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**Datasheet for the decision
of 11 April 2008**

Case Number: T 0518/05 - 3.2.07

Application Number: 96920126.8

Publication Number: 0830238

IPC: B24D 3/28

Language of the proceedings: EN

Title of invention:

Dual cure binder systems

Patentee:

Saint-Gobain Abrasives, Inc.

Opponent:

3M Innovative Properties Company Office of Intellectual
Property Counsel

Headword:

-

Relevant legal provisions:

EPC Art. 54, 111(1), 123(2)(3)
RPBA Art. 13

Relevant legal provisions (EPC 1973):

EPC R. 64
RPBA Art. 10b

Keyword:

"Admissibility of appeal (yes)"
"Admissibility of amended requests (yes)"
"Allowability of amendments (main- and second auxiliary
request - yes; first auxiliary request - no)"
"Novelty (main request - no, second auxiliary request - yes)"
"Remittal to department of first instance for further
prosecution (yes)"

Decisions cited:

-

Catchword:

-



Case Number: T 0518/05 - 3.2.07

D E C I S I O N
of the Technical Board of Appeal 3.2.07
of 11 April 2008

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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 15 February 2005
revoking European patent No. 0830238 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: H. Meinders
Members: H. Hahn
I. Beckedorf

Summary of Facts and Submissions

I. The patent proprietor lodged an appeal against the decision of the Opposition Division to revoke European patent No. 0 830 238. Its notice of appeal included the following:

"Statement

The appealed Decision is the Decision to **revoke** a European **Patent N^oEP-B 0830238** dated on February 15, 2005.

The appeal is directed, namely:

- to the discussion of the prior art, and namely the teaching of the prior art.
- to the discussion of novelty and inventive step, of all the granted claims or at least a part of said claims, or of amended claims as might be submitted;
- to the discussion related to the compliance of the granted claims to all the EPC articles and Rules, namely those cited in the Decision;
- more generally to establishing the patentability of the invention as claimed under the form of the granted claims or at least a part of the said claims, or of amended claims as might be submitted;
- the refund of the Appeal Fee will NOT be requested."

II. An opposition had been filed against the patent as a whole under Article 100(a) EPC on the grounds of lack of novelty and inventive step citing documents D1 (US-A-4 751 138), D2 (US-A-4 903 440), D3 (US-A-5 236 472) and D4 (US-A-5 256 170).

The Opposition Division held that claim 1 as granted lacked novelty with respect to a process disclosed in D2.

- III. With a communication dated 29 November 2007 annexed to the summons to oral proceedings the Board presented its preliminary opinion based on claims 1 to 25 of the patent as granted.

The Board remarked that claim 1 appeared to lack novelty over D2 and additionally over documents D1, D3 and D4 which had not been considered in the impugned decision (D1 having been discussed in the oral proceedings before the Opposition Division).

Since the impugned decision was silent with respect to independent process claim 16, which could, however, be considered to represent a preferred embodiment of claim 1, the Board further remarked that, provided that novelty of the subject-matter of claim 1 would be established, for procedural reasons it would appear to be more efficient to at least settle the issue of novelty for all the independent claims, i.e. to also discuss novelty of process claim 16. In this context the Board noted that the process embodiment of D4 using epoxy(meth)acrylate as binder appeared to be novelty destroying for process claim 16 as granted.

With respect to the appellant's auxiliary request that the case be remitted to the department of first instance for discussion of inventive step the Board noted that the Opposition Division had not yet carried out any examination of inventive step, the other ground

of opposition under Article 100(a) EPC raised by the opponent-respondent. Therefore, provided that a request would be filed of which the claimed subject-matter could be considered to be novel, the issue of inventive step would have to be dealt with, taking into consideration the problem-solution approach, on remittal pursuant to Article 111(1) EPC.

The parties were given the opportunity to file observations to the communication which should be filed well in advance, i.e. at least one month, before the date of the oral proceedings.

Finally, the parties were advised to take note of the Rules of Procedure of the Boards of Appeal, in force as of 1 May 2003 and especially of Article 10b (as of 13 December 2007: Article 13).

