CLAIMS:

1. A cementitious composite product having stone-like properties, the product comprising an extrudable cementitious composition comprised of a hydraulic cement, aggregate, a rheology-modifying agent being selected from the group consisting of methylhydroxyethylcellulose, hydroxymethylethylcellulose, carboxymethylcellulose, methylcellulose, ethylcellulose, hydroxyethylcellulose, hydroxypropylcellulose, amylpectin, amulose, seagel, starch acetates, starch hydroxyethers, ionic starches, long chain alkylstarches, dextrins, amine starches, phosphate starches, dialdehyde starches, alginic acid, phycocolloids, agar, gum Arabic, guar gum, locust bean gum, gum karaya, gum tragacanth, collagens, caseins, biopolymers, biopolyesters, petroleum-based polymers, latexes, biodegradable polymers, polyvinyl chloride, polyvinyl alcohol, and polyvinyl acetate, clay, and combinations thereof, and from about 1.5% (by volume of the extrudable cementitious composition) to about 5.0% (by volume of the extrudable cementitious composition) cellulose fibers and from about 1.5% (by volume of the extrudable cementitious composition) to about 3.5% (by volume of the extrudable cementitious composition) polyvinyl alcohol fibers, the fibers substantially homogeneously distributed through the extrudable cementitious composition, wherein the cementitious composite product has a Moh's hardness value of at least 4 and a bulk density of ~~at~~ from about 1.3 g/cm^3 to about 2.3 g/cm^3.

2. The cementitious composite product as set forth in claim 1, wherein the extrudable cementitious composition comprises fine aggregate and coarse aggregate.

3. The cementitious composite product as set forth in claim 1, wherein fibers are included in an amount of from about 3% to about 20% (by volume of the extrudable cementitious composition).

4. The cementitious composite product as set forth in claim 1, wherein the fibers have an aspect ratio of at least about 10:1.

5. The cementitious composite product as set forth in claim 1, wherein the rheology-modifying agent is included in an amount of from about 0.1% (by volume of the extrudable cementitious composition) to about 4% (by volume of the extrudable cementitious composition).

6. The cementitious composite product as set forth in claim 1, wherein the cementitious composite product has a Moh's hardness value of at least about 5.

7. The cementitious composite product as set forth in claim 1, wherein the cementitious composite product has a compressive strength of at least about 6,000 psi.

8. The cementitious composite product as set forth in claim 1, wherein the cementitious composite product has a compressive strength of at least about 8,000 psi.

9. The cementitious composite product as set forth in claim 1, wherein the cementitious composite product has a compressive strength of at least about 10,000 psi.

10. The cementitious composite product as set forth in claim 1, wherein the cementitious composite product has a flexural strength of at least about 1,500 psi.

11. The cementitious composite product as set forth in claim 1, wherein the cementitious composite product has a flexural strength of at least about 4,000 psi.

12. The cementitious composite product as set forth in claim 1, wherein the cementitious composite product has a flexural strength of about 5,700 psi and a bulk density of from about 1.6 g/cm^3 to about 1.7 g/cm^3.

13. The cementitious composite product as set forth in claim 1 comprising no reinforcing member.

14. The cementitious composite product as set forth in claim 1, further comprising at least one admixture in the extrudable concrete composition, wherein the admixture is selected from the group consisting of set accelerators, air entraining agents, strength enhancing amines and other strengtheners, dispersants, water reducers, superplasticizers, water binding agents, viscosity modifiers, corrosion inhibitors, pigments, wetting agents, water soluble polymers, water repellents, permeability reducers, finely divided mineral admixtures, nucleating agents, volatile solvents, salts, buffering agents, acidic agents, coloring agents, and mixtures thereof.

15. The cementitious composite product as set forth in claim 1, wherein the cementitious composite product is capable for use in a countertop, tile, cladding, and roofing tile.

16. A method for manufacturing a cementitious composite product having stone-like properties, the method comprising:

mixing together water, fibers and a rheology-modifying agent being selected from the group consisting of methylhydroxyethylcellulose, hydroxymethylethylcellulose, carboxymethylcellulose, methylcellulose, ethylcellulose, hydroxyethylcellulose, hydroxypropylcellulose, amylpectin, amulose, seagel, starch acetates, starch hydroxyethers, ionic starches, long chain alkylstarches, dextrins, amine starches, phosphate starches, dialdehyde starches, alginic acid, phycocolloids, agar, gum Arabic, guar gum, locust bean gum, gum karaya, gum tragacanth, collagens, caseins, biopolymers, biopolyesters,

petroleum-based polymers, latexes, biodegradable polymers, polyvinyl chloride, polyvinyl alcohol, and polyvinyl acetate, clay, and combinations thereof to form a fibrous mixture in which the fibers are substantially homogeneously dispersed;

