International Application Published under the Patent Cooperation Treaty (PCT)

World Intellectual Property Organization

Abstract:

A method of preparing a floor covering comprising the steps of: i) obtaining a preformed flexible sheet of flooring vinyl, complete and suitable for use as flooring, ii) printing a selected photographic image directly onto the vinyl by way of suitable machinery, and iii) applying a transparent protective sealing coating over the image after the image has been printed onto the vinyl.
FIELD OF THE INVENTION

This invention relates to floor coverings. A preferred embodiment of the invention relates to printed vinyl floor coverings.

BACKGROUND

It is known to use vinyl sheets or tiles to cover the internal floor spaces of residential or commercial premises. An object of at least one embodiment of the present invention is to provide a vinyl floor covering which incorporates a photographic style image for decorative or other aesthetic purposes, or to at least provide the public with a useful choice.

SUMMARY OF THE INVENTION

According to one aspect of the invention there is provided a method of preparing a floor covering comprising the steps of:

i) obtaining a preformed flexible sheet of flooring vinyl, complete and suitable for use as flooring,

ii) printing a selected photographic image directly onto the vinyl by way of suitable machinery, and

iii) applying a transparent protective sealing coating over the image after the image has been printed onto the vinyl.

The vinyl, when printed as above, can be applied as a floor covering on a floor surface.

Preferably the image is printed at step ii) by way of a suitable inkjet printer.
Preferably the photographic image is of a real scene from nature, for example the sky, outer space, the ocean, a desert, a jungle, etc. Optionally the photographic image is of a real scene from an urban or rural area, for example a city, a building, or a farm, etc.

Preferably the image is printed on an area of the vinyl which substantially does not have a sheen finish prior to printing.

According to a further aspect of the invention there is provided a method of preparing a floor covering comprising the steps of:

i) obtaining a flexible sheet of flooring vinyl,

ii) printing a selected photographic image chosen by and provided by a customer directly onto the vinyl by way of suitable machinery, and

iii) applying a transparent protective sealing coating over the image after the image has been printed onto the vinyl.

DETAILED DESCRIPTION

According to a preferred embodiment of the invention a sheet of flexible vinyl floor material (for example a polyvinyl chloride based product) is printed with a photographic image to give an interesting life-like flooring effect (optionally three dimensional) within a residential or commercial building. The image is first digitally captured by a suitable high definition camera. The image is then transferred to a suitable flat bed inkjet printer, for example a Durst Rho 600 flat bed printer. The printer prints the photographic image directly onto the vinyl. To enable this it may be necessary to ensure that the printer prints on what would in other circumstances be the underside of the vinyl, i.e. the side which does not have a sheen finish. In this regard vinyl is normally applied with its sheen finished surface facing upwards so as
to better protect against stains and wear and tear. Printing on the sheen side may make it difficult or even impossible for the colouring agents used by the printer to properly adhere to the vinyl. It is for that reason that printing is preferably to the non-sheen side of the vinyl.

When the photographic image has been printed onto the vinyl it is covered by a suitable transparent sealing coating. This serves to protect the image against wear and fading as people, objects, and light come into contact with the vinyl when in use. The vinyl is then applied to a floor to give an aesthetically pleasing finish to the floor.

For example the printed vinyl may give a very realistic scene effect which in a sense gives one the feeling of being drawn into the scene. For example the image may show what one sees standing atop the edge of a famous tall building, looking down onto the street below. Alternatively the image may show a famous desert scene, for example pyramids in Egypt, etc. The options for scenes are virtually limitless.

According to some embodiments of the invention consumers may bring their own photographs to a workman so that they can be printed onto vinyl. Alternatively consumers may select a photographic image from a collection of images provided by the workman.

While some preferred forms of the invention have been described by way of example it should be appreciated that modifications and improvements can occur without departing from the scope of the appended claims.
CLAIMS

1. A method of preparing a floor covering comprising the steps of:
   i) obtaining a preformed flexible sheet of flooring vinyl, complete and suitable for use as flooring,
   ii) printing a selected photographic image directly onto the vinyl by way of suitable machinery, and
   iii) applying a transparent protective sealing coating over the image after the image has been printed onto the vinyl.

2. A method according to claim 1, wherein the image is printed at step ii) by way of a suitable inkjet printer.

3. A method according to claim 1 or 2, wherein the photographic image is of a real scene from nature or from an urban or rural area.

4. A method according to claim 1, 2 or 3, wherein the image is printed on an area of the vinyl which substantially does not have a sheen finish prior to printing.

5. A method according to claim 1, substantially as herein described.

6. A floor covering prepared according to any one of the preceding claims.

7. A floor covering according to claim 6, when applied to a floor surface.

8. A method of preparing a floor covering comprising the steps of:
   i) obtaining a flexible sheet of flooring vinyl,
ii) printing a selected photographic image chosen by and provided by a customer directly onto the vinyl by way of suitable machinery, and

iii) applying a transparent protective sealing coating over the image after the image has been printed onto the vinyl.
### INTERNATIONAL SEARCH REPORT

**A. CLASSIFICATION OF SUBJECT MATTER**

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<th>Int. Cl.</th>
<th>B32B 9/00 (2006.01)</th>
<th>B32B 33/00 (2006.01)</th>
<th>E04F 15/00 (2006.01)</th>
<th>B44C 5/00 (2006.01)</th>
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According to International Patent Classification (IPC) or to both national classification and IPC

### b. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

- DWPI & Keywords (Floor, Vinyl, Tile, Covering, Print, Ink, Image, Photograph, Seal, Protect, InkJet) and similar terms; Google & Keywords (Floor, Graphic, Vinyl, InkJet)

### C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
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<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
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<td>A</td>
<td>US 2005/0079330 A1 (TANEL) 14 April 2005 See abstract, paragraphs [0008] to [0011] and figures 1 to 7.</td>
<td>x 1-8</td>
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<td>A</td>
<td>US 5863632 A (BISKER) 26 January 1999 See abstract, column 4 lines 17 to 29 and figures 1 to 4.</td>
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* Further documents are listed in the continuation of Box C

**X** See patent family annex

- **A** Special categories of cited documents
  - "A" document defining the general state of the art which is not considered to be of particular relevance
  - "E" earlier application or patent but published on or after the international filing date
  - "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
  - "O" document referring to an oral disclosure, use, exhibition or other means
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**T** later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

**X** document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

**Y** document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

**O** document member of the same patent family

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**Date of the actual completion of the international search**

28 June 2007

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**Date of mailing of the international search report**

5 JUL 2007

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**Name and mailing address of the ISA/AU**

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<td>A</td>
<td>US 6802164 B1 (NEWBROUGH et al.) 12 October 2004</td>
<td>See abstract and figures 1 to 5.</td>
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<td>A</td>
<td>BE 1009214 (BRANDT et al.) 3 December 1996</td>
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<td>A</td>
<td>Derwent Abstract Accession No. 2004-720022/7 1, Class Q45;T04, DE 420007762 U1 (TAMPOPRINT AG) 7 October 2004</td>
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This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.

END OF ANNEX