

УДК 691

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GENERAL INFORMATION ON CELLULAR CONCRETE PRODUCED ON THE BASIS OF INNOVATIVE TECHNOLOGIES

Abstract: *In this article, general information about cellular concrete produced on the basis of innovative technologies is presented based on theories.*

Key words and phrases: *concrete durability, porosity, silica, acid, strength, construction.*

Аннотация: *В данной статье на основе теории представлены общие сведения о ячеистом бетоне, производимом на основе инновационных технологий.*

Ключевые слова и фразы: *прочность бетона, пористость, кремнезем, кислота, прочность, конструкция.*

Cellular concrete - mineral binder and silicate to fillers based on artificial porous construction material is light _ concrete of types one is considered (Figure 1)



Figure 1. Cellular
concrete appearance

Basically construction heat insulation for intended : for example , of buildings a lot layered the wall structures heat insulation layer as , reinforced concrete medium plates and attics for insulation as ; up to 400°C has been equipment and of pipes surfaces heat with protection to do for _ to the heat resistant cellular concrete surface temperature up to 700°C has been equipment heat insulation for is used .

Cellular concrete the following properties according to classified as :

- functional the goal,
- pore harvest to do method ,
- connective type ,
- silicate of the component type ,
- hardening method

Cellular of concrete functional purpose according to classification is given in table 1 .

Cellular of concrete average density and to the goal looking classification

Table 1

Concrete type	Average density, kg / m ³	To squeeze strength, MPa
Heat insulation	300-500	0.4-1.2
Thermal insulation-structural	500-800	1.2-2.5
Structural	800-1200	2.5-15

Porous crop to do method according to to the following divided into :

- chemical (aerated concrete , gas silicates , gas slag concrete , gas ash concretes and others);
- mechanical (foam concrete , foam silicates , slag hydroxide foamy concrete , foam aggregate concrete and others);
- mechanical-chemical (foamy aerated concretes).

Chemical method basically high dispersion pore harvest doer aluminum component and initial components (alkaline environment provide) between chemical reactions through gas harvest to do is based on Aerated concrete in getting gas work producer (aluminum powder) and calcium between hydroxide [Ca(OH 2)]. reactions the following scheme according to continue will :



Harvest has been hydrogen do not interfere it provides porosity (increase) .
This porization method with carbonated of concrete products is taken .

Mechanic method mouldable to the mass special prepared technical stable foam enter them _ together mixing and later on porous do not interfere to harden based on This scheme according to foamy concrete is taken .

Foamy concrete products work release technology fundamentally difference who does two scheme according to organize done : first scheme usual atmosphere in pressure technical foam , lime part and foamy concrete mixture to receive provides ; second scheme 0.1 - 0.5 MPa excess in pressure foamy concrete mass to receive provides a mixer and pneumatic camera of the pump functions one in the aggregate will be combined .

Marked products efficient combined mechanical and chemical method get can _ This method news category input can , in this the first stage molding mixture to the structure foam the introduction with breaks down , then porous in mass gas harvest doer substances or cellular porosity which provides another methods because of bigger cellular holes harvest will be done .

Connector type according to cellular concrete as follows classified as :

- cemented ;
- lime-silicate connective ;
- slag binder substance _
- ash ;
- gypsum connective .

Hardening method according to the following divided into :

- autoclave cellular concretes (hardening processes at a temperature of 170-190 ° C and steam is air environment occurs at a pressure of 0.8-1.2 MPa will be);
- autoclave didn't happen cellular concrete (up to 100 ° C has been hydrothermal processing to give in temperature and atmosphere in pressure hardens);

- natural stiffening cellular concrete (normal moisture conditions for 28 days hardens).

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