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Improvements to Floor Posters

This invention relates to improvements in display posters, particularly, but not exclusively to posters
10 located in hostile environments such as car park surfaces and/or exterior surfaces.

Presently, interior floors (for example, stone, concrete, asphalt or marble) are capable of having posters or notices applied to them. Such posters might display
15 safety information or advertisements. The posters are made from a substrate printed with the information for display on the top surface and an adhesive applied to the underside. A coating on the top surface may be applied to improve the coefficient of friction of the poster to help reduce
20 slippage.

Generally, floors need to be flat with a smooth surface to allow the adhesive to stick the poster to the floor with sufficient adhesion; a poster stuck to a rough floor surface may not last as long as one stuck to a smooth surface. Also,
25 moisture can ingress between the floor and the poster causing the poster to become unstuck from the floor and lift from the floor.

Therefore, present floor posters are limited to application on areas of flooring where the environment is
30 generally good and the poster is sheltered from rain, for example, inside a building. Such areas might include railway station forecourts or pedestrian alley-ways in covered shopping malls.

We have appreciated that present floor posters can not
35 be applied to surfaces in hostile environments whilst remaining in a satisfactory state and without the need for continual replacement. However, we have appreciated that there is a need for such posters in hostile environment such as outdoor or indoor car parks. In this context, the term
40 floor is used to mean an exterior surface such as a car park or road.

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The present invention addresses this problem.

According to the invention, the present invention provides a display system comprising a poster for fixing to an external surface; the poster comprising a panel having a plurality of layers, including an adhesive layer for adhering the poster to the external surface; and a display layer with displayable content for viewing when the poster is fixed to the surface; the system further comprising a sealer resin, wherein, in use, the sealer resin is applied directly to the external surface to form a moisture resistant boundary to which the poster is fixed, and wherein the sealer resin penetrates a distance into the external surface.

The invention also provides a method for fixing a poster to an external surface, the poster comprising: a panel having a plurality of layers, including an adhesive layer for adhering the poster to the external surface; and a display layer with displayable content for viewing when the poster is fixed on the surface; the method comprising applying a sealer resin directly to the external surface that penetrates a distance into the external surface to form a moisture resistant boundary; and adhering the poster to the sealed surface.

The invention also provides a floor display system, comprising: a poster to be fixed to a surface, the poster including a display layer having displayable content for viewing when the poster is fixed to the surface; a sealer resin for sealing the surface that is applied directly to the surface and penetrates a distance into the surface to form a moisture resistant boundary; and an adhesive layer for adhering the poster to the sealed surface.

Embodiments of the invention have the advantage that a display system can be produced that can give acceptable performances in a hostile environment such as a car park. The use of a sealant on the underlying car park surface prior to an adhesive layer prevents the ingress of dirt and moisture under the poster to be displayed, greatly prolonging the life. The adhesive will bond to the sealant rather than the surface.

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5 Preferably, the sealant penetrates into the surface,
for example by 2 - 3 cms. This is particularly advantageous
where the surface is uneven and porous.

 Embodiments of the invention are also advantageous for
certain indoor environments such as multi-storey car parks
10 which are very hostile environments not suited to existing
floor displays.

 Embodiments of the invention will now be described by
way of example with reference to the accompanying figures,
in which:

15 Figure 1 is a schematic of a floor poster embodying the
present invention;

 Figure 2 is a flow diagram of a process embodying the
present invention.

 Referring to figure 1, a floor poster 10 comprises a
20 panel with a number of laminated layers. The example
illustrated has three layers, a protective layer 12, a
printed layer 14, and an adhesive layer 16. The protective
layer is preferably transparent thereby allowing the printed
layer to be viewed, and prevent water from penetrating to
25 the printed layer. Preferably, the protective layer also
provides a surface of similar frictional characteristics to
the surface of the floor on which the poster may be placed.
This helps to prevent people or vehicles losing traction and
slipping on the poster surface.

30 The asphalt floor on which the panel is to be placed
comprises an upper asphalt layer 18 which overlies a layer
of sand 26 which in turn overlies a drainage layer 24. The
asphalt layer 18 is pre-treated with a sealer compound 20.
The compound 20 seals the top layer of asphalt 18 from water
35 or moisture 22 that may ingress or penetrate through the
drainage layer 24 and sand 26 that underlie the asphalt 18;
the sealer waterproofs the top layer of the floor.

