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**Datasheet for the decision
of 22 April 2020**

Case Number: T 1625/17 - 3.3.03

Application Number: 09749928.9

Publication Number: 2283056

IPC: C08G18/38, C08L63/00,
C08L63/02, C08L75/00,
C09D163/00, C09D163/02,
C09D175/02, C09D175/04

Language of the proceedings: EN

Title of invention:

NOVEL FAST CURING ULTRA HIGH SOLIDS LOW VOC COATING SYSTEM FOR
AGGRESSIVE CORROSIVE ENVIRONMENTS

Patent Proprietor:

Hempel A/S

Opponents:

Jotun A/S
Akzo Nobel Coatings International B.V.
Sika Technology AG

Relevant legal provisions:

RPBA Art. 12(2), 12(4)
EPC Art. 56, 54(2)

Keyword:

New evidence admitted on appeal - direct and appropriate response to the contested decision
Handout of slides made available during presentation - availability to the public (yes)
Inventive step (no) (main request, 5th and 10 th auxiliary requests)
Unsubstantiated 1st to 4th, 6th to 9th and 11th to 14th auxiliary requests - not admitted into the proceedings

Decisions cited:

T 0939/92, T 1212/97, T 0667/01, T 2451/13



Beschwerdekammern

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Case Number: T 1625/17 - 3.3.03

D E C I S I O N
of Technical Board of Appeal 3.3.03
of 22 April 2020

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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted on
8 June 2017 concerning maintenance of the
European Patent No. 2283056 in amended form.

Composition of the Board:

Chairman D. Semino
Members: F. Rousseau
W. Ungler

Summary of Facts and Submissions

I. The appeals lie from the interlocutory decision of the opposition division posted on 8 June 2017 according to which European patent No. 2 283 056 as amended according to the third auxiliary request based on the set of claims labelled "MAIN REQUEST-C" filed during the oral proceedings on 11 May 2017 met the requirements of the EPC. The decision was also based on a main request submitted with letter of 13 February 2014, a first auxiliary request based on the set of claims labelled "MAIN REQUEST-A" filed with letter of 5 April 2017 and a second auxiliary request based on the set of claims labelled "MAIN REQUEST-B", also filed during the oral proceedings.

II. Claims 8 and 9 of the first auxiliary request ("MAIN REQUEST-A") read as follows :

"8. A method for the establishment of a coated structure using a coating system consisting of a primer composition and a top-coat composition, said primer composition comprising an epoxy-based binder system being a combination of one or more epoxy resins, one or more curing agents and optionally one or more reactive epoxy diluents, said epoxy resin having an epoxy equivalent weight of 150-700, and said top-coat composition comprising a polyurea-based binder system having as the primary components one or more di- or poly-isocyanate components and one or more di- or polyamine components, wherein the one or more di- or polyamine components include a secondary amine, said method comprising:

(i) applying the primer composition onto a predetermined part of the surface of the structure thereby forming a curable primer film on said surface,

(ii) allowing said curable primer film to at least partially cure thereby forming an epoxy primer coat,

(iii) applying the top-coat composition onto the epoxy primer coat thereby forming a curable top-coat film on said epoxy primer coat, and

(iv) allowing said curable top-coat film to cure, and if necessary allowing said epoxy primer coat to fully cure, thereby forming a cured coating system consisting of the epoxy primer coat and a polyurea top-coat;

wherein said primer composition has a volume solids % of at least 82 %, said top-coat composition having a volume solids % of at least 82 %; and the weighted average volume solids % of the coating system being at least 84 %, or

wherein said primer composition has a volume solids % of at least 86 %, said top-coat composition having a volume solids % of at least 78 %; and the weighted average volume solids % of the coating system being at least 82 %;

wherein the coating system is applied in a total dry film thickness of 120-400 μm ,

and wherein the volume solids is determined according to ISO 3233 with the modification that drying is carried out at 23 °C and 50 % relative humidity for 7 days.

9. The method according to claim 8, wherein the primer composition comprises 20-35 % by solids volume of zinc."

In the following, the first alternative covered by claim 8 in which the weighted average volume solids of the coating system used is of at least 84% will be referred to as the "first embodiment". The second alternative defined in claim 8, i.e. the methods using a coating system whose weighted average volume solids is of at least 82%, will be designated as the "second embodiment".

