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D E C I S I O N
of 30 May 2006

Case Number: T 0286/05 - 3.3.03

Application Number: 97931188.3

Publication Number: 0907682

IPC: C08L 23/04

Language of the proceedings: EN

Title of invention:
Cable jacket

Patentee:
UNION CARBIDE CHEMICALS & PLASTICS TECHNOLOGY CORPORATION

Opponent:
Borealis Technology OY

Headword:
-

Relevant legal provisions:
EPC Art. 123(2)

Keyword:
"Extension of subject-matter (yes)"

Decisions cited:
T 0201/83, T 0383/88, T 0873/94, T 0714/00

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0286/05 - 3.3.03

D E C I S I O N
of the Technical Board of Appeal 3.3.03
of 30 May 2006

Appellant: (Patent Proprietor)
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Decision under appeal: **Interlocutory decision of the Opposition Division of the European Patent Office dated 24 November 2004 and posted 11 January 2005 concerning maintenance of European patent No. 0907682 in amended form.**

Composition of the Board:

Chairman: R. Young
Members: C. Idez
C. Heath

Summary of Facts and Submissions

I. The grant of the European patent No. 0 907 682 in the name of Union Carbide Chemicals & Plastics Technology Corporation in respect of European patent application No. 97 931 188.3 filed on 20 June 1997 and claiming priority in respect of the US patent application No 669603 filed on 24 June 1996 was announced on 15 November 2000 (Bulletin 2000/46) on the basis of 7 claims.

Claim 1 read as follows:

"A cable comprising one or more communications media or electrical conductors, or a core of two or more communications media or electrical conductors, each communications medium, electrical conductor, or core being surrounded by at least two layers, an inner insulating layer and an outer jacketing layer having a thickness in the range of about 0.5 to about 2.5 mm (about 20 to about 100 mils), said jacketing layer comprising an in situ blend of two copolymers of ethylene and one or more alpha-olefins having 3 to 12 carbon atoms, said blend having an Mw/Mn ratio in the range of about 8 to about 22; a melt index as determined under ASTM D-1238, Condition E, at 190°C and 2.16 kg in the range of about 0.2 to about 3.5 grams per 10 minutes; a melt flow ratio in the range of about 55 to about 135; a molecular weight in the range of about 90,000 to about 250,000; and a density of at least 0.915 gram per cubic centimeter."

Claims 2 to 7 were dependent claims.

II. On 14 August 2001, a Notice of Opposition was filed against the patent by Borealis Technology OY in which revocation of the patent in its entirety was requested on the grounds of lack of novelty and lack of inventive step (Article 100(a) EPC), on the ground of insufficiency of disclosure (Article 100(b) EPC), and on the ground of extension of subject-matter (Article 100(c) EPC).

The opposition was supported *inter alia* by the following documents:

D2: US-A-5 382 631;
D3: WO-A-97/03 124;
D4: Specification for Polyethylene-Insulated Copper-Conductor Telecommunication Distribution Cables, BS 3573: 1972; British Standards Institution; pages 4 to 13 (1972) together with amendments slip No. 1, pages 1 to 3 (1976);
D5: Thermoplastic-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy; NEMA Standards Publication No. WC 5-1992, Revision 1, ICEA Publication No. S-61-402; pages 21 to 26;
D6: US-A-5 126 398; and the later filed, but admitted
D7: US-A-4 547551.

III. By an interlocutory decision announced orally on 24 November 2004, and issued in writing on 11 January 2005, the Opposition Division held that the grounds of opposition did not prejudice the maintenance of the patent in amended form.

The decision of the Opposition Division was based on a main request as submitted by the Patent Proprietor at the oral proceedings of 24 November 2004, and on an auxiliary request submitted by the Patent Proprietor with its letter dated 17 September 2004.

As can be deduced from the Minutes of the Oral Proceedings (see paragraph 1) the set of claims of the Main request of the Patent Proprietor differed from the set of claims as granted only in that granted Claim 4 had been made dependent on Claim 2.

