, cf. the last characterizing feature of claim 1 of auxiliary request 1. However, this feature was

obvious to a person skilled in the art, see paragraph [0035] of the patent in suit, and was also known from the prior art, see eg documents D17 and D18. The characterizing features of claim 1 of auxiliary request 1 were known in combination from each of the documents D14 to D16. It followed that claim 1 of auxiliary request 1 did not involve an inventive step with respect to documents D1 and D4 and common general knowledge as exemplified by documents D17 and D18, and with respect to document D1 and any of the documents D14, D15 or D16.

The respondent had failed to file a description of the patent in suit that had been brought into conformity with the claims according to auxiliary request 1, although it chose of its own volition not to appear at oral proceedings. It was not fair to the appellant and to the public if the Board were to remit the case to the department of first instance thereby allowing the respondent to adapt the description, since this should have been done earlier.

VII. The respondent's arguments in writing can be summarized as follows:

The assembled sleeve-shaped sealing means comprised a final second circumferential rib which was provided with a circumferential, axially extending annular abutment plane for abutment against the narrow line or pipe, see claim 1 as maintained. Furthermore, the annular abutment plane ended in the end plane of the flange, so that the annular abutment plane abutted the outer surface of the smaller pipe 3 tightly and level, see paragraph [0032] of the application as filed (published version).This was

clearly shown in Figure 2 of the application as filed (published version). From this, the person skilled in the art would directly and unambiguously deduce that in effect, during use, a barrier—not a seal—was formed in the end plane of the flange. Mentioning this effect in claim 1 as maintained did not contravene Article 123(2) EPC.

Figures 1 and 2, and the description thereof, provided the person skilled in the art with a detailed example of how to form the final second circumferential rib. The requirements of Article 83 EPC were thus met.

The Opposition Division correctly held that the feature "*the end plane (17) of the end flange is formed a little conically sloping toward the outer edge*" contributed to the barrier effect. The person skilled in the art did not have any hint to combine any of the prior art documents, in particular documents D1 and D4 and to further modify the already modified end plane of the flange by additionally shaping it conically. The subject-matter of claim 1 as maintained therefore involved an inventive step.

The appellant filed the documents D14 to D18 on 9 October 2009, more than five years after the expiry of the opposition period and almost 30 months after expiry of the time limit for filing the statement of grounds for appeal. No reasons were provided why the documents could not have been filed earlier. These documents should therefore not be admitted into the appeal proceedings.

Reasons for the Decision

MAIN REQUEST

1. *Allowability of the amendments, Article 123(2) EPC*

Claim 1 as maintained is directed to an "assembled sleeve-shaped sealing means (1, 4) for the sealing of the annular space (18) between two partly overlapping bodies (2, 3) ...". The wording of the claim 1 as maintained, cf. *[the sealing means ... and an end flange ...] which are intended to be accommodated in the annular space and to be placed against the end edge of the widest pipe or line (2), respectively*, makes it clear that the claim relates to an "assembled sleeve-shaped sealing means" before use, ie before it is accommodated in the annular space.

The feature "*thereby forming a barrier in the end plane of the flange during use*" (henceforth referred to as barrier feature) must be construed as meaning that the sealing means before use, viz. the final second circumferential rib (8a) thereof, is suitable for, or capable of, forming a barrier in the end plane of the flange during use. For this reason, in the following what is disclosed in the application as filed (henceforth reference is made to the published version) about the sleeve-shaped sealing means during use must be examined. Moreover, claim 15 as maintained rather than claim 1 as maintained is examined, since the assembled sleeve-shaped sealing means reiterated in claim 15 as maintained are sealing means during use, said means must not merely be suitable for, or capable of, forming a barrier in the end plane of the flange, it must actually form a barrier. This is a more stringent requirement.

In paragraph [0034] of the application as filed it is pointed out that during insertion of the sealing means, the circumferential ribs 7 will be bent backwards as a result of contact with the inner surface of the widest pipe 2. It is clear that during insertion of the sealing means the final second circumferential rib 8a may be bent backwards as well, with the result that it will no longer abut the outer surface of the pipe 3 tightly and level, unless said rib 8a is substantially shape-retaining, cf. paragraph [0032] of the application as filed.

Although the feature that the final second circumferential rib is substantially shape-retaining is generally described in paragraph [0011] of the application as filed as a preferred feature (cf. claim 2 as filed), this was with respect to claim 1 as filed, ie before the barrier feature was added.

In the judgment of the Board, the final second circumferential rib of the assembled sleeve-shaped sealing means reiterated in claim 15 as maintained must be shape-retaining for ensuring that a barrier is formed in the end plane of the flange during use.

