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(54) **Method for adapting an original paint layer on an article, article having an original paint layer and a peelable, new paint layer applied thereupon.**

(57) Method for adapting an original paint layer on an object, preferably on a vehicle, comprising the steps of:

- arranging a resin layer on the object, subsequently allowing the resin layer to cure, wherein after curing a resin layer is obtained which is adhered peelably to the original paint layer; and

- applying a new paint layer to the peelable resin layer and allowing the paint layer to dry, preferably with a subsequent additional step of:

- applying a transparent top layer to the new paint layer and allowing the top layer to dry.

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Description

[0001] The present invention relates to a method for adapting an original paint layer on an object, preferably on a vehicle.

[0002] For the purpose of presenting vehicles, in particular cars, on specific occasions it is often required to adapt the appearance of the vehicle to the occasion. When such a wish exists, it is then usual to adapt the appearance of a car by spraying over the original paint layer of the car with a new paint layer.

[0003] In this way it is possible to respray a car successively a number of times for different presentations. A drawback of respraying is that the new visible paint layer is applied permanently, and the original paint layer cannot be readily restored. The number of times respraying is possible is further limited because the overall paint layer increases in thickness with each treatment, while the thickness of the overall paint layer for cars is restricted.

[0004] The present invention has for its object to provide a new method which does not have the above stated drawbacks. It is also an object of the invention to achieve a similar end result in respect of the quality of the newly applied paint layer.

[0005] According to a first aspect, this object of the invention is achieved by providing a method for adapting an original paint layer on an object, preferably on a vehicle, comprising the steps of:

- arranging a resin layer on the object, subsequently allowing the resin layer to cure, wherein after curing a resin layer is obtained which is adhered peelably to the original paint layer; and
- applying a new paint layer to the peelable resin layer and allowing the paint layer to dry.

[0006] The new paint layer is similar in quality to a paint layer obtained by direct respraying as according to the prior art. The new paint layer according to the invention can moreover be peeled off the original paint layer. When a subsequent adaptation of the paint layer is required, the peelable resin layer with new paint layer can thus be first removed in its entirety from the object, after which the original paint layer is obtained. This is then provided once again with a peelable resin layer and another new paint layer without increasing the thickness of the overall paint layer. The object with original paint layer can moreover be easily restored in this way. This method of operation provides an attractive and advantageous way of varying the paint colours of the object.

[0007] Curing of the resin layer can be achieved by drying in air, optionally at increased temperature.

[0008] It is noted by the way that peelable resin layers are per se known in the field, particularly as protective layers on vehicles. Other functionalities of the peelable resin layers are also known, wherein the peelable resin layer itself has for instance a camouflage colour or cam-

ouflage pattern for the purpose of military vehicles.

[0009] Applying a separate new paint layer to a peelable resin layer has however not been described, nor has it been previously suggested.

[0010] The method according to the invention preferably comprises a subsequent additional step of:

- applying a transparent top layer to the new paint layer and allowing the top layer to dry.

[0011] An optimum end result is thus obtained wherein the new paint layer has the appearance of an original paint layer, wherein the top layer moreover fulfils a protective function.

[0012] In the method according to the invention one or more of the applied layers are more preferably applied by spraying on a liquid.

[0013] Spraying on a liquid is a very practical method of applying the respective layers. Each layer can thus be applied as a thin film.

[0014] With particular preference the method according to the invention comprises a prior additional step of:

- pretreating the upper surface of the original paint layer by cleaning and drying thereof.

[0015] This makes it possible to arrange an optimal, even film of peelable resin layer, so that the subsequently applied new paint layer has the appearance of an original paint layer.

[0016] It is further recommended in the method according to the invention that the peelable resin layer is of a type classified as tacky booth coating.

