CLAIMS:

1. An article of manufacture comprising a compressed mixture of

(a) particulates comprising a blend of (i) clay material comprising at least one clay mineral having a plasticity index above about 20% and liquid limit above about 40%, as determined according to ASTM4318 and (ii) water insoluble inorganic material and

(b) fibrous material;

wherein a sample of said article of manufacture is characterized by at least one of

- a shape parameter of said water insoluble inorganic material within a range of 0.24 and 0.33;
- flexural strength of at least 7MPa when measured according to ASTM C99;
- compressive strength of at least 30MPa when measured according to ASTMC170 on a cubic sample of said article of manufacture;
- compressive strength of at least 3 MPa when measured according to EN 772-1 for air-dried specimens, on said sample having a shape of a hollowed masonry block;
- elastic modulus of between 2.5GPa and 15GPa when measured according to ASTMC99;
- a ratio between Ultimate Tensile Strength (UFS) strain to yield point strain of at least 1.2 and a ratio between UFS toughness to yield point toughness of at least 2; and
- inorganic cation content of at least 0.00034wt%.

2. The article of manufacture of claim 1, wherein said clay material constitutes at least 10%v and /or between about 10%v and about 50%v out of a total volume of said article of manufacture as determined by Scanning Electron Microscopy (SEM) equipped with an Energy Dispersive Spectroscopy (EDS) detector.

3. The article of manufacture of claim 1 or 2, wherein said water insoluble inorganic material comprises a natural inorganic material, such as natural inorganic material selected from the group consisting of quartz, limestone, dolomite, chalk, sandstone, shale, pumice,

obsidian, rhyolite, scoria, dacite, granite, gabbro, diabase, diorite, pegmatite, peridotite, basalt, marble, quarzite and any combination of same.

4. The article of manufacture of any one of claims 1 to 3, wherein said insoluble inorganic material comprises recycled matter comprising water insoluble inorganic material.

5. The article of manufacture of any one of claims 1 to 4, wherein the water insoluble inorganic material is in an amount that constitutes at least 50%v and/or between about 50%v and about 90%v out of a total volume of said article of manufacture as determined using SEM equipped with an Energy Dispersive Spectroscopy (EDS) detector.

6. The article of manufacture of any one of claims 1 to 5, wherein said fibrous material comprises natural fibers and/or synthetic fibers, the natural fibers being preferably plant fibers and/or natural fibers comprising at least one of cellulose, hemicellulose and lignocellulose fibers.

7. The article of manufacture of any one of claims 1 to 6, wherein said fibrous material are characterized by at least one of:

- it has a longitudinal dimension of at least 2mm, preferably between 2mm and 30mm;

- it has a tensile strength of at least 400Mpa;

- it is present at a minimum amount of 1% and/or between about 1% and 20% of out of a total volume of the article of manufacture.

8. The article of manufacture of any one of claims 1 to 7, wherein said water insoluble inorganic material has a shape parameter within a range of 0.24 and 0.33.

9. The article of manufacture of any one of claims 1 to 8, having a flexural strength of at least 7MPa.

10. A method for obtaining an article of manufacture, the method comprising:

- placing within a mold a wet mixture comprising

(a) particulates comprising a blend of (i) clay material comprising at least one clay mineral having a plasticity index above 20% and liquid limit above 40% as determined according to ASTM4318 and (ii) water insoluble inorganic material;

(b) fibrous material, and

(c) a liquid comprising inorganic cations, in water; the amount of said liquid being between about 5wt% and 50wt% out of the total weight of particulates and fibrous material;

the liquid being added in an amount to provide said wet mixture with a plasticity of between 8 to 1.15 according to pfefferkorn test;

- subjecting the wet mixture to compression molding under conditions that allow controlled liquid removal out of the wet mixture during application of compression forces onto said wet mixture until reaching at least one of

  - removal of at least 7% of liquid out of a total weight of the wet mixture prior to said compression; and

  - removal of liquid out of a total weight of the wet mixture prior to said compression, until reaching a liquid content in said compressed mixture of less than 15%;

- removing the compressed mixture from the mold to obtain the article of manufacture; and

- optionally, coating said article or manufacture with a sealer.

11. The method of claim 10, wherein said clay material, said water insoluble inorganic material, and said fibrous material are as defined in any one of claims 2 to 10.

12. The method of claim 10 or 11, comprising heating the mold to a temperature of at least about 30ºC prior to placing said wet mixture, preferably between about 30ºC and about 140ºC prior to placing said wet mixture.

13. The method of any one of claims 10 to 12, comprising placing the wet mixture in a mold comprising a porous plate and/or comprising a moisture wicking fabric.

14. The method of any one of claims 10 to 13, comprising applying negative air pressure during at least portions of said compression duration, preferably at a pressure of at least 10 Bar or between 10Bar and about 200 Bar.

15. The method of any one of claims 10 to 14, comprising drying the compressed mixture after extraction from the mold, the drying comprises removal of liquid to a moisture content that is between about 0.1% and 1% out of a total weight of the resulting article of manufacture.