Claim 1 of the auxiliary request read as follows:
"A cable comprising one or more communications media, or a core of two or more communications media, each communications medium or core being surrounded by at least two layers, an inner insulating layer and an outer jacketing layer having a thickness in the range of about 0.5 to about 2.5 mm (about 20 to about 100 mils), said jacketing layer comprising an in situ blend of two copolymers of ethylene and one or more alpha-olefins having 3 to 12 carbon atoms, said blend having an Mw/Mn ratio in the range of about 8 to about 22; a melt index as determined under ASTM D-1238, Condition E, at 190°C and 2.16 kg in the range of about 0.2 to about 3.5 grams per 10 minutes; a melt flow ratio in the range of about 55 to about 135; a molecular weight in the range of about 90,000 to about 250,000; and a density of at least 0.915 gram per cubic centimeter."

Claims 2 to 6 of the auxiliary request were dependent claims.

In its decision, the Opposition Division held that Claim 1 of the main request which corresponded to Claim 1 of the patent as granted did not meet the requirements of Article 123(2) EPC, since there was no support in the original application for an electrical conductor [sic] having a thickness in the range of 0.5 to 2.5 mm.

Concerning the auxiliary request, it was considered that Claims 1 to 6 thereof were admissible under Articles 123(2) and (3) EPC. According to the decision, this was not contested by the Opponent.

The Opposition Division took the view that the teaching of the patent was sufficiently disclosed in order to enable the skilled person to carry out the invention (Art. 83 EPC).

According to the decision, the subject matter of Claim 1 of the auxiliary request was considered as novel. In that respect, the Opposition Division did not accept the argument of the Opponent that Example 3 of document D3 was novelty destroying for the subject-matter of that claim.

According to the decision, the object of the patent was to provide a cable having a jacket, having high tensile strength, high elongation and improved low temperature brittleness as compared with LLDPE (paragraph [0005] of the patent specification).

Document D6 was considered as the closest state of the art since it related also to a process for the in situ blending of polymers which can be used for inter alia

"wire and cable applications". According to the decision, D6 did not address the problem of improved low temperature brittleness.

The Opposition Division came to the conclusion that D6 taken in combination with D2 and/or D7 would not render the claimed subject-matter obvious because none of these two documents related to a material having improved low temperature brittleness for use in communication cables.

IV. Notices of Appeal were filed on 4 March 2005 by the Opponent (Appellant I), and on 21 March 2005 by the Patent Proprietor (Appellant II). The prescribed fees were paid on the same day, respectively.

V. In the Statement of Grounds of Appeal filed on 11 May 2005, Appellant II presented arguments concerning the allowability under Article 123(2) EPC of the main request which had been refused by the Opposition Division. These arguments may be summarized as follows:

(i) This request had been refused under Article 123(2) EPC on the ground that subject matter was added to Claim 1 during prosecution of the application.

(ii) The Opposition Division found that there was no basis for indicating that the electrical conductor has a thickness of 0.5 to 2.5 mm.

(iii) It was presumed that the Opposition Division intended to refer to the thickness of the outer jacketing layer rather than the thickness of the electrical conductor.

(iv) Claim 1 as originally filed contained no restriction regarding the thickness of the outer jacketing layer.

(v) The Opposition Division seemed to have used a novelty test rather than the tests normally used by the Boards of Appeal.

(vi) In the present case, a limiting feature had been added to original Claim 1, namely that the outer jacketing layer had a thickness of 0.5 to 2.5 mm.

(vii) Application of a novelty test was not appropriate to determine whether or not the amendment complied with Article 123(2) EPC. Reference was made in that respect to the decision T 873/94 (OJ EPO 1997, 456).

(vii) The amendment made during the prosecution of the patent in suit was clearly allowable because the feature of the jacketing layer having a thickness of 0.5 to 2.5 mm was not inextricably linked with further features which were not included in Claim 1. Reference was made to decisions T 714/00 of 6 August 2002 (not published in OJ EPO) and T 201/83 (OJ EPO 1984, 481).

