POLYURETHANE ARTIFICIAL LEATHER
AND TRANSFER PRINTING METHOD
THEREOF

Inventor: Jin Sup Rhee, Seoul (KR)

Correspondence Address:
EDELL, SHAPIRO, FINNAN & LYTLE, LLC
1901 RESEARCH BOULEVARD
SUITE 400
ROCKVILLE, MD 20850 (US)

Appl. No.: 10/867,725

Filed: Jun. 16, 2004

There are provided dyed polyurethane artificial leather and
a transfer printing method of the polyurethane artificial
leather, the polyurethane artificial leather further comprising
a water adhesives mixture layer without an oil-based solvent
being formed between coarse fabric of fibrous constituents
and at least one layer of a polyurethane.
POLYURETHANE ARTIFICIAL LEATHER AND TRANSFER PRINTING METHOD THEREOF

TECHNICAL FIELD

[0001] The present invention relates to a polyurethane artificial leather and a transfer printing method thereof. Polyurethane artificial leather, and more particularly, to a polyurethane artificial leather and a transfer printing method thereof for clearly realizing various colors and patterns on polyurethane artificial leather by preventing dye from running.

BACKGROUND ART

[0002] Leather used as cloth is divided into artificial leather and natural leather. Natural leather can be merchandized, and also merchandized by dyeing as dyed leather, itself. However, natural leather is very expensive compared with artificial leather. Therefore, the products made of artificial leather are actively being developed as alternative to the natural leather.

[0003] Conventionally, the polyurethane artificial leather is manufactured by depositing polyurethane on a releasing paper having emboss formed thereon, adhering the polyurethane-deposited layer and coarse fabric by using oil-based adhesives, and printing color.

[0004] The conventional manufacturing process of polyurethane artificial leather can be illustrated in detail as follows.

[0005] First, liquid polyurethane is deposited on a releasing paper having emboss formed thereon, and dried inside a thermal chamber at a temperature of 100°-130° C. for one minute. Then, oil-based adhesives is put on one side of the polyurethane-deposited layer opposite to the other side having emboss formed thereon, and dried again inside the thermal chamber at a temperature of 100° C. for one minute.

[0006] Then, the coarse fabric of fibrous components is adhered on the adhesives-deposited layer, and is dried inside a thermal chamber at a temperature of 120° C. for one minute, and ripened inside a ripening room at a temperature of about 80° C. for 24-48 hours. The releasing paper is then removed and printing is performed on the polyurethane-deposited layer. In case of using two different colors, the above processes and the printing are performed two times by the same way, and a top printing layer is finally formed on the polyurethane-deposited layer.

[0007] FIG. 1 is a sectional view of polyurethane artificial leather having two different colors printed by the conventional printing method.

[0008] Referring to FIG. 1, a coarse fabric of fibrous components 10, an oil-based adhesives-deposited layer 12, and a polyurethane-deposited layer 14 are sequentially formed, and a first printing layer 15, a second printing layer 16, and a top printing layer 17 are sequentially formed on the polyurethane-deposited layer 14, opposite to the coarse fabric 10. A releasing paper was removed, and accordingly it is not shown in the drawings.

[0009] Conventionally, the adhesion of the polyurethane-deposited layer 14 and the coarse fabric 10 is given by using oil-based adhesives, and the coloring is done by printing. However, the conventional printing method causes the inconveniences, and the wastes of time and expenses because dyeing with multiple colors requires the printing as many times as the number of wanted colors.

[0010] Additionally, the conventional method has a disadvantage in that dyes falls down toward the coarse fabric and runs when using oil-based adhesives because of the MEK (methyl ethyl ketone) and DMF (dimethyl formamide) of the polyurethane deposited on a releasing paper for the printing of leather.

[0011] The use of colorant for preventing the dyes' running also makes a problem of complicating the manufacturing process of artificial leather.

[0012] As another method of forming multiple colors and patterns on artificial leather, there is provided a transfer printing method. The transfer printing is performed by putting paper or film having drawings printed thereon on the surface of artificial leather, and leaving the drawings on the fabric surface of artificial leather by suppressing with appropriate pressure and temperature.

[0013] The transfer printing method is superior to the method of directly printing on the coarse fabric in the aspects of precision, vivid color or accuracy because of the characteristics of paper having little elasticity. In addition, the transfer printing method decreases inconveniences of process because it can realize various colors and patterns, and infinite degrees of colors just by only one printing unlike the method of printing many times in order to realize various colors.

