CLAIMS

1. A building panel, comprising a surface layer (5) and a core (6), the core comprises wood fibres (14'), wherein the surface layer (5) comprises a substantially homogenous mix comprised of wood fibres (14), a binder (19) and wear resistant particles (12), wherein the wood fibres (14) in the surface layer (5) are unrefined and comprise natural resins such as lignin,

wherein the panel is a floor panel comprising a balancing layer (7),

wherein the binder (19) is a thermosetting resin,

wherein the wear resistant particles (12) comprise aluminium oxide and wherein aluminium oxide particles (12') are in direct contact with an upper part of the core (6).

2. The building panel as claimed in claim 1, wherein the core (6) is a board, e.g. a HDF or a particleboard, wherein the surface layer (5) further comprises colour pigments (15) and wherein the wood fibres (14) in the surface layer (5) comprise fibres of the same material type as in the core (6).

3. The building panel as claimed claim 1 or 2, wherein the binder (19) comprises a melamine resin.

4. The building panel as claimed in claim 3 wherein the wear resistant particles (12) are bonded to the wood fibres (14) in the surface layer (5) with the melamine resin.

5. The building panel as claimed in any one of claims 1 - 4, wherein the surface layer (5) comprises a vertical portion (P) with three horizontal planes (H1, H2, H3) extending parallel with the main plane of the panel (1) wherein a first upper plane (H1) located in an upper part of the surface layer (5) comprises a first aluminium oxide particle (12), a second intermediate plane (H2) located under the first aluminium oxide particle (12) comprising wood

and a third lower plane (H3) under the second plane (H2) comprising a second aluminium oxide particle (12').

6. The building panel as claimed in any one of the preceding claims, wherein the weight content of the aluminium oxide particles in the surface layer (5) is in the range of about 5 % to about 30% of the total weight of the surface layer.

7. The building panel as claimed in any one of the preceding claims, wherein the weight content of the aluminium oxide particles in the surface layer (5) is at least 100 gram/m2.

8. The building panel as claimed in any one of the preceding claims, wherein the core (6) is HDF.

9. The building panel as claimed in any one of the preceding claims , wherein the core (6) is a particleboard.

10. The building panel as claimed in any one of the preceding claims, wherein the surface layer (5) further comprises a print that extends into the surface below the upper wear resistant particles (12).

11. The building panel as claimed in any one of the preceding claims, wherein the surface layer (5) comprises brushed portions with different fibre structures.

12. The building panel as claimed in any one of the preceding claims, wherein the surface layer (5) comprises brushed portions with different wear resistance.

13. The building panel as claimed in any one of the preceding claims, wherein the surface layer (5) wood fibres (14) are essentially smaller than 1 mm.

14. The building panel as claimed in any one of the preceding claims, wherein the surface layer (5) comprise wood fibres (14) in powder form which are essentially smaller than 0,5 mm.

15. The building panel as claimed in any one of the preceding claims, wherein a panel edge comprises a mechanical locking system (4,4') for locking of the panel with similar other panels and wherein such locking system is formed in the core (6).

16. A method of manufacturing a building panel (1) with a decorative surface layer comprising the steps of:

- dry mixing of particles comprising wood fibres (14) comprising natural resins, binders of thermosetting resin (19), colour pigments (15) and small wear resistant particles (12) of aluminium oxide to obtain a dry mix
- applying the dry mix directly onto a core (6) comprising a wood fibre based board, and
- bringing the dry mix under high pressure and temperature thereby forming it to a decorative surface layer of the building panel.

17. The method as claimed in claim 16, wherein the panel is a floor panel.

18. The method as claimed in claim 17, wherein the wood fibre based board is HDF.

19. The method as claimed in claim 18, wherein the wood fibre based board is a particleboard.

20. The method as claimed in any one of claims 16-19, wherein the method further comprises a pre pressing prior to the final pressing.

21. The method as claimed in any one of claims 16-20, wherein the method further comprises a printing operation prior to the final pressing.

22. The method as claimed in any one of claim 16-21, wherein the method comprises a machining operation comprising forming the building panel to a floor panel (1) with mechanical locking systems (4, 4') at opposite edges.