The second auxiliary request ("MAIN REQUEST-B") was limited to the methods defined in claims 8 and 9 of the "MAIN REQUEST-A"

The third auxiliary request ("MAIN REQUEST-C") was limited to the first embodiment of the methods defined in claims 8 and 9 of the "MAIN REQUEST-A".

III. The decision was taken having regard to the following documentary evidence amongst others:

D3: Slides of the presentation "Polyaspartics-Modern binders for highly efficient 2K PUR systems" on 10 May 2007 at the European Coatings Show 2007 in Nürnberg by Thomas Bäker from Bayer Material Science
D3a: Catalogue of the European Coatings Show 2007 in Nürnberg, 8 - 10 May 2007, Nürnberg Messe, VINCETZ, cover and pages 52-53

D4: Technical Data POLYMASTIC 2000, Jotun Paints, 2007

D5: Technical Data MARATHON I Q, Jotun Paints, 2007

D7: Technical Data Intercure 200 HS, International Protective Coatings, 1997

D8: Intercure® 99, Direct to Metal Polyaspartic, International Protective Coatings, 2008
D9: Polyurea spray coatings, The technology and latest developments, M. Broekaert
D10: Polyurea Elastomer Technology: Bridging the Gap to Commercial Applications, D.J. Primeaux et al, Polyurethanes Expo '98, September 17-20, 1998
D11: US 7,169,876 B2
D17: EP 1 788 048 A1
D29: WO 2007/054304 A1
D31: "Are Two Coats As Effective As Three?" by Shuang-Ling Chong et al, Federal Highway Administration, Public Roads, Sept/Oct 2006 Vol. 70 No. 2
D32: Technical Data Interzinc® 52, International Protective Coatings, 2007.

IV. According to the reasons for the decision the main request did not meet the requirements of Rule 80 EPC and the subject-matter of claim 7 of the first auxiliary request ("MAIN REQUEST-A") lacked an inventive step over the disclosure of D8 in combination with D17. The subject-matter of the second auxiliary request ("MAIN REQUEST-B") limited to the methods defined in claims 8 and 9 of the "MAIN REQUEST-A" was not allowable, because the second embodiment of claim 1 of the "MAIN REQUEST-B" (i.e. the second embodiment of claim 8 of the "MAIN REQUEST-A") also lacked an inventive over D8 in combination with D4. The opposition division admitted into the proceedings the third auxiliary request ("MAIN REQUEST-C") whose subject-matter was limited to the first embodiment of the methods defined in claims 8 and 9 of the "MAIN REQUEST-A" for which D8 was not prior art. The claimed method was found to be inventive starting from the disclosure of D10 which represented the closest prior art. It was also held that D3 had not been shown to

have been made publicly available, so that the additional objection that the method of the "MAIN REQUEST-C" lacked an inventive step over D3 failed to convince. In the absence of further objections the third auxiliary request ("MAIN REQUEST-C") was found to meet the requirements of the EPC.

V. Appeals against that decision were lodged by the patent proprietor and by all three opponents. Opponents 1 and 3 withdrew their appeals. They are accordingly party as of right to the appeal proceedings pursuant to Article 107, second sentence, EPC.

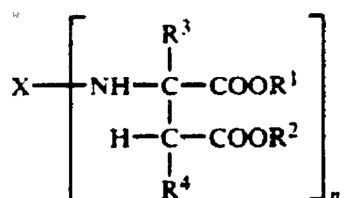
VI. The patent proprietor submitted with their statement setting out the grounds of appeal (letter of 17 October 2017) a main request and 1st to 14th auxiliary requests.

The main request corresponds to the claim request labelled "MAIN REQUEST-A" filed before the first instance whose wording, as far as its claims 8 and 9 are concerned, is indicated in above section II., i.e. the first auxiliary request on which the contested decision was based.

The 1st auxiliary request differs from the main request in that it is specified in each of the independent claims, including independent method claim 8, that the primer composition and the top-coat compositions are applied "in wet form".

The 2nd auxiliary request differs from the 1st auxiliary request in that the primer composition is defined in all independent claims to comprise "20-35 % by solids volume of zinc". As a result the 2nd auxiliary request contains a single method claim.

The 3rd auxiliary request differs from the 2nd auxiliary request in that the independent claims, including the method claim, comprise the additional restriction that the polyurea-based binder system comprises an isocyanate-reactive component of the formula (I):



wherein X represents a divalent hydrocarbon group obtained by the removal of the amino groups from 1,4-diaminobutane, 1,6-diaminohexane, 2,2,4-trimethyl-1,6-diaminohexane, 2,4,4-trimethyl-1,6-diaminohexane, 1-amino-3,3,5-trimethyl-5-aminomethyl-cyclohexane, 4,4'-diamino-dicyclohexyl methane or 3,3-"dimentyl"-4,4'-diamino-dicyclohexyl methane; R¹ and R² representing methyl or ethyl groups, R³ and R⁴ representing hydrogen and n being an integer of at least 2.

