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Datasheet for the decision of 7 March 2008

Case Number: T 0570/05 - 3.3.05

Application Number: 99910041.5

Publication Number: 0986521

IPC: C03C 17/245

Language of the proceedings: EN

Title of invention:
Solar control coated substrate with high reflectance

Appellant (Patentee):
AGC Flat Glass Europe SA

Respondent (Opponent):
PPG Industries Ohio, Inc.

Headword:
-

Relevant legal provisions:
EPC Art. 123(2)

Relevant legal provisions (EPC 1973):
-

Keyword:
"Added subject-matter (yes; all requests)"

Decisions cited:
T 0201/83, T 1067/97, T 0714/00

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0570/05 - 3.3.05

D E C I S I O N
of the Technical Board of Appeal 3.3.05
of 7 March 2008

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Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 15 March 2005 revoking European patent No. 0986521 pursuant to Article 102(1) EPC.

Composition of the Board:

Chairman: G. Raths
Members: H. Engl
C. Vallet

Summary of Facts and Submissions

I. This appeal lies against the decision of the opposition division to revoke European patent EP 0 986 521 B1.

II. The opposition division held that the claimed subject matter in accordance with the main and the auxiliary requests lacked an inventive step having regard to document

D3: GB-A-2 302 102

in conjunction with

D1: WO-A-97/25 287.

Furthermore, the opposition division found the subject matter of claim 1 of the third auxiliary request lacking in disclosure.

III. The patentee (appellant) filed the notice of appeal with a letter dated 4 May 2005. With the grounds for appeal the appellant filed two sets of claims as a first and second auxiliary request and an Annex 1 showing plots of reflectance RL of various Sn/Sb coatings over coating thickness (Diagrams A and B). The appellant's main request was directed at the claims as granted.

IV. Dependent claim 10 in accordance with the main request (claims as granted) reads as follows:

"10. A coated transparent substrate as claimed in any preceding claim, in which the said coating layer has a thickness of from 220 to 500 nm."

V. Independent claim 1 in accordance with the first auxiliary request reads as follows:

"1. A transparent substrate carrying a pyrolytically-formed coating layer containing oxides of tin and antimony in a Sb/Sn molar ratio of from 0.01 **to 0.24**, characterised in that the coating layer has a thickness of from 100 to 500 nm and in that the coating layer further contains an additive comprising one or more of aluminium, chromium, cobalt, iron, manganese, magnesium, nickel, vanadium **[]** and zinc and is free from fluorine, whereby the so-coated substrate has a reflectance (RL) of at least 10%."

Changes and omissions **[]** with respect to the claims as granted highlighted by the board in **bold.**

Corresponding changes have been made in independent process claim 25.

Dependent Claim 7 of the first auxiliary request reads:

"7. A coated transparent substrate as claimed in any preceding claim, in which the said coating layer has a thickness of from 220 to 500 nm."

VI. Claim 1 in accordance with the second auxiliary request reads:

"1. A transparent substrate carrying a pyrolytically-formed coating layer containing oxides of tin and antimony in a Sb/Sn molar ratio of from **0.03 to 0.21**, characterised in that the coating layer has a thickness

of from **220** to 500 nm and in that the coating layer further contains an additive comprising one or more of aluminium, chromium, cobalt, iron, manganese, magnesium, nickel, vanadium **[]** and zinc and is free from fluorine, whereby the so-coated substrate has a reflectance (RL) of at least 10%."

VIII. Oral proceedings were held on 7 March 2008.

IX. The appellant's arguments, insofar as they are relevant for the present decision, may be summarized as follows:

The amendments to the claims, in particular the newly claimed ranges, find support in the application as originally filed. The appellant argued that there was no need for the new range of 220 to 500 nm to be originally disclosed as such as long there was a clear basis for the claimed upper and lower limit of the coating thickness. The latter value of 220 nm was disclosed in examples 18, 21 and 25. Only one example fell outside the amended range. The skilled person was initially taught a range of from 100 to 500 nm. However, he would gather from the examples that the lower end of the range, below 220 nm, was exemplified only by one example (example 19), whereas by far the most coated substrates in accordance with the invention exhibited higher coating thicknesses. Although there was an influence between coating thickness and reflectance RL, as stated in paragraph [0057] of the opposed patent with respect to a comparison between individual examples, this did not mean that a general teaching could not be derived from the examples. The proposed amendments did not add new information and did not affect the legal position of third parties. Essentially the same arguments applied

also with respect to the range of 0.01 to 0.24 for the molar ratio of Sn/Sb, wherein the upper value of 0.24 was disclosed in the examples 11, 13 and 26.

X. The respondent (opponent) essentially argued as follows:

Claim 10 as granted and claim 1 of the second auxiliary request contained the feature reading *"coating layer from 220 to 500 nm"*, a range which was not disclosed in the originally filed documents. Claim 1 in accordance with the first auxiliary request likewise contravened Article 123(2) EPC in that the value of 0.24 for the Sb/Sn ratio was inadmissibly taken from examples. The respondent noted that at least one example was outside the range of thicknesses claimed in claim 1 of the second auxiliary request, and even more examples were outside the new range of 0.01 to 0.24 for the molar ratio of Sn/Sb. Having in particular regard to what was disclosed in paragraph [0057] of the opposed patent, a generalization of the examples was not admissible.

