Research Article:

EVALUATION OF SURFACE QUALITY OF MEDIUM DENSITY FIBERBOARDS (MDF) AND PARTICLEBOARDS AS FUNCTION OF WEATHERING

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Abstract:
The objective of the study was to evaluate the surface quality of commercially produced particleboard and medium density fiberboard (MDF) panels as function of weathering. Four types of panels were exposed to three weathering cycles of water soaking, freezing, and heat exposures to determine the influence of such conditions on their surface roughness. The stylus type equipment was employed to determine the roughness of control samples as well as after each one of the weathering cycle. Two accepted roughness parameters, namely average roughness ($R_a$) and mean peak-to-valley height ($R_z$) were used for the measurement of overall roughness changes of the specimens. Surfaces of both types of particleboard samples were adversely influenced as a result of first cycle of weathering and then they were reconditioned and subjected to two more exposure cycles. In the case of MDF samples the first and the second weathering exposures increased roughness of the samples but they were rebalanced at the end of the third cycle. The highest $R_a$ value of 17.16 µm was determined for particleboard samples exposed to the first exposure cycle. Overall surface quality of MDF samples were less influenced than those of particleboard specimens. Based on the findings in this work it appears that stylus technique can effectively be used to evaluate surface quality of such composite panels as they are subjected to different weathering exposures.

Key words: weathering; wood composites; roughness.

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