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**Datasheet for the decision  
of 4 April 2025**

**Case Number:** T 0989/23 - 3.3.02

**Application Number:** 07024737.4

**Publication Number:** 2072587

**IPC:** C09D123/06, C09D123/08,  
C08L23/06

**Language of the proceedings:** EN

**Title of invention:**

COATED PIPES HAVING IMPROVED MECHANICAL PROPERTIES AT ELEVATED  
TEMPERATURES AND A METHOD OF PRODUCTION THEREOF

**Patent Proprietor:**

Borealis Technology Oy

**Opponent:**

The Dow Chemical Company

**Headword:**

**Relevant legal provisions:**

EPC Art. 56, 84  
RPBA 2020 Art. 12(4), 12(6)

**Keyword:**

Inventive step - partial technical problems  
Claims - clarity after amendment  
Amendment to case - exercise of discretion  
Fundamental procedural defect

**Decisions cited:**

G 0007/93, G 0003/14, R 0006/19, R 0011/20, T 0182/88,  
T 0640/91, T 0326/87, T 0430/89, T 0669/90, T 0951/91,  
T 0201/92, T 0986/93, T 0755/96, T 0502/98, T 1209/05,  
T 1549/07, T 0582/08, T 0620/08, T 0980/08, T 1178/08,  
T 1652/08, T 1074/10, T 1852/11, T 2197/11, T 1568/12,  
T 0026/13, T 0572/14, T 0341/15, T 0487/16, T 0617/16,  
T 0776/17, T 0966/17, T 1768/17, T 2603/18, T 0256/19,  
T 2685/19, T 3201/19, T 0326/22

**Catchword:**

A board has the power to review an opposition division's procedural decision to consider late submissions filed in opposition proceedings. Otherwise, the parties' right to a judicial review of an essential part of the opposition division's decision would be denied. Moreover, on appeal, a board would be compelled to accept a legal and factual framework even if it is based on an erroneous exercise of discretion (point 9.7 of the Reasons).



**Beschwerdekammern**

**Boards of Appeal**

**Chambres de recours**

Boards of Appeal of the  
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Case Number: T 0989/23 - 3.3.02

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.02**  
**of 4 April 2025**

**Appellant:** Borealis Technology Oy  
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**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
6 April 2023 concerning maintenance of the  
European Patent No. 2072587 in amended form.**

**Composition of the Board:**

**Chairman** M. O. Müller  
**Members:** S. Bertrand  
L. Bühler

## **Summary of Facts and Submissions**

- I. The appeals of the patent proprietor and the opponent are against the opposition division's interlocutory decision that European patent No. 2 072 587, in amended form according to auxiliary request 3, which comprises the set of claims previously filed as auxiliary request 1 on 12 July 2021, and the invention to which it relates were found to meet the requirements of the EPC.
- II. Since the patent proprietor and the opponent are both appellants and respondents in these appeal proceedings, they will simply be referred to in the following as "the patent proprietor" and "the opponent", respectively.
- III. The patent is concerned with the provision of coated metal pipes that are useful at high service temperatures (paragraph [0001] of the patent).
- IV. The following documents are referred to in the present decision:

D1	WO 2004/067654 A1
D2	AWWA Manual M55, "Engineering Properties of Polyethylene", 2006, chapter 1, pages 1 to 19
D10	US 2005/0239976 A1
D11	JP 2005/281543 A
D12	Machine translation of JP 2005/281543 A

D13 "Catalyst Design for Tailor-Made Polyolefins: Proceedings of the International Symposium on Catalyst Design for Tailor-Made Polyolefins", Kanazawa, 10-12 March 1994, ISBN 0-444-98656-1, chapter 10: "The Control of Molecular Weight Distributions in Ziegler-Natta Catalysis", page 109

- V. In the impugned decision, the opposition division's conclusions included the following.
- The subject-matter of claim 1 of the main request did not involve an inventive step starting from D1.
  - Claim 1 of auxiliary requests 1 and 2 did not comply with the requirements of Article 84 EPC.
  - The subject-matter of claim 1 of auxiliary request 3 did involve an inventive step starting from D1.
- VI. In its statement of grounds of appeal, the opponent argued that the subject-matter of claim 1 of auxiliary request 3, which the opposition division had found allowable, lacked an inventive step in view of, *inter alia*, D1 as the closest prior art. It also filed documents D10 to D12.
- VII. In its statement of grounds of appeal, the patent proprietor contested the opposition division's conclusions regarding the main request and auxiliary requests 1 and 2. It submitted sets of claims according to new auxiliary requests 1 to 21 as well as document D13.

- VIII. In its reply to the patent proprietor's grounds of appeal and in a further letter, the opponent contested the allowability of the main request and auxiliary requests 1 to 21. It also objected to the admittance of auxiliary requests 4 to 8 and 10 to 21 and to document D13.
- IX. In its reply to the opponent's grounds of appeal, the patent proprietor contested the submissions made by the opponent. It also objected to the admittance of documents D10 to D12.
- X. The board summoned the parties to oral proceedings as per their requests and issued a communication under Article 15(1) RPBA.
- XI. In a further letter, the opponent provided further submissions regarding the admittance of D10 to D12.
- XII. Oral proceedings before the board were held by videoconference on 4 April 2025 in the presence of both parties.
- XIII. The parties' requests, where relevant to this decision, were as follows.

The patent proprietor requested:

- that the decision under appeal be set aside and that the opposed patent be maintained as granted

or

- that the patent be maintained in amended form on the basis of a set of claims according to one of auxiliary requests 1 to 21

and

- that D10 to D12 not be admitted into the proceedings.

