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Description**Technical Field**

5 The present invention relates to a planar element and to a method for producing such planar elements.

Prior Art

10 For the technical background of the present invention, reference is made to the publication DE 102 49 223 A1 from the prior art as well as to the publication EP 0 864 444 A2 from the prior art.

15 **Disclosure of the present invention: object, solution, advantages**

Starting from the documents mentioned above as well as taking the outlined prior art into account, the object of the present
20 invention is to further develop a planar element of the aforementioned type as well as a method of the aforementioned type in such way that said planar element is easily and inexpensively to produce on the one hand and allows remarkable optical effects to be obtained on the other hand.

25 This object is achieved by a planar element having the features of claim 1, as well as by a method having the features of claim 8. Advantageous embodiments and expedient further developments of the present invention are
30 characterised in the respective dependent claims.

In this connection, the support plates of the planar element may consist of different materials to ensure greater flexural strength as well as easier manufacturing; thus the support
35 plate is advantageously configured as aluminium composite sheet, for example with a plastic core or with a mineral core and with two aluminium cover sheets.

In this connection, the support material, i. e. the support plate is selected such that the plate corresponds to the nature of the application; acrylic, aluminium or polyethylene is a preferred support material for damp areas or wet areas, for example for shower cubicles, including a snail shower, or for swimming pools, the quality of the support material being able to be adapted to the application; for example the thermal stability may be selected to be between seventy degrees Celsius and 110 degrees Celsius.

Expediently, the size and the selected material of the panel predetermine the material thickness thereof.

The size of the walls to be coated is dependent on the production of the panel, in order to avoid the formation of gaps. When producing coated panels in situ, expediently acrylic sheet, aluminium composite sheet or polyethylene sheet joints may be bonded in order to avoid gaps in a reliable manner. In this connection, the suitability of the substrate as well as the thermal expansion has to be considered.

According to an expedient development of the present invention, the support plates are provided with a suitable primer which is appropriate for the choice of material, in order to ensure the adhesion of the applied material.

The coating of the panels may be carried out in different ways, preferably by

- a paint coating/painted finish, the paint coat being able to be applied in any design to fulfil design requirements; the application may, for example, be carried out by hand, by means of a spray device or by means of a plotter; the films are prepared for processing;

- films, which may be applied onto the support substrate which has, in particular, been primed; the design of the films may, for example, be implemented by a plotter.

According to an advantageous embodiment of the present invention a final sealing coat is applied repeatedly, for example three times, which may be selected depending on the
5 chosen coating.

If the support substrate is provided, for example, with a paint coating and/or with a painted finish, the final coating of the panel takes place by a repeated application of a
10 preferably transparent coating, which is scratch-resistant and wear-resistant. The coating may be rolled, painted or sprayed on. The appearance of the surface may be shiny, matt or may even be textured.

15 In the case of a film coating, a second film may be applied which has similar properties to the paint coating. This second film may be transparent or coloured, and the surface is absolutely smooth. Also, the surface structure may be correspondingly influenced.

20 Irrespective of, but preferably in combination with, a translucent or transparent design of the support plate, the finished coated panel, for example in an embodiment as a cavity wall or as a cavity, may be back-lit.

25 Irrespective of, or in combination with, such back-lighting, the planar element may be provided with at least one printed image and/or with at least one inscription, for example in the form of advertising, namely for businesses, hotels or clubs.

30 In this case, the printed image and/or the inscription may be applied separately or as part of the coating produced, for example, by means of a paint coating/painted finish or by means of film.

35 The optional embodiment of back-lighting the planar element, in particular in the use as a planar hollow element, may be combined in a particularly synergetic manner with the optional embodiment of the printed image and/or the lettering. As a

result, particularly impressive visual effects may be achieved, as by means of the back-lighting the printed image and/or the lettering is visually highlighted and thus attracts specific attention.

5

With regard to the production of the planar element of the type set forth above, with a self-supporting assembly care has to be taken that the panels have a corresponding rigidity and are screwed, nailed or pegged in the manner of building
10 panels.

If the panel, however, is bonded with special adhesive to a substrate, and joined on all sides, this bonding may be carried out in a point bonding method. The preparation of the
15 substrate in this case is to follow the specification of the manufacturer of the adhesive.

The present invention finally relates to the use of at least one planar element according to the type set forth above
20 and/or a method according to the type set forth above, as a decorative element, shower wall, the front of an item of furniture, partition or the like, in particular in damp areas or wet areas, for example for shower cubicles or for swimming pools.