- IV. With letter dated 27 February 2008 the appellant filed an amended main request and a first and a second auxiliary request together with arguments concerning the basis for the amendments and the question of novelty in view of D1-D4.

- V. Oral proceedings before the Board were held on 11 April 2008. First a discussion with respect to the new issues of formal admissibility of the appeal and the admissibility of the above mentioned amended requests took place, followed by the issues of allowability of the amendments and of novelty. As a result of that discussion the requests filed with letter of 27 February 2008 were amended at the oral proceedings and resubmitted as "new" requests.

- (a) The appellant requested that the decision under appeal be set aside and that the case be remitted to the department of the first instance for further prosecution on the basis of any set of claims filed as new main request (claims 1 to 20) or as new first auxiliary request (claims 1 to 20) or as new second auxiliary request (claims 1 to 7) that the Board finds to involve novelty.
- (b) The respondent (opponent) requested that the appeal be dismissed.

At the end of the oral proceedings the Board announced its decision.

VI. Independent claims 1 and 13 according to the new main request read as follows (amendments as compared to claims 1 and 16 as granted are in bold):

"1. A process for the production of a coated abrasive which comprises

- a. Forming an abrasive layer on a backing material, said abrasive layer comprising abrasive grits and a bi-functional binder formulation which comprises a bi-functional compound having at least one radiation curable functional group and at least one thermally curable functional group per molecule, **whereby the radiation curable functional groups are acrylate, methacrylate or cycloaliphatic epoxy groups and the thermally curable functional groups are epoxy groups;**
- b. Using radiation to at least partially cure the radiation curable functional groups;

and

c. Subsequently completing the cure by activation of the thermally curable functional groups."

"13. A process for the production of a coated abrasive which comprises

- a. Coating a backing layer with a maker formulation comprising a compound having at least one UV curable (meth)acrylate group and at least one thermally curable epoxy group per molecule;
- b. Applying a layer of abrasive grits to the maker formulation;
- c. Exposing the maker coat to UV radiation sufficient to at least partially cure the UV curable (meth)acrylate groups; and
- d. Subsequently curing the epoxy groups."

VII. Independent claims 1 and 14 according to the new first auxiliary request read as follows (amendments as compared to claims 1 and 16 as granted are in bold):

"1. A process for the production of a coated abrasive which comprises

- a. Forming an abrasive layer on a backing material, said abrasive layer comprising abrasive grits and a bi-functional binder formulation which comprises a bi-functional compound having at least one radiation curable functional group and at least one thermally curable functional group per molecule, **wherein the bi-functional binder composition is applied as a maker coat and the abrasive grits are deposited thereon, and wherein the bi-functional binder composition is pattern-coated on the backing material;**
- b. Using radiation to at least partially cure the radiation curable functional groups;

and

c. Subsequently completing the cure by activation of the thermally curable functional groups."

"14. A process for the production of a coated abrasive which comprises

a. Coating a backing layer with a maker formulation comprising a compound having at least one UV curable (meth)acrylate group and at least one thermally curable epoxy group per molecule, **whereby the maker coat formulation is pattern coated on the backing material;**

b. Applying a layer of abrasive grits to the maker formulation;

c. Exposing the maker coat to UV radiation sufficient to at least partially cure the UV curable (meth)acrylate groups; and

d. Subsequently curing the epoxy groups."

VIII. Claim 1 according to the new second auxiliary request reads as follows (amendments as compared to claim 16 as granted are in bold):

"1. A process for the production of a coated abrasive which comprises

a. Coating a backing layer with a maker formulation comprising a compound having at least one UV curable (meth)acrylate group and at least one thermally curable epoxy group per molecule, **wherein the bi-functional binder formulation also comprises a filler that has been surface modified by reaction with a silane;**

b. Applying a layer of abrasive grits to the maker formulation;

c. Exposing the maker coat to UV radiation sufficient

to at least partially cure the UV curable (meth)acrylate groups; and
d. Subsequently curing the epoxy groups."

