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Datasheet for the decision of 11 September 2025

Case Number:	T 0146/24 - 3.2.01
Application Number:	17843525.1
Publication Number:	3473740
IPC:	B23K11/11, C22C38/00, C23C2/00, C21D8/02, C21D6/00, B32B15/01, C22C38/38, C22C38/28, C22C38/26, C22C38/16, C22C38/12, C22C38/08, C22C38/06, C22C38/04, C22C38/02, B23K11/20, C22C38/58, C22C38/14, B23K11/16, B23K11/00
Language of the proceedings:	EN

Title of invention:
AUTOMOBILE MEMBER HAVING RESISTANCE WELD

Patent Proprietor:
JFE Steel Corporation

Opponent:
ArcelorMittal

Headword:

Relevant legal provisions:
EPC Art. 54, 56, 100(a), 114(2)

Keyword:
Grounds for opposition - lack of patentability (no) - fresh ground for opposition (yes) - admitted (no) - discretion of opposition division - correct exercise of the discretion (yes)
Novelty - main request (yes)
Inventive step - main request (yes)
Late submitted material - document admitted by first instance (no)
Late submitted material - correct exercise of discretion (yes)

Decisions cited:
G 0007/93, T 0640/91, T 0727/00, T 2273/10, T 0948/13, T 1621/16, T 0025/24

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

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Case Number: T 0146/24 - 3.2.01

D E C I S I O N
of Technical Board of Appeal 3.2.01
of 11 September 2025

Appellant: (Opponent)	ArcelorMittal 24-26, Boulevard d'Avranches 1160 Luxembourg (LU)
Representative:	Lavoix 2, place d'Estienne d'Orves 75441 Paris Cedex 09 (FR)
Respondent: (Patent Proprietor)	JFE Steel Corporation 2-3, Uchisaiwai-cho 2-chome Chiyoda-ku Tokyo, 100-0011 (JP)
Representative:	Haseltine Lake Kempner LLP Bürkleinstrasse 10 80538 München (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 24 November 2023 rejecting the opposition filed against European patent No. 3473740 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman	G. Pricolo
Members:	V. Vinci
	A. Jimenez

Summary of Facts and Submissions

I. The appeal of the opponent lies against the decision of the Opposition Division rejecting the opposition filed against European patent No. 3 473 740.

In its decision, the Opposition Division found that the only ground for opposition raised by the opponent under Article 100(a) EPC in conjunction with Articles 54 and 56 EPC was not prejudicial to the maintenance of the patent as granted and rejected the opposition. Novelty and inventive step were positively assessed in view of the following prior-art documents which are relevant for the present decision:

D1: EP 2 703 512 A1
D2: WO 2015/011547 A2
D3: SEP-1220 - "*Testing and Documentation Guideline for the joinability of thin sheet of steel - Part 2: Resistance Spot Welding*" - August 2011
D5: US 2014/0230971 A1

The late filed document

D4: EP 2 426 230 A1

as well as a fresh ground for opposition under Article 100(c) in conjunction with Article 123(2) EPC were not admitted into the opposition proceedings by the Opposition Division in the exercise of its discretion pursuant to Article 114(2) EPC.

II. With a communication pursuant to Article 15(1) RPBA dated 28 March 2025, the Board informed the parties of its preliminary assessment of the case.

Oral proceedings pursuant to Article 116 EPC took place before the Board on 11 September 2025 by videoconference.

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

The respondent (patent proprietor) requested that the appeal be dismissed or, in the alternative, that the patent be maintained in amended form on the basis of the auxiliary requests 1 to 3 filed with the reply to the statement of grounds of the appellant.

IV. Independent claim 1 as granted reads as follows (labelling of the groups of features (1) to (3) according to the appealed decision):

(1) *"An automotive member having a resistance weld for fixing a sheet set including two or more steel sheets including at least one high-strength steel sheet as a base material, the high-strength steel sheet having a tensile strength exceeding 900 MPa [feature 1],*

(2) *the high-strength steel sheet including a composition containing, in mass%,*

C: 0.11 to 0.18%,
Si: 0.01 to 2.50%,
Mn: 4.0 to 8.1 %,
Al: 0.01 to 1.50%,
N: 0.010% or less,

each of one or two of Ti and Nb: 0.005 to 0.100%, optionally one or more selected from the group of

V: 0.05% or less,
B: 0.010% or less,
Cu: 0.50% or less,
Ni: 0.50% or less,
Cr: 0.50% or less,
Mo: 0.50% or less,
Ca: 0.0050Ca or less, and
REM: 0.0050% or less,

optionally one or more of

P: 0.05% or less,
S: 0.005% or less,
Sb: 0.01 % or less,
Sn: 0.10% or less,
Zn: 0.01% or less, and
Co: 0.10% or less,

and optionally Ta, Mg and Zr contents in total of less than 0.1 %, the balance being Fe and unavoidable impurities

