

Howard Talks Tech

Is your stage curtain FR?

When using stage curtains in a public area such as in schools, universities, theatres, auditoriums and performing arts centers it is important to consider flame retardant fabric for fire/life safety reasons. Most local fire code authorities require that drapery fabrics used in such places be certified as fire retardant.

There was a famous fire that started in an unprotected stage curtain. On December 30, 1903, hundreds of adults and school children gathered in the “fireproof” Iroquois Theater in downtown Chicago for a Holiday performance when sparks from a stage light ignited the red-velvet curtain. When it was all over, 572 people died in the fire and more died later, bringing the eventual death toll up to 602.

Fabric such as cotton and linen if untreated can ignite quickly and result in spreading flame fast to other areas. The ignition and burn factors of fabric are typically affected by the weight and weave of the fabric. Most of the fabric surface texture such as napped fabric (for velvets and velour’s) will ignite easier than smooth surface type.

Check your stage draperies for labels at the top or bottom edge. These labels should indicate whether the fabric is inherently flame retardant (IFR) or flame retardant treated (FR). IFR fabrics do not need to be retreated - they are flame retardant for the life of the fabric. If the drapes are FR (flame retardant treated) they do need to be periodically retreated. The label should indicate the date of the last treatment. If the period since treatment is greater than five years, the curtains will require re-treatment.

Inherently “IFR” Flame Retardant and “PFR” Permanently Flame Retardant fabric has been certified as “IFR or “PFR” because the fibers have been woven such that they are noncombustible for the life of the fabric...meaning they will last for life and not dissipate despite repeated cleaning. Fabric that is certified as “FR” Flame Retardant has been topically treated in an immersion process with a chemical flame retardant after the fabric has been woven. The advantage to topically treating a fabric with flame retardant to make it FR is that the flammability of fabric can be drastically reduced. Many natural fibers, including cotton, can be topically treated; with a chemical that reduces the fabric’s flammability to the extent that it becomes nearly non-combustible.

There is no official federal regulation governing the fire-retardant capabilities of draperies and curtains used in public spaces, such as theaters, school auditoriums, churches, casinos and venues for special events or trade shows. The National Fire Prevention Association developed a standard, *NFPA 701: Standard Method of Fire Tests for Flame Propagation of Textiles and Films*.

All curtains shall have a **certificate of flame retardancy** that is permanently affixed to each separate curtain panel. This certificate should have been provided by the curtain manufacturer, and properly identifies the specific curtain, size, fabric content and applicable fire rating. Special care should be taken to make sure that the requirements for flame-retardancy and dates are current and up to date.



So, what is the advantage of flame retardancy? Should the fabric catch fire, the chemical reacts with the gases and tars generated naturally by the fabric and converts the gases and tars to carbon char and this will drastically slow the burning rate.