**Definition of *FIRE LOAD*:**

* The weight of combustible material per square foot of floor space.
* The combustible contents or interior finish of a building per unit floor area, often expressed as pounds per square foot or as Btu per square foot.
* The amount of fuel within a building which has the potential of burning and releasing heat to feed the growth of a fire.

**Fire load can be calculated as follows:-**  
Weight of material in Kg (mass) X Calorific value of the material - Answer in Kj  
For example:

1 tonne of propane @ a calorific value of 47.3 x 103 Kj/Kg  
 = 1000 x 47.3 x 103 = 47300 Kj  
If you want to relate this to wood equivalent the formula is:-  
 mass x calorific value divided by the calorific value of wood,

for example (with the calculation above):  
 1000 x 47.3 x 103 divided by the C of wood (17.6 x 103)  
  = 47300000 divided by 17600  
  = 2.7 tonnes (wood equivalent)

**Calculating the Fire Loading of a Compartment**

The fire loading of a compartment is a way of establishing the severity of a fire and the measurement (kj) is related to the heat output. As stated by Drysdale (1985) the formula for calculating the fire loading is noted as:

Calorific Value x Mass (or volume) = Area Fire Loading Kj/m2

Floor Area

Ex: 1 tonne of propane stored in a room having 240m2 area (10mx8mx3m)

47.3 x 1000 = 197.08 Kj/m2

240

Information on the mass of materials should be obtained from a number of sources using different methods, these included: contacting the manufacturer, consulting information currently available at the location and using relevant standards. The classification of the fire load in each area should be shown using the above formula.