

Aekkalak Khongyon 2011: Bending Behavior of Pai Tong (*Dendrocalamus asper Backer*) Bamboo Culms. Master of Engineering (Civil Engineering), Major Field: Civil Engineering, Department of Civil Engineering. Thesis Advisor: Associate Professor Benjapon Wethyavivorn, Ph.D. 97 pages.

This research studied the bending and failure characteristics of Pai Tong (*Dendrocalamus asper Backer*) culms, 2-3 years age. The physical and mechanical properties were compared to those obtained from ISO 22157-1. Bamboo culms of 2.50 m., 3.00 m. and 3.60 m. were loaded under bending. Tension tests parallel to fibers, compression tests parallel to fibers and shear tests parallel to fibers according to ISO 22157-1, have also been performed. It was founded that Pai Tong culms with less than 40D in length failed in shear, while those with more than 40D failed in bending. The flexural modulus of elasticity, bending stress, tensile stress parallel to fibers, compressive stress parallel to fibers, shearing stress parallel to fibers with and without node are 160,291-205,781 ksc., 773-1,107 ksc., 316-976 ksc., 444-728 ksc., 79-140 ksc. and 36-136 ksc., respectively.

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Student's signature

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Thesis Advisor's signature