

This study was conducted for the General Services Administration.

The study examined the effect of a post-flashover room fire on a corridor and attached target room. The burn room was a 2.44 m square with a 2.44 m high ceiling. The corridor was 12.8 m long, 2.44 m wide, and 2.44 m high. The target room was composed of two parts, a rectangular area, 2.6 m by 2.4 m and 2.2 m high and an entry alcove, 0.8 m long, 1.1 m wide and 2.0 m high.

Gas temperatures, wall surface temperatures and concentrations of oxygen, carbon dioxide, and carbon monoxide were measured at selected points in the burn room, corridor, and target room.

Various methods of protecting the target room from the effects of the post-flashover room fire were also examined. The target room and its doorway were protected using a simulated "standard" door (with a top cut, a side cut, and an undercut), a reduced leakage door (undercut only), and a commercial accordion fire door. In addition, the target room with the "standard" door was tested using mechanical pressurization.

Pressurization of the target room and reduction of the amount of door leakage, below that of a standard door, into the target room were effective methods of reducing temperature rise and the penetration of products of combustion into the target room.

Measurements from the study were used to examine a recently proposed model for predicting the flow velocity of the initial gravity wave down the corridor. The measured and predicted values agreed within the limits of uncertainty for the data.