(viii) According to page 14 of the application as filed, "in a telecommunications cable, the jacketing layer thickness can be about 20 to about 100 mils with a preferred range of about 30 to 80 mils". 20 to 100 mils corresponded to 0.5 to 2.5 mm.

(ix) The feature that the thickness of the outer jacketing layer might be from 0.5 to 2.5 mm was clearly

not inextricably linked with the cable being a telecommunications cable.

(x) It was self evident to one skilled in the art that both communications media and electrical conductors might have an outer jacketing layer having a thickness of 0.5 to 2.5 mm and that this feature was not inextricably linked with communications cables.

(xi) Page 32 of the application as filed referred to the compositions of Examples 1 to 6 being extruded onto copper wire with a targeted jacket thickness of 30 mils (about 0.75 mm). Copper wire could act both as a communications media or an electrical conductor.

(xii) Tables 4-4 and 4-5 of document D5 which was concerned with electric cables, specified that the jacket thickness was similar to the range set forth in Claim 1 of the patent in suit.

(xiii) Furthermore, as pointed out by the Opponent, the cable jacket thickness was not a parameter open to inventive activity since it was fixed by governmental and/or industrial specifications.

(xiv) Thus, one skilled in the art would immediately recognise that the thickness of the jacketing layer being from 0.5 to 2.5 mm was not restricted to communications media but can also be applied to electrical conductors.

VI. With the Statement of Grounds of Appeal submitted on 20 May 2005, Appellant I filed 6 new documents. It also submitted arguments concerning sufficiency of

disclosure, novelty, inventive step and the allowability of the main request of the Patent Proprietor under Article 123(2) EPC. The arguments presented in that respect may be summarized as follows:

(i) In the application document as originally filed the only instances where it was dealt with the thickness of the jacketing layer were Claim 2 and page 14, last sentence of the first paragraph. These passages of the original application, however, related exclusively to telecommunications cables.

(ii) Documents D4 and D5 proved that the outer jacketing layer thickness of communication and electrical conductor cables differed significantly.

(iii) Thus, it was clear for the skilled person that values given for the thickness of an outer jacket of a communication cable could not be transferred to an electrical power cable. This could also be easily understood from a technical point of view considering the different nature and power loads of the conductors of a communication cable and an electrical power cable.

(iv) It was agreed that the thickness of cable jackets was a parameter not open to inventive activity. The decisive question was however whether an amendment could be directly and unambiguously deduced from the application documents as filed.

(v) This was clearly not the case for the thickness of a jacketing layer of an electrical power cable in the present case.

VII. In its letter dated 26 September 2005, Appellant I while essentially relying on the arguments presented in its Statement of Grounds concerning the allowability of granted Claim 1 under Article 123(2) EPC, made further submissions in that respect which may be summarized as follows:

(i) An unwarranted advantage would certainly be given for a patent proprietor if it was allowed contrary to decision T 714/00 to extract an isolated feature from a combination where that feature was inextricably linked with the remainder of the features of that combination.

(ii) In the present case, there was a clear and unambiguous, i.e. "inextricable", linkage between the features of "telecommunications cables" and "jacketing layer thickness of 0.5 to 2.5 mm", because this was suggested by the application as filed, and because there was a technical reason for this linkage.

VIII. In its letter dated 6 December 2005, Appellant II requested as an Auxiliary Request I that the patent be maintained in the form allowed by the Opposition Division. Concerning the allowability of the main request under Article 123(2) EPC, it argued essentially as follows:

(i) The Opponent had relied on D4 and D5 to indicate that the thickness of the outer jacketing layers differed dramatically for communications and electrical power cables with the same overall diameter.

(ii) This, however, did not alter the fact that the outer jacketing layer thickness could be within the range claimed by the Patentee in the Main Request.

(iii) Furthermore, the Opponent's argument was baseless because it assumed that the Patent Proprietor must claim the entire breadth of ranges possible in order to have a valid claim.

IX. In its letter dated 23 March 2006, Appellant I presented further arguments concerning sufficiency of disclosure, novelty and inventive step.

