

Identical upholstered furniture fabric and padding specimens were exposed to four increasingly severe small flaming ignition sources and to a radiant source.

The small ignition sources were partly patterned after the Bunsen burner tests of BS 5852 Part 2. For the radiant source, the Cone Calorimeter was used, and specimens were exposed to irradiances of 10 and 15 kW/square meter. A wide range of ignition properties was found, depending on both the cover fabric and padding.

The relationship between Cone Calorimeter and small scale ignition tests was generally as follows: Specimens, which, when exposed in the Cone Calorimeter at 15 kW/square meter irradiance, reached a heat release rate of 50 kW/square meter in less than 60 seconds generally were ignited by the two smaller sources used.

Conversely, specimens which reached this heat release rate in longer times generally had greater small flame ignition resistance. Suggestions are also made for further improvements in the design of small scale flaming ignition and Cone Calorimeter tests for specimens combining an upholstery fabric and a padding.

The major such improvement would be to break the char in such test, which probably often breaks in real life experiments but in small scale experiments may protect the padding material.