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**Datasheet for the decision
of 19 October 2021**

Case Number: T 1985/18 - 3.2.01

Application Number: 06806063.1

Publication Number: 1934013

IPC: B23K35/28, B32B15/01, B23K35/02

Language of the proceedings: EN

Title of invention:
MULTI-LAYERED BRAZING SHEET

Patent Proprietor:
Aleris Rolled Products Germany GmbH
MAHLE Behr GmbH & Co. KG

Opponents:
C-TEC CONSTELLIUM TECHNOLOGY CENTER /
CONSTELLIUM NEUF-BRISACH
Gränges AB

Headword:

Relevant legal provisions:
EPC Art. 52(1), 56, 107

Keyword:

Inventive step - non-obvious modification

Decisions cited:

Catchword:



Beschwerdekammern
Boards of Appeal
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Case Number: T 1985/18 - 3.2.01

D E C I S I O N
of Technical Board of Appeal 3.2.01
of 19 October 2021

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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
20 June 2018 concerning maintenance of the
European Patent No. 1934013 in amended form.**

Composition of the Board:

Chairman J. J. de Acha González
Members: V. Vinci
 A. Jimenez

Summary of Facts and Submissions

- I. The appeal filed by the opponent 1 is directed against the interlocutory decision of the opposition division to maintain the European patent No. 1 934 013 in amended form. The appeals originally lodged by the patent proprietor and by the opponent 2 were withdrawn during the oral proceedings before the Board.

In its decision the opposition division held that the ground for opposition under Article 100(a) in combination with Article 54 EPC prejudiced the maintenance of the patent as granted and that the patent as amended according to the auxiliary request 1 lacked inventive step in the meaning of Articles 52(1) and 56 EPC, and decided to maintain the patent in amended form according to the auxiliary request 2. In particular, the opposition division concluded that the subject-matter of the sole independent claim of the auxiliary request 2 was novel and involved an inventive step in view of the following prior art documents:

D3: WO 03 089 237 A1, and

D8: EP 07 996 67 A1.

- II. Summons to oral proceedings were issued on 29 June 2020. With a communication under Article 15(1) RPBA 2020 (Rules of Procedure of the Boards of Appeal OJ EPO 2019, A63) dated 13 July 2020, the Board informed the parties of its preliminary, non binding assessment of the appeals.

Oral Proceedings pursuant to Article 116 EPC were held before the Board on 19 October 2021 by videoconference.

III. The appellant (opponent 1) requested that the decision under appeal be set aside and that the European patent be revoked.

The respondent (patent proprietor) withdrew its appeal and thus requested to dismiss the appeal of the appellant (opponent 1) and confirm the decision of the opposition division.

The party as of right (opponent 2) withdrew its appeal and did not present any final request.

IV. Claim 1 as maintained by the opposition division reads as follows:

"A multi-layer brazing sheet comprising:

- a core of a 3xxx alloy*
- an inner braze cladding of a 4xxx alloy, and between core and inner braze cladding*
- an interliner of a 3xxx, 1xxx or 7xxx alloy,*

and wherein the 3xxx alloy of the core consists of:

- 0.55 - 1.0 wt.% Cu*
- 0.65 - 1.8 wt.% Mn*
- < 0.05 wt.% Mg*
- < 0.4 wt.% Zn*
- < 1.0 wt.% Si*
- < 0.7 wt.% Fe*

and optionally one or more of

- < 0.3 wt.% Cr*

- < 0.2 wt. % Ti,

and one or more of V, Zr, In, Sc, Sn, each in a range of up to 0.5 %,

balance aluminium and unavoidable impurities,

wherein the 3xxx alloy of the interliner consists of:

- < 0.25 wt. % Cu

- 0.5-1.0 wt. % Mn

- < 0.3 wt. % Mg

- 0.1 -5.0 wt. % Zn

- < 1.0 wt. % Si

- < 0.7 wt. % Fe

balance aluminium and unavoidable impurities, wherein the interliner has less Mn than the core."