 The sealer compound is applied to the asphalt in liquid
form and preferably penetrates into the asphalt preferably
40 soaking approximately 2 to 3 cm in to the asphalt from the
asphalt's surface. Due to differences in asphalt or other

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5 floor types depending on their usage, and subsequent differences in permeability to the sealer, different sealers are required for different asphalts or other floor surfaces. This generally requires that the surface to which the poster is to be applied is surveyed to assess which sealer compound is best suited for that asphalt type. A poster embodying the present invention may also be installed on other porous floors such as brick paving, concrete, tiles, tarmac (RTM), terrazzo, block paving, concrete paving stones or even marble surfaces.

15 The adhesive layer 16 comprises a solid adhesive coating on the back of the panel beneath the printed layer that is protected by a peal back coating of a type well known in the field (not shown). The peal back coating is peeled off to expose the adhesive just before the panel is stuck to the pre-treated area of floor. The panel is applied to the pre-treated surface in a way that reduces pockets of air getting trapped between the panel and the floor.

Figure 1 shows water 22 ingressing through the asphalt from beneath the surface, through the underlying layers. If the poster is placed outside, or in an environment where the floor may be wet, then water could also ingress between the panel and the floor. The top protective layer 12 is chosen to provide a waterproof barrier to water trying to penetrate the poster through the top layer of the panel. Also, water is prevented from penetrating between the panel and the pre-treated asphalt, by the adhesive providing a good seal between the panel and the pre-treated asphalt.

It is estimated that the posters applied to asphalt using a compound or method embodying the present invention last for approximately three months under normal usage before renewal of the panel is required. The sealer is estimated to require renewal after a period of five years or so has lapsed.

The panel is worn by traffic passing over the poster; such traffic may take the form of persons or vehicles. If an inappropriate (or no) sealer is used to treat the asphalt

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5 before the panel is applied to the surface, then the poster
is unlikely to remain in an acceptable state for an
acceptable period. This is especially so if the panel is
subjected to adverse weather conditions or excessive traffic
wear. In such circumstances, the panel's adhesive will lose
10 adhesion to the asphalt and lift off the asphalt. This may
require the panel to be renewed at a rate that is considered
not commercially acceptable.

By 'acceptable state' we mean a state in which the
panel's printed layer is legible and all the panel remains
15 adhered to the asphalt surface; there are no edges or areas
of the panel that have come unstuck from the asphalt. By an
'acceptable period' we mean a period of approximately at least
two months in which the panel requires little or no
maintenance to keep it in an acceptable state.

20 Referring to figure 2, the process 50 for applying the
poster to an area of floor is shown. The area on which the
poster is to be placed is first surveyed at 52 to check for
the suitability of the poster being applied to the surface,
and also to determine which sealer is best suited for that
25 particular area of floor. The survey determines the
likelihood and rate at which the poster will be exposed to
water or moisture. This includes a determination of the
porous nature of the floor and the poster's proposed
location. These factors should be taken into account when
30 determining the type of sealer to be applied to the floors.

It may be possible to apply a sealer which is capable
of sealing most exterior surfaces prior to applying the
banner, in which case, the need to survey the surface may be
redundant.

35 The appropriate artwork for the panel of the poster is
designed at 54 and printed at 56. The floor surface is
treated at 58 with the suitable sealer and the panel placed
at 60 on the treated area. The panel may require regular
cleaning and maintenance at 62 to keep it in a suitable
40 condition, and replacement at 64 of the panel may be
required after a three month period.

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- 5 An example of a suitable sealant is a resin having the following composition:

	Methyl Methacrylate	30%-60%
	1, 1' (P-Tolyimino) Dipropane - 2- 02	0-1%
10	Butyl Methacrylate	10%-30%
	Ethylhexyl Acrylate	10%-30%

 The relative percentages of each component will vary depending on the type of asphalt, or other surface to be
15 sealed, including, but not limited to concrete and concrete brick paved surfaces. Suitable sealants are supplied by Floor Image International Ltd, of Stockport, United Kingdom under the trade mark SL SCRATCH COAT.

