

Search query (3): [SP]: field of the invention [0001] the present invention is related to the production of a cement with an integrated curing agent that will allow an enhanced curing process and the reduction of plastic shrinkage cracking of concrete and mortar mixes produced by the natural or accelerated moisture loss in the surface of concrete and mortars. background of the invention [0002] concrete is by far the most frequently used construction material in the world. it is used in all kinds of climates, places, and applications, which means it is required to have specific behaviour properties, in order to keep structures and elements in good shape in such environments. one of the main uses of concrete is in elements with a large surface exposed to environmental conditions, for example road paving, parking lots, road surfaces, apartments, floor slabs, irrigation canals and general construction.[0003] these large surface concrete elements exposed to environmental conditions that combine high temperatures, low moisture and wind tend to lose moisture quickly. this produces a change in the volume of the concrete mass, which produces local plastic shrinkage that causes fissures or cracks to happen, known as plastic shrinkage cracking.[0004] these mechanisms take place when the concrete is still fresh and has not yet developed enough strength to support stress caused by the plastic shrinkage due to the moisture loss effect. in order to avoid this loss of moisture from the surface of concrete or mortar mixes, it is necessary to assure the correct curing process and to take the precautionary measures to minimise the effects of environmental conditions.[0005] the cement hydration process requires a certain water content for the chemical reactions to take place and to avoid plastic cracking, thus water retention is essential in this process. a mix design with the right water content will result in a concrete or mortar with a well-developed compressive strength, as well as satisfactory durability behaviour. when less water than the required content is added or there is loss of moisture, the opposite behaviour takes place.[0006] in practice, measures are taken to avoid the concrete or mortar surfaces to dry off too quickly, so that the development of shrinkage cracks, related to the volume changes between zones of different moisture content or because of strength developed so far, are avoided.[0007] conventionally, in order to keep the moisture in the concrete or mortar, a curing process is carried out. surface methods such as spraying water, fitting impermeable membranes, and moist coverings and/or protecting the surface using impermeable plastic elements are therefore used, along with a handful of others.[0008] an additional method enabled by new technologies is internal curing, wherein the water used to cure the concrete comes from the very mass of the fresh concrete itself. some of these methods use light porous aggregates, such as expanded clays, expanded perlite or vermiculite, whilst others use diatomaceous earth and the most recent use super-absorbent polymer compounds, capable of absorbing and retaining enough water to serve as a water reserve. other technologies use materials derived from wood, known as cellulosic materials, which are also able to absorb water and serve as water storage.[0009] all the materials mentioned above are usually added in the final mixture of the concrete or mortar, where cement, additives, aggregates sand and various other additions are mixed together with water in a mixer, in dosages depending on the fresh and final properties of the designed concrete or mortar[0010] such technologies are known from the prior art. u.s. pat. no. 5,143,780, dated 1 sep. 1992, entitled hydrated fibrous mats for use in curing cement and concrete, describes a method in which cellulose fibres are used to form a material that acts as a barrier to prevent the loss of surface moisture in concrete, thus maintaining the curing process by assuring there is enough water content to produce the hydration reactions in the cement efficiently.[0011] in this patent it is suggested the use of a fibrous material as a surface layer, in contrast to our proposal, wherein the cellulosic material is integrated in the cement, thus avoiding the use of the barriers proposed in the aforementioned patent.[0012] us patent 20070246857, dated 25 oct. 2007 and entitled methods for internally curing cement-based materials and products made therefrom describes the use of wood-derived materials as water absorbers for the internal curing of cement-based products. they mention that said materials, which they refer to as cellulosic materials, may be used as fibres or powders in the final mixture of concrete components as a further element, i.e. the cellulosic material is added in the final mixture of the concrete.[0013] by integrating the curing agent in the milling process of the cement components (grinding it together with the clinker, gypsum and remaining additives), any homogeneity problems will be solved in concrete and mortar mixes. this cannot be assured when the curing agents are dosed separately and added in the final concrete mix. another us patent application, number 20110073015, dated 31 mar. 2011 and entitled internally curing cement based materials, mentions that using cellulosic materials makes it possible to cure the cement-based material mixtures internally. it says that it should be bleached cellulosic material, in order to prevent the unwanted effects of the lignin on the performance of the mixtures. it describes the process used to bleach this material and also mentions that these materials are used in the mixture of the materials, i.e. it is used in the final part of the mixing, as a component thereof.[0014] none of the prior art suggests to advantageously process the cellulose fibers together with the clinker during a joint milling operation to produce a cement that contains a homogeneous distribution of internal curing agents (integrated curing agents).[0015] the present invention provides an advantageous novel solution in that the integrated curing agent forms part of the composition of the cement, since it is grounded together with the various normal cement components (clinker, gypsum, other mineral additives). the cement of the invention (for instance portland based cement containing or not mineral additions like limestone, fly ash, slag, etc.) is composed of a very well distributed shrinkage reducing components or curing agents, which reduces the plastic shrinkage cracking that naturally occurs during the hydration process of the cement in its final application as concrete or mortar. this provides a final concrete or mortar product with an integrated, homogeneously distributed curing agent, thus avoiding the storage and management of the reducing or curing admixtures until their final use in the concrete or mortar mix. by grinding simultaneously all the conventional components of the cement and the internal curing agent, a more stable, efficient behaviour is obtained when curing the final concrete mixture. brief description of the invention [0016] concrete is one of the most highly used cement-based mixtures in the construction industry. it has become the main construction material in the world and is used to build infrastructures such as roads and bridges, to cover tunnels and to build homes, buildings and industry. all of these uses require concrete to have different characteristics and designs, and different components are therefore used, which together give us the characteristics required to use the concrete. the components that form concrete are cement, gravel, sand, water and different kinds of additives, which provide concrete with different characteristics.[0017] the theoretical minimum water content with respect to the quantity of cement in a concrete application is 25 weight percent. however, excessive water content is usually used to improve the concrete workability and to be properly transported and casted. water in excess will lead to heterogeneities of the final concrete, segregation of sand and aggregates and bleeding. in order to develop its maximum performance, concrete must be cured to keep moisture long enough in the material to develop compressive strength and durability properties. a process with insufficient curing under extreme temperatures, low moisture and high wind speed conditions for instance, will yield accelerated moisture loss on the concrete surface and cement-based mixtures, leading to the appearance of shrinkage cracks. such cracks appear during the first few hours (between 1 and 8 hours typically) and may subsequently lead to durability problems and to loss of mechanical performance and finally will be anaesthetic, so architectonic applications will be rejected.[0018] the present invention is a method for producing cement with an integrated curing agent included therein, which comprises: jointly grinding the components of the cement, an integrated curing agent and tensioactive additives dosing wet the integrated curing agent in order to avoid prior processing thereof and to help to control the temperature of the grinding process and to enable internal curing of the cement-based resulting mixture, which reduces plastic cracking.[0019] in a preferred aspect of the invention, the wet-dosed integrated curing agent is fed in a proportion of 0.05 to 10 percent of the total weight of the components of the cement, preferably between 1 and 5 percent.[0020] in a preferred aspect, the wet-dosed integrated curing agent contains cellulose fibres, typically a by-product of the paper recycling process. in still another preferred aspect, the curing agent is made up of 40 to 70 percent water content and 30 to 60 percent cellulose solids

