PROPERTIES OF THREE LAYER PARTICLE BOARD FROM *Leucaena leucocephala*

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The last, this thesis is far from being perfect, but it is expected that this thesis will be useful not only for the researcher, but also the readers. For this reason, constructive thought full suggestion and critics are well come to make this thesis better.

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ABSTRACT

PROPERTIES OF THREE LAYER PARTICLE BOARD FROM *Leucaena leucocephala*

Leucaena leucocephala becomes new source of raw material for making particleboard in the Malaysia industries. *Leucaena leucocephala* was used in the study with core size, 1.0mm and 2.0mm and resin content at 7%, 9% and 11% with target density 700kg/m^3. The aims of the study were to determine the properties of *Leucaena leucocephala* particleboard and to study the effect of particle size and resin content on the particle board properties. Particle board was evaluated for their physical and mechanical properties according to BS EN standard. Bending test (MOR and MOE) and internal bonding test were carried out to know the mechanical properties, while thickness swelling and water absorption test were carried out to measure the physical properties. As the result all of boards passed the BS EN standard requirement for mechanical test (MOR, MOE and IB) however, they failed in their physical test (TS). It can be conclude that the higher the resin content gave the higher the board strength and the bigger the particle size gave the lower the strength.