



Fire Loss Statistics

Fire statistics can be used to identify trends and assess the overall effectiveness of fire protection. Complete, consistent and comprehensive data is difficult and expensive to gather. Consequently, conditions under which the information was collected are very important. Canada and the U.S. have methods, materials and environments. It is not surprising then, to see that Canada and the U.S. have records. Studies show that, in both countries, the annual fire losses as a percentage of Gross Domestic Product is decreasing at comparable rates. Since U.S. fire statistics are much more extensive than current ones, fire statistics are examined here for information on fire protection in commercial buildings.

The average dollar loss per fire can be looked at as one means of assessing the effectiveness of the building construction and fire-protection systems. In general, the lower average loss is presumed to indicate less damage sustained to the contents and the structure of each construction type, and therefore, is presumed to indicate that construction type and fire-protection features have influenced the outcome.

The loss-per-fire values for the unsprinklered protected and unprotected wood-frame construction types compare favorably with those for other construction types, in that they are close to the lowest values of the other construction types. For sprinklered structures, protected wood-frame construction holds the second lowest loss-per-fire value. This demonstrates the efficacy of the advances in fire protection of wood-frame buildings. What can also be seen is that unprotected noncombustible construction with or without sprinklers experience average losses per fire that are approximately three times greater than those of either protected noncombustible construction or protected and unprotected wood-frame construction.

It is generally believed that sprinklered buildings are better protected from fire than similar buildings especially if constructed of wood. The effectiveness of sprinklers in reduction of the average loss per fire is an average of 21%. Of particular interest average decreases for both protected noncombustible and protected wood-frame construction. The noncombustible structures can benefit as much from the installation of sprinklers as do protected ones.

The number of fires where sprinklers are present in unprotected wood-frame structures is relatively low, as these tend to be small wood frame buildings that do not typically have sprinkler systems installed. The average loss per fire calculated for sprinklered structures in that category, therefore, could be easily overwhelmed by a few extreme values. This may explain the anomaly in the statistics that show that sprinklers in unprotected wood frame construction actually increase the average loss per fire.