(3) *wherein a maximum hardness (HV_{BM}) in a heat-affected zone of the resistance weld is at least 1.1 times hardness (HV_W) of a nugget in the resistance weld formed in a softest steel sheet of the sheet set during resistance welding, an*

average grain size of a steel sheet structure of the heat-affected zone within 2 mm in a direction at a right angle to a sheet thickness from an end part of the nugget in the resistance weld is 3 μm or less, and

a minimum hardness (HV_{min}) in the heat-affected zone is at least 90% of hardness (HV_α) of the high-strength

steel sheet before the resistance welding,

wherein the hardness of the resistance weld is measured as specified in JIS Z 2244, 2009, and wherein HV_α is obtained by Equation (1):

HV_α (Hv) = (tensile strength of the high-strength steel sheet before the resistance welding (MPa) - 30) / 3.14 (1).

Reasons for the Decision

Non-Admittance of the fresh ground for opposition under Article 100(c) EPC and of the late filed document D4

1. The Board does not see any reason to interfere with the discretionary decision of the department of first instance not admitting the fresh ground for opposition under Article l00(c) in conjunction with Article 123(2) EPC and the late filed document D4 .

Non-Admittance of the fresh ground for opposition

1.1 This fresh ground for opposition was raised for the first time by the appellant (opponent) with their letter of 29 September 2023 in response to the submission of the new auxiliary requests 2 and 3 filed by the respondent (patent proprietor) with their letter of 4 September 2023. With their appeal, the appellant (opponent) held that since this ground for opposition was clearly prejudicial to the maintenance of the patent as granted, it should have been considered by the Opposition Division that instead erroneously

decided to disregard it for the reason that it was *"prima facie"* not relevant.

1.2 The appellant (opponent) argued that a reasonable *"prima facie"* assessment of the three objections raised under Article 123(2) EPC against the amendments introduced in claim 1 as granted, namely:

1) the amendments to the ranges of content of some essential elements in feature (2)

2) the introduction of the optional elements of the composition in feature (2), and

3) the amendments to the mechanical properties of the high-strength steel sheet in feature (3),

would have promptly revealed without any need for further investigation, i.e. *"prima facie"*, that these objections - contrary to the conclusion of the Opposition Division - were all justified and hence prejudicial to the maintenance of the patent as granted. For this reason and in accordance to the EPO *"Guidelines"* part E, Chap VI, 2.1, the Opposition Division should have taken the fresh ground for opposition into consideration no matter what stage the opposition procedure had reached and irrespective of the reasons for the belated submission. The appellant (opponent) alleged that the arguments of the Opposition Division in support of its conclusion that the objections raised were *"prima facie"* not justified were incorrect, unreasonable and not in conformity with the principles set out in the applicable Case Law of the Boards of Appeal.

1.2.1 Regarding the modifications to the originally disclosed ranges of the essential components of the claimed high-strength steel sheet C, Mn and Al (see claim 1 as filed) introduced in claim 1 as granted, the appellant (opponent) argued that the person skilled in the art immediately and hence *"prima facie"* recognized that these amendments were the result of an arbitrary selection among 576 possible combinations of generic ranges and preferred and/or more preferred upper or lower limits suggested for these generic ranges disclosed in paragraphs [0018] to [0023] of the A1-Publication. In support of the allegation that the *"prima facie"* assessment of compliance with Article 123(2) EPC was neither correct nor reasonable in view of well established Case Law of the Boards of Appeal, the appellant (opponent) referred in their written submissions to the decisions T0727/00, T2273/10 and T0948/13 allegedly dealing with similar situations and objections and in which the deciding boards concluded that an arbitrary selection from several list of possible ranges was not allowable under Article 123(2) EPC. During the oral proceedings before the Board, the appellant (opponent) also referred to the conclusions of the recent decision T0025/24 confirming the principles of the above mentioned decisions and hence that the reasoning and the conclusions of the opposition division, even if in the context of a *"prima facie"* assessment of compliance of the amendments with the requirements of Article 123(2) EPC, were unreasonable. The respondent (patent proprietor) requested to disregard the submissions based on the decision T0025/24 under Article 13(2) RPBA and relied on the conclusions of the decision T1621/16 allegedly confirming that converging multiple selections from lists of alternatives was allowable under Article

123(2).