The 4th auxiliary request differs from the 3rd auxiliary request in that the independent claims define in addition that the dry film thickness of the first layer is higher than the dry film thickness of the second layer and that the rust creep of the dry coating system as determined according to ISO 12944-6 according to the corrosion category C5-M, High, is at the most 1 mm.

The 5th auxiliary request correspond to the the second auxiliary request underlying the contested decision ("MAIN REQUEST-B"), i.e. it consists of the methods defined in claims 8 and 9 of the present main request.

The 6th to 9th Auxiliary Requests correspond to the above-mentioned 1st to 4th Auxiliary Requests, in which

claims directed to coating systems have been cancelled, i.e. the 6th to 9th auxiliary requests are directed to the method claim(s) defined in the 1st to 4th auxiliary requests, respectively.

The 10th auxiliary request corresponds to the the third auxiliary request underlying the contested decision ("MAIN REQUEST-C"), i.e. it consists of the method claims 8 and 9 of the present main request restricted to their first embodiment.

The 11th to 14th auxiliary requests are directed to the first embodiment of the method claim(s) defined in the 1st to 4th auxiliary requests, respectively.

VII. Opponent 2 submitted with their rejoinder to the statement of grounds of the patent proprietor the following document:

D38: Affidavit from Thomas Bäker of 8 January 2018, including Annex 1.

VIII. In preparation of oral proceedings foreseen for 19 March 2020, the Board issued a communication dated 6 February 2020 including a preliminary opinion *inter alia* on whether the slides of D3 should be considered to have been made available to the public and on the issue of inventive step, in particular in relation to the method claims starting from the disclosure of D3 as the closest prior art in respect of the main request, 5th auxiliary request and 10th auxiliary request, as well as on the admittance of the 1st to 4th, 6th to 9th and 11 to 14th auxiliary requests.

- IX. With letter of 12 February 2020 the patent proprietor informed the Board that it would not be represented at the oral proceedings.
- X. The oral proceedings were thereafter cancelled by the Board and the parties informed that the decision would be communicated in writing.
- XI. The patent proprietor's submissions, in so far as they are pertinent, may be derived from the reasons for the decision below. They are essentially as follows:
- (a) D38 was late-filed and should not be admitted into the proceedings.
 - (b) D3 was not comprised within the state of the art. Even if it were the case, D3 did not constitute the closest prior art. In any event the subject-matter of any the independent claims 1, 7 and 8 of the main request was inventive step in the light of D3 when taken as the closest prior art and the teaching of D9, D10, D11 and D31.
 - (c) The subject-matter of claims 1, 7 and 8 of the main request was also inventive when considering D10 as the closest prior art.
 - (d) The subject-matter of claim 7 and of the second embodiment of claim 8 was inventive over D8.
 - (e) The subject-matter of the auxiliary requests met the requirements of Article 56 EPC.
- XII. The submissions of opponents 1 and 2, in so far as they are pertinent, may be derived from the reasons for the decision below. They are essentially as follows:

- (a) According to opponent 2 D38 and its Annex should be admitted into the proceedings.
- (b) D3 had been made available to the public as shown by D3a and D38. The subject-matter of any of the independent claims 1, 7 and 8 of the main request lacked an inventive step starting from either D3 or D10 as the closest prior art and in the light of the teaching of D4, D5, D17 and D31.
- (c) The subject-matter of claim 7 and of the second embodiment of claim 8 lacked an inventive step over D8.
- (d) Opponent 1 also submitted that the patentee had not sought before the opposition division to restrict the subject-matter of claim 1 or of the second embodiment of claim 8 of the main request, so that the 1st to 4th auxiliary requests should not be admitted into the proceedings.

XIII. Opponent 3 did not make any submission.

XIV. The appellant/patent proprietor requested that the decision under appeal be set aside and the patent be maintained on the basis of the claims of the main request, or alternatively on the basis of the claims of the 1st to 14th auxiliary requests, all submitted with their statement of grounds of appeal (letter of 17 October 2017).

