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**Datasheet for the decision
of 19 October 2012**

Case Number: T 0067/10 - 3.2.05

Application Number: 01988026.9

Publication Number: 1343939

IPC: D21J1/08

Language of the proceedings: EN

Title of invention:

Process for coating a substrate

Patentee:

Akzo Nobel Coatings International B.V.

Opponent:

Becker Acroma Kommanditbolaag

Headword:

Relevant legal provisions:

EPC 1973 Art. 100(b), 56

RPBA Art. 13

Keyword:

Sufficiency of disclosure (yes)
Admissibility of late filed second auxiliary request (yes)
Inventive step - main and first auxiliary request (no) -
second auxiliary request (yes)

Decisions cited:

T 418/91

Catchword:



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Chambres de recours**

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Case Number: T 0067/10 - 3.2.05

D E C I S I O N
of the Technical Board of Appeal 3.2.05
of 19 October 2012

Appellant: Becker Acroma Kommanditbolslag
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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted 26 November 2009 rejecting the opposition filed against European patent No. 1343939 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman: M. Poock
Members: S. Bridge
G. Weiss

Summary of Facts and Submissions

- I. The opponent lodged an appeal on 18 January 2010 against the decision of the opposition division rejecting the opposition filed against European patent No. 1 343 939. The statement setting out the grounds of appeal was received on 25 March 2010.

- II. The opposition was filed against the patent as a whole based on the grounds of lack of novelty, Article 54 EPC, and lack of inventive step, Article 56 EPC, referred to in Article 100(a) EPC and of sufficiency of disclosure according to Article 100(b) EPC.

- III. Oral proceedings were held before the Board of Appeal on 19 October 2012 in the absence of the appellant (opponent) whose representatives had previously informed the board that they would not attend.

- IV. The appellant requested in writing that the decision under appeal be set aside and that the European patent No. 1 343 939 be revoked.

The respondent (patent proprietor) requested that the appeal be dismissed (main request) or, as an auxiliary request, that the decision under appeal be set aside and that the patent be maintained in amended form on the basis of claims 1 to 7 filed with the letter dated 18 October 2010 or on the basis of claims 1 to 7 filed as second auxiliary request during the oral proceedings held on 19 October 2012.

- V. Claims 1 and 7 of the patent in suit as granted (main request) read as follows:

"1. Process for the coating of a veneer, solid wood, or reconstituted wood substrate comprising the steps of:

- a) applying a press coating as an aqueous colloidal dispersion to the substrate;
- b) applying heat and pressure to the coated substrate to cure the press coating and to obtain a substrate with a smooth coating film, with the pressure being such that the substrate is not substantially compressed;
- c) applying a top coat to the substrate after the curing of the press coating; and
- d) curing said top coat."

"7. A veneer, solid wood, or reconstituted wood substrate coated with a press coat and at least one radiation curable coating layer comprising unreacted double bonds wherein the amount of unreacted double bonds in the substrate after curing of the radiation curable coating layer as measured by IR Chromatography is less than 15% of the total amount of double bonds present in the uncured coating composition."

VI. Claim 1 according to auxiliary request 1 differs from claim 1 of the main request in that in step c) the reference to a "top coat" has been amended to instead refer to a "radiation curable top coat" and in that step d) has been amended to read "curing said top coat using UV radiation".

Apart from having been re-numbered, claim 6 according to auxiliary request 1 is identical to claim 7 according to the main request.

VII. Claim 1 according to auxiliary request 2 differs from claim 1 of the auxiliary request 1 in that in step c) the reference to a "radiation curable top coat" has

been further amended to instead refer to a "*radiation curable top coat comprising unreacted double bonds*" and in that the following additional feature is introduced at the end of the claim: "*wherein the amount of unreacted double bonds in the substrate after curing of the radiation curable coating layer as measured by IR Chromatography is less than 15% of the total amount of double bonds present in the uncured coating composition*".

