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**Datasheet for the decision  
of 24 February 2022**

**Case Number:** T 2499/18 - 3.2.03

**Application Number:** 06710171.7

**Publication Number:** 1861522

**IPC:** C23F13/16, C23F13/02, E04C5/01

**Language of the proceedings:** EN

**Title of invention:**  
TREATMENT PROCESS FOR CONCRETE

**Patent Proprietor:**  
Glass, Gareth  
Roberts, Adrian  
Davison, Nigel

**Opponent:**  
Soletanche Freyssinet S.A.S.

**Headword:**

**Relevant legal provisions:**  
EPC Art. 123(2), 100(c), 56, 54  
EPC R. 103(1)(a)  
RPBA Art. 12(4)  
RPBA 2020 Art. 13(1), 13(2)

**Keyword:**

Grounds for opposition - added subject-matter (yes)  
Novelty - multiple selection (no)  
Inventive step - non-obvious modification - (yes)  
Amendment to appeal case - exercise of discretion - amendment gives rise to new objections (no) - amendment detrimental to procedural economy (no) - amendment overcomes issues raised (yes)  
Amendment after summons - taken into account (yes) - exceptional circumstances (yes)  
Substantial procedural violation - appealed decision sufficiently reasoned (no)  
Reimbursement of appeal fee - (yes)

**Decisions cited:**

T 0012/81, J 0014/19

**Catchword:**



**Beschwerdekammern**

**Boards of Appeal**

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Case Number: T 2499/18 - 3.2.03

**D E C I S I O N**  
**of Technical Board of Appeal 3.2.03**  
**of 24 February 2022**

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**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
30 July 2018 concerning maintenance of the  
European Patent No. 1861522 in amended form.**

**Composition of the Board:**

**Chairman**            C. Herberhold  
**Members:**            B. Miller  
                             E. Kossonakou

## Summary of Facts and Submissions

I. European patent No. 1 861 522 ("the patent") relates to an electrochemical treatment to protect reinforced concrete from deterioration arising from corrosion of steel, and to an anode for this treatment.

II. Opposition was filed against the patent, on the grounds of Article 100(b) and (c) and Article 100(a) EPC together with Articles 54 and 56 EPC.

In the interlocutory decision the opposition division found that the patent met the requirements of the EPC on the basis of the claims of auxiliary request 2 submitted in electronic form on 27 April 2018.

This decision was appealed against by both parties. As both parties are appellants (and thus also respondents), for simplicity the Board will continue to refer to the parties as the patent proprietors and the opponent in this decision.

III. In a communication pursuant to Article 15(1) RPBA 2020 which was annexed to the summons to oral proceedings, the Board indicated its preliminary opinion to the parties. *Inter alia*, it was pointed out that the amendments in claims 2, 3, 14, 17 and 25 as granted did not comply with the requirements of Article 123(2) EPC.

IV. In response to the communication pursuant to Article 15(1) RPBA 2020, the patent proprietors filed auxiliary requests 16 to 30 by letter dated 23 July 2021, in addition to auxiliary requests 1 to 15 filed with the statement setting out the grounds of appeal. Also, the opponent filed further observations with regard to the

communication by the Board and the further auxiliary requests 16 to 30.

V. Oral proceedings were held on 24 February 2022 by videoconference using the ZOOM platform. In the course of the oral proceedings, the patent proprietors withdrew auxiliary requests 1 to 15, 17 and 18.

VI. At the end of the oral proceedings the parties' requests were as follows:

The patent proprietors requested that the decision under appeal be set aside and that the patent be maintained on the basis of the claims as granted in accordance with the main request.

Alternatively, they requested that the patent be maintained in amended form on the basis of the claims of one of auxiliary requests 16 or 19 to 30 as filed by letter dated 23 July 2021.

The opponent requested that the decision under appeal be set aside and the patent be revoked in its entirety.

VII. State of the art

The following documents already cited during the opposition proceedings are of particular importance for the present decision:

D1: WO 01/71063 A1

D2: GB 2 389 591 A

D3: WO 00/26439 A2

D4: BBA Agrément Certificate No. 04/4140 for Galvashield Anodes - issued 20 September 2004

D6: Cathodic Protection of Steel in Concrete, edited by P.M. Chess, 1998 Edition

- D7: Vector Ebonex product datasheet, 2003
- D8: Vector Ebonex, typical anode layout, March 2001
- D9: Sacrificial Cathodic Protection of Reinforced Concrete Elements - A State-of-the-Art Report: Nace International Publication 01105, Item No. 24224, March 2005
- D10: US 6 027 633 A

VIII. Wording of the independent claims under consideration

- (a) Claims as granted in accordance with the main request

Claim 1 reads as follows:

"Use of an anode and a source of DC power to protect steel in concrete construction which use comprises driving a current off the anode to the steel using the source of DC power to deliver a temporary impressed current treatment adapted to improve the environment at the steel to arrest steel corrosion and subsequently delivering from the same anode to the steel a low current preventative treatment adapted to inhibit steel corrosion initiation wherein the temporary impressed current treatment is a high current treatment relative to the low current preventative treatment and the anode comprises a sacrificial metal element that undergoes sacrificial metal dissolution as its main anodic reaction."

Claim 16 relates to

"An anode adapted for use in accordance with any of claims 1 to 15 comprising a sacrificial metal element and

an impressed current anode connection detail wherein the anode is a compact discrete anode adapted for embedment in a cavity formed in concrete and the sacrificial metal element is less noble than steel and the impressed current anode connection detail is a connection to the sacrificial metal element that conducts electrons and is protected from anodic dissolution and comprises a conductor that remains passive at potentials more positive than +500 mV above the potential of the copper/saturated copper sulphate reference potential where the conductor extends away from the sacrificial metal element to provide a connection point adapted to connect the conductor to another conductor."

(b) Claims of auxiliary request 16

Claim 1 corresponds to claim 1 as granted wherein the following feature has been added:

"wherein the anode is a compact discrete anode embedded in a porous material in a cavity formed in the concrete."

Claim 12 corresponds to claim 16 as granted.



(c) Claims of auxiliary request 19

Claim 1 corresponds to claim 1 as granted wherein the following feature has been added:

"wherein the low current preventative treatment is achieved by providing a path for electron conduction from the sacrificial metal element to the steel."

Claim 10 corresponds to claim 16 as granted wherein the following feature has been added:

"and the compact discrete anode is small enough to fit into one of:  
a cored or drilled cavity in concrete 50 mm in diameter and 200 mm in length;  
a chase cut into a concrete surface 30 mm in width and 50 mm deep."

(d) Auxiliary requests 20-30 play no part in this decision.

