and usыhanyya a direction about A DIFFERENT fibers. Provedënnaya statystycheskaya Monitor showed vыsokuyu poluchennыh accuracy of results.

Timber structure, density, usыhanye, pryamovoloknystaya, volnysto-svylevatoe stroenye poplar, Ptich eye.

According to experimental results, the effect of anomalous structure of sycamore wood on its physical properties: density and shrinkage in different directions relatively to the fibers has been exposed. Statistical analysis showed the high accuracy of the results was conducted.

Wood structure, density, shrinkage, straight-grained, cross-grainedwavy-structure sycamore, bird's eye.

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DISCUSS METHODOLOGICAL ASPECTS OF RESEARCH TECHNOLOGY OF WOOD COMPONENTS BY CRUSHING

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The influence of the characteristics of the wood component on the properties of composite materials. These stages of the manufacturing process monoderevu. The results of the test experiment for the production of wood crushing tonkomirnoyi component materials.

Wood composites, wood fiber, monoderev, crushing tonkomirnoyi wood.

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Current nowadays problem of rational use of raw materials in the wood industry to some extent solved using low-quality wood as filler in the manufacture of composite materials.

Among these materials - plates derevynnostruzhkovi (DStP) and derevynnovoloknysti (DVP and MDF), OSV materials "Ultraspen", "Stractureframe", parkelit etc. [1, 4]. The difference between these materials is the difference technological factors on the stages of the process, which in principle common to them, making the tree component, causing binding and pressing [1].

On the basis of the existing range of wood composite materials can be concluded that the main difference between them is the different structure which is largely due to various parameters of wood particles:

their shape, size, breed humidity. The increase in the mechanical properties of materials will help to use long thin particles [5, 6]. It should be noted that the presence of the bark has a negative impact.

Wood plate component materials such as derevynnostruzhkovi (DSP, OSV et al.) And fibreboards (Board, MDF, etc) and products made by cutting raw material for schepu or chips and its subsequent grinding on chips or fibers. After applying the wood-binding adhesive composition is formed at a certain pressure and temperature [1-6].

In the production of the most common nowadays wood stoves using wood particles needle or plate form. The presence of dust and bark limited. Plate shape provides higher mechanical properties boards due to the greater length of the wood fibers. Therefore, the outer layers of plates that the operation is perceived more stress, more chips to form a faction [1].

Significantly higher mechanical performance of different plate special large chips. To provide such plates ruggedized chips in different layers oriented in a certain way (OSB).

This technology can be used to manufacture frames furniture products instead of wood parts (material "Stractureframe"). For this shponovydnoho pitched fiber material of a certain size and width, made of logs logs are placed parallel to each other.

Even greater fiber length in the material LVL (Laminated Veneer Lumber), because it is made from peeled veneer thickness 2 ... 3.2 mm in continuous presses. These plates are manufactured length18 mWidth 80 ... 1800 mm, thickness 21 ... 75 mm. They are used for load-bearing structures in construction, formwork, woodwork and construction products and others.

The positive effect of using wood component with long fibers inherent structural material, which has not found wide application, but has promising prospects. In the Ukrainian Research Institute machining wood, where 90 years of research conducted, it was called "monoderev" because the properties and structure it is similar to natural wood [2, 7]. The peculiarity of this material is that the wood component is obtained not by cutting and crushing small diameter wood. By preserving the natural strength of anisotropy and wood fibers physico-mechanical properties monodereva 5 ... 7 times higher than similar indicators chipboard and fiberboard and close to that of natural hardwood. This material may be a perfect replacement of natural wood solid hardwood in the manufacture of parts for wood, cabinet designs and more.

Because the study monodereva were discontinued in the early stages, given the prospects of this material identified the need to hold a series of pilot experiments to determine the main areas of research and large-scale optimization of process parameters of production. Within

these experiments is expected to clarify the boundaries and the level of basic operational parameters and get the natural sample material.

The process consists of monodereva manufacturing operations to crush tonkomiru state fiber weaving, drying them, applying binder forming package and pressing. Obviously, the properties of this material depend on many factors at each stage of the process.

Of great importance for the formation of high quality material with mechanical and geometrical parameters of the tree component. They depend on the characteristics of the raw materials crushing process parameters and further training to osmolennya.

For the manufacture of wood monodereva component can be used tonkomir from thinning and logging residues - the tops of trees, branches, etc. The characteristics of such materials is a breed diameter humidity. The choice of species composition of wood, to be used in the study should take into account, on the one hand, preferably low compressive strength across the grain, on the other hand, the large number of such materials in the forestry sector. Such requirements are met by soft deciduous (aspen, alder, poplar) and softwood (pine) species.

Among the crushing process parameters that form the weaving characteristics obtained in the survey process parameters to optimize their production should consider the impact of topography and diameter rollers, pressure, feed rate, the number of passes.

Quantitative characteristic quality of weaving can be tensile strength along the fibers.

Under the randomization of experimental research for future manufacturing operations (drying, causing binding, forming and pressing packet) must comply with the same methods and modes.

Drying weaving in an industrial environment can be carried out as fixed or as a checkpoint operation.

When selecting the type of binder should be considered to wood adhesive properties and requirements to the final product on environmental, water resistance and so on. The purpose and type of binder material depends on its quantity, mode and method of applying further compaction (temperature, duration of exposure under pressure, etc.). Note that manual formation package allows to produce billets complex spatial form, followed by pressing in vacuum presses.

As the parameters characterizing monoderev as a structural material may be considered its mechanical properties, resistance to pulling screws, water resistance, biostiykist, fire, etc.

