

## **Abstract**

Parallel strand lumbers are manufactured by laminating rotary peeled veneer strands that are oriented in the same grain direction to form a material of thickness similar to sawn lumber with a waterproof adhesive. In this research, according to the scrape rotary peeled veneer of the Nayshabur Puia Factory and also recycle plastic materials Factory of Mashhad which making of Parallel Strand Lumber Wood- Plastic in three level (40, 45, 50) with different proportions strand to plastic adding coupling agent of maleic anhydride (3%). During laboratory pressing in three level (30,35,40 minute) under temperature of 171 °C for poly propylene and 210°C for poly ethylene terphetalat under pressure of 35kg/cm<sup>2</sup> , were arranged, and the lumber were made parallel of two kinds of recycle plastic include; poly propylene and poly ethylene terphetalat with (600×200×20) dimension millimeter. So, mechanical properties of lumbers include ;static bending ,parallel and perpendicular compression on the fiber ,Internal Bound ,shear strength, direct screw withdrawal test and physical properties are include ;water absorption and thickness swelling ,after swelling in the water ,those were determined according to the ASTM D5446 and ASTM D1034 . The result show that the best lumber in case of mechanical properties which making of poly propylene but lumber which made of poly ethylene terphetalat having better physical properties. A lumber which contains of poly propylene and poly ethylene terphetalat having lower static bending and MOE than control sample but the physical properties, like the thickness swelling and water absorption of these lumbers are more than control sample. Also the lumber which making of poly propylene that its strength properties include; the compression strength, screw withdrawal is more than the control sample. The lumber with contains of poly propylene are having more compression strength, internal bound and screw withdrawal strength is more than the control sample.

**Key words:** Parallel strand lumber wood- plastic composite, Waste plywood, Press time



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**Determination of physical and mechanical  
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