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(54) Panel for external use

(57) A panel (10) for external use is described, comprising an internal core (12) and an external layer (14) in which the internal core (12) is made of PVC and the external layer (14) is made of polymethyl methacrylate. The PVC layer has a thickness between 15 mm and 30 mm and the external layer (14) has a thickness of 0,2 mm at most, in order to obtain profilings of said panel.

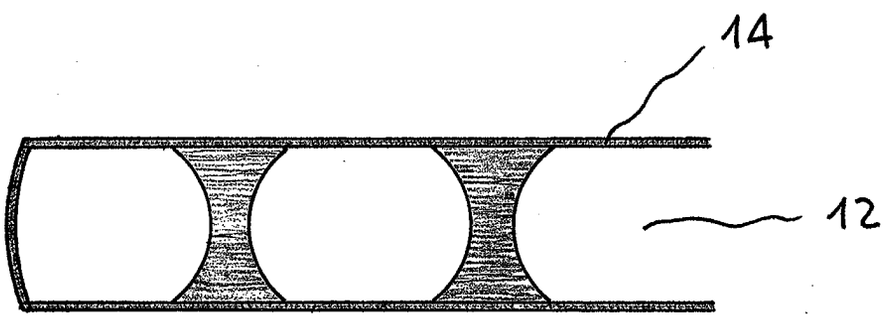

Fig. 2

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Description

[0001] The present invention is about a panel for external use, used in particular for balconies, fences or mountain stockades.

[0002] It is known for years the utilization of wooden pickets for the external use in such applications for several reasons, such as the considerable aesthetic result. In spite of this continuative use of wood for years, said wood needs a continuous maintenance and thus a reduction of its use for environmental problems has been made in the last years. Products made of plastic are a valid alternative available on the market. In particular, it is known the use of rigid, foamed or recycled PVC which have substituted the wooden panels although, unlike them, the PVC materials has been proved not only aesthetically by far inferior, but also more fragile. To overcome these inconveniences, multilayer panels have been provided. For example, in document JP 10,180,776 a multilayer structure is described, having an internal core made of PVC material and at least a polyurethane layer able to improve the aesthetic and weatherproof properties of a panelling.

[0003] In document MI-2000U000024 of the same applicant a multilayer panel is described, in which an internal PVC core is covered on every side by a double-layer structure comprising a further PVC layer having a thickness of about 150 μm and a polymethyl methacrylate layer of about 50 μm. These panels, although being a valid alternative to wooden products, have been proved less adapted for obtaining panels with different profiles, typical of mountain inhabited structures.

[0004] Object of the present invention is thus to provide for a panel for external use suitable for being profiled, with nice-looking aspect and therefore similar to wooden panels but without their inconveniences.

[0005] The present invention has brilliantly solved this problem, providing for a multilayer panel with appropriate dimensions of the same layers which can be profiled, being aesthetically similar to a profiled wooden product and not having colours separation or also detachment or deformation, even if partial, of the outermost layer of the panel.

[0006] Said purpose is obtained by a panel according to claim 1, to which it is referred for sake of concision.

[0007] The present invention is described in detail hereinafter, with explanatory but not limiting purpose, with reference to the annexed drawings, wherein:

Figure 1 is a front view of a profiled panel according to the invention;
Figure 2 is a sectional view of the panel of Figure 1; and
Figure 3 is a front view of the panel before its profiling.

[0008] The panel according to the present invention, shown in Figure 1, is generally indicated with numeral 10 and comprises an internal core 12 and an external layer 14. The internal core 12 is made of PVC, preferably foamed PVC. Recycled PVC can also be used, therefore requiring a full painting because of the multicolour effect typical of the recycled PVC.

[0009] According to the present invention, the thickness of said internal PVC core is comprised between 15 mm and 30 mm, preferably 20 mm. This thickness range is essential to obtain a profiled panel. In fact, for a thickness greater than 30 mm the PVC costs are so high not to make convenient the production of said panels, and thus being preferable their substitution with the wooden products, while for a thickness smaller than 15 mm the PVC core is too flexible. Said layer 14 is a polymethyl methacrylate film which allows the protection against atmospherical agents and whose colours are unalterable for at least 10 years. It is already preformed with the typical wood grain and it consequently forms a layer similar to a wooden layer when applied on the internal core 12. In order to allow the piece profiling without causing external visual defects of detachment, the thickness of the layer 14 must be of 0,2 mm at most.

