EPRA International Journal of Environmental Economics, Commerce and Educational Management
Journal DOI: 10.36713/epra0414 |ISI I.F Value: 0.815|SJIF Impact Factor (2020): 7.572 ISSN: 2348 – 814X
Volume: 7| Issue: 5| December 2020

ASHGE-BASED WASHING BINDING BODIES

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----------ANNOTATION----------
Chemical-mineralogical composition and hydraulic activity of binders based on ash-slag wastes, fuel ash and slag on their widespread use in the production of binders
KEYWORDS: *Ash-slag waste, active mineral additives, sulfate medium, sour ash.*

INTRODUCTION

The chemical-mineralogical composition and hydraulic activity of fuel ash and slag-based binders allow them to be widely used in the production of binders. Ash-slag waste can be used as an active mineral additive with clinker-free binders and cement clinker, as well as as a raw material component for the formation of cement clinker [1]. Ash has a certain hydraulic activity, i.e. the ability to bind calcium oxide at normal temperatures. The activity of the ash is observed in much smaller fractions and increases as the phase composition of the glass appears. Glass is easily hydrated in alkaline and sulfate environments with increasing alumina permeability. Sour ash is characterized by low hydraulic activity. Like slag, the activity of the ash increases during hydrothermal treatment. The content of unburned fuel in the ash should be minimal (in coal ash - no more than 10%. In peat - 5%), the amount of SO3 should not exceed 3%, the amount of unburned SaO and MgO binder should not exceed 5%. Lime acocan is applied quenched, but there is also the practice of using it quenched.

OBJECTIVES

The composition of lime-ash cements depends on the presence of active calcium oxide and minerals capable of hydration in the ash composition. The optimal content of lime in these binders is 10 ... 40%, which decreases with increasing amount of free calcium oxide and minerals in the ash. Like other lime-hydraulic binders, the softness of lime-ash cements should be such that at least 90% of the mass must pass through the sieve when the sample is sieved -№ 008. Curing of this group of binders should begin 25 minutes after the start of the mixing process and end within 24 hours. When gypsum (5%) is added to them and quicklime is used, hardening is accelerated and other properties of binders are improved.

METHODOLOGY

The brand of lime-ash cements is defined in the same way as that of Portland cement. The test features are that the samples are first kept in a humid environment for 7 days, then they are removed from the mold and kept in water for 21 days. The following brands of connectors under consideration are available: M50, M100, M150 and M200. Autoclave treatment allows to form concrete with a strength of 15 ... 25 MPa on the basis of lime-ash binders. Ash and fuel slag are used as a raw component of Portland cement clinker and as an active mineral additive in the production of Portland cement, as well as composite ash and slag cements.

In the production of clinker, the soil and partially calcareous components of the raw material mixture are replaced by ash, which in some cases improves the chemical-mineralogical composition of the clinker and its burning conditions. The approximate value of the suitability of ash-slag waste as a component of the raw

material mixture is determined by the conditional silicate modulus index, which should not be less than 1.9. Higher technical and economic performance of clinker production is achieved through the use of dry ash from pneumatic assembly. For the cement industry, the presence of unburned fuel, which averages 10% of the ash content, is valuable. That means 1 million. tons of ash when used as a raw material component, the cement industry will produce 100 mln. will have fuel. In the production of cement, the main components of fuel ash and slag are used as active mineral additives.

In this case, they should be in the following quantities, not more than%: S2A - 40, S3A -3, losses on heating - 10. Waste ash and fuel slag, like other active mineral additives, are added in quantities not exceeding,%: portland cement-15, puttsolon-25. ..40. The inclusion of ash in the cement (up to 15%) reduces its strength in the initial stages of the solidification process, the decrease in strength is minimal at 28 days, and in the long curing periods the strength of cement is much higher than in the ashless state. An increase in ash content (more than 15%) usually results in a significant decrease in the strength properties of the cement. As the ash content increases, the water requirement of the cement increases, but it is less than that of other putstsolan additives.

Typically, the increase in ash dispersion is due to the water demand of ash portland cement does not cause an increase, but rather has some plasticizing effect. As a result of the relatively small hydraulic activity of the ash, the use of ash cements reduces the heat dissipation in concrete, which is an important factor in its use in large-scale structures. It has been practically proven that any type of ash mainly increases the sulphate resistance of mixes and concretes when clinker is used with a high content of S3A. The cost-effectiveness of 1 ton of ash, which is used as an additive in the cementing of cement mortar, is 0.7 ... 1 soum. As a result of research conducted by the staff of the Moscow Institute of Civil Engineering named after Kuibyshev, the technology of production of Portland cement and slagportland cement through the introduction of fuel granular slag as an active additive was proposed. Slags with a modulus of 0.6 ... 1 and an activity modulus of 0.4 ... 0.6 have been found to have the highest hydraulic activity [2].

SUGGESTIONS

The physical and mechanical properties of slagportland cement based on fuel and granulated blast furnace slag differ little from each other. Replacement of blast furnace slag with granulated fuel slag is economically viable for cement plants located close to thermal power plants and equipped with liquid slag collection facilities. The optimal amount of granulated fuel slag is about 40% in evaporated cements, while in autoclave treatment it is doubled. In the production of granular fuel slag slagportland cement concrete prefabricated reinforced concrete structures. can be successfully used in industrial and civil construction, in the construction of large hydraulic structures.

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