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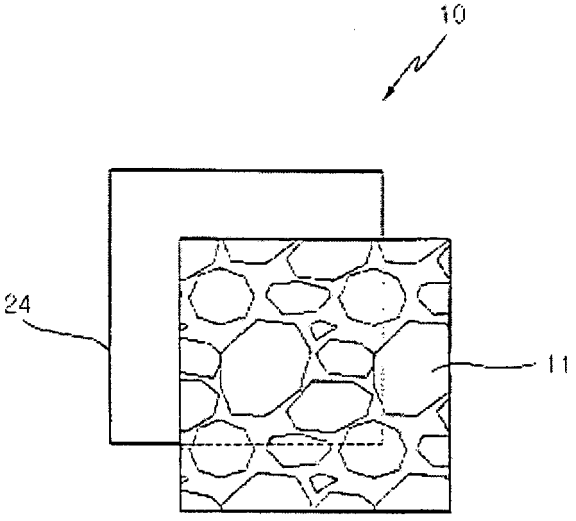
(54) Finishing panel using marble

(57) The present invention relates to a finishing panel (10) using marble including a marble panel (11) to be disposed at a front surface and a back body panel (20) joined with a rear surface of the marble panel, wherein the back body panel (20) comprises a supporting panel (23) formed in the same size with the marble panel (11) and attached to the marble panel (11), and a coupling panel (24) positioned at a rear surface of the supporting panel (23) and having both sides facing each other in complementary shape, and wherein one of the sides is formed with a groove part (25) behind the supporting panel (23), and the other side is formed with a protrusion part (26), so that the groove part (25) and the protrusion part (26) of the coupling panel (24) are engaged with a protrusion part (26) and a groove part (25) of adjacent coupling panels (24).

Fig. 1



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Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to a finishing panel attached to a surface of a wall, a floor or a door of a building structure, and more particularly to, a finishing panel which employs marble for exhibiting high grade atmosphere, and may be connected in a simple structure for improving construction workability and durability.

2. Discussion of Related Art

[0002] In general, ceramic tiles, steel plates or panels formed of reinforced plastics are widely used as wall or floor finishing elements. But recently, the interest in the residual environments such as apartments, public buildings or office spaces becomes growing, and there are increasing trends toward the use of panels formed of natural marble for producing differentiated and sophisticated atmosphere.

[0003] For reference, commercial natural marble panels are produced and used with the standards of 600mm × 600mm × 20mm, and 500mm × 500mm × 20mm. However, the marble panels have disadvantages as described below.

[0004] First, the cost of raw materials is a problem. The raw material cost of the marble itself is relatively high in comparison with other materials. Further, delivery or cutting of the marble cannot be carried out by general construction workers but carried out by stonemasons who are specially equipped and professionally skilled. Therefore, personnel expenses are very high and the high personnel expenses are included in the raw material cost, increasing the cost of the marble panels. Conclusionally, the marble panel cannot be used widely as a finishing element but is limitedly employed in partial buildings, which are very expensive.

[0005] Second, characteristics of the materials are another problem. The marble is heavy and fragile in comparison with other materials. Therefore, the construction and handling thereof become difficult, increasing the construction cost thereof and extending a construction period thereof when constructing wall surfaces or floor surfaces with the marble panels.

[0006] Therefore, demands for resolving the above problems of the marble panels are increasing. As a solution, there have been suggested a marble panel formed of a ceramic tile layer and a marble layer bound with each other by an adhesive agent, as disclosed in Korean Patent Publication No, 2003-90146 and Korean Patent Publication No. 2006-19824. In the disclosures, a commercial ceramic tile is used as a back body panel which substitutes a thickness of a pure marble panel. The ceramic tile is formed by sintering inorganic stone textured clay such as clay, feldspar, quartzite, quartz, and the like at a high temperature, which may achieve cost saving and weight reducing effects of the marble tiles to some degree.

[0007] However, the ceramic tile has still problems in hardness that the ceramic tile is fragile so that the machining thereof such as cutting, milling, polishing, and the like is difficult. Conclusionally, the suggested ceramic tile attaching type marble panel has a limit that the complement of the fragile characteristics of a pure marble panel is impossible. Further, the weakness in the machining causes difficulties in proper adoption thereof for various construction environments and special designing or adoption thereof for improving the convenience of the constructions is impossible.

