

CSS-Fire Curtain Specification

Testing or Classification:

BSEN 1634-1:2008 Fire resistance & smoke control tests for door, shutter and openable window assemblies and elements of building hardware. Fire resistance tests for doors, shutters and openable windows.

BSEN 1363-1: 1999 Fire resistance tests. Part 1: General requirements.

BSEN 1363-2:1999 Fire resistance tests. Part 2: Alternative & additional procedures.

BSEN 13501-2:2007+A1:2009 Fire classification of construction products and building elements. Classification using test data from fire resistance tests, excluding ventilation services ratings.

BS476-6:1989+A1:2009 Fire tests on building materials and structures. Method of test for fire propagation for products.

BS476-7:1997 Fire tests on building materials and structures. Method of test to determine the classification of the surface spread of flame of products.

BS476-22:1987 Fire tests on building materials and structures. Methods for determination of the fire resistance of non-loadbearing elements of construction.

BSEN 14600:2005 Doorsets & openable windows with fire resisting and / or smoke control characteristics. Requirements & classification.

BSEN 10219-1:1997 Cold formed welded structural sections of non-alloy and fine grain steels. BSEN 10025-2:2004 Hot rolled products of structural steels

BSEN 10305-3:2002 Specification for seamless & welded tubes for automobile, mechanical & general purposes. Specific requirements for electric resistance welded (including induction welded) steel tubes.

BSEN ISO 9001:2008 Quality management system.

UL 10D Fire protective curtains classification.

UL 10D S Fire protective curtains classification, smoke designation. UL864 Control units & accessories for fire alarms.

ULC-S527 Standard for control units for fire alarm systems

UL723:2008 Test for surface burning characteristics of building materials.

UL1784:2009 Air leakage test of door assemblies.

Fabric Testing DIN EN 53855, 53851, 53855 T1, 53830, 53857 T1, 52273 & DIN EN 1049

Performance & Classification

60 minutes integrity up to 1000 °C (1832°F)

Approved for spans unlimited in width, heights up to 7m minimum fabric overlap 600mm E60 Class "0"

SC1 Compliance Parameters:

-tested for fire resistance to BS EN 1634-1

-provides gravity fail safe operation

-tested to UL10D complies

-conforms to NFPA105:2007

-conforms to NFPA80 -motors within the assemblies tested to operate at temperatures up to 300 °C

-fabric tested to BS476-6+A