Claim 6 according to auxiliary request 2 differs from claim 6 according to auxiliary request 1 in that the expression "*from an aqueous colloidal dispersion*" is introduced after "*a press coat*".

VIII. The following documents are referred to in the present decision:

D1: "*Das Kalandrierverfahren - neue Beschichtungstechnik in der Holz- und Möbelindustrie*", Ind.-Lack.-Betrieb, 1984, Vol. 52, No. 9, pages 334 to 336;

D7: "*Paints, Coating and Solvents*", D.Stoye, W.Freitag, 2nd edition, Wiley-VCH, 1998, ISBN 3-527-28863-5, pages 51 to 55, 109, 112 and 278.

IX. In the written procedure, the appellant argued essentially as follows:

The information set out in the description of the patent in suit does not enable the skilled person to carry out the invention with respect to the amount of unreacted bonds in the radiation cured coating layer over the whole claimed range, which is "*less than 15%*",

in claim 7 (main request), respectively, "less than 10%" in claim 8 (main request).

The subject-matter of claim 1 (main request) differs from the closest prior art process disclosed in document D1 only in that the press coating is applied as an aqueous colloidal dispersion and in that the top coat is cured.

However, according to the patent in suit (column 2, lines 46 to 48), the sealing effect of the press coating is achieved because of the calendering step and is thus not achieved merely because the press coating is an aqueous colloidal dispersion.

Document D1 is primarily concerned with the use of water based coatings as replacements for solvent based coatings. Such waterborne paints are known to fall into two general classes: solutions (water reducible coatings with binders dissolved in water) and emulsions. Thus, the skilled person would not hesitate to use an aqueous colloidal dispersion (i.e. an emulsion) with a reasonable expectation of success.

Curing of a top coat is a conventional process step, well known to the skilled person.

Thus, using an aqueous colloidal dispersion and curing a top coat as claimed in claim 1 according to the main request cannot justify an inventive step.

The solution of claim 7 (main request) concerns the problem of unreacted double bonds of radiation curable coatings remaining in the coated substrate. According to the patent in suit (column 8, lines 48 to 52) the sealing effect of the press coating seems to reduce the

penetration of the radiation curable coating layer into the substrate. However, a skilled person would expect less of a curable top layer to penetrate into such a calender treated and thus sealed surface. Thus the limits of 15%, respectively 10% are merely achieved as the result of including the calendering step in the process. Therefore, the subject-matter of claim 7 according to the main request does not involve an inventive step.

- X. The arguments of the respondent in the written and oral proceedings can be summarised as follows:

Examples 4A and 6A of the patent in suit respectively achieve 3% and 7% of remaining double bonds. The alleged lack of sufficiency of disclosure has merely been asserted without the provision of any proof. The invention is thus disclosed in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

Document D1 discloses coatings with 70 to 100% solids to be diluted with water (column 1, second paragraph, page 334). The addition of water can only result in one of an aqueous solution, an aqueous-oil dispersion or an aqueous-solid dispersion. As achieving the latter requires high shear conditions and consistent particle sizes and because document D1 is silent about the outcome of the dilution, the skilled person would assume that a solution is used. However, solutions have the known disadvantage that large quantities are absorbed into the substrate (see patent in suit paragraphs [0003] and [0004]), so that a greater amount of solution is required for a given sealing effect. Although the patent in suit does not provide any direct evidence for this, it is nevertheless considered

plausible that particles of an emulsion cannot penetrate into the substrate as deeply as a solution can.

The only reference to a top coat in document D1 mentions spraying ("*abspritzen*") with nitrocellulose lacquer ("*Nitrolack*") or polyester paint ("*Polyesterlack*") (column 3, page 335) and thereby implies an absence of further treatment: In particular "*Nitrolack*" is a lacquer which dries physically through evaporation of its solvent and thus does not require any curing.

The subject-matter of claim 1 (main request) differs from the closest prior art process disclosed in document D1 in that the press coating is an aqueous colloidal dispersion and in that the top coat is cured.

