in DIFFERENT hodychnыh sloyah. Some sloyah AP formyrovalas solely IZ traheyd with krajne tolstыmy shell; a second in DR preobladaly traheydы co Significantly less than tolstыmy shell; Thirdly cheredovanye was observed in "layers" DIFFERENT traheyd.

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Width of annual rings and rate of late wood and physical properties (density and shrinkage) of pine wood from Caucasus was study. Variability and interdependency of this indices estimated.

Pine wood, width of annual rings, rate of late wood, basic density, volume shrinkage.

Predstavlenы Study Results shyrynы hodychnыh layers and percent pozdney timber and fyzycheskyh properties (density and shrinkage) timber with sosnы Caucasus. Otsenena variability and vzaymosvyaz эtyh indicators.

Timber sosnы width hodychnoho layer, the percentage pozdney timber, bazysnaya density, obъemnaya shrinkage.

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EFFECT OF ADDING TECHNICAL PROPERTIES OF WAX ON WOOD-POLYMER PLATES FOR THEIR DIFFERENT TEMPERATURE AND DURATION OF PRESSING

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The effect of adding technical paraffin for different temperature and duration of pressing DPM. With the increasing of technical waterproof wax DPM increases. Maximum values of tensile strength during static bending observed in paraffin technical content 5,0-7,5%. With increasing temperature and duration of pressing within the studied indicators of strength and water resistance DPM increase.

Wood-polymer materials, technical paraffin, water resistance, strength.

Wood-polymer materials based on thermoplastic polymers are characterized by satisfactory physical and mechanical wood filler content of 50%. A further increase in the filler content leads to a drastic reduction of water resistance and deterioration in strength. Therefore, the PDM with a high content of wood filler, to maintain high performance, requiring modifying additives. One of the most suitable modifying additives that combines the security, availability, and cost is a small paraffin. Paraffin, being nyzkoplavkym analogue polyethylene reduces its temperature fluidity and viscosity, allowing thermoplastic polymer is easier and faster to penetrate the capillary-porous wood particles contributes to efficient atomization binder and its uniform distribution in the bulk material [1,2].

Action wax can also reduce the temperature and duration of pressing DPM, significantly improves performance and reduces energy consumption of press.

Reducing the temperature and duration of pressing also helps minimize termodestruktsiynyh processes occurring in the wood. It should be noted that the effect of wax combines several different functions - it acts as an agent of cohesion, ultraviolet absorber, thermal stabilizer and grease.

However, the introduction of wood-polymer composition more than 10% paraffin is impractical [1], since the surface of wood particles formed his thick layer of molten thermoplastic polymer makes it difficult to penetrate the capillary-porous wood, which reduces the strength ratios according DPM.

The purpose of research - Investigate the effect of the addition of wax on the technical properties of wood-polymer plates for different temperature and duration of pressing.

Materials and methods research. To perform the study used the following materials: wood chips humidity 3% crushed secondary polyethylene and polyethylene. DPM made of wood particles containing 60% recycled polyethylene - 37,5-30% technical paraffin (TP) - 2,5-10,0% and density plates 900 kg / m3, by pressing the following operational parameters: temperature - 160 ; 180; 200 ° C; length - 0.8; 1.0; 1.2 min / mm; pressure - 3.5 MPa. After hot pressing DPM vytrymuvavsya cold press at a pressure of 1.5 MPa to 40-50oS temperature.

Research results. Dependence of tensile strength during static bending the content of TP has extreme character. The maximum strength ratios observed for the contents of the composition from 5.0 to 7.5% (Table. 1). In particular, the increase in the content of TP from 2.5

to 7.5% strength during static bending increases by 7-15% depending on the duration and temperature pressing (Table. 1). In case of further improving its content index strength decreases sharply. In addition, with increasing temperature from 160 to 200oS pressing and duration from 0.8 to 1.2 min / mm, the figure increases significantly. However, the high content of TP 7.5 and 10.0%, it creates on the surface of the wood particle film that prevents the molten thermoplastic polymer contact wood particles and reduces the mechanical properties of DPM.

1. The results of experimental studies.

	Duration movement of such individuals, min / mm	Temperature pressing C	Contents TP%			
			2.5	5.0	7.5	10.0
Tensile strength during static bending, MPa	0.8	160	4.49	4.87	3.50	3.13
		180	5.69	6.32	5.62	4.37
		200	6.73	7.24	7.28	4.94
	1.0	160	5.18	5.51	4.36	3.61
		180	6.17	6,88	6.39	4.87
		200	7.74	8.41	7,67	5.58
	1.2	160	6.11	6.59	5.13	4.64
		180	7.07	8.06	7.06	5.33
		200	8.17	8.97	7.98	6.07
Water absorption,%	0.8	160	12.37	8,88	6.90	6.24
		180	11.20	7.92	5.39	4.76
		200	8.56	6.68	4.34	3.37
	1.0	160	10.99	7.73	5.88	5.01
		180	9.42	6.93	4.26	4.05
		200	6.59	2.76	3.46	2.76
	1.2	160	8.92	4.00	4.60	4.00
		180	7,66	3.44	3.63	3.44
		200	5.48	3.65	2.50	2.47