IX. The arguments of the patent proprietors, as far as they are relevant to this decision, can be summarised as follows:

(a) Amendments in claim 1 as granted

The terms "high" and "low" current treatment were relative terms and would be understood as such in the context of claim 1 as filed, in particular in combination with their indicated function. No subject-matter that makes it explicit that the "temporary impressed current treatment was a high current treatment relative to the low current preventative treatment" was added by the amendments to claim 1,

since the relative meaning of the terms "high" and "low" was the same as in claim 1 as filed.

(b) Amendments in claims 2 and 3 as granted

The amendments in claims 2 and 3 as granted were based on paragraphs [0035] and [0040] as originally filed, which were concerned with efficient use of current for delivering charge to improve the environment at the steel. Since efficiency was always desirable and was also aimed at by the application as filed, see e.g. paragraphs [0029], [0033] and [0048], the skilled person would understand paragraphs [0035] and [0040] as disclosing the maximum charge required in order to improve the environment at the steel.

(c) Amendments in claim 14 as granted

The objection concerning the amendments in claim 14 as granted had been raised in opposition proceedings only with regard to auxiliary request 2, whereas in appeal proceedings it had been raised only with regard to auxiliary request 1. This objection with regard to the claims as granted should not be admitted into the appeal proceedings, in accordance with Article 12(4) RPBA 2020.

Further, the wording of claim 14 as granted was based on claim 5 as filed, referring to a "porous material in contact with the concrete", which implied nothing other than the porous material being attached to the concrete as defined in claim 14 as granted.

(d) Amendments in claims 17 and 18 as granted

Claims 19 and 20 as filed stated that the anode was "small enough to fit into" a certain-sized cavity or chase cut, whereas the corresponding claims 17 and 18 as granted stated that the anode was "adapted to fit into" the cavity or chase cut. However, there was no technical difference between these phrases in the context of anodes for being received in cavities or chase cuts in concrete, since the anode was "adapted to fit" when it physically fitted in the chase cut or cavity, i.e. when its dimensions were less than those of the chase cut or cavity, or in other words were "small enough to fit". Therefore the mere change of wording did not extend the technical teaching.

(e) Amendments in claim 29 as granted

Claim 29 was based on paragraph [0073] of the application as originally filed, which stated that "*it is preferable that the porous material has putty like properties, including a compressive strength of less than 1 N/mm<sup>2</sup> and preferably less than 0.5 N/mm<sup>2</sup> and contains compressible void space*". While the compressive strength was explicitly given in claim 29, the putty like properties were implicit in the claim, since any compressible porous embedding material would inevitably have compressible void space and hence putty like properties.

(f) Admittance of auxiliary request 16

Auxiliary request 16 should be admitted into the appeal proceedings, since by filing this request the patent proprietors had merely reacted to all the objections raised under Article 123(2) EPC with regard to the

claims as granted. In view of the exceptional circumstance that a huge number of auxiliary requests would have been necessary in order to react to the multitude of objections raised by the opponent in the grounds of appeal, these amendments had been exemplarily demonstrated and explained in detail only for the former auxiliary request 3. However, the patent proprietors had explicitly indicated in the reply to the appeal that the same amendments would be made in the remaining auxiliary requests should the need arise, which helped to make the case manageable for all parties.

The only further amendment which had not been exemplarily outlined in the former auxiliary request 3 concerned the subject-matter of claim 14 as granted. This further amendment in claim 1 of auxiliary request 16 compared with claim 1 of auxiliary request 1 was necessitated by the further exceptional circumstance that the objection concerning the amendment in claim 14 as granted had never been properly substantiated and raised by the opponent against the claims as granted. Only in the communication annexed to the summons to attend oral proceedings did the Board raise and reason this objection against the main request. Further, this objection was finally admitted into the proceedings only during the oral proceedings before the Board. Hence this further amendment in claim 1 of auxiliary request 16 was the direct consequence of the exceptional circumstances derived from the events during the appeal proceedings.

The convergence criterion did not apply, since auxiliary request 16 was the first request after the main request to be considered during the oral

proceedings before the Board, as proposed already in the letter dated 23 July 2021.

(g) Novelty of claim 12 of auxiliary request 16 over D2

The anode according to claim 12 had to be suitable for delivering a high current, temporary impressed treatment to improve the environment at the steel to arrest corrosion, and for subsequently delivering a low current preventative treatment by providing a path for electron conduction between the anode and the steel while undergoing sacrificial metal dissolution as its main anodic reaction, i.e. a subsequent galvanic cathodic protection treatment.

D2 did not disclose a compact discrete anode adapted for embedment into a cavity formed in concrete, but an elongated-surface anode that was inserted into a joint and was in the form of a mesh or sheet.

Furthermore, D2 did not directly and unambiguously disclose a sacrificial metal element that was less noble than steel in combination with an impressed current anode connection detail in the form of a conductor that remained passive at potentials more positive than +500 mV above the potential of the copper/saturated copper sulphate reference potential.

Although D2 stated on page 6 that "examples of conductor 3 include wires made of titanium, steel or copper, or carbon fibre", this statement was not linked to "sacrificial anodes" but would be understood by the skilled person as relating to galvanic systems, but not to impressed systems. Hence various selections from within the disclosure on page 6 of D2 were required to arrive at the subject-matter of claim 12.

(h) Admittance of auxiliary request 19

Auxiliary request 19 corresponded to auxiliary request 4 submitted with the reply to appeal, and included the same amendments for the same exceptional circumstances as for auxiliary request 16.

The claims of auxiliary request 19 were convergent with the claims of the former auxiliary request 2 which formed the basis of the contested decision by the opposition division.

(i) Novelty of claim 10 of auxiliary request 19 over D2

D2 disclosed an anode assembly for insertion into joints of concrete wherein the joints are typically about 30 mm, e.g. 20 to 40 mm, in width. However, D2 did not disclose an anode which was small enough to fit into a cored or drilled cavity or a chase cut in the sizes as defined in claim 10.

(j) Inventive step with regard to claim 10 of auxiliary request 19 starting from D1

D1 disclosed an anode which surrounded a pillar of a concrete structure and which therefore was not a discrete anode.

Furthermore, D1 did not disclose the type of conductor. It was not inevitable that a voltage of more than +500 mV would have been applied according to D1. Consequently, it could not be implicitly inferred what type of conductor was used for the anode according to D1.

The subject-matter of claim 10 therefore differed from the disclosure of D1 not only in that the anode was a compact discrete anode, but further in that the conductor remained passive at potentials more positive than +500 mV above the potential of the copper/saturated copper sulphate reference potential.

The use of a connector that remained passive at potentials more positive than +500 mV enabled the anode to be used as part of a treatment that provided stronger impressed current effects. The connector provided an anode that was capable of delivering the inventive multi-phase treatment of claim 1 that provided the advantages of both impressed current temporary treatments and galvanic cathodic protection treatments.

