

**STRENGTH PROPERTIES OF SINGLE PIN DOWEL JOINT
ON OIL PALM LUMBER**

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ABSTRACT

STRENGTH PROPERTIES OF SINGLE DOWEL JOINT USING OIL PALM TRUNK

T-shape joints are widely used in furniture part installation. It's commonly applied in chair or desk for its rail or stretcher. The strength of structural part in furniture depends on how strong the joints can absorb the impact or can hold the load for a period of time. To identify the performance of joints it's necessary to study the potential of joints with a specified strength to enhance the weakest joint system. The objective of this research was to study the performance of joints by using three different diameter sizes (6mm), (8mm), (10mm) and adhesive, Poly Vinyl Acetate (PVAc) and Epoxy. This is to determine either the three size diameter of dowel with different glue, PVAc and Epoxy can give significant effect the (OPT), if these sizes and glue used are significant, it will save the furniture production in terms of its cost. The testing result was analyzed using SPSS. The result analyzed using ANOVA through Duncan's Multiple Range Test (DMRT). The results shows that for both adhesive no significant value for two testing. It was determined when P-value is > 0.05 . According to ANOVA, bending test Glue, recorded their P-value are $P=0.167$ for Maximum Load (2.026) for the tensile P-value are $P=0.137$ for Maximum load (2.368). For Dowel sizes bending test P-value are $P=0.007$ for Maximum Load (6.193), $P=0.009$ for Tensile at Break and Maximum Load (5.851). Based on this result, all dowel size has highly significant strength for all testing compare with adhesive used PVAc and Epoxy not significant, from that used of PVAc on T-shape joint is better because PVAc low price compare to the Epoxy.

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