1.2.2 Regarding the ranges of the elements P, S, Sb, Sn, Zn, Co, Ta, Mg and Zr introduced in claim 1 as granted as optional components, the appellant (opponent) objected that they were disclosed in the originally filed application only as possible impurities (reference was made to paragraphs [0024] and [0025] of the A1-Publication). Therefore, the Opposition Division should have promptly realised that an undisclosed information was unallowably introduced in claim 1 as granted.

1.2.3 Regarding the disputed amendments to the originally claimed mechanical and structural properties of the resistance weld joint, the appellant (opponent) observed that feature (3) of claim 1 as granted was modified by further specifying that:

the hardness of the resistance weld was measured according to the Japanese Industrial Standard (JIS) Z 2244, 2009, and that

the hardness HVα of the high-strength steel sheet was determined according to the equation labelled with the reference (1).

The appellant (opponent) held that - contrary to the conclusions of the Opposition Division - these amendments was not *"prima facie"* directly and unambiguously derivable from paragraphs [0064] and [0051] of the A1-Publication cited in the decision under appeal. The appellant (opponent) referred instead to paragraphs [0058] and [0062] and essentially argued that there was no general teaching in the originally filed application for the use of the standard JIS Z 2244, 2009 in isolation. On the contrary, the use of

this specific measurement standard was disclosed only in combination with a test force of 2.94 N and with a measurement of the tensile strength of the high-strength steel sheet before resistance welding carried out according to the specific standard JIS Z 2241, 2011. They thus concluded that the Opposition Division failed to *"prima facie"* recognize that the amendments to the mechanical and structural properties of the resistance introduced in claim 1 as granted resulted in an unallowable intermediate generalisation of the specific teaching disclosed in the application as filed infringing Article 123(2) EPC.

1.3 The Board is not convinced:

According to established Case Law of the Boards of Appeal, the review of a discretionary decision of the department of first instance by the Board should be generally restricted to the question whether the department has exercised its discretion power properly, according to the correct criteria and in a logic and reasonable way. As correctly emphasised by the respondent (patent proprietor) in their reply by referring to the decisions G 7/93 and T 640/91, the role of the Board of Appeal is not to review all the facts and circumstances of the case as if it were in the Opposition Division's place and decide whether or not it would have exercised discretion in the same way. Instead, the Board of Appeal should only overrule a discretionary decision of the Opposition Division if it is concluded that the Opposition Division applied the wrong principles, did not take the right principles into account, or behaved in an arbitrary or unreasonable way, thereby exceeding the proper limits of its discretion. However, this is not the case here

as it will be explained below:

1.3.1 The Board observes that the Opposition Division when disregarding the fresh ground for opposition under Article 100 (c) EPC has exercised its discretion pursuant 114 (2) EPC by applying the correct criterion of the *"prima facie"* relevance (see point 2.2 the appealed decision), and this - as it will explained below - in an appropriate and reasonable way.

1.3.2 Regarding the disputed modifications of the originally disclosed ranges of the essential components C, Mn and Al of the high-strength steel sheet, the Board shares the view of the Opposition Division and the respondent (patent proprietor) that the information presented in the cited paragraphs [0017], [0018], [0020] and [0021] of the A1-Publication justifies the conclusion that the amendments comply at least *"prima facie"* with the requirements of Article 123(2) EPC. As correctly observed by the respondent (appellant), the ranges have been amended convergently, i.e. in the sense of narrowing the originally claimed ranges, and this on the basis of explicitly disclosed preferred and/or more preferred upper and lower limits. This circumstance speaks against the objection of the appellant (opponent) that an arbitrary selection from two lists took place. More specifically, regarding the disputed modification of the originally disclosed range of C with respect to claim 1 as filed, the Board concurs with the Opposition Division that the fact that paragraph [0018] of the A1-Publication explicitly indicates to set *"more preferably"* the content of C to 0.11% or more and to 0.18% or less provides the person skilled in the art with a explicit pointer to adopt the amended narrower range of 0.11% to 0.18% instead of the originally claimed broader range of 0.08% to 0.25%. The

same applies to the reduction of the upper limit of the aluminium content to 1.5% which is indicated as preferred choice in paragraph [0021] of the A1-Publication and which convergently narrows the originally filed range of 0.01% to 2.00%. Analogously, paragraph [0020] contains an explicitly pointer to set *"more preferably"* the lower limit of the content on Mn to 4.0, thereby convergently narrowing the originally claimed range of 3.1% to 8.1%. In accordance to the assessment of the Opposition Division and the submissions of the respondent (patent proprietor), the Board considers that the above mentioned pointers present in the originally filed application drastically reduce the number of possible selections and justify the conclusion of the Opposition Division that the amended and convergently narrower ranges introduced in claim 1 as granted which are based on explicitly disclosed preferred/more preferred upper and lower limits are not arbitrary and do not introduce, at least *"prima facie"*, any undisclosed information. Regarding the Case Law cited by the appellant (opponent), including the decision T0025/24 published after the contested decision and which relate to an assessment in the substance of compliance with Article 123(2) EPC of a selection from several lists in a specific case, the Board cannot see how they can affect the evaluation of whether the *"prima facie"* assessment of the Opposition Division has been carried out in a reasonable way or not, as alleged by the appellant (opponent). In this respect the Board observes that as explicitly stated in the cited decision T0025/24, reasons 1.3, the details of the specific case need to be taken into account and are decisive to assess whether the subject-matter of the amended claim is directly and unambiguously derivable from the application as originally filed.