The objective technical problem had to be formulated as being to provide an anode with improved corrosion treatment capabilities.

The skilled person knew from his common general knowledge that sacrificial materials were not suitable for use in impressed current treatments when permanently embedded in concrete (see page 62 of D6, fifth complete paragraph). When aiming at a solution to the objective technical problem defined above, they would therefore not have adapted the anode of D1 to be a compact discrete anode, i.e. one specifically tailored for being embedded in concrete for long-term use. Further, the skilled person would not have seen an advantage in providing a conductor that remained passive at potentials more positive than +500 mV above the potential of the copper/saturated copper sulphate reference potential. Indeed, the common general knowledge rather would have told them that such an

anode should not be operated in an impressed current mode due to anodic dissolution.

(k) Inventive step with regard to claim 10 of auxiliary request 19 starting from D2

D2 disclosed a surface anode for insertion into joints in concrete. Anodes to be inserted into joints usually covered the whole surface of the joint. Joints were relatively long and had a greater depth and length than chase cuts referred to by claim 10 of auxiliary request 19. Starting from the teaching of D2, the skilled person had no motivation to provide an anode in a size to fit into the relatively small chase cut or cavity as defined in claim 10, since this would not have been technically sensible for the purpose as described in D2.

(l) Inventive step with regard to claim 10 of auxiliary request 19 starting from D3

D3 disclosed a conventional embeddable sacrificial anode (galvanic system) which was preferably zinc in combination with a steel wire connector.

The subject-matter of claim 10 differed from the anode of D3 in that the conductor remained passive at potentials more positive than +500 mV above the potential of the copper/saturated copper sulphate reference potential.

This resulted in a single anode that was capable of delivering a more effective corrosion treatment that could quickly reverse ongoing corrosion and then prevent the return of corrosion with minimal intervention between treatments.



Although D3 disclosed on page 2, line 36 that "preferably the wire is as noble or more noble than the steel of the reinforcement", this teaching did not provide an incentive to use a connector as required by claim 10, since it related to the variability of the nobility of the steel of the reinforcement, and did not provide any encouragement to choose metals other than steel for the connector, in particular to solve the underlying problem.

(m) Inventive step with regard to claim 10 of auxiliary request 19 starting from D4

The anode disclosed in D4 corresponded to the sacrificial anode described in detail in D3. Hence D4 was no more relevant to the inventiveness of claim 10 than D3.

X. The opponent's corresponding arguments can be summarised as follows:

(a) Amendments in claim 1 as granted

Claim 1 as originally filed used the terms "high current" and "low current" in an absolute sense. No basis could be found in the application as originally filed for these terms being understood to be no more than relative terms defining a current relative to one another, possibly without having the meaning of the absolute term - as defined in claim 1 as granted.

(b) Amendments in claims 2 and 3 as granted

Paragraphs [0035] and [0040] of the application as originally filed were not provided in relation to the

claimed invention but belonged to a section titled "Mechanism of Electrochemical Protection", which was a general background discussion of electrochemical protection. Accordingly, these paragraphs did not provide a basis for the claimed charge densities of claims 2 and 3 in combination with the subject-matter of claim 1 as granted.

Further, there was no disclosure in these paragraphs that these values should be read as maxima as required by claims 2 and 3. In particular, in paragraph [0040] the values were said to (i) "appear to/ may be sufficient" or (ii) "ha[ve] been shown to induce ... " in "a substantial proportion" of the concrete cover. The skilled reader would understand from these statements that the values presented in this paragraph might not be sufficient for the stated purposes, and were rather to be understood as lower limits.

(c) Amendments in claim 14 as granted

Although the objection against the amendments in claim 14 as granted was raised in opposition proceedings with regard to auxiliary request 2 and in appeal proceedings with regard to auxiliary request 1, it was immediately apparent that the same objection was valid in regard to the claims as granted as well. Hence the objection should also be taken into account with regard to the main request.

Claim 14 as granted required the porous material to be attached to the concrete. This feature was not directly and unambiguously derivable from the application as originally filed, in particular not from its claim 5 which, rather, required the porous material to be in contact with the concrete.

(d) Amendments in claims 17 and 18 as granted

The phrase "small enough to fit" in claims 19 and 20 as originally filed meant that the anode was smaller than the cavity or chase cut, whereas the phrase "adapted to fit" in the corresponding claims 17 and 18 as granted meant that it was precisely the same size and shape as the cavity or chase cut. Hence these phrases had quite different meanings. Thus the amendment added the new information that the anode should be sized "to fit" without qualification (i.e. it should not be too small either).

(e) Amendments in claim 29 as granted

Claim 29 was based on paragraph [0073] of the application as originally filed. This paragraph did not provide a teaching for a porous material having a compressive strength of less than  $1 \text{ N/mm}^2$  without also having "putty like" properties such as being malleable.

Since a material having a compressive strength of less than  $1 \text{ N/mm}^2$  did not necessarily have "putty like" properties, the isolation of the feature of the porous material having a compressive strength of less than  $1 \text{ N/mm}^2$  according to claim 25 from the feature that it is "putty like" extended the subject-matter of the application beyond that originally filed.

(f) Admittance of auxiliary request 16

Auxiliary request 16 was filed after notification of the summons to attend oral proceedings by the Board. In the absence of exceptional circumstances, this request should not be admitted into the proceedings, in accordance with Article 13(2) RPBA 2020.

Furthermore, the subject-matter of claim 1 of auxiliary request 16 was not convergent with the subject-matter of claim 1 of the former auxiliary requests 1 to 15.

(g) Novelty of claim 12 of auxiliary request 16 over D2

Disregarding all redundant and meaningless features and features relating to the intended purpose of the anode according to claim 12, this claim simply defined a piece of metal that was less noble than steel (i.e. a sacrificial metal element) having a piece of electrical conductor which was more noble than steel extending from it. An example was a piece of aluminium (or zinc) cast around a titanium wire as exemplified in the patent.

D2 disclosed on page 6, lines 24 to 28 a sacrificial anode in combination with a conductor in the form of "wires made of titanium, steel or copper, or carbon fibre". By selecting only either titanium or carbon fibre as the wire material, the skilled person arrived at an anode as defined by claim 12.

(h) Admittance of auxiliary request 19

Auxiliary request 19 was filed after notification of the summons to attend oral proceedings by the Board. In the absence of exceptional circumstances, this request should not be admitted into the proceedings, in accordance with Article 13(2) RPBA 2020.

Furthermore, the subject-matter of claim 1 of auxiliary request 19 was not convergent with the subject-matter of claim 1 of auxiliary request 16.

