EVALUATION OF THE FIRE PERFORMANCE INDICES OF SOME BUILDING MATERIALS

S. A. Anjorin & J. D. Abiwo
Mechanical Engineering Department, Federal University of Technology Akure
P.M.B. 704, Akure, **NIGERIA**

ABSTRACT

Many buildings have been destroyed by fire and lots of properties lost to outbreak of fire in both residential and industrials buildings. These occurred because of the lack of knowledge of the fire propagation index of building materials used in constructing the buildings. Fire performance indices provide a measure in comparative terms of the contribution of a material to the build-up of heat and potential fire spread. In this study, fire performance indices of selected building materials, tested against a non-combustible material (9.5 mm plasterboard) were calculated. The fire performance indices (I) for Asbestos (Nigerite) ceiling Board, Asbestos (Imperial) Ceiling Board, Mansonia Hard Wood (*Mansonia altissima)*, Omo Soft Wood *(Cordia platythyrsa*), Ikere clay Brick and Glass were 60.1, 58.3, 30.7, 42.1, 4.8 and 5.5 respectively. The application of ammonium phosphate coating to *Mansonia altissima* and *Cordia platythyrsa* reduced their fire performance indices by 48.5% and 52.0% respectively.

Keywords: Fire, performance, propagation, indices, noncombustible, coatings.