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The influence of pre-treatment on bonding strength of wood

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Abstract: Bonding performances of laminated veneer (prepared from chestnut and poplar woods) were determined by using urea formaldehyde and phenol formaldehyde adhesives which have widely usage in the furniture industry. The laminated veneer were investigated bonding strength after hold by 96 hours in water vapor, 1 week in water and 2 hours in 60 ° C, 103 ° C, -20 ° C temperatures. According to test results of chestnut was observed to be higher than poplar for all pretreatment implement bonding strength. Generally results showed that applied pretreatments had caused a decrease in bonding strength for in both types of adhesive. The lowest bonding strength was determined when exposed to water vapor. When all pretreatments are considered, laminated veneers which are manufactured from chestnut and PF adhesive are proposed to use under different environment conditions.
Keywords: Chestnut, Poplar, Water vapor, Water holding, Bonding strength