

A study was conducted for the General Services Administration to investigate and quantify sprinklered fire exposure on an exit corridor and spaces adjacent to that corridor. The study compares the conditions in the test facility due to a 1 MW crib fire with those of a fire under control by a sprinkler. The effect of a sprinkler positioned in the corridor, outside of the burn room, was also examined.

The test facility consisted of a burn room, a target room and a corridor connecting the two rooms. 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 consisted of an entry alcove and a rectangular room with a total volume of 15 m³. The target room was protected using a simulated "standard door" (6 mm top cut, 6 mm side cut and a 13 mm undercut).

Gas temperatures and concentrations of oxygen, carbon dioxide, and carbon monoxide were measured at selected points in the three rooms. Tenability was assessed using both temperature and gas toxicity criteria. This assessment showed that sprinklers maintained tenable conditions outside the room of fire origin.