CLAIMS

What is claimed is:

1. A layered cement board comprising:

a plurality of polymeric fabric layers comprising a first polymeric fabric layer and a second polymeric fabric layer; and

a plurality of cement layers comprising a first cement layer and a second cement layer,

wherein the ~~plurality of~~first polymeric fabric layer~~layers being~~ is interlaid between the first cement layer and the second cement layer ~~plurality of cement layers~~, and the second polymeric fabric layer is disposed on the second cement layer,~~;~~

wherein the first polymeric fabric layer and the first cement layer are compressed together to form first compressed layers, and the second polymeric fabric layer and the second cement layer are compressed together to form second compressed layers on the first compressed layers, and

wherein the plurality of polymeric fabric layers are substantially chemically inert in an alkaline environment of about 12-14 pH.

2. The layered cement board of claim 1, wherein the plurality of polymeric fabric layers comprise any one of a polyolefin fabric layer, a thermoplastic polymer fabric layer, or a polyamide fabric layer.

3. The layered cement board of claim 1 or 2, wherein the plurality of polymeric fabric layers comprise any one of a polypropylene fabric layer, a polyethylene fabric layer, a polytetrafluoroethylene fabric layer, a polyvinyl chloride fabric layer or an acrylic fabric layer.

4. The layered cement board of any one of the preceding claims, further comprising ~~at least two~~a third cement layer~~layers~~.

5. The layered cement board of ~~any one of the preceding claims~~claim 4, further comprising ~~at least two~~ a third polymeric fabric layer~~layers~~.

6. The layered cement board of ~~any one of the preceding claims~~claim 5, ~~further comprising three polymeric fabric layers being~~wherein the second polymeric fabric layer is interlaid between ~~three cement layers~~the second cement layer and the third cement layer.

7. The layered cement board of any one of the preceding claims, further comprising a ~~fiber~~ mesh layer provided in or on ~~in any~~ one of the cement layers and ~~between an overlaid~~ under a corresponding one of the plurality of polymeric fabric ~~layer~~layers disposed on said one of the cement layers.

8. The layered cement board of any one of ~~the preceding~~ claims 1 to 6, further comprising ~~two fiber~~a first mesh layer~~layers, one~~ provided in or on the first cement layer and under the first polymeric fabric layer, and a second mesh layer provided in or on the third cement layer and under the third polymeric fabric layer~~a top most cement layer of the layered cement board, and another in a bottom most cement layer of the layered cement board~~.

9. A method of manufacturing a layered cement board, comprising:

providing a base panel;

depositing a first layer of cement on the base panel, the first layer of cement arranged to be vertically deposited onto the base panel;

overlaying the first layer of cement with a first polymeric fabric layer;

compressing the first layer of cement and the first polymeric fabric layer together with a first set of rollers to form first compressed layers;

depositing a second layer of cement on the first ~~polymeric fabric layer~~compressed layers and overlaying the second layer of cement with a second polymeric fabric layer; and

compressing the ~~interlaid layers~~second layer of cement and the second polymeric fabric layer together with a second set of rollers to form second compressed layers on the first compressed layers~~base panel with a set of rollers~~;

wherein the polymeric fabric layers are substantially chemically inert in an alkaline environment of about 12-14.

10. The method of claim 9, further comprising:

depositing a third layer of cement on the second ~~polymeric fabric layer~~ compressed layers and overlaying the third layer of cement with a third polymeric fabric layer.

11. The method of claim 9 or 10, further comprising: overlaying the first layer of cement with a ~~fiber~~ mesh layer prior to overlaying the first layer of cement with the first polymeric fabric layer.

12. The method of claim 10, further comprising: overlaying the third layer of cement with a ~~fiber~~ mesh layer prior to overlaying the third layer of cement with the third polymeric fabric layer.

13. The method of any one of claims 9 to 12, wherein ~~further comprising compressing the interlaid~~the compressed layers ~~of cement and polymeric fabric~~ on the base panel ~~with a set of rollers~~ are compressed to together provide an output thickness ~~determined~~ in the range of 7 to 25 mm.

14. The method of any one of claims 9 to 12, ~~further comprising compressing~~ wherein the first compressed layers ~~layer of cement and the first polymeric fabric layer with a first set of rollers~~are compressed to provide an output thickness ~~determined~~ in the range of 2 to 12 mm.

15. The method of any one of claims 9 to 14, further comprising introducing a starch ether additive to a cement mixture for providing ~~any~~the first layer of cement, the second layer of cement, and/or the third layer of cement in the layered cement board.

16. The method of any one of claims 9 to 15, wherein the base panel comprises a fiberglass reinforced plastic panel.

17. The method of claim 16, wherein the ~~base panel comprises a~~ fiberglass reinforced plastic ~~sandwich~~ panel is a fiberglass reinforced plastic sandwich panel.

