



## **Proscenium Opening Protection and Fire Safety Curtains**

**Fire Safety Curtains** were developed in the 1850's to protect property. After a couple of theatre fires in the early 1900's, they became required by codes and standards as a feature to protect occupants. While the record of their value is questionable, they are still required to complete the fire resistive separation of the stage from the auditorium in some facilities.

**The** criterion for when a fire safety curtain is required has changed several times in the last 50 to 60 years. They were limited to “full working stages” for a long time, and this was generally understood to be large stages for professional productions, such as fully produced operas or musicals. In the 1960's and 1970's, the requirement was changed to include more stages, including many high school stages. Initially the a fire safety curtain was required when the distance from the top of the proscenium opening to the “ceiling above the stage” exceeded five feet. Later, when it was realized how easy it was to just have a very high proscenium opening and close it down with a curtain to avoid the requirement, the codes were changed to require a fire safety curtain “where curtains, scenery, or other combustible hangings are retractable”. Further changes refined this to “retractable vertically” because even the draw curtains on elementary school stages were deemed to be retractable. Finally in 1992, under the Board for the Coordination of Model Codes, the criteria to require separation of stage and auditorium by fire resistive construction complete with proscenium opening protection was changed yet again. That change, still in effect today, requires that the stage height when measured from stage floor to the highest point of roof or floor deck above exceeded fifty feet, proscenium opening protection is required. This criterion is based on the greater height allowing the storage of a greater quantity of combustibles and the proven efficacy of fire sprinklers to heights of fifty feet.

**Subsequently**, there have been two standards developed that set minimum requirements for the design, fabrication, installation, testing, and operation of fire safety curtains. While there are many issues addressed, the relevant concerns for schools with stages with fire safety curtains come from NFPA 80 and include:

- 20.7.1.1 The fire safety curtain assembly shall be closed at all times except when there is an event, rehearsal, or similar activity.*
- 20.7.1.3 Emergency operation shall be verified by the owner every 90 days.*
- 20.9.1 The rigging system shall be inspected annually.*
- 20.9.1.3 Retraining of the owner and staff shall be mandatory during each annual inspection.*

**We** emphasize the regular operation aspects, including keeping it closed except when necessary for an activity; periodic testing and inspection; and the training. These are frequently ignored in our experience. To facilitate this, all new fire safety curtains except a limited number of small, simple ones, are required to be motorized. This generally eases the trepidation and fear that users have of not being able to get the fire safety curtain open for a performance. This revision was the result of many fire safety curtains not having been operated for years (or ever!) since the initial installation, let

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alone regularly as required. This resulted in very low reliability.

**Therefore**, we strongly recommend:

- Annual inspections with training included
- Regularly exercising the fire safety curtain by keeping it closed when not needed open

As a result we recommend motorizing all existing non-motorized fire safety curtains.

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