Solution to Problems

[0008]

The present inventors performed a thorough investigation in order to achieve the object, focused on the content of silica (SiO_2) and a mass ratio (SiO_2/Al_2O_3) of silica (SiO_2) to alumina (Al_2O_3) in pozzolan contained in coal ash, and found that, in a mixed cement in which the SiO_2 content and the mass ratio SiO_2/Al_2O_3 are in specific ranges, short-term strength development is high while maintaining properties of the coal ash as an admixture, thereby completing the present invention. That is, the present invention is as follows.

[0009]

[1] A mixed cement wherein 20 ~ 40 mass% of coal ash in which a SiO_2 content is 55 ~ 60 mass% or lower and a mass ratio SiO_2/Al_2O_3 is 2.3 ~ 2.7 or lower, and 60 ~ 80 mass% of Portland cement with respect to the total amount of the coal ash and the Portland cement, and 100 ~ 300 mg/kg of triethanolamine are contained, and

a mass ratio (the amount of Fe in a crystal phase/the amount of Fe in the coal ash) of an iron content in a crystal phase of the coal ash to an iron content in the coal ash is 0.10 ~ 0.17.

[2] The mixed cement according to [1], in which the trialkanolamine is triethanolamine.

[3] The mixed cement according to [1] or [2], in which the sum of the SiO_2 content and an Al_2O_3 content in the coal ash is 70 ~ 82 mass%.

[4] The mixed cement according to any one of [1] to [3], in which a Fe_2O_3 content in the coal ash is 5.0 ~ 8.0 mass%.

[5] The mixed cement according to any one of [1] to [4], in which a mass ratio (the amount of Fe in a crystal phase/the amount of Fe in the coal ash) of an iron content in a crystal phase of the coal ash to an iron content in the coal ash is 0.10 ~ 0.17.

[6] The mixed cement according to any one of [1] to [5], in which an insoluble residue (insol) content in the coal ash is 75 ~ 87 mass%.

[7] The mixed cement according to any one of [1] to [6], in which a Blaine specific surface area of the coal ash is 2500 ~ 4000 cm^2/g.

[8] The mixed cement according to any one of [1] to [7], in which a content of the coal ash is 25 ~ 35 mass% and a content of the Portland cement is 65 ~ 75 mass%.

Effects of Invention

[0010]

According to the present invention, it is possible to provide a mixed cement that contains coal ash and in which short-term strength development is high while maintaining properties as an admixture of coal ash.

CLAIMS

1. A mixed cement wherein 20 ~ 40 mass% of coal ash in which a SiO_2 content is 55 ~ 60 mass% or lower and a mass ratio SiO_2/ Al_2O_3 is 2.3 ~ 2.7 or lower, and 60 ~ 80 mass% of Portland cement with respect to the total amount of the coal ash and the Portland cement, and 100 ~ 300 mg/kg of triethanolamine are contained, and

a mass ratio (the amount of Fe in a crystal phase/the amount of Fe in the coal ash) of an iron content in a crystal phase of the coal ash to an iron content in the coal ash is 0.10 ~ 0.17.

2. The mixed cement according to claim 1, wherein the sum of the SiO_2 content and an Al_2O_3 content in the coal ash is 75 ~ 86 mass%.

3. The mixed cement according to any one of claims 1 or 2, wherein a Fe_2O_3content in the coal ash is 5.0 ~ 8.0 mass%.

4. The mixed cement according to any one of claims 1 to 3, wherein an insoluble residue (insol) content in the coal ash is 75 ~ 87 mass%.

5. The mixed cement according to any one of claims 1 to 4, wherein a Blaine specific surface area of the coal ash is 2500 ~ 4000 cm2/g.

6. The mixed cement according to any one of claims 1 to 5, wherein a content of the coal ash is 25 ~ 35 mass% and a content of the Portland cement is 65 ~ 75 mass%.