18. The method of claim 17, wherein the fiberglass reinforced plastic sandwich panel comprises two panels of fiberglass reinforced plastic provided about a support structure.

19. The method of claim 18, wherein the support structure comprises a honeycomb structure.

20. The method of any one of claims 9 to 19, further comprising carrying out a curing of the ~~overlaid~~ compressed layers ~~of cement and polymeric fabric~~ to remove moisture therefrom ~~from the prepared cement block~~.

21. The method according to claim 20, ~~further comprising~~wherein the curing of the ~~overlaid~~compressed layers ~~of cement and polymeric fabric~~ is performed under standard ambient temperature and pressure.

CLAIMS

What is claimed is:

1. A layered cement board comprising:

a plurality of polymeric fabric layers comprising a first polymeric fabric layer and a second polymeric fabric layer; and

a plurality of cement layers comprising a first cement layer and a second cement layer,

wherein the first polymeric fabric layer is interlaid between the first cement layer and the second cement layer, and the second polymeric fabric layer is disposed on the second cement layer,

wherein the first polymeric fabric layer and the first cement layer are compressed together to form first compressed layers, and the second polymeric fabric layer and the second cement layer are compressed together to form second compressed layers on the first compressed layers, and

wherein the plurality of polymeric fabric layers are substantially chemically inert in an alkaline environment of about 12-14 pH.

2. The layered cement board of claim 1, wherein the plurality of polymeric fabric layers comprise any one of a polyolefin fabric layer, a thermoplastic polymer fabric layer, or a polyamide fabric layer.

3. The layered cement board of claim 1 or 2, wherein the plurality of polymeric fabric layers comprise any one of a polypropylene fabric layer, a polyethylene fabric layer, a polytetrafluoroethylene fabric layer, a polyvinyl chloride fabric layer or an acrylic fabric layer.

4. The layered cement board of any one of the preceding claims, further comprising a third cement layer.

5. The layered cement board of claim 4, further comprising a third polymeric fabric layer.

6. The layered cement board of claim 5, wherein the second polymeric fabric layer is interlaid between the second cement layer and the third cement layer.

7. The layered cement board of any one of the preceding claims, further comprising a mesh layer provided in or on one of the cement layers and under a corresponding one of the plurality of polymeric fabric layers disposed on said one of the cement layers.

8. The layered cement board of any one of claims 1 to 6, further comprising a first mesh layer provided in or on the first cement layer and under the first polymeric fabric layer, and a second mesh layer provided in or on the third cement layer and under the third polymeric fabric layer.

9. A method of manufacturing a layered cement board, comprising:

providing a base panel;

depositing a first layer of cement on the base panel, the first layer of cement arranged to be vertically deposited onto the base panel;

overlaying the first layer of cement with a first polymeric fabric layer;

compressing the first layer of cement and the first polymeric fabric layer together with a first set of rollers to form first compressed layers;

depositing a second layer of cement on the first compressed layers and overlaying the second layer of cement with a second polymeric fabric layer; and

compressing the second layer of cement and the second polymeric fabric layer together with a second set of rollers to form second compressed layers on the first compressed layers;

wherein the polymeric fabric layers are substantially chemically inert in an alkaline environment of about 12-14.

10. The method of claim 9, further comprising:

depositing a third layer of cement on the second compressed layers and overlaying the third layer of cement with a third polymeric fabric layer.

11. The method of claim 9 or 10, further comprising: overlaying the first layer of cement with a mesh layer prior to overlaying the first layer of cement with the first polymeric fabric layer.

12. The method of claim 10, further comprising: overlaying the third layer of cement with a mesh layer prior to overlaying the third layer of cement with the third polymeric fabric layer.

13. The method of any one of claims 9 to 12, wherein the compressed layers on the base panel are compressed to together provide an output thickness in the range of 7 to 25 mm.

14. The method of any one of claims 9 to 12, wherein the first compressed layers are compressed to provide an output thickness in the range of 2 to 12 mm.

15. The method of any one of claims 9 to 14, further comprising introducing a starch ether additive to a cement mixture for providing the first layer of cement, the second layer of cement, and/or the third layer of cement in the layered cement board.

16. The method of any one of claims 9 to 15, wherein the base panel comprises a fiberglass reinforced plastic panel.

17. The method of claim 16, wherein the fiberglass reinforced plastic panel is a fiberglass reinforced plastic sandwich panel.

18. The method of claim 17, wherein the fiberglass reinforced plastic sandwich panel comprises two panels of fiberglass reinforced plastic provided about a support structure.

19. The method of claim 18, wherein the support structure comprises a honeycomb structure.

20. The method of any one of claims 9 to 19, further comprising carrying out a curing of the compressed layers to remove moisture therefrom.

21. The method according to claim 20, wherein the curing of the compressed layers is performed under standard ambient temperature and pressure.