25

As a result, the present invention provides many different possibilities for use and application, namely in the design of walls for high-quality baths and showers. The wall may thus be used directly as a shower wall. Additional sealing of the
30 substrate is not necessary, depending on the selected material. The style may be created according to the requirements of the user.

A further intended use and application is in the form of a so-called renovation panel, i. e. the coated panel may also be
35 directly applied during renovation or refurbishment, for example to old paintwork or tiling. The substrate must in this case be correspondingly load-bearing. By means of such

renovation panels, for example, baths may be very rapidly redesigned.

As a result, by means of the present invention many different designs in terms of colour design, film design and the like are possible, namely according to the requirements of businesses, hotels or clubs. The planar elements produced according to the invention are, in particular, shower-resistant, fade-resistant and acid-resistant.

Brief explanation of the drawings

As has already been discussed hereinbefore, there are various possibilities for embodying and further developing the teaching of the present invention in an advantageous manner. To this end, on the one hand, reference is made to the claims dependent on claim 1 and on claim 8, and, on the other hand, further embodiments, features and advantages of the present invention are explained in more detail hereinafter by way of the exemplary embodiment illustrated by Fig. 1.

It is shown in:

Fig. 1 in a schematic cross-sectional view an embodiment for a planar element according to the present invention which is produced according to the method of the present invention.

Best way for embodying the present invention

The planar element 100 according to Fig. 1 has a support substrate 10 in the form of a support plate, namely in the form of

- an aluminium composite sheet, for example with a plastic core or with a mineral core and with two aluminium cover sheets,

which is provided on one surface (namely in the cross-

sectional view of Fig. 1 on the right-hand side) with a coating 30.

Said coating 30, for example, which is rolled, painted or sprayed onto the support substrate 10, may be a paint coating and/or a painted finish; the coating 30 may, however, also be configured in the form of a film applied or bonded or laminated onto the support substrate 10.

In order to ensure the adhesion of the application (= coating 30), between the support substrate 10 and the coating 30 a primer coat 20 is provided.

In particular, when using the planar element 100 as a decorative element, as a shower wall, as a partition or the like, for example in damp areas or wet areas, such as for example in shower cubicles or in swimming pools, a sealing coat 50 is of use, which protects the planar element 100 against any kind of effects, for example from liquids.

For example, underneath the sealing coat 50 the planar element 100 is provided with a printed image and/or with an inscription 40, for example in the form of advertising, namely for businesses, for hotels or for clubs. In this connection, the printed image and/or the inscription 40 may be applied separately between the coating 30 and the sealing coat 50 or as part of the coating 30 produced, for example, by means of a paint coating/painted finish or by means of film.

By means of a plurality of illuminating elements 60 arranged on the side remote from the coating 30, in the planar element 100 according to Fig. 1 a background illumination or backlighting is produced, by means of which in combination with the printed image and/or with the inscription 40 in a particularly synergetic manner particularly impressive visual effects are achieved, as by means of the back-lighting 60 the printed image and/or the lettering 40 may be visually highlighted and thus attract specific attention.

List of reference numerals

- 10 support substrate, in particular support material or support plate
- 5 20 primer, in particular primer coat
- 30 application or coating
- 40 printed image or inscription or lettering, in particular advertising
- 50 sealing coat
- 10 60 illumination, in particular illuminating element

Patentkrav

1. Plant element (100) med
 - i det mindste et som aluminiumslaminatplade udformet

5 bæresubstrat (10), navnlig i det mindste en bæreplade, og

 - i det mindste en belægning (30) placeret på i det mindste en flade eller side af bæresubstratet (10),

kendetegnet ved

en flerdobbelt forsegling (50) af den flade eller side på

10 belægningen (30), som vender væk fra bæresubstratet (10).
2. Plant element ifølge krav 1, kendetegnet ved, at aluminiumslaminatpladen har en kunststofkerne eller en mineralsk kerne og to aluminiumsdæklag.

15

3. Plant element ifølge krav 1 eller 2, kendetegnet ved, at bæresubstratet (10) er forsynet med i det mindste en grundering (20).
4. Plant element ifølge i det mindste et af kravene 1 til 3, kendetegnet ved, at belægningen (30)
 - er udformet som påstrygning og/eller som maling eller
 - er udformet i form af i det mindste en folie, som kan trækkes på bæresubstratet (10).

20

5. Plant element ifølge i det mindste et af kravene 1 til 4, kendetegnet ved i det mindste et påtryk og/eller ved i det mindste en påskrift (40), for eksempel i form af reklame.

