Claims

1. A hydraulic binder for a mortar composition comprising, by weight, from 10 to 70% of at least one ladle slag, from 0 to 35% of Portland cement, from 5 to 45% of calcium sulfate and from 2 to 35% of aluminous cement, the at least one ladle slag having a particle size distribution by volume such that the D50 is less than 40 µm,

wherein the ladle slag has a chemical composition which comprises the following constituents within the limits hereunder expressed as percentages by weight:

SiO_2: 2-20%,

CaO: 30-60%

Al_2O_3: 20-50%, and

wherein the ladle slag comprises at least one crystalline phase of calcium aluminate type in a content by weight of between 10 and 60%.

2. The binder according to claim 1, wherein the at least one crystalline phase of the calcium aluminate type is of C3A or C12A7 type.

3. The binder according to claim 2, such that the D50 of the ladle slag is less than 20 µm.

4. The binder according to claim 1, comprising said ladle slag and at least one of the following constituents:

- one or more cements selected from Portland cements, belite cements, aluminous or sulfoaluminate cements, cements of pozzolanic mixtures optionally comprising fly ash, silica fumes, limestone, calcined schist and/or natural or calcined pozzolans, and/or

- a source of calcium sulfate selected from plaster, hemihydrate, gypsum and/or anhydrite, alone or in a mixture.

5. The binder according to claim 1, which comprises or consists of, by weight, from 10 to 70% of ladle slag, from 2 to 35% of Portland cement, from 5 to 45% of calcium sulfate and from 2 to 35% of aluminous cement.

6. A dry mortar composition comprising a binder according to claim 1, and aggregates.

7. The dry mortar composition according to claim 6, wherein the aggregates have a diameter of less than 8 mm.

8. The dry mortar composition according to claim 6, comprising by weight from 0 to 7% of Portland cement, from 1 to 35% of ladle slag, from 1 to 15% of calcium sulfate, from 0 to 5% of aluminous cement and from 40 to 90% of aggregates.

9. The dry mortar composition according to claim 8, comprising by weight from 3 to 6% of Portland cement, from 8 to 15% of ladle slag, from 5 to 10% of calcium sulfate, from 1 to 4% of aluminous cement and from 40 to 90% of aggregates.

10. The dry mortar composition according to claim 6, comprising one or more additives, chosen from rheological agents, water-retaining agents, air-entraining agents, thickeners, biocidal protecting agents, dispersants, pigments, accelerators and/or retarders, polymeric resins.

11. A floor product or technical mortar, obtained by mixing with water of the dry mortar composition according to claim 6.

12. The floor product according to claim 11, which is a screed or a floor coating.

13. The binder according to claim 1, wherein the ladle slag has a chemical composition which comprises the following constituents within the limits hereunder expressed as percentages by weight:

SiO_2: 7-12%,

CaO: 40-55%

Al_2O_3: 25-45%.

14. The binder according to claim 3, wherein the D50 of the ladle slag is between 8 and 15 μm.

15. The dry mortar composition according to claim 6, comprising between 10 and 60% by weight of binder.

16. The dry mortar composition according to claim 7, wherein the aggregates have a diameter of less than 4 mm.

17. The binder according to claim 1, wheren the ladle slag is crystallized at least 30% by weight.

18. The binder according to claim 1, wherein the ladle slag has an iron oxide content of less than 5% by weight.

19. The binder according to claim 1, wherein the ladle slag comprises a phase C_3A and a phase $C_{12}A_7$ in a total content by weight of at least 20%.