XI. Requests:

The appellant requests that the decision under appeal be set aside and the patent be maintained as granted (main request); or, in the alternative, that the patent be maintained on the basis of the sets of claims filed with letter of 11 July 2005 as first and second auxiliary requests, respectively.

The respondent requests that the appeal be dismissed.

Reasons for the Decision

Amendments

1. *"Thickness of from **220** to 500 nm"*

1.1 Claim 10 in accordance with the main request, claim 7 in accordance with the first auxiliary request and claim 1 in accordance with the second auxiliary request contain the feature:

"*…the … coating layer has a thickness of from **220** to 500 nm"*

The only literal basis in the application as originally filed (WO-A-99/48827) for the lower value of 220 nm of the claimed coating thickness range is to be found in the examples 18, 21 and 25 (see Table 3).

1.2 Article 123(2) EPC stipulates that a European patent application or a European patent may not be amended in such a way that it contains subject-matter which extends beyond the content of the application as filed. In the present case, formal disclosure for the value "220" exists; the issue to be decided is whether or not new subject matter is added by forming a **new range** in a claim using said figure of 220 nm, it being evident that nowhere in the documents as filed said value forms the lower (or indeed any) endpoint of a range of thicknesses.

1.3 In this respect the board considers the following jurisprudence of the Boards of Appeal as particularly relevant:

T 201/83 (OJ EPO 1984, 481, point 12, last sentence) reads: *"An amendment of a concentration range in a claim for a mixture, such as an alloy, is allowable on the basis of a particular value described in a specific example, provided the skilled man could have readily recognised 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."*

In decision T 1067/97 (4 October 2000; Reasons, point 2.1.3.) the board stated: *"According to established jurisprudence of the boards of appeal, if a claim is to be restricted to a preferred embodiment, it is normally not admissible under Article 123(2) EPC to extract isolated features from a set of features which have originally been disclosed in combination for that embodiment."*

However, the board immediately thereafter explained: *"Such kind of amendment would only be justified in the absence of any clearly recognisable functional or structural relationship among said features (see the examples cited in "Case Law of the Boards of Appeal of the European Patent Office, 3rd edition 1998", European Patent Office 1999, Section III-A, 1.1)."*

This jurisprudence is confirmed in decision T 0714/00 (of 6 August 2002; Reasons 3.3): *"Extracting an isolated feature from an originally disclosed combination and using it for delimiting 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."*

1.4 The board must therefore examine whether or not there exists a functional or structural relationship between the coating layer thickness, in particular its lower limit, and the remaining features of the claim.

In this connection, paragraph [0057] of the patent clearly states:

"It should be borne in mind that comparisons of the respective reflectance values between different examples can only be made for similar thicknesses and Sb/Sn ratios ***because these parameters are of great importance for the reflectance value****. For example, two coatings of the same composition will show differences in reflectance as a function of their thickness." [Emphasis added].*

1.5 The appellant itself confirmed during oral proceedings that reflectance RL is dependent on coating thickness. In fact, inspection of the graphs in Diagram A filed by the appellant on 11 July 2005 reveals a significant variation of RL (in %) with coating thickness (for instance a coating of SnO_2 with 10% Sb exhibits an RL of 8% at 150 nm, an RL value of more than 14 at 225 nm, and again of about 9% at 275 nm). Essentially the same strong variation exists for a different Sb content of 5%. This dependency of reflectance on the coating thickness is in fact of the same order of magnitude as the claimed influence of the coating additives. This dependency of reflectance is also found, although in a less pronounced way, for coatings systems including an undercoat (see Diagram B).

The condition of absence of any clearly recognisable functional or structural relationship under which an isolated extraction of a feature of an example would be allowable according to the above discussed jurisprudence is thus not satisfied in the present case.

1.6 Claim 10 of the main request and claim 7 of the first auxiliary request and claim 1 of the second auxiliary request therefore do not meet the requirements of Article 123(2) EPC; these requests must be rejected.

2. *"Sn/Sb molar ratio of 0.01 to 0.24"*

2.1 The same issue as above arises with the amendment to claims 1 and 25 of the first auxiliary request, wherein the value of **0.24** in the claimed range of 0.01 to **0.24** for the molar ratio of Sb and Sn is taken uniquely from examples 11, 13 and 26.

The opposed patent (paragraph [0057]) stresses the great importance of the Sn/Sb molar ratio for the reflectance value of the coatings. In Diagram A there are depicted two graphs of RL vs. thickness for Sn coatings with 5% Sb and 10% Sb, respectively. The differences in RL attributable to this different coating composition amount up to 2%, which is in the same order of magnitude as the effect of the metal additive on RL (see for instance examples 1 and 2). Since the claim encompasses considerably greater variations of the coating composition in terms of Sn/Sb molar ratio than those shown in Diagram A, still correspondingly greater variations of RL are to be expected.

2.3 Therefore, the board concludes that the Sn/Sb molar ratio of the coating is not a parameter which is essentially independent from the remaining features of the claim. Therefore, in the light of the decisions of the Boards of Appeal discussed above, its isolated extraction from (an) example(s), without at the same time restricting the claim with respect to the other parameters of the said example(s), contravenes Article 123(2) EPC.

The first auxiliary request is therefore rejected for this reason, too.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar The Chairman

S. Sánchez Chiquero G. Raths