XV. The appellant/opponent 2 requested that the decision under appeal be set aside and that the patent be revoked.

- XVI. The party as of right to the appeal proceedings pursuant to Article 107, second sentence, EPC/ opponent 1 requested that the appeal of the patent proprietor be dismissed.
- XVII. The party as of right to the appeal proceedings pursuant to Article 107, second sentence, EPC/ opponent 3 did not make any request.

Reasons for the Decision

1. The present proceedings are governed by the revised version of the Rules of Procedure which came into force on 1 January 2020 (Articles 24 and 25(1) RPBA 2020), except for Articles 12(4) to (6) and 13(2) RPBA 2020 instead of which Articles 12(4) and 13 RPBA 2007 remain applicable (Article 25(2) and (3) RPBA 2020).
2. The patent proprietor has informed the Board by letter of 12 February 2020 that it would not be represented at the oral proceedings, which in accordance with the case law (Case Law of the boards of Appeal, 9th edition 2019, III.C.4.3.2) is equivalent to a withdrawal of the request for oral proceedings. By means of this the patent proprietor has decided to base its case on its written submissions. In this respect the patent proprietor had the possibility to take position on all the issues on which this decision is based, namely availability to the public of the slides shown in D3, inventive step of the two alternative methods covered by the subject-matter of claim 8 of the main request (corresponding also to the ones of claim 1 of the 5th and 10th auxiliary requests) starting from D3 as the closest prior art, and admittance of the 1st to 4th, 6th to 9th and 11th to 14th auxiliary requests, as they

were dealt with both in the submissions of the parties and in the communication of the Board. As the Board was in the position to decide according to the request of the opponents, the decision could be taken in writing and the oral proceedings were canceled, as not deemed necessary.

Main request

Inventive step of the subject-matter of claim 8

Public availability of the slides shown in D3

3. The public availability of the slides of a presentation alleged to have been made by Thomas Bäker on 10 May 2007 at the European Coatings Show 2007 in Nürnberg is to be assessed taking into account all the facts and evidence submitted in relation to their presentation.
- 3.1 D3 submitted by opponent 1 with their notice of opposition is indicated to be a paper copy of said slides which all except the last one bear the date indicated for the presentation and the name of the alleged presenter.
- 3.2 D3a submitted by opponent 2 represents the catalogue or program of said European Coatings Show 2007. The information on page 53 of that catalogue consists in the left-hand column of a list of presentations with titles, time (a 20-minutes slot) and a common location for all presentations (Hall 3, Stand 3-351) and in the right-hand column of the indication of the location of various stands, each of the above mentioned presentations being attributed to a different stand.

- 3.3 D3a indicates on page 53 a presentation by Thomas Bäker from Bayer Material Science on 10 May 2007 with the same title as that indicated on slide 1 of D3, namely "Polyaspartic-Coatings-Modern Binders for highly efficient 2K PUR systems". The stand corresponding to said presentation which is indicated in the right-hand column of page 53, namely stand 4-419, is also indicated on the last slide of D3 inviting the audience to visit said mentioned stand to discuss further questions.
- 3.4 Based on the above information and the content of the slides, it is evident that the European Coatings Show is a trade fair at which short presentations also take place, the presenters and/or their companies being otherwise present at stands for discussing at least technical matters with potential customers.
- 3.5 An Affidavit from Mr Bäker (D38) whose admittance into the proceedings has been disputed by the patent proprietor was submitted with the reply of opponent 2 to the statement of grounds of appeal of the patent proprietor to counter the opposition division's finding in the contested decision that D3a did not show "up to the hilt" (meaning "beyond reasonable doubt"; cf. T 2451/13 of 14 January 2016, point 3.2) that the presentation had been held and that the slides were made available to the public. According to D38 the above mentioned presentation took place and the slides shown in Annex 1 to the affidavit were distributed at the European Coatings Show in Nürnberg on 10 May 2007. Therefore, the filing of said Affidavit with the rejoinder of opponent 2 falls within the limits of a normal submission that a party, looking for the reversal of the decision on certain points, is entitled to present. The Board therefore does not see any reason

to hold inadmissible said affidavit (D38) under Article 12(4) RPBA 2007. D38 is thus in the proceedings.