[0014] However, the transfer printing method also has disadvantage in that the transfer printing cannot be used in realizing multiple colors on polyurethane artificial leather because dyes falls down and runs coarse fabric when using oil-based adhesives in order to bond the polyurethane and the coarse fabric together.

DISCLOSURE OF THE INVENTION

[0015] The present invention is directed to provide polyurethane artificial leather and a transfer printing method of polyurethane artificial leather for easily printing various colors and patterns without repeatedly printing to realize the colors and patterns that substantially obviate one or more of the problems due to limitations and disadvantages of the related art.

[0016] An object of the present invention is to provide a polyurethane artificial leather and a transfer printing method thereof for more easily realizing clear colors and patterns because dyes does not runs.

[0017] Additional features and advantages of the invention will be set forth in the description which follows, and in part will be apparent from the description, or may be learned by practice of the invention. The objectives and other advantages of the invention will be realized and attained by the structure particularly pointed out in the written description and claims thereof as well as the appended drawings.

[0018] To achieve these and other advantages and in accordance with the purpose of the present invention, as embodied and broadly described, the polyurethane artificial leather comprises a coarse fabric of fibrous components, at
least one layer of polyurethane deposited on the coarse fabric, and a water adhesives mixture layer without an oil-based solvent deposited between the polyurethane-deposited layer and the coarse fabric to bond the two layers together.

[0020] The transfer printing method of polyurethane artificial leather comprises the steps of: depositing liquid polyurethane on the upper side of a releasing paper having emboss formed thereon, and drying; depositing water adhesives mixture without oil-based solvent on the upper side of the polyurethane-deposited layer formed in the above step, and drying; adhering a coarse fabric on the upper side of the water adhesives mixture, and drying; ripening the fabric having the liquid polyurethane, the water adhesive mixture, and the coarse fabric formed thereon; removing the releasing paper under the polyurethane-deposited layer, and performing a transfer-printing on the polyurethane-deposited layer without the releasing paper by using a transfer paper; and separating the transfer paper by water-washing after the transfer printing, and ripening.

[0021] A transfer printing method of polyurethane artificial leather according to another aspect of the present invention comprises the steps of: depositing polyurethane including liquid DMF dimethyl formamide on a coarse fabric so as to make wet half-finished goods; solidifying the wet half-finished goods in water, and ripening inside a ripening room; adhering a transfer paper on the ripened wet half-finished goods, and performing transfer printing; removing the transfer paper by water-washing after the transfer printing, and depositing water adhesives mixture without oil-based solvent on the DMF-included polyurethane layer on which dyes is transfereed; rolling the wet fabric having the water adhesives mixture layer formed thereon, and ripening; depositing a liquid polyurethane after the ripening step; and putting and suppressing a releasing paper having emboss on the polyurethane-deposited layer to form emboss thereon, and ripening.

[0022] A transfer printing method of polyurethane artificial leather according to further another aspect of the present invention comprises the steps of: solidifying wet finished goods having a coarse fabric, a water adhesives mixture layer without oil-based solvent, and a polyurethane-deposited layer sequentially formed in water, and ripening; performing a transfer-printing on the ripened wet finished goods by putting a transfer paper; removing the transfer paper by water washing after the transfer printing; putting and suppressing a releasing paper having emboss on the polyurethane-deposited layer to form emboss thereon, and ripening; and removing the releasing paper.

[0023] It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory and are intended to provide further explanation of the invention as claimed.

BRIEF DESCRIPTION OF THE DRAWINGS

[0024] The accompanying drawings, which are included to provide a further understanding of the invention and are incorporated in and constitute a part of this specification, illustrate embodiments of the invention and together with the description serve to explain the principles of the invention.

[0025] In the drawings:

[0026] FIG. 1 is a sectional view of polyurethane artificial leather having two colors manufactured by conventional printing method;

[0027] FIG. 2 is a sectional view of dry polyurethane artificial leather manufactured by a first embodiment of the present invention;

[0028] FIG. 3 is a sectional view of a polyurethane artificial leather in case of using conventional oil-based adhesives;

[0029] FIG. 4 is a sectional view of polyurethane artificial leather in case of using water adhesives according to a first embodiment of the present invention;

[0030] FIG. 5 is a sectional view of polyurethane artificial leather manufactured by a second embodiment of the present invention; and

[0031] FIG. 6 is a sectional view of polyurethane artificial leather manufactured by a third embodiment of the present invention.

