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**Datasheet for the decision
of 20 July 2010**

Case Number: T 1934/09 - 3.2.06

Application Number: 05257289.8

Publication Number: 1672174

IPC: F01D 5/28

Language of the proceedings: EN

Title of invention:

Corrosion resistant coating composition, coated turbine component and method for coating same

Patentee:

GENERAL ELECTRIC COMPANY

Opponent:

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Headword:

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Relevant legal provisions:

EPC Art. 84

Relevant legal provisions (EPC 1973):

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Keyword:

"Claims - clarity - no"

Decisions cited:

-

Catchword:

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Case Number: T 1934/09 - 3.2.06

D E C I S I O N
of the Technical Board of Appeal 3.2.06
of 20 July 2010

Appellant: GENERAL ELECTRIC COMPANY
1 River Road
Schenectady, NY 12345 (US)

Representative: Illingworth-Law, William Illingworth
Global Patent Operation - Europe
GE International Inc.
15 John Adam Street
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 17 March 2009
refusing European patent application
No. 05257289.8 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: P. Alting van Geusau
Members: G. L. de Crignis
K. Garnett

Summary of Facts and Submissions

- I. By decision posted on 17 March 2009 the examining division refused the European patent application No. 0525728.8 for lack of clarity and inventive step.
- II. On 15 May 2009 the appellant (applicant) filed an appeal against this decision and on the same date paid the appeal fee. A statement setting out the grounds of appeal was received at the European Patent Office on 23 July 2009.
- III. In a communication in the annex to the summons to oral proceedings, the Board questioned the clarity and the disclosure of the subject-matter of the claims filed with the grounds of appeal.
- IV. With its letter of 17 June 2010 the appellant withdrew the request for oral proceedings and requested a decision according to the state of the file.
- V. Oral proceedings were held on 20 July 2010. In the written proceedings the appellant had requested that the decision under appeal be set aside and that a patent be granted on the basis of the request filed with the grounds of appeal.
- VI. Claim 1 of this request has the following text:

"A composition comprising a particulate corrosion resistant component for coating a metal substrate of a turbine component, the composition consisting essentially of:
from 0 to 95% alumina particulates;

from 5 to 100% corrosion resistant non-alumina particulates having a CTE greater than that of the alumina particulates; wherein the corrosion resistant non-alumina particulates comprise an overlay metal alloy having the formula MCrAlY, wherein M is a nickel or nickel-cobalt alloy, and wherein the corrosion resistant non-aluminium particulates further comprise yttria[sic]-stabilized zirconia; and a glass-forming binder component."

Independent claim 5 refers to an article comprising such a composition.

It was further stated in the statement setting out the grounds of appeal that "if it would be helpful we would be happy to amend 'the composition consisting essentially of:' to 'the composition consisting of:'".

VII. The arguments of the appellant may be summarised as follows:

Claim 1 had been amended in order to address the clarity objections.

The definitions of both the coating composition and the substrate had been included in order to more clearly link the wording to the problem/solution identified in the decision of the opposition division.

Moreover, claim 1 specified a composition which consisted essentially of the listed components. A person skilled in the art would realise that the listed components made up the entire composition apart from the possibility of some inconsequential amounts of

impurities which may have inadvertently become included during production.

A skilled person, when reading from claim 1 that "yttria-stabilized" zirconia must be present, would appreciate that it must be present in at least a sufficient quantity to have a material effect on the composition.

With regard to inventive step, the problem can be seen as the avoidance of the cracking that occurs in coatings that are based on alumina particulates that are either adhered to or within a phosphate binder matrix. This problem is solved by replacing partially or entirely the alumina particles with corrosion resistant non-alumina particulates that have a CTE greater than alumina. This gives a better CTE match between the coating and the underlying substrate, hence leading to greater strain tolerance in the coatings and therefore less cracking.

Accordingly, all clarity objections and the inventive step objection raised in the appealed decision had been remedied and the application was in order for grant.

Reasons for the Decision

1. The appeal is admissible.
2. *Article 84 EPC*
 - 2.1 When compared to the claim considered by the examining division, current claim 1 now includes the feature that

the composition is "for coating a metal substrate of a turbine component".

- 2.2 In accordance with the case law of the Boards of Appeal this means that the composition must be suitable for coating a metal substrate of a turbine component. However, the amendment does not get rid of the Article 84 EPC problem identified by the examining division in their decision, namely that any composition containing at least 5% non-alumina particulates, of which an undefined amount consists of a MCrAlY type overlay alloy and yttrium stabilized zirconium, and an undefined amount of glass-forming binder, leads to an almost totally undefined composition. The fact that such a composition is for coating an undefined metal substrate of an undefined turbine component is clearly not relevant as regards the objection raised.
- 2.3 It is further to be noted that according to the description of the invention, the CTE of the composition should match with the metal substrate. According to the claim the desired CTE is related to (possibly nonexistent, i.e. 0%) alumina particles, themselves undefined, and moreover, having no relation whatsoever with the undefined metal substrate of the undefined turbine component.
- 2.4 The appellant argues that a person skilled in the art would realise that the listed components make up the entire composition apart from the possibility of some inconsequential amounts of impurities which may inadvertently have become included during production. In this respect the appellant also suggested an amendment to claim 1 in which "essentially" was deleted.

- 2.5 However, such view is contradictory to the description, which refers in paragraph [0029] to additional optional components such as liquid carrier components, colorants or pigments, and viscosity modifying or controlling agents. Accordingly, it is not clear to what extent such further optional components could be included in the composition and for this reason alone the suggested further amendment (deletion of "essentially") has no sufficient basis in the description of the patent to be accepted.
- 2.6 Hence, claim 1 fails to satisfy the requirements of Article 84 EPC and is therefore not allowable.
- 2.7 The potentially valid argument of the appellant that a skilled person, when reading from claim 1 that "yttria-stabilized" zirconia must be present, would appreciate that it must be present in at least a sufficient quantity to have a material effect on the composition is not enough to overcome the above issues. Therefore the application cannot be granted on the basis of such a claim.
3. The appellant, by not attending the oral proceedings which it had requested in the grounds of appeal, waived the possibility of being able to comment on the above objections in a dialogue for which the board had prepared. It is therefore also not appropriate to further evaluate the concerns expressed in the annex to the summons of the Board, namely whether claim 1 as amended would meet the requirements of Article 123(2) EPC or whether the subject-matter claimed is inventive.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar

The Chairman

M. Patin

P. Alting van Geusau