IX. The appellant argued essentially as follows:

The case was taken over in December 2007 from a colleague but the extent to which amendment or cancellation of the decision under appeal was requested was clear from the notice of appeal dated 6 April 2005 (see in particular, point I above), i.e. to set aside the decision as identified and to maintain the patent as granted. It was taken by surprise by this objection of the respondent which could have been raised much earlier.

With respect to the sets of claims filed with letter of 27 February 2008 it remarked as the case was only recently taken over by the new representative, these additional requests were filed at the earliest possible moment, in any case well before the limit date indicated by the Board. It should be allowable to incorporate the subject-matter of dependent claims as granted into the independent claims as granted at this stage of proceedings. These new requests represent a reaction to the Board's communication and attempt to overcome the novelty objections raised therein. The reason for further limiting the independent claims into three different technical directions is simply to make the claims novel by incorporating features of granted dependent claims which were never under discussion in the first instance proceedings.

Claim 1 of the new main request is a combination of claims 1, 3 and 4 as granted so that the requirements of Articles 123(2) and (3) EPC are met.

Claims 1 and 13 of the new main request are novel over D1 to D4. Only example 10 of D1 mentions a composition UV-5 which comprises a compound having an epoxy and acrylic groups in the same molecule but this example was only radiation cured so that no thermal curing of the epoxy groups took place (see column 16, lines 16 to 59). Examples 1 and 5-8 of D1 do not mention the claimed functional groups in one molecule as required by claims 1 and 13 of the main request. D4 does not disclose bireactive monomers and points to the opposite direction, i.e. to be most preferably free of bireactive monomers (see column 13, lines 54 and 55). Both D2 and D3 do not disclose the required combination of epoxy and acrylate functional groups.

The feature "... is pattern-coated ..." of claims 1 and 14 of the new first auxiliary request renders the subject-matter of these claims novel over D1 to D4. "Pattern-coating" means a specific pattern like a three-dimensional structure, e.g. a pyramid. This feature and paragraph [0028] of the patent should be interpreted in that manner. Claim 1 represents a combination of claims 1, 5 and 6 as granted whereas claim 14 is based on a combination of claims 16 and 20 as granted. Dependent claim 5 is based on claim 7 as granted and thus, since the patent also discloses that the size coat may comprise said bi-functional binder formulation (see patent, paragraph [0014]), the requirements of Articles 123(2) and (3) EPC are met for the new first auxiliary request.

The subject-matter of claim 1 of the new second auxiliary request represents a combination of claims 16 and 22 as granted so that the requirements of Articles 123(2) and (3) EPC are met. The subject-matter of claim 1 is novel over D1 to D4 since these documents do not disclose a process for making a coated abrasive which includes the step of coating a backing layer with a maker formulation which comprises the combination of a bi-functional binder formulation comprising a compound having at least one UV curable (meth)acrylate group and at least one thermally curable epoxy group per molecule with a filler that has been surface modified with a silane.

X. The respondent argued essentially as follows:

The notice of appeal dated 6 April 2005 appears not to meet the requirement of Rule 64 b) EPC 1973 because the "statement" (see point I above) does not identify the extent to which amendment or cancellation of the decision is requested. It is admitted that these issues could have been raised earlier but the admissibility of the appeal represents an issue which can be raised at any time of the proceedings.

Originally the claims as granted were maintained. Then three new requests were filed with letter of 27 February 2008, but the auxiliary requests thereof point into different directions. Only the amended main request is supported by the appellant's original arguments before the Opposition Division and the grounds of appeal. Furthermore, the features added to the independent claims are very common and no effects

can be attributed to them. The fact that the file had only recently been taken over from a colleague is no excuse for their late filing. Therefore the first and second auxiliary requests should not be admitted into the proceedings.

