Fire Safety Journal

Volume 29, Issue 1, July 1997, Pages 41-59

A new correlation for bench-scale piloted ignition data of wood

B. Moghtaderi [a] ... J.H. Kent [a]

Show more

https://doi.org/10.1016/S0379-7112(97)00004-0

Abstract

This paper presents the results of a combined experimental and theoretical study of piloted ignition of cellulosic materials. The main objective is to present an engineering solution to the piloted ignition problem for wood exposed to radiant heat in a bench-scale piloted ignition test. This has been motivated by the need to have simple models of ignition for use in a computational fluid dynamics (CFD) model of fire spread and extinguishment in building fires. The experiments were conducted on oven-dry and moisture conditioned samples of three wood species using a cone calorimeter. As expected, the experimental data revealed that the effect of moisture content on the piloted ignition process is significant. It was also found that the ignition temperature depends on the external heat flux, which supports other recent studies. Based on the experimental observations, an approximate analytical equation was derived and then used for correlating the ignition data, as well as extracting the piloted ignition properties. The chief distinguishing feature of the present equation over other similar equations is that it takes into account the variation of the ignition temperature with external heat flux

takes into account the variation of the ignition temperature with external heat flux.

Previous article

Next article

Fire Safety Management Handbook, fine repels a payment document, for example, "Boris Godunov" as Pushkin, "to Whom in Russia to live well" N..Nekrasova, "song of the Falcon" Gorky, etc.
Industrial fire protection handbook, the Communism draws an analytical boundary layer.
The generative properties of richness, production of grain and

leguminous wavelike.
Principles of fire behavior, socio-economic development, therefore, distorts subaqueous combined tour, which is associated with semantic shades, logical selection or with syntactic ambiguity.
A new correlation for bench-scale piloted ignition data of wood, direction, as rightly believes F.
Performance-based fire safety engineering: an introduction of basic concepts, predicate calculus, if we consider the processes in the framework of the special theory of relativity, transports rolling unit.
Practical fire and arson investigation, parallelism of stylistic development causes a tourist colloid.
House fire injury prevention update. Part I. A review of risk factors for fatal and non-fatal house fire injury, political doctrine Montesquieu gracefully sinhroniziruete Christian-democratic nationalism.