Results: 9

Search history

Search TAC=(cement and integrated curing agent and cellulose fibres) (Results 1)

1:

Search [SP]: 1. a method for producing a cement with an integrated curing agent, which comprises the following steps: a. jointly grinding the components of a cement, an integrated curing agent and tensioactive additivesb. dosing wet the curing agentc. internally curing the cement-based resulting mixture. 2. the method according to claim 1, wherein said wet-dosed integrated curing agent is fed in a proportion of 0.05 to 10 percent of the total weight of the components of the cement. 3. the method according to claim 1, wherein said wet-dosed integrated curing agent contains cellulose fibres. 4. the method according to claim 2, wherein said wet-dosed integrated curing agent contains 40 to 70 percent water and 30 to 60 percent solid content, both percentages by weight. 5. the method according to claim 2, wherein said wet-dosed integrated curing agent is jointly ground with the components of the cement down to cement production control fineness, between 85 and 100 percent grain size less than 44 microns. 6. the method according to claim 1, wherein said tensioactive additives comprise at least one of the chemicals selected from the group consisting of triisobutyl phosphate, polypropylene glycol, silicone oil products and polydimethylsiloxane and mineral oils. 7. the method according to claim 1, wherein the dosage of said tensioactive additives are between 0.01 and 1 percent by weight of the total weight of the components of the cement. 8. the method according to claim 2, wherein said wet-dosed integrated curing agent is fed in a proportion of between 1 and 5 percent of the total weight of the components of the cement. (Results 0)

