

Fire Curtains

Fire safety curtains provide a barrier between the stage and auditorium in the event of a fire. The curtain prevents the heat, smoke and flame from a fire on stage from affecting an audience while the auditorium is evacuated.

Fire curtains may also be used to restrict access between the stage and auditorium or as a noise barrier. Leaving the curtain closed when the auditorium is not in use provides a fire and security barrier between the auditorium and stage. New regulations may require the curtain be closed when the auditorium is not in use.

J. R. Clancy developed and patented the first automatic self-closing fire curtains in 1904. Today we continue to be the leaders in the development of new fire curtain materials and mechanisms to protect your theatre.

Many approaches to fire curtains

There are many different methods of rigging a fire curtain, and a great variety of release mechanisms and other hardware. There are also many different building and fire codes in the U.S., each with their own requirements. We'll work with you to develop a fire curtain system to meet your requirements.

How a manual fire curtain works

A typical fire curtain is made from Zetex Plus 1210ZP, which is listed by the California State Fire Marshall's Office as a Proscenium Curtain. The weight of the fire curtain is partially balanced by a counterweight arbor. The system is intentionally left "curtain heavy" to ensure that gravity will close the curtain.

The curtain is restrained from closing by a fire line attached to the arbor release. The fire line is a 1/8" galvanized utility cable that runs around the proscenium opening, containing six fusible links and two manual release levers. The fire line is held in tension, so that when the line separates, releasing the arbor, the curtain closes.

How a motorized fire curtain works

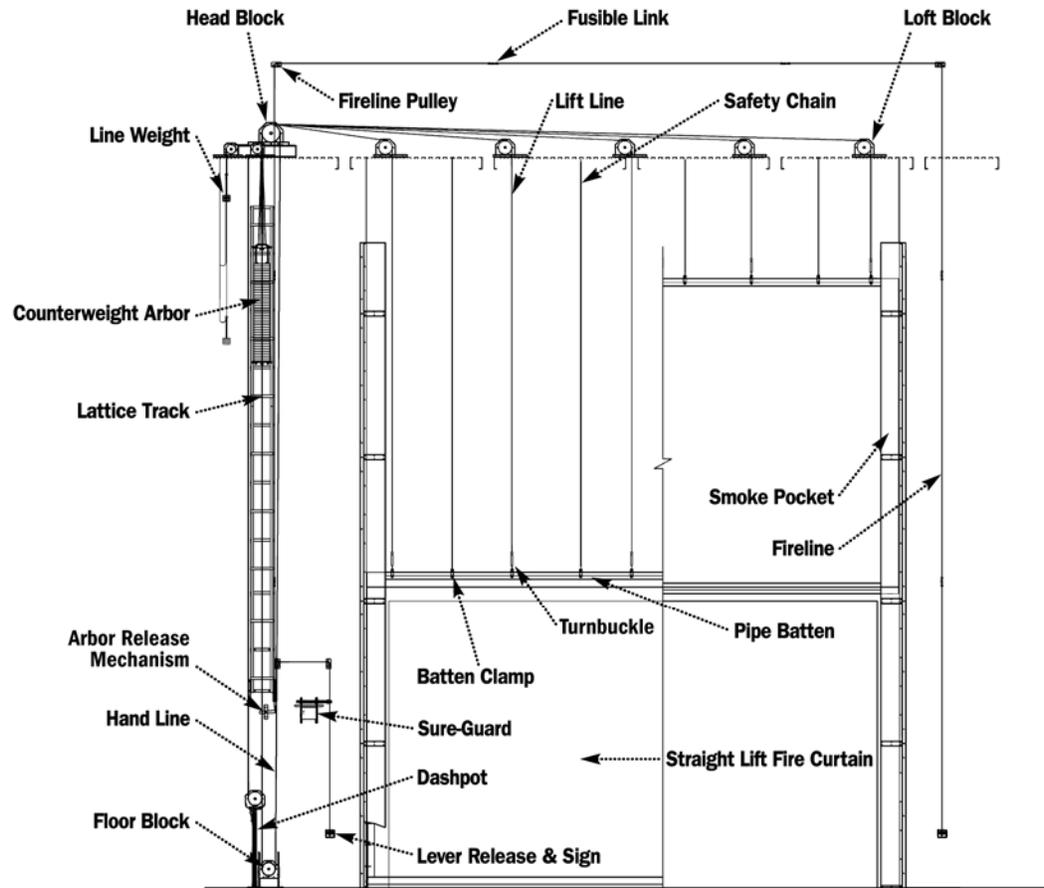
Fire curtain winches can carry the entire weight of the fire curtain without needing counterweights. The fire line connects to a brake or clutch on the winch. Once the brake or clutch is opened the curtain will close. A speed governor regulates the closing speed of the curtain.

