

Tropical In-Ground Durability of CCB-treated Keruing and other Sarawak Timbers after 8 – 10 Years Exposure

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Abstract

The heartwood of 12 mainly low-durability native timber species of Sarawak [4 *Dipterocarpus* (Keruing) species, *Anisoptera grossivenia* (Mersawa kunyit), *Canarium apertum* (Seladah), *Dacryodes incurvata* (Seladah laut), *Dryobalanops oblongifolia* (Kapur kelansau), *Mesua macrantha* (Mergasing), *Podocarpus micropedunculatus* (Kayu cina), *Shorea compressa* (Engkabang langgai), and *Pterospermum javanicum* (Bayur)] from various treatability classes, were pressure treated to refusal in 10% CCB preservative solution. Twenty replicated heartwood stakes of 19 x 19 x 457 (long) mm were planted to a depth of 230 mm in the ground and evaluated after the first 8 – 10 years exposure while the test continues. The field test site had high clay content, and despite the high annual rainfall (>3000 mm), samples with CCB dry salt retention of over 30 kg/m³ still remained sound after exposure (using an ASTM1758 10-point rating scale) period of up to 10 years, stakes with retention <25 kg/m³ had trace (rating: 9) or moderate (rating: 7) decay and termite attacks, while those with subsequently lower retentions failed within the first 6 years. Within an 8 – 10 years exposure evaluated at 6 monthly intervals, many stakes with only trace (rating: 9) or moderate (rating: 7) decay in the previous 6 months failed (rating: 0) abruptly within the next 6 months of evaluation instead of showing progressively severe biodegradation (i.e. ratings 4 or 7). Overall this first update of the field trial suggests for particular treatable structural species, CCB treated timbers exposed to ground contact (particularly wet clayey soils) could have a service life of at least 10 years when adequately treated to least 300 litre/m³ to achieve at least 30 kg/m³ retention.

Keywords: CCB preservative, tropical timbers, treated wood, stake test, service life, preservative performance, in-ground durability

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