BEST MODE FOR CARRYING OUT THE INVENTION

[0032] Reference will now be made in detail to the preferred embodiments of the present invention, polyurethane artificial leather and transfer printing method of polyurethane artificial leather, examples of which are illustrated in the accompanying drawings.

[0033] According to the first embodiment of the present invention, there are provided dry polyurethane artificial leather, which is formed by transfer-printed on a dry finished goods, and a transfer printing method of dry polyurethane artificial leather.

[0034] FIG. 2 is a sectional view of dry polyurethane artificial leather manufactured by a first embodiment of the present invention.

[0035] Referring to FIG. 2, the polyurethane artificial leather of the first embodiment of the present invention is formed by sequentially depositing a coarse fabric 20, a water adhesives mixture layer 22, and a polyurethane layer 24. The water adhesives mixture layer 22 bonds together the coarse fabric 20 and the polyurethane layer 24.

[0036] In addition, the polyurethane-deposited layer 24 has emboss formed thereon, and is saturated with dyes of a transfer paper. Unlike the conventional method of forming a top print layer 17 of FIG. 1 as an outmost layer, the polyurethane artificial leather of the first embodiment of the present invention is formed such that the surface of the polyurethane-deposited layer 24 saturated with dyes is exposed to the outside. A releasing paper used to form emboss is not shown in the drawing because it was removed.

[0037] Now herein after, there is provided detailed illustration of a transfer printing method of polyurethane artificial leather of the first embodiment of the present invention.

[0038] First, liquid polyurethane is deposited on a releasing paper having emboss formed thereon. The releasing paper is 0.3–0.4 mm thick, and the polyurethane is deposited with a thickness of 0.15 mm. The polyurethane layer deposited on the releasing paper is dried inside a thermal chamber
at a temperature of 80–180° C. for 1–3 minutes. Emboss is formed on the polyurethane-deposited layer when the liquid polyurethane is solidified.

[0039] Then, an adhesive is deposited on the polyurethane-deposited layer 24, wherein the adhesive is water adhesive. It is preferable to deposit the water adhesive on the side of the polyurethane-deposited layer 24 opposite to the side on which emboss is formed.

[0040] The water adhesive is a water-based polyurethane two-pack resin without solvent, and is used as artificial leather and industrial adhesives. Especially, the water adhesive does not include MEK (methyl ethyl ketone) and DMF (dimethyl formamide) as solvent.

[0041] More particularly, the most appropriate water adhesives used in the present invention has a viscosity of 1400–1600 cps/25±1° C., a solid of 39–41%, a tensile strength of 400–500 kgf/cm², and an elongation of 600–800%. Particularly, the above water adhesive has high elastic recovery rate and good viscosity.

[0042] In order to increase the viscosity rate of the water adhesives, hardener is added, and is used as artificial leather and industrial adhesives. As for the hardener, its adhesiveness, thermal endurance and dispersal to the water should be good, and the water adhesives and the hardener are mixed with a ratio of 100:5. However, the mixing ratio of water adhesives, water, and hardener can be varied with thickness of the polyurethane-deposited layer, etc. according to the specific embodiments. Hereinafter, the mixture of the water adhesives and hardener mixed with an appropriate ratio will be referred to as water adhesives mixture.

[0043] The water adhesives mixture is deposited with a thickness of 0.015 mm. After the deposition of the water adhesives mixture, it is dried inside a thermal chamber at a temperature of 100–150° C. for 1–3 minutes.

[0044] A coarse fabric 20 is adhered on the water adhesives mixture layer 22, and dried inside a thermal chamber at a temperature of 80–130° C. for 1–3 minutes again. The fabric having the coarse fabric 20 attached thereto is ripened inside a ripening room at a temperature of 80° C. for 24–48 hours. Then, the releasing paper under the polyurethane-deposited layer is removed, and a transfer printing is performed.

[0045] When removing the releasing paper, emboss is formed on the polyurethane-deposited layer, the surface of which is exposed out.

[0046] A transfer paper is adhered on the exposed surface of the polyurethane-deposited layer 24 of the finished fabric, and has various colors or patterns printed thereon. The transfer paper is normally a printing paper having oil-based chemical.

