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Structural use of palmyrah timber in Sri Lanka

D I Fernando*, S Savindrarajah and S Vinodan

Department of Civil Engineering, The Open University of Sri Lanka, Nugegoda

Palmyrah is a palm tree commonly found in the Northern and Eastern Provinces of Sri Lanka. It is usually a large tree growing up to 30 m in height and with a straight circular trunk of up to 1.5 m in circumference. Valuable timber can be obtained from tall, strong palms of at least 50 years old. Wooden planks obtained from palmyrah palm are used for a variety of structural elements such as roof truss members, purlins and reepers.

A study was carried out to determine the physical and mechanical properties of palmyrah timber. A range of tests- Static Bending Test, Compression Tests (parallel and perpendicular to grains), Shear Test (parallel to grains), Cleavage Test, Tension Test (parallel and perpendicular to grains) were carried out to identify the strength class and the suitability for use as structural components in roof structures. The tests were carried according to the British Standard BS 373:1957 on testing small clear specimens.

Based on the test results, the strength class was identified by the bending strength, tension parallel to grains, tension perpendicular to grains, compression parallel to grains and compression perpendicular to grains. The density and mean density were comparatively high and satisfy the minimum requirements of D50 strength class. Stiffness values also satisfied the minimum requirements of D50 strength class from Characteristic Values for Strength Classes (BS EN 338). Therefore, palmyrah timber can be classified as D50 strength class for structural purposes.

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