These features are in synergy, because the improved sealing (of the substrate) by the press coat decreases the penetration of the curable top coat layer (into the substrate). Curable top coating material which penetrates deeply into the substrate is not reached by the curing radiation and thus leads to health, safety and environmental problems (patent in suit, column 2, lines 5 to 10). This problem which also concerns UV curable top layers (see the subject-matter of claim 7 according to the main request) is not mentioned in document D1 which is concerned with replacing solvent bases by water bases (third full paragraph, column 2, page 334).

The subject-matter of claims 1 and 7 according to the main request therefore involves an inventive step.

The subject-matter of claim 1 according to the first auxiliary request further includes the subject-matter of claim 4 as granted with respect to a UV-radiation curable top coating. The above arguments with respect to claim 7 (main request) now also apply to claim 1 (auxiliary request). The subject-matter of claims 1 and 7 according to the auxiliary request therefore involves an inventive step.

The late filing of the second auxiliary request is due to the illness of the original attorney and the resulting late transfer of the case to the present attorney. This request does not introduce any new issues: the amendments to the claims only involve each respective independent claim including the additional features from the respective other independent claim as granted.

Claims 1 and 6 according to the second auxiliary request both address a problem not discussed in the prior art, namely the health, safety and environmental issues caused by uncured top coating material penetrating deeply into the substrate and not being reached by the curing radiation (patent in suit, column 2, lines 5 to 10). The solution involves a press coat from an aqueous colloidal dispersion to seal the substrate and to limit the amount of unreacted double bonds still present after curing.

Reasons for the Decision

1. The appeal is admissible.
2. *Sufficiency of disclosure (Article 100(b) EPC 1973)*

According to the description of the patent in suit the "*low amount of unreacted double bonds is probably due to the effective sealing of the porous surface of the substrate by using the press coat. Due to this sealing, the penetration of the radiation curable coating layer into the substrate is reduced*" (paragraph [0026], patent in suit). In the examples 4A and 6A, values of respectively 3% and 7% unreacted double bonds have been achieved (column 12, line 34 and column 14, line 8, patent in suit). It is thus quite clear to the board that the skilled person, using his knowledge of radiation cured coatings, would be able to select without undue burden suitable process parameters for curing the radiation cured coating layer and, because of the above sealing effect, achieve any desired value of unreacted double bonds within the claimed ranges.

In any case, in opposition proceedings, it is the opponent who bears the burden of proof that the invention cannot be carried out within the whole range claimed (see "*Case law of the boards of appeal of the European patent office*", 6th edition 2010, page 247, lines 4 to 8 and, for example, T 418/91).

Since the appellant merely asserted the insufficiency of disclosure without providing any evidence or reasons why the skilled person cannot achieve any required level of unreacted double bonds in the respective ranges "*less than 15%*" (claim 7, main request) or "*less than 10%*" (claim 8, main request), the board has no basis for not considering that the subject-matter of claims 7 and 8 according to the main request is sufficiently disclosed for the skilled person to carry out the invention as claimed.

3. *Main request - inventive step (Article 56 EPC 1973)*

The magazine article D1 constitutes the closest prior art and discusses the calendering process for coatings for the wood and furniture industry (see title). It teaches that a calendered press coat reduces the amount of paint required for coating (page 334, left hand column, second paragraph from the bottom; page 334, middle column, last paragraph to right hand column, first paragraph; page 336, left hand column, penultimate sentence of first paragraph; page 336, middle column, lines 1 to 10 of the first full paragraph).

Document D1 mentions spraying ("abspritzen") with nitrocellulose lacquer ("Nitrolack") or polyester paint ("Polyesterlack") as a possible further treatment of a calendered press coating for surfaces needing such a top coat (page 335, last paragraph).

The subject-matter of claim 1 (main request) differs from the process disclosed in document D1 in that the press coating is an aqueous colloidal dispersion and in that the top coat is cured.

