



## PRODUCTION OF CHIPBOARD MATERIAL FROM LOCAL RAW MATERIALS

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### ABSTRACT

*According to most experts, in the coming years, the sub-sector of building materials production needs modern construction with a set of consumer characteristics that meet needs, environmental friendliness and an increase in the production of new efficient materials that meet aesthetic requirements. The requirements of a modern person are associated with an increase, one can expect significant structural changes. In the conditions of increasing energy saving requirements of modern construction, it is also relevant to search for new types of chipboard materials. These materials, obtained from local raw materials, have a whole set of listed properties, and therefore their use is becoming more and more popular.*

### INTRODUCTION

Wood is the most demanded plant raw material used for the production of heat-insulating materials and structures. As a result of its processing, millions of tons of waste remain in the form of sawdust, wood chips, twigs and branches that can be used in production. In addition, there are raw materials similar to wood in terms of chemical composition, such as grain straw, reed, vine, cotton stalk, cotton seed, sunflower, and rice.

In the context of the growing shortage of cane, the use of plant waste becomes especially relevant. First, it allows to expand the types of products of cane processing enterprises and, as a result, to increase their profitability. Secondly, the

problem of protecting the environment from waste pollution is being solved.

### LITERATURE ANALYSIS AND METHODOLOGY

The rational management of nature, which includes the integrated use of plant materials, implies the involvement of the cane processing industry and the production of agricultural waste. One of the promising ways of using plant waste is the production of heat-insulating materials. Plant waste can be used both as the main raw material and as an additive to the working composition in the production of building materials, reducing the cost of the finished product. According to the GOST classification, heat-insulating materials based on plant raw materials, including



plant waste, can be conditionally divided into 3 types:

- sewn mats;
- pressed boards based on pre-fibrous raw materials (DVP) using plant raw material modification products as binders or incorporating external mineral or polymer binders;
- pressed boards based on crushed (sliced) raw materials using an organic or mineral binder.

## RESULTS

The most popular type of thermal insulation materials based on plant raw materials are fiber boards. Depending on the type of plant material used (sawdust, branches, roots, etc.) and the method of obtaining fibrous mass, the production scheme of heat-insulating materials changes and is adjusted. Thus, for example, pulping by explosive autohydrolysis (VAG) allows to bypass the measurement step and obtain board materials, since adhesives are formed during pulping.

The stage of obtaining fibrous mass from plant raw materials is the most important in the entire technological cycle for the

production of fiberboard. First, the quality of the resulting fibrous mass determines the performance characteristics of the finished product, and secondly, this stage requires the most energy and resources. Therefore, the choice of methods and tools for the process of obtaining fiber mass is probably the main task in the production design for the production of fiber board. Currently, three main methods are used: the thermomechanical method using defibrators and cleaning agents, the high-speed pressure cooking method, and the chemical-mechanical method, in which raw materials are boiled in alkaline solutions before grinding.

## CONCLUSION

For the production of soft fiber boards with satisfactory thermal insulation properties, the average diameter of the resulting fiber should be 30-50 microns, and the average length should be from a few hundredths of a millimeter to 3-4 mm. Considering these requirements, it is important to choose not only the right method of pulping and the type of grinding machine used, but also its operating mode.

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