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6545068

GROUTING COMPOSITIONS

Simmons, Walter John, Barsotti, Domenic Joseph, Gramlich, Phillip Edwin
USA
Assigned to E.I. du Pont de Nemours and Company

A composition is provided which comprises a first component, a second component, and a compressible substance in which the first component comprises a peroxide, a liquid which comprises water, and a solid particulate; and the second component comprises a polymer, a crosslinking agent, and a solid particulate. The composition can further comprises a sugar. Also disclosed is a process that can be used for preventing a grouting composition from becoming limp. The process comprises combining a grouting composition with a compressible substance in which the composition comprises a first component and a second component as disclosed above.

6554894

MASONRY CEMENT COMPOSITION AND METHOD OF MAKING

Styron, Robert William, Basaraba, Richard George, Hicks, James Kenneth
USA
Assigned to Mineral Resource Technologies, LLC

A masonry cement composition is provided which contains a blend of fly ash, Portland cement, a retarding agent, and an air entrainment agent. The masonry cement composition may be formed into a mortar having a high air content which exhibits good compressive strength and does not exhibit efflorescence.

6558461

SET RETARDERS FOR FOAMED CEMENTS

Lebo, Jr., Stuart E. Resch, Shane L
USA
Assigned to Lignotech USA Inc.

An improved non-dispersing set retarder additive for foamed cements, cement compositions containing the additive, and methods of cementing in a subterranean zone penetrated by a well bore are provided. The set retarder additive includes a blend of a sulfonated lignin, preferably a lignosulfonate, with an alkali lignin, preferably a kraft lignin, having an organic sulfur content of 0–3.5% by weight in a ratio of about 6:4–8:2. The methods are basically comprised of the steps of preparing a foamed cement composition comprised of hydraulic cement, a non-dispersing set retarder, sufficient water to form a slurry, sufficient gas to foam the slurry and a foaming and foam stabilizing surfactant present in an amount sufficient to facilitate the formation of the foam and stabilize the foamed cement composition.

6562122

LIGHTWEIGHT WELL CEMENT COMPOSITIONS AND METHODS

Dao, Bach, Ravi, Krishna M, Vijn, Jan Pieter, Noik, Christine, Rivereau, Alain
The Netherlands
Assigned to Halliburton Energy Services Inc.

Lightweight cement compositions and methods of cementing a subterranean zone penetrated by a well bore utilizing the compositions are provided. A lightweight cement composition of the invention is basically comprised of a coarse particulate hydraulic cement, an ultrafine particulate hydraulic cement mixture comprised of slag cement and a Portland or equivalent cement, fly ash, fumed silica, hollow glass spheres and water.

6562229

LOUVERED ANODE FOR CATHODIC PROTECTION SYSTEMS

Burgher, John W, Dong, Dennis F, Loftfield, Richard E
Canada

A metal anode useful in a galvanic or impressed current cathodic protection system for a steel reinforced concrete article is a unitary, multi-plane, porous, metal anode strip or ribbon having a plurality of louvers defining a plane or planes at the lateral extremities of said louvers. In one embodiment, louvers extending in their long dimension longitudinally on the anode strip are spaced apart from adjacent louver units by an intermediate plane. Louvered anode strips consisting of a valve metal or alloy or mixture thereof are useful at an anode current density of up to about 20 milliamps per square foot. Louvered metal anodes comprising an electrocatalytically active coating on a valve metal substrate are useful at higher anode current densities. Sacrificial metal anodes such as zinc anodes are useful in galvanic cathodic protection systems.

6569232

FIBER REINFORCED LIGHT WEIGHT CELLULAR CONCRETE

Castro, Magdiel, Moran, Osvaldo
USA

The present fiber reinforced cellular concrete is produced through a chemical reaction that does not require high heat or pressure ovens (autoclaves). Among its unique features, is the fact that different compression strengths can be obtained by varying the proportion of ingredients and resulting densities. The concrete utilizes a base of a pozzolanic product with aluminum powder, lime, calcium formate, cement, and polypropylene fiber is added, along with water. Expanded shale, clay or slate is added to provide lower shrinkage to the resulting mass reducing cracking. Optionally, sand and compatible reinforcing material can also be added.

6569525

HIGHLY DISPERSIBLE REINFORCING POLYMERIC FIBERS

Rieder, Klaus-Alexander, Berke, Neal S, Macklin, Michael B, Ranganathan, Anandakumar
USA
Assigned to W.R. Grace and Company-Conn.

Synthetic polymer reinforcing fibers provide dispersability and strength in matrix materials such as concrete, masonry, shotcrete, and asphalt. The individual fiber bodies, substantially free of stress fractures and substantially non-fibrillatable, have generally quadrilateral cross-sectional profiles along their elongated lengths.

6569526

HIGHLY DISPERSIBLE REINFORCING POLYMERIC FIBERS

Rieder, Klaus-Alexander, Berke, Neal S, Macklin, Michael B, Ranganathan, Anandakumar, Altoubat, Salah
USA
Assigned to W. R. Grace and Company-Conn.

Synthetic polymer reinforcing fibers provide dispersability and strength in matrix materials such as concrete, masonry, shotcrete, and asphalt. The individual fiber bodies, substantially free of stress fractures and substantially non-fibrillatable, have generally quadrilateral cross-sectional profiles along their elongated lengths. Preferred fibers and matrix materials having such fibers demonstrate excellent finishability in addition to dispersion and toughness properties.

