Claims

1. A composition for the preparation of a fire protection mortar comprising
   - 45 to 70% by weight of cement binder,
   - 8 to 20% by weight calcite,
   - 8 to 20% by weight mica,
   - 0 to 5% by weight of xonotlite,
   - 0.1 to 20% by weight of expanded perlite,
   - 0.1 to 10% by weight of fibers,
   - 0.01 to 2% by weight of air entrainer and foaming agent,
   - 0.01 to 4% by weight of processing aids.

2. The composition of claim 1, wherein the cement binder is selected from the group consisting of Portland cement (CEM I), Portland composite cement (CEM II), Blastic furnace slag cement (CEM III), Pozzolanic cement (CEM IV), other Composite cement (CEM V), and combinations thereof.

3. The composition of claim 1 or 2, wherein the cement binder comprises calcium aluminate cement, sulfur aluminate cement and combinations thereof.

4. The composition of claims 1 to 3, wherein the fibers are selected from the group consisting of PP fiber, PVA fiber, cellulose fiber, glass fiber including alkali resistant glass fiber, rock wool, mineral wool, steel fiber and combinations thereof.

5. The composition of claims 1 to 4, wherein the expanded perlite is partly or fully substituted by fillers selected from the group consisting of pumice, foamed glass, expanded clay, hollow ceramic spheres of fly ashes from power plant, exfoliated vermiculite and combinations thereof.

6. The composition of any one of claims 1 to 5, wherein the processing aids are selected from the group consisting of setting retarder, setting accelerator, super plasticizer, pumping aid, water retention agent, thixotropic agent, water repellent, water born re-dispersible polymers and combinations thereof.

7. The composition of any one of claims 1 to 6, wherein the fibers have an average length of less than 15 mm.

8. The composition of any one of claims 1 to 7, wherein the calcite has a particle size (d90 by weight) of less than 200 µm.

9. A fire protection mortar obtainable by mixing the composition of any one of claims 1 to 8 with water, preferably

- 30 to 70% by weight of the composition of claims 1 to 8 and
- 70 to 30% water.

10. A fire protection product obtainable by spraying or casting the fire protection mortar of claim 9.

11. The fire protection product of claim 10 wherein casting includes shaping processes selected from filter press, Flow-on and Magnani process.

12. The fire protection product of claim 10 or 11 having a bulk density below 1200 kg/m^3, preferably between 500 and 1000 kg/m^3.

13. Method for providing a fire protection system comprising

- spraying a mortar of claim 9 and/or
- fixing a cast fire protection product of claim 11 or 12

on a substrate.

14. The method of claim 13 further comprising embedding a metal or plastic mesh in the mortar.

15. Use of a composition of any one of claim 1 to 8 for preparing a fire protection mortar.

5

Claims

1. A composition for the preparation of a fire protection mortar comprising

   - 45 to 70% by weight of cement binder,
   - 8 to 20% by weight calcite,
   - 8 to 20% by weight mica,
   - 0 to 5% by weight of xonotlite,
   - 0.1 to 20% by weight of expanded perlite,
   - 0.1 to 10% by weight of fibers,
   - 0.01 to 2% by weight of air entrainer and foaming agent,
   - 0.01 to 4% by weight of processing aids.

2. The composition of claim 1, wherein the cement binder is selected from the group consisting of Portland cement (CEM I), Portland composite cement (CEM II), Blastic furnace slag cement (CEM III), Pozzolanic cement (CEM IV), other Composite cement (CEM V), and combinations thereof.

3. The composition of claim 1 or 2, wherein the cement binder comprises calcium aluminate cement, sulfur aluminate cement and combinations thereof.

4. The composition of claims 1 to 3, wherein the fibers are selected from the group consisting of PP fiber, PVA fiber, cellulose fiber, glass fiber, rock wool, mineral wool, steel fiber and combinations thereof.

5. The composition of claim 4, wherein said glass fiber is an alkali resistant glass fiber.

6. The composition of claims 1 to 5, wherein the expanded perlite is partly or fully substituted by fillers selected from the group consisting of pumice, foamed glass, expanded clay, hollow ceramic spheres of fly ashes from power plant, exfoliated vermiculite and combinations thereof.

7. The composition of any one of claims 1 to 6, wherein the processing aids are selected from the group consisting of setting retarder, setting accelerator, super plasticizer, pumping aid, water retention agent, thixotropic agent, water repellent, water borne re-dispersible polymers and combinations thereof.

8. The composition of any one of claims 1 to 7, wherein the fibers have an average length of less than 15 mm.

9. The composition of any one of claims 1 to 8, wherein the calcite has a particle size (d90 by weight) of less than 200 µm.

10. A fire protection mortar comprising the composition of any one of claims 1 to 9 and water.

11. A fire protection mortar obtainable by mixing the composition of any one of claims 1 to 9 with water, comprising

- 30 to 70% by weight of the composition of claims 1 to 9 and
- 70 to 30% water.

12. A fire protection product obtained by spraying on a slab or casting the fire protection mortar of claim 10 or 11.

13. A fire protection product obtainable by spraying or casting the fire protection mortar of claim 10 or 11.

14. The fire protection product of claim 13 wherein casting includes shaping processes selected from filter press, Flow-on and Magnani process.

15. The fire protection product of claim 13 or 14 having a bulk density below 1200 kg/m^3.

16. The fire protection product of claim 15, wherein the bulk density is between 500 and 1000 kg/m^3.

17. Method for providing a fire protection system comprising

- spraying a mortar of claim 10 or 11 and/or
- fixing a cast fire protection product of any one of claims 14 to 16

on a substrate.

18. The method of claim 17 further comprising embedding a metal or plastic mesh in the mortar.

19. Use of a composition of any one of claim 1 to 9 for preparing a fire protection mortar.