If it be generally considered plausible that particles of an emulsion cannot penetrate into the substrate as deeply as a solution, then the skilled person would necessarily have been aware of this fact. The patent in suit does not provide any evidence that it is because of the use of an aqueous colloidal dispersion that the sealing effect of the substrate is achieved. Instead, the patent in suit states that the sealing effect is achieved because of the press coating, i.e. because of the calendering step (column 2, lines 46 to 48) and is thereby in this respect consistent with the disclosure of document D1 (page 334, left hand column, penultimate

paragraph and right hand column, lines 4 to 11). The board thus cannot accept that the sealing effect is achieved merely because an aqueous colloidal dispersion is used.

In consequence, starting from document D1, the objective problem to be solved by the skilled person is to put its teaching into practice.

This involves selecting suitable paints for the press coating and for the top coating when such a top coating is required.

An aqueous colloidal dispersion - as opposed to a solution or an aqueous-oil dispersion - is merely one of three possibilities the skilled person would consider as part of the normal practice of his art when seeking a water based press coat in accordance with the process of document D1.

As pointed out by the board during the oral proceedings, the skilled person is familiar with UV-curable polyester paints (document D7, page 55, first full paragraph) and the choice of such a coating does not extend beyond the normal practice of the art.

The subject-matter of claim 1 according to the main request therefore does not involve an inventive step.

4. *First auxiliary request - inventive step (Article 56 EPC 1973)*

The subject-matter of claim 1 according to the first auxiliary request further specifies a radiation curable top coating cured using UV-radiation.

The above arguments with respect to claim 1 according to the main request thus apply likewise.

The subject-matter of claim 1 according to the first auxiliary request therefore does not involve an inventive step.

5. *Second auxiliary request*

5.1 *Admissibility*

The board considered the second auxiliary request of the respondent to be a response to the discussions during the oral proceedings. Although late filed, the amendments made - the inclusion of the features relating to the UV curable coat from granted claim 7 into claim 1 and the inclusion of the aqueous colloidal dispersion feature of granted claim 1 into claim 6 - do not raise any new issues which the board could not be expected to deal with without adjournment of the oral proceedings or which the other party could not reasonably have expected. The board thus exercised its discretion according to Article 13(1) RPBA and admitted the second auxiliary request into the proceedings.

5.2 *Inventive step (Article 56 EPC 1973)*

Although document D1 mentions environmental considerations against solvent based lacquers (page 334, middle column, third full paragraph), only their replacement by a water diluted press coating is discussed. The problem resulting from curable top coating material penetrating deeply into the substrate and not being reached by the curing radiation is neither mentioned in document D1 nor in any other

available prior art. In consequence, there is also no evidence in the prior art concerning the limits specified in claims 1 and 6 for the relative amount of unreacted double bonds remaining in the substrate after curing.

As was already pointed out by the appellant in the grounds of appeal in the context of claim 7 of the main request, the skilled person would merely expect a lesser amount of top coating material to be required when coating a substrate sealed by a press coating.

However, this consideration has no bearing on the issue of the relative amount of unreacted double bonds remaining in the substrate after curing.

In any case, the appellant bears the burden of proof (see point 2 above) for the assertion that the claimed limits can be achieved merely as the result of including the calendaring step in the process.

Under these circumstances, the board is not obliged to delay its decision, by reason only of the absence at the oral proceedings of any party duly summoned who may then be treated as relying only on its written case (Article 15(3) RPBA).

The subject-matter of claims 1 and 6 according to the second auxiliary request therefore involves an inventive step.

Claims 2 to 5 and 7 are directly or indirectly dependent from independent claims 1 or 6 so that the subject-matter of these claims also meets the requirement of Article 56 EPC 1973.

The description has been adapted to the amended claims.
The amendments made to the application do not extend
beyond the content of the application as filed.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the department of first instance with the order to maintain the patent as amended with the following documents:
 - claims 1 to 7 of the second auxiliary request submitted during the oral proceedings held on 19 October 2012;
 - description columns 1 to 14 submitted during the oral proceedings held on 19 October 2012.

The Registrar:

The Chairman:



D. Meyfarth

M. Poock

Decision electronically authenticated