3.6 The parties referred to decisions of the boards of appeal T 1212/97 of 14 May 2001 and T 0667/01 of 15 February 2006 based on the rationale of T 1212/97. Those decisions concern the issue of ascertaining the contents of oral presentation in the absence of a handout distributed to the audience, containing a summary of the most important parts of the lecture and copies of the slides shown or in the absence of convincing evidence that such handout was distributed. In the present case, the decisive point is not the question whether exactly the information contained in D3 was orally presented by Mr Bäker to the audience, or in other words whether the information provided orally by Mr Bäker during the oral presentation fully comprised the content of the slides, which the Board on the basis of the evidence available is not in the position to establish with a sufficient degree of certainty, but rather whether a copy of the slides shown in D3 was made available to the public.

3.7 The slides attached as Annex 1 to the Affidavit D38 of Mr Bäker correspond to those contained in D3. They have been indicated in said Affidavit to have been part of Mr Bäker's presentation and to have been distributed at the ECS in Nürnberg on 10 May 2007. Thus, Mr Bäker whose credibility has not been questioned declared in D38 that the presentation had been held and that handouts of those slides were made available to the audience.

3.8 The fact that the presentation was held by Mr Bäker on 10 May 2007 at the ECS Forum was not contested and is

supported by document D3a and D38 as pointed out above (cf. points 3.2 and 3.3). Furthermore, there are no indications on file that the access to the Forum or to the presentations held was in any way restricted or limited to visitors which agreed to or were bound by any obligation of confidentiality. Thus, the only question left to be answered is whether sufficient evidence has been submitted in support of the allegation that handouts of D3 have been made available to the audience.

- 3.9 According to the patent proprietor there was no evidence regarding the publication date of D3 and there was no evidence that any member of the audience had actually taken an handout of the slides. However, considering the content of the slides which do not provide detailed technical information, but rather outline for potential customers the advantages of the technology presented, and in view of the obvious interest of Bayer Material Science to advertise for their technology and to attract customers, for example to their stand mentioned on the last slide of D3 inviting the audience to visit stand 4-419 to discuss further questions, the Board is convinced that paper copies of the slides contained in D3 have been made available to the audience and thus to the public on 10 May 2007, as supported by the declaration of Mr Bäker (D38; cf. above point 3.7). Thus, the question whether all of the slides have been presented via a screen or via a beamer during the presentation in an appropriate manner can be left unanswered. For the sake of completeness only it is noted in reply to the argument put forward by the patent proprietor, that it is not necessary to prove that at least one copy of the slides has actually been taken by one member of the audience, since for the criterion of public

availability it is already sufficient to provide an opportunity that a copy can be taken by a member of the public.

- 3.10 On that basis it is concluded that it has been proven beyond reasonable doubt that a copy of the slides shown in D3 was made available to the public at the presentation of Mr Bäker at the ECS in Nürnberg on 10 May 2007, which means that the slides shown in D3 belong to the state of the art which according to Article 54(2) EPC shall be held to comprise everything made available to the public by means of a written or oral description, by use, or in any other way, before the date of filing of the European patent application.

Closest prior art

4. According to paragraph [0020] of the patent in suit there was a need for a coating system for aggressive corrosive environments, enabling faster processing and lower VOC (Volatile Organic Compound).
- 4.1 The slides of D3 concern "Polyaspartics-Modern binders for highly efficient 2K PUR systems", i.e. the use of polyaspartics in two component polyurethane systems. Slide 10 of D3 describes the use of a polyaspartic protective topcoat on an epoxy primer which was chosen by opponent 2 as the closest prior art. Such polyaspartic coating is indicated on slide 3 to be based on a reaction of an aliphatic polyisocyanate with a polyaspartate, which reaction is depicted on slide 6. D3 highlights on slides 8 and 11 the benefits of using such polyaspartic coatings, including fast cure even at ambient temperature which leads to a faster painting process and/or to faster return to service and the use of "Ultra high solids to No-VOC possible". Moreover, it

was not only common ground before the date of priority of the patent in suit that polyurea paints provided corrosion protection (see paragraph [0010] of the specification), but as argued by the opponents the uses illustrated in D3 (slides 12, 14 and 16) in the context of protective coatings clearly implied said function.

- 4.2 Accordingly, even if D3 does not mention the use of the coating systems described therein for a specific type of corrosion protection, i.e. aggressive corrosive environments, which ability obviously depends on various variables, the Board is nevertheless satisfied that the coating structure schematically represented on slide 10 of D3, i.e. a polyaspartic top-coat on an epoxy primer, which is implicitly disclosed to be useful for corrosion protection and is taught in D3 to fulfil the two other aspects of the objectives indicated in paragraph [0020] of the specification, i.e. fast processing and low VOC (Volatile Organic Compound), represents a reasonable starting point for the skilled person seeking to achieve the objectives mentioned in the patent in suit.