adding a mix of hydraulic cement and aggregate to the fibrous mixture to yield an extrudable cementitious composition having a plastic consistency and which includes from about 1.5% (by volume of the extrudable cementitious composition) to about 5.0% (by volume of the extrudable cementitious composition) cellulose fibers and from about 1.5% (by volume of the extrudable cementitious composition) to about 3.5% (by volume of the extrudable cementitious composition) polyvinyl alcohol fibers;

extruding the extrudable cementitious composition into a green intermediate extrudate having a predefined cross-sectional area, the extrudate being form-stable upon extrusion and capable of retaining substantially the cross-sectional area so as to permit handling without breakage; and

causing or allowing the hydraulic cement to cure to form the cementitious composite product, wherein the cementitious composite product has a Moh's hardness value of at least 4 and a bulk density of from about 1.3 g/cm^3 to about 2.3 g/cm^3.

17. The method as set forth in claim 16, wherein the extrudable cementitious composition comprises fine aggregate and coarse aggregate.

18. The method as set forth in claim 16, wherein fibers are included in an amount of from about 3% to about 20% (by volume of the extrudable cementitious composition).

19. The method as set forth in claim 16, wherein the extrudable cementitious composition comprises from about 0.1% (by volume of the extrudable cementitious composition) to about 4% (by volume of the extrudable cementitious composition) rheology-modifying agent.

20. The method as set forth in claim 16, wherein the cementitious composite product has a Moh's hardness value of at least about 5.

21. The method as set forth in claim 16, wherein the cementitious composite product has a compressive strength of at least about 6,000 psi.

22. The method as set forth in claim 16, wherein the cementitious composite product has a compressive strength of at least about 8,000 psi.

23. The method as set forth in claim 16, wherein the cementitious composite product has a compressive strength of at least about 10,000 psi.

24. The method as set forth in claim 16, wherein the cementitious composite product has a flexural strength of at least about 1,500 psi.

25. The method as set forth in claim 16, wherein the cementitious composite product has a flexural strength of at least about 4,000 psi.

26. The method as set forth in claim 16, wherein the cementitious composite product has a flexural strength of about 5,700 psi and a bulk density of from about 1.6 g/cm^3 to about 1.7 g/cm^3.

27. The method as set forth in claim 16, wherein the cementitious composite product comprises no reinforcing member.

28. The method as set forth in claim 16, further comprising adding at least one admixture to the fibrous mixture, wherein the admixture is selected from the group consisting of set accelerators, air entraining agents, strength enhancing amines and other strengtheners, dispersants, water reducers, superplasticizers, water binding agents, viscosity modifiers, corrosion inhibitors, pigments, wetting agents, water soluble polymers, water repellents, permeability reducers, finely divided mineral admixtures, nucleating agents, volatile solvents, salts, buffering agents, acidic agents, coloring agents, and mixtures thereof.

29. The method as set forth in claim 16, wherein the cementitious composite product is capable of use in a countertop, tile, cladding, and roofing tile.

WHAT IS CLAIMED IS:

1. A cementitious composite product having stone-like properties, the product comprising an extrudable cementitious composition comprised of a hydraulic cement, aggregate, a rheology-modifying agent, and fibers substantially homogeneously distributed through the extrudable cementitious composition and included in an amount greater than about 2% (by volume of the extrudable cementitious composition), wherein the cementitious composite product has a hardness value of at least 4 MOH and a bulk density of at from about 1.3 g/cm^3 to about 2.3 g/cm^3.

2. The cementitious composite product as set forth in claim 1, wherein the extrudable cementitious composition comprises fine aggregate and coarse aggregate.

3. The cementitious composite product as set forth in claim 1, wherein fibers are included in an amount of from about 3% to about 20% (by volume of the extrudable cementitious composition).

4. The cementitious composite product as set forth in claim 1, wherein fibers comprise cellulose fibers and polyvinyl alcohol fibers.

5. The cementitious composite product as set forth in claim 4, wherein the extrudable cementitious composition comprises from about 1.5% (by volume of the extrudable cementitious composition) to about 5.0% (by volume of the extrudable cementitious composition) cellulose fibers and from about 1.5% (by volume of the extrudable cementitious composition) to about 3.5% (by volume of the extrudable cementitious composition) polyvinyl alcohol fibers.

6. The cementitious composite product as set forth in claim 1, wherein the rheology-modifying agent is included in an amount of from about 0.1% (by volume of the extrudable cementitious composition) to about 4% (by volume of the extrudable cementitious composition).

7. The cementitious composite product as set forth in claim 1, wherein the cementitious composite product has a hardness value of at least about 5 MOH.

8. The cementitious composite product as set forth in claim 1, wherein the cementitious composite product has a compressive strength of at least about 6,000 psi.

9. The cementitious composite product as set forth in claim 1, wherein the cementitious composite product has a compressive strength of at least about 8,000 psi.