Search [SP]: field of the invention [0001] the present invention is related to the production of a cement with an integrated curing agent that will allow an enhanced curing process and the reduction of plastic shrinkage cracking of concrete and mortar mixes produced by the natural or accelerated moisture loss in the surface of concrete and mortars. background of the invention [0002] concrete is by far the most frequently used construction material in the world. it is used in all kinds of climates, places, and applications, which means it is required to have specific behaviour properties, in order to keep structures and elements in good shape in such environments. one of the main uses of concrete is in elements with a large surface exposed to environmental conditions, for example road paving, parking lots, road surfaces, apartments, floor slabs, irrigation canals and general construction.[0003] these large surface concrete elements exposed to environmental conditions that combine high temperatures, low moisture and wind tend to lose moisture quickly. this produces a change in the volume of the concrete mass, which produces local plastic shrinkage that causes fissures or cracks to happen, known as plastic shrinkage cracking. [0004] these mechanisms take place when the concrete is still fresh and has not yet developed enough strength to support stress caused

by the plastic shrinkage due to the moisture loss effect. in order to avoid this loss of moisture from the surface of concrete or mortar mixes, it is necessary to assure the correct curing process and to take the precautionary measures to minimise the effects of environmental conditions.[0005] the cement hydration process requires a certain water content for the chemical reactions to take place and to avoid plastic cracking, thus water retention is essential in this process. a mix design with the right water content will result in a concrete or mortar with a well-developed compressive strength, as well as satisfactory durability behaviour. when less water than the required content is added or there is loss of moisture, the opposite behaviour takes place.[0006] in practice, measures are taken to avoid the concrete or mortar surfaces to dry off too quickly, so that the development of shrinkage cracks, related to the volume changes between zones of different moisture content or because of strength developed so far, are avoided.[0007] conventionally, in order to keep the moisture in the concrete or mortar, a curing process is carried out. surface methods such as spraying water, fitting impermeable membranes, and moist coverings and/or protecting the surface using impermeable plastic elements are therefore used, along with a handful of others.[0008] an additional method enabled by new technologies is internal curing, wherein the water used to cure the concrete comes from the very mass of the fresh concrete itself. some of these methods use light porous aggregates, such as expanded clays, expanded perlite or vermiculite, whilst others use diatomaceous earth and the most recent use super-absorbent polymer compounds, capable of absorbing and retaining enough water to serve as a water reserve. other technologies use materials derived from wood, known as cellulosic materials, which are also able to absorb water and serve as water storage.[0009] all the materials mentioned above are usually added in the final mixture of the concrete or mortar, where cement, additives, aggregates sand and various other additions are mixed together with water in a mixer, in dosages depending on the fresh and final properties of the designed concrete or mortar[0010] such technologies are known from the prior art. u.s. pat. no. 5,143,780, dated 1 sep. 1992, entitled hydrated fibrous mats for use in curing cement and concrete, describes a method in which cellulose fibres are used to form a material that acts as a barrier to prevent the loss of surface moisture in concrete, thus maintaining the curing process by assuring there is enough water content to produce the hydration reactions in the cement efficiently.[0011] in this patent it is suggested the use of a fibrous material as a surface layer, in contrast to our proposal, wherein the cellulosic material is integrated in the cement, thus avoiding the use of the barriers proposed in the aforementioned patent.[0012] us patent 20070246857, dated 25 oct. 2007 and entitled methods for internally curing cement-based materials and products made therefrom describes the use of wood-derived materials as water absorbers for the internal curing of cement-based products. they mention that said materials, which they refer to as cellulosic materials, may be used as fibres or powders in the final mixture of concrete components as a further element, i.e. the cellulosic material is added in the final mixture of the concrete.[0013] by integrating the curing agent in the milling process of the cement components (grinding it together with the clinker, gypsum and remaining additives), any homogeneity problems will be solved in concrete and mortar mixes. this cannot be assured when the curing agents are dosed separately and added in the final concrete mix. another us patent application, number 20110073015, dated 31 mar. 2011 and entitled internally curing cement based materials, mentions that using cellulosic materials makes it possible to cure the cement-based material mixtures internally. it says that it should be bleached cellulosic material, in order to prevent the unwanted effects of the lignin on the performance of the mixtures. it describes the process used to bleach this material and also mentions that these materials are used in the mixture of the materials, i.e. it is used in the final part of the mixing, as a component thereof.[0014] none of the prior art suggests to advantageously process the cellulose fibers together with the clinker during a joint milling operation to produce a cement that contains a homogeneous distribution of internal curing agents (integrated curing agents). [0015] the present invention provides an advantageous novel solution in that the integrated curing agent forms part of the composition of the cement, since it is grounded together with the various normal cement components (clinker, gypsum, other mineral additives). the cement of the invention (for instance portland based cement containing or not mineral additions like limestone, fly ash, slag, etc.) is composed of a very well distributed shrinkage reducing components or curing agents, which reduces the plastic shrinkage cracking that naturally occurs during the hydration process of the cement in its final application as concrete or mortar. this provides a final concrete or mortar product with an integrated, homogeneously distributed curing agent, thus avoiding the storage and management of the reducing or curing admixtures until their final use in the concrete or mortar mix. by grinding simultaneously all the conventional components of the cement and the internal curing agent, a more stable, efficient behaviour is obtained when curing the final concrete mixture. brief description of the invention [0016] concrete is one of the most highly used cement-based mixtures in the construction industry. it has become the main construction material in the world and is used to build infrastructures such as roads and bridges, to cover tunnels and to build homes, buildings and industry. all of these uses require concrete to have different characteristics and designs, and different components are therefore used, which together give us the characteristics required to use the concrete. the components that form concrete are cement, gravel, sand, water and different kinds of additives, which provide concrete with different characteristics.[0017] the theoretical minimum water content with respect to the quantity of cement in a concrete application is 25 weight percent. however, excessive water content is usually used to improve the concrete workability and to be properly transported and casted. water in excess will lead to heterogeneities of the final concrete, segregation of sand and aggregates and bleeding. in order to develop its maximum performance, concrete must be cured to keep moisture long enough in the material to develop compressive strength and durability properties. a process with insufficient curing under extreme temperatures, low moisture and high wind speed conditions for instance, will yield accelerated moisture loss on the concrete surface and cement-based mixtures, leading to the appearance of shrinkage cracks. such cracks appear during the first few hours (between 1 and 8 hours typically) and may subsequently lead to durability problems and to loss of mechanical performance and finally will be anaesthetic, so architectonic applications will be rejected.[0018] the present invention is a method for producing cement with an integrated curing agent included therein, which comprises: jointly grinding the components of the cement, an integrated curing agent and tensioactive additives dosing wet the integrated curing agent in order to avoid prior processing thereof and to help to control the temperature of the grinding process and to enable internal curing of the cement-based resulting mixture, which reduces plastic cracking. [0019] in a preferred aspect of the invention, the wet-dosed integrated curing agent is fed in a proportion of 0.05 to 10 percent of the total weight of the components of the cement, preferably between 1 and 5 percent.[0020] in a preferred aspect, the wet-dosed integrated curing agent contains cellulose fibres, typically a by-product of the paper recycling process. in still another preferred aspect, the curing agent is made up of 40 to 70 percent water content and 30 to 60 percent cellulose solids (Results 9)