The opponent requested:

- that the decision under appeal be set aside and that the opposed patent be revoked
- that auxiliary requests 4 to 8 and 10 to 21 not be admitted into the proceedings
- that D10 to D12 be admitted into the proceedings and
- that D13 not be admitted into the proceedings.

XIV. The arguments of both the patent proprietor and the opponent, where relevant to the present decision, are summarised below.

## **Reasons for the Decision**

Main request

1. Inventive step - claim 1 - Articles 100(a) and 56 EPC

1.1 Claim 1 of the main request reads as follows:

*"1. A pipe comprising an inner surface, an outer surface layer (A) and a coating layer (B) covering said outer surface layer (A), wherein the coating layer (B) comprises a coating composition (B-2) comprising a multimodal ethylene copolymer (B-1), being a copolymer of ethylene and one or more alpha-olefin comonomers*

having from 6 to 10 carbon atoms, wherein the multimodal ethylene copolymer (B-1) comprises

(B-1-1) from 40 to 60%, based on the weight of the multimodal ethylene copolymer (B-1), [sic] a low molecular weight ethylene homopolymer component, said low molecular weight ethylene homopolymer (B-1-1) having a weight average molecular weight of from 5000 g/mol to 70000 g/mol; and

(B-1-2) from 60 to 40%, based on the weight of the multimodal ethylene copolymer (B-1), [sic] a high molecular weight ethylene copolymer component, said high molecular weight ethylene component (B-1-2) being a copolymer of ethylene with one or more alpha-olefin comonomers having from 6 to 10 carbon atoms and having a weight average molecular weight of from 100000 g/mol to 700000 g/mol; and

wherein the multimodal ethylene copolymer (B-1) has a weight average molecular weight of from 70000 g/mol to 250000 g/mol and a melt index  $MFR_2$ , determined according to ISO 1133 at 190°C under a load of 2.16 kg, of from 0.05 g/10 min to 5 g/10 min, a melt index  $MFR_5$ , determined according to ISO 1133 at 190°C under a load of 5 kg, of from 0.5 to 10 g/10 min and a density of from 946 kg/m<sup>3</sup> to 956 kg/m<sup>3</sup>, as determined by ISO 1183-2/1872-2B, and the coating composition (B-2) has a tensile modulus determined according to ISO 572-2 of at least 800 MPa, and the weight average molecular weight is determined according the disclosure in the description."

- 1.2 The opponent contended that the subject-matter of claim 1 of the main request did not involve an inventive step starting from D1.

### 1.3 Disclosure of D1

Claim 1 of D1 discloses a coating composition comprising a multimodal ethylene polymer. Claim 20 of D1 relates to a metal pipe coated with the coating composition of claim 1.

The parties relied on example 1 of D1. Example 1 of D1 discloses a multimodal ethylene polymer comprising 50% by weight of an ethylene homopolymer having a molecular weight of less than 29 000 g/mol (page 14, lines 36 and 37, of D1) and 50% by weight of an ethylene 1-hexene copolymer (page 15, lines 6 to 9, of D1). The multimodal ethylene polymer has a density of 0.944 g/cm<sup>3</sup> and a MFR<sub>2</sub> of 0.6 g/10 min (page 15, lines 10 to 14, of D1).

It was common ground between the parties that example 1 of D1 represents a suitable starting point for assessing the inventive step of the subject-matter of claim 1 of the main request.

The ethylene homopolymer of example 1 of D1 is an ethylene homopolymer component as required for the low molecular weight ethylene homopolymer component (B-1-1) of claim 1 of the main request. Example 1 of D1 does not disclose the exact molecular weight of the ethylene homopolymer. It was, however, common ground between the parties that a weight average molecular weight of the low molecular weight compound (B-1-1) as specified in claim 1 of the main request was intrinsic to the composition disclosed in example 1 of D1.

The ethylene 1-hexene copolymer of example 1 of D1 is a copolymer of ethylene and a monomer with six carbon atoms (hexene) as required for the high molecular

weight ethylene copolymer component (B-1-2) of claim 1 of the main request.

It was also common ground between the parties that the weight average molecular weight and melt index  $MFR_5$  of the multimodal ethylene polymer (B-1) as specified in claim 1 of the main request were intrinsic to the composition disclosed in example 1 of D1.

Furthermore, the melt index  $MFR_2$  of 0.6 g/10 min of the multimodal ethylene polymer of example 1 is within the range required by claim 1 of the main request (0.05 g/10 min to 5 g/10 min).

The density of the multimodal ethylene polymer of example 1, of 0.944 g/cm<sup>3</sup>, i.e. 944 kg/m<sup>3</sup>, does not fall within the range of 946 kg/m<sup>3</sup> to 956 kg/m<sup>3</sup> required by claim 1 of the main request.

Furthermore, D1 does not disclose the tensile modulus of the coating composition.

Lastly, example 1 of D1 does not disclose the weight average molecular weight of the ethylene 1-hexene copolymer, while claim 1 requires a weight average molecular weight of from 100 000 to 700 000 g/mol.

#### 1.4 Distinguishing features

In view of the above, and this was common ground between the parties, claim 1 of the main request comprises the following distinguishing features over example 1 of D1:

- (i) a density of the multimodal ethylene copolymer (B-1) of 946 to 956 kg/m<sup>3</sup> (944 kg/m<sup>3</sup> in example 1 of D1)

- (ii) a tensile modulus of the coating composition (B-2) of at least 800 MPa (not disclosed in example 1 of D1)
- (iii) a weight average molecular weight  $M_w$  of the high molecular weight ethylene copolymer component (B-1-2) of 100 000 to 700 000 g/mol (not disclosed in example 1 of D1)

#### 1.5 Objective technical problem

The patent proprietor argued, and the board agrees, that the objective technical problem is the provision of an improved coated pipe with the coating/coating composition imparting improved surface mechanical properties at elevated temperatures (indicated by the Vicat softening temperature) and increased stiffness/rigidity (indicated by the tensile modulus, the tensile stress at yield and the Shore hardness) at room temperature, while acceptable stress cracking resistance is maintained.