[0047] The appropriate ranges of temperature and pressure for transfer printing can be selected according to the kinds of the coarse fabric 20, and preferably, the temperature is 100–28° C., and it is more preferable to employ the temperature range of 180–250° C. The transfer time for pressure is 5–8 seconds. If the transfer printing is performed by the conditions of the above temperature and pressure ranges, the polyurethane-deposited layer is saturated with dyes, and transferred on.

[0048] The water-washing follows the transfer printing in order to take off the releasing paper, and the fabric is ripened again inside a ripening room at a temperature of 80–150° C., so that the dry polyurethane artificial leather is made.

[0049] In the first embodiment of the present invention, the water adhesives used to adhere the polyurethane-deposited layer 24 to the coarse fabric 20 does not include MEK (methyl ethyl ketone) and DMF (dimethyl formamide) solvent.

[0050] Now herein after, the difference of each case in using an oil-based adhesives and the water adhesives will be illustrated referring to the drawings as for dyes running through the polyurethane artificial leather.

[0051] FIG. 3 is a sectional view of a polyurethane artificial leather in case of using conventional oil-based adhesives, and FIG. 4 is a sectional view of polyurethane artificial leather in case of using water adhesives according to a first embodiment of the present invention.

[0052] Referring to FIG. 3, in case of forming an oil-based adhesives layer 12 between a coarse fabric 10 and a polyurethane-deposited layer 14, the dyes of a transfer paper passes the oil-based adhesives layer, and runs down to the coarse fabric 10 because of oily components of the transfer paper so that dyes' running occurs. The reference number 18 in the drawing represents the transfer paper.

[0053] In detail, the dyes' running occurs because the interaction of the MEK (methyl ethyl ketone) and DMF (dimethyl formamide) components of the oil-based adhesives, and the chemical components of the dyes. The dyes' running continues even after the manufacturing is completed in the production line as well as during the manufacturing of polyurethane artificial leather. For this reason, a transfer printing method could not be employed in the conventional manufacturing process of polyurethane artificial leather when printing multiple colors because the boundary lines between colors are indistinguishable for the dyes' running.

[0054] In FIG. 3, the arrows show the thickness with which dyes penetrates, and the dotted region shows the range to which dyes runs over from one point.

[0055] As shown by the range of the dotted region, the dyes runs more through the oil-based adhesives layer 12. In addition, the dyes runs up and down through the coarse fabric 10 and the polyurethane-deposited layer 14, too.

[0056] However, as shown in FIG. 4, when forming the water adhesives mixture layer 22 between the coarse fabric 20 and the polyurethane-deposited layer 24, the dyes' running does not occur because the dyes of the transfer paper is stuck in the water adhesives mixture layer 22, and does not falls down to the coarse fabric 20. In addition, the dyes is not spread around the water adhesives mixture layer 22 so that the colors and patterns transfer-printed on the polyurethane artificial leather are clearly realized.

[0057] The dotted region shown in FIG. 4 shows the limit by which dyes is spread into the layers wherein the dyes is stuck within the water adhesives mixture layer 22, and does not run down to the coarse fabric 20 and does not go up over the polyurethane-deposited layer 24, either.

Embodiment 2

[0058] Now herein after, there are illustrated in detail polyurethane artificial leather and a transfer printing method
of polyurethane artificial leather according to a second embodiment of the present invention.

[0059] FIG. 5 is a sectional view of polyurethane artificial leather manufactured by the second embodiment of the present invention.

[0060] Referring to FIG. 5, the polyurethane artificial leather of the second embodiment of the present invention comprises a coarse fabric 30, a DMF-included polyurethane layer 32, and a water adhesives mixture layer 34, which are sequentially formed. A polyurethane-deposited layer 36 is formed on the water adhesives mixture layer 34, saturated with the dyes of a transfer paper.

[0061] In the second embodiment, the polyurethane-deposited layer 36 is exposed out as an outermost layer unlike the conventional method.

[0062] The transfer printing method of polyurethane artificial leather according to the second embodiment of the present invention is now illustrated.

[0063] The second embodiment is directed to the method of manufacturing wet polyurethane artificial leather by performing a transfer printing on wet half-finished goods.

[0064] A liquid DMF-included polyurethane 32 is deposited on the coarse fabric 30 so as to make half-finished goods. The DMF-contained polyurethane layer 32 includes more DMF as solvent and polyurethane resin as a main component.