6569923

POLYMER-CEMENT COMPOSITES AND METHODS OF MAKING SAME

Slagter, John T
USA

A polymer-cement composite comprises, by weight percent, about 40% to 50% inert, inorganic filler material, such as silica sand; about 12% to 23% latex, preferably in aqueous suspension; about 20% to 25% hydraulic cement; and about 7% to 13% reactive silica. The reactive silica is a pozzolanic material, and in preferred embodiments, where the cement is portland cement, comprises an advantageous mixture of precipitated and ground silica. All solid components have a particle size of less than about 300 microns. The polymer-cement composite is preferably made by dry mixing of the powdered components throughly in a high intensity mixer, adding the liquid components, and wet mixing to form a thoroughly blended, de-aired green mixture. The green mixture is formed into any desired shape, cured, and dried. Preferably, the product is cured in a warm, moist environment.

6569924

SOLUBILIZED DEFOAMERS FOR CEMENTITIOUS COMPOSITIONS

Shendy, Samy, Bury, Jeffrey R, Luciano, John J, Vickers, Jr, Thomas M
USA
Assigned to MBT Holding AG

Solubilizing agents are mixed with water insoluble defoamers and a dispersant for cementitious compositions to provide an admixture for cementitious compositions that is stable over time. Suitable solubilizing agents include alkoxylated moieties or particles. A cementitious composition is provided that includes cement, water, a water insoluble defoamer, a dispersant for cementitious compositions, and a solubilizing agent that solubilizes the water insoluble defoamer. A method is provided for making a cementitious composition that includes mixing cement, water, a water insoluble defoamer, a dispersant for cementitious compositions, and a solubilizing agent that solubilizes the water insoluble defoamer.

6572697

FIBER CEMENT BUILDING MATERIALS WITH LOW DENSITY ADDITIVES

Gleeson, James A, Paradis, Kalynne H, Sloane, Brian P, Melmeth, David L, Seligman, Dean M
Australia
Assigned to James Hardie Research Pty Limited

This invention relates to a formulation with the addition of low density additives of volcanic ash, hollow ceramic microspheres or a combination of microspheres and volcanic ash or other low density additives into cementitious cellulose fiber reinforced building materials. This formulation is advantageously lightweight or low density compared as compared to current fiber cement products without the increased moisture expansion and freeze-thaw degradation usually associated with the addition of lightweight inorganic materials to fiber cement mixes. The low density additives also give the material improved thermal dimensional stability.

6572698

ACTIVATED ALUMINOSILICATE BINDER

Ko, Suz-Chung
Switzerland
Assigned to International Mineral Technology AG

An activated aluminosilicate binder containing aluminosilicates, calcium sulphate and an activator containing alkali metal salts is disclosed. The aluminosilicates are selected from a group consisting of blast furnace slag, clay, marl and industrial by-products, such as fly ash, and has an Al_2O_3 content greater than 5% by weight. Blast furnace slag is present in an amount less than 35% by weight, and cement kiln dust, in an amount of from 1 to 20% by weight, is added to the mixture as an activator.

6576331

LOAD-CARRYING STRUCTURES COMPRISING BAMBOO FIBERS AND POLYMERS

Ryan, Dale Bradley
USA

Shaped load-carrying structures are fabricated using bamboo linear fibers with a compatible bonding material and synthetic polymers such as polyesters, epoxies, and polyolefins. The structures are manufactured by coating at least one of bamboo culms, split bamboo culms, bamboo fiber tape, or prepared bamboo fibers with a bonding material to produce a core. The core is then combined with a polymer matrix and extruded or molded to form a structure having the desired shape. The structures compare favorably with wood, steel, and concrete regarding strength, longevity, price and ability to withstand earthquakes. The structures may be used as beams, columns, telephone poles, marine piles and pallets.

6548589

CEMENT DISPERSING POLYMERS FOR HIGH FLOW, HIGH STRENGTH AND SELFCOMPACTING CONCRETE

Widmer, Jurg, Sulser, Ueli, Velten, Ulf, Schober, Irene, Burge, Theodor A
Switzerland
Assigned to Sika Schweiz AG

A multipurpose cement dispersing, shrinkage compensating and anticorrosive polymer and an admixture comprising said polymer, which improve the workability and the early strength development of fresh concrete, are described. Said polymer is an ester-and amid group-modified acrylic polymer, obtainable by aqueous solution radical copolymerization of (1) acrylic or methacrylic acid with (2) an acrylic or methacrylic methoxy-polyalkyleneglycolester monomer having 2–300 moles of an oxyalkylene group each having 2–3 carbon atoms, (3) optionally an acrylic or methacrylic methoxy-polyalkyleneglycolamide monomer having 2–300 moles of an oxyalkylene group each having 2–3 carbon atoms, (4) an acrylic or methacrylic ester of a tertiary aminoalkanol and (5) optionally an acrylic amide of a primary or secondary aliphatic, cycloaliphatic or aromatic amine.

6565935

POLYMER CONCRETE STRUCTURES

Lohnes, Steve
Canada
Assigned to Cappar Limited

A structure comprising a filled thermosetting polymer composition. The filled thermosetting polymer composition has a mineral filler content of at least 92% by weight and not more than 8% by weight of thermosetting polymer and a co-efficient of thermal expansion that is less than $15 \times 10\text{-}6$ in/in/ degree C. The filler is a mineral particulate filler with generally rounded edges and the thermosetting polymer composition has a density that is at least 95% of the theoretical density for the filler and polymer. Embodiments of the composition per se may be used to form a structure for resisting acid solutions.