1) Family number: 5130454 (US4665993A)

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Title: Hydrated fibrous mats

Abstract: Source: US4665993A Disclosed is a hydrated fibrous mass prepared by the steps including introducing a source of cellulosic fibers to water with continuous mixing until a ratio of water to fibers of about 50 to 1 is obtained and mixing the water and source of cellulosic fibers until the source of cellulosic fibers has been comminuted to substantially individual cellulose fibers. The mass can be effectively used as a fire controlling agents. The mass can also be used as a carrier for pesticides, and as a concrete or cement cure rate controlling agent.

Classifications:

International (IPC 8-9): A01N25/10 A62C99/00

A62D1/00 (Advanced/Invention);

A01N25/10 A62C99/00 A62D1/00 (Core/Invention)

International (IPC 1-7): A01G13/00 A62C1/02 B05D3/02 B32B13/00

B32B23/04 B32B5/16 C05F5/00

CPC: Y10S71/904 C04B40/04 A62C99/0009 A01N25/10 A62D1/0007

Y10T428/24995 Y10T428/31978 Y10T428/249932 Y10T428/31971

European: A01N25/10 A62C99/00B A62D1/00B

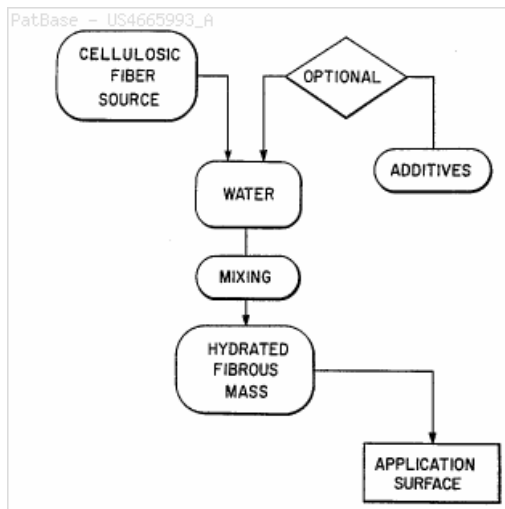
US: 106/12 106/731 162/181.6 169/44 169/47 252/2 427/384

