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(54) Mat, in particular a path

(57) A mat 1 has a carrier 2 of a woven or non-woven, permeable material. On the carrier 2 there is a permanently plastic deformable binding agent 3. The binding agent has an elongation at break of more than 100% after 5 years of ageing and a viscosity between 5 and 10 sec STV 4mm at 20°C. The binding agent 3 is preferably a non-bituminous, non-toxic, bitumen-like emulsion.

On and partly in the binding agent 3 there is a cover material 4. The cover material is a granular or chunky material, for example gravel.

If great force is exerted on the cover material 4, for example during walking on the mat, the binding agent 3 continues to hold the cover material 4 through its plastic deformable characteristic.

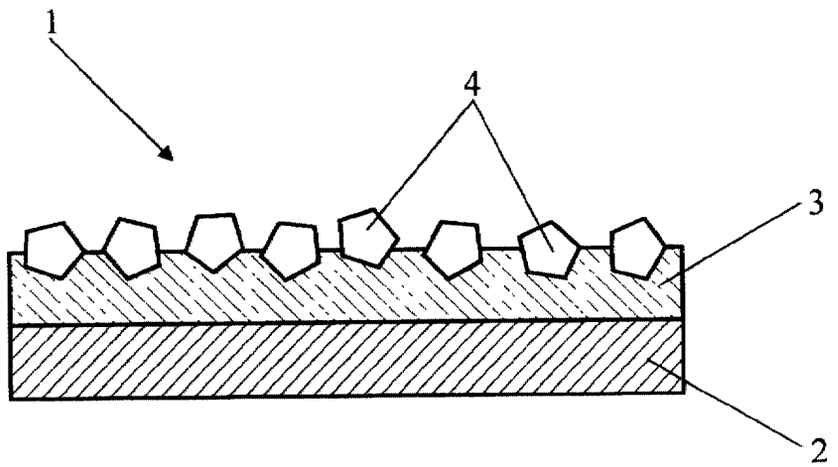

FIG. 2

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Description

BACKGROUND OF THE INVENTION:

Field of the invention

[0001] The invention relates to a mat comprising a carrier, a binding agent present on the carrier, and a cover material on and/or at least partly in the binding agent. More specifically the invention relates to a mat that is suitable for outdoor use, for example in the garden, and that can be used as a roll-up walkway or cover for surfaces and/or objects.

Prior art

[0002] Such a mat is known from European patent application no. 0 687 329. This known mat has foil as a carrier. The cover material is granular and is attached to the foil with a binding agent. If significant force is exerted on the granular cover material of the known mat, the cover material can loosen from the binding agent causing it to come offand it can be lost. For this reason the known mat is less suitable as a walkway, since during walking significant force is exerted on the cover material.

Summary of the invention

[0003] An objective of the invention is to provide a mat of the type described in the preamble to which the cover material is better attached. To this end the mat according to the invention is characterised in that the binding agent is a permanently plastic deformable binding agent. If great forces are exerted on the cover material here, the cover material can move but it remains attached because the binding agent deforms in a plastic manner. Even if the cover material comes loose it will then again be pressed in the binding agent such that it becomes fixed in place again. The permanently plastic deforming capacity of the binding agent differentiates the mat according to the invention from the known mat. In the use of the mat this is expressed in the staying attached of the cover material (gravel and/or other mineral material, shells, etc.) such that wear on the mat is minimal. The known mat shows, even after a short period of time (a few months), when used normally as a walkway, bald spots as a result of crumbling off of the cover material.

[0004] It should be remarked that a permanently plastic deformable binding agent is generally known, particularly in road construction. However, the known applications of the binding agent are all limited to application on a hard foundation. The mat according to the invention is flexible and can be used on a soft foundation, for example on the ground in a garden. The mat can also be rolled up so that it can be moved easily.

