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BMS92 (1942): FIRE LOAD vs. FIRE SEVERITY

By Richard Schulte

On October 7, 1942, the National Bureau of Standards (NBS), published a document known as BMS92, *Building Materials and Structures (Fire-Resistance Classifications of Building Constructions)*. Included in BMS92 is a table, Table 5, which relates the average (combustible) fuel loading on a per square foot basis to the expected equivalent fire severity using the fire exposure of the ASTM E119 time-temperature curve as the baseline for comparison. The following correlation between fuel loading and fire severity is presented in Table 5.

Average Fuel Loading (Pounds/S.F.)	Equivalent Fire Severity (Hours)
5	1/2
7-1/2	3/4
10	1
15	1-1/2
20	2
30	3
40	4-1/2
50	6
60	7-1/2

While we now know that the correlation presented above is flawed because the “severity” of a fire which develops in combustibles is greatly influenced by the amount of oxygen (ventilation) available to the fire, the correlation above is nonetheless still of interest because it provides a good approximation of the severity of a fire which can develop in various occupancies.

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