Distinguishing features of the subject-matter of claim 8 over D3

5. The parametric feature "volume solids" as used in operative claim 8 of the main request for defining the primer composition, the top-coat composition and the weighted average "volume solids" of the coating system (which consists of the primer composition and the top-coat composition) is to be understood in the light of the express reference to the measuring method for this parameter in the claim (i.e. determined according to ISO 3233 with the modification that drying is carried out at 23 °C and 50 % relative humidity for 7 days), as

well as in view of paragraphs [0156] and [0157] of the specification, as the ratio of the dry film thickness measured after 7 days to the wet film thickness measured immediately after application times 100, the drying conditions being as set out in claim 8. Based on that definition the volume solids % designates the amount of constituents which are not solvents and which will not evaporate during drying. A high volume solids % correlates therefore with a low content of volatile organic compounds.

On that basis the use for the top-coat of a volume solids % of at least 82 % (for the first embodiment of claim 8) or of at least 78 % (for the second embodiment of claim 8) does not represent a distinguishing feature over the closest prior art which discloses not only on slide 8 "Fast cure even at ambient temperature" and "Ultra high solids to No-VOC" for the polyaspartic coating, but also on slide 11 an application time of a primer and polyaspartic top-coat within 6 to 8 hours. This was not disputed by the patent proprietor. Moreover, it can be taken from the patent proprietor's submissions that the presence of a curing agent for the epoxy resin and the use of steps (i) to (iv) as defined in claim 8 were implicit from the disclosure of D3 so that those features do not represent distinguishing features over the closest prior art either.

6. Having regard to the coating structure represented on slide 10 of D3, which disclosure implies a method for preparing said coating, it is undisputed that the method of present claim 8 differs solely from the closest prior art in that the following selections have been operated :

- the primer composition has a volume solids % of at least 82 % (first embodiment) or of at least 86 % (second embodiment) and the epoxy resin characterizing the primer composition has an epoxy equivalent weight (EEW) in the range of 150-700,
- the proportion of the primer and top-coat compositions is such that their weighted average volume solids % value is at least 84 wt% (first embodiment) or at least 82 % (second embodiment) and
- a total dry film thickness of 120-400 µm is used.

Problem successfully solved

7. The patent proprietor argues that *"The technical effect of the above differences is that the claimed coating compositions have corrosive resistance (see examples)"* and that the technical problem solved over D3 would reside in the provision of *"a coating composition, which is suitable for highly corrosive environments, enabling faster processing and lower VOC"* (sections 39 and 40 of the reply to the statement of grounds for appeal of opponent 2).
- 7.1 The examples mentioned by the patent proprietor are understood by the Board to be those contained in the specification. According to the established jurisprudence, if comparative tests are relied on to demonstrate an inventive step on the basis of an improved effect, the nature of the comparison with the closest state of the art must be such that the alleged advantage or effect is convincingly shown to have its origin in the features distinguishing the invention from the closest state of the art (Case Law, *supra*, I.D.10.9). The patent proprietor, however, did not

refer to any specific experimental result, let alone to a comparison of specific examples, meant to support the patent proprietor's opinion that the present distinguishing features, i.e. the selection of the ranges mentioned in above point 6 would result in the alleged advantages. In particular, the alleged resistance to corrosion has not been shown to be attributable to one of the above addressed distinguishing features.

- 7.2 To the benefit of the patent proprietor and in line with the submissions of opponent 1 in sections 58 and 59 of their rejoinder, the Board nevertheless considers credible that all things being otherwise equal, a higher volume solids % of the epoxy-based binder system and a consequent higher weighted average volume solids % of the coating system (meaning a lower content of solvent and VOC in the coating system; see first paragraph of above point 5) would result in a faster drying time. Concerning the selection of the EEW values or of the total dry film thickness defined in the present claims, no effect has been indicated, let alone shown, to be attributable to those selections.
- 7.3 Considering that D3 already concerns coating systems or coating methods leading to a reduce level of VOC or faster processing time (see for example slides 8, 11 and 17), the problem solved by the subject-matter of present claim 8 over the closest prior art can only be formulated as the implementation of the teaching provided by D3, i.e. the provision of further methods for establishing a protective coating leading to level of VOC or processing times as suggested in that document.

