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Datasheet for the decision of 15 February 2021

Case Number: T 0032/19 - 3.3.05

Application Number: 13001884.9

Publication Number: 2653577

IPC: C22C21/00, C22C21/06, C22C21/08

Language of the proceedings: EN

Title of invention:
Aluminum alloy sheet that exhibits excellent surface quality after anodizing and method for producing the same

Patent Proprietor:
UACJ Corporation

Opponent:
C-Tec Constellium Technology Center /
Constellium Rolled Products Singen GmbH

Headword:
Excellent surface quality aluminum alloy/UACJ Corporation

Relevant legal provisions:
EPC Art. 123, 83, 56
EPC R. 103(4)(c)

Keyword:
Amendments - allowable (yes)
Sufficiency of disclosure - (yes)
Inventive step - (yes)

Decisions cited:
T 2532/11

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

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Case Number: T 0032/19 - 3.3.05

D E C I S I O N
of Technical Board of Appeal 3.3.05
of 15 February 2021

Appellant: (Patent Proprietor)	UACJ Corporation 1-7-2, Otemachi Chiyoda-ku Tokyo 100-0004 (JP)
Representative:	Flaccus, Rolf-Dieter Flaccus · Müller-Wolff Patentanwälte Bussardweg 10 50389 Wesseling (DE)
Respondent: (Opponent)	C-Tec Constellium Technology Center / Constellium Rolled Products Singen GmbH CS10027 - Propriété Industrielle 725, rue Aristide Bergès Alusingen-Platz 1 38341 Voreppe / 78224 Singen (FR)
Representative:	C-TEC Constellium Technology Center Constellium Propriété Industrielle 725, rue Aristide Berges Boîte Postale CS 10027 38341 Voreppe (FR)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 29 October 2018 revoking European patent No. 2653577 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman	E. Bendl
Members:	G. Glod
	R. Winkelhofer

Summary of Facts and Submissions

I. The patent proprietor's (appellant's) appeal lies from the opposition division's decision revoking European patent EP-B-2 653 577.

II. The following documents are of relevance here:

D1: JP 58-11769
D1a: Translation of D1
D5: Affidavit from Mrs Emilie Lae

III. With the statement of grounds of appeal, the appellant submitted two claim requests.

IV. By submissions of 24 October and 6 November 2019, the appellant replaced the previous requests with a new main request and auxiliary requests 1 to 3.

V. The only claim of the main request is as follows:

"*1. A method for producing the aluminum alloy sheet comprising*

- homogenizing an ingot comprising either or both of 0.001 to 0.1 mass% of Ti and 0.0001 to 0.4 mass% of Cr and further comprising one or more elements selected from 0.3-6.0 mass% Mg, 0.5 mass% or less of Cu, 0.5 mass% or less of Mn, 0.4 mass% or less of Fe and 0.3 mass% or less Si, with the balance being Al and unavoidable impurities, wherein the ingot is homogenized at a temperature equal to or higher than solidus temperature-50°C for more than 3 hours, and
- subjecting the ingot to point analysis that measures the concentration of the peritectic element from

fluorescent X-rays that are generated by applying electron beams using an EPMA, wherein crystal grains at several points of each (upper and lower) rolling target side of the ingot are subjected to said point analysis, and
- selecting the ingot having a structure in which a difference in concentration of a peritectic element between an area having a diameter of 5 μm and positioned in a center area of a crystal grain and an area having a diameter of 5 μm and positioned away from a grain boundary of the crystal grain by 2.5 μm is 0.040% or less, and
-subjecting the selected ingot to hot rolling and cold rolling;
wherein the aluminum alloy sheet comprising either or both of 0.001 to 0.1 mass% of Ti and 0.0001 to 0.4 mass% of Cr as the peritectic element that undergoes a peritectic reaction with at least aluminum, and further comprising one or more elements selected from 0.3-6.0 mass% Mg, 0.5 mass% or less of Cu, 0.5 mass% or less of Mn, 0.4 mass% or less of Fe and 0.3 mass% or less Si, with the balance being Al and unavoidable impurities, and requiring an anodic oxide coating, a concentration of the peritectic element in a solid-solution state that is present in an outermost surface area of the aluminum alloy sheet varying in a widthwise direction of the aluminum alloy sheet in a form of a band having a width of 0.05 mm or more, and a difference in the concentration of the peritectic element between adjacent bands being 0.008 mass% or less."

VI. In its communication pursuant to Article 15(1) RPBA the board was of the preliminary opinion that the main request met the requirements of the EPC.

VII. The appellant and the respondent both withdrew their requests for oral proceedings on 20 October 2020 and 4 November 2020, respectively. The decision can thus be given in writing.

VIII. The respondent's arguments against the appellant's position that are relevant to the present decision can be summarised as follows:

The appeal was not admissible. The requirements of Article 84 EPC were not fulfilled since details of the electron probe microanalyser (EPMA) measurement method were missing.

The claimed process was not sufficiently disclosed because the skilled person could not find the right process conditions to obtain satisfactory measurements by EPMA without undue burden.

The claimed process lacked an inventive step in view of D1.

IX. The appellant requests that the impugned decision be set aside and that the patent be maintained in amended form on the basis of the main request submitted on 24 October 2019 or on the basis of one of auxiliary requests 1 to 3 submitted on 6 November 2019.

The respondent requests that the appeal be rejected as inadmissible, or be dismissed.

Reasons for the Decision

1. Admissibility of the appeal

The respondent argues that the appeal was not admissible, since, in line with T 2532/11, the appellant only submitted amended claims, thereby accepting the impugned decision.

