

## SAND AND WATER MADE PRODUCTS AS PERSPECTIVE ENERGY SAVING TECHNOLOGY OF BUILDING MATERIALS

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The most widely used in construction materials industry are ceramic and lime bricks. Higher energy consumption and several ecological problems make their manufacture to become more and more expensive. The growing market of construction works and constant extension of real estate property increases the demand for cheap and new materials with desired features. As a result of many years intensive scientific researches there is now a practical possibility to offer an alternative and unique sand and water based products technology of manufacture (bricks, wall, floor and roofing tiles, sanitary materials, heat insulating and acid proof articles, decorations and other – all of them of desired size, shape and colour). This type of manufacture is very profitable for the countries having the deposits of sand everywhere situated and being extracted at very low prices.

Relative to conventional construction materials, sand and water made products (SWP) with mechano-chemical binders will continue to gain in popularity because of the following advantages:

- low energy consumption and low prices for the products (Table 1);
- ecological safety of the manufacture process and of the ready-made products;
- superb mechanical and design properties;
- high thermal stability and resistance to different acids;
- moisture and cold proofness;
- surface need not be fired;
- no shrinkage of the products after drying;
- simple to manufacture a variety of different products;
- ready availability and flexibility in design;
- absence of manufacture wastes.

Table 1 – Energy expenses to produce 1.000 pieces of 250× 120× 65 mm bricks

Indices	Units of measuring	Types of bricks		
		Ceramic bricks	Lime bricks	Sand & Water bricks
Convention fuel	kg	230.0	70.0	17.7
Electrical energy	KWt	80.0	45.8	70.0
Energy expenses compared to ceramic bricks:				
fuel	%	100.0	59.0	15.4
electrical energy	%	100.0	57.0	88.0
Total energy expenses compared to ceramic bricks	%	100.0	59.0	30.0