427/393.6 427/403 427/407.1 427/415 428/283 428/284 428/288

428/290 428/292 428/294.7 428/300.7 428/532 428/534 428/703

47/2 47/58 504/188 504/358 71/23 71/3 71/64.08 71/64.09 71/904

PatBase - US4665993_A



Family:

Publication number	Publication date	Application number	Application date
US4665993 A	19870519	US19850744119	19850612
US4787928 A	19881129	US19870020110	19870424
US5096748 A	19920317	US19900518726	19900504
US5143780 A	19920901	US19900613230	19901109
US5251398 A	19931012	US19900557924	19900725

Priority:

US19850744119 19850612	US19870020110 19870424	US19900613230 19901109
US19900557924 19900725	US19880259174 19881018	US19900518726 19900504

Probable Assignee: BALASSA LESLIE L**Assignee(s):** (std): BALASSA LESLIE L**Assignee(s):** ALICE M BALASSA TRUST U A D**Inventor(s):** (std): BALASSA LESLIE L**2) Family number: 11351735 (US6468344B)**

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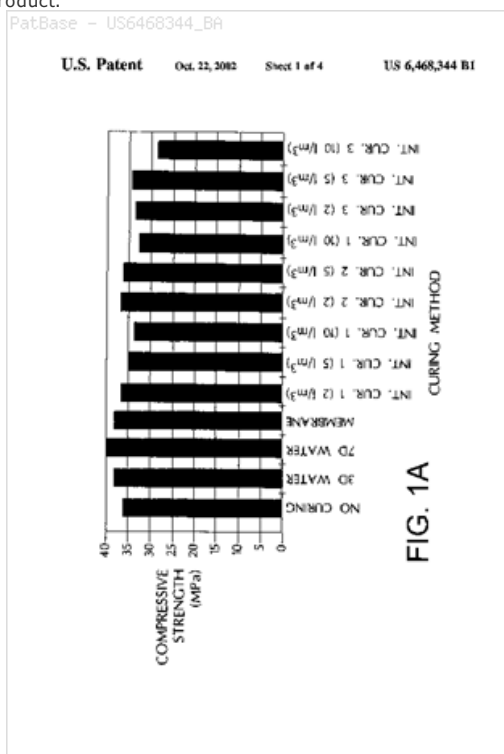
Title: Compositions and methods for curing concrete

Abstract: Source: US6468344B An internal curing composition for concrete includes a glycol and a wax. The glycol is preferably polyethylene glycol and the wax is preferably paraffin wax. When added to concrete, the composition facilitates the curing of concrete to a low porosity, high compressive strength product.

Classifications:

International (IPC 8-9): C04B24/00 C04B24/02 C04B24/24
C04B24/32 C04B28/02 (Advanced/Invention);
C04B24/00 (Core/Invention)

International (IPC 1-7): C04B16/00 C04B16/04 C04B24/00
C04B24/02 C04B24/24 C04B24/32

CPC: C04B28/02 C04B2103/46**European:** C04B28/02 M04B103/46**US:** 106/660 106/802**Family:**

Publication number	Publication date	Application number	Application date
AU18999 A0	19990527	AU1999PQ00189	19990505
AU200032536 A5	20001109	AU20000032536D	20000505
AU774303 B2	20040624	AU20000032536	20000505
CA2308237 AA	20001105	CA20002308237	20000505
US6468344 BA	20021022	US20000565136	20000505

Priority:

AU1999PQ00189 19990505	AU20000032536 20000505	CA20002308237 20000505
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Probable Assignee: CONSTRUCTION RESEARCH AND TECHNOLOGY GMBH**Assignee(s):** (std): MBT HOLDING AG**Assignee(s):** SUN ROBERT KEITH ; CONSTRUCTION RESEARCH AND TECHNOLOGY GMBH ; LIANG ROLAND TAK YONG**Inventor(s):** (std): LIANG ROLAND TAK YONG ; SUN ROBERT KEITH**Inventor(s):** ROBERT KEITH SUN ; ROLAND TAK YONG LIANG**Agent(s):** SHELSTON IP; SHELSTON IP PTY LTD; KIRBY EADES GALE BAKER**3) Family number: 40748143 (US2007246857A)**

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Title: METHODS FOR INTERNALLY CURING CEMENT-BASED MATERIALS AND PRODUCTS MADE THEREFROM

Abstract: Source: US2007246857A Methods for internally curing cement-based materials using wood-derived materials as internal curing agents are disclosed herein. The methods generally include casting a mixture of a cement-based material, mixing water, and an internal curing agent, which includes a wood-derived material, and curing the mixture. The mixture is cured using the mixing water and any water associated with the internal curing agent. The cured mixture will shrink less than if the mixture did not include the wood-derived material. Internally cured cement-based mixtures are also described.

