IMPACT OF RESIN CONTENT ON COMPRESSIVE STRENGTH AND JANKA HARDNESS OF COMPOSITE WOOD-BASED PANELS

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ABSTRACT

The aim of the research presented in this paper is to study the impact of resin content on compressive strength and Janka hardness of composite wood-based panels.

For this purpose three experimental models of composite wood-based panels were made that represent a combination of particleboards and constructive veneers. The core layer of composite panels was made of single-layer particleboard with thickness of 16 mm. Particleboards were overlaid on both sides with beech peeled veneer with thickness of 3,2 mm.

Water-soluble phenol-formaldehyde resin with 10 %, 13 % and 16 % dry matters content on dry wood basis was used respectively for production of single-layer particleboard cores of the three composite models. The resin used in all three models was modified with epoxy resin.

The veneers were bonded on the particleboard core with the same resin that was used for particle bonding, but without modifier.

Tests for compressive strength were carried out according to MKC DA1.110.

The results from the research showed that the resin content in particleboard core has significant impact on the values of compressive strength of composite wood-based panels.

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