 It is envisaged that posters embodying the present
20 invention may be applied to car park areas or external walkways made of asphalt. The posters might, for example, be used to advertise shops or stores close to that particular parking area or to direct shoppers to an entrance of shopping malls from the car park. Such car park posters
25 might have a width equivalent to 3 car parking spaces and with a depth of one metre, or so. Other sizes of posters/panels are possible but may be limited by the surface on which they are to be applied. The actual nature of the displayable material is not a feature of the present
30 invention.

 The placement of the posters in areas previously unutilised will provide an extra revenue stream for car park operators and others. Advertisers will also benefit by the opportunity to advertise their stores or services close to
35 the point of sale.

 Modifications to the embodiments described are possible within the scope of the invention. For example, the adhesive may be applied as a separate layer on top of the sealed surface, rather than as a layer prepared on the back of the
40 layer of displayable material. Other modifications will occur to those skilled in the art.

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- 5 The skilled person will be able to perceive of many
different applications embodying the present invention, as
well as modifications to the embodiments described. For
example, high visibility signs could be placed on the
pavement close to pedestrian closings to help the visually
10 impaired identify the crossing; or to identify a route to
safe position in case of emergency.

CLAIMS

1. A display system comprising a poster for fixing to an external surface; the poster comprising a panel having a plurality of layers, including an adhesive layer for adhering the poster to the external surface; and a display layer with
5 displayable content for viewing when the poster is fixed to the surface; the system further comprising a sealer resin, wherein, in use, the sealer resin is applied directly to the external surface to form a moisture resistant boundary to which the poster is fixed, and wherein the sealer resin penetrates a distance into the external surface.
- 10 2. A display system as claimed in claim 1, wherein the panel further comprises a protective layer on top of the display layer.
3. A display system as claimed in claim 2, wherein the protective layer has a coefficient of friction generally similar to, equal, or greater than the surface coefficient of friction.
- 15 4. A display system as claimed in any of claims 1, 2 or 3, wherein the type of sealer resin used for the treatment of the surface is dependent on the type of external surface.
5. A display system according to any preceding claim, wherein the sealer resin comprises 30-60% Methyl Methacrylate, 10-30% Butyl Methacrylate and
20 10-30% Ethylhexyl Acrylate.
6. A display system according to claim 5, wherein the sealer resin further comprises up to 1% 1, 1' (P-Tolylimino) Dipropene -2-02.
7. A display system according to any preceding claim, wherein the external surface is a floor.
- 25 8. A display surface according to claim 7, wherein the floor is porous.
9. A display system according to claim 7, wherein the floor surface comprises asphalt.

10. A display system according to claim 7, wherein the floor surface comprises concrete.
11. A display system according to claim 7, wherein the floor surface comprises brick.
- 5 12. A method for fixing a poster to an external surface, the poster comprising: a panel having a plurality of layers, including an adhesive layer for adhering the poster to the external surface; and a display layer with displayable content for viewing when the poster is fixed on the surface; the method comprising applying a sealer resin directly to the external surface that penetrates a distance into the external surface to form a moisture resistant boundary; and adhering the poster to the sealed surface.
- 10 13. A method according to claim 12, comprising cleaning the external surface prior to sealing with the sealer resin.
14. A method according to claim 13, wherein the cleaning comprises removing dirt, oil and grease.
- 15 15. A method as claimed in claim 12, 13 or 14, comprising conducting a survey of the surface for the determination of the sealer resin type to be used prior to sealing the surface.
16. A method according to any of claims 12 to 15, wherein the external surface is an external floor.
- 20 17. A floor display system, comprising:
a poster to be fixed to a surface, the poster including a display layer having displayable content for viewing when the poster is fixed to the surface;
a sealer resin for sealing the surface that is applied directly to the surface and penetrates a distance into the surface to form a moisture resistant boundary; and
25 an adhesive layer for adhering the poster to the sealed surface.
18. A floor display system according to claim 17, wherein the poster includes the adhesive layer.

19. A floor display system according to claim 18, wherein the adhesive layer is protected by a peel off strip which is removable for application of the adhesive layer to the sealed surface.
- 5 20. A method for fixing a poster to a floor surface, comprising sealing the external surface with a sealer resin that is applied directly to the surface and penetrates a distance into the surface to form a moisture resistant boundary; and adhering the poster to the sealed surface.