Novelty of the subject-matter of claims 1 and 13 of the new main request is still contested. The process according to D1 uses bireactive compounds in various combinations of radiation and conventional heat curing resin systems (see column 2, line 55 to column 3, line 10). Preferred bireactive compounds are those contained in reaction products comprising acrylic acid and a compound comprising epoxy groups (see column 6, lines 11 to 41 and lines 48 to 52). The binder may comprise thermally activated initiators (see column 11, lines 9 to 19). According to example 1 a binder composition UV-1 including bireactive No. 2, which is the reaction product of one mole diglycidyl ether of Bisphenol A with one mole of acrylic acid (and thus includes two epoxy groups and an acrylate group in one molecule) was applied as make coat onto a backing and after drop coating the abrasives thereon was radiation cured. Thereafter a size coat formulation also including said bireactive No. 2 was applied and then heated by an IR heater to 100°C and then thermally cured (see column 13, lines 20 to 52). Furthermore, this epoxy-acrylate, i.e. bireactive No. 2, appears to correspond to the preferred one according to the contested patent (see page 4, lines 8 to 10). Since the term "acrylic acid" according to D1 includes (meth)acrylic acid (see column 6, lines 49 to 51; claim 3) also claim 13 is anticipated. Also the examples 5-8 of D1 are relevant, which were carried out

in accordance with the procedure of example 1 and of which the size coat formulation comprises a latent thermal initiator (see column 15, lines 14 to 16, lines 35 to 40 and lines 49 to 52). Hence D1 is novelty destroying for claims 1 and 13.

The feature "pattern-coating" of claim 1 of the new first auxiliary request can be interpreted in the light of paragraph [0028] of the patent in a broad manner. Namely, that not all of the backing is coated with the maker coat. In reality there is always a margin on the backing which is not coated with the make coat binder formulation. Dependent claim 5 of the first auxiliary request as well as the description of the contested patent (see patent, paragraph [0014]) allow that the size coat comprises said bi-functional component in its formulation. Consequently, claim 1 embraces an embodiment wherein only the size coat including said bi-functional binder formulation is pattern-coated so that example 25 of D1 appears to be novelty destroying for claim 1. According to said example a composition UV-25 including said bireactive No. 2 was applied as a size coat only onto **portions** of the cured make coat made from composition UV-20 and then cured (see column 21, lines 50 to 63; and Table X). Therefore claim 1 lacks novelty over D1.

Otherwise dependent claim 5, which is based on claim 7 as granted which only referred to claim 1 as granted, contravenes Article 123(2) EPC since dependent claim 6 as granted, which defined the pattern-coating with the bi-functional binder composition, referred to dependent claim 5 as granted, which defined that the bi-functional binder composition is applied as a maker

coat. This view appears to be supported by paragraph [0028] of the patent wherein it is stated that the binder formulation according to the invention when applied as maker coat, can be pattern coated on the backing" (see page 4, lines 43 to 45). Thus the embodiment now created by dependent claim 5 of the new first auxiliary request has no basis in the application as originally filed.

The formal allowability and novelty of claim 1 of the new second auxiliary request are not contested.

Reasons for the Decision

1. *Admissibility of the appeal*

1.1 According to Rule 64 EPC 1973, which is applicable to the present appeal at the time when it was filed, the notice of appeal shall contain (a) the name and address of the appellant in accordance with the provisions of Rule 26, paragraph 2(c); and (b) a statement identifying the decision which is impugned and the extent to which amendment or cancellation of the decision is requested.

1.2 The notice of appeal dated 6 April 2005 specifies under point "a) appellant" the name, the address and the State in which the principal place of business of the appealing company is located.

Hence requirement (a) of Rule 64 EPC 1973 is fulfilled.

1.3 Furthermore, from the reference numbers EPA 96 920 126.8 and EP N°B 0830238 and the date of the decision of 15 February 2005 cited on the first page of said notice of appeal the impugned decision can be clearly identified.

1.3.1 Under point "b) statement" (see point I above) of said notice of appeal it is firstly made clear that the impugned decision was to **revoke** European patent EP-B-0 830 238 on 15 February 2005.

Thereafter it is stated "**the appeal is directed ...**" and eventually at the fourth bullet it is stated "more generally **to establishing the patentability of the invention as claimed under the form of the granted claims** or at least part of said claims, or of amended claims as might be submitted" (emphasis added by the Board).