#### 1.6 Obviousness

Considering the patent proprietor's objective technical problem as formulated above, the subject-matter of claim 1 of the main request lacks an inventive step in view of the secondary document D2, which was relied on by the opponent.

D2 is a review on the fundamental understanding of material characteristics in the design for piping systems. D2 teaches (table 1-1 on page 2) that the softening point (improved surface mechanical properties at elevated temperatures), the tensile properties and the stiffness of pipe coating are increased as the

density of the ethylene copolymer used in the coating composition increases.

In view of this teaching of D2, the skilled person would have increased the density of the multimodal ethylene copolymer disclosed in example 1 of D1 (first distinguishing feature) to improve the softening point, tensile properties and stiffness of the coating and thus to improve the stiffness/rigidity of the coating at room temperature. In doing so, the skilled person would have arrived at a tensile modulus of the coating composition as claimed (second distinguishing feature).

The weight average molecular weight  $M_w$  of the high molecular weight ethylene copolymer component (B-1-2) of 100 000 to 700 000 g/mol (third distinguishing feature) represents an arbitrary selection which is not linked to any technical effect, as was acknowledged by the patent proprietor itself (point 3.10 of its statement of grounds of appeal).

The skilled person would have thus arrived at the subject-matter of claim 1 of the main request without any inventive merit.

The patent proprietor argued that D2 did not disclose any numerical values of the softening point, tensile properties or stiffness of the coating, or indeed any quantitative indications as to what extent these parameters have to be altered upon changing the density.

The board does not find this argument convincing. Firstly, neither the softening point nor the stiffness value of the coating are technical features of claim 1 of the main request, and it is thus irrelevant whether D2 discloses any values of these properties. Secondly, as set out above, D2 clearly teaches increasing the

density to solve the objective technical problem. This teaching is therefore sufficient for a skilled person. The skilled person would have thus increased the density of the multimodal ethylene copolymer disclosed in example 1 of D1 until the tensile modulus in claim 1 of the main request was achieved (the stiffness and softening point are simultaneously increased).

The patent proprietor also submitted that page 2 of D2, which discloses densities in the range of 0.936 to 0.945 g/cc (936 to 945 kg/m<sup>3</sup>), did not teach increasing the density of the multimodal ethylene copolymer disclosed in example 1 of D1 to above 945 kg/m<sup>3</sup>, i.e. to a value as required by claim 1 of the main request.

The board is not convinced. As submitted by the opponent, the teaching of D2 is not limited to page 2 of D2. The third paragraph on page 3 of D2 teaches, as "recent advances", densities as high as 0.952 g/cm<sup>2</sup> (952 kg/m<sup>3</sup>), i.e. within the range of 946 kg/m<sup>3</sup> to 956 kg/m<sup>3</sup> required by claim 1 of the main request.

- 1.7 For these reasons, the subject-matter of claim 1 of the main request does not involve an inventive step starting from D1 in combination with D2.
2. In view of the above, the main request is not allowable.

#### Auxiliary request 1

3. Clarity - claim 1 - Article 84 EPC
- 3.1 Claim 1 of auxiliary request 1 is identical to claim 1 of the main request, except that it includes the further limitation that the multimodal ethylene copolymer (B-1) is produced in the presence of a Ziegler-Natta catalyst.

3.2 The opponent contended that the limitation included in claim 1 of auxiliary request 1 was unclear.

3.3 The set of claims as granted does not contain the phrase "*the multimodal ethylene copolymer (B-1) is produced in the presence of a Ziegler-Natta catalyst*". In so far as claim 1 of auxiliary request 1 contains this phrase, it is therefore open to an assessment of clarity under Article 84 EPC (G 3/14; OJ EPO 2015, A102, order).

3.4 Pursuant to Article 84 EPC, the claims must define the matter for which protection is sought. Hence, the purpose of this provision is to enable the scope of protection to be determined. To this end, it is necessary to determine what is covered by a claim at issue. For this, the claims have to be clear as such.

In the case at hand, the question to be answered is what the limitation by the phrase "*the multimodal ethylene copolymer (B-1) is produced in the presence of a Ziegler-Natta catalyst*" covers.

The patent proprietor relied on D13 and submitted that polymers obtained using Ziegler-Natta catalysts generally exhibited a rather broad molecular weight distribution and also that a meaningful comparison with the prior art was facilitated. Since the multimodal ethylene copolymer (B-1) of claim 1 of auxiliary request 1 was produced only in the presence of a Ziegler-Natta catalyst, the copolymer had a broad molecular weight distribution, as shown in the examples and paragraph [0014] of the patent. The limitation in the claim was thus clear.

The board does not agree.

The board acknowledges that D13 discloses (page 109, introduction) that "[c]lassical heterogeneous Ziegler-Natta catalysts never produce polyolefins with narrow molecular weight distributions (MWD), that means close to the value expected for a polymerization with associated transfer reactions ( $M_w/M_n \gg 2$ ). On the contrary homogeneous catalysts are well known to often produce polymers with the expected narrow distribution."