1.3.3 Regarding the objection that the elements P, S, Sb, Sn, Zn, Co, Ta, Mg and Zr now recited in claim 1 as granted as optional components, were disclosed in the originally filed application only as possible impurities, the appellant (opponent) relied at the oral proceedings to their written submissions and did not make any further comment. In this respect, the Board concurs with the Opposition Division that the introduction in claim 1 as granted of optional components originally disclosed as unavoidable impurities does not imply that these elements become an essential portion of the composition. It is reasonable to assume that at least *"prima facie"* the person skilled in the art understands from paragraph [0024] of the A1-Publication that the elements of the list introduced in claim 1 as granted are just examples of known impurities and that there presence can or cannot be measured, depending on the measurement made, whereby they can be reasonably considered as optional elements let alone that - as pointed out by the Opposition Division and the respondent (patent proprietor) - when the composition of the steel sheet is measured, it is not possible to distinguishing whether an element is present as a mere impurity or as a purposive element. Therefore, in the Board's view, the Opposition Division *"prima facie"* assessment was fully justified.

1.3.4 Regarding the amendment to the mechanical and structural properties of the high-strength steel sheet defined in feature (3), the Board concurs with the Opposition Division and the respondent (patent proprietor) that the claimed measurement of the hardness of the weld according to the norm JIS Z 2244 is disclosed in the first sentence in paragraph [0064] in isolation, i.e. without referring to any other norm for the measurement of the tensile strength of the

high-strength steel sheet before resistance welding. Nor the Board can find a decisive indication that the test force of 2.94 N, which is mentioned separately in the following sentence, should not be considered *"prima facie"* as a mere an example of the conditions under which the the hardness of the resistance weld can be measured. The same applies to the equation (1) which is presented in isolation in paragraph [0051] of the A1-Publication. Therefore, the Board considers that it was correct and reasonable for the Opposition Division to conclude that this amendment *"prima facie"* complies with the requirements of Article 123(2).

Late filed Document D4

1.4 The same general considerations presented under points 1.3 and 1.3.1 above analogously apply to the review by the Board of the discretionary decision of the Opposition Division not to admit the late field document D4 which is contested by the appellant (opponent) with their appeal.

1.4.1 In support of the disputed *"prima facie"* relevance of this late filed evidence, the appellant (opponent) pointed out that (1) this document was cited by the Examining Division, that (2) it also related to a high-strength steel sheet with a tensile strength of 980 MPa or more and that (3) it also focused on the importance of weldability of high-strength steel sheet (reference was made to paragraphs [0003] and [0004] of D4). In addition, they observed that the conventional welding parameters suggested in paragraph [0047] of the contested patent were essential identical with those adopted in the welding process of D4 (see paragraph [0055]). The appellant (opponent) also argued that although the Mn content of 2.0% to 3.5% suggested in D4

was indeed completely outside the range 4.0% to 8.1% recited in claim 1 as granted, it still had an overlap with the content of Mn of 3.1% to 8.1% originally recited in claim 1 as filed. For the reasons above the appellant (opponent) concluded that - contrary to the assessment of the Opposition Division - document D4 was *"prima facie"* relevant and should have been admitted into the opposition proceedings. In reply to the argument of the Opposition Division that D4 was less relevant than document D3, which was already part of the opposition proceedings, they put forward that this allegation did not justify the decision to disregard its technical contest when assessing patentability.

1.5 The Board is not convinced and concurs with the Opposition Division and the respondent (patent proprietor) that the clearly different content of Mn of the high-strength steel sheet of D4 compared with the claimed range of Mn implies - irrespective of the question whether the welding parameters are similar or even identical - that also the resulting mechanical and structural properties of the weld after welding are different. The Board also follows the arguments of the respondent (patent proprietor) that in the present case the Opposition Division correctly assessed the prima *"facie relevance"* of D4 in view of the combination of technical features recited in claim 1 as granted and not of the broader subject-matter of claim 1 as filed. Therefore, the Board does not see any reason to overturn the discretionary decision of the Opposition Division to disregard this late filed document under Article 114(2) EPC.

