

Sirawet Charaspredalap 2010: An Experimental Study of Piloted Ignition and Burning Behavior of Woods and Wood Products. Master of Engineering (Mechanical Engineering), Major Field: Mechanical Engineering, Department of Mechanical Engineering. Thesis Advisor: Assistant Professor Nathasak Boonmee, Ph.D. 269 pages.

This research presents an experimental study of pilot ignition and Burning Behavior of wood and wood products commonly used in build construction and decoration. The experiments were carried out on the cone calorimeter according to the ASTM 1354 standard. The test samples were selected for 8 types of wood products: hardboard 3 mm thick, MDF 3 mm and 6 mm thick, plywood 4 mm and 6 mm thick, Teak plywood 4 mm and 6 mm thick, and particleboard 16 mm thick, and 4 species of wood: Teak, Rubber wood, Makah wood, and Beech.

The research presents the piloted ignition properties of wood and wood products: critical heat flux for piloted ignition, thermal inertia, burning flux, and piloted ignition temperature. Based on the critical heat flux for piloted ignition and ignition temperature, among the 8 types of wood products, MDF has the highest rank in fire risk where the plywood has the lowest rank. For 4 species of wood, Beech and Makah wood have the lowest critical heat flux for ignition where Teak has the highest critical heat flux for ignition.

---

Student's signature

---

Thesis Advisor's signature