Claim 15 as maintained is directed to an assembly of two partly overlapping bodies, defining an annular space between them, which space is sealed by means of an assembled sleeve-shaped sealing means 1, 4 according to any one of the preceding claims, including claim 1 as maintained according to which the final second circumferential rib (8a) is not necessarily substantially shape-retaining.

Claim 15 as maintained therefore introduces subject-matter that extends beyond the content of the application as filed, Article 123(2) EPC.

It follows that the main request of the respondent is not allowable.

AUXILIARY REQUEST 1

2. *Allowability of the amendments, Article 123(2) EPC*

Claim 1 of auxiliary request 1 specifies that the final second circumferential rib (8a) is substantially shape-retaining. Such a final second circumferential rib is suitable for, or capable of, forming a barrier in the end plane of the flange during use. The amendment overcomes the objection raised by the appellant that the barrier feature introduced subject-matter extending beyond the content of the application as filed, Article 123(2) EPC.

Consequently, claim 14 of auxiliary request 1, which refers back to any one of the preceding claims, including claim 1 of auxiliary request 1 also meets the requirements of Article 123(2) EPC, cf. point 1 above.

The appellant has argued that a further amendment was necessary in order to ensure that the final second circumferential rib 8a formed a barrier in the end plane of the flange during use, namely the presence of a thickened portion 13.

This cannot be followed. The purpose of the thickened portion 13 is to keep the end flange 6 against the pipe end edge with a view to prevent a leakage along the path

D shown in Figure 2, see paragraph [0034] of the application as filed (published version), wherein it is stated"*... as a result of circumferential rib 8a with the abutment plane 16 pressed against the pipe 3 and because of the thickened portion 13 which keeps the end flange 6 against the pipe end edge, also a leakage path along C and D will be prevented to a large extent*." It is clear that as a result of circumferential rib 8a with the abutment plane 16 pressed against the pipe 3 only a leakage path along C will be prevented.

Claims 1 and 14 of auxiliary request 1 do not therefore extend beyond the content of the application as filed, Article 123(2) EPC.

3. *Sufficiency of disclosure, Article 83 EPC*

The appellant has submitted that the invention was not sufficiently disclosed, because the specification failed to specify the width and the height of the final second circumferential rib 8a, which were critical parameters for assuring that the final second circumferential rib 8a would not bend during insertion of the assembled sleeve-shaped sealing means into the annular space, cf. see paragraph [0032] of the patent in suit.

However, in paragraphs [0027] to [0029] of the patent in suit numerical values for the seven diameters D1 to D7 shown in Figure 1 are given, from which approximate values of the width and the height of the final second circumferential rib 8a shown in Figure 1 can be obtained. A preferred material of the sealing means is given in paragraph [0027] of the patent in suit. The appellant has failed to prove that it was an undue burden for the

person skilled in the art to construct an assembled sleeve-shaped sealing means meeting all the requirements of claim 1 of auxiliary request 1 on the basis of, or starting from, the assembled sleeve-shaped sealing means described in paragraphs [0027] to [0029] of the patent in suit and shown in Figure 1.

The invention claimed in claim 1 of auxiliary request 1 is therefore disclosed in a manner sufficiently clear and complete to be carried out by a person skilled in the art, Article 83 EPC.

4. *Objection of lack of inventive step, Article 56 EPC*

4.1 The problem the invention seeks to solve is to improve the sealing of the sleeve-shaped sealing means known from document D1, see paragraphs [0007] and [0008] of the patent in suit.

This improvement consists in particular in the provision of a substantially shape-retaining final second circumferential rib (8a), which has a largest radial height in the end plane of the flange, cf. features (i) to (iv) recited below.

Document D1 represents the closest prior art. This document discloses an assembled sleeve-shaped sealing means which is split in two parts, ie its cylindrical casing has an axis and is composed of two similar longitudinal members, having all the features of the preamble of claim 1 of auxiliary request 1.

The subject-matter of claim 1 of auxiliary request 1 differs from the sleeve-shaped sealing means known from document D1 in that:

(i) a final second circumferential rib (8a) is substantially shape-retaining and is formed at said one end of the casing at the inner circumference of the end flange (6), which rib is provided with a circumferential, axially extending annular abutment plane (16) for abutment against the narrow line or pipe,

(ii) in which before use the final second circumferential rib (8a) has a largest radial height in the end plane (17) of the flange (6),

(iii) thereby forming a barrier in the end plane of the flange during use,

(iv) in which the end plane (17) of the end flange is formed a little conically sloping toward the outer edge.

The appellant has submitted that features (i) to (iii) were known from document D4 and that feature (iv) was trivial for the person skilled in the art. Whilst the Board agrees with the latter, namely that it was obvious to the person skilled in the art to provide the flange with an end plane conically sloping toward the outer edge with a view to prevent that—if the pipes are vertically arranged—moisture is left on the end plane (cf. paragraph [0035] of the patent in suit), it does not agree with the former.