1.6 In conclusion, the Board is convinced that - contrary to the allegations of the appellant (opponent), the Opposition Division exercised its discretion pursuant

to Article 114(2) EPC not only according to the correct principle of the *"prima facie"* relevance, but also in a logic and reasonable way without exceeding the proper limits of its discretion. The discretionary decision of the department of first instance to disregard the fresh ground for opposition and the late filed document D4 has thus to be confirmed.

Ground for opposition pursuant to Article 100(a) in conjunction with Article 54 EPC

2. The ground for opposition pursuant to Article 100(a) in conjunction with Article 54 EPC is not prejudicial to the maintenance of the patent as granted, as correctly stated in the decision under appeal.

2.1 With their appeal the appellant (opponent) maintained that the subject-matter of independent claim 1 as granted lacked novelty over D2 and D5 within the meaning of Articles 52(1) and 54 EPC.

Novelty over D2

2.2 The appellant (opponent) referred to page 1, line 1 to 10 of D2 and argued that an automotive member according to feature (1) of claim 1 as granted was directly and unambiguously disclosed in this prior art document, as acknowledged by the Opposition Division but contested by the respondent (patent proprietor). They also put forward that - contrary to the assessment of the Opposition Division - the ranges indicating the content of the essential elements of the high-strength steel sheet of claim 1 as granted were not narrow with respect to the general ranges disclosed in claim 1 of D2 and to the suggested preferred ranges. Its was alleged that the skilled person reading D2 would have

seriously contemplated working in the ranges recited in claim 1 of the contested patent. Reference was made in this respect to the EPO *"Guidelines"*, VI-7 (ii) b). Furthermore, the appellant (opponent) pointed out that the composition according to the specific Example I in Table 1 of D2, only slightly differed from the claimed claimed composition in the aluminium content. In their opinion, the Al content of 1.7% of the Example I could not be considered far removed from the claimed range 0.01% to 1.5%. The appellant (opponent) thus concluded that the composition according to feature (2) of claim 1 as granted was directly and unambiguously disclosed in D2. They also alleged that since the composition and the manufacturing and welding conditions disclosed in D2 (reference was made to Table 2 and pages 6 and 20) were the same as in the contested patent, the inherent result of welding the high-strength steel sheet of D2 was mandatorily an automotive member showing the mechanical and structural characteristics required by to feature (3) of claim 1 as granted.

2.3 The arguments of the appellant (opponent) are not convincing:

The Board follows the view of the Opposition Division and the appellant (opponent) that document D2 suggests indeed the use of the high-strength steel sheet in the automotive industry (see for example page 1 and claim 21) and that therefore feature (1) of claim 1 as granted - contrary to the opinion of the respondent (patent proprietor) - is anticipated by this prior art document. However, the Board concurs with the Opposition Division and the respondent (patent proprietor) that a high-strength steel sheet with a composition according to feature (2) of claim 1 as granted is not directly and unambiguously disclosed in

this prior art document. Looking at both the general disclosure of the composition of the steel sheet of D2 and at the disclosed preferred ranges, the Board agrees with the Opposition Division that each of the claimed ranges for C, Si, Al and Ti and/or Nb are either narrow sub-ranges within, or ranges only partially overlapping with the general and preferred ranges disclosed in D2. As convincingly pointed out by the respondent (patent proprietor) in their reply and in accordance with established Case Law of the Boards of Appeal, to question the novelty of an alloy composition defined by a plurality of sub-ranges and/or overlapping ranges defining in percentage the content of each component of the alloy, it is not sufficient that the claimed ranges are disclosed in isolation in a prior art document. The decisive question is rather whether the claimed sub-ranges and/or overlapping ranges are also directly and unambiguously disclosed in combination. This is not the case here because - as pointed out by the respondent (patent proprietor) - it is not possible to identify in D2 any clear and unambiguous pointer directly and unambiguously leading to the combination of the specific ranges of feature (2) of claim 1 as granted. Turning now to the specific Example I disclosed in D2, the Board concurs with the Opposition Division and the respondent (patent proprietor) that the composition of the high-strength steel sheet according to this embodiment is not prejudicial to the novelty of feature (2) of claim 1 either at least because the suggested aluminium content of 1.7% is clearly outside the range 0.01% to 1.5% required by claim 1. Having said that and irrespective of the question whether the manufacturing and welding conditions suggested in D2 are identical to those of the contested patent or not, the Board agrees with the Opposition Division and the respondent (patent proprietor) that since the compositions of the high-

strength steel sheets according to the patent and D2 are different, for example because the different content of aluminium of the Example I, it has to be assumed that also the mechanical and structural properties of the weld joint resulting from the resistance welding process undergone by the steel sheets will be different, let alone that D2 does not disclose either the specific measurement standard nor the equation (1) required by feature (3) of claim 1 as granted. Therefore, beside feature (2), also feature (3) of the claim is not directly and unambiguously disclosed in D2.

