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Datasheet for the decision of 22 July 2025

Case Number: T 0412/23 - 3.4.03

Application Number: 09753877.1

Publication Number: 2283332

IPC: G01J3/46

Language of the proceedings: EN

Title of invention:
METHOD FOR DETERMINATION OF A MATCHING COLOUR VARIANT

Patent Proprietor:
Akzo Nobel Coatings International B.V.

Opponent:
BASF Coatings GmbH

Headword:
Combination of three documents of different complexity

Relevant legal provisions:
EPC Art. 52(1), 56, 100(a), 100(b)
RPBA Art. 13(2)

Keyword:
Inventive step - (yes) - problem and solution approach - non-obvious combination of known features
Sufficiency of disclosure - (yes)
Late-filed argument - justification for late filing (no)

Decisions cited:
T 0063/06, T 0038/11

Catchword:
When the teachings of three documents are combined, this has to be done - in circumstances such as the present ones - step by step, i.e. in a first step, the teaching of another document is combined on the basis of the teaching or embodiment of the closest state of the art. In a second step, it must then be examined whether the skilled person would also combine the result of this combination with the teaching of the third document. In doing so, the context of the initial situation as well as the complexity and specific technical context of each document or embodiment has to be taken into account. (2.5.9 of the reasons)

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Case Number: T 0412/23 - 3.4.03

D E C I S I O N
of Technical Board of Appeal 3.4.03
of 22 July 2025

Appellant: (Opponent)	BASF Coatings GmbH Glasuritstrasse 1 48165 Münster (DE)
Representative:	RDL Patentanwälte PartG mbB Senefelderstrasse 26 70176 Stuttgart (DE)
Respondent: (Patent Proprietor)	Akzo Nobel Coatings International B.V. Christian Neefestraat 2 1077 WW Amsterdam (NL)
Representative:	Akzo Nobel IP Department Christian Neefestraat 2 1077 WW Amsterdam (NL)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 18 January 2023 rejecting the opposition filed against European patent No. 2283332 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman	T. Häusser
Members:	A. Böhm-Pélissier
	P. Guntz

Summary of Facts and Submissions

I. The appeal is against the decision of the opposition division rejecting the opposition against the patent EP 2 283 332.

II. The opposition division decided that the subject-matter of claim 1 as granted was new and involved an inventive step. Furthermore, the opposition division decided that the ground for opposition under Article 100(b) EPC did not prejudice the maintenance of the patent as granted.

III. Reference is made to the following **documents**:

E0 = prior art discussed in the impugned patent (paragraphs [0006] and [0007], see section 2.2.1)
E00 = prior art discussed in the impugned patent (paragraph [0002], see section 2.5.2)
E15 = US 2007/0250273 (discussed in the impugned patent in paragraph [0005], see section 2.5.3)

IV. The patent was opposed in its entirety on the grounds of lack of technical character (Article 100(a) EPC in combination with Articles 52(2)(c)), lack of inventive step (Article 100(a) EPC in combination with Articles 52(1), 56 EPC) and lack of sufficient disclosure (Article 100(b) EPC).

V. The invention

The invention relates to a method for determining a suitable colour variant for painting a car without the need for expensive equipment and extensive colour fans.

The method involves evaluating visual deviations based on predefined visual characteristics (e.g. brightness, hue, saturation and texture features such as graininess or gloss) from two different viewing and/or illumination angles. The best matching variant of the standard colour is determined from three to six variant colours.

Requests

VI. At the oral proceedings before the board the **appellant (opponent)** requested that the decision under appeal be set aside and that the patent be revoked in its entirety.

The **respondent (patent proprietor)** requested that the appeal be dismissed.

VII. **Claim 1** of the **sole request** (patent as granted) (labelling "(1)", "(1.1)", ... as inserted by the opponent) reads as follows:

(1) A method of determination of a matching variant of a standard colour of a repair paint
(1.1) matching the effect colour of an object to be repaired in an automobile body repair shop, the method comprising the steps of
(1.2) a) determination of the standard colour of the colour of the object to be repaired, characterised in that it further comprises the step of
(1.3) b) determination of the best matching variant
(1.3.1) of the standard colour from 3 to 6 variant colours, wherein
(1.3.2) • a swatch coated with the colour of the standard colour is visually compared under at least two

different angles of illumination and/or observation with the colour to be matched,
(1.3.3) • the visual deviation from the standard colour and the colour of the object to be matched being evaluated on the basis of predetermined deviations for the visual properties,
(1.3.3.1) wherein the predetermined visual properties comprise at least one colour property and at least one texture property,
(1.3.4) • based on the predetermined deviations for the visual properties of the standard colour and the colour of the object to be matched, the best matching variant of the standard colour is determined using a database
(1.3.4.1) wherein sets of deviations for predetermined visual properties are linked to specific variants of standard colours.

VIII. The **reasoning** of the opponent, as far as it is relevant for this decision, can be summarised as follows:

(a) The claimed subject-matter could not be carried out by the skilled person, because the subjective colour perception was different for different light conditions and different persons carrying out the invention; it was an undue burden to produce variant colours for the parameters of visual properties described in the specification.
(b) The skilled person would combine the teachings of the prior art discussed in the impugned patent in paragraphs [0002], [0005] and [0007] and therefore arrive at the subject-matter of claim 1.

IX. The reasoning of the patent proprietor, as far as it is relevant for this decision, can be summarised as follows:

(a) The skilled person had average visual perception skills and was able to provide three to six variant colours for the different combinations of visual colour properties including texture without any technical difficulty. The argument that it was an undue burden to carry out the invention by trial and error was late filed and therefore not to be admitted under Article 13(2) RPBA.

(b) The skilled person would not combine the teachings of the prior art discussed in the patent in paragraphs [0002], [0005] and [0007] and would not arrive at the claimed subject-matter without exercising inventive skills.

Reasons for the Decision

1. Main request - sufficient disclosure (Article 100(b) EPC)

1.1 The opponent argued that the subjective perception of each user of the claimed method was different and therefore it was not possible to deliver a reproducible result. As could be seen from E15, section [0007], the swatch of variant colours approach required a great deal of trial and error. An enormous number of combinations of visual parameters were required (cf. T 0038/11, point 2.6 of the Reasons) and these could not be represented by only three to six variant colours.

1.2 The patent proprietor argued that it was for a long time common practice in the field of body repair shops to work with the average perceptual behaviour of users and that, based on extensive experience with similar methods, it was possible to achieve very good results

in terms of reproducibility. The techniques required for this were well known. If there were problems with feasibility, these would have to be proven by the opponent. The burden of proof lay with the opponent (T 0063/06, catchword). Furthermore, the argument that there were too many combinations of parameters was raised for the first time in the oral proceedings before the board. This argument was late filed under Article 13(2) RPBA and could not be admitted, as it prevented - if admitted - the representative from consulting with the inventors.

1.3 The board agrees with the reasoning of the opposition division (section 4 of the impugned decision) and the proprietor (section 2 of the reply to the statement setting out the grounds of appeal). The requirement of sufficiency of the disclosure means that the invention be disclosed in such a manner that it can be carried out by a person skilled in the art. In the present case, the person skilled in the art is the person creating the variant colours and linking the evaluation of the visual properties to the variant colours or vice versa. The board agrees with the patent proprietor that visual comparisons can be made using, among other things, average colour perception skills and that this makes reproducibility achievable to a sufficient degree.

1.4 The submission that it is an undue burden for the skilled person to project the large combination of visual parameters onto a small number of variant colours was only raised during the oral proceedings before the board. Since the opponent did not invoke any exceptional circumstances or cogent reasons and the patent proprietor would have no opportunity to respond appropriately, e.g. by consulting the inventors, the

board sees no reason why this submission should be admitted.

1.5 Consequently, the board came to the conclusion that the patent as granted discloses the invention in a manner sufficiently clear and complete to be carried out. Under Article 13(2) RPBA, the board did not take into account the new submission with regard to undue burden to carry out the invention.

2. Main request - inventive step (Article 56 EPC)

2.1 Closest state of the art

The only state of the art discussed by the appellant is the prior art discussed in the impugned patent (E0, E00, E15). Both parties agree that E0 is the closest state of the art, because it discloses colour examination from two different viewing angles. E00 discloses examination from only one angle. The embodiments of E15 use complex automated electric means for colour examination from multiple angles.

