

EVALUATION OF COATING PERFORMANCE AND COLOR STABILITY ON THERMALLY RECTIFIED EUCALYPTUS GRANDIS AND PINUS CARIBAEA VAR. HONDURENSIS WOODS

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It is recognized that thermal rectification improves some wood properties (e.g. resistance to fungi, dimensional stability, hydrophobicity etc.). However, little information is available on the effect of heat treatments on the finishing properties and color stability of wood. In this work, *Eucalyptus grandis* and *Pinus caribaea* var. *hondurensis* woods underwent a variety of thermal rectification treatments (from 140 to 200°C). Heat-treated wood was sanded (60-80 grit) and roll-coated with a UV-curable polyurethane. Coating performance was assessed through pull-off adhesion tests and accelerated aging. Samples were also evaluated for color stability before and after aging. The increment in maximum temperature of thermal rectification caused a decrease in coating pull-off adhesion strength. Slight coating cracks and adhesive coating failures occurred after aging of samples thermally rectified at maximum temperatures from 180 to 200°C. The thermal rectification at 160°C provided an optimum combination of color stabilization and adhesion upholding after aging.

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