



CERAMIC MANUFACTURING TECHNIQUE WITH TECHNOGENIC WASTE USAGE



Manufacturing technique for ceramic products involves loading to the blend composition, in addition to clay dough, of a neutralized mixture which was obtained from waste products of titanium (IV) oxide due to sulfuric acid technology and ash of thermal power plants. The process of the waste neutralization takes place at normal temperature.

These ceramics exceed in quality ceramic products made by plastic forming according to standard technology and do not contain radioactive elements and heavy metals.

Manufacturing technique for ceramic products utilizing technogenic waste involves the use of standard chemical equipment.

The main advantage of the technique, compared to similar ones, is an improved quality of the ceramic products due to the presence of the waste in the products which consists of titanium (IV) oxide.

The manufacturing technique lows the cost of raw materials and reduces the environmental burden. A patent for this technique was granted in Ukraine.

Depending on the number and composition of the additive physico-chemical properties of the ceramic products are determined in the following ranges:

- density, g/cm³ 1.45-1.89;
- water absorption, % 12.96-17.60;
- compressive strength, MPa 25-53.

Physico-chemical parameters of ceramic samples meet the requirements of the State Standard of Ukraine ДСТУ 530-95 and ДСТУ 530-95 “Face bricks and ceramic stones” and the values of such ceramic product brand marks as 100, 125, 150, 175, 200, 250, 300.