(i) Novelty of claim 10 of auxiliary request 19 over D2

D2 disclosed an anode assembly for insertion into joints in concrete wherein the joints were typically about 30 mm, e.g. 20 to 40 mm, in width (page 3, lines 29, 30). Since joints and chase cuts had a similar size, D2 implicitly disclosed an anode which was small enough to fit into a chase cut in the size as defined in claim 10.

(j) Inventive step with regard to claim 10 of auxiliary request 19 starting from D1

D1 disclosed in relation to Figure 7 an anode made of zinc (page 11, line 6 and page 17, line 13) and wiring which had to be inherently protected from anodic dissolution for the system to work. The wiring therefore had to remain inherently passive at potentials more positive than +500 mV above the potential of the copper/saturated copper sulphate reference potential.

The subject-matter of claim 10 differed from the anode according to D1 in that the anode was a discrete anode rather than a non-discrete anode.

The patent itself acknowledged in paragraphs [0005] and [0008] that both forms of anode were well-known at the priority date. Changing the form of the anode from a jacketed zinc anode system according to D1 to a compact discrete anode system according to claim 10 was a matter of routine design.

(k) Inventive step with regard to claim 10 of auxiliary request 19 starting from D2

D2 disclosed a surface anode for insertion into joints in concrete. Joints and chase cuts had similar dimensions. It did not matter for an anode whether it was placed into a chase cut or a joint. Adapting the size of an anode as disclosed in D2 in order to fit into the space available came within a normal design option which did not require inventive skill.

(l) Inventive step with regard to claim 10 of auxiliary request 19 starting from D3

D3 disclosed in claim 1 a sacrificial anode with connection wires extending from it which could be twisted around steel reinforcement bars to form a simple electrical connection. The anode was made of aluminium, cadmium or magnesium. The elongate connector was conveniently in the form of a wire.

The subject-matter of claim 10 differed from the anode of D3 in that the conductor remained passive at potentials more positive than +500 mV above the potential of the copper/saturated copper sulphate reference potential.

The problem to be solved could be formulated as how to provide an alternative connection detail to steel that was more noble than the steel of the reinforcement.

It was obvious to use a titanium wire in order to solve the underlying technical problem, since

- D3 points to the use of metal more noble than the steel of the reinforcement;

- there were only a limited number of conductive metals that were more noble than steel, might be formed into suitable wires and were readily available to the skilled person;
- titanium wire was widely used in the cathodic protection industry for providing interconnections to impressed current anodes, as evidenced by D6, D7, D8, D9 or D10.

(m) Inventive step with regard to claim 10 of auxiliary request 19 as granted starting from D4

The anode disclosed in D4 corresponded to the sacrificial anode described in detail in D3. Hence the arguments with regard to D3 equally applied when alternatively considering D4 as a possible starting point for the assessment of inventive step.

(n) Reimbursement of the appeal fee

In the written submissions and during the oral proceedings before the opposition division, the opponent challenged inventive step of the product claim (anode) starting from D1, D2, D3 and D4.

The contested decision provided reasoning only with regard to D2. Not a single comment or argument had been presented in the contested decision as to whether the attacks based on D1, D3 or D4 had been considered at all, or at least why they had not been regarded as convincing by the opposition division.

Hence the opposition division had committed a substantial procedural violation which justified reimbursement of the appeal fee.

## **Reasons for the Decision**

### 1. Applicable Rules of Procedure of the Boards of Appeal

Both appeals were filed before the entry into force of the revised version of the Rules of Procedure of the Boards of Appeal (RPBA 2020) on 1 January 2020. In accordance with the transitional provisions laid down in Article 25 RPBA 2020, the RPBA 2020 are applicable to appeals already pending on the date of entry into force as well as to appeals filed thereafter (Article 25(1) RPBA 2020).

Pursuant to Article 25(2) RPBA 2020, Article 12(4) and (6) RPBA 2020 shall not apply to statements of grounds of appeal filed before its entry into force and to replies thereto filed in due time. Instead, Article 12(4) RPBA 2007 continues to apply.

### 2. Article 100(c) EPC

#### 2.1 Amendments in claim 1 as granted

##### 2.1.1 Claim 1 as originally filed (reference is made to the A2 publication of the patent: WO 2006/097770, "the application") defines a "low current preventative treatment" and a temporary impressed current treatment which is a "high current treatment".

The terms "high" and "low" are relative terms as such, since they are not defined by specific values. In the technical context of claim 1 as filed it is immediately evident that both terms are to be understood in relation to one another. More specifically, taking into account the



functions of the said currents defined in claim 1 as filed, namely the "high current" being used in the impressed current treatment and the "low current" being used in the preventative treatment, the two terms are unambiguously understood as being relative to each other.

Claim 1 as granted defines nothing other than this, simply clarifying that the distinction between a low and a high current is relative: "the temporary impressed current treatment is a high current treatment relative to the low current preventative treatment". Furthermore, just as in claim 1 as originally filed, the claimed high and low currents are defined with a link to their respective function, i.e. the high current being for temporary impressed current treatment and the low current being for preventative treatment. By their links to the respective function, the terms in claim 1 as granted have the same meaning as the "absolute" terms in claim 1 as originally filed, which are likewise linked to this very function.

2.1.2 Hence the Board sees no reason to deviate from the finding in point II.1.2 on page 5 of the contested decision, that the amendment in claim 1 as granted meets the requirement of Article 123(2) EPC.

2.2 Amendments in claims 2 and 3 as granted

2.2.1 In point II.1.3 on page 5 of the contested decision, the opposition division concluded that the amendments in claims 2 and 3 of the main request, i.e. the definition of the maximum charge to be delivered during the impressed current treatment, go beyond the teaching of the application as filed.

2.2.2 The patent proprietors argue that paragraphs [0035] and [0040] of the application provide a basis for the amendments in granted claims 2 and 3.

2.2.3 However, paragraph [0040] is part of the technical background set out under the heading "Mechanism of Electrochemical Protection". It states that *"a charge of 100 kC/m<sup>2</sup> has been shown to induce steel passivity in heavily chloride contaminated concrete in simulated marine exposure conditions in the laboratory and 600 kC/m<sup>2</sup> appears to be sufficient to re-alkalise not only the corroding sites (pit re-alkalisation), but a substantial proportion of the concrete cover in the re-alkalisation of carbonated concrete."*

The values of 100 kC/m<sup>2</sup> and 600 kC/m<sup>2</sup> are thus disclosed in paragraph [0040] of the application as charge values to induce steel passivity and to re-alkalise the corroding sites under specific conditions.

No direct and unambiguous disclosure that the values indicated for these specific conditions and discussed in the context of the technical background of the mechanism of electrochemical protection can be used in general for the two-step process defined in claim 1 using an anode that comprises a sacrificial metal element can be found therein.