[0005] The permanently plastic nature of the binding agent of the mat according to the invention is expressed in the elongation at break to be applied to the binding agent, and also that this elongation only decreases to a limited extent as a consequence of ageing (oxidation). An embodiment of the mat according to the invention is characterised in that the elongation at break of the binding agent is greater than 100%. This elongation at break is the value without ageing of the binding agent. Preferably the elongation at break is even greater than 100% after 5 years of ageing under average Dutch climate conditions. Thus the rolling up ability of the mat according to the invention remains consistent for a period of at least 5 years. This elongation can be determined by generally known stress-strain measurements.

[0006] A further embodiment of the mat according to the invention is characterised in that the elongation at break of the binding agent is greater than 500%. This elongation at break, too, is the value without ageing of the binding agent. Preferably the elongation at break is greater than 500% here, as well, after 5 years under average Dutch climate conditions.

[0007] An additional embodiment of the mat according to the invention is characterised in that the elongation at break of the binding agent is greater than 1000%. This elongation at break, too, is the value without ageing of the binding agent. Preferably here, too, the elongation at break is once again greater than 1000% after 5 years of ageing under average Dutch climate conditions. The binding agent is preferably a non-bituminous, nontoxic, bitumen-like emulsion.

[0008] Another embodiment of the mat according to the invention is characterised in that the viscosity of the binding agent is preferably between 1 and 20 sec STV 4mm at 20°C. Or even more preferably between 5 and 10 sec STV 4mm at 20°C.

[0009] To obtain a good adhesion of the binding agent to the carrier, a further embodiment is characterised in that the carrier contains a woven or non-woven, permeable material.

[0010] It should be remarked that the advantage of a carrier of a woven or nonwoven, permeable material could also be realised with another binding agent than the above described permanently plastic deformable binding agent. Here the option is specifically left open of claiming this characteristic separately from the above-mentioned characteristics.

Brief description of the drawings

[0011] The invention will be elucidated more fully below on the basis of drawings in which an embodiment ofthe mat according to the invention is shown. In these drawings:

Figure 1 is a diagrammatic presentation of an embodiment of the mat according to the invention in a perspective view; and
Figure 2 is a cross-section of the mat shown in Figure 1.

Detailed description of the drawings

[0012] In Figure 1 an embodiment of the mat according to the invention is diagrammatically shown in a perspective view. The mat 1 is executed as a roll-up walkway and has a carrier 2 of a woven or non-woven, permeable material, for example textile.

[0013] On the carrier there is a permanently plastic deformable binding agent 3. The binding agent can be attached to the carrier via the melted phase or via an emulsified phase. The elongation at break of the binding agent is greater than 100% after 5 years of ageing under average Dutch climate conditions. The binding agent has a viscosity between 5 and 10 sec STV 4mm at 20°C. The binding agent is a non-bituminous, non-toxic, bitumen-like emulsion, for example "Latexfalt Safegrip" emulsion, available from the Vauafalt company in Koudekerk aan de Rijn, Netherlands.

[0014] In the binding agent 3 there is a cover material 4 that is partly present in the binding agent. The cover material is a granular or chunky material, for example pieces of wood chips, whole or crushed shells, or gravel.

[0015] Although in the above the invention is explained on the basis ofthe drawings, it should be noted that the invention is in no way limited to the embodiment shown in the drawings. The invention also extends to all embodiments deviating from the embodiment shown in the drawings within the context defined by the claims.

Claims

1. Mat, specifically a roll-up walkway, comprising a carrier, a binding agent present on the carrier, and a cover material on and/or at least partly in the binding agent, characterised in that the binding agent is a permanently plastic deformable binding agent.

2. Mat according to claim 1, characterised in that the elongation at break of the binding agent is greater than 100%.

3. Mat according to claim 2, characterised in that the elongation at break ofthe binding agent is greater than 500%.

4. Mat according to claim 3, characterised in that the elongation at break ofthe binding agent is greater than 1000%.

5. Mat according to one of the preceding claims, characterised in that the binding agent is a non-bituminous, non-toxic, bitumen-like emulsion.

