

Effect of different diameters and rake angles of Forstner bit on the quality of drilling on treated oil palm wood

ABSTRACT

Drilling characteristics and quality of oil palm wood (OPW) for high grade furniture manufacturing were determined. The effects of diameter and rake angle of a Forstner bit on the quality of drilling in treated OPW was investigated in comparison with untreated OPW and rubberwood. Boring qualities of treated OPW proved to be superior to untreated OPW but fell a bit below the quality shown by rubberwood. The 25 mm diameter bit outperformed the 32 mm diameter bit, while 30° rake angle outperformed 20° rake angle. Treated OPW and rubberwood are of the same class of surface quality with Ra value of 8.65 and 8.63 μm , respectively, while the untreated OPW is far inferior (14.28 μm). In conclusion, the treated OPW shows immense improvement in drilling quality compared to untreated OPW.

Keyword: Forstner; Drilling characteristic; Drilling quality; Oil palm wood