2.2.4 The patent proprietors argue that the skilled person would inherently conclude that the values disclosed in paragraph [0040] can be used in the process according to claim 1, since the skilled person would consider the efficiency of a process in view of the teaching provided in paragraphs [0013], [0029] and [0048] of the application and would thus take into account the charge values which are disclosed as being sufficient.

However, considerations which might motivate a skilled person to take into account technical information belong to the question of obviousness, which is not considered in assessing allowability of an amendment. Rather, an amendment has to be directly and unambiguously derivable from the application as filed.

2.2.5 This is however not even inherently the case. The values indicated in paragraph [0040] are only said to (i) "appear sufficient" or (ii) "ha[ve] been shown to induce ... [steel passivity]" in "a substantial proportion" of the concrete cover under the very specific conditions according to the document US6322691 cited in this paragraph.

No teaching can be found that the values disclosed in regard to the cited prior art can be used as a maximum in the two-step process according to use claim 1. Paragraph [0040] could, rather, be read as disclosing minimum values, since lower values may not be sufficient for the stated purposes.

2.2.6 Analogous reasoning applies with respect to paragraph [0035], which reports on a specific laboratory study in an aggressive simulated marine environment, without any link to the claimed impressed current treatment.

2.2.7 Hence the patent proprietors' argument is not convincing, and the Board sees no reason to deviate from the finding in point II.1.3 on page 5 of the contested decision, that the amendments in claims 2 and 3 as granted do not meet the requirement of Article 123(2) EPC.

2.3 Amendments in claim 14 as granted

2.3.1 Admittance of the objection against claim 14 as granted

The objection concerning the amendments in claim 14 as granted had been briefly addressed by the opponent in the opposition proceedings with regard to auxiliary request 2, see point 10.11 of the letter dated 7 June 2018, and has not been discussed in the contested decision.

Also, in reaction to the appeal by the patent proprietors, the opponent raised this objection in the written submissions in appeal proceedings only with regard to auxiliary request 1, see points 4.4.1 and 4.4.3 of its reply to the appeal.

However, the Board considered it as being artificial to discuss the allowability of an amendment in a dependent claim as granted only with regard to auxiliary requests, and therefore addressed this objection in the annex to the summons to attend oral proceedings in the context of the claims as granted in accordance with the main request as well.

Exercising its discretion under Article 12(4) RPBA 2007, the Board accordingly admitted this objection with regard to the main request into the appeal proceedings.

2.3.2 Allowability of the amendment

The wording of the feature "the porous material being attached to the concrete for long term use" of claim 14 cannot be found in the application as originally filed.

Claim 5 as filed, on which claim 14 is allegedly based, rather refers to a "porous material in contact with the concrete". However, an item in contact with concrete is not necessarily attached to it. Therefore claim 5 as filed does not provide a teaching for attaching the porous material to the concrete.

This teaching cannot be derived from paragraphs [0008] and [0073] of the application, which merely disclose that the anode is embedded in and held in place by the porous material, either. After all, an anode can be embedded in a porous material and, as described in paragraph [0008], can be held strongly in concrete in a cavity without the porous material being attached to the concrete. For example, the discrete anode embedded in the porous material can be inserted into a cavity of a concrete floor and can hold there simply by gravity. Further attachment of the porous material to the surrounding concrete is not necessary and thus not inherently read into the teaching of claim 5 of the application.

2.3.3 Therefore the wording of claim 14 as granted extends beyond the teaching of the application as filed and does not meet the requirement of Article 123(2) EPC.

2.4 Amendments in claims 17 and 18 as granted

2.4.1 Claims 17 and 18 are based on claims 19 and 20 as filed wherein the phrase "small enough to fit" has been replaced by "adapted to fit".

In point II.2.4 on page 8 of the contested decision, the opposition division concluded that the change of wording does not extend or change the technical teaching.

The phrases, however, have a different meaning. "Small enough to fit" simply requires the anode to be smaller than the hole - it could be much smaller and of any shape. On the other hand, "adapted to fit" rather implies that the anode has the correct size, shape and length for the hole, since it has to be "adapted".

2.4.2 The change of wording in claims 17 and 18 therefore extends the subject-matter beyond the teaching as filed, contrary to the requirement of Article 123(2) EPC.

2.5 Amendments in claim 29 as granted

2.5.1 Claim 29 is based on the last sentence of paragraph [0073] of the application, which reads:

"To accommodate the products of anodic dissolution it is preferable that the porous material has 'putty like' properties, including a compressive strength of less than 1 N/mm<sup>2</sup> and preferably less than 0.5 N/mm<sup>2</sup> and contains compressible void space."

The application therefore teaches that the porous material having a compressive strength of less than 1 N/mm<sup>2</sup> has "putty like" properties, i.e. is a material which is considered by the skilled person to be putty like and is thus e.g. malleable. Claim 29 as granted does not require the porous material to have "putty like" properties, and therefore represents an intermediate generalisation of the teaching in paragraph [0073] of the application.

2.5.2 In point II.2.6 on page 9 of the contested decision, it is stated that a porous material having "putty like"

properties is only characterized by "having a compressive strength of less than 1 N/mm<sup>2</sup>".

However, it has not been demonstrated that any porous material having a compressive strength of less than 1 N/mm<sup>2</sup> has "putty-like" properties or that a material having "putty like" properties is a synonym for a material having a compressive strength of less than 1 N/mm<sup>2</sup>.

2.5.3 Thus the omission of the condition that the material has "putty like" properties extends the subject-matter beyond that of the application, contrary to the requirements of Article 123(2) EPC.

2.6 It follows that the ground of opposition pursuant to Article 100(c) EPC prejudices maintenance of the patent as granted in accordance with the main request.

3. Admittance of auxiliary request 16

3.1 Auxiliary request 16 was filed in response to the notification of the summons to attend oral proceedings by the Board. It therefore constitutes an amendment to the appellant's appeal case (cf. J 14/19, Reasons 1.5). Consequently, Article 13(2) RPBA 2020 applies.

According to Article 13(2) RPBA 2020, any such amendment made after notification of a summons to oral proceedings shall, in principle, not be taken into account unless there are exceptional circumstances, which have been justified with cogent reasons by the party concerned.

3.2 In exercising its discretion, the Board may take into account the convergent approach as set out in the

explanatory remarks on Article 13(2) RPBA 2020 in document CA/3/19, pages 43 and 44.

According to the explanatory remarks, for an amendment after the notification of a summons the third level of the convergent approach applies. At this level, the Board may rely on criteria applicable at the second level of the convergent approach, i.e. the criteria applying for Article 13(1) RPBA 2020.