Novelty over D5

2.4 The appellant (opponent) maintained that the document D5 disclosed an automotive member including a high-strength steel sheet according to feature (1) of claim 1 as granted, as also acknowledged in the decision under appeal. This allegation was contested by the respondent (patent proprietor) who objected that D5 related to a high-strength steel sheet per se and not to an automotive member with a resistance weld to fix such a high strength steel sheet thereto.

2.4.1 Regarding the composition of the high-strength steel sheet - as correctly pointed out by the Opposition Division - the ranges disclosed in D5 largely overlap the ranges claimed in the patent which are not narrow as compared to those suggested in this prior art document. Furthermore, it is common ground that the composition of the specific Examples M and V in Table 1 of D5 takes clearly away the novelty of the composition of the high-strength steel sheet as recited in feature (2) of claim 1 as granted.

2.4.2 It is undisputed that D5 fails to explicitly anticipate the mechanical and structural properties of the resistance weld recited in feature (3) of claim 1 as granted, and that this piece of prior art is also silent regarding the standard used to measure the hardness of the resistance weld and the equation (1) applied to determine the hardness of the high-strength steel sheet before welding.

2.4.3 In this respect the appellant (opponent) argued that the spot welding parameters disclosed in the patent are conventional as demonstrated by documents D2 and D3. Therefore - in their opinion - by carrying out the spot welding process referred to in D5 according to these conventional parameters to weld the high-strength steel sheet disclosed in D5, for example the steel sheet according to Examples V and M, a spot weld joint according to the mechanical and structural features recited in feature (3) of claim 1 was necessarily obtained.

2.5 The arguments of the appellant (opponent) cannot convince the Board:

As correctly observed by the respondent (patent proprietor), D5 merely mentions that the welding process applied to the high-strength steel sheet disclosed therein is a spot welding or arc welding in general (see paragraph [0035]). In the Board's view, this general statement results in a lack of information regarding the welding parameters actually adopted and does not permit to directly and unambiguously conclude that the welding condition of the patent are essentially identical to those applied to the high-strength steel sheet of D5, let alone to such an extent that the same mechanical and structural properties as

defined in feature (3) of claim 1 as granted are obtained in the weld joint of this prior art document. The allegation of the appellant (opponent) that the welding parameters disclosed in the patent are conventional and thus somehow also inherent to the disclosure of D5 is based on mere speculations and cannot convince. First of all a spot welding process as mentioned in D5 encompasses both a resistance welding as recited in claim 1 and a laser spot welding process. Since these different welding processes imply different welding parameters, it cannot be concluded that the welding conditions applied in D5 are necessarily the same as the resistance welding conditions of the contested patent. Furthermore, as pointed out by the respondent (patent proprietor), even assuming that D2 and D3 describe conventional welding conditions of the kind adopted in the contested patent there is no prove that these conditions are always adopted, let alone that they are applied to weld the high-strength steel sheet according to D5 and in particular to the Examples M and V. Furthermore, irrespective of the admissibility objection raised by the respondent (patent proprietor) , the Board cannot see how the view of the appellant (opponent) that the hardness parameters defined in feature (3) are allegedly *"unusual"* may impact on the assessment of the novelty of this feature with respect to D5.

2.5.1 In conclusion, the Board confirms the findings of the Opposition Division that documents D2 and D5 do not directly and unambiguously disclose the subject-matter of claim 1 as granted.

Ground for Opposition pursuant to Article 100(a) in conjunction with Article 56 EPC

3. The ground for opposition pursuant to Article 100(a) in conjunction with Article 56 EPC is not prejudicial to the maintenance of the patent as granted, as correctly stated in the decision under appeal.

3.1 With their appeal, the appellant (opponent) contested the findings of the Opposition Division that the subject-matter of claim 1 as granted was not rendered obvious by D1, D2 or D5 as closest prior art taken alone or in combination with further pieces of prior art.

3.2 It is common ground that the technical problem addressed by the contested patent has to be seen as how to provide an automotive member having a resistance weld for which the fracture form in a cross tensile test is a plug fracture, the automotive member comprising a high-strength steel sheet having a tensile strength exceeding 900 MPa.

