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ВЛИЯНИЕ ВНЕШНЕЙ ЗОЛЫ НА СВОЙСТВА ПЕНОБЕТОНА

Аннотация На основании анализа и лабораторных экспериментов
предварительно можно сделать вывод о применении пенобетона с золой-уноса.

Ключевые слова: прочность, зола-уноса, пеногенератор

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INFLUENCE OF FLASH ASH ON PROPERTIES OF FOAM CONCRETE

Annotation Based on the analysis and laboratory experiments, it is preliminary
possible to conclude the use of foam concrete with fly ash.

Key words: strength, fly ash, foam generator.

Lightweight foam concrete is one of the latest innovations of concrete technology in civil engineering, which can be used as an environmentally friendly material and suitable for thermal insulation. Foam concrete contains fine sand, cement, water and foam without the use of coarse aggregate[1].

Foam concrete is produced by adding foam to the mixture. The function of foam is to create air voids in the mixture, making the weight of the concrete lighter. The foaming agent is diluted in water and then air pressure is applied using a foam generator to produce foam.

Fly ash used as a filler in foam concrete not only saves resources, but also improves the properties of foam concrete. In this paper, the thermal properties of fly ash foam concrete were studied through experiments and the results were analyzed. [2,3,4,5]

The effect of fly ash on the strength of foam concrete is studied in this article. The dry density of the foam concrete used in this experiment is 600 kg/m³, which is

mainly used in foam concrete for heat preservation in construction. [6,7,8] To more effectively use the fly ash from municipal solid waste to develop new foam concrete building materials, different proportions of fly ash are studied, and this paper analyzes the dry density, mechanical characteristics and microstructure appearance of foam concrete of different ages[9].

To carry out experimental studies, we used Portland cement from the Kuvasaycement plant, grade PTs400 D20, foam concrete composition (Tables 1, 2), thermal insulation and structural foam concrete grade M800 [10].

By experimentally studying various compositions of foam concrete, high performance indicators of the components were observed when containing fly ash. Structural foam concrete with fly ash was studied by manufacturing 2 series of twin prism samples measuring 4x4x16 cm. The first series was control samples, the second - with fly ash. Test periods are 1, 3, 7, 14 and 28 days after hardening. The test results are presented in table. 3[11].

Table. 1 Laboratory composition with sand, thermal insulation and thermal insulation structural foam concrete mixtures

№	Name of material	Composition of foam concrete mixtures, kg	
		na 1 m ³	control for 5 liters of batch
1.	Sement	300	1500
2.	Pesok frak. 0-5 mm	300	1500
3.	Peno	50	250
4.	Voda, l	160	800

Table 2 Laboratory composition with fly ash, thermal insulation and thermal insulation structural foam concrete mixtures

№	Naimenovanie materiala	Composition of foam concrete mixtures, kg
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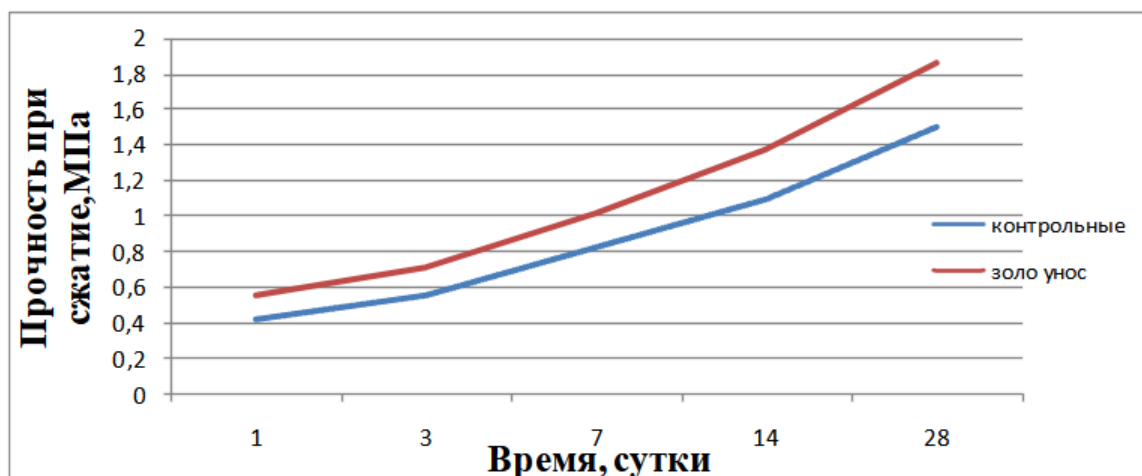
		na 1 m ³	control for 5 liters of batch
1.	Sement	300	1500
2.	Zola unos	300	1500
3.	Peno	50	250
4.	Voda, l	180	900

The introduction of fly ash into the composition of thermal insulation and thermal insulation structural foam concrete increases the strength of the thermal insulation and thermal insulation structural foam concrete during all curing periods.

Table 3 Results of a study of the compressive strength of thermal insulation and structural foam concrete

№	Name of samples	Average density, kg/m ³	Compressive strength of thermal insulation and thermal insulation structural foam concrete (MPa) at age and its increase (%), day				
			1	3	7	14	28
1	With sand	800	<u>0.42</u>	<u>0.55</u>	<u>0.82</u>	<u>1,1</u>	<u>1.5</u>
			100	100	100	100	100
2	With fly ash	850	<u>0.56</u>	<u>0.72</u>	<u>1.02</u>	<u>1.38</u>	<u>1.86</u>
			130	130	124	125	124

Figure 1 Effect of fly ash on the compressive strength of thermal insulation and thermal insulation structural foam concrete



Conclusion. Thus, by experimentally studying various compositions of foam concrete, to obtain increased strength of foam concrete with the addition of fly ash.

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