Criteria to be considered in this regard are, for example, whether the amendment is suitable for resolving the issues concerned, whether the amendment is detrimental to procedural economy and whether the amendment is a reaction to the events in the proceedings.

- 3.3 The Board agrees with the patent proprietors that exceptional circumstances exist for admitting the request for the following reasons:
  - 3.3.1 Auxiliary request 16 is based on auxiliary request 1 which was filed with the proprietors' statement of grounds of appeal. In the statement setting out the grounds of appeal, the opponent raised various objections concerning the allowability of the amendments and patentability of the claimed subject-matter. Most of the amendments objected to, but most importantly all the objections eventually found convincing by the Board, belong to different dependent claims and are thus independent of each other. In order to react to the multitude of objections raised by the opponent and to defend their position in an appropriate manner, the patent proprietors would thus have had to file a huge number of auxiliary requests.



3.3.2 In order to keep the case manageable for all the parties involved and also for the Board, the patent proprietors exemplarily outlined and explained in detail for former auxiliary request 3 which amendments were intended to overcome all the objections under Article 123(2) EPC raised by the opponent in its statement setting out the grounds of appeal. Auxiliary request 3 was filed on 24 April 2019 with the reply to the opponent's appeal, i.e. in a timely manner. The patent proprietors explicitly indicated in this reply to the appeal (see page 20, third auxiliary request, last paragraph) that the same amendments would be made in the remaining auxiliary requests should the need arise. Apart from one amendment (the one with regard to claim 14 as granted, see point 3.3.3 below), all the amendments in auxiliary request 16 were therefore already clearly identified and announced by the patent proprietors with the reply to the statement setting out the grounds of appeal. The proprietors' strategy had thus been made clear in good time well before the Board's communication ("front-loading"). Thus neither the Board nor the other party was taken by surprise by the filing of the additional auxiliary requests in preparation for the oral proceedings. Moreover, the amendments did not change the basis for the remaining discussions concerning the patentability of the claimed subject-matter.

3.3.3 The only further amendment which had not been exemplarily outlined in the former auxiliary request 3 concerned the subject-matter of claim 14 as granted. This further amendment in claim 1 of auxiliary request 16 compared with claim 1 of auxiliary request 1 was necessitated by the further exceptional circumstance that the objection concerning the amendment in claim 14

as granted had not been properly substantiated and raised by the opponent against the claims as granted.

Indeed, the objection raised in points 4.4.1 to 4.4.3 of the reply to the appeal (in the context of auxiliary request 1) merely stated that claim 14 of the patent as granted was not present in the claim set as originally filed and that there was thus no basis in the application as originally filed for the invention having the feature of "the porous material being attached to the concrete for long term use".

Only in the annex to the summons to attend oral proceedings by the Board was this objection discussed in the context of the main request. Moreover, in point 4.3.3 of the Board's communication the proprietors' attention was drawn for the first time to the different wording of claim 5 as originally filed in this context, thus further crystallizing the objection. Finally, as far as the main request was concerned, the opponent's objection itself was only formally admitted into the proceedings during the oral proceedings before the Board, see point 2.3.1 above. Hence the only amendment in claim 1 of auxiliary request 16 which had not already been explicitly announced and exemplarily demonstrated in the former auxiliary request 3 (which was filed in a timely manner with the reply to the opponent's appeal, see above) was occasioned by these exceptional circumstances deriving from the Board's communication and the events during the appeal procedure.

3.3.4 Finally, by filing auxiliary request 16 the patent proprietors reacted to and also overcame all the objections raised under Article 123(2) EPC with regard

to the claims as granted, without introducing additional problems.

3.3.5 In light of the preceding considerations, the Board decided to acknowledge exceptional circumstances justifying the filing of auxiliary request 16 after the notification of the Board's preliminary opinion, thus at a very late stage in the proceedings. The Board thus considered it appropriate to take into account the amendment to the proprietors' case, consisting in introducing into auxiliary request 16 those amendments originally proposed for the former auxiliary request 3 filed by the opponent in response to the appeal.

3.4 Regarding the criteria set out in Article 13(1) RPBA 2020, the Board finds them clearly in favour of considering auxiliary request 16 in the course of the present proceedings. The reasons have already been outlined in the preceding discussion of the application of Article 13(2) RPBA 2020 and can be summarised as follows: the amendments are suitable for resolving the issues concerned, they are not detrimental to procedural economy but rather promote it, and they are a reaction to the events in the proceedings.

In this context it is important to note that, contrary to the opponent's argument, the convergence criterion does not apply with regard to auxiliary request 16, since it was the first auxiliary request after the main request to be considered during the oral proceedings before the Board.

Moreover, it was clear from the explanations by the patent proprietors in their letter dated 23 July 2021 (see third paragraph on page 7) that auxiliary requests 16 to 30 were not to be considered after discussion of

auxiliary requests 1 to 15 but as an alternative to them, depending on the discussion concerning the allowability of the amendments in the claims as granted.

4. Auxiliary request 16 - Article 54 EPC

4.1 Interpretation of the wording of claim 10

Claim 10 is a product claim which defines an anode. The definition of the anode according to claim 10 contains various features directed to its intended use in the two-step process defined by claim 1.

The intended purpose is usually not taken into account in assessing novelty as long as the product known from the prior art is suitable for the intended purpose, see Case Law of the Boards of Appeal, 9th edition, 2019 ["Case Law"], Chapters I.C.5.2.7 and I.C.8.1.5.

In this regard, the Board agrees with the patent proprietors that the term "discrete anode" has a specific meaning for the skilled person (see D6, chapter 4.4.4 starting on page 78) and does not encompass surface anodes which are applied as a spray coating or mesh on a surface of a concrete structure.

However, the term "discrete anode" does not imply a limitation concerning shape or size, and claim 1 does not contain a limitation in this regard either. Hence an anode in the form of a piece of metal of any shape is suitable for use as a discrete anode.

Taking into account the features defining the anode itself, the anode according to claim 10 therefore has to comprise merely

- i) a wire (connection detail, connector) of non-sacrificial material such as titanium or carbon fibres, and
- ii) a sacrificial metal element.

This interpretation of claim 10 is supported by the example in paragraph [0076] of the patent, which describes a corresponding simple arrangement of an anode according to the invention in the form of an aluminium block cast around a titanium wire.

#### 4.2 Disclosure in D2

D2 describes a cathodic protection anode and its use in joints of reinforced concrete (see page 1, lines 2 and 3). This is achieved by forming the body of the anode in a way that allows it to deform and to conform to a joint in concrete into which it is inserted, see claim 1.

With reference to Figure 4, it is described on page 8, lines 14 to 16 of D2 that the zinc anode sheets 21 may have a size of 60 x 140 x 0.4 mm. Such an anode can be considered to be compact. Furthermore, the anode of D2 is a piece of sacrificial metal and hence is at least suitable as a discrete anode as required by claim 1.