X. With its letter dated 26 May 2006, Appellant I withdrew its appeal. It further indicated in this letter that it would not be represented at the oral proceedings before the Board scheduled to take place on 30 May 2006.

XI. Oral proceedings were held before the Board on 30 May 2006, in the absence of the Opponent (now Respondent).

Following preliminary considerations of the Board concerning the exact wording of the Main Request of the Appellant (Patent Proprietor), the Appellant indicated that its Main Request differed from the set of Claims as granted only in that Claim 4 had been made dependent on Claim 2, and filed a copy a this main request.

The discussion was then focussed on the allowability of the main request under Article 123(2) EPC.

The Appellant, while relying on its arguments presented in that respect in the written phase of the appeal

proceedings made the additional submissions which may be summarized as follows:

(i) In Claim 1 as originally filed, there was no limitation concerning the thickness of the jacketing layer, either for a telecommunication cable or for cables for electrical conductors.

(ii) In Claim 2 as originally filed, which referred to communication cables, it was mentioned that the thickness of the jacketing layer was in the range between 20 and 100 mils.

(iii) In the course of the examination proceedings, this feature had been incorporated in Claim 1 in respect to communication cable and cables for electrical conductors.

(iv) The thickness of the jacketing layer was not a relevant feature for inventive step.

(v) The incorporation of the thickness of the jacketing layer represented a restriction of the claimed subject-matter. In that respect reference was made to the decision T 873/94, in which the Board had allowed an amendment in a claim consisting in the introduction of an undisclosed limiting feature in that claim, since it was clear for the skilled person, in view of the original description, that the scope of the original claim encompassed this variant, and that hence the amended claim did not extend beyond the content of the application as filed.

(vi) In the present case, the skilled person would have understood that a jacketing layer with a thickness of 20 to 100 mils could also be used for electrical cables.

(vii) This was also supported by the fact that the thickness range defined in Claim 1 was within the range defined for electrical cables in D5 (cf. Tables 4-6 and 4-7 of D5).

XII. The Appellant requested that the decision under appeal be set aside and the patent be maintained based on the main request as filed in the oral proceedings.

Reasons for the Decision

1. The appeal is admissible.

2. *Procedural matters*

2.1 As mentioned in Section X above, the Opponent (Appellant I), in its letter dated 26 May 2006, withdrew its appeal and informed the Board that it would not attend the oral proceedings scheduled to take place on 30 May 2006.

2.2 In accordance with Rule 71(2)EPC, the proceedings were continued without the Opponent (Respondent). It further follows, that, in accordance with Article 11(3) of the Rules of Procedure of the Boards of Appeal, the Board considers that the absent party relied only on its written submissions.

Main Request

3. *Article 123(2) EPC*

3.1 As indicated above in Section XI, Claim 1 of the Main Request corresponds to Claim 1 as granted.

3.2 Claim 1 as granted differs from Claim 1 as originally filed

(i) in that the melt index of the blend is determined under ASTM D-1238, Condition E, at 190°C and 2.16 kg;

(ii.a) in that the outer jacketing layer has a thickness in the range of about 0.5 to 2.5 mm (about 20 to about 100 mils) for a cable comprising one or more communication media or a core of two or more communication media; and

(ii(b)) in that the outer jacketing layer of cables comprising electrical conductors, or a core of two or more electrical conductors has a thickness in the range of about 20 to 100 mils (i.e. about 0.5 to about 2.5 mm).

3.3 While it is immediately evident that amendment (i) finds its basis on page 11, lines 7 to 9 of the application as originally filed, and that amendment (ii.a) is supported by original Claim 2 and page 14, lines 26 to 29 of the application as originally filed, it remains to be checked whether there is a basis in the application as originally filed for amendment (ii.b).

3.4 In this connection, the Board can only state that there is no explicit basis for this amendment in the application as originally filed.

3.5 Thus, it must be examined whether this amendment can be directly and unambiguously implicitly derived from the application as originally filed, taking into account, as indicated in the decision T 383/88 of 1 December 1992 (not published in OJ EPO; Reasons point 2.2.2), that the slightest doubt as to the derivability of the amendment from the unamended document would rule out the amendment.