End Table. 1

Swelling%	0.8	160	10.65	8.47	7.82	6.28
		180	8,43	7.34	6.17	4.60
		200	7.02	6.15	5.36	3.57
	1.0	160	8.72	7.36	6.32	4.90
		180	7.53	5.99	5.06	4.08
		200	5.10	2.67	3.75	2.67
	1.2	160	7.72	4.49	5.64	4.49
		180	6.39	2.99	4.41	2.99
		200	4.09	3.26	2.15	1.95
Resistivity stretching screws, N / mm	0.8	160	91.90	83.89	82.96	82.40
		180	100.06	88.67	87.13	86.16
		200	103.77	97.48	90.59	87.54
	1.0	160	96.84	92.69	91.27	85.92
		180	102.84	99.31	95.66	89.91

	200	107.89	108.47	98.89	83.06
	160	98.24	99.06	97.81	88.36
1.2	180	105.57	105.67	102.11	87.59
	200	111.53	113.06	104.83	82.37

Effect of TP content in water absorption and thickness swelling DPM has a completely different character, with the increase of its content from 2.5 to 10% water absorption is significantly reduced (see. Table. 1). Minimum water absorption rates observed for DPM maximum temperatures (200oS) and duration of pressing (1.2 min / mm). In addition, with the increasing of TP from 7.5 to 10.0% reduction in water absorption is virtually invisible, especially characteristic maximum temperature (200oS) and long lasting pressing (1.0-1.2 min / mm). A significant reduction in water absorption DPM if you add the TP associated with the formation of waterproof film on the surface of the wood particles. In addition, the TA fills pores and cracks in the material, which does not allow water to penetrate into the inner layers of DPM.

Effect of TP content on swelling in thickness is similar to its effect on water absorption, but in this case, the dependence is almost linear (Table. 1). Like the case of water absorption with increasing temperature from 160 to 200oS pressing and duration from 0.8 to 1.2 min / mm thickness swelling rates are reduced, the minimum values are observed at the temperature and duration of pressing 200oS 1.2 min / mm. With increasing temperature and duration of pressing secondary polyethylene under TP becomes more mobile, allowing it to form on the surface of the wood particles polymer film, which also prevents the penetration of water molecules in their capillary-porous structure.

Effect of TP on resistivity stretching screws is negative. With the increasing of TP from 2.5 to 10.0% in almost all cases it is essential to reduce (Table. 1). For long lasting (1.0-1.2 min / mm) and maximum temperature (200oS) pressing with increasing content of 2.5 to 5.0% is a slight increase of specific resistance stretching screws (respectively, 0.5 and 1.37%). TP film formed on the surface of the wood particles in DPM determines the effect of sliding, resulting in easier removal of screws materials. However, compared with the figures chipboard (60-100 N / mm), resistivity stretching screws even 10% TP content is quite high (90-103 N / mm).

Conclusion. Analyzing the impact of DPM TP content, temperature and duration of pressing on their properties, it should be noted that the highest strength ratios during static bending observed in composites containing paraffin technical 5,0-7,5%. With the increasing of TP DPM water resistance increases. As for the temperature and duration of pressing is that the highest rates of strength and water resistance

DPM observed temperature by pressing - pressing 200oS and duration - 1.2 min / mm.

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Effect of additions tehnycheskoho established in parafyna DIFFERENT temperatures and Duration pressovanyya DPM. C. Increase CONTENT tehnycheskoho parafyna vodostoykost DPM grows. Maksymalnыe Limit Indicator prochnosty at statycheskom yzhybe observed at tehnycheskoho Contents parafyna 5,0-7,5%. C. Increase temperature and Duration pressovanyya in yssleduemыh Limit Indicator prochnosty and vodostoykosty DPM rastut.

Wood-Polymer materials, tehnycheskyy parafyn, vodostoykost, prochnost.

The effect of the addition of technical wax at different pressing temperatures and durability WPC were investigated. The increase of technical wax content leads to increase water resistance of WPC. Maximum values of MOR were observed at technical wax content 5.0-7.5%. The increase of pressing temperatures and durability leads to increase water resistance, MOR and screw withdrawal resistance of WPCs.

Wood-polymer materials, technical paraffin, water resistance, strength.

UDC 674.09: 674,093

THE RESULTS OF RESEARCH VALUE COST OF RAW MATERIALS IN THE PRODUCTION OF RADIAL TIMBER GIVEN SPECIFICATION

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The experimental results consumption of raw materials in the manufacture of radial lumber. With developed and proposed simulation model, which takes into account the actual size-qualitative characteristics