Obviousness of the solution

8. Finally, it remains to be decided whether the skilled person desiring to solve the problem identified above would, in view of the disclosure of D3, possibly in combination with D4, D5, D17 and D31 cited by opponent 2 or with common general knowledge, have taken the measures defined in above point 6 as to arrive at the subject matter of operative claim 8. This should be done taking into account that in case of the existence of more than one distinguishing feature over the prior art and in the absence of any synergistic effect arising from their combination (which has neither been shown nor argued to be the case), it has to be examined whether each of these features, taken singly, would be derivable from the prior art in an obvious way when starting from the closest prior art (Case Law, *supra*, I.D.9.2.2).

8.1 The patent proprietor argues in essence that the skilled person would have been taught away from the claimed method since starting from the disclosure of D3 the most obvious measure for the skilled person would be in the light of D3, D9, D10, D11 and D31 to suppress the epoxy primer and to apply the polyaspartic coating directly on the metal surface to be protected (reply to the statement of grounds of appeal of opponent 2, sections 41 to 43). However, according to the case law of the boards of appeal the assessment of the obviousness of the claimed solution is not judged on the basis of the most obvious solution for the skilled person, so that the question as to which measure in the present case would be the most obvious can remain unanswered.

- 8.2 It rather needs to be answered whether what is claimed is the result of measures which belong to those the skilled person would consider to be obvious when seeking to solve the problem successfully solved over the closest prior art. According to the case law of the boards of appeal, the answer to the question what a skilled person would have done in the light of the state of the art depends in large measure on the technical result he has set out to achieve (see T 0939/92, OJ EPO, 1996, 309, reasons Nrs 2.4.2 and 2.5.3). Faced with the problem identified in above point 7.3, it is the Board's view that the skilled person would consider any measure which he or she would expect to result in a low level of VOC or a fast processing time as already in D3.
- 8.3 In this respect, as argued by opponent 2, the skilled person would have consulted document D17 which is also concerned with high-solids and rapid-curing anti-corrosive coating compositions comprising a low content of solvent (paragraphs [0001] and [0009]) and which teaches (paragraphs [0067],[0074] and [0075]) and therefore suggests for this purpose the use of epoxy resins whose EEW values are within the range defined in operative claim 8.
- 8.4 Moreover, as argued by opponent 2, the skilled person would also be aware of the teaching of document D31 concerning anti-corrosive coating systems based on zinc-rich primer top-coated with fast dry polyaspartics (page 2, third, fourth and tenth full paragraphs), which two-coat systems with an epoxy primer and a polyaspartic top-coat may have a total dry film thickness of 300 and 275 μm , as indicated on page 4, table, systems 6 and 7, respectively, i.e. a dry film

thickness within the range defined in operative claim 8.

- 8.5 As to the minimum volume solids % values defined in operative claim 8, such values are arbitrary in the sense that they have not been shown to be associated with the achievement of any particular technical effect. The selection of such high values for the primer is not only obvious in the light of D17 which requires as shown above high-solids content, low content of solvent and rapid-curing and in view of D3 which stresses the need for fast curing systems and low VOC (see above point 7.3) but also suggested by the data sheets D4 and D5 concerning epoxy resins used for corrosion protection which have solids volume % of 96 and 98 %, respectively. The same holds true for the weighted average volume solids of at least 84 % for the first embodiment of claim 8 and of at least 82 % for the second embodiment of claim 8 whose obviousness results from the obviousness to use high volume solids % for the primer and the fact that the top-coats recommended in D3 exhibit such high values as indicated in above points 4.1 and 4.2.
- 8.6 In view of the above, the skilled person aiming at solving the problem defined in point 7.3 above would have found obvious in view of the prior art to use each of the measures identified in above point 6, thereby arriving in an obvious manner at both embodiments defined in claim 8 of main request.
9. The main request is therefore not allowable, as each of the two embodiments defined in its claim 8 does not involve an inventive step.

5th and 10th auxiliary requests

10. The 5th auxiliary request comprises only the methods defined in claims 8 and 9 of the present main request, whereas the 10th auxiliary request comprises only said methods, but restricted to their first embodiment. As indicated above, both the first and second embodiments of those method claims lack an inventive step. The 5th and 10th auxiliary requests are therefore not allowable either for the same reasons as outlined for the main request.

1st to 4th, 6th to 9th and 11th to 14th auxiliary requests

11. The 1st auxiliary request differs from the main request in that the independent claims define that the primer composition is applied in wet form. The patent proprietor indicated that the claims of the 1st auxiliary request were *"inventive, for essentially the same reasons given for the Main Request, above"* (statement of grounds, top of page 5).