25

6. Plant element ifølge i det mindste et af kravene 1 til 5, kendetegnet ved i det mindste en belysning (60), navnlig en bagbelysning, for eksempel fra den flade eller side af det plane element (100), som vender væk fra belægningen

30

7. Plant element ifølge i det mindste et af kravene 1 til 6, kendetegnet ved en udformning som hulrum eller hul væg.

35

8. Fremgangsmåde til fremstilling af i det mindste et plant element (100), idet der på i det mindste en flade eller side af i det mindste et som aluminiumslaminatplade udformet bæresubstrat (10), navnlig i det mindste en bæreplade, påføres i det mindste en belægning (30), kendetegnet ved, at den flade eller side af belægningen (30), der vender væk fra bæresubstratet (10), forsegles (50) flere gange.

9. Fremgangsmåde ifølge krav 8, kendetegnet ved, at belægningen (30) rulles, stryges eller sprøjtes på bæresubstratet (10).

10. Fremgangsmåde ifølge krav 8 eller 9, kendetegnet ved, at bæresubstratet (10) grunderes (20).

11. Fremgangsmåde ifølge i det mindste et af kravene 8 til 10, kendetegnet ved, at det plane element (100) belyses (60), navnlig bagbelyses.

12. Anvendelse af i det mindste et plant element (100) ifølge i det mindste et af kravene 1 til 7 og/eller en fremgangsmåde ifølge i det mindste et af kravene 8 til 11 som dekorationselement, brusevæg, møbelfront, skillevæg eller lignende, navnlig i fugtige eller vådrum, for eksempel til brusekabiner eller swimmingpools.

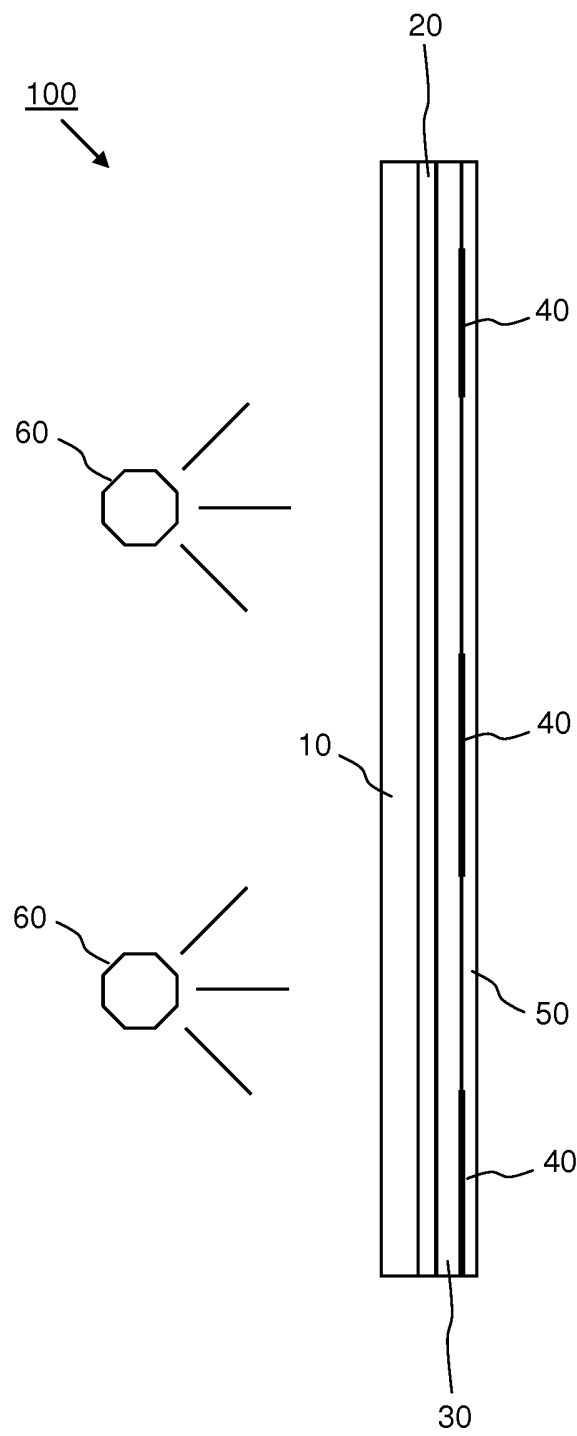


Fig. 1