SUMMARY OF THE INVENTION

[0008] Therefore, the present invention is derived to resolve the above and any other disadvantages of the prior art marble panels or marble tiles.

[0009] According to the present invention, there is an object to provide a finishing panel to be attached to walls, floors, and doors of a building or any other structures, wherein the finishing panel uses marble.

[0010] There is another object of the present invention to provide a finishing panel, which is superior in an economical aspect, simple in handling or construction, and exhibits high stability and high impact resistance especially.

[0011] There is still another object of the present invention to provide a finishing panel, which may realize the convenience in the construction owing to superior machining characteristics and keep coupling states stably for a long time.

[0012] In a finishing panel including a marble panel to be disposed at a front surface, and a back body panel joined with a rear surface of the marble panel, the back body panel includes a supporting panel formed in the same size with the marble panel and attached to the marble panel, and a coupling panel positioned at a rear surface of the supporting panel and having both sides facing each other and formed in corresponding shape with each other, wherein one of the sides is formed with a groove part behind the supporting panel, and the other one is formed with a protrusion part, so that the groove part and the protrusion part are engaged with a protrusion part and a groove part of other adjacent coupling panels.

[0013] The groove part and the protrusion part are formed with holding elements for preventing separation thereof from each other when they are coupled with each other.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] The objects, features and advantages of the present invention will be more clearly understood from the following detailed description in conjunction with the accompanying drawings, in which:

Fig. 1 is a plane view showing a finishing panel according to a preferred embodiment of the present invention;

Fig. 2 is a plane view of a finishing panel according to another preferred embodiment of the present invention, which is modified from the finishing panel of Fig. 1;

Fig. 3 is a plane view of a finishing panel according to a preferred embodiment of the present invention;

Fig. 4 is an expanded cross-sectional view of a finishing panel according to the preferred embodiment of the present invention; and

Fig. 5 is a cross-sectional view for explaining connection states of the finishing panel according to a preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0015] Hereinafter, the supporting panel and the coupling panel are explained in detail in their material characteristics and the preferred embodiments according to the present invention will be described with reference to the accompanying drawings.

[0016] The supporting panel is formed of materials such as gypsum plaster boards, bamlight boards, and acryl or fiber boards.

[0017] In the gypsum board, gypsum plaster is cured in the stabilized crystallization state between two raw sheets for forming a strong board.

[0018] Generally, the gypsum plaster board is superior in the properties such as fireproofness, lightweight, heat insulation, sound insulation, construction workability, waterproofness(waterproofness-processed gypsum), and the like, so that the gypsum plaster board is well-known as an ideal construction interior material. Therefore, the gypsum plaster board may be properly employed as a back body panel in the present invention.

[0019] Further, the bamlight board represents so-called "fiber-reinforced cement plate" manufactured with cement and inorganic fibers as main raw materials.

[0020] Generally, the bamlight board is superior in the properties such as incombustibility, lightweight, impact resistance, construction workability, anti-corrosiveness, and the like, so that the bamlight board is well-known not only as an incombustible interior material but also as an ideal finishing material in humid places. Therefore, the bamlight board may be properly employed as the back body panel in the present invention. In particular, the bamlight board may be formed in a multiply structure for improving waterproof properties in places of serious humidity.

[0021] The acryl represents a plastic material formed of Methyl Methacrylate MMA as a main raw material. In general, the acryl board is superior in the properties such as light transmission, impact resistance, lightweight, chemical resistance, weather resistance, waterproofness, coloring power, and the like, so that the acryl board may be properly employed as the supporting panel in the present invention. Particularly, light passing through the marble panel may be diffused in the acryl, exhibiting illumination effect on the whole.

[0022] The fiber board represents a plate element formed of plant fibers such as timber or straws by molding hot pressing or drying. The fiber boards are divided into soft fiber insulation boards, semihard fiber insulation boards(medium density fiber boards MDFs), hard fiber insulation boards(high density fiber boards HDFs) according to specific gravities thereof, wherein the MDFs or the HDFs is properly employed as the supporting panel in the present invention.