1.3.2 From the above statements it is firstly clear, since the patent was revoked by the Opposition Division, that it is requested to set aside the impugned decision. Any other interpretation would not make sense. Secondly, it can readily be recognised that the decision under appeal should be cancelled *in toto*, i.e. to maintain the patent as granted by taking account of said statement "**establishing the patentability of the invention as claimed in the form of the granted claims**". Auxiliarily, amendment of the decision was requested by maintenance in amended form, via the statement "**establishing the patentability of the invention as claimed in the form of ... at least part of the said (i.e. granted) claims or of amended claims as might be submitted**".

Hence also the requirement (b) of Rule 64 EPC 1973 is fulfilled.

1.3.3 Consequently, the respondent's late objections to the admissibility of the appeal presented the first time at the oral proceedings before the Board, cannot hold.

1.4 The Board therefore concludes that the notice of appeal meets all the requirements of Rule 64 EPC 1973. Since the notice of appeal and the grounds of appeal were timely filed and met the requirements of Articles 106-108 EPC the appeal is deemed filed and considered admissible.

2. *Admissibility of amended requests*

With letter dated 27 February 2008 the appellant submitted an amended main request and two auxiliary requests (see point IV above) which were sent by the EPO with communication dated 7 March 2008 to the respondent. Thus these requests were filed well before expiry of the time limit as set out in the Board's communication (see point III above) and likewise the respondent received them in time.

The respondent argued that - since these requests were presented only about one month before the date of the oral proceedings and in substance are of a non-converging nature, as they go into different directions - only the amended main request should be admitted since it is the only one being in line with the argumentation originally presented by the patentee in the opposition proceedings and in its grounds of appeal.

Consequently, this objection of the respondent relates to a (late) change to the appellant's case. In accordance with Article 13(1) RPBA, it lies within the discretion of the Board whether or not it considers such belated changes.

In the present case the Board considers that these requests are a reaction to the lack of novelty objections raised in its communication with respect to claims 1 and 16 as granted (see point III above). Furthermore, although the appellant, after having changed its representative, could have filed these three requests earlier than it actually did, these requests represent only combinations of said two independent claims 1 and 16 as granted with, of at most two, dependent claims as granted and they attempt to establish novelty of the subject-matter claimed therein.

Therefore the Board cannot see any abuse of procedure in the present case wherein amended requests were filed in the time period between the Board's communication and the time limit given therein in order to overcome objections made in that communication.

In exercising its discretion the Board thus came to the conclusion that these three new requests represent fair attempts to overcome said objections. The question whether the amendments made are appropriate to remove the objections can only be answered on the basis of their content (compare the points below). Consequently, the Board admitted the main request and first and second auxiliary requests filed with letter of 27 February 2008 at this stage of the proceedings.

Following the discussion at the oral proceedings on the formal allowability of the amendments to the claims, as well as the issue of novelty (see point 4 below), these requests were replaced with their respective "new" versions.

New main request

3. *Admissibility of amendments (Article 123(2) and (3) EPC)*

Independent claim 1 of the main request is based on claims 1, 3 and 4 as granted while independent claim 16 remained unamended. Claim 1 of the main request is based on a combination of claims 1, 3 and 4 of the application as originally filed (corresponding to the published WO-A-96 39278) while claim 13 is based on claim 16 in combination with page 3, lines 18 to 20, both of the application as originally filed. Thus the requirement of Article 123(2) EPC is met by the subject-matter of claims 1 and 16. Since the subject-matter of claims 1 and 16 has been limited compared to that of claims 1 and 16 as granted the requirement of Article 123(3) EPC is likewise met.

4. *Novelty (Article 54 EPC)*

4.1 The process for producing a coated abrasive product according to D1 uses bireactive binder compounds containing at least one ethylenically-unsaturated group and at least one 1,2-epoxide group in various combinations of radiation curable and conventional heat curing resin systems (see column 2, line 55 to column 3, line 10). Preferred bireactive compounds are those contained in reaction products comprising acrylic acid

and a compound comprising epoxy groups (see column 6, lines 11 to 41 and lines 48 to 52). The binder may comprise thermally activated initiators (see column 11, lines 9 to 19).