Document D4 discloses a socket joint ("sealing means") for plastic pipes. The sealing means known from document D4 comprises a radially inwardly directed annular flange,

the inner diameter of which corresponds to the inner diameter of the narrowest pipe to be connected, see column 3, lines 46 to 53. This flange is not intended to be placed against the end edge of the widest pipe as in the invention. Unlike the sealing means of the invention, the sealing means known from document D4 is not composed of two or more similar longitudinal members, does not have an outwardly directed end flange in the sense of the invention and cannot be inserted into the annular space between two partly overlapping bodies. In document D4 the spigot end of the narrowest pipe to be connected cannot be inserted in the widest pipe unless the socket joint is placed in the widest pipe, or around the narrowest pipe. Document D4 is silent about whether the final support seal 7 on the inner circumference of the cylindrical frame section shown at the far left of Figure 2 is shape-retaining or not. The material of the sealing unit including the support seals 7 is said to be a thermoplastic rubber (whereby the support seals 7 may also be made of a different material), there is no disclosure that the support seals abutting the spigot end 1a are substantially shape-retaining.

It follows that document D4 does not disclose any of the characterizing features (i) to (iv) of claim 1 of auxiliary request 1.

In the judgment of the Board, the person skilled in the art starting from the assembled sleeve-shaped sealing means known from document D1, and seeking to improve the known sealing means would not have arrived at the subject-matter of claim 1 of auxiliary request 1 on the basis of document D4 and/or his or her general technical knowledge.

4.2 The subject-matter of claim 1 of auxiliary request 1 therefore involves an inventive step having regard to documents D1 and D4, Article 56 EPC.

The subject-matter of claims 2 to 13 which are dependant on claim 1 of auxiliary request 1 similarly involves an inventive step.

This applies ***mutatis mutandis*** to claim 14 of auxiliary request 1, which is directed to an assembly of two bodies defining an annular space between them, which is sealed by means of the assembled sleeve-shaped sealing means according to any of the claims 1 to 13 of auxiliary request 1.

4.3 The appellant filed documents D14 to D18 for the first time during the appeal proceedings, on 9 October 2009, one month before the oral proceedings before the Board. The reason given by the appellant at the oral proceedings for the late-filing of the documents was that the Board had stated in its communication annexed to the summons, that the appellant's position seemed to be that feature (iv) of claim 1 as maintained was obvious to the person skilled in the art "***although not shown in any of the cited documents***".

Document D14 relates to a clamp for a roof device. In Figure 2 a grommet 42 is shown, which end plane is formed conically sloping towards the edge, thus providing similar advantages as stated in paragraph [0035] of the patent in suit. However, a grommet is not even remotely a sealing means for sealing of the annular space between two partly overlapping bodies as defined in the preamble

of claim 1 of auxiliary request 1. The grommet has no end flange intended to be a placed against the end edge of the widest pipe. Document D14 does not disclose any of the characterizing features (i) to (iv) of claim 1 of auxiliary request 1.

Document D15 discloses a sleeve tubing seal for cast-iron pipes comprising an annular flange 10, which end plane, ie the radial cross-section thereof, has the form of a quarter of a circle, see Figure 2, and page -3-, last paragraph. A circular end plane cannot fairly be said to be conically sloping toward the outer edge. There is no disclosure that the material of the annular flange 10, which includes a part (abutment plane 12) abutting pipe 28, is shape-retaining. The characterizing features (i), (iii) and (iv) of claim 1 of auxiliary request 1 are hence not disclosed in document D15.

Document D16 concerns a pipe connection comprising a sealing ring 5 and a cylindrical sleeve 4 made from an elastic material, for example rubber, or a suitable plastics material (see column 2, lines 17 to 19), having a beadlike element ("Wulst 4b") that prevents the penetration of condensed water and dirt into the annular space 3, see column 3, lines 23 to 28, and Figure 8. However, element 4b is not a flange in the sense of the invention, since it cannot be placed against the end edge of the widest pipe. There is no disclosure that the material of the element 4b is shape-retaining. Document D16 therefore discloses none of the characterizing features (i) to (iv) of claim 1 of auxiliary request 1.

Whilst the sealing means known from documents D17 and D18 comprise a cylindrical casing, neither the outer surface

nor the inner surface of that casing is provided with circumferential ribs. These documents do not disclose any of the characterizing features (i) to (iv) of claim 1 of auxiliary request 1.

In exercising its discretionary power under Article 114 EPC, none of the documents D14 to D18 are admitted by the Board into the appeal proceedings, since taking these documents into account could not have lead to a different conclusion than the one expressed in point 4.2 above.

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 on the basis of claims 1 to 14 filed as auxiliary request 1 on 16 October 2009 and the description to be adapted.

The Registrar: The Chairman:

N. Maslin W. Zellhuber