[0023] Materials of the above supporting panels are superior in impact resistance and have no defects such as flexible deformation, bending, twisting, or crack according to humidity. Therefore, such the supporting panel complements fragile characteristics of the marble panel disposed at the front surface, and is simultaneously available as a first element of the back body panel for the marble panel without no deformation caused by environmental factors. Preferably, the supporting panel composing the back body panel and a coupling panel described below are coated with bio ceramic materials for antifungal and deodorizing effects.

[0024] The fiber board is not essentially required for the coupling panel of the finishing panel in the present invention but may provide benefits as the finishing panel owing to their lightweight and high adhesiveness. Further, the fiber board is prepared relatively thickly and exhibits high machinery characteristics, so that the fiber board may be properly employed as a second element of the back body panel for the marble panel in the present invention.

[0025] In the present invention, the finishing panel may be formed in various shapes for the convenience of construction. First, the finishing panels may be designed to be fitted with each other at side surfaces of other finishing panels, which are adjacent to each other. Second, the finishing panels may be fitted with rails, which are provided additionally. Structures thereof may be modified by the superior machining characteristics of the materials forming the back body panels of the present invention, which will be described in detail with respect to the accompanying drawings.

[0026] Referring to Fig. 1. and Fig. 2, a finishing panel 10 of the present invention includes a marble panel 11 disposed at a front surface position, and a back body panel 20 joined with a rear surface of the marble panel 11. The back body panel 20 includes a supporting panel 23 formed of a gypsum plaster board, a bamlight board, an acryl or fiber board, and a coupling panel 24 positioned at a rear part of the supporting panel 23 for keeping coupling states between such the finishing panels 10. The supporting panel 23 is formed with a surface area equal with that of the marble panel 11, and the coupling panel 24 is joined with a rear part of the supporting panel 23, wherein the coupling panel 24 is inclined in a diagonal

direction as shown in Fig. 1 or in a lateral direction as shown in Fig. 2 with respect to the marble panel 11.

[0027] In the structure as described above, the adjacent finishing panels 10 may be fitted with each other like puzzle pieces. Even though it is not shown, the puzzle type fitting structure may be employed for back body panels 20 which include fiber boards as the coupling panels.

[0028] At this time, the back body panel 20 is entirely inclined or the coupling panel 24 of the back body panel 20 may be inclined.

[0029] Referring to Fig. 3, and Fig. 4, the finishing panel 10 of the present invention includes a marble panel 11 disposed to a front surface position, and a back body panel 20 joined with a rear surface of the marble panel 11. The back body panel 20 includes a supporting panel 23 formed of a gypsum plaster board, a bamlight board, or an acryl board, and a coupling panel 24 formed of a fiber board. The supporting panel 23 is formed in the standards equal with those of the marble panel 11, and joined with the marble panel 11 concentrically.

[0030] On the other hand, the coupling panel 24 is in the shape with corresponding upper and lower sides, and corresponding right and left sides, wherein the corresponding sides respectively face each other with respect to the marble panel 11. That is, the coupling panel 24 has a side formed with a groove part 25 behind the supporting panel 23 and the other side formed with a protrusion part 26 at a position corresponding to the groove part 25. Therefore, the coupling panels 24 are engaged with each other by the fitting of the protrusion part 25 of a coupling panel 24 into the groove part 25 of another coupling panel 24. For the convenience of assembling, the protrusion part 26 is formed in a tapered shape which is inclined gradually toward a tip thereof.

[0031] In order to reinforce the coupling force in the engagement between the groove part 25 and the protrusion part 26, holding elements are provided for preventing deviation of the groove part 25 and the protrusion part 26 from the engagement state therebetween.

[0032] Referring to Fig. 4, as for the holding elements, the groove part 25 is formed with a holding groove 27 and the protrusion part 26 is formed with a holding protrusion 28 in the complementary shape with the holding groove 27 at a position corresponding to the holding groove 27.

[0033] As describe above, the groove part 25 and the protrusion part 26 in the complementary shape, and the coupling structure provided by the holding groove 27 and the holding protrusion 28, which makes the groove part 26 and the protrusion part 26 engaged and prevents the engagement between the groove part 26 and the protrusion part 26, realize coupling between the finishing panel 10 and other adjacent finishing panels 10 in the fitting manner.

[0034] In the meantime, the coupling panel 24 of the back body panel 20 has rail grooves 33 to be fitted into rails, which are provided additionally to a surface of a structure. In the construction, the finishing panels 10 may be attached to the structure by fitting the coupling panels 24 to the rails, wherein the finishing panels 10 may be naturally disposed in position.