The appellant's arguments with respect to D1 cannot be accepted for the following reasons:

- 4.1.1 According to example 1 a binder composition UV-1 including bireactive No. 2, which is the reaction product of one mole diglycidyl ether of Bisphenol A with one mole of acrylic acid (and thus includes two epoxy groups and an acrylate group in one molecule) was applied as make coat onto a backing and after drop coating the abrasive grits thereon was radiation cured in an RPC Processor by means of two medium pressure mercury lamps. Thereafter a size coat formulation also including said bireactive No. 2 was applied and then heated by an IR heater to 100°C and then cured in said RPC Processor (see column 13, lines 20 to 52).
- 4.1.2 Examples 5-8 of D1 for producing coated abrasives on a backing material were made in accordance with the procedure of example 1 using likewise UV-1 as the make coat and the then applied size coat formulations comprised additionally a latent thermal initiator. According to example 5 the size coat comprised UV-1 whereas it was replaced by other binders in examples 6-8 (see column 15, lines 14 to 16, lines 35 to 40 and lines 49 to 52).
- 4.1.3 Said epoxy-acrylate, i.e. bireactive No. 2, corresponds to a preferred bi-functional binder according to the patent-in-suit (see page 4, lines 8 to 10).

Thus the process according to D1 for the production of a coated abrasive comprises the steps of

- a) forming an abrasive layer on a backing material, said abrasive layer comprising abrasive grits and a bi-functional binder formulation comprising a bi-functional compound having one radiation curable acrylate group and two thermally curable epoxy groups per molecule,
- b) using radiation to at least partially cure the acrylate functional groups, and
- c) subsequently completing the cure by activating the thermally curable epoxy groups.

Consequently, the process according to D1 has all the features of one of the alternatives of the process of claim 1. The subject-matter of claim 1 thus lacks novelty.

4.2 Mercury lamps, as disclosed in the context of the examples of D1, are commonly used to provide electromagnetic radiation, particularly in the ultraviolet light range. This fact was not contested by the appellant.

4.2.1 Since the term "acrylic acid" according to D1 generally includes (meth)acrylic acid (see column 6, lines 49 to 51; claim 3) the skilled person when considering the whole content of this document is taught that he can simply replace acrylic acid by (meth)acrylic acid. This holds also true for the aforementioned examples. Thereby the skilled person arrives at a process as described above wherein the acrylate functional groups are replaced by (meth)acrylate functional groups which

are cured by the UV light produced by the said two mercury lamps.

4.2.2 Consequently, the process according to D1 is also novelty destroying for the subject-matter of claim 13.

4.3 The main request is thus not allowable since the subject-matter of claims 1 and 13 lacks novelty over D1 (Article 54 EPC).

New first auxiliary request

5. *Admissibility of amendments (Article 123(2) and (3) EPC)*

Claim 1 of the first auxiliary request is based on claims 1, 5 and 6 as granted, the latter defining that "**the bi-functional binder composition is pattern-coated** on the backing material" (claim 5 as granted defined "in which **the bi-functional binder composition is applied as a maker-coat** and the abrasive grits are deposited thereon" (emphasis added by the Board) and referred only to claim 1. Said claims 1, 5 and 6 as granted have a basis in claims 1, 5 and 6 of the application as originally filed which disclose the identical references. Thus claim 1 of the new first auxiliary request meets the requirements of Articles 123(2) and (3) EPC.

5.1 Dependent claim 5 of the new first auxiliary request, however, now defines "The process according to claim 1, in which **the bi-functional binder composition is added as a component of a size coat**" (emphasis added by the Board). The wording of claim 5 of this auxiliary

request is identical with that of dependent claim 7 as granted.

- 5.1.1 According to the subject-matter of claim 5, when dependent upon claim 1, an embodiment is created wherein the size coat comprising said bi-functional binder composition is pattern-coated. However, no basis in the application as originally filed can be found which would provide support for such an embodiment.
- 5.1.2 There exists only one passage in the application as originally filed concerning the pattern-coating but **only** in the context of the **maker coat** and then also in combination with a phenolic resin size coat (see page 8, lines 11 to 22).
- 5.1.3 There exists likewise only one passage in the application as originally filed concerning the embodiment wherein the binder layer comprising the bi-functional component may be applied as a size coat over a conventional maker resin layer, or over a make coat that also comprises a bi-functional binder component (see page 3, line 37 to page 4, line 4). This passage thus corresponds to the subject-matter of dependent claim 7 as originally filed and claim 7 as granted, respectively. Pattern-coating in combination with a size-coat comprising said bi-functional component is, however, nowhere disclosed.
- 5.1.4 Consequently, dependent claim 5 extends beyond the content of the application as originally filed and thus contravenes Article 123(2) EPC.