The 2nd auxiliary request differs from the 1st auxiliary request in that the primer composition is defined in all independent claims to comprise *"20-35 % by solids volume of zinc"*. The patent proprietor submitted that the claims of the 2nd auxiliary request were *"inventive, for essentially the same reasons given for the Main Request, above"*. It was noted in addition that *"high levels of primer (e.g. Hempadur Zinc 17320) provide suitable dry-to-walk-on times (Table 8 of the patent), while failing the corrosion test in Table 9 of the patent"* (statement of grounds, bottom of page 5).

The 3rd auxiliary request differs from the 2nd auxiliary request in that the independent claims define

that the polyurea-based binder system comprises an isocyanate-reactive component of the formula (I) indicated in above point VI. Concerning inventive step, the same arguments as those submitted for the 2nd auxiliary request were submitted and it was added that no pointer in references D3, D8, D9, D17, D10, D11 or D29 that polyaspartic esters having said the structure of claim 4 as filed should be used as secondary amines and that D9 rather pointed towards the advantages of using primary amines as curing agents (statement of grounds, bottom of page 6).

The 4th auxiliary request differs from the 3rd auxiliary request in that the independent claims define that the dry film thickness of the first layer is higher than the dry film thickness of the second layer and that rust creep of the dry coating system as determined according to ISO 12944-6 according to the corrosion category C5-M, High, is at the most 1 mm. In addition to the inventive step submissions made for the 3rd auxiliary requests the patent proprietor added for the 4th auxiliary request that no single reference teaches the subject-matter of granted claims 2 and 6, i.e. that the primer composition comprises 20-35 % by solids volume of zinc and that the rust creep of the dry coating system as determined according to ISO 12944-6 according to the corrosion category C5-M, High, is at the most 1 mm, respectively. It was also held that *"to arrive at the subject-matter of the claims of the enclosed 4th Auxiliary Request, the skilled person has to artificially construct the claims from a variety of references, using hindsight knowledge of the claimed invention"* (statement of grounds, bottom of page 7).

As indicated by the patent proprietor, the 6th to 9th auxiliary requests correspond to the above-mentioned

1st to 4th auxiliary requests, in which claims directed to coating systems have been cancelled and the 11th to 14th auxiliary requests correspond to the above 6th to 9th auxiliary requests in which the second embodiment of the independent method claim has been deleted. No additional submissions on inventive step were made for these requests.

12. Under Article 12(2) RPBA 2007, the statement of grounds of appeal and the reply must contain a party's complete case. This would have required in the present case to explain whether and how the additional features contained in the independent claims introduced additional distinguishing features over the closest prior art, were meant to lead to a different formulation of the problem successfully solved over it, and to a different assessment of the obviousness of the claimed solution, in particular why the additional features were not already implied by the measures whose obviousness was argued by the opposing parties in relation to the requests of higher ranking. This would also have necessitated an indication of the pertinent passages of the relevant prior art and their assessment in order to allow for the Board and the opposing parties to make a link between the arguments submitted by the patent proprietor and the disclosure of those documents, allowing thereby the Board and the opposing parties to understand whether the amendments inserted by the patent proprietor could overcome the lack of inventive step found in respect of the auxiliary requests of higher ranking. This is not only true in respect of the objection of inventive step over D3 addressed in the present decision, but also in respect of the additional objections for lack of inventive step starting from the disclosure of any of D8/D7, D8/D32 or D10 which have been raised against the main request and

fully substantiated by opponents 1 and 2. The submissions made by the patent proprietor in respect of the auxiliary requests, devoid of a clear analysis, require therefore from the Board and the opposing parties an unreasonable effort to form an opinion of whether the elements of reasoning invoked by the patent proprietor if considered in a full analysis of inventive step would be convincing or not, which contrary to the RPBA runs counter the requirements of a fair procedure and efficient processing of the case. Although the lack of substantiation of the auxiliary request was communicated to the patent proprietor, no additional submissions were made in this respect, the patent proprietor merely indicating that they would not attend the oral proceedings. Under these circumstances the 1st to 4th, 6th to 9th and 11th to 14th auxiliary requests are held inadmissible under Article 12(4) RPBA 2007 as they do not meet the requirement of Article 12(2) RPBA 2007 (Case Law, *supra*, V.A.4.12.5).

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:



B. ter Heijden

D. Semino

Decision electronically authenticated