CLAIMS

1. A panel comprising a plasterboard, the plasterboard having a backing lamina attached to one of the faces thereof, the plasterboard comprising a gypsum matrix having fibres embedded therein in an amount of at least 1 wt% relative to the gypsum.

2. A panel according to claim 1, wherein the gypsum matrix further comprises a starch additive, the starch additive being present in an amount of at least 1 wt% relative to the gypsum.

3. A panel according to claim 2, wherein the starch additive is present in the gypsum matrix of the plasterboard in an amount of at least 2 wt% relative to the gypsum.

4. A panel according to any one of the preceding claims, wherein the fibres are present in the gypsum matrix of the plasterboard in an amount of at least 2 wt% relative to the gypsum.

5. A panel according to any one of the preceding claims, in which the fibres are selected from a group comprising glass fibres, wood fibres, fibres derived from wood (such as regenerated cellulose fibres), and mixtures thereof.

6. A panel according to claim 5, wherein the fibres are regenerated cellulose fibres and further wherein the average length of the fibres lies in the range 0.1-0.5 mm and / or the average diameter of the fibres is below 20 micron.

7. A panel according to any one of claims 1-6, wherein the fibres are present within the board in the form of particles of agglomerated fibres, such as paper particles or wood particles.

8. A panel according to claim 7, wherein the maximum dimension of the particles is in the range 0.5-3 mm and / or the average length of the fibres within the particles is in the range 1-15 mm and / or the average diameter of the fibres within the particles is in the range 1-50 micron.

9. A panel according to claim 5, wherein the fibres are glass fibres and further wherein the average length of the fibres lies in the range 10-50 mm and / or the average diameter of the fibres lies in the range 5-50 micron.

10. A panel according to claim 5, wherein the fibres are glass fibres and further wherein the average length of the fibres lies in the range 10-50 mm and / or the average diameter of the fibres lies in the range 20-80 micron.

11. A panel according to any one of claims 2-10, wherein the starch is a non-migratory starch.

12. A panel according to claim 11, wherein the starch is selected from the group comprising: dextrin, pre-gelatinised starch, substituted starch, and starch having a Brookfield viscosity of less than 60 cps at a temperature below 60°C and a Brookfield viscosity greater than 10,000 cps at a temperature of 70°C.

13. A panel according to claim 11 or 12, wherein the starch is a substituted starch and the substituent group is an ether substituent group or an ester substituent group.

14. A panel according to any one of the preceding claims, wherein the lamina comprises substantially a material selected from the group comprising: PVC, HDPE, Nylon, polycarbonate, Bakelite, polypropylene, acetal, and fibreglass.

15. A panel according to any one of the preceding claims, wherein the lamina has a thickness of at least 1 mm.

16. A plasterboard comprising a gypsum matrix having fibres embedded therein in an amount of at least 1 wt% relative to the gypsum, the gypsum matrix further comprising a polymeric additive, the polymeric additive being present in an amount of at least 1 wt% relative to the gypsum.

17. A plasterboard according to claim 16, wherein the fibres are present in an amount of at least 3 wt% relative to the gypsum, and the polymeric additive is present in an amount of at least 3 wt% relative to the gypsum.

18. A plasterboard according to claim 16 or claim 17, wherein the polymeric additive is selected from group comprising polyvinyl acetate, poly vinyl acetate-ethylene co-polymer, polyvinyl pyrrolidone crosslinked with polystyrene sulfonate, polyvinyl alcohol, methyl cellulose, hydroxyethyl methyl cellulose, styrene-butadiene copolymer latex, acrylic ester latex, acrylic copolymer latex, polyester resin, epoxy resin, polymethyl methacrylate, polyacrylic acid, cationic starch, ethylated starch, dextrin and mixtures thereof.

19. A plasterboard according to any one of claims 16 to 18, wherein the polymeric additive is a starch.

20. A plasterboard according to claim 19, wherein the starch is a migratory starch.

21. A plasterboard according to claim 19, wherein the starch is an acid-thinned starch.

22. A plasterboard according to any one of claims 19-21, wherein the starch is a native starch.

23. A plasterboard according to any one of claims 16 to 22, wherein the fibres are glass fibres.

24. A plasterboard according to claim 23, wherein the fibres are 4-10 mm long.

25. A plasterboard according to claim 23 or claim 24, wherein the fibre diameter is in the range 5-50 micron.

26. A method of manufacturing a plasterboard according to any one of claims 19-22, comprising the step of adding starch to a gypsum slurry, wherein the grain size of the starch is less than 40 micron.

27. A method of manufacturing a plasterboard according to any one of claims 19-22, wherein the plasterboard is dried at a temperature in the range 140-180°C.

CLAIMS

1. A panel comprising a plasterboard, the plasterboard having a backing lamina attached to one of the faces thereof, the plasterboard comprising a gypsum matrix having fibres embedded therein in an amount of at least 1 wt% relative to the gypsum, in which the lamina has a thickness of at least 1 mm.

2. A panel according to Claim 1, in which the gypsum matrix further comprises a starch additive, the starch additive being present in an amount of at least 1 wt% relative to the gypsum.

3. A panel according to Claim 2, in which the starch additive is present in the gypsum matrix of the plasterboard in an amount of at least 2 wt% relative to the gypsum.

4. A panel according to Claim 1, 2 or 3, in which the fibres are present in the gypsum matrix of the plasterboard in an amount of at least 2 wt% relative to the gypsum.

5. A panel according to any preceding claim, in which the fibres are selected from a group comprising glass fibres, wood fibres, fibres derived from wood (such as regenerated cellulose fibres), and mixtures thereof.

6. A panel according to Claim 5, in which the fibres are regenerated cellulose fibres and further in which the average length of the fibres lies in the range 0.1-0.5 mm and / or the average diameter of the fibres is below 20 micron.

7. A panel according to any preceding claim, in which the fibres are present within the board in the form of particles of agglomerated fibres, such as paper particles or wood particles.

8. A panel according to Claim 7, in which the maximum dimension of the particles is in the range 0.5-3 mm and / or the average length of the fibres within the particles is in the range 1-15 mm and / or the average diameter of the fibres within the particles is in the range 1-50 micron.

9. A panel according to Claim 5, in which the fibres are glass fibres and further in which the average length of the fibres lies in the range 10-50 mm and / or the average diameter of the fibres lies in the range 5-50 micron.

10. A panel according to Claim 5, in which the fibres are glass fibres and further in which the average length of the fibres lies in the range 10-50 mm and / or the average diameter of the fibres lies in the range 20-80 micron.

11. A panel according to any of Claims 2 to 10, in which the starch is a non-migratory starch.

12. A panel according to Claim 11, in which the starch is selected from the group comprising: dextrin, pre-gelatinised starch, substituted starch, and starch having a Brookfield viscosity of less than 60 cps at a temperature below 60°C and a Brookfield viscosity greater than 10,000 cps at a temperature of 70°C.

13. A panel according to Claim 11 or 12, in which the starch is a substituted starch and the substituent group is an ether substituent group or an ester substituent group.

14. A panel according to any preceding claim, in which the lamina comprises substantially a material selected from the group comprising: PVC, HDPE, Nylon, polycarbonate, Bakelite, polypropylene, acetal, and fibreglass.