Very heavy fire curtains may need to be counterweighted. In this case traction winches may be used. These have a head block with "V" grooves that drive the lift lines to open and close in normal operation. The winch is equipped with a clutch between the gearbox and traction head block. The clutch lever is held engaged by the fire line. When the fire line is released, the clutch is disengaged, allowing the head block to freewheel, so that the curtain closes.

Speed Regulation – Dampers & Dashpots

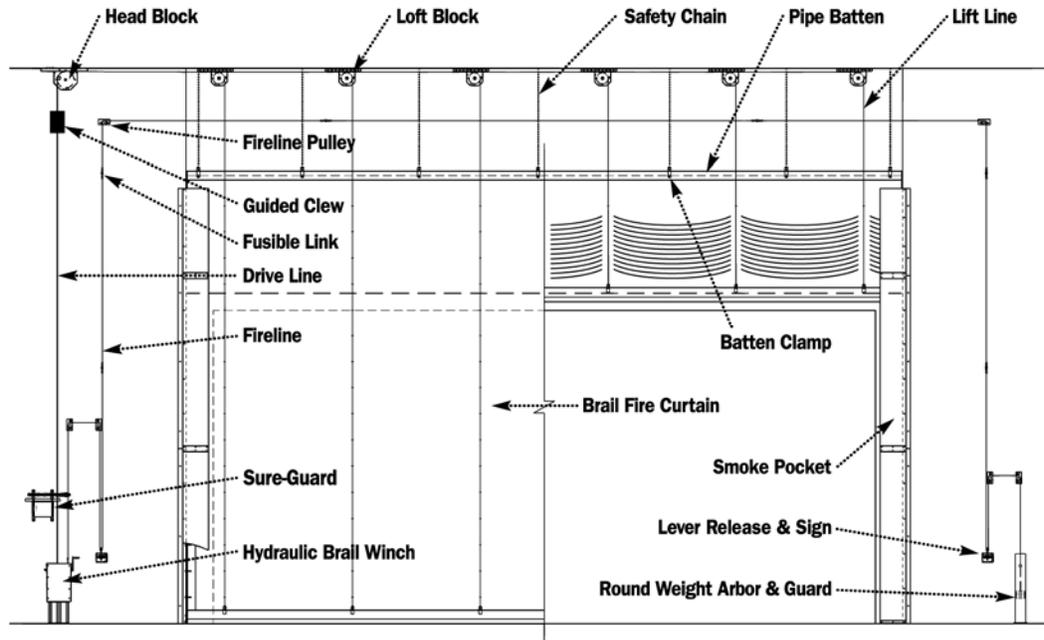
Most codes require that a fire curtain close in “less than 30 seconds, with the last 8 feet of travel requiring 5 or more seconds for full closure” (2006 International Building Code, the Uniform Building Code has the same requirement). For curtains with less than 48 feet of travel a constant speed of 96 fpm meets both of these requirements. A speed regulator may be required in some cases to assure a constant speed. Hydraulic dampers are used when necessary. For larger curtains a hydraulic dashpot is needed to provide a reduced speed for the last 10 feet of travel.

Straight Lift Fire Curtain



The Straight Lift Fire Safety Curtain system is used when the available space is more than twice the proscenium height. It uses a counterweight set to balance the weight of the curtain. Motorization is possible using a traction drive winch in place of the head block.

Brail Fire Curtain



This system is used when the space above the proscenium is as small as half (or even less) the height of the proscenium opening. The curtain folds up on itself as it is raised, allowing it to fit in a reduced height. This type of curtain is not counterweighted, but is operated by a fire curtain winch. Both manual and powered winches are available.

Tripped Fire Curtains

Tripped fire curtains are not recognized by current building codes. Due to reliability problems we recommend that tripped curtains be replaced with brail curtains.

Other Types of Fire Safety Curtains

Rigid fire curtains are available to meet the requirements of governing codes and the needs of very large or unusual spaces. We'll work with you to provide the right fire curtain to meet your needs.

© J. R. Clancy 2007