Starting from D1 alone or in combination with D2 or D3

3.3 The appellant (opponent) maintained that document D1 disclosed an automotive member including a high-strength steel sheet with a tensile strength exceeding 900 MPa according to feature (1), wherein the specific example I in Table 1 related to such a high-strength steel sheet having a composition as recited in feature (2) of claim 1 as granted. The appellant (opponent) acknowledged that feature (3) of the independent claim was not directly and unambiguously disclosed in this prior art document. The Board notes that this assessment of the technical content of D1 is in

accordance with the decision under appeal and was not contested by the respondent (patent proprietor) with their reply to the statement of grounds of appeal.

3.3.1 Regarding the distinguishing feature (3) and analogously to their submissions in support of the alleged lack of novelty in view of D2 and D5 - the appellant (opponent) relied again on the argument that the welding parameters disclosed in the patent were conventional when welding high-strength steel sheets. The person skilled in the art would thus obviously apply these allegedly conventional parameters to weld the high-strength steel sheet of the Example I of D1 to manufacture an automotive component, thereby unavoidably obtaining a weld joint showing the mechanical and structural characteristics required by the only distinguishing feature (3). In the context of this line of arguments, the appellant (opponent) also referred to D2 and D3 to more convincingly support their assumption that the welding parameters described in the contested patent were merely conventional and thus part of common general knowledge.

3.3.2 Should the above line of arguments based on D1 alone in view of common general knowledge not be convincing, the appellant (opponent) argued that the welding parameters disclosed in D2 closely matched those of the contested patent. This was true also for the apparently diverging nugget diameter suggested in this prior art document that in their opinion equated in the practise the nugget diameter disclosed in the patent. The same considerations were made in respect of the combination of D1 with D3. Although it was acknowledged that this evidence did not relate to a welding test for a welded automotive member, but for a steel sheet which can be used in an automotive member, the appellant (opponent)

considered it representative of conventional welding conditions as D2. The appellant (opponent) assumed again that the welding parameters set out in the patent, including the welding current and the welding diameter of 5√t or more, were suggested in D3. In view of all the above, they concluded that the person skilled in the art was motivated to apply the conventional welding conditions set out in D2 or D3, which were identical to the welding conditions of the contested patent, to the identical steel sheet of D1, thereby inherently arriving to a weld with the mechanical and structural characteristics recited in feature (3) of claim 1. The appellant (opponent) also put forward that - in any event - describing the mechanical and structural characteristics of the weld with unusual parameters, as it is was alleged in the case in claim 1 of the contested patent, could not imply any inventive contribution over the prior art.

3.4 The Board is not convinced:

Regarding the line of arguments based on D1 alone and as pointed out under point 2.3.4 above, the appellant (opponent) failed to demonstrate that the welding conditions presented in the contested patent are conventional, and that therefore the person skilled in the art would obviously apply them when welding the high-strength steel sheet of the example I of D1, thereby inherently arriving to a weld joint with the mechanical and structural characteristics according to feature (3) of claim 1. On the contrary, in accordance with the Opposition Division and the respondent (patent proprietor), the Board cannot see why the person skilled in the art should be motivated to apply exactly the specific welding parameters suggested in the contested patent to weld the high-strength steel sheet

of the Example I of D1. Document D1 does not provide any hint in this respect. Therefore, an automotive member with a resistance weld showing the mechanical and structural characteristics recited in feature (3) of claim 1 as granted is not rendered obvious by D1 taken alone and/or in view of common general knowledge.

3.4.1 The same reasoning applies *"mutatis mutandis"* to the lines of inventive step attack based on D1 as closest prior art in combination with D2 or D3. In accordance with the arguments of the Opposition Division and the respondent (patent proprietor), the Board cannot see any motivation for the person skilled in the art aiming to address the technical problem defined under point 3.2 above, to apply exactly the welding conditions suggested in these prior art documents when welding the high-strength steel sheet according to the Example I of D1, and this irrespective of the disputed question of whether the welding parameters suggested in D2 or D3 are identical to the welding parameters of the contested patent.

3.4.2 Finally and analogously to the arguments presented in respect of the novelty attacks, the Board cannot see how in the present case the view of the appellant (opponent) that the hardness and structural parameters required by the distinguishing feature (3) were allegedly *"unusual"* may deprive them of an inventive contribution.

