

Investigation on the Effect of Sugarcane Bagasse/HDPE Composition on the Screw Withdrawal Resistance of Injection Molded Parts

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Abstract : Withdrawal resistance of screws driven into HDPE/Sugarcane Bagasse injection molded parts was investigated. After chemical treatment and drying, SCB was pre-mixed with HDPE using twin extruder. The resulting granules are used in producing samples in injection molding machine. SCB with the quantity of %10, %20, and %30 was used. By using a suitable fixture, screw heads can take with tensile test machine grips. Parts with screws in the center and edge were fasten together. Then, withdrawal resistance was measured with tensile test machine. Injection gate is at the one edge of the part. The results show that by increasing SCB content in composite, the withdrawal resistance is decreased. Furthermore, the withdrawal resistance at the edges (near injection gate and the end of the filling path of mold cavity) is more than that of the center.

Keywords : polyethylene, sugarcane bagasse, wood plastic, screw, withdrawal resistance

Conference Title : ICAMET 2015 : International Conference on Advanced Manufacturing Engineering and Technologies

Conference Location : Istanbul, Türkiye

Conference Dates : October 26-27, 2015