3.6 The Appellant has submitted that the thickness range of 0.5 to 2.5 mm which had been explicitly disclosed in respect of a telecommunication cable in the application as filed (page 14, lines 26 to 29; Claim 2) was not inextricably linked with telecommunication cables and it has, in that respect, referred to the decisions T 714/00 and T 201/83 for justifying the allowability under Article 123(2) EPC of the incorporation in Claim 1 of the thickness range 0.5 to 2.5 mm for the jacketing layer in respect to cables comprising electrical conductors. The Appellant has further submitted that the introduction of the range from 0.5 to 2.5 mm for the thickness of the jacketing layer represented a limitation in view of the scope of original Claim 1 and that the skilled person would have immediately recognized that this range of thickness was not restricted to communication media but could also be applied to electrical conductors and it has relied on decision T 873/94 for supporting the allowability under Article 123(2) EPC of the amendment (ii.b).

3.7 Concerning the first argument of the Appellant, the Board notes that, while decision T 714/00 states in paragraph 3.3 of the Reasons, that "extracting an isolated feature from an originally disclosed combination and using it for delimiting the claimed subject-matter can only be allowable under the concept of Article 123(2) EPC if that feature is not inextricably linked with further features of that combination", the Board in charge of that case indeed elaborated this statement by relying on the principles set out in decision T 201/83 (cf. T 714/00 Reasons point 3.4 and 3.5) according to which an amendment is allowable on the basis of a particular value disclosed in a specific example, "provided the skilled man could have readily recognized this value as not so closely associated with the other features of the example as to determine the effect of that embodiment of the invention as a whole in a unique manner and to a significant degree".

3.8 In this context, the Board notes that, as submitted by the Opponent and not contested by the Appellant, the cable jacket thickness for telecommunication cables and electrical cables is fixed by specifications prescribed by government and/or industry.

3.9 The Board notes, however, that there are, on the one hand, specific regulations for telecommunication cables (cf. document D4), and, on the other hand, specific regulations for electrical cables (cf. document D5). In that respect, while D4 and D5 respectively prescribe the thickness of the jacketing layer for telecommunication cables (D4) and for electrical cables (D5) in relation to the diameter of the cables, it is

immediately evident that for the same cable diameter, the thickness of the jacketing layer differs significantly for electrical cables and communication cables (cf. Tables 5 and 8 on Amendment Slip No. 1 of D4; Table 4-7 of D5).

3.10 This implies, in the Board's view, that the thickness of the jacketing layer for both a telecommunication cable and an electrical cable is defined by the diameter of the cable and its use. In other words, this reciprocally implies that the indication of the thickness of the jacketing layer of a telecommunication cable is inherently closely associated with the function and the diameter of the cable, and that the indication of the thickness of the jacketing layer inherently defines the diameter of the cable.

3.11 Consequently, there is, in the Board's view, a reasonable doubt as to whether there is a loose connection between the thickness of the jacketing layer, the cable diameter and the cable type, and hence whether the skilled man would treat them as features that could be separately considered, and consequently as to whether the skilled man could have readily recognised that the value of the thickness range indicated on page 14 of the original description, and in original Claim 2 was not closely associated with the kind of cable (cf. also T 201/83, Reasons point 9 and T 714/00 Reasons point 3.4).

3.12 It thus follows that amendment (ii.b) does not fulfil the conditions set out in decisions T 201/83 and T 714/00 for an allowable amendment under Article 123(2) EPC.

3.13 In the case under consideration in decision T 873/94, the single claim of the application as filed defined a semi-conductor device in form of a pull-up element. According to this decision, the p-n junction diode of the pull-up element was not defined as an Esaki diode but this claim could be regarded as including within its scope a pull-up element in which the p-n diode junction was an Esaki diode provided this would be supported by the description. According to the decision (cf. paragraph 3.2 of the reasons) the text of the description and accompanying drawings would have made it plain to a skilled person that a Esaki diode could advantageously be used in a pull up element, even though the use of an Esaki diode was specifically disclosed only in one Example (Example 2) which related to a RAM cell, and it was hence considered that the amended claim directed to a pull-up element including an Esaki diode did not extend beyond the content of the application as originally filed.

3.13.1 This clearly implies, in the Board's view, that the decisive arguments for allowing the amendment in the case T 873/94 were that it corresponded to a limitation of the subject-matter of original Claim 1 and that it was evident for the skilled person from the application as originally filed that an Esaki diode could also be used in a semiconductor device in form of a pull-up element.

3.13.2 Nevertheless, while it can be agreed with the Appellant that the introduction of amendment (ii.b) results in a limitation of the scope of original Claim 1 as did the introduction of the feature "Esaki diode" in the case

under consideration in T 873/94, the Board however observes that Claim 1 as originally filed in the present case relates to two distinct entities, i.e. communication cables and electrical cables, while original Claim 1 in the case under consideration in T 873/94 made reference to only one entity (i.e. a semi conductor device in form of a pull-up element).

3.13.3 This implies that in contrast to the case under consideration in T 873/94, the relevant question is not whether a specific element (Esaki diode) disclosed in a specific semi-conductor device (RAM cell) might be generalized to the original entity (semi-conductor device in form of a pull up element), but whether a feature (thickness of the jacketing layer) disclosed for the first entity (communication cable) might be transferred to the second distinct entity (electrical cable).

3.13.4 In that context, the allowability of amendment (ii.b) under Article 123(2) EPC would be precluded if there is the slightest doubt that the thickness of the jacketing layer of 0.5 to 2.5 mm which has been only disclosed in relation of a communication cable could also be used in a corresponding electrical cable.

3.13.5 In that respect, the Board notes that the Appellant has referred to the Examples 1 to 6 at page 32 of the application as filed which disclose the coating of a copper wire with a jacketing layer having a thickness of 30 mils, and has subsequently submitted that a copper wire could be equally used in an electrical cable or in a communication cable, and that therefore

the same thickness of the jacketing layer is equally applicable to electrical and communication cables.

3.13.6 Independently of the fact that Examples 1 to 6 cannot be considered as illustrating the production of the claimed communication or electrical cables, since no insulating layer has been provided on the copper wire, the fact that the same copper wire might be used in both a communication cable or an electrical cable would not alter the fact that it is the final function of the cable (communication cable or electrical cable) which is the determining factor for the thickness of the jacketing layer of a cable comprising this copper wire, so that it cannot be ascertained that the same copper wire used in communication cable with a corresponding jacketing layer of a thickness in the range of 0.5 to 2.5 mm would also inevitably be coated by a jacketing layer of a thickness in the range 0.5 to 2.5 mm if used in an electrical cable.

3.13.7 On the contrary, while it is true as submitted by the Appellant that the claimed range of 0.5 to 2.5 mm is within the range defined in Tables 4-5 to 4-7 for electrical cables (i.e. between 0.38 and 3.56 mm), the comparison between Tables 5 and 8 of document D4 and Table 4-7 of document D5 clearly shows that within a range of cable diameter such as 11.5 mm to 43.5 mm the range of thickness of the jacketing layer for a communication cable varies from 0.9 to 1.4 mm (i.e. within the claimed range of 0.5 to 2.5 mm), while it varies between 1.52 and 2.79 mm for an electrical cable (i.e. outside the disclosed range of 0.5 to 2.5 mm).

3.13.8 There is therefore a reasonable doubt as to whether the thickness of the jacketing layer of 0.5 to 2.5 mm which has been only disclosed in relation of a communication cable could also be used in a corresponding electrical cable.

3.14 In view of the above, the Board can only come to the conclusion that amendment (ii.b) is neither explicitly nor implicitly directly and unambiguously derivable from the application documents as filed. Consequently amendment (ii.b) contravenes Article 123(2) EPC.

3.15 Consequently, the main request of the Appellant must be refused.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The President:

E. Görgmaier R. Young