

CALCULATION OF LIGHTWEIGHT CONCRETE COMPOSITION

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***Abstract:** Volumetric mass, thermal conductivity, and strength of lightweight concrete depend primarily on the nature of the fillers used, the amount of water added to the mixture, and the brand of cement. In the preparation of lightweight concrete structures, the mixture is often placed in the mold in one form. is absorbed. Cement and water consumption should be increased to make the porous concrete mixture easily flowable. Therefore, when calculating the composition of lightweight concrete, it is necessary to pay attention to the porosity, water permeability, and the shape of the grains.*

***Keywords:** lightweight concrete, fillers, building materials and others*

Calculating the composition of the concrete mixture is carried out in the following order: determination of the concrete mixture and the demand for concrete; selection of used materials and determination of quality; 1 m³ calculation of material consumption for concrete; calculating the consumption of materials for the experimental mixture;

preparing a mixture for the experiment and calculating its composition; calculating the actual composition of the concrete mixture. Tasks given to determine the composition of concrete should include the following : concrete dry density, concrete's cold resistance and waterproofing grade, technological parameters of concrete mixture preparation and compaction; type of cement, its activity, type of coarse aggregate, type of sand, its tendency to water and density.

1 m³ The calculation of material consumption for concrete is as follows:

1) The consumption of cement is determined taking into account the strength of concrete, the brand of cement, the strength of large filler and the strength of the concrete mixture.

2) Water consumption is determined. When determining it, it is necessary to pay attention to the mobility of concrete (hardness) and the type of large filler.

3) Volumetric concentration of large filler is determined. When determining it, consumption of cement and water, density of concrete and moisture content of sand are taken into account.

4) The cost of a large planter is determined as follows : (k g/m³)

$$K_t = 100 \cdot Y \cdot \rho$$

Here ρ - a large filler of grains density ,

Y- big of the filler volume concentration ,

5) Sand spending is defined as :

$$Q = \rho_q - 1,15 \cdot C - K_t$$

Here, C-cement consumption; K_t - consumption of a large filler.

After determining the composition of lightweight concrete, its strength may not correspond to the specified strength. Therefore, we prepare cube samples of heavy concrete with similar sides of 15 cm and test them. If the test results do not match the calculated content, we will adjust the content by changing it.

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