

Abstract

Oriented Strand Board is a composite material that is made from pressed rectangular strands with resin. This compound has almost same properties in length and cross cutting directions. In this study, the effect of amount of resin (PF), press time and temperature pressing is investigated on physical and mechanical properties of OSB made of Iran native species of Spruce and beech than 70/30 % by weight. The manufacturing of boards was done in two level temperatures (170, 180 °C) under press times (8 and 10 min) and under two level of amount resins (PF) (6 and 8 %). The boards were manufactured with (400×400×10) dimension millimeter. Mechanical properties including bending strength, Modulus Of Elasticity, Internal Bonding, Hardness and physical properties including Water Absorption and Thickness Swelling after 2 and 24 hours and 2 hours soaking appears to cold water soaking appears in boiling water was measured according to standard ASTM D-1037. Statistical analysis showed that the independent effects of time and temperature on mechanical properties other than stiffness was significant at 95% and the independent effect of resin and interaction between all treatments were not significant. 10 minutes was the highest mechanical strength obtained at the time of press and 8 minutes was minimum mechanical strength. The physical properties was not any significant differences between different treatments is that it is based on significant does not resin.

Key words: Oriented Strand Board, physical and mechanical properties, Spruce, beech, Phenol formaldehyde



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**Determination of the physical and mechanical properties of oriented
strand board made from poplar and beech under amount of resin
(phenol formaldehyde), and press time**

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