Reasons for the Decision

PROCEDURAL ISSUES

1. As result of the withdrawal of the appeals of the patent proprietor and of the opponent 2, the opponent 1 is the sole appellant in the present case. The patent proprietor and the opponent 2 have thus no longer the status of appellant. The patent proprietor remains respondent and the opponent 2 party as of right pursuant to Article 107 EPC, second sentence.

1.1 From the above procedural circumstances, it follows that the opponent 2 does not object anymore to the decision of the opposition division. Hence, the objections and the lines of argument submitted by the

opponent 2 as part of its appeal, but which were not relied upon by the appellant are not discussed in this decision beyond the Board's opinion expressed in its communication pursuant to Article 15(1) RPBA 2020. This holds true in particular regarding the objections of lack of clarity under Article 84 EPC, lack of novelty pursuant to Articles 52(1) and 54 EPC in respect of documents D3 and D8 and lack of inventive step pursuant to Articles 52(1) and 56 EPC in view of document D8 as closest prior art in combination with the common general knowledge of the skilled person or with document D3 raised by the opponent 2 during the appeal proceedings but not relied upon by the appellant.

INVENTIVE STEP: ARTICLES 52(1) and 56 EPC

2. The subject-matter of claim 1 as maintained by the opposition division involves an inventive step in the meaning of Articles 52(1) and 56.
- 2.1 The appellant alleged that the subject-matter of claim 1 would be rendered obvious by the disclosure of document D3 as closest prior art in view of the teaching of document D8.
- 2.2 The appellant essentially argued that document D3 would disclose a multi-layer brazing sheet comprising a 3xxx alloy core and an 3xx alloy interliner, i.e. the core "Alloy N°3" and the interliner "Alloy N°. 6" in Table 2 of document D3, according to the compositions defined in claim 1, from which its subject-matter would only differ in that:

"the interliner has less Mn than the core".

- 2.3 While it was not disputed that this feature is not disclosed in document D3, the respondent contested the view of the appellant that the person skilled in the art would directly and unambiguously derive from this prior art document a multi-brazing sheet comprising a 3xxx alloy core according to the composition of the "Alloy N° 3" and a 3xxx alloy interliner according to the composition of the "Alloy N° 6" disclosed in Table 2 with the reason that this combination is not listed in Table 3 of D3 among the suggested combinations of core and interliner alloys selected from the respective lists of Table 2.
- 2.4 The assessment of the question of whether the combination of the core alloys N°3 and interliner alloy N°6 can be considered to be directly and unambiguously drivable from document D3 - as asserted by the the appellant - or rather to be an obvious selection from the two lists of cores and interliners in Table 2 can be let aside, because the Board is convinced that even by assuming - as asserted by the appellant - that the feature stated in claim 1 that "*the interliner has less Mn than the core*" would represent the only distinguishing feature with respect to document D3, the person skilled in the art, starting from this prior art document and aiming to solve the technical problem addressed by the contested patent, would not arrive at a multi-layer brazing sheet as defined in claim 1 without exercising an inventive step.
- 2.5 It is common ground that the objective technical problem can be formulated as providing an alternative multi-layer brazing sheet showing adequate corrosion resistance.

2.6 The appellant argued that the person skilled in the art looking for an alternative to the multi-layer brazing sheet of document D3 would already find in this piece of prior art an encouragement to limit the amount of Mn in the interliner because, as suggested by the second passage of paragraph [0033], the addition of an uncontrolled amount of Mn (as well as of others elements) would be detrimental to the required anti-corrosion properties. The appellant also observed that a further clear indication for lowering the amount of Mn of the interliner would be provided by the analysis of the compositions of the interliners N°4, N°5, N°7 and N°8 listed on Table 2 of document D3 showing, in particular, a wt.% of Mn significantly reduced with respect to those of the interliner N°6. The appellant further argued that the person skilled in the art, in view of the technical problem at stake and being aware of the necessity to control the amount of Mn in the interliner of document D3 stressed in paragraph [0033] of this prior art, would turn its attention to the disclosure of document D8 which indisputably related to a similar multi-layer brazing sheet (see in particular core alloy A5 in Table 1 combined with anyone of the interliners B6 to B8 or B13 in Table 2) and which addressed the same technical problem of improving resistance against corrosion. By doing that the person skilled in the art would find in this prior art document (reference was made to page 5, lines 36 to 44 and to claim 6 of D8) a clear teaching to set the amount of Mn in the interliner alloy less than those of the core alloy, thus according to the distinguishing feature of claim 1. The appellant thus concluded that it would be obvious for the person skilled in the art to apply this teaching to the multi-layer brazing sheet of document D3 and thus to modify the wt.% of Mn of the interliner N°6 in such a way to make it less than the

