

Offers Tips on Flame Retarding

This is the first of two pieces on flame retarding. While people and companies may still use the term “fire-proofing,” it is really not possible to fire-*proof* something unless, perhaps, it means encasing the item in concrete. We can flame-*retard* items by applying a variety of chemical products. These products slow the spread of flame by starving the fire of oxygen by generating non-combustible gases, or by creating particles/molecules that interfere with the chain reaction.

All facilities should be aware of, and comply with, any federal, state, and local regulations that apply. Begin your search with your local fire department.

What should be flame-retarded? Well, think about what could safely burn in your theatre. I sincerely hope your answer is “Nothing!” Flame retarding has been recommended by fire authorities for many, many years for all materials such as curtains, lumber, furniture, and large props. This recommendation is especially relevant for soft goods. The purpose is two-fold: keep people safe while the items are in use in the theatre, and prevent a massive conflagration in the event that a fire starts in a storage area.

In any fire-hazard survey do not forget the house; upholstered seats (especially with wiring running inside them), sound-absorbent materials in the pit, flammable artwork, and curtains at the lobby doors--or anywhere--should be flame-retarded. Even if applicable laws do not provide for it, consider the idea that there is an obligation to protect coworkers/students, audience, and building by flame-retarding all combustible material. Their safety depends on our diligence.

The test standards applying to theatrical drapes are National Fire Prevention Association’s 701 and 705. Fabrics used for interior finishes in buildings, upholstery and wood have their own variety of standards which are listed and explained in *The NFPA Fire Protection Handbook, 18th Edition*, with Arthur E. Cote, editor. 701 is a test used by manufacturers and flame-retarding companies to demonstrate flame-retardancy of textiles under careful scientific conditions. 705 is the field flame test for textiles. A sample of at least ½ inch x 4 inches is suspended in a draft-free area and a kitchen match is held ½ below the center bottom for 12 seconds. The results should show that the flame did not spread in excess of 4 inches from the bottom, there were no more than 2 seconds of afterflame, and that broken or dripping pieces did not burn after reaching the floor. The NFPA does make clear that this test is not as reliable as 701, and that it can be inaccurate in either direction. The test should be used to augment a comprehensive regulatory program.

Old furniture is rarely flame-retardant. Rather than bursting aflame immediately, upholstery typically smolders for hours, but lets off enough smoke and toxic fumes to kill. It is also very difficult to extinguish such fires because even when doused with water they can reignite hours later. Firefighters will take the item outside, tear it apart, and saturate it with water. Cigarettes and upholstery are a particularly risky combination, thus making it important to inspect furniture and carpeting after a smoking show. The stage is not the only area with flammable upholstery; green rooms and break rooms also need safe furniture, as well as strict enforcement of no-smoking policies. Unfortunately, resistance to both cigarette ignition and flames are somewhat incompatible in upholstery, making it even more important to keep away cigarettes and fire!

Now that the subject of flame-retarding has been broached and the tests for fabrics explained, go out and evaluate your space and materials for fire safety. A future column will discuss the actual how-to of flame-retarding, especially for soft goods.