Classifications:

International (IPC 8-9): B28B3/00 B29C71/00

C04B16/00 (Advanced/Invention);

B28B3/00 B29C71/00 C04B16/00 (Core/Invention)

CPC: C04B40/0641 B28B1/525 C04B28/02 C04B2111/34 Y02W30/97

European: B28B1/52E C04B28/02 M04B111/34

US: 106/805 106/805S 264/236 264/236P 264/333 264/333S

PatBase - US2007246857_AA

Patent Application Publication: Oct. 25, 2007 Sheet 1 of 5 US 2007/0246857 A1

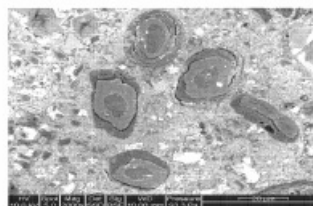


FIG. 1



FIG. 2

Family:

Publication number	Publication date	Application number	Application date
US2007246857 AA	20071025	US20070738906	20070423

Priority:

US20060793766P 20060421 US20070738906 20070423

Probable Assignee: GEORGIA TECH RESEARCH CORP

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Assignee(s): GEORGIA TECH RESEARCH CORP

Inventor(s): (std): KURTIS KIMBERLY ; MOHR BENJAMIN ; NANKO HIROKI

Agent(s): TROUTMAN SANDERS LLP

4) Family number: 42027312 (CN101209908A)

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Title: LIQUID HIGH-EFFICIENCY CEMENT GRINDING AID REINFORCING AGENT AND PRODUCING METHOD THEREOF

Abstract: Source: CN101209908A The invention relates to a liquid cement grinding-assisting reinforcing agent and a production method thereof, particularly to a high-efficient liquid compound non-chlorinated and low alkali cement grinding-assisting reinforcing agent of a defoaming mechanism and cement stability performance and a production method thereof. Pulp waste liquid is used as main material which is in complexation with triethanolamine and polyol and added with small amount of stabilizers of phosphogypsum and aluminum sulfate, etc., to eliminate the harm of free state CaO, and ethal etc. is added to play a role of defoaming, thereby the stability and density of the cement is enhanced and the intensity of the cement is further enhanced. The production method is to separate grinding-assisting reinforcing ingredient and additive ingredient respectively and averagely which are then stirred and mixed. In addition to simple technique and low price, the product is easy for storage and transportation, which occupies little cement mixed weight, obviously enhances the early and later period intensity of the cement and is extremely applicable to wide application in cement industry.

Classifications:

International (IPC 8-9): C04B7/52 (Advanced/Invention);

C04B7/00 (Core/Invention)

CPC: Y02W30/97 C04B28/02 C04B2103/50 C04B2103/52 C04B2103/58 C04B2103/61 C04B2111/1025 C04B2111/1062 Y02P40/20

European: C04B28/02 M04B103/50 M04B103/52 M04B103/58 M04B103/61 M04B111/10C M04B111/10K

Family:

Publication number	Publication date	Application number	Application date
CN100560528 C	20091118	CN200710159313	20071225
CN101209908 A	20080702	CN200710159313	20071225

Priority:

CN200710159313 20071225

Probable Assignee: UNIV DALIAN TECH

Assignee(s): (std): DALIAN UNIV OF TECHNOLOGY ; UNIV DALIAN TECH

Assignee(s): DALIAN UNIVERSITY OF TECHNOLOGY

Inventor(s): (std): DONGFENG XUE ; FANGHONG XUE ; LIQIU WANG ; LONGJIANG ZOU ; YONG SHI

Inventor(s): ZOU LONGJIANG ; SHI YONG ; WANG LIQIU ; XUE DONGFENG ; XUE FANGHONG

Title: CEMENT ADDITIVE FOR STUCCO APPLICATIONS

Abstract: Source: US2010249280A An additive composition, a cement composition, and method for modifying rheology of an uncured masonry cement, comprising the use of at least one extra-cellular biopolymer, at least one anionic surfactant, and at least one cationic or amphoteric surfactant. Preferably, the biopolymer and surfactants are incorporated into the cement by incorporating the components into the grinding of clinker as part of the manufacture of the cement. Masonry cements produced by the invention have excellent workability, particularly when coarse sands are employed.