For the sake of argument, the board accepts that the limitation in claim 1 of auxiliary request 1 that the multimodal ethylene copolymer (B-1) is produced in the presence of a Ziegler-Natta catalyst implies a Ziegler-Natta catalyst only, i.e. the multimodal ethylene copolymer (B-1) is produced without the addition of any further catalyst, and the board further accepts that the copolymer produced with a Ziegler-Natta catalyst has a broad molecular weight distribution. Finally, the board accepts that the claim can be interpreted using the description.

However, contrary to the patent proprietor's submission, it cannot be concluded that the broad molecular weight distribution defined in the description is clear.

The limitation of claim 1 to a broad molecular weight distribution of the multimodal ethylene copolymer (B-1), as argued by the patent proprietor, is unclear when the claim is viewed *per se*. In particular, it is unclear what limits as regards the molecular weight are covered, or not, by a "broad" molecular weight distribution. The description of the patent gives different values for the molecular weight distribution. Paragraph [0014] of the patent, which was cited by the patent proprietor, reads as follows:

"*Preferably, the multimodal ethylene copolymer (B-1) has a broad molecular weight distribution [...] of from 15 to 50, preferably from 20 to 40 and in particular 25 to 40.*" Table 2 of the patent, which was also cited by the patent proprietor, discloses values of 30.2, 32.3, 34.7 and 35.1 for examples 1, 2, 4 and 5, respectively, which are in accordance with claim 1 of auxiliary request 1. Hence, the description at best only gives preferred values for the broad molecular weight distribution. In any case, it does not contain any general definition of what is to be understood by a broad molecular weight distribution. Hence, there are no clear limits in claim 1 of auxiliary request 1 with respect to the broad molecular weight distribution, even when interpreting it in the light of the description.

3.5 The board concludes that claim 1 of auxiliary request 1 does not meet the requirements of Article 84 EPC and auxiliary request 1 is therefore not allowable.

3.6 In reaching this conclusion, the board admitted the patent proprietor's document D13 into the proceedings and took the document into account. Since the decision is in the opponent's favour, there is no need to give any reason for the opponent's request not to admit D13.

#### *Auxiliary request 2*

4. Clarity - claim 1 - Article 84 EPC

4.1 Claim 1 of auxiliary request 2 is identical to claim 1 of auxiliary request 1, except that it includes the further limitation that the multimodal ethylene copolymer (B-1) is produced in a sequential polymerisation process comprising at least two

polymerisation zones operating at different conditions to produce the multimodal copolymer.

- 4.2 The opponent contended that the limitation included in claim 1 of auxiliary request 2 was unclear.
- 4.3 Like claim 1 of auxiliary request 1, claim 1 of auxiliary request 2 includes a reference to a Ziegler-Natta catalyst. Thus, the same reasons as those set out above with respect to claim 1 of auxiliary request 1 apply *mutatis mutandis* to claim 1 of auxiliary request 2. This was not commented upon by the patent proprietor during the oral proceedings.
- 4.4 Consequently, auxiliary request 2 is not allowable either.

#### Auxiliary request 3

5. Inventive step - claim 1 - Article 56 EPC
- 5.1 Compared with claim 1 of the main request, claim 1 of auxiliary request 3 includes the further limitation that the multimodal ethylene copolymer (B-1) has a ratio of weight average molecular weight to number average molecular weight,  $M_w/M_n$ , of 15 to 50, determined according to ISO 16014-4:2003 and ASTM D 6474-99.

In the following, the ratio of weight average molecular weight to number average molecular weight will be referred to as the molecular weight distribution.

- 5.2 The opponent argued the subject-matter of claim 1 of auxiliary request 3 did not involve an inventive step starting from D1.
- 5.3 It was common ground that example 1 of D1 was a suitable starting point for assessing inventive step.

5.4 As set out above, claim 1 of the main request comprises the following distinguishing features over example 1 of D1:

- (i) a density of the multimodal ethylene copolymer (B-1) of 946 to 956 kg/m<sup>3</sup> (944 kg/m<sup>3</sup> in example 1 of D1)
- (ii) a tensile modulus of the multimodal ethylene copolymer (B-1) of at least 800 MPa (not disclosed in example 1 of D1)
- (iii) the weight average molecular weight Mw of the high molecular weight ethylene copolymer component (B-1-2) of 100 000 to 700 000 g/mol (not disclosed in example 1 of D1)

Claim 1 of auxiliary request 3 also comprises these distinguishing features.

It was common ground between the parties that document D1 did not disclose the molecular weight distribution of the multimodal ethylene copolymer of example 1. Thus, claim 1 of auxiliary request 3 comprises the following further distinguishing feature over example 1 of D1, in addition to those set out above:

- (iv) a molecular weight distribution of the multimodal ethylene copolymer of 15 to 50, determined according to ISO 16014-4:2003 and ASTM D 6474-99

5.5 Technical effect and objective technical problem

As regards distinguishing features (i) to (iii), the patent proprietor argued, and the board agrees, that the objective technical problem is the provision of an

improved coated pipe with the coating/coating composition imparting improved surface mechanical properties at elevated temperatures and an increased stiffness/rigidity (indicated by the tensile modulus, the tensile stress at yield and the Shore hardness) at room temperature, while acceptable stress cracking resistance is maintained.

As regards distinguishing feature (iv), the patent proprietor relied on table 2 of the patent and submitted that the molecular weight distribution of the multimodal ethylene copolymer as specified in claim 1 of auxiliary request 3 was correlated with an increased throughput of the coating at the extruder used to prepare the coated pipe. An increased throughput corresponded to an improved processability.

With regard to the effect achieved by distinguishing feature (iv), the following is to be considered.

