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Some Technological Properties of Laminated Veneer Lumber Manufactured from Pine (*Pinus sylvestris* L.) Veneers with Melamine Added - UF Resins

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Abstract: The objectives of this study were to compare the modulus of elasticity, bending strength, shear strength and formaldehyde emissions of laminated veneer lumber (LVL) bonded with melamine added urea formaldehyde resin (UF+M) and produced with other resins such as urea-formaldehyde (UF), melamine-urea-formaldehyde (MUF) and phenol formaldehyde (PF), and to determine the effects of 2 different climate conditions on the bending strength and modulus of elasticity of pine LVL panels. After the panel production, the test specimens were divided into 2 groups for all tests. The first group of test specimens were conditioned at 20 °C and 45% R.H., while the rest of the samples were conditioned at 20 °C and 65% R.H. for about 2 weeks prior to testing. According to the test results, the bending strength and modulus of elasticity values of the specimens conditioned at 20 °C and 45% R.H. were higher than those of the specimens conditioned under the other climate condition. The increases in those strength values determined for the specimens bonded with PF adhesive were more obvious than those of the specimens bonded with other adhesives. Formaldehyde emission values decreased and shear strength values increased with the addition of melamine to the glue mixture.

Key Words: LVL, resin type, climate condition, technological properties, formaldehyde emission

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