According to point II.3.2 on page 10 of the reasons of the contested decision, D2 does not disclose the combination of a connector made from non-sacrificial materials such as titanium and carbon fibre with a sacrificial anode.

However, D2 states on page 6, lines 24 to 26 that a non-sacrificial electronic conductor 3 may be used to

maintain continuity through the anode material 2. It is explicitly disclosed that this is useful if the anode material is a sacrificial one. Hence D2 discloses a sacrificial anode comprising an electronic conductor as required by claim 10.

The same paragraph on page 6 discloses in the following sentence that examples of conductor 3 include wires made of titanium, steel or copper, or carbon fibre.

Thus D2 directly and unambiguously discloses a sacrificial anode material in combination with a conductor made of titanium, steel, copper or carbon fibre.

#### 4.3 Assessment of novelty

The combination of a sacrificial anode material with titanium or carbon fibre wire falls under claim 10, since claim 10 does not specify any particular sacrificial metal for the anode.

A single selection from the materials listed for the non-sacrificial conductor is thus sufficient to arrive at an anode falling within the scope of claim 10.

In line with established case law (Case Law, Chapter I.C.6.2, in particular T 12/81), a single selection does not establish novelty.

#### 4.4 It follows that the subject-matter of claim 10 does not meet the requirements of Article 54 EPC.

5. Admittance of auxiliary request 19

5.1 Auxiliary request 19 was filed together with auxiliary request 16 (see point 3 above) after notification of the summons to attend oral proceedings.

5.2 Exceptional circumstances

Auxiliary request 19 is based on auxiliary request 4 as filed with the reply to the appeal by the opponent. Compared with auxiliary request 4, in order to overcome the Article 123(2) objections, it comprises the same amendments as auxiliary request 16 compared with auxiliary request 1.

The late filing of auxiliary request 19 thus results from the same exceptional circumstances as the filing of auxiliary request 16, see point 3.3 above. Hence the same reasoning for its admittance applies as for auxiliary request 16.

5.3 Convergence criterion

Claim 1 of auxiliary request 16 differs from claim 1 as granted by different features from claim 1 of auxiliary request 19.

Auxiliary request 16 originates from auxiliary request 1, which belongs to the patent proprietors' appeal. Hence auxiliary request 16 is an attempt to improve the patent proprietors' position compared with former auxiliary request 2, which the opposition division considered to be allowable, and is thus in line with the purpose of the appeal filed by the patent proprietors.

Auxiliary request 19, on the other hand, originates from auxiliary request 4, which belongs to the patent proprietors' defence against the appeal filed by the opponent. Auxiliary request 19 is convergent with the claims of former auxiliary request 2, which the opposition division considered to be allowable. It is an appropriate action for a patent proprietor to defend its patent in a convergent manner starting from the claims as found allowable by the opposition division.

Hence the convergence criterion is met by auxiliary request 19.

5.4 The Board thus exercised its discretion by admitting auxiliary request 19 into the appeal proceedings (Articles 13(1) and 13(2) RPBA 2020).

6. Auxiliary request 19

6.1 Claim 1

Independent claim 1 of this auxiliary request was not objected to under Article 100(a) EPC by the opponent.

The Board therefore has no reason to deviate from the findings in point II.3.1 on page 9 (novelty) and in point II.4.1 on pages 10 and 11 (inventive step) of the contested decision.

6.2 Claim 10 - Article 54 EPC

D2 discloses an anode assembly for insertion into expansion joints of concrete wherein the joints are typically about 30 mm, e.g. 20 to 40 mm, in width, see page 3, lines 28 to 30 of D2.



However, D2 does not disclose the dimensions of the anode to be placed into these joints.

The width of the joints indicated in D2 can be seen as providing a maximum value for the thickness of the anode. However, no conclusions can be drawn therefrom with regard to the length or the width of the anode.

With reference to Figure 4, it is described on page 8, lines 14 to 16 of D2 that the anode sheets 21 may be 60 x 140 x 0.4 mm. However, due to their width of 60 mm these sheets are not small enough to fit into the chase cut defined by claim 10 of auxiliary request 19.

Hence D2 does not disclose an anode having a size that is small enough for the anode to be able to fit into a cored or drilled cavity or a chase cut in the sizes as defined in claim 10.

The subject-matter of auxiliary request 19 therefore meets the requirements of Article 54 EPC.

### 6.3 Claim 10 - Article 56 EPC

Starting from D1

- 6.3.1 D1 discloses an anode for a retrofit application, see Figures 1 and 2 in combination with page 14, lines 8 and 9. The anode surrounds the concrete structure such as a bridge pile, see page 10, lines 1 to 2. The anode is connected to a battery (claim 1) and can be made of titanium or zinc, see page 11, lines 4 to 6.

D1 does not disclose what type of conductor is used for the anode. It is not inevitable that a voltage of more than +500 mV will be used according to D1.

Consequently, it cannot be inferred what type of conductor is used for the anode according to D1.

6.3.2 It follows that the subject-matter of claim 10 differs from the disclosure in D1 in that

- the anode is a compact discrete anode,
- the conductor remains passive at potentials more positive than +500 mV above the potential of the copper/saturated copper sulphate reference potential, and
- the anode is small enough to fit into a cavity or chase cut as defined in claim 10.

6.3.3 The use of a connector that remains passive at potentials more positive than +500 mV enables the anode to be used as part of a treatment that provides stronger impressed current effects. The connector thereby provides an anode that is capable of delivering the multi-phase treatment according to use claim 1 that provides the advantages of both impressed current temporary treatments and galvanic cathodic protection treatments.

Providing a discrete anode which is small enough to fit into a cavity or chase cut as defined in claim 10 also contributes to the suitability of the anode to be used in the multi-phase treatment of claim 1.

6.3.4 The objective technical problem can therefore be formulated as being to provide an anode with improved corrosion treatment capabilities.

6.3.5 The skilled person is aware from the common general knowledge that sacrificial materials are not suitable for impressed current use when permanently embedded in

concrete (see page 62 of D6, fifth complete paragraph). They would therefore not adapt the anode of D1 to be a compact discrete sacrificial anode having a size as implied by claim 10 without any explicit motivation, in particular since D1 also confirms on page 11, lines 6 to 8 that zinc is less suitable for the impressed current treatment intended by D1 than titanium due to the corrosion of zinc over time which can be expected.

6.3.6 Further, the common general knowledge does not provide an incentive for the skilled person to use a conductor that remains passive at potentials more positive than +500 mV above the potential of the copper/saturated copper sulphate reference potential in combination with a sacrificial anode.

