

- International Association of
Fire Fighters

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John A. Gannon
President

Alfred K. Whitehead
Secretary-Treasurer

INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS

1750 NEW YORK AVENUE, N.W., WASHINGTON, D.C. 20006
TELEPHONE NO. (202) 737-8484



John A. Gannon
President

THE NEED FOR FIRE RESISTANT FURNITURE TESTING: FLAMMABILITY IGNITING REGULATORY ACTION

BACKGROUND PAPER

Alfred K. Whitehead
Secretary-Treasurer

"Flashover is the ultimate event in a room fire signaling the final untenability for room occupants and greatly increased hazard to other building space. The room becomes filled with flame, and heat fluxes are sufficient to ignite most combustibles."

-Vytenis Babrauskas
Center for Fire Research
National Bureau of Standards

Burning or smoldering furniture is responsible for more fire deaths than any of the other contents in a room. Most often it kills by smoldering over a long period of time, emitting toxic gases--then bursting into flames fatal to occupants already overcome by fumes.

Called "flashover," it is the professional fire fighters' nightmare. Escape for those trapped in the room during flashover is virtually impossible. Serious injury or death for those fighting the fire is frequent. Fire fighters' experience, backed by fire scientists' research, indicates that the time between ignition and flashover has been compressed in recent years by over 50%. All are in agreement that this is due to the increased burn rate of modern upholstered furniture and other synthetics, exacerbated by the smaller room size of modern buildings.

By some estimates, the average time to flashover, formerly 8 to 12 minutes, is a deadly 2 to 4 minutes today. This means the fire is reaching flashover as the fire fighters arrive, making rescue of the occupants more difficult and the firefighting environment more dangerous.

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We have filled the rooms of our buildings with combustible toxic fuel causing fires to burn hotter, faster and deadlier; upholstered furniture is the most plentiful and therefore the most deadly portion of the fuel.

The National Fire Protection Association reports that upholstered furniture was the first item ignited in fires responsible for over 1000 civilian deaths, over 100 fire fighter deaths and 4000 injuries, as well as \$250 million in damage annually. Although upholstered furniture represents only about 4% of all residential fires, it is initially involved in more than 20% of the deaths and 12% of the injuries.

In January 1987, the State of Maryland issued a report from The Governor's Task Force on Deaths from Fires in Buildings, whose 31 members represented the medical community, fire fighters, building code officials, the General Assembly, private citizens' and the plastics, home building, insurance and real estate industries. A major conclusion of this report was:

"Furnishings in a room are usually the most important source of fuel contributing to fire deaths, and modern reliance on synthetics, especially foams, may well have resulted in an increased fire load. Building materials make a lesser contribution because of fire rating and codes which manage their use."

FIRE FIGHTERS CALL FOR FLAMMABILITY REGULATIONS

Remarkably, in the comprehensive detail of the fire, electrical and building codes that attempt to ensure the safety of the structure in which we work and live, there are very few restrictions governing the fire safety of building contents.

The IAFF believes that the flammability and firegas toxicity of all room contents should be regulated. As a minimum first step, high risk occupancies should be required to be furnished with upholstered furniture that has passed a scientifically valid flammability test. Regulations governing the fabrics and foams that are used in the upholstered chairs, ottomans and couches which fill our hotels, motels, nursing homes, office buildings and auditoriums should be mandatory.

Such regulations will accelerate industry efforts to develop furniture components that are more fire resistant and less toxic when exposed to fire. There are fabrics and foams already on the market that have passed valid flame testing. However, while some hotel chains and some other high risk facilities are voluntarily using these life-saving materials, the majority are not.

The IAFF is working with states on legislation which would require full flame testing of all upholstered furniture used in high risk occupancies. As a model, they are using testing procedures developed by the California Bureau of Home Furnishings, known as California State Technical Order #133.

The State of California has the longest and most successful history of furniture fire regulation of any jurisdiction, which includes a mandatory cigarette ignition smoldering test (Technical Orders #116 & 117) and voluntary full flame test. Between 1974 and 1985, the number of fires started in upholstered furniture dropped by 50% there, a much steeper decline than the nation as a whole. The number of fire deaths from upholstered furniture dropped even more sharply. This decline is even more remarkable in light of California's population growth of 25% during the same period.

The nationwide impact made upon fire prevention through regulated standards can be vividly seen in the case of mattress flammability. Once the leading source of fire deaths, mattresses have been subject to minimal flammability standards imposed by the U.S. Consumer Product Safety Commission, (CPSC) in 1973. These regulations were a major factor in the 49% decrease in deaths from mattress fires of from 1980 to 1984.

In contrast, deaths from upholstered furniture dropped only 18% during, that same time. The National Fire Protection Association forecasts that fire deaths from upholstered furniture will rise from 1986 to 1996, while fire deaths from mattresses will continue to decrease by a significant 59%. The IAFF believes the most efficient and pragmatic approach to bringing

about a lifesaving decline in upholstered furniture fire deaths is through mandatory flammability standards, which federal policy has failed to implement.

FEDERAL EFFORTS INEFFECTIVE

For almost ten years the upholstered furniture industry has been subject to ineffective voluntary standards established by the industry-based Upholstered Furniture Action Committee (UFAC). Monitoring of the UFAC program by the Consumer Product Safety Commission reveals the UFAC standards to be inadequate.

According to the CPSC, although deaths from furniture fires have followed the general downward trend of fire casualties attributable to smoke detectors and better firefighting methods, they have declined at a lesser rate than the deaths for residential fires in general.

Other industry efforts setting non-mandatory flammability standards in high occupancy buildings, such as hotels, have also been ineffective. On the contrary, these voluntary standards have given consumers a false sense of security. They have not and cannot save lives; it is time to develop mandatory standards across the country which will.

Legislation could not have prevented the arson that is alleged to have ignited the furniture in Puerto Rico's DuPont Plaza Hotel last New Year's Eve. However, flame resistant low-toxicity furniture might have prevented the fire from burning so rapidly, reaching flashover so quickly that it was at first mistaken for an explosion.

The IAFF, representing over 170,000 professional fire fighters in the United States and Canada, has been at the forefront of the effort to make our living and working environments less flammable and less lethal in fire situations. Among the first to call national attention to the problem of combustion toxicity and the need to find a way to control the hazards of fumes from burning materials, the IAFF is working to achieve toxicity standards, in addition to those existing for flammability.

New York State, with strong fire fighter support, became the first in the nation to include the toxicity testing of building materials as a building code requirement. Soon builders, architects and the general public in New York State will know what gases specific materials will emit in a fire and be able to make informal decisions about the materials they put in their buildings and homes.

The IAFF is working closely with concerned legislators to insure that fires in our residences and in high risk occupancies will not continue to burn hotter and faster. Through enactment of mandatory flammability standards for upholstered furniture, as well as inclusion of toxicity testing in building codes and other life safety measures, America's tragically high rate of fire death and injury can be dramatically reduced.

OFFICE: 202-737-8484



HAROLD A. SCHATBERGER
DIRECTOR
DEPARTMENT OF GOVERNMENTAL AFFAIRS
AND PUBLIC RELATIONS
INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS
AFL-CIO-CLC

1750 NEW YORK AVE., N.W. WASHINGTON, D.C. 20008