Table 2 of the patent is reproduced in part below:

example	1	2	3	4	5	6R	7R
Mw/Mn	30.2	32.3	ND	34.7	35.1	29.6	22.9
Throughput	76.3	78.9	83.8	83.1	79.2	78.3	71.9

Examples 1, 2, 4 and 5 have molecular weight distributions within the range of 15 to 50, as specified in claim 1 of auxiliary request 3, and therefore these examples are in accordance with claim 1 of auxiliary request 3.

The molecular weight distribution (Mw/Mn) of example 3 was not determined. Thus, it cannot be concluded that example 3 is in accordance with claim 1 of auxiliary request 3.

In the case of examples 1, 2, 4 and 5 (which are in accordance with claim 1 of auxiliary request 3), the throughput is 76.3, 78.9, 83.1 and 79.2 kg/h, respectively.

However, there is no comparative example in table 2 of the patent in which the molecular weight distribution is not within the range of claim 1 of auxiliary request 3 (i.e. 15 to 50).

Thus, contrary to the patent proprietor's view, it cannot be concluded that the molecular weight distribution of the multimodal ethylene copolymer as specified in claim 1 of auxiliary request 3 is correlated with an improved throughput of the coating at the extruder used to prepare the coated pipe as compared with D1.

The patent proprietor argued that when comparing examples 2, 4 and 5 in table 2 of the patent, a clear trend was derivable, according to which a broader molecular weight distribution resulted in an increased throughput of the coating at the extruder used to prepare the coated pipe.

The board disagrees.

As submitted by the opponent, example 5 has a broader molecular weight distribution (35.1) than example 4 (34.7), but a decreased throughput (79.2 vs 83.1). Thus, this comparison does not support the trend alleged by the patent proprietor.

It is, however, accepted, in favour of the patent proprietor, that a certain throughput of the coating at the extruder used to prepare the coated pipe, and thus an acceptable processability, is achieved by the

claimed molecular weight distribution (distinguishing feature (iv)).

As submitted by the opponent, there is no functional interaction between distinguishing features (i) to (iii) on the one hand and distinguishing feature (iv) on the other. In the absence of such a functional interaction, the objective technical problem comprises two partial technical problems:

- (a) the provision of an improved coated pipe with the coating/coating composition imparting improved surface mechanical properties at elevated temperatures (indicated by the Vicat softening temperature) and an increased stiffness/rigidity (indicated by the tensile modulus, the tensile stress at yield and the Shore hardness) at room temperature, while acceptable stress cracking resistance is maintained
- (b) the provision of a coated pipe having an acceptable processability

## 5.6 Obviousness - admittance

As regards the second partial technical problem (the provision of a coated pipe having an acceptable processability), the opponent relied on documents D10 to D12.

### 5.6.1 Admittance of documents D10 to D12

D10 is a US patent application directed to polymers having a broad molecular weight distribution.

D11 is a Japanese patent application relating to ethylene- $\alpha$ -olefin copolymers for steel coating.

D12 is the English translation of D11.

Documents D10 to D12 were submitted by the opponent with its statement of grounds of appeal to show that it was already known that a broader molecular weight distribution improved processability.

The patent proprietor objected to the admittance of these documents.

It was undisputed between the parties that D10 to D12 represent new facts and evidence relied upon for the first time in the appeal proceedings. The submission of D10 to D12 thus constitutes an amendment of the opponent's appeal case within the meaning of Article 12(4) RPBA. Any such amendment may be admitted only at the discretion of the board.

Moreover, under Article 12(6) RPBA, the board shall not admit, *inter alia*, facts and evidence which should have been submitted before the opposition division.

As submitted by the opponent, and this was not contested by the patent proprietor, the issue of processability was only referred to by the patent proprietor during the oral proceedings before the opposition division. The submission of D10 to D12 with the statement of grounds of appeal thus represented the first opportunity for the opponent to reply to the issue of processability.

The patent proprietor argued that the limitation of the molecular weight distribution could be found in granted claim 14. Auxiliary request 3 had been filed with the reply to the notice of opposition, then as auxiliary request 1. Furthermore, paragraph [0075] of the patent referred to a broad molecular weight distribution allowing a high throughput. The fact that the patent proprietor relied on this effect during the oral

proceedings could not have been surprising for the opponent.

The board does not accept the patent proprietor's view. It is not the task of the opponent to speculate about the line of defence a patent proprietor may take at a later stage of the proceedings, and to pre-emptively present arguments against any such possible defence. It is the patent proprietor who decides which line of defence to take and when. If a patent proprietor decides to present an argument late, it cannot complain about an opponent's reaction also being late. The fact that an auxiliary request containing the molecular weight distribution feature had already been filed in reply to the notice of opposition therefore in fact goes against the patent proprietor's case since it underlines the fact that even though the request had been presented early on in the opposition proceedings, the patent proprietor nevertheless waited with the defence of this request until the oral proceedings.

Hence, the patent proprietor's submission relating to processability during the oral proceedings before the opposition division justifies the opponent's filing of D10 to D12 with its statement of grounds of appeal.

Based on the considerations set out above, D10 to D12 were admitted into the appeal proceedings pursuant to Article 12(4) and (6) RPBA.

#### 5.6.2 Obviousness - Substance

As regards the first partial technical problem (the provision of an improved coated pipe with the coating/coating composition imparting improved surface mechanical properties at elevated temperatures and an increased stiffness/rigidity at room temperature, while acceptable stress cracking resistance is maintained),

the reasons set out above with respect to the subject-matter of claim 1 of the main request also apply to the subject-matter of claim 1 of auxiliary request 3.

As regards the second partial technical problem (the provision of a coated pipe having an acceptable processability), the skilled person would have considered the teaching of D10 and D11/D12.