[0065] The half-finished goods as above is solidified in water, and ripened inside a ripening room at a temperature of 80° C. for 24–48 hours. During the ripening process, the DMF component is volatilized and only the polyurethane resin is left with solidified as a main component of artificial leather.

[0066] A transfer paper is put on the ripened wet half-finished goods for transfer printing. The components of the transfer paper, and the temperature and time for transfer printing are the same as in the first embodiment.

[0067] More particularly, appropriate ranges of temperature and pressure can be employed according to the kinds of the coarse fabric 30, and preferably, the temperature is 120–280° C., and the temperature range of 120–250° C. is more preferable. The transfer time for pressure is 5–8 seconds.

[0068] If the transfer printing is performed by the conditions of the above temperature and pressure ranges, the polyurethane-deposited layer is saturated with dyes, and transferred on.

[0069] The transfer paper is taken off by water-washing after the transfer printing, and the water adhesives mixture layer is deposited on the DMF-included polyurethane layer 32 on which dyes is transferred. A releasing paper is put on the fabric having the water adhesives mixture layer 34 formed thereon. The wet fabric is rolled and ripened inside a ripening room at a temperature of 80–150° C. for 24–48 hours.

[0070] The water adhesives is not bonded to the fabric when the fabric having layers is rolled and ripened by the usage of the releasing paper. The dyes of the transfer paper is stuck in the water adhesives mixture layer 34, and does not run to the coarse fabric 30 because of using the water adhesives mixture. What the usage of water adhesives makes the dyes stop running and stuck was already explained in the first embodiment, and more reference is omitted herein.

[0071] The releasing paper is removed after the fabric is ripened, and polyurethane is deposited.

[0072] A releasing paper having emboss is put and suppressed on the polyurethane-deposited layer to form emboss thereon. Then, it is ripened and the releasing paper is taken off so that emboss is formed on the wet half-finished goods. The manufacturing of the transfer-printed wet polyurethane artificial leather is completed.

Embodiment 3

[0073] Now herein after, there are illustrated in detail polyurethane artificial leather and a transfer printing method of polyurethane artificial leather according to a third embodiment of the present invention.

[0074] FIG. 6 is a sectional view of polyurethane artificial leather manufactured by the third embodiment of the present invention wherein the dyes’ running does not occur.

[0075] Referring to FIG. 6, the polyurethane artificial leather according to the third embodiment comprises a coarse fabric 40, a water adhesives mixture layer 42 formed on the upper side of the coarse fabric 40, and a polyurethane-deposited layer 44, which are sequentially formed, and emboss is formed on the polyurethane-deposited layer 44 which is saturated with the dyes of a transfer paper.

[0076] The third embodiment also employs the polyurethane-deposited layer 44 as an outermost layer unlike the conventional method, wherein a top print layer referred to as 17 of FIG. 1 is formed on the outmost.

[0077] Hereinafter, a detailed explanation of polyurethane artificial leather and a transfer printing method of polyurethane artificial leather is made according to the third embodiment of the present invention. The third embodiment is about the method of manufacturing wet polyurethane artificial leather by transfer printing on wet finished goods.

[0078] The wet finished goods having a coarse fabric 40, a water adhesives mixture layer 42, and a polyurethane layer 44 sequentially deposited is solidified in water, and ripened inside a ripening room at a temperature of 80° C. for 24–48 hours. The transfer printing is performed on the ripened wet finished goods by putting a transfer paper thereon.

[0079] The third embodiment is characterized in that the polyurethane-deposited layer 44 is solidified in water.

[0080] The wet finished goods having the coarse fabric 40, the water adhesives mixture layer 42, and the polyurethane-deposited layer 44 sequentially formed, can be also formed such that the polyurethane-deposited layer 44 is formed in water and then, the water adhesives mixture layer 42 is put thereon, and the coarse fabric 40 is bonded thereon. However, the method of manufacturing the wet finished goods of artificial leather is not limited by the above ways, and conventionally introduced various methods can be used, too.

[0081] The temperature and time ranges for transfer printing, and the components of the transfer paper are the same as in the first embodiment. In addition, the usage of the water
adhesives helps the dyes of the transfer paper not to run down to the coarse fabric, and not to cause dyes' running, which are illustrated in the first embodiment, and a detailed explanation is omitted.

