CLAIMS

1. A powdered quick-setting agent comprising a calcium aluminate and a sodium silicate, wherein the molar ratio of SiO_2 to Na_2O in the sodium silicate (SiO_2/Na_2O) is 0.5 to 1.5.

2. The powdered quick-setting agent according to claim 1, wherein the number of hydrates in the sodium silicate is 9 or less.

3. The powdered quick-setting agent according to any one of claims 1 or 2, wherein the molar ratio of CaO to Al_2O_3 in the calcium aluminate (CaO/Al_2O_3) is 2.0 to 3.0.

4. The powdered quick-setting agent according to any one of claims 1 to 3, further comprising at least one selected from the group consisting of an alkali carbonate, a calcium hydroxide and an alum.

5. The powdered quick-setting agent according to any one of claims 1 to 4, further comprising at least one selected from the group consisting of an alkali metal sulfate, an alkaline earth metal sulfate, and an aluminum sulfate.

6. The powdered quick-setting agent according to claim 4 or 5, comprising an alum, wherein the alum is at least one selected from the group consisting of potassium alum, sodium alum, and ammonium alum.

7. The powdered quick-setting agent according to any one of claims 1 to 6, comprising the calcium aluminate in an amount of 30 to 80 parts by mass and the sodium silicate in an amount of 0.5 to 20 parts by mass in 100 parts by mass of the powdered quick-setting agent.

8. The powdered quick-setting agent according to any one of claims 4 to 7, comprising an alkali carbonate, a calcium hydroxide and an alum, and comprising the alkali carbonate in an amount of 1 to 20 parts by mass, the calcium hydroxide in an amount of 5 to 30 parts by mass and the alum in an amount of 0.5 to 30 parts by mass in 100 parts by mass of the powdered quick-setting agent.

9. The powdered quick-setting agent according to any one of claims 5 to 8, comprising an alkali metal sulfate, and comprising the alkali metal sulfate in an amount of 3 to 25 parts by mass in 100 parts by mass of the powdered quick-setting agent.

10. The powdered quick-setting agent according to any one of claims 5 to 9, comprising an alkaline earth metal sulfate, and comprising the alkaline earth metal sulfate in an amount of 10 to 60 parts by mass in 100 parts by mass of the powdered quick-setting agent.

11. The powdered quick-setting agent according to any one of claims 5 to 10, comprising an aluminum sulfate, and comprising the aluminum sulfate in an amount of 5 to 25 parts by mass in 100 parts by mass of the powdered quick-setting agent.

12. The powdered quick-setting agent according to any one of claims 5 to 11, comprising an aluminum sulfate, and wherein the number of hydrates in the aluminum sulfate is 5 to 18.

13. The powdered quick-setting agent according to any one of claims 5 to 12, comprising an alkaline earth metal sulfate, and wherein the Blaine's specific surface area of the alkaline earth metal sulfate is 3000 cm^2/g or more.

14. A quick-setting material prepared by blending a powdered quick-setting agent of any one of claims 1 to 13 in spray mortar or spray concrete.

15. The quick-setting material according to claims 14, wherein the spray mortar or the spray concrete contains a blast furnace slag.

16. A quick-setting material hardened product of a hardened product of a quick-setting material of claim 14 or 15, which is such that cracks existing in the surface thereof and having a maximum width of 0.1 mm are repaired 50% or more in a water contact environment for at least 6 months.

17. A spraying method, comprising mixing and combining a spray mortar or a spray concrete while being conveyed, with a powdered quick-setting agent of any one of claims 1 to 13 to be a combined stream, and spraying the resultant stream to a subject to be sprayed therewith.