amount Mn in the core N°3, thereby arriving without any inventive step at an alternative multi-layer brazing sheet according to claim 1.

2.7 The Board cannot follow the arguments submitted by the appellant for the following reasons:

Firstly, as convincingly pointed out by the respondent in reply to the arguments of the appellant, no unambiguous hint to the idea of lowering the wt.% of Mn of the interliner N°6 (0.98 wt.%) can be derived from Table 2 of document D3. In fact, beside the interliners mentioned by the appellant which have indeed a lower Mn content, the interliners N°9 and N°10 show again an amount of Mn even higher than those of the interliner N°6 (i.e. 1.02 wt.% and 1.17 wt.% respectively). From Table 2 the person skilled in the art would thus deduce at the very least that the amount of Mn in the interliner N°6 may be both increased or lowered. Even assuming that the person skilled in the art starting from the multi-layer brazing sheet of document D3 and looking for an alternative multi-layer brazing sheet also showing adequate corrosion resistance would direct its attention to document D8 because this prior art discloses a similar multi-layer brazing sheet and addresses the same technical problem, the isolation of the single teaching from the passage on page 5, lines 36 to 44 indicated by the appellant and its application to the composition of the multi-layer brazing sheet of D3 cannot be considered to represent an obvious step. In fact, as convincingly argued by the respondent, the passage at stake does not only suggest to set the amount of Mn in the interliner less than those in the core as required by claim 1, but combines this teaching with a suggested amount of Mn in the interliner in a range of 0.05 to 0.6 wt.%, i.e. much less than the

amount of Mn in the interliner N°6 of document D3 (0.98 wt.%) which corresponds to the one of claim 1. Therefore, the Board shares the view of the respondent that the person skilled in the art would be reluctant to isolate the teaching of D8 regarding the relationship between the amount of Mn in the core and in the interliner, thereby ignoring the suggested content of Mn, and to apply only this teaching to the multi-layer brazing sheet of document D3 having an interliner, namely the interliner according to the Alloy N°6 in Table 2 characterized by a much higher content of Mn than those suggested in document D8. More generally the Board shares the view of the respondent that the person skilled in the art, which is an expert in the technical field of the development and manufacture of brazing alloys, would not be encouraged to tentatively modify the amount of a single component of a multi-layer brazing sheet well knowing that such a modification might compromise the overall and very sensitive balance of the components, thereby leading to an unpredictable and unsatisfactory behaviour during brazing. The Board thus concurs with the respondent that the reasoning of the appellant is based on an unallowable post-facto analysis of the available prior art leading to conclusions going beyond what the skilled person would have objectively inferred from documents D3 and D8 without the benefit of hindsight knowledge of the invention. Therefore, the subject-matter of claim 1 is not rendered obvious by the combination of D3 with D8.

2.8 As no further inventive step attacks have been raised by the appellant, the Board concludes that the subject-matter of claim 1 involves an inventive step over the cited prior art in the meaning of Articles 52(1) and 56 EPC.

3. In conclusion, the Board sees no reasons for deviating from the assessment of the opposition division that the main request at stake, corresponding to the auxiliary request 2 underlying the decision under appeal, meets the requirements of the EPC.

Order

For these reasons it is decided that:

The appeal is dismissed

The Registrar:

The Chairman:



A. Vottner

J. J. de Acha
González

Decision electronically authenticated