[0082] The transfer paper is removed after the transfer printing and water-washing.

[0083] A releasing paper having emboss is put on the polyurethane-deposited layer, which is then suppressed to form emboss thereon, and ripened at a temperature of 80–150°C. The releasing paper is taken off so that the manufacturing of the transfer-printed wet polyurethane artificial leather is completed.

INDUSTRIAL APPLICABILITY

[0084] The present invention is about a transfer printing method of artificial leather for easily printing various colors just by one printing process without performing the printing process repeatedly many times. According to the present invention, the patterns and the colors are clearly formed because fabric and polyurethane are bonded by water adhesives so that dyes does not run around, which results in manufacturing more elegant polyurethane artificial leather.

[0085] Additionally, the present invention makes it possible to produce more beautiful polyurethane artificial leather because a polyurethane layer saturated with dyes is exposed to the outside instead of a top printing layer.

[0086] The present invention also makes it wider the range of products which are made of polyurethane artificial leather, and can be employed on various items such as shoes, clothes, and bags, etc. which polyurethane artificial leather having single color manufactured by the conventional method was not used for.

[0087] While the present invention has been described and illustrated herein with reference to the preferred embodiments thereof, it will be apparent to those skilled in the art that various modifications and variations can be made therein without departing from the spirit and scope of the invention. Thus, it is intended that the present invention covers the modifications and variations of this invention that come within the scope of the appended claims and their equivalents.

1. A transfer printing method of polyurethane artificial leather comprising the steps of:
   a) depositing liquid polyurethane on the upper side of a releasing paper having emboss thereon, and drying;
   b) depositing water adhesives mixture without oil-based solvent on the upper side of the polyurethane-deposited layer formed in a step, and drying;
   c) adhering a coarse fabric on the upper side of the water adhesives mixture, and drying;
   d) ripening the fabric having the coarse fabric adhered on;
   e) removing the releasing paper under the polyurethane-deposited layer, and performing a transfer printing on the polyurethane-deposited layer having the releasing paper taken off from by using a transfer paper; and
   f) separating the transfer paper by water-washing after the transfer printing, and ripening.

2. The transfer printing method of polyurethane artificial leather of claim 1, wherein the oil-based solvent essentially comprises MEK (methylene ketone) and DMF (dimethyl formamide).

3. The transfer printing method of polyurethane artificial leather of claim 1, wherein the water adhesives mixture comprises water adhesives, hardener, and water.

4. The transfer printing method of polyurethane artificial leather of claim 3, wherein, the water adhesives has a viscosity of 1400–1600 cps/25±1°C, a solid of 39–41%, a tensile strength of 400–500 kgf/cm², and an elongation of 600–800%.

5. The transfer printing method of polyurethane artificial leather of claim 1, wherein the transfer printing is performed at a temperature of 100–280°C for 5–8 seconds.

6. A polyurethane artificial leather manufactured and dyed by the transfer printing method of polyurethane artificial leather of claim 1.

7. A polyurethane artificial leather comprising:
   a) a coarse fabric of fibrous components;
   b) a water adhesives mixture layer formed on the upper side of the coarse fabric; and
   c) a polyurethane layer deposited on the water adhesives mixture layer and bonded to the coarse fabric by the water adhesives mixture layer and having emboss on the surface thereof.

8. A transfer printing method of wet polyurethane artificial leather comprising the steps of:
   a) depositing polyurethane including liquid DMF dimethyl formamide on a coarse fabric so as to make a wet half-finished goods;
   b) solidifying the wet half-finished goods in water, and ripening inside a ripening room;
   c) adhering a transfer paper on the ripened wet half-finished goods, and performing a transfer printing;
   d) removing the transfer paper by water-washing after the transfer printing, and depositing water adhesives mixture without oil-based solvent on the DMF-included polyurethane layer on which dyes is transferred;
   e) rolling and ripening the wet fabric having the water adhesives mixture layer formed thereon;
   f) depositing liquid polyurethane on the ripened fabric; and
   g) putting and suppressing a releasing paper having emboss on the polyurethane-deposited layer to form emboss thereon, and ripening.

9. The transfer printing method of wet polyurethane artificial leather of claim 8, wherein the DMF-contained polyurethane layer comprises more DMF as a solvent, and polyurethane resin as a main element.

