

RESUMEN N° 4- 11/05/09

Dr. Prof. A.M.EMINOV, the engineer B.T.SOBIROV, the master, A.A.EMINOV, The Tashkent Chemical – technology Institute, Dr. Prof. Z.R.KADIROVA., Institute of general and inorganic chemistry AS RUz

BUILDING FRONT TILES BY USING GALVANIC SHLAMMS

KEYWORDS:

Building ceramic front tiles with use non-conventional raw materials – galvanic shlamms; Mixture components of experimental body; Mechanical durability; Thermo stability.

In this work results of research of building ceramic front tiles with use nonconventional raw materials – galvanic shlamms a withdrawal of a factory "Electrodevice" (the joint venture JV Elga-Asia) are given. As the basic local source of raw materials were used of Angren secondary kaolin, whedge Sergeli KDK, Koytash pegmatite.

With this purpose for definition of technological parameters of manufacturing of front tiles have been lead industrial tests of optimum structures of ceramic weights. Skilled- industrial tests on reception of experimental batches (Open Society " Elga Azia ") are lead at the Tashkent combine building materials.

Eight structures of raw mixture have been chosen for this purpose : three- component masses weights on the basis of wedge Sergeli KDK without pegmatite with content galvanic shlam in quantity of 10-20 %; the mass of four componential containing 15 % pegmatite with prevalence wedge and with the maintenance galvanic shlam in quantity of 10 %. Thus it is necessary to note, that mixture structures of the skilled ceramic masses, prepared in quantity of 4 kg for each one (in recalculation on dry substance).

In table 1 are resulted mixture structures of skilled ceramic weights on the basis of local raw materials with using galvanic shlam "Uzelectroapparat".

To study technological and physicommechanical properties of samples on the basis of investigated mixture applied the accepted technique ceramic technologies. On the basis of which stony materials anticipate crushed no more than 10 mm in a diameter, then exposed to a thin grinding by wet way in a spherical mill with uralit cover and shallow bodies were splitted up till the size no more. Then their mixing with crushed Angren clay and a joint grinding clay and pined components was spent in 8-10 hours in humidity slicker 48-50% till disparity, characterized surplus on sieve №0063 no more 2%. Prepared ready slicker let out over sieve №5 and then exposed drained in gypsum form.

After draining up to the pressed humidity of 6, 5-7, 0 % of mass were sifted by prodeleting through a sieve № 2 under the standard, were defined granulemetric structures of press-powders. Plasticity of weights determines on a difference between absolute humidity mass deals to the top border of fluidity and border rolling. In tab.2 researched characteristics, in particular granulemetric structures of the received press-powders, their humidity and parameters of plasticity are shown.

Pressing of ceramic front tiles in the size 200x200x7 mm was spent on press "Magnum-808" at pressure of pressing of 230-240 kg/sm². Mechanical durability dried up at temperature 100 +5 °C tiles on the average made 4, 8-5, 2 kg/sm². Fresh forming of a tile burnt on a conveyor line "Siti" at the general duration of 45 minutes and the maximal temperature 1117-1121 °C.

Results of visual survey of the burnt samples have shown that except for mass M-3 all tiles after roasting had no cracks and de-formations. Also on glazier surfaces of the tiles sock, pin and mountain ash were absent.

Tests of physico-mechanical properties of skilled tiles have shown that on durability on a bend in the burnt condition all structure for exception is surpassed with requirements of SS 6141-91. All without exception satisfied to requirements on thermo stability and hardness on Moose and on indicator water absorptions is satisfied with mass M-1, M-3 and M-6. Thus it is possible to note, that on a parameter of deviations from the nominal sizes have slightly exceeded the admission of mass M-5 and M-6, however all three-componential mass (except for M-6) have considerably exceeded maximum deviations on length and width (in 1,6 - 6,3 times), that testifies to unsatisfactory sintering. Here there are strong linear deformations of samples, owing to sharp increase in quantity of a formed liquid phase at final stages of roasting. Only four-componential mass M-7 and M-8, containing 15 % Koytash had admissible parameters of deviations.

It is necessary to note also, that these structures are allocated among others with qualitatively excellent low values of the general usade (enlarge and shortages of mud), on the average almost in 2 times.

As a whole, it is established, that the general usade four-componential mass below the general usade three-componential

On the basis of the received results are skilled-industrial tests it is certain, that the weights containing possessing quantity wedge together with pegmatite are optimum. Thus maintenance galvanic shlam should not exceed 10 %. It is established, that introduction in structure of 10 % of fight of the burnt tiles improves physico-mechanical and technological properties of the burnt tile.

As a result of the lead researches it is certain, that optimum maintenances of raw components for manufacture ceramic facade tiles on the basis of results it is skilled - industrial testing make, mass of %:

Angren secondary kaolin	- 40-45 %;
Klines Sergeli KDK	- 20-25 %;
Koytash pegmatite	-15 %;
Skull (battle heated tile)	-10 %;
Galvanic mud plant "Uzelectroapparat"	- 10 %;

Thus, lead it is skilled-industrial tests have shown an opportunity of using galvanic shlam factory "Uzelectroapparat" as a raw component of mass for reception ceramic the facing front tiles adequating operating required of the standard. Usage of galvanic shlam over shown factory in structure of tiled mass will allow to reduce transport races-courses to transportation of raw material as they are located in territory of Tashkent, and also to expand raw base to solve problems of preservation of the environment due to recycling technogenic by-products of the industry.