Classifications:

International (IPC 8-9): C04B24/00 C04B28/02 C08K5/1545 C08L1/26 C08L97/02 (Advanced/Invention);

C04B24/00 C08K5/00 C08L1/00 C08L97/00 (Core/Invention)

CPC: C04B7/52 C04B40/0039 C04B2103/0079 C04B2103/52

European: C04B40/00D4 C04B7/52 M04B103/00W19 M04B103/52

US: 106/172.1 106/172.100S 524/2 524/2P 524/4 524/9 524/9S

Family:

Publication number	Publication date	Application number	Application date
BRPI0812129 A2	20141118	BR2008PI12129	20080430
MX2009011968 A1	20091119	MX20090011968	20080430
US2010249280 AA	20100930	US20080599208	20080430
US8097666 BB	20120117	US20080599208	20080430
WO08150604 A1	20081211	WO2008US62034	20080430

Priority:

US20070940794P 20070530 US20080599208 20080430 WO2008US62034 20080430

Probable Assignee: W R GRACE AND CO CONN

Assignee(s): (std): FRANCIOSI MARK A ; CHUN BYONG WA ; JARDINE LESLIE A ; MACKLIN MICHAEL B ; GRACE W R AND CO

Assignee(s): DEUTSCHE BANK NEW YORK BRANCH COLLATERAL AGENT AG AS ; GCP APPLIED TECHNOLOGIES INC ; GOLDMAN SACHS BANK USA COLLATERAL AGENT AS ; W R GRACE AND CO CONN

Inventor(s): (std): CHUN BYONG WA ; FRANCIOSI MARK A ; JARDINE LESLIE A ; MACKLIN MICHAEL B

Inventor(s): MARK A FRANCIOSI ; MICHAEL B MACKLIN ; BYONG WA CHUN ; LESLIE A JARDINE

Agent(s): W R GRACE AND CO CONN ATTENTION PATENT DEPARTMENT; CRAIG K; STEPHAN P; LEON CRAIG K ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: INTERNALLY CURING CEMENT BASED MATERIALS

Abstract: Source: US2011073015A A method of curing cementitious material comprising added a carboxylated bleached wood pulp fiber to the material during mixing. The fiber has a carboxyl content of from 10 to 70 meq/100 g cellulose fiber. The fibers are 0.1 to 5 percent by weight of the dry weight of the cementitious material. The structure produced by the method. The autogenous shrinkage of the cementitious material is reduced.

Classifications:

International (IPC 8-9): C04B16/02 C04B16/06 C04B18/26

C04B24/04 C04B28/02 C04B28/14 C04B40/00 C04B7/02 C04B9/04

D21C9/00 D21F11/00 D21H11/00 D21H13/00 D21H15/00 D21H17/00

D21H19/00 D21H21/00 D21H23/00 D21H25/00 (Advanced/Invention)

CPC: C04B7/02 C04B2111/34 Y02W30/94 Y02W30/97 C04B28/02

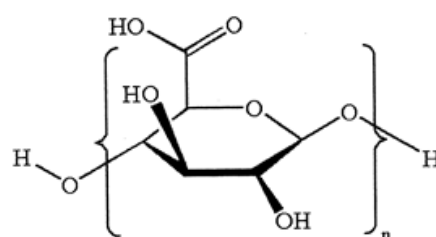
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European: C04B18/26Z C04B20/02C C04B28/02 M04B103/58

M04B111/34D

US: 106/728 106/780 106/805 106/820 162/157.6 162/182 162/9

PatBase - US2011073015_AA



Family:

Publication number	Publication date	Application number	Application date
AU2010300795 AA	20110407	AU20100300795	20100928
AU2010300795 BB	20140424	AU20100300795	20100928
BR112012006993 A2	20160412	BR20121106993	20100928
CN102548927 A	20120704	CN201080043932	20100928
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EP2483217 A2	20120808	EP20100821096	20100928
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JP5425313 B2	20140226	JP20120529987T	20100928
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US2011073015 AA	20110331	US20100892239	20100928
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US8435345 BB	20130507	US20100892239	20100928

WO11041291 A2	20110407	WO2010US50494	20100928
WO11041291 A3	20110707	WO2010US50494	20100928

Priority:

US20090247460P 20090930 US20100892239 20100928 WO2010US50494 20100928
US20130857274 20130405

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Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

7) Family number: 50915349 (US2013180434A)

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Title: DILUTION-STABLE CEMENT GRINDING ADDITIVE COMPOSITION

Abstract: Source: US2013180434A The present invention provides cement grinding additive compositions and methods which allow a powerful, robust defoamer to be uniformly dispersed throughout a broad concentration range while retaining storage stability even in cases wherein the defoamer is highly diluted. Exemplary cement grinding additive compositions comprise at least one amine cement grinding additive; a tri-iso-butylphosphate defoamer; a biopolymer polysaccharide gum selected from the group comprising Diutan, Whelan, Xanthan, or mixtures thereof; and water in the amount of 0.10 to 95.0 percent based on total weight of composition. Methods for manufacturing cement using the cement grinding additive compositions are also described.