[0010] The application of said film is performed by well-known methods, for example by roller film-machine on a PVC core obtained by hot extrusion.

[0011] The layer structure of definite dimensions according to the invention allows to obtain panels for external use, in particular for fences and balconies, which are aesthetically similar to the wooden panels and easy to be profiled, but instead of said wooden panels they are weatherproof and do not need a continuous maintenance.

[0012] Finally, the present invention is suitable for numerous modifications and alterations, all within the innovative concept exposed in the appended claims, while the technical details can change according to the needs.

Claims

1. A panel (10) for external use comprising an internal core (12) and an external layer (14) in which the internal core (12) is made of PVC and the external layer (14) is made of polymethyl methacrylate, wherein the PVC layer (12) has a thickness between 15 mm and 30 mm and the external layer (14) has a thickness of 0,2 mm at most.

2. The panel according to claim 1, wherein the internal core (12) is made of foamed PVC.

3. The panel according to claims 1 or 2, wherein the thickness of said internal core (12) is of 20 mm.

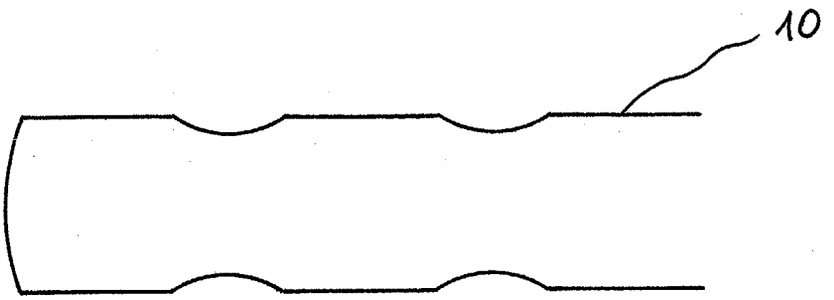

Fig. 1

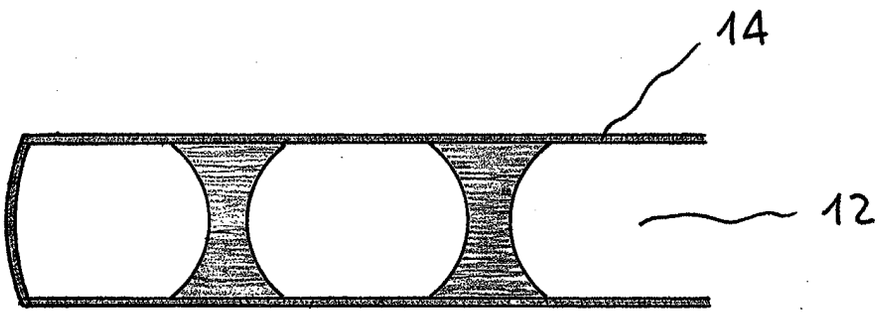

Fig. 2

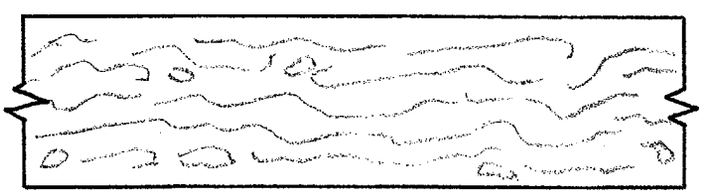

Fig. 3

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EUROPEAN SEARCH REPORT

Application Number
EP 04 07 5833

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
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A	* page 2, line 5 - page 4, line 3; figures 1,2 *	2,3	
A	WO 92/20523 A (BARRACUDA TECH AB) 26 November 1992 (1992-11-26) * page 7, line 31 - page 9, line 17; figures 1,2 *	1-3	
A	FR 2 173 324 A (HOECHST AG) 5 October 1973 (1973-10-05) Revendications 1-7 * figures 1-3 *	1-3	TECHNICAL FIELDS SEARCHED (Int.Cl.7) E04C E04B
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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
MUNICH	25 June 2004	Stefanescu, R

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
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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

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 04 07 5833

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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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82