Claims:

1. A method for making a cementitious composition, comprising: mixing together with water the following components:

(A) a cementitious binder composition comprising ground granulated blast furnace slag (GGBFS) in an amount of 96%-100% based on total dry weight of the cementitious binder component;

(B) at least one alkaline-earth activator chosen from $Ca(OH)_2$, CaO, MgO, or a mixture thereof; and

(C) an early strength enhancer component comprising (i) at least one slag dispersant chosen from a polycarboxylate ether (PC) type polymer dispersant, a non-PC dispersant chosen from a sulfonate type dispersant or a phosphonate type dispersant; and (ii) at least one activator chosen from calcium nitrate, calcium nitrite, calcium chloride, sodium chloride, triethanolamine, methyldiethanolamine, sodium thiocyanate, or mixture thereof.

2. The method of claim 1 wherein the early strength enhancer component comprises at least one PC type polymer dispersant, and more preferably at least two PC type polymer dispersants.

3. The method of claim 1 wherein the binder composition of component A further comprises fly ash, and further wherein the GGBFS:fly ash weight ratio in component A is from 71:29 to 95:5.

4. The method of claim 1 wherein the water and the components A, B, and C are mixed together in the following amounts: water in the amount of 25%-45%; component A comprising 96%-100% GGBFS based on total dry solid weight of the cementitious binder composition of component A; component B in the amount of 0.5% to 10%; and component C in the amount of 1.5% to 6.0%; the foregoing percentages of water and components A, B, and C being based on total dry weight of component A.

5. The method of claim 1 wherein the water and components A, B, and C are mixed together in the following amounts: water in the amount of 25%-40%; component A comprising 96%-100% GGBFS based on total dry solids weight of the cementitious binder composition of component A; component B in the amount of 2.0% to 8.0%; and component C in the amount of 2.0% to 5.0%; the foregoing percentages of water and components A, B, and C being based on total dry weight of component A.

6. The method of claim 1 wherein the water and components A, B, and C are mixed together in the following amounts: water in the amount of 28%-38%; component A comprising 100% GGBFS based on total dry solids weight of the cementitious binder composition of component A; component B in the amount of 4.0% to 6.0%; and component C in the amount of 2.5% to 4.5%; the foregoing percentages of water and components A, B, and C being based on total dry weight of component A.

7. The method of claim 1 wherein components B and C are combined together or combined separately with component A.

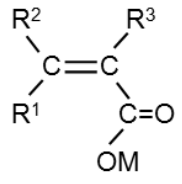
8. The method of claim 1 wherein, in addition to the at least one alkaline-earth activator component chosen from $Ca(OH)_2$, CaO, MgO, or a mixture thereof as set forth in component B, component A is combined with at least one activator chosen from calcium nitrate, calcium nitrite, sodium thiocyanate, triethanolamine, methyldiethanolamine, calcium chloride, sodium chloride, or mixture thereof.

9. The method of claim 1 wherein component A is combined with at least one activator chosen from calcium nitrate, calcium nitrite, or mixture thereof.

10. The method of claim 1 wherein component A is devoid of Ordinary Portland Cement, calcium sulfoaluminate cement, or mixture thereof.

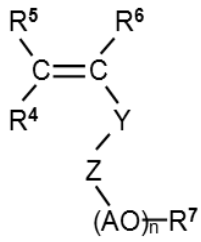
11. The method of claim 1 wherein the strength enhancement component comprises at least one PC type dispersant polymer obtained from three monomer

components A, B, and C, wherein monomer component A is an unsaturated carboxylic acid monomer represented by structural formula 1,



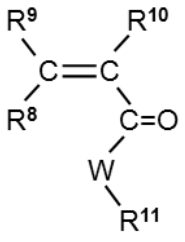
[formula 1];

monomer component B is a polyoxyalkylene monomer represented by structural formula 2:



[formula 2]; and

monomer component C is an unsaturated carboxylate ester or amide monomer represented by structural formula 3:



[formula 3];

wherein R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, and R^{10} each individually represent a hydrogen atom, a C1 to C4 alkyl group, or -COOM group wherein M represents a hydrogen atom or an alkali metal; Y represents $–(CH_2)_p–$ wherein "p" represents an integer of 0 to 6; Z represents –O–, –COO–, –OCO–, –COHN–, or –NHCO– group; $–(AO)_n$ represents repeating ethylene oxide groups, propylene oxide groups, butylene oxide groups, or a mixture thereof; "n" represents the average number of repeating –(AO)- groups and is an integer of from 10 to 250; W represents an oxygen atom or an –NH– group, and R_{11} represents a C1 - C10 alkyl group or a C2 - C10 hydroxyalkyl group.

12. The method of claim 1 wherein the early strength enhancement component comprises at least one polycarboxylate ether type dispersant polymer

having at least two different structures using different component B monomers represented by formula 2.

13. The method of claim 12 wherein the early strength enhancement component comprises at least one polycarboxylate type comb polymers in combination with at least one viscosity modifying admixture, preferably chosen from a biopolymer polysaccharide, a cellulose type thickener, or mixture thereof.

14. The method of claim 1 wherein the at least one dispersant is sodium naphthalene sulfonate.

15. The method of claim 1 wherein component B further includes calcium carbonate or source of calcium carbonate, wherein the calcium carbonate is present in the binder of component A in the amount of 0.1 to 10% based on total dry weight of component A.

16. The method of claim 1 wherein, after mixing water and components A, B, and C together to obtain a uniform paste or slurry, the paste or slurry is subjected after mixing to a temperature of 30-70 degrees C.