[0017] In the relevant field tacky booth coatings are known and extensively described as a coating suitable for covering inner walls of spray booths. This type of coating is commercially available in different variants. The coating is sprayed as a protective layer on the inner walls of the spray booths and cured. The material has a decreased adhesive power and can therefore be peeled off the inner wall. The protective layer serves to collect residues of sprayed paints which have not settled on the object for spraying in the spray booth. The protective layer can be peeled off at any desired moment and replaced by a new protective layer. The inner walls of a spray booth are thus permanently protected from residues of paints which have not settled on the object for spraying.

[0018] It has been found that a peelable resin layer of the tacky booth coating type is highly suitable for the method according to the invention.

[0019] In addition, it is recommended in the method according to the invention that the peelable resin layer comprises as main component a partially cured resin chosen from the group of polyurethane, polyvinyl butyral, ethylene vinyl acetate, ethylene acrylate, polyvinyl acetate and the derivatives thereof, as well as combinations of the above stated resins and their derivatives.

[0020] Such a resin is found to function very well as

underlayer for the new paint layer, while at the same time having good peelability relative to the original paint layer. A shared feature of these resins is that they do not cure completely, whereby a fraction of unreacted groups is present in the resin layer. This fraction of unreacted groups is also present in the contact surface of the resin layer lying against the original paint layer. The resin layer can be peeled off on this basis.

[0021] In the method according to the invention the resin layer is more preferably arranged in the form of an aqueous suspension of the reactants for the corresponding resin.

[0022] An aqueous suspension is recommended because it generally has little environmental impact, and the health hazards are moreover reduced for those applying the resin layer. The aqueous suspension is moreover suitable for spraying on of a resin layer.

[0023] The reactants for the resin depend of course on the type of resin chosen: for polyurethane these are isocyanate and glycol; for polyvinyl butyral they are polyvinyl alcohol and butanal; for polyvinyl acetate this is the monomer vinyl acetate; for ethylene vinyl acetate and ethylene acrylate they are the corresponding monomers, i.e. ethylene and vinyl acetate, and vinyl acrylate respectively.

[0024] The reactants for the resin can alternatively be a prepolymer of the resin. It is also possible for the reactants of the resin to be a mixture of the corresponding monomers and the corresponding prepolymer.

[0025] It is also recommended in the method according to the invention that the resin layer, in the form in which it is arranged, comprises additives of surfactants and/or release agents.

[0026] Such additives increase the suitability of the reactants for the resin to be arranged in the form of a liquid.

[0027] In the method according to the invention a cured resin layer is with particular preference obtained which comprises as additive a pigment, preferably a white pigment.

[0028] Such a resin layer forms a suitable surface for applying a new paint layer because the white pigment prevents the colour of the underlying original paint layer showing through, thereby avoiding a show-through effect on the new paint layer.

[0029] It is recommended in the method according to the invention that the cured resin layer has a thickness in the range of 10 to 50 micrometres, and preferably 15 to 40 micrometres. This thickness has been found highly suitable for meeting all the requirements of a peelable layer in the context of the invention.

[0030] It is noted for the sake of completeness that the new paint layer applied to the peelable resin layer preferably has a thickness in the range of 15-25 micrometres, and the optional top layer has a thickness in the range of 40-50 micrometres.

[0031] According to a second aspect of the invention, an object is provided, preferably a vehicle, which is provided with an original paint layer on which the following

successive layers are present:

- a cured, peelable resin layer, and
- a dried, new paint layer.

[0032] Such an object is highly suitable for use in presentations wherein the object is provided with a temporary paint layer desired for the presentation. The object can be shown again with the original paint layer by peeling off the peelable resin layer to which the temporary paint layer has been applied. If desired, warm water can be applied during peeling in order to simplify peeling or to remove residues of the resin layer left behind.

[0033] Several recommended variants of the object according to the invention follow below. The advantages of these variants have already been elucidated above with reference to the method according to the invention.

[0034] In the case of the object according to the invention a dried transparent top layer is preferably present on the new paint layer.

[0035] In the case of the object according to the invention the peelable resin layer is more preferably of a type classified as tacky booth coating.

[0036] According to a following variant, the peelable resin layer comprises as main component a partially cured resin chosen from the group of polyurethane, polyvinyl butyral, ethylene vinyl acetate, ethylene acrylate, polyvinyl acetate and the derivatives thereof, as well as combinations of the above stated resins and their derivatives.