Paragraph [0006] of D10 teaches that a broadening in the molecular weight distribution of a polyolefin tends to improve the flow of the polyolefin when it is being processed at high rates of shear. D11/12 is concerned with steel pipes coated with an ethylene- $\alpha$ -olefin copolymer (paragraph [0002] of D11/12).

Paragraph [0017] of D11/D12 teaches that "*[t]he molecular weight distribution (Mw/Mn) of the ethylene- $\alpha$ -olefin copolymer is preferably 7 or more, more preferably 8 or more, from the viewpoint of enhancing extrusion moldability. Moreover, the value is preferably 25 or less, more preferably 20 or less, and still more preferably 17 or less, from the viewpoint of enhancing low-temperature impact resistance.*" Thus, D11/D12 also teaches that a broader molecular weight distribution enhances moldability, i.e. processability. In view of the teaching of D10 and D11/D12, the skilled person would have thus adapted the molecular weight distribution of the multimodal ethylene copolymer of example 1 of D1 until it reached a value of between 7 and 25, e.g. 15 or 20, in order to achieve an at least acceptable processability. Consequently, by following the teaching of D10 and D11/D12, the skilled person would have arrived at a molecular weight distribution as broad as that specified in claim 1 of auxiliary request 3.

The patent proprietor submitted that D1 taught a molecular weight distribution of 3 to 10 to achieve a suitable processability, while D11/D12 taught higher values. In view of this controversial teaching, the skilled person would have disregarded D11/D12 and not combined it with D1.

The board does not find the patent proprietor's submission convincing.

The board acknowledges that D1 teaches on page 9, lines 20 to 22, a molecular weight distribution of 3 to 10 to achieve a "suitably processable" multimodal ethylene polymer. However, as submitted by the opponent, this would not prevent the skilled person from considering the alternative teaching proposed by D10 and D11/D12, i.e. to provide a multimodal ethylene copolymer with a broader molecular weight distribution to achieve an acceptable processability.

It follows that the solution to the second partial technical problem is obvious in view of the teaching of D10 or D11/12.

5.7 Consequently, the claimed solutions to the partial technical problems set out above are found not to involve an inventive step.

5.8 Auxiliary request 3 is not allowable.

Auxiliary requests 4 to 16 and 18 to 21

6. Auxiliary requests 4 to 16 and 18 to 21 were amended as follows.

6.1 Auxiliary request 4 is a combination of auxiliary requests 1 and 3.

- 6.2 Auxiliary request 5 is a combination of auxiliary requests 2 and 3.
- 6.3 The claims of auxiliary request 6 correspond to the claims of auxiliary request 3, except that the density of the multimodal ethylene copolymer (B-1) is limited further to a range of 946 to 954 kg/m<sup>3</sup> in claims 1 and 14 (946 to 956 kg/m<sup>3</sup> in claims 1 and 15 of auxiliary request 3).
- 6.4 Auxiliary request 7 is a combination of auxiliary requests 1 and 6.
- 6.5 Auxiliary request 8 is a combination of auxiliary requests 2 and 6.
- 6.6 The claims of auxiliary request 9 correspond to those of auxiliary request 3, except that a Vicat softening temperature of at least 117°C is specified in claims 1 and 15.
- 6.7 Auxiliary request 10 is a combination of auxiliary requests 6 and 9.
- 6.8 Auxiliary request 11 is a combination of auxiliary requests 1 and 10.
- 6.9 Auxiliary request 12 is a combination of auxiliary requests 2 and 10.
- 6.10 The claims of auxiliary request 13 correspond to the claims of auxiliary request 10, except that the lower limit of the molecular weight distribution is increased to 20 in claims 1 and 14 (15 in claims 1 and 14 of auxiliary request 10).
- 6.11 Auxiliary request 14 is a combination of auxiliary requests 1 and 13.

- 6.12 Auxiliary request 15 is a combination of auxiliary requests 2 and 13.
- 6.13 Auxiliary request 16 corresponds to auxiliary request 1 with the product claims deleted and a coated pipe product-by-process claim (claim 16) added.
- 6.14 Auxiliary request 18 is a combination of auxiliary requests 3 and 17.
- 6.15 Auxiliary request 19 is a combination of auxiliary requests 6 and 18.
- 6.16 The claims of auxiliary request 20 correspond to the claims of auxiliary request 19, except that the lower limit of the molecular weight distribution is increased to 20 in claim 1 (15 in claim 1 of auxiliary request 19).
- 6.17 The claims of auxiliary request 21 correspond to the claims of auxiliary request 19, except that the lower limit of the molecular weight distribution is increased to 25 in claim 1 (15 in claim 1 of auxiliary request 19).
7. During the oral proceedings, it was concluded that, and the patent proprietor did not dispute this, auxiliary requests 4 to 16 and 18 to 21 were not allowable for the same reasons as those given with respect to the higher-ranking requests.
8. In view of this, there is no need to address the opponent's request not to admit auxiliary requests 4 to 8 and 10 to 16.

## Auxiliary request 17

9. Auxiliary request 17 corresponds to auxiliary request 16 with the coated pipe product-by-process claim deleted. Auxiliary request 17 thus only contains process claims.

9.1 Auxiliary request 17 was filed in the opposition proceedings, together with eighteen further sets of amended claims, on 23 January 2023, the final date for making submissions or amendments under Rule 116 EPC. The opposition division decided that these auxiliary requests were not open for examination as to their admissibility since they had been filed within the time limit set under Rule 116 EPC (point II.3 of the reasons for the decision).

The opponent requested that auxiliary request 17 not be admitted.

9.2 On the issue of the admittance of auxiliary request 17, the patent proprietor referred to the minutes of the oral proceedings before the opposition division and to the contested decision, and argued that the opposition division had admitted all of the auxiliary requests, including auxiliary request 17, into the opposition proceedings. Auxiliary request 17 had not been considered by the opposition division since the higher-ranking auxiliary request 3 had been found allowable. The patent proprietor further argued that auxiliary request 17 had been maintained when filing the appeal and pointed to pages 31 to 32, section 24.2 et seq., of its statement of grounds of appeal. Hence, auxiliary request 17 was not an amendment to the patent proprietor's appeal case within the meaning of Article 12(4) RPBA. Moreover, auxiliary request 17

overcame the issues of the higher-ranking requests. All the product claims were deleted.

9.3 The patent proprietor also noted that auxiliary request 17 was directed to a process, i.e. a method, only. In its decision, the opposition division had not considered the allowability of any method claim. Therefore, the patent proprietor requested that the case be remitted to the opposition division on the basis of auxiliary request 17. Moreover, for this claim request, D1 could no longer be considered a feasible starting point in view of the specific catalyst used. The patent proprietor acknowledged that this argument had not been put forward previously; however, this new submission took into account the course of the oral proceedings before the board, and in particular the admittance of D10 to D12.

9.4 The opponent referred to its reply to the patent proprietor's appeal, dated 18 December 2023, and argued that the opposition division had misunderstood its discretionary powers in thinking that it did not have any power not to admit auxiliary request 17. This was legally wrong. The opponent pointed out that a new sentence had been introduced in Part E-VI. 2.2.2 of the Guidelines for Examination, in force from 1 March 2023, which reads as follows: "Amendments submitted before the date set under Rule 116(1) cannot, as a rule, be considered as being late-filed". However, this did not mean that the opposition division had no discretion at all. The opposition division was therefore incorrect to state that it had no discretion to consider the admissibility of the auxiliary requests. There was no basis in the EPC for this view; nor was it supported by the Guidelines. The opposition division did have discretion and, in the present circumstances, bearing in mind the numerous requests and non-convergent

amendments, including some taken from the description, it should not have admitted the auxiliary requests. The admittance of auxiliary request 17 was hence based on a fundamental error. Moreover, auxiliary request 17 was clearly not allowable and not suitable for addressing the deficiencies found by the board and therefore it should not be admitted into the appeal proceedings either.

9.5 According to Article 12(4) RPBA, any part of a party's appeal case which is not directed to the requests, facts, objections, arguments and evidence on which the decision under appeal was based is to be regarded as an amendment, unless the party demonstrates that this part was admissibly raised and maintained in the proceedings leading to the decision under appeal. As set out above, auxiliary request 17 was admitted by the opposition division, but it was not considered in its decision in substance since the opposition division concluded that the subject-matter of the higher-ranking auxiliary request 3 complied with the requirements of the EPC. In spite of the opposition division's decision to admit auxiliary request 17, the opponent contested whether auxiliary request 17 had been admissibly raised and maintained within the meaning of Article 12(4) RPBA. Moreover, the opponent disputed the correctness of the decision to admit auxiliary request 17 because the opposition division had wrongly assumed not to have discretion not to admit the auxiliary request.

9.6 The board is aware of decisions holding that submissions admitted by the opposition division cannot be excluded from consideration on appeal, in particular if these submissions have been considered in substance in the decision, as there is no legal basis for such an exclusion (see e.g. T 487/16, point 3.1; T 1768/17, point 5.2; T 617/16, point 1.1.1; T 26/13, point 2;

T 1568/12, point 2.4; T 2603/18, points 1.1 to 1.2; T 3201/19, point 1). In the present case, auxiliary request 17 was admitted, but was not relevant to the opposition division's final decision, and hence not considered in substance, because the higher-ranking auxiliary request 3 was considered allowable. However, the above decisions could nevertheless be seen to also extend to the present situation and to preclude a review of the opposition division's decision to admit auxiliary request 17. Therefore, the board will first address the extent of its power of review.

9.7 Like an opposition division's decision to disregard late-filed submissions, a decision to admit such submissions into the opposition proceedings is a discretionary procedural decision which forms part of the opposition division's final decision on the merits of an opposition (in regard to decisions not to admit submissions see T 986/93, OJ EPO 1996, 215, point 2.4; T 620/08, point 3.4; T 1074/10, point 2.2). A decision to admit late-filed submissions adversely affects the party contesting their admittance (albeit only in view of a possible adverse decision on appeal based on the admitted submissions; see T 1549/07, point 4). Therefore, a board has the power to review an opposition division's procedural decision to take into consideration submissions filed late in opposition proceedings. Otherwise, the parties' right to a judicial review of an essential part of the opposition division's decision would be denied. Moreover, on appeal, a board would be compelled to accept a legal and factual framework, even if it is based on an erroneous exercise of discretion.

9.8 Nevertheless, a board of appeal should only overrule the way in which a department of first instance has exercised its discretion if it concludes that it did so

according to the wrong principles, or without taking into account the right principles, or in an unreasonable way, and thus exceeded the proper limits of its discretion (T 182/88, OJ EPO 1990, 287, point 4; T 640/91, OJ EPO 1994, 918, point 6.3; T 986/93, OJ EPO 1996, 215, point 2.5; G 7/93, OJ EPO 1994, 775, point 2.6). As a consequence, requests, facts or evidence that have been admitted into opposition proceedings can be disregarded on appeal if the opposition division's decision to admit them suffered from an error in the use of discretion. This view is in line with decisions affirming such a review of discretionary decisions by opposition divisions to admit late submissions (T 1209/05, points 2.1 to 2.6; T 1652/08, points 3.1 to 3.5; T 1852/11, points 1.1 to 1.3; T 2197/11, points 3.2.1 to 3.2.3; T 572/14, points 2.1 to 2.6; T 341/15, points 1.1 to 1.3; T 326/22, points 2.1 to 2.3; T 776/17, point 5.1; left open in T 2685/19, point 2.1.1). The board thus has the power and duty to review the opposition division's decision to admit auxiliary request 17 into the opposition proceedings as to the correctness of the opposition division's exercise of discretion. Hereinafter, the board will therefore examine whether the opposition division's discretionary decision to admit auxiliary request 17 suffered from an error in the use of discretion.

- 9.9 The filing of requests for amendment of the patent is governed by Article 123(1) EPC, which gives the opposition division the discretionary power not to admit new requests for amendment (T 755/96, OJ EPO 2000, 174, point 3.3; T 980/08, point 4.5; T 1178/08, point 2.1; T 966/17, point 2.2; R 6/19, points 5 to 6; T 256/19, point 4.7; R 11/20, point 14). The exercise of this discretion has to take into

account the following. In *inter-partes* proceedings, each party has to be given equal opportunity to present their case and must be given a fair chance to respond to new matter raised by the other party or parties or by the opposition division. Both the opposition division and the parties have to observe the principle of good faith (T 669/90, OJ EPO 1992, 739, points 2.3 and 2.4; T 201/92, point 3.5). To expedite the proceedings and implement the principle of fairness towards the other party or parties, each party must submit all facts, evidence, arguments and requests for amendments relevant to their case as early and completely as possible, and not in a piecemeal manner (T 326/87, OJ EPO 1992, 522, points 2.1.1 and 2.1.2; T 430/89, point 5.3; T 951/91, OJ EPO 1995, 202, points 5.2 and 5.3). This case law was developed mainly in the context of Article 114(2) EPC, pertaining to facts and evidence. Nevertheless, in view of the principles set out above, the rationale of this case law also applies to a patent proprietor's observations to an opposition, which should include not just all facts and evidence relied on to defend the patent (T 502/98, point 1.5) but also requests for amendment of the patent that are considered necessary in order to address the main objections raised by the opponent, in case these are found to prejudice the maintenance of the patent (see, for example, T 582/08, point 8.5). Whether or not facts, evidence, objections and amended sets of claims presented after the notice of opposition or the observations filed in response should be considered in opposition proceedings or not does not merely depend on their filing within the time limit under Rule 116 EPC, but also on the specific circumstances of the case. Therefore, observing the time limit under Rule 116 EPC is not a sufficient reason for admitting facts, evidence or sets of amended

claims submitted at this stage of the opposition proceedings (see also T 364/20, point 7). Consequently, the opposition division erred in denying it had discretionary power to disregard auxiliary request 17. The opposition division might have been misled by the statement introduced in the Guidelines (see point 9.4). However, while being overly restrictive, even the wording of this statement, in view of it containing the insertion "as a rule", does not negate the opposition division's discretionary power, which would indeed be contrary to the EPC.

9.10 The opposition division's decision to admit, *inter alia*, auxiliary request 17 into the opposition proceedings thus suffered from an error in the exercise of its discretionary power. Therefore, the board decided to overturn the opposition division's decision to admit auxiliary request 17 into the opposition proceedings. As a consequence, this procedural decision does not establish that auxiliary request 17 was "admissibly raised" in opposition proceedings.

9.11 The board agrees with the opponent that the filing of additional sets of amended claims (including auxiliary request 17) on 23 January 2023 was not a diligent and appropriate reaction to the opponent's submission filed on 14 April 2022 and reiterated on 2 September 2022, or to the opposition division's communication of 30 May 2022. The auxiliary requests introduced a variety of combinations of features, including some taken from the description, and went in different directions. An opponent cannot be expected to anticipate such substantial amendments. Two months before the oral proceedings did not provide a fair chance to respond to the new matter raised by these requests for amendment. Therefore, the circumstances of the specific case did not, in the board's view,

establish that auxiliary request 17 was "admissibly raised" in the opposition proceedings, either. Therefore, auxiliary request 17 had to be regarded as an amendment of the patent proprietor's appeal case within the meaning of Article 12(4) RPBA.

9.12 The following aspects were relevant to the question of whether or not auxiliary request 17 could be admitted on appeal. As was noted by the Chairman during the oral proceedings, the substantiation of patentability of the subject-matter of auxiliary request 17 in the patent proprietor's statement of grounds of appeal differed from the explanations given during the oral proceedings in support of both the *prima facie* allowability of auxiliary request 17 and the remittal of the case for further prosecution. In the statement of grounds of appeal, the patent proprietor accepted D1 as the starting point for the assessment of inventive step of the method claims, but during the oral proceedings it argued that D1 was not a feasible starting point. The former defence, which did not distinguish between the product claims and the method claims, was not suitable for overcoming the board's conclusions on the lack of inventive step of the product claims. The latter defence, made at the oral proceedings before the board, only raised new issues, including the question of whether a document other than D1 was the closest prior art, which neither the board nor the opponent could be expected to address at such a late stage of the appeal proceedings and would have required remittal of the case for further prosecution. Therefore, auxiliary request 17 was not to be admitted under Article 12(4) RPBA or under Article 13(2) RPBA.

9.13 For the reasons set out above, the board decided not to admit auxiliary request 17 into the appeal proceedings. In view of this decision, there was no need to remit

the case to the opposition division for further prosecution on the basis of auxiliary request 17.

10. Since none of the patent proprietor's requests is both allowable and admissible, the patent is to be revoked.

## 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:



U. Bultmann

M. O. Müller

Decision electronically authenticated