23. A method as claimed in claim 16 wherein the method further comprises the steps of:

- arranging said core layer (6) on a balancing layer (7) comprising wood fibres and a binder,
- applying heat and pressure to the three layers comprising the surface layer, the core (6) and the balancing layer (7).

24. The method as claimed in claim 23 wherein the method comprises applying a balancing layer (7) that has a higher density than the core layer (6).

25. The method as claimed in any one of claim 16-24, wherein aluminium oxide particles (12') of the dry mix are in direct contact with an upper part of the core (6).

26. A building panel, comprising a surface layer (5) and a core (6), the core comprises wood fibres (14), wherein the surface layer (5) comprises a substantially homogenous mix of wood fibres (14), which comprise natural resins, a binder (19) and wear resistant particles (12), wherein the panel is a floor panel comprising a balancing layer (7), wherein the binder (19) is a thermosetting resin, wherein the wear resistant particles (12) comprise aluminium oxide, wherein he surface layer (5) comprises a vertical portion (P) with three horizontal planes (H1, H2, H3) extending parallel with the main plane of the panel (1), wherein a first upper plane (H1) located in an upper part of the surface layer (5) comprises a first aluminium oxide particle (12), a

second intermediate plane (H2) located under the first aluminium oxide particle (12) comprising wood and a third lower plane (H3) under the second plane (H2) comprising a second aluminium oxide particle (12') and wherein aluminium oxide particles (12') are in direct contact with an upper part of the core (6).

CLAIMS

1. A method of manufacturing a building panel comprising the steps of:

mechanically mixing wood fibres with a binder and wear resistant particles into a mix; and

bringing the mix, including the wood fibres, the binder and the wear resistant particles, under heat and pressure, thereby forming a building panel.

2. The method as claimed in claim 1, wherein the building panel is a floor panel.

3. The method as claimed in claim 1, wherein the binder is a thermoplastic resin.

4. The method as claimed in claim 1, wherein the binder is a thermosetting resin.

5. The method as claimed in claim 1, wherein the wear resistant particles comprise aluminium oxide.

6. The method as claimed in claim 1, wherein the method further comprises the step of applying the mix on a core comprising a wood fibre based board.

7. The method as claimed in claim 6, wherein the wood fibre based board is HDF.

8. The method as claimed in claim 6, wherein the wood fibre based board is a particleboard.

9. The method as claimed in claim 1, wherein the method further comprises a pre pressing prior to the final pressing.

10. The method as claimed in claim 1, wherein the method further comprises a printing operation prior to the final pressing.

11. The method as claimed in claim 1, wherein the method comprises a machining operation comprising forming the building panel to a floor panel with mechanical locking systems at opposite edges.

12. A method as claimed in claim 1, wherein the method further comprises the steps of:

arranging the mix on a core layer comprising wood fibres and a binder;

arranging said core layer on a balancing layer comprising wood fibres and a binder; and

applying heat and pressure to the three layers comprising the mix, the core and the balancing layer.

13. The method as claimed in claim 12 wherein the balancing layer has a higher density than the core layer.

14. The method as claimed in claim 12, wherein the binder is a thermosetting resin and the wear resistant particles comprise aluminium oxide.

15. The method as claimed in claim 1, wherein the wood fibres, the binder, and the wear resistant particles are in dry form.

16. The method as claimed in claim 1, wherein the mix is in powder form.

17. The method as claimed in claim 1, wherein the step of mixing comprises mixing the mix into a homogenous mix.

18. The method as claimed in claim 1, wherein the mix further comprises colour pigments.

19. The method as claimed in claim 6, wherein the mix forms a surface layer on said core.

20. The method as claimed in claim 10, wherein the printing operation is performed by an ink jet printer.

21. The method as claimed in claim 1, wherein the wood fibres are in powder form.

22. A method of manufacturing a building panel comprising the steps of:

mixing wood fibres with a binder and wear resistant particles into a mix,

applying the mix on a core, and

bringing the mix, including the fibres, the binder and the wear resistant particles, under heat and pressure, thereby the mix forms a surface layer on the core.

23. A method of manufacturing a building panel comprising the steps of:

mechanically mixing fibres with a binder and wear resistant particles into a mix, and

bringing the mix, including the fibres, the binder and the wear resistant particles, under heat and pressure, thereby forming a building panel.