

NIST releases final report on Charleston sofa store fire

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NIST researcher photographing the remains of the Sofa Super Store in Charleston, S.C., on June 19, 2007, the day after the fire that killed nine firefighters. Credit: NIST Engineering Lab

The National Institute of Standards and Technology has released its final report on its study of the June 18, 2007, fire at the Sofa Super Store in Charleston, S.C., that trapped and killed nine firefighters, the highest number of firefighter deaths in a single event since 9/11. The final report is strengthened by clarifications and supplemental text based on comments provided by organizations and individuals in response to the draft report of the study, released for public comment on Oct. 28, 2010.

The revisions did not alter the study team's main finding: the major factors contributing to the rapid spread of the [fire](#) at the Sofa Super Store were large open spaces with furniture providing high-fuel loads,

the inward rush of air following the breaking of windows, and a lack of sprinklers.

Based on its findings, the study team made 11 recommendations for enhancing building, occupant and firefighter safety nationwide. In particular, the team urged state and local communities to adopt and strictly adhere to current national model building and fire safety codes. These codes are used as models for building and fire regulations promulgated and enforced by U.S. state and local jurisdictions. Those jurisdictions have the option of incorporating some or all of the code's provisions but often adopt most provisions.

If today's model codes had been in place and rigorously followed in Charleston in 2007, the study authors said, the conditions that led to the rapid fire spread in the Sofa Super Store probably would have been prevented.

Specifically, the NIST report calls for national [model building](#) and fire codes to require sprinklers for all new commercial retail furniture stores regardless of size, and for existing retail furniture stores with any single display area of greater than 190 square meters (2,000 square feet). Other recommendations include adopting model codes that cover high fuel load situations (such as a furniture store), ensuring proper fire inspections and building plan examinations, and encouraging research for a better understanding of fire situations such as venting of smoke from burning buildings and the spread of fire on furniture.

Two of the recommendations in the draft report were slightly modified to increase their effectiveness. The recommendation "that all state and local jurisdictions ensure that fire inspectors and building plan examiners are professionally qualified to a national standard" was improved by listing three nationally accepted certification examinations as examples of "how professional qualification may be demonstrated."

Another recommendation has been enhanced by urging state and local jurisdictions to "provide education to firefighters on the science of fire behavior in vented and non-vented structures and how the addition of air can impact the burning characteristics of the fuel."

NIST is working with various public and private groups toward implementing changes to practices, standards, and building and fire codes based on the findings from this study.

More information: Volume I: www.nist.gov/manuscript-public...ch.cfm?pub_id=908200

Volume II: www.nist.gov/manuscript-public...ch.cfm?pub_id=908201

Provided by National Institute of Standards and Technology

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