[0035] The rail structures 33 may be employed without any relationship with the groove part 25 and the protrusion part 26, which are complementary with each other, and the structure of the holding groove 27 and the holding protrusion 28 for preventing the deviation of the groove part 25 and the protrusion part 26 from each other, but may be employed together with the above structures simultaneously for realizing much improved convenience in the construction.

[0036] The finishing panel according to the present invention includes a front marble panel and a back body panel joined with a rear surface of the marble panel. The back body panel is selectively formed of materials having high impact resistance, superior construction workability and superior machining characteristics. Therefore, the back body panel complements the fragile characteristics of the marble panel.

[0037] In the meantime, a groove part and a protrusion part in the complementary shape, and a deviation-preventing coupling structure, that is, a holding groove and a holding protrusion respectively formed at the groove part and the protrusion part, keep the coupling state between the finishing panels stably.

[0038] Therefore, the finishing panel of the present invention may provide construction convenience and keep stable construction states for a long time, thereby improving competitiveness and reliability.

[0039] Although the foregoing description has been made with reference to the preferred embodiments, it is to be understood that changes and modifications of the present invention may be made by the ordinary skilled in the art without departing from the spirit and scope of the present invention and appended claims.

Claims

1. A finishing panel including a marble panel to be disposed at a front surface and a back body panel joined with a rear surface of the marble panel, **characterized in that** the back body panel comprises a supporting panel formed in the same size with the marble panel and attached to the marble panel, and a coupling panel positioned at a rear surface of the supporting panel and having both sides facing each other in complementary shape, wherein one of the sides is formed with a groove part behind the supporting panel, and the other side is formed with a protrusion part, so that the groove part and the protrusion part of the coupling panel are engaged with a protrusion part and a groove part of adjacent coupling panels.

2. The finishing panel as claimed in claim 1, wherein the coupling panel is an MDF(medium density fiber board) or an HDF(high density fiber board).

3. The finishing panel as claimed in claim 1, wherein the supporting panel and the coupling panel are coated with bio-ceramic materials.

4. The finishing panel as claimed in claim 1, wherein the protrusion part of the coupling panel is formed in a tapered shape.

5. The finishing panel as claimed in claim 1, wherein a rear surface of the coupling panel is formed with rail grooves.

6. The finishing panel as claimed in claim 1, wherein the groove part and the protrusion part are provided with holding elements for preventing separation thereof from each other when they are coupled with each other.

