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SELECTED MECHANICAL PROPERTIES OF ASPEN WOOD

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ABSTRAKT

The paper presents summary of research results of selected mechanical properties of compressed non-treated and steamed aspen wood in three moisture contens (12, 16, 30 %) for its possible use in furniture production.

We were investigating the following:

- tensile strength of non-treated aspen wood parallel to wood fibres – σ_{pL} [MPa]
- compression strength non-treated aspen wood parallel to wood fibres – σ_{pL} [MPa]
- compression strength of compressed non-treated and steamed aspen wood parallel
- to wood fibres – σ_{pL} [MPa]
- bending modulus of elasticity of compressed non-treated and steamed aspen
- wood across the fibres in tangential direction – $\mathbf{E}_{oh,w}$ [MPa]
- bending strength of compressed non-treated and steamed of aspen wood across
- the wood fibres in tangential direction – σ_{oh} [MPa]

Key words: aspen wood, tensile strength, compression strength, modulus of elasticity, bending strength.

SUMMARY

From research summary of selected mechanical properties of aspen wood [**Rybansk**ý 2004], [**Gáborík – Dudas – Gaff** 2002, 2004], [**Dudas – Gáborík** 2003], [**Gáborík – Dudas** 2006] results from, that compressed aspen wood after pressing-compacting at first pressing level and 16% moisture level allocate more strength values in compression parallel with grains aspen wood about 21% at change its density 10, 62%, bending modulus of elasticity perpendicular with grains of wood compressed allocate more value about 2,3%, bending strength perpendicular with grains of wood at tangential direction allocate more value about 17,4%. Aspen wood is suitable for an independent use in manufacturing of shaped-bended and laminate furniture. Improvement mechanical properties aspen wood corresponding with values [**Chuchrjanshij** 1953, **Požgaj at.all**.1993]. Bend ability of aspen wood itself approach the bend ability properties of beech [**Stevens –Turner** 1970], [**Zemiar at all**. 1999].

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