TECHNOLOGICAL ANIZOTROPY OF ARTIFICAL STONE AND PRACTICAL USE OF THIS PHENOMENON

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The technology of the concrete and lime-sand building stone usually includes uniaxial pressure of semidry mixes.

In the Concrete Mechanics Laboratory of the RTU, a technological anisotropy of the pressed stone is stated. The degree of this anisotropy is about 1.1-1.25. This is associated with the self-destruction processes after discharge of the moulding pressure since the microdefects are preferably located in the planes perpendicular to the pressure direction. Therefore, the tensile strength in the pressure direction is less than in other directions. This phenomenon was used for elaboration of a four-direction split-technology for producting a cheap and lightweight external facing material for buildings. When this technology is used in the production of lime-sand bricks, frost-resistant facing tiles can be obtained. These tiles can also be used for the imitation of a split natural stone like the dolomite, limestone or other sediment rock, which is more (about 4-5 times) expensive and has very non-homogenous mechanical properties.