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(54) Title: ARTICLES OF MANUFACTURE AND METHODS OF PRODUCTION

(57) Abstract: The present disclosure relates to articles of manufacture and to methods for obtaining the same, the 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 (i) a shape parameter of said water insoluble inorganic material within a range of 0.24 and 0.33; (ii) flexural strength of at least 7MPa when measured according to ASTM C99; (iii) compressive strength of at least 30MPa when measured according to ASTM C170 on a cubic sample of said article of manufacture; (iv) 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; (v) elastic modulus of between 2.5GPa and 15GPa when measured according to ASTM C99; (vi) 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 (vii) inorganic cation content of at least 0.00034wt%.

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