2.2 Disclosure of E0

2.2.1 **E0** discloses (paragraphs [0006] and [0007] of the impugned patent; underlining by the board):

[0006] A known method for colour variant selection is to provide the bodyshops with swatches of the standard colour and of each colour variant of the standard colour. The sprayer can select the best matching swatch by visual comparison of the automobile surface to be repaired and the swatches. Each swatch corresponds to a colour variant and an associated paint recipe. The paint recipe corresponding to the swatch having the

lowest overall deviation for visual properties is selected as the best matching recipe. However, it is expensive to provide all automobile body shops with swatches of thousands of colour variants and to update the system regularly. Also, due to variations in the swatch preparation process, colour swatches sometimes differ in colour properties from the actual target colour sprayed by the user.
[0007] Another procedure currently used is that a paint supplier will provide swatches only for a refinish paint that matches the standard paint colour, and alternate descriptions of refinish paints available are provided. The refinisher places the swatch representing the standard paint colour and judges the difference from the paint on the vehicle that is to be matched, e.g., lighter and greener at near-specular angle and darker at the flop angle, and matches that information with the description of the alternate paint formulas available and chooses the closest alternate and then attempts to spray-match the colour of the vehicle being repaired.

2.2.2 The board agrees with the opponent that "lighter"/"darker" and "greener"/"less green" are two different visual properties.

2.2.3 Therefore E0 discloses:

(1) a method of determination of a matching variant of a standard colour of a repair paint
(1.1) matching the effect colour of an object to be repaired in an automobile body repair shop, the method comprising the steps of
(1.2) a) determination of the standard colour of the colour of the object to be repaired, characterised in that it further comprises the step of

(1.3) b) determination of the best matching variant
(1.3.1) ~~of the standard colour from 3 to 6 variant colours~~, wherein
(1.3.2) • a swatch coated with the colour of the standard colour is visually compared under at least two different angles of illumination and/or observation (*near-specular angle, flop angle*) with the colour to be matched,
(1.3.3) • the visual deviation from the standard colour and the colour of the object to be matched being evaluated on the basis of predetermined deviations for the visual properties (*matching the difference with the description of the alternate paint formulas available and choosing the closest alternate*),
(1.3.3.1) wherein the predetermined visual properties comprise at least one colour property (*lighter/darker, greener/less green*) ~~and at least one texture property~~,
(1.3.4) • based on the predetermined deviations for the visual properties of the standard colour and the colour of the object to be matched, the best matching variant of the standard colour is determined using a database (*descriptions of the alternate paint*)
(1.3.4.1) wherein sets of deviations (*alternates*) for predetermined visual properties are linked to specific variants of standard colours.

2.3 Differences

Therefore, E0 fails to disclose
(a) determination of the best matching variant of the standard colour from 3 to 6 variant colours;
(b) the predetermined visual properties comprise at least one texture property.

2.4 Technical effect, objective technical problem to be solved

2.4.1 The opponent argued that the objective technical problem to be solved could be broken down into two independent partial problems:

(a) Determining the precision of the process. This was necessary for every colour selection process. The more colour variants were offered, the more precise (and complex) the colour selection process was; the fewer variants were offered, the faster, simpler and less precise the process was.

(b) Determining the complexity of the colours to be examined. Investigating texture as visual property meant that more complex colours, such as metallic colours or so-called effect colours, could also be examined. These colours were given a special texture by adding e.g. aluminium particles.

2.4.2 The patent proprietor argued that the two distinguishing features could not be separated and the objective technical problem could not be split into two partial problems because distinguishing features (a) and (b) had a synergistic effect, namely that the method was both relatively precise (because complex effect colours could be investigated) and relatively simple (because a very low number of colour variants was necessary and no electric means were required).

2.4.3 The board agrees with the patent proprietor that it is not appropriate to formulate partial problems as the distinguishing features (a) and (b) are functionally related. The specific visual property defined in feature (b) affects the number of necessary variants defined in feature (a). The objective technical problem is therefore to improve the method of E0 so that an appropriate colour can be determined more precisely but

still in a very simple manner even for complex effect colours.