The new first auxiliary request is therefore not allowable.

New second auxiliary request

6. *Admissibility of amendments (Article 123(2) and(3) EPC)*

Claim 1 of the new second auxiliary request is based on the combination of claims 16 and 22 as granted which were based on claims 16 and 22 of the application as originally filed. The subject-matter of independent process claim 16 as granted is thereby limited. Dependent claims 2-7 of the second auxiliary request correspond to claims 17-21 and 23 as granted, respectively, which were based on claims 17 to 21 and 24 as originally filed, respectively.

Hence claims 1 to 7 of the new second auxiliary request meet the requirements of Articles 123(2) and (3) EPC.

7. *Novelty (Article 54 EPC)*

Claim 1 of the new second auxiliary request defines a process for producing coated abrasives wherein the maker formulation comprises a compound having at least one UV curable (meth)acrylate group and at least one thermally curable epoxy group per molecule, and which binder formulation also comprises a filler which has been surface modified by reaction with a silane.

7.1 D1, although disclosing applying maker formulations comprising bi-functional binder molecules having (meth)acrylate and epoxy groups, only generally mentions the addition of fillers, lubricants, and minor

amounts of other additives as surfactants, pigments and suspending agents (see column 11, lines 20 to 24). There is no mention of the filler having been surface modified by reaction with a silane.

- 7.2 D2 discloses the use of an aminosilane treated calcium metasilicate filler for making coated abrasives (see column 16, lines 18 and 19) but only in combination with a melamine acrylate binder system (see column 2, lines 26 to 37 and line 54 to column 3, line 14), which is not the maker formulation presently claimed.
- 7.3 D3 discloses a similar binder system as D2 (see column 2, lines 48 to 67; column 3, lines 14 to 48). The binder optionally comprises additives such as fillers, fibers, lubricants, grinding aids, wetting agents, surfactants, pigments, dyes, coupling agents, plasticizers, and suspending agents (see column 13, lines 31 to 37). There is no mention of the filler having been surface modified by reaction with a silane.
- 7.4 The method for producing coated abrasives according to D4 may involve the use of epoxy-acrylates which may be bi-functional molecules (see column 2, line 58 to column 3, line 20; column 8, lines 63 to 67). The make coat precursor and/or size coat precursor can optionally comprise additives such as fillers, fibers, lubricants, grinding aids, wetting agents, surfactants, colorants, coupling agents, plasticizers, and suspending agents (see column 14, lines 24 to 29). There is no mention of the filler having been surface modified by reaction with a silane.

7.5 The Board therefore concludes that claim 1 of the second auxiliary requests is novel over the processes disclosed in any of D1 to D4.

8. *Remittal to the department of first instance
(Article 111(1) EPC)*

First of all, the Opposition Division has not yet carried out any examination of inventive step. Furthermore, by combining the subject-matter of claims 16 and 22 as granted according to claim 1 of the new second auxiliary request the case has been substantially amended. Therefore, since the claimed subject-matter of the second auxiliary request is considered to meet the requirements of Articles 123(2) and (3) EPC and to be novel, the issue of inventive step, which was raised by the respondent as another ground of opposition under Article 100(a) EPC, has to be dealt with.

The Board, also taking account of the appellant's request for remittal to the department of first instance for further prosecution, in accordance with Article 111(1) EPC, therefore remits the case for this purpose to the Opposition Division for further prosecution (see in this context the Case Law of the Boards of Appeal of the European Patent Office, 5th Edition, 2006, VII.D.9 and VII.D.14.4).

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 for further prosecution on the basis of the new second auxiliary request filed in the oral proceedings.

The Registrar:

The Chairman:

G. Nachtigall

H. Meinders