10. The transfer printing method of wet polyurethane artificial leather of claim 8, wherein the step of transfer printing is performed at a temperature of 100–280°C for 5–8 seconds.

11. The transfer printing method of wet polyurethane artificial leather of claim 8 further comprising steps of adhering a releasing paper on the water adhesives mixture
layer between the above d) and e) step so that the adhesives is not adhered to, and removing the releasing paper before the f) step.

12. The transfer printing method of wet polyurethane artificial leather of claim 8, wherein the oil-based solvent essentially comprises MEK (methylethyl ketone) and DMF (dimethyl formamide).

13. The transfer printing method of wet polyurethane artificial leather of claim 8, wherein the water adhesives mixture comprises water adhesives, a hardener, and water.

14. The transfer printing method of wet polyurethane artificial leather of claim 13, wherein the water adhesives has a viscosity of 1400–1600 cps/25±1°C, a solid of 39–41%, a tensile strength of 400–500 kgf/cm², and an elongation of 600–800%.

15. A dyed polyurethane artificial leather manufactured by the method of claim 8.

16. A dyed polyurethane artificial leather comprising:
   a) a coarse fabric of fibrous components;
   b) a polyurethane layer containing DMF (dimethyl formamide), and formed on one side of the coarse fabric;
   c) a water adhesives mixture layer formed on one other side of the DMF-included polyurethane layer;
   d) a polyurethane layer deposited on the upper side of the water adhesives mixture layer, and having emboss formed thereon.

17. A transfer printing method of polyurethane artificial leather comprising the steps of:
   a) solidifying wet finished goods having a coarse fabric, a water adhesives mixture layer without oil-based solvent, and a polyurethane-deposited layer sequentially formed in water, and ripening;
   b) performing a transfer printing on the ripened wet finished goods by putting a transfer paper;
   c) removing the transfer paper by water-washing after the transfer printing;
   d) putting and suppressing a releasing paper having emboss on the polyurethane-deposited layer to form emboss thereon, and ripening; and
   f) removing the releasing paper.

18. The transfer printing method of polyurethane artificial leather of claim 17, wherein the step of transfer printing is performed at a temperature of 100–280°C for 5–8 seconds.

19. The transfer printing method of polyurethane artificial leather of claim 17, wherein the oil-based solvent essentially comprises MEK (methylethyl ketone) and DMF (dimethyl formamide).

20. The transfer printing method of polyurethane artificial leather of claim 17, wherein the water adhesives mixture comprises water adhesives, a hardener, and water.

21. The transfer printing method of polyurethane artificial leather of claim 17, wherein the water adhesives has a viscosity of 1400–1600 cps/25±1°C, a solid of 39–41%, a tensile strength of 400–500 kgf/cm², and an elongation of 600–800%.

22. A dyed polyurethane artificial leather manufactured by the method of claim 17.

23. A dyed polyurethane artificial leather comprising:
   a) a coarse fabric of fibrous components;
   b) a water adhesives mixture layer formed on the upper side of the coarse fabric; and
   c) a polyurethane layer deposited on the upper side of the water adhesives mixture layer, and having emboss formed thereon.

24. A dyed polyurethane artificial leather comprising:
   a) a coarse fabric of fibrous components;
   b) at least one layer of polyurethane deposited on the coarse fabric; and
   c) a water adhesives mixture layer without an oil-based solvent deposited between the polyurethane-deposited layer and the coarse fabric to bond the two layers together.

25. The dyed polyurethane artificial leather of claim 24, wherein the polyurethane-deposited layer is transfer-printed on.

26. The dyed polyurethane artificial leather of claim 24, further comprising a polyurethane-deposited layer formed between the water adhesives mixture layer and the coarse fabric, wherein the polyurethane layer includes DMF (dimethyl formamide) and is transfer-printed with integrally formed with the coarse fabric.

27. The dyed polyurethane artificial leather of claim 24, wherein the oil-based solvent essentially comprises MEK (methylethyl ketone) and DMF (dimethyl formamide).

28. The dyed polyurethane artificial leather of claim 24, wherein the water adhesives mixture comprises water adhesives, hardener, and water.

29. The dyed polyurethane artificial leather of claim 25, wherein the water adhesives has a viscosity of 1400–1600 cps/25±1°C, a solid of 39–41%, a tensile strength of 400–500 kgf/cm², and an elongation of 600–800%.