2.5 Non-obviousness

2.5.1 The opponent argued that E15 taught investigating the texture of the paint and E00 taught to use three to six variant colours.

2.5.2 **E00** discloses (paragraph [0002] of the patent; underlining of the board):

[0002] These colour variations make it difficult to attain an excellent colour match in an automobile body repair shop. Typically, three to six variants are used to cover the range of variants of one standard colour occurring in the field. ...

2.5.3 **E15** discloses (underlining by the board):

[0001] The present invention relates to a method for matching of a repair paint to texture properties, and optionally colour, of a paint film on a substrate to be repaired. ...
[0004] *Besides colour, a paint film shows numerous further visual properties. Particularly when effect pigments, such as for example aluminium flake pigments or pearlescent pigments, are used, the look of a paint film is not of a uniform colour, but shows texture. This can include phenomena as coarseness, glints, micro-brilliance, cloudiness, mottle, speckle, sparkle or glitter. In the following, texture is defined as the visible surface structure in the plane of the paint film depending on the size and organization of small constituent parts of a material. In this context, texture does not include roughness of the paint film*

but only the visual irregularities in the plane of the paint film. Structures smaller than the resolution of the human eye, contribute to "colour", whereas larger structures generally also contribute to "texture".

2.5.4 According to the opponent E15 taught in paragraphs [0001] and [0004] to consider texture properties when investigating the visual properties of a paint. The context of these text passages was very general and independent of the specific and complex embodiments described in E15. In paragraph [0005] of the impugned patent document E15 was discussed and matching of a repair paint to texture properties was explicitly mentioned. These passages were a clear indication that the skilled person also considered the texture of the paint when selecting the matching colour for a paint finish. Therefore, E15 could be considered as evidence that texture characteristics might be used in some manner within the field of colour matching.

2.5.5 E00 revealed in the same broad context as E0 that three to six variant colours were commonly used in a swatch. Therefore, the skilled person would combine the teachings of E0, E00 and E15 especially because these different teachings were discussed in close relation to each other in the impugned patent, reflected the general common knowledge of the skilled person and could be easily combined with each other without technical difficulty.

2.5.6 Sub-problem (a) always had to be addressed and solved when comparing a colour with variant colours. It set the precision and the framework of the method. E00 provided an indication of a technical framework that was known to the skilled person. Three to six variant colours was a common range. Problem (b) also had to be

solved, as the skilled person had to decide whether effect colours should also be examined or not. E15 taught in section [0004] that, with regard to texture, colour properties such as *coarseness, glints, micro-brilliance, cloudiness, mottle, speckle, sparkle or glitter* could be examined. If the skilled person decided in favour of such effect colours, as required by the problem to be solved, they would automatically investigate these visual properties as part of the examination process.

2.5.7 The patent proprietor argued that the skilled person would not combine the teachings of the prior art discussed in the patent in paragraphs [0002], [0005] and [0007] because this was contrary to the problem to be solved, i.e. providing a method for determining the appropriate paint for complex colours that was both simple, i.e. without electric means, and suitable for complex colours such as effect colours.

2.5.8 The board essentially agrees with the reasoning of the opposition division (section 6.3 of the Reasons of the impugned decision) and of the patent proprietor (section 3 of the reply to the statement setting out the grounds of appeal). When solving a single objective technical problem the skilled person cannot combine in the present context the teachings of three documents at a single stroke, but must first combine the teaching of E0 with the teaching of one of the documents E15 and E00 and then, in a second step, combine the result of this combination with the teaching of the other one of the documents E15 and E00.

2.5.9 In other words, when the teachings of three documents are combined, this has to be done - in circumstances such as the present ones - step by step, i.e. in a

first step, the teaching of another document is combined on the basis of the teaching or embodiment of the closest state of the art. In a second step, it must then be examined whether the skilled person would also combine the result of this combination with the teaching of the third document. In doing so, the context of the initial situation as well as the complexity and specific technical context of each document or embodiment has to be taken into account.

2.5.10 In the present case none of the cited documents teaches both using three to six colour variants and evaluating the texture of the paint without any additional technical means except a swatch of variant colours.