To implement the process of manufacturing wood component monodereva as weaving, was reconstructed for crushing plant species (Fig. 1). It consists of a bed on which the fixed block bearing four drums,

the front two of which - Drive. They are served raw to the other two, while crushing it. The upper drum conditioner on both sides grooves cut at an angle to prevent stretching the width weaving.

Adjust the gap between the upper and lower drums is through vertical movement shaft by means of pneumatic cylinders, mounted above the upper drums. Pistons cylinders connected to the upper block bearings. The air enters the pneumatic cylinders and pistons are driven down, lowering the upper shaft. The pressure in the cylinders is controlled by a pressure gauge. The rate of raw materials may be regulated gear. Engine power 1200 kW.

Fig. 1. Installation for crushing wood.

Length of tables, mounted in front of and behind the settings should match the length tonkomiru supplied to crush, and length obtained weaving. To test the experiment the samples of the most common and rapidly renewable wood - poplar. Length samples - 1 meter. Samples rozsortuvaly into four groups of 10 samples for diameters: 15 mm,20 mm,25 mm and 30 mm 10 samples. Moisture samples were subjected to crushing was 80%.

Half of the samples of each group were subjected to a certain number of cycles crushing for weaving around the same structure size fibers (Fig. 2a). The second half of the samples were passed through the installation of once more while receiving weaving, of which is shown in Fig. 2b. The magnitude of increased pressure at each subsequent passage of the sample through the installation of one atmosphere. The main parameters of the process of crushing the study in trial experiments are given in the table.

Note that increasing the number of cycles crushing promotes the release of material from the cortex, which has a positive impact on the quality of the final material.

The resulting tree weaving contain fibers of varying thickness, most of which are interconnected by a length. An important characteristic of dimensional weaving may be the average thickness of a certain number of major fiber. Performed by 5 measurements on each side of the sample. The average values of the largest fiber thickness for each sample size given in the table. As you can see, the thickness of the fibers to achieve 6-10 mmThicker samples had to be subjected to more crushing cycles. Further increase in the number of cycles give the same effect.

and - the coarser weaving b - subtle weaving

Fig. 2. plaiting received crushing to install.

Settings research crushing process in trial experiments.

The thickness of the material, mm	15		20		25		30	
Number of samples pc.	5	5	5	5	5	5	5	5
The number of cycles crushing	3	4	3	4	4	5	5	6
The pressure in the cylinders, SC	0.0; 1.0; 2.0	0.0; 1.0; 2.0; 2.0	0.0; 1.0; 2.0	0.0; 1.0; 2.0; 3.0	0.0; 1.0; 2.0; 3.0	0.0; 1.0; 2.0; 3.0; 4.0	0.0; 1.0; 2.0; 3.0; 4.0	0.0; 1.0; 2.0; 3.0; 4.0; 5.0
Thickness weaving, mm	6-10	1-5	6-10	1-5	6-10	1-5	6-10	1-5

Quantitative characteristic wood weaving may be their mechanical properties in tension along the fibers.

After crushing the samples were placed horizontally weaving on a grid with holes 10x10 mm. and dried in convective drying chamber at 60 OS. to 4% moisture. Drying took place within 4 - 5 hours

Application binder can be performed by different methods - immersion, pouring, contact application, spraying and others. For putting glue on fiber, having a form of weaving, seems the most appropriate application method of spraying nozzles followed by drawing between rollers. This will contribute to a better distribution of binder fibers. Number binder for all samples should be the same (in% by weight of the wood component). Type of binder must comply with the final product. The most important of these requirements may be high adhesion to wood, environmental, technological application, the cost of others.

The following operations: forming packages as rectangular samples of the same section and pressing.

As a result of testing of mechanical and physical properties obtained in the experiment samples monodereva trial will be chosen level parameters studied and clarified the main methodological aspects of the experiment.

The implementation technology of composites based on wood fiber component of the natural length will allow to obtain materials with predicted high levels of mechanical properties.

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Proanalyzyrovano Effect characteristics arboreal component properties on kompozytsyonnыh materials. Pryvedenы эtapы Production of technological process monodreva. Results Pryvedenы trial experiment for Production arboreal component tonkomernoho crushing of raw materials.

Drevesnыe kompozytsyonnыe materials, drevesnыe fiber monodrev, crushing tonkomernoy timber.

Influence of features of wood component upon properties of wood composite materials is analyzed. Stages of technological process of "monoderev" composite material production are presented. The results of the pilot experiment on production of wood component by crushing low diameter wood are shown.

Wood composite materials, wood fiber, monoderev, crushing of low diameter wood.

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Resource saving TECHNOLOGIES Processing Used WOOD

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Used systematic approach to processing VZHD in technology derevoobroblennya. Experimentally confirmed the possibility of using technology in production processes VZHD derevoobroblennya of manufacturing product samples, blanks curved shape, furniture board, carpentry plate. The main physical and mechanical properties of the resulting product developed by technology. Proposed regime parameters for the implementation of the results of research into production. Developed resource saving and ecologically technology with practical recommendations for VZHD in derevoobroblenni.

Used wood, potential, systematic approach,mathematical models derevoobroblennya technology, practical recommendations.

Urgency. Potential resource base and unused raw wood, which reserves increased with the development of industry and economy in general are inventories of used wood (VZHD). Studies of domestic and foreign scholars of this problem related mainly use industrial wood waste, without involving VZHD the process of recycling - making products from it. The results of their study suggest that the problem is not completely solved, having not developed a scientific basis and practical recommendations for efficient production processes to the prediction of properties of the products VZHD.Thus, the study