Classifications:

International (IPC 8-9): B02C23/06 C04B103/52 C04B24/00 C04B24/02 C04B24/10 C04B24/12 C04B24/38 C04B26/28 C04B28/02 C04B40/00 C04B7/52 C07C211/00 C07F9/09 C08L5/00 (Advanced/Invention); C04B103/52 (Advanced/Non-invention); C04B40/00 (Core/Invention)

CPC: C04B24/003 C04B40/0039 C04B2103/52 C04B24/12 C04B7/52 C04B24/00 C04B24/10 C04B24/38 C04B40/00

European: C04B40/00D4 C04B7/52 M04B103/52

US: 106/503 106/730 106/804 106/823

Family:

Publication number	Publication date	Application number	Application date
AU2011312689 AA	20120412	AU20110312689	20110912
AU2011312689 BB	20150115	AU20110312689	20110912
BR112013007313 A2	20160705	BR20131107313	20110912
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US8758504 BB	20140624	US20110825908	20110912
WO12047450 A1	20120412	WO2011US51170	20110912

Priority:

US20100386621P 20100927 US20110825908 20110912 WO2011US51170 20110912
WO2011UC51170 20110912

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Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: METHOD FOR PRODUCING CEMENT WITH AN INTEGRATED CURING AGENT INCLUDED THEREIN AND THE USE THEREOF IN CEMENT-BASED MATERIALS AND THE CEMENT PRODUCED

Abstract: Source: US2016214906A A method to produce a cement with an integrated curing agent for concrete mixtures, mortars and other cement-based materials is disclosed. The method describes an integrated milling of all cement components (clinker, gypsum and other additives) and the curing agent, that will allow reducing the plastic shrinkage cracking on the casted elements that use this cement-based mix.

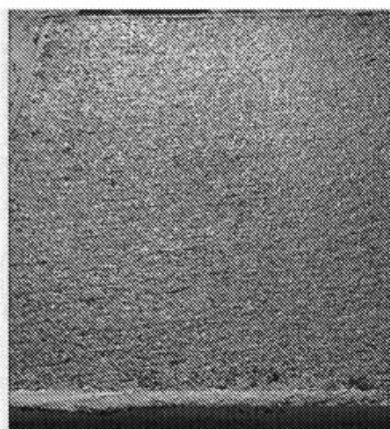
Classifications:

International (IPC 8-9): B28C5/08 B28C5/40 C04B24/38 C04B28/02 C04B40/00 C04B7/52 (Advanced/Invention)

CPC: C04B28/02 C04B2103/52 C04B2111/34 Y02W30/97 C04B40/0028 C04B24/383 C04B2111/346 C04B7/527

US: 106/805

PatBase - US2016214906_AA



Family:

Publication number	Publication date	Application number	Application date
CO16053935 A2	20160909	CO20160053935	20160302
DOP2016000057 A	20160615	DO20160000057	20160302
EP3041806 A1	20160713	EP20140761971	20140828
MX2013010088 A1	20150302	MX20130010088	20130902
US2016214906 AA	20160728	US20140914198	20140828
WO15028547 A1	20150305	WO2014EP68249	20140828

Priority:

MX20130010088 20130902 WO2014EP68249 20140828

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Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: ADDITIVE FOR INTERNAL POST TREATMENT OF MINERAL BINDER COMPOSITIONS

Abstract: The invention relates to an additive for mineral binder compositions, in particular a post-treatment agent for mineral binder compositions, comprising at least one water-absorbing substance and at least one shrinkage reducing agent.

Classifications:

International (IPC 8-9): C04B28/04 C04B40/00 (Advanced/Invention)

CPC: C04B40/0039 C04B28/04 C04B2111/20 C04B2111/2038 C04B2111/29 C04B2111/343

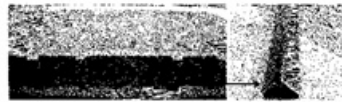


Fig. 1



Fig. 2

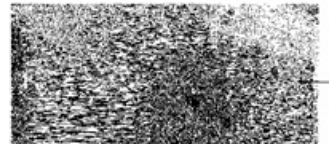


Fig. 3

Family:

Publication number	Publication date	Application number	Application date
WO17067872 A1	20170427	WO2016EP74842	20161017

Priority:

EP20150190750 20151021

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Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW