Research Article:

INFLUENCE OF FREEZING UPON SPRUCE WOOD PROPERTIES

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Abstract:
The paper presents the results concerning some physical and mechanical properties of spruce wood (Picea abies L.), used as construction material, respectively: oven-dry density, shrinkage anisotropy coefficient, static bending strength and MOE, tensile strength perpendicular to the grain, compression strength parallel to the grain and the nails withdrawal resistance, all being determined according to the standards in force by means of samples cut from the same log.

The log was divided into two halves along the central longitudinal symmetry plane. The test pieces resulted from one half were frozen at -25°C for one week and the ones resulted from the second half were used for the witness-samples (these were not frozen). All test pieces were dried and conditioned at 12% moisture content. Hereinafter, standard samples for physical and mechanical tests were cut and tested.

The recorded values were statistically processed by means of a special adapted computer program for processing monofactorial experimental data. Thus, the randomness and normal repartition were verified, and the main statistical parameters were calculated, in order to compare the means of the different properties for previously frozen and unfrozen wood.

Key words: spruce wood; frozen wood; construction wood; physical properties; mechanical properties; statistical data processing.

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