

BASIC REQUIREMENTS FOR SOLID BIOFUEL

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The main requirements for the quality of finished solid biofuel are: high moisture resistance, heat capacity, density and strength.

One of the effective ways to increase the heat-technical characteristics of the original biomass is its pressing in a mixture with other combustible, especially high-calorie materials.

It was established that the addition of used polyethylene in the amount of 30 % by mass does not impair the necessary consumer characteristics, but significantly increases the heat capacity of the fuel briquette.

The calorific value of polyethylene is quite high, 46.5 MJ/kg (gasoline 47). That is, we significantly increase the heat capacity of the briquette.

The main qualitative indicator of polyethylene, in comparison with the materials listed above, and unlike all other polymer materials, is its good weldability, which will determine the creation of a homogeneous material.

The weldability of polyethylene provides: high elasticity of the briquette even with heavy loads of the case. The appearance of affordable ultrahigh-frequency (UHF) equipment, which is characterized by flexibility, a high degree of automation, low inertia of the adjustment of the output parameters, makes it possible to influence the structure, composition and properties of materials in a targeted manner.

Modification of these materials in a given direction allows to implement previously unattainable technological processes of processing secondary raw materials (plant waste, polyethylene, leather dust, etc.).

Automated determination of energetically rational modes of operation of the microwave installation based on economic criteria is economically and energetically expedient and practically quite feasible.