Starting from D2 alone or in combination with D3

3.5 Should the Board follow the positive novelty assessment of the Opposition Division in view of D2, the appellant (opponent) pointed out that the generic and preferred ranges of the essential components of the high-strength

steel sheet disclosed in this prior art document differed from the composition recited in feature (2) of claim 1 in the content of Al and of Ti, Nb and V. The appellant (opponent) argued that the skilled person, starting from the preferred composition of D2 and relying on the examples provided therein, was certainly motivated to explore the range 1% to 2% for the content of Al and to limit the content of the micro-alloying elements Ti, Nb, V, thereby arriving without an inventive step at a high-strength steel sheet with a composition according to feature (2) of claim 1. The same applied even more so when starting from the specific Example I in Table 1 of D2 that only differed from the claimed composition in the content of aluminium which was outside of the claimed range (1.7% vs. 0.01% to 1.5%). Having said that, the appellant (opponent) held that starting from such a high-strength steel sheet with the same composition as the one claimed and considering that the welding parameters suggested in D2 are identical to those indicated in the contested patent, one would inherently arrive to an automotive member having a resistance weld with the same hardness and microstructure as recited in feature (3) of claim 1 as granted. The appellant (opponent) also stressed that the content of aluminium in claim 1 as filed and in paragraph [0021] of the original description was up to 2%, whereby no particular technical effect could be associated to the claimed narrower range 0.01% to 1.5%. Furthermore, the appellant (opponent) reiterated the objection that the claimed mechanical and structural characteristics of feature (3) were expressed by unusual parameters. In the event that the Board could not follow the argument that the welding parameters adopted in the contested patent were conventional and identical to those of D2, the appellant (opponent) argued that a combination of

D2 with D3 rendered obvious the subject-matter of claim 1 as granted for the same reasons reasons presented for example in support of the line of attack based on D1 and D3.

3.6 None of these arguments are convincing:

Firstly, the Board concurs with the respondent (patent proprietor) that D2 addresses a different technical problem, namely to improve the weldability of aluminium alloyed steel sheets containing non-conventional amounts of alloying elements and exhibiting high strength and high formability (see for example page 3, lines 10-12 and page 4, lines 1-4). As correctly pointed out by the Opposition Division and the respondent (patent proprietor) in their replies, D2 does not contain any hint that a modification of the suggested amount of Al would improve the resistance weld so that the fracture form in a cross tensile test would be a plug fracture, nor that the mechanical and structural properties of the weld recited in feature (3) of granted claim 1 are necessary for this effect. Having said that, the Board is convinced that a person skilled in the art dealing with alloyed high-strength steel sheets to be resistance welded would avoid any arbitrary modifications of the suggested composition, let alone of a single component of the composition. They are in fact well aware that even minor changes to the content of a basic components can have significant and unforeseeable negative effects on the resultant mechanical and structural characteristics of both the steel sheet and a the weld formed therefrom. Therefore, the Board cannot see why the person skilled in the art starting for instance from the suggested content of 1.7% of aluminium of the steel sheet according to Example I of D2 and aiming to address the technical

problem addressed by the contested patent should necessarily consider to lower (and not to increase) only the aluminium content to bring it within the claimed range, and this without considering to also adjust the content of any other essential component. Furthermore - as convincingly argued by the respondent (patent proprietor) - the person skilled in the art in view of the fact that the majority of the examples in Table 1 of D2 shows a content of Al outside the claimed range and, in particular > 1.5%, would rather be inclined to increase the percentage of Al of the Example I and not to reduce it to a maximum of 1.5%. The same applies to the line of argument starting from the general disclosure of the composition of the high-strength steel sheet of claim 1 D2 or from the suggested preferred ranges, let alone that in this case also the content of Ti, Nb and V needs to be adjusted to match the composition of claim 1 as granted. For all the reasons above the Board confirms the assessment of the Opposition Division that a modification of the composition of the high-strength steel sheet of D2 in the sense of the claimed composition is not obvious. It follows that irrespective of the disputed questions of whether the welding conditions suggested in D2 are the same as in the contested patent and whether these allegedly conventional welding conditions could be found in D3 and applied to resistance weld the steel sheet of D2, it would not be possible - starting from a high-strength steel sheet having a different composition - to inherently arrive to the same mechanical and structural characteristics imposed for the weld of the claimed automotive member by feature (3) of claim 1.

Starting from D5 alone or in combination with D2 or D3

3.7 As per D1 and in accordance with the assessment of the Opposition Division, the appellant put forward that D5 disclosed an automotive member including a high-strength steel sheet according to feature (1), wherein the specific Examples M and V presented in Table 1 described a high-strength steel sheet having a composition according to feature (2) of claim 1 as granted. The appellant (opponent) argued that if the Board confirmed the opinion that feature (3) was not inherently derivable from D5, the subject-matter of claim 1 as granted was at least rendered obvious in view of common general knowledge, D2 or D3 for the same reasons submitted to support the lines of inventive step attack starting from D1.

3.7.1 However, these arguments cannot convince the Board for the same reasons presented under previous points 3.4 to 3.4.2 in respect of the inventive step attacks starting from D1.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

H. Jenney G. Pricolo

Decision electronically authenticated