



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Some Mechanical Properties of Alder [*Alnus glutinosa* subsp. *barbata* (C. A. Mey.) Yalt.] Wood Obtained from Artvin Region

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Abstract: In this study, some mechanical properties of Alder [*Alnus glutinosa* subsp. *barbata* (C. A. Mey.) Yalt.] wood were investigated. The experiments were carried out on test specimens obtained from 10 selected experimental trees taken from Artvin region. The selection of the experimental trees, preparation of the test specimens and application of the test procedures were carried out according to the relevant Turkish standards. Some mechanical properties of Alder wood such as compression strength parallel to grain, static bending strength, modulus of elasticity, impact strength (impact bending), tension strength parallel to grain, shear strength, cleavage strength and values of Brinell-hardness were investigated. As a result, a compression strength parallel to grain of 423 kp/cm², static bending strength of 790.54 kp/cm², modulus of elasticity of 87816 kp/cm², impact bending of 0.58 kpm/cm², tension strength parallel to grain of 763 kp/cm², tangential shear strength of 64.79 kp/cm², radial shear strength of 60.74 kp/cm², radial cleavage strength of 4.17 kp/cm², tangential cleavage strength of 4.50 kp/cm², cross-section Brinell-hardness value of 2.89 kp/mm², tangential-section Brinell-hardness value of 1.49 kp/mm² and radial-section Brinell-hardness value of 1.51 kp/mm² were obtained. Using compression strength parallel to grain and specific gravity values, specific and static quality values were calculated to be 18.21 and 8.78 km respectively. Dynamic quality factor (value) was calculated to be 2.49 by means of impact bending and specific gravity values. The results were compared with the other studies carried out on the relevant species which have the same or a similar anatomical structure. Some suggestions about the optimum usage of Alder wood (plywood, particleboard, packing cases, tool handles, furniture (especially in concealed parts such as drawer sides and bottoms) etc.) were given according to the mechanical properties of the species. It was determined that Alder wood was not appropriate for use in structural beams, flooring etc. Key Words: Alder, Mechanical Properties

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