10. The cementitious composite product as set forth in claim 1, wherein the cementitious composite product has a compressive strength of at least about 10,000 psi.

11. The cementitious composite product as set forth in claim 1, wherein the cementitious composite product has a flexural strength of at least about 1,500 psi.

12. The cementitious composite product as set forth in claim 1, wherein the cementitious composite product has a flexural strength of at least about 4,000 psi.

13. The cementitious composite product as set forth in claim 1, wherein the cementitious composite product has a flexural strength of about 5,700 psi and a bulk density of from about 1.6 g/cm^3 to about 1.7 g/cm^3.

14. The cementitious composite product as set forth in claim 1 comprising no reinforcing member.

15. The cementitious composite product as set forth in claim 1, further comprising at least one admixture in the extrudable concrete composition, wherein the admixture is selected from the group consisting of set accelerators, air entraining agents, strength enhancing amines and other strengtheners, dispersants, water reducers, superplasticizers, water binding agents, viscosity modifiers, corrosion inhibitors, pigments, wetting agents, water soluble polymers, water repellents,

permeability reducers, finely divided mineral admixtures, nucleating agents, volatile solvents, salts, buffering agents, acidic agents, coloring agents, and mixtures thereof.

16. The cementitious composite product as set forth in claim 1, wherein the cementitious composite product is capable for use in a countertop, tile, cladding, and roofing tile.

17. A method for manufacturing a cementitious composite product having stone-like properties, the method comprising:

mixing together water, fibers and a rheology-modifying agent to form a fibrous mixture in which the fibers are substantially homogeneously dispersed;

adding a mix of hydraulic cement and aggregate to the fibrous mixture to yield an extrudable cementitious composition having a plastic consistency and which includes fiber at a concentration greater than about 2% by volume of extrudable cementitious composition;

extruding the extrudable cementitious composition into a green intermediate extrudate having a predefined cross-sectional area, the extrudate being form-stable upon extrusion and capable of retaining substantially the cross-sectional area so as to permit handling without breakage; and

causing or allowing the hydraulic cement to cure to form the cementitious composite product, wherein the cementitious composite product has a hardness value of at least 4 MOH and a bulk density of from about 1.3 g/cm^3 to about 2.3 g/cm^3.

18. The method as set forth in claim 17, wherein the extrudable cementitious composition comprises fine aggregate and coarse aggregate.

19. The method as set forth in claim 17, wherein fibers are included in an amount of from about 3% to about 20% (by volume of the extrudable cementitious composition).

20. The method as set forth in claim 17, wherein fibers comprise cellulose fibers and polyvinyl alcohol fibers.

21. The method as set forth in claim 20, wherein the extrudable cementitious composition comprises from about 1.5% (by volume of the extrudable cementitious composition) to about 5.0% (by volume of the extrudable cementitious composition) cellulose fibers and from about 1.5% (by volume of the extrudable cementitious composition) to about 3.5% (by volume of the extrudable cementitious composition) polyvinyl alcohol fibers.

22. The method as set forth in claim 17, wherein the extrudable cementitious composition comprises from about 0.1% (by volume of the extrudable cementitious composition) to about 4% (by volume of the extrudable cementitious composition) rheology-modifying agent.

23. The method as set forth in claim 17, wherein the cementitious composite product has a hardness value of at least about 5 MOH.

24. The method as set forth in claim 17, wherein the cementitious composite product has a compressive strength of at least about 6,000 psi.

25. The method as set forth in claim 17, wherein the cementitious composite product has a compressive strength of at least about 8,000 psi.

26. The method as set forth in claim 17, wherein the cementitious composite product has a compressive strength of at least about 10,000 psi.

27. The method as set forth in claim 17, wherein the cementitious composite product has a flexural strength of at least about 1,500 psi.

28. The method as set forth in claim 17, wherein the cementitious composite product has a flexural strength of at least about 4,000 psi.

29. The method as set forth in claim 17, wherein the cementitious composite product has a flexural strength of about 5,700 psi and a bulk density of from about 1.6 g/cm^3 to about 1.7 g/cm^3.

30. The method as set forth in claim 17, wherein the cementitious composite product comprises no reinforcing member.

31. The method as set forth in claim 17, further comprising adding at least one admixture to the fibrous mixture, wherein the admixture is selected from the group consisting of set accelerators, air entraining agents, strength enhancing amines and other strengtheners, dispersants, water reducers, superplasticizers, water binding agents, viscosity modifiers, corrosion inhibitors, pigments, wetting agents, water soluble polymers, water repellents, permeability reducers, finely divided mineral admixtures, nucleating agents, volatile solvents, salts, buffering agents, acidic agents, coloring agents, and mixtures thereof.

32. The method as set forth in claim 17, wherein the cementitious composite product is capable of use in a countertop, tile, cladding, and roofing tile.