The board does not concur with this position, since in the present case there is a clear link between the decision and the statement of grounds of appeal, contrary to the case underlying T 2532/11 (see Reasons 2.2.1), which states, in accordance with established case law of the boards [cf. Case Law of the Boards of Appeal, 9th edition, 2019, V.A.2.6.5], that such a direct and clear link between the contested decision and the grounds for appeal has to be established to render an appeal admissible.). The present statement of grounds of appeal argues that the only claim is supposed to be based on claim 2, including the subject-matter of claim 1 and with further limitations to overcome the lack of "undue burden" with respect to sufficiency of disclosure (point 3.3 of the statement). Furthermore, the appellant contests the opposition division's position on "unusual parameters" (point 4.1 of the statement).

The requirements of Article 108 and Rule 99(2) EPC are fulfilled and the appeal is admissible.

Main request

2. Article 13(1) RPBA 2020

The main request was submitted in response to the respondent's reply to the appeal, and therefore Article 13(1) RPBA 2020 applies (see Article 25(1) RPBA 2020).

From the appellant's reasoning it can be seen that the (previous) main request submitted with the appeal was a reaction to the impugned decision, while the additional amendments made in the present (new main) request were to overcome the respondent's newly raised objections filed with the reply to the appeal (point 2 of the appellant's submission of 24 October 2019).

Since the request overcomes all outstanding issues, as outlined below, it is considered as part of the proceedings.

3. Article 123(2) EPC

Claim 1 (only claim) is directly and unambiguously derivable from claim 1 as filed in combination with page 2, lines 11 to 17, page 6, lines 7, 8 and 17 to 26, and page 7, lines 6 to 9, of the application as filed.

The requirements of Article 123(2) EPC are therefore met.

4. Article 123(3) EPC

Claim 1 includes all the features of claim 2 as granted and, compared with claim 1 as granted, is further restricted in terms of the composition and the method

steps. The requirements of Article 123(3) EPC are fulfilled.

5. Article 84 EPC

The requirements of Article 84 EPC are met for the following reasons:

The point analysis by an electron probe microanalyser (EPMA) is known to the skilled person. Since the results relevant to claim 1 relate to a difference in concentration, the question of whether only the solid solution state and Cr and/or Ti in precipitates are measured is not relevant. The respondent's argument relating to the precision of the measurement is speculative, since there is no evidence that would prove that the claimed differences in concentration cannot be reliably determined or that it is dependent on the number of points measured ("several"), such that the method being part of claim 1 would have to be considered unclear. D5 is not relevant because it does not contain such evidence.

6. Article 83 EPC

Only Examples 6 and 7 of the patent are in accordance with claim 1, since they meet the requirements of homogenisation temperature and duration. There is no indication that would show that these examples cannot be reproduced. The skilled person trying to rework the invention would start from these examples and would vary the composition of the ingot as needed. If the difference in concentration between the indicated areas of the peritectic element in the ingot was 0.04 mass% or less, the skilled person would use it and subject it to the hot and cold rolling, with the expectation of

obtaining the difference in concentration as claimed at the end of claim 1.

There is no doubt that this expectation is fulfilled and that it does not require an unreasonable number of experiments in the first step to obtain the desired ingot.

The requirements of Article 83 EPC are met.

7. Article 54 EPC

The respondent has not raised any novelty objection during the appeal; there is no reason for the board to take a different stance.

8. Article 56 EPC

8.1 The invention relates to a method for producing an aluminium alloy that exhibits excellent surface quality (paragraph [0001]).

8.2 D1 is the closest prior art since it also relates to such a method. It discloses, in Examples 1 to 6, a method for producing an aluminium alloy sheet having a high strength and a good workability, and with no occurrence of band-like or streak-like patterns on the surface thereof after anodisation (last paragraph of D1a). Examples 1 and 6 showed very minor band-like patterns (D1a: page 6, lines 2 and 3).

8.3 The problem to be solved is to provide a method that makes it possible to produce an aluminium alloy sheet that exhibits excellent surface quality after anodising (paragraph [0005] of the patent).

8.4 The problem is solved by a method according to claim 1, characterised in that the ingot is subjected to point analysis that measures the concentration of the peritectic element from fluorescent X-rays that are generated by applying electron beams using an EPMA, wherein crystal grains at several points of each (upper and lower) rolling target side of the ingot are subjected to said point analysis.

In addition, the ingot having a structure in which a difference in concentration of a peritectic element between an area having a diameter of 5 µm and positioned in a centre area of a crystal grain and an area having a diameter of 5 µm and positioned away from a grain boundary of the crystal grain by 2.5 µm is 0.040% or less is selected.

8.5 The selection of this ingot makes it possible to solve the stated problem as evidenced by Examples 6 and 7 and also other examples that do not fall within the scope of the claim.

8.6 It needs to be established whether or not the solution was obvious. Although D1 already discloses aluminium alloy sheets that exhibit excellent surface quality after anodising, D1 does not teach that, in the production method, the ingot can be selected such that the final alloy sheet has the desired properties. Even if some of the ingots of D1 have the required difference in the concentration, there is no active step of measuring and selecting. These steps, which make it possible to reliably solve the problem, are neither taught in D1 nor in any other cited prior art document. Therefore the proposed solution involves an inventive step.

8.7 The requirements of Article 56 EPC are met.

9. Rule 103(4)(c) EPC

The appellant withdrew the request for oral proceedings on 20 October 2020, which is within one month of notification of the communication pursuant to Article 15(1) RPBA 2020, and no oral proceedings took place. The requirements for 25% reimbursement of the appeal fee are thus met.

Order

For these reasons it is decided that:

1. The impugned decision 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 sole claim of the main request submitted on 24 October 2019, and a description to be adapted thereto.

3. 25% of the appeal fee is reimbursed.

The Registrar: The Chairman:

C. Vodz E. Bendl

Decision electronically authenticated