6. Mat according to one of the preceding claims, characterised in that the viscosity of the binding agent at 20°C lies between 1 and 20 sec STV 4mm.

7. Mat according to claim 6, characterised in that the viscosity of the binding agent at 20°C lies between 5 and 10 sec STV 4mm.

8. Mat according to one of the preceding claims, characterised in that the carrier comprises a woven or non-woven, permeable material.

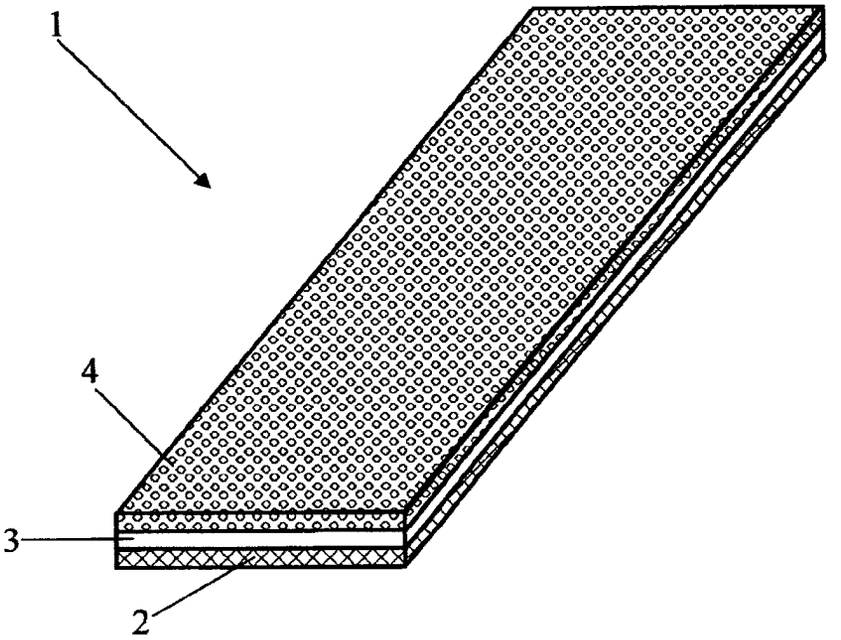

FIG. 1

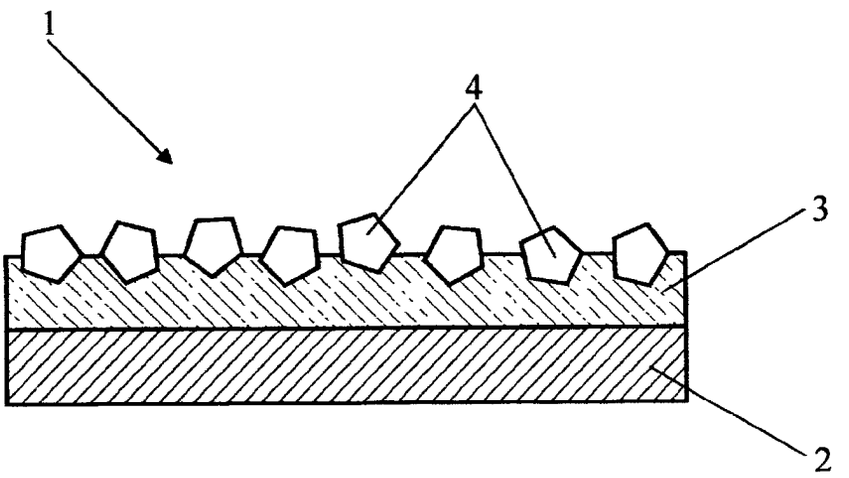

FIG. 2

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 00 20 4288

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	26 February 2001	Dijkstra, G

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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EPO FORM 1503 03.82 (P04C01)

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