2.5.11 E15 only teaches examining the texture of the colour in the context of *calculating a repair paint with matching texture properties by utilizing a calculational texture model using the texture data of the paint modules* (see claim 1 of E15) and not in the simple context of E0, which requires no electric means. E15 teaches the examination of texture only by using complex image processing software, while E0 and E00 teach the examination of colour only with the human eye from only one or two angles.

2.5.12 The board notes that the reference to E15 and its content in paragraph [0005] was added during examination proceedings before the EPO and was not part of the original application documents. Furthermore, E15 is described as disclosing "paint modules" associated with specific textures based on a texture calculation model. It does not relate to the method described in paragraph [0007] at all. The observation that metallic effect paints present particular challenges in colour matching and that texture must be considered to improve

matching accuracy, originates from the patent itself (paragraph [0010]) and cannot be regarded as prior art.

2.5.13 From the context of the contested patent, it is clear that E00 and E0 refer to different evaluation methods. E00 relates to a basic method and involves a method with examination of a single angle and a single visual property. E0 relates to a different, more sophisticated method with examination from two different angles and two visual properties. The method of E00 may require different colour charts than examination of two visual properties from two different angles as taught by E0.

2.5.14 The board cannot see how the skilled person would arrive at a combination of all claimed features by combining the teachings of E0, E00 and E15. Assuming a user of the method of E0 recognized that effect colours are harder to match accurately, they would also need to identify that this difficulty stems from variations in texture (cf. E15, paragraph [0004]). As there are no concrete indications pointing in this direction, it is doubtful that the skilled person would even consider this approach. Moreover, the method of E0 would require adaptation by introducing a second classification dimension for texture among the colour variants. E0, however, provides no teaching or suggestion in this regard.

2.5.15 However, if the skilled person were to opt for such a second dimension, this second dimension would comprise a multitude of additional texture properties (cf. E15, paragraph [0004]: *coarseness, glints, micro-brilliance, cloudiness, mottle, speckle, sparkle or glitter*). This multitude of aspects would lead the skilled person to provide a multitude of variant colours in order to do justice to this multitude of aspects. However, for such

a complex assessment, the skilled person would not consider that only three to six colour variants as suggested by the very simple method of E00 would be sufficient to determine the reference colour with sufficient precision. Even if the skilled person were assigned the task of providing a simplified method, they would not consider that the extremely simplified method of E00 is also applicable to the object of E15, since section [0004] of E15 alone already suggests a multi-parameter system. Therefore, it is not apparent that the skilled person would consider it obvious that a method with an added texture dimension could still achieve accurate matching using only three to six variant colours.

2.6 On the other hand, if the skilled person in a first step were to acquire the teaching of E00 based on E0 and, on simple inspection from two angles, to reduce the number of colour variants to only three to six variant colours, the skilled person would not consider it possible in a second step that such a relatively small colour spectrum could also cover other complex aspects such as texture, so that effect colours could also be examined.

2.6.1 Therefore, the board agrees with the opponent only insofar as the skilled person might combine the teaching of E0 with the teaching of E00 **or** E15. However, in a second step, the skilled person would not take into account the teaching of the other document, since, depending on whether the skilled person would first turn to a simpler or more complex teaching, they would not consider the more complex or overly simplified teaching in a second step.

2.6.2 Therefore, the board comes to the conclusion that the person skilled in the art would not combine the teaching of E0 at the same time with the teachings of both E00 **and** E15, since in the latter the context is different from that in E0, being significantly more complex in one case (E15) and simpler in the other (E00). The method of E00 may require different colour charts. E15 *inter alia* teaches that the examination of texture is only possible with further complex technical aids (image processing software) and therefore teaches away from assessing colour with the human eye alone.

2.7 Consequently, the board comes to the conclusion that the subject matter of the patent as granted involves an inventive step (Articles 52(1) and 56 EPC).

3. **Summary**

Since the grounds for opposition raised under Articles 100(a) and 100(b) EPC do not prejudice the maintenance of the patent as granted, the opponent's appeal against the decision rejecting the opposition must be dismissed and the opposition division's decision be confirmed (Articles 111(1) and 101(2) EPC).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

S. Sánchez Chiquero T. Häusser

Decision electronically authenticated