Fig. 1

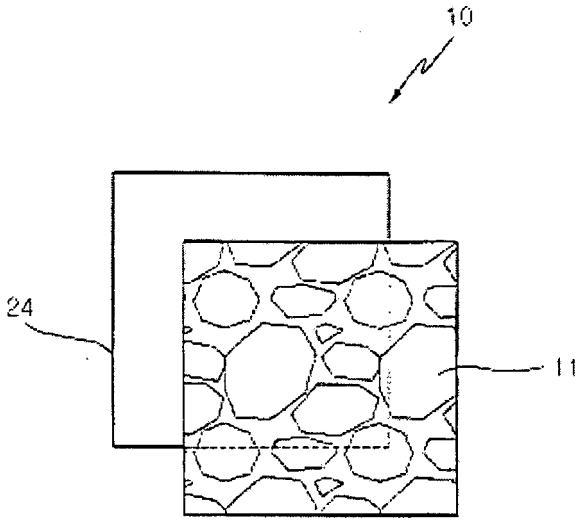


Fig. 2

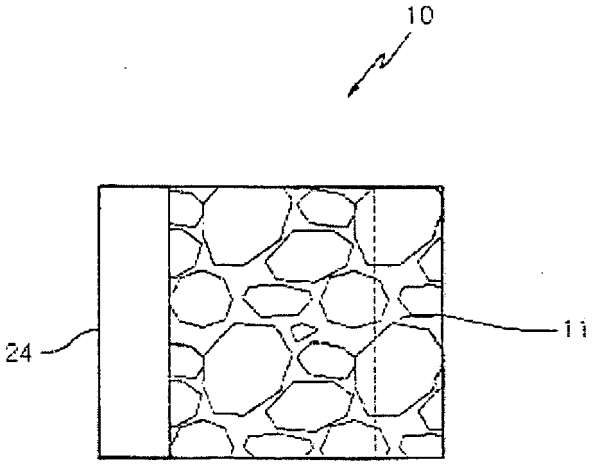


Fig. 3

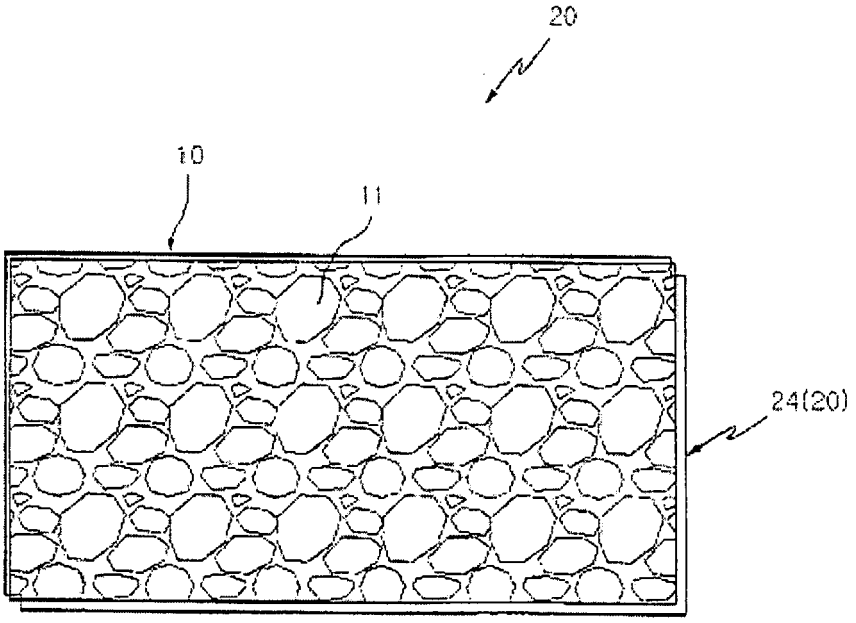


Fig. 4

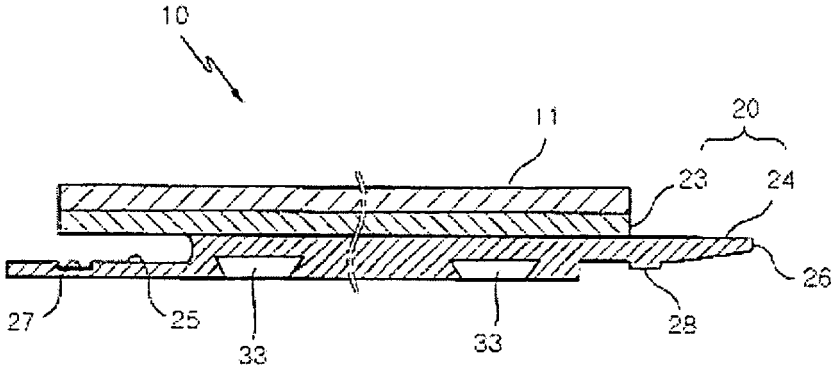
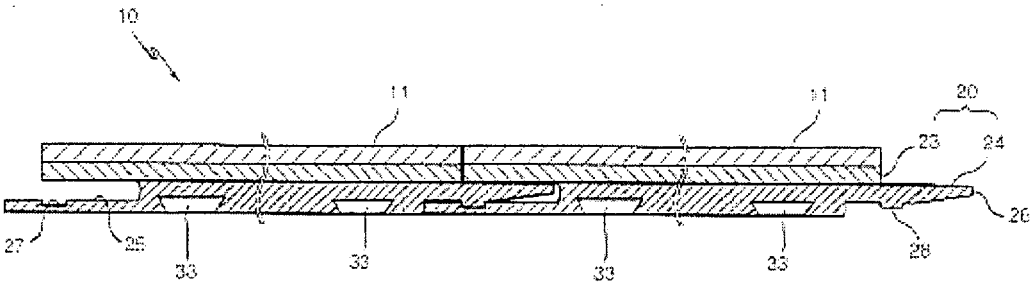


Fig. 5



REFERENCES CITED IN THE DESCRIPTION

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- KR 200619824 **[0006]**