On the one hand, the common general knowledge about sacrificial anodes rather teaches that such an anode should not be operated in an impressed current mode due to the risk of anodic dissolution.

On the other hand, the common general knowledge about impressed anodes comprising titanium wires as evidenced by

- D6: page 55, Figure 3.4; page 64, lines 22 to 23; table on pages 66 to 68, in particular page 67, first entry relating to anode type "zinc metallizing"; page 72, section 4.4.2.3,
- D7: table on page 2: "Wire pack",
- D8: upper figure and left-hand figure,
- D9: page 4, second paragraph, and
- D10: col. 5, line 12

does not provide an incentive to use a titanium wire in combination with a **discrete, sacrificial** anode when

starting from D1 either, in particular in order to solve the underlying problem.

- 6.3.7 The opponent's argument with regard to D1 as the starting point for assessing inventive step is therefore considered to be based on hindsight.

Starting from D2

- 6.3.8 Taking into account the legal fiction that a single selection does not establish novelty, and further taking into account that an anode in the form of a metal sheet could be suitable as a discrete anode, D2 was relevant for assessing novelty.

However, the skilled person has no reason to start from D2 in order to provide discrete anodes for a multi-phase process defined in use claim 1 of auxiliary request 19.

- 6.3.9 Were the skilled person to start from D2, since D2 refers to both sacrificial anodes and impressed current anodes (page 4, lines 23 to 24), they could have selected a titanium wire as connector for a sacrificial anode in accordance with the general disclosure on page 6, lines 24 to 30.

The subject-matter of claim 10 differs from the disclosure of D2 in the particular, smaller, size of the anode.

Such a smaller size allows use of the anode in the inventive multi-phase process of claim 1.

6.3.10 The objective technical problem can therefore be regarded as being to provide an anode which can be used in different corrosion inhibition treatments.

Anodes to be inserted into joints usually cover a greater percentage of the surfaces within the joint and therefore are relatively long and thin and have a greater depth than discrete anodes to be inserted into chase cuts or a cavity as referred to by claim 10 of auxiliary request 19. This is illustrated by example 2 of D2, which discloses a compressible zinc anode for test purposes, comprising a zinc sheet with a size of 60 x 140 x 0.4 mm.

It follows that the skilled person starting from the general disclosure on page 6 of D2 had no motivation to form a discrete anode small enough to fit into a cavity or chase cut as defined in claim 10 in order to make the anode suitable for further methods of corrosion protection.

Providing the anode in a size to meet the requirements of claim 10 would, rather, be counter-intuitive when starting from D2, since for relatively small anodes (small depth) it cannot be guaranteed that the anode would cover enough of the surface area to achieve the intended effect within a joint of concrete when applied as illustrated in Figures 1 and 2 of D2.

6.3.11 The opponent's argument with regard to D2 as a starting point for assessing inventive step is therefore likewise considered to be based on hindsight.

Starting from D3

- 6.3.12 D3 discloses a conventional embeddable sacrificial anode (galvanic system) preferably made of zinc (see page 4, line 27) in combination with a steel wire connector (see page 2, lines 34 to 35 and page 5, lines 7 to 8).
- 6.3.13 The subject-matter of claim 10 differs from the anode of D3 in that the conductor remains passive at potentials more positive than +500 mV above the potential of the copper/saturated copper sulphate reference potential.
- 6.3.14 This results in an anode that is capable of delivering a more effective impressed current corrosion treatment that can quickly reverse ongoing corrosion and then prevent the return of corrosion with minimal intervention between treatments.
- 6.3.15 The objective technical problem can therefore be formulated as being to provide an anode with improved corrosion treatment capabilities.
- 6.3.16 D3 discloses on page 2, line 36 that "preferably the wire is as noble or more noble than the steel of the reinforcement". In the context of page 2 of D3, this statement relates to the variability of the nobility of the steel of the reinforcement. Hence this statement on page 2 of D3 advises the skilled person to use a connector made of steel which is more noble than the steel of the reinforcement.

However, this statement on page 2 of D3 does not provide an encouragement to choose metals other than

steel for the connector. Even more, this statement does not provide an incentive to use a connector as required by claim 10, such as a titanium wire, to render the discrete anode suitable in a multi-phase process defined by use claim 1.

Nor does the common general knowledge concerning titanium wires as demonstrated by documents D6 to D10, see point 7.2.6 above, provide an incentive to use a connector as required by claim 10 for the discrete anode of D3 in order to render the anode suitable for the use according to claim 1.

- 6.4 The subject-matter of claim 10 is therefore not rendered obvious when starting from D3.

Starting from D4

- 6.5 The anode disclosed in D4 corresponds to the sacrificial anode described in detail in D3. Hence starting from D4 the same argument applies as with regard to D3.

- 6.6 The subject-matter of auxiliary request 19 therefore meets the requirements of Article 56 EPC.

7. Procedural violation - reimbursement of the appeal fee

- 7.1 In the written submissions and during the oral proceedings before the opposition division (see page 2 of the minutes) the opponent challenged inventive step of the product claim (anode) starting from D1, D2, D3 and D4.

The contested decision provides reasoning only with regard to D2. Not a single comment or argument has been

presented in the contested decision as to why the alternative attacks based on D1, D3 or D4 were not considered as convincing by the opposition division.

Therefore the contested decision does not demonstrate that the corresponding arguments based on these documents were considered by the opposition division.

Hence the contested decision violates the right to be heard pursuant to Article 113(1) EPC, see Case Law, Chapter III.B.2.4.2.

7.2 In view of this substantial lack of reasoning in the contested decision, the opponent was not in a position to evaluate whether the arguments concerning inventive step starting from D1, D3 and D4 had been properly taken into account by the opposition division. Even if they had been taken into account by the opposition division during oral proceedings before it announced its decision, the opponent was not in a position to evaluate why the opposition division did not consider them convincing, and therefore was not in a position to evaluate whether it would make sense to file an appeal in this regard.

Hence the opponent had to file an appeal in order to make sure that its arguments concerning inventive step starting from D1, D3 and D4 were appropriately considered by the deciding body, and to receive reasoning for each.

Hence there is a causal link between the filing of the appeal and the substantial procedural violation by the opposition division.

7.3 Reimbursement of the appeal fee is therefore equitable.



## Order

### For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the opposition division with the order to maintain the patent in amended form on the basis of the following documents:
  - claims 1 to 20 of auxiliary request 19
  - description paragraphs 1 to 18 and 20 to 84 as filed during the oral proceedings and annexed to the minutes, and
  - Figures 1 to 7 of the patent specification.
3. The opponent's appeal fee is to be reimbursed.

The Registrar:

The Chairman:



A. Voyé

C. Herberhold

Decision electronically authenticated