[0037] The cured resin layer preferably further comprises as additive a pigment, more preferably a white pigment.

[0038] The cured resin layer preferably has a thickness in the range of 10 to 50 micrometres, and preferably 15 to 40 micrometres.

Claims

1. Method for adapting an original paint layer on an object, preferably on a vehicle, comprising the steps of:

- arranging a resin layer on the object, subsequently allowing the resin layer to cure, wherein after curing a resin layer is obtained which is adhered peelably to the original paint layer; and
- applying a new paint layer to the peelable resin layer and allowing the paint layer to dry.

2. Method as claimed in claim 1, with a subsequent additional step of:

- applying a transparent top layer to the new paint layer and allowing the top layer to dry.

3. Method as claimed in any of the foregoing claims,

wherein one or more of the applied layers are applied by spraying on a liquid.

4. Method as claimed in any of the foregoing claims, with a prior additional step of:
 - pretreating the upper surface of the original paint layer by cleaning and drying thereof.
5. Method as claimed in any of the foregoing claims, wherein the peelable resin layer is of a type classified as tacky booth coating.
6. Method as claimed in any of the foregoing claims, wherein the peelable resin layer comprises as main component a partially cured resin chosen from the group of polyurethane, polyvinyl butyral, ethylene vinyl acetate, ethylene acrylate, polyvinyl acetate and the derivatives thereof, as well as combinations of the above stated resins and their derivatives.
7. Method as claimed in any of the foregoing claims, wherein the resin layer is arranged in the form of an aqueous suspension of the reactants for the corresponding resin.
8. Method as claimed in any of the foregoing claims, wherein the resin layer, in the form in which it is arranged, comprises additives of surfactants and/or release agents.
9. Method as claimed in any of the foregoing claims, wherein a cured resin layer is obtained which comprises as additive a pigment, preferably a white pigment.
10. Method as claimed in any of the foregoing claims, wherein the cured resin layer has a thickness in the range of 10 to 50 micrometres, and preferably 15 to 40 micrometres.
11. Object, preferably a vehicle, provided with an original paint layer on which the following successive layers are present:
 - a cured, peelable resin layer, and
 - a dried, new paint layer.
12. Object as claimed in claim 11, wherein a dried transparent top layer is present on the new paint layer.
13. Object as claimed in claim 11 or 12, wherein the peelable resin layer is of a type classified as tacky booth coating.
14. Object as claimed in any of the foregoing claims 11-13, wherein the peelable resin layer comprises as main component a partially cured resin chosen

from the group of polyurethane, polyvinyl butyral, ethylene vinyl acetate, ethylene acrylate, polyvinyl acetate and the derivatives thereof, as well as combinations of the above stated resins and their derivatives.

15. Object as claimed in any of the foregoing claims 11-14, wherein the cured resin layer comprises as additive a pigment, preferably a white pigment.
16. Object as claimed in any of the foregoing claims 11-15, wherein the cured resin layer has a thickness in the range of 10 to 50 micrometres, and preferably 15 to 40 micrometres.



EUROPEAN SEARCH REPORT

Application Number
EP 11 19 3063

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 0 336 196 A1 (BASF LACKE & FARBEN [DE]; MAURER WALTER [DE]) 11 October 1989 (1989-10-11) * abstract * * column 1, lines 1-31 * * column 2, lines 16-46 * * column 4, lines 11-35 * * column 7, line 25 - column 8, line 43 * * claims 1-7 *	1-5, 7-13,15, 16	INV. B05D5/00 F41H3/00 ADD. B05D7/14
X	WO 01/83878 A2 (ECOLAB INC [US]) 8 November 2001 (2001-11-08) * abstract * * page 1, lines 8-18 * * page 5, lines 16-21 * * claims 1,2,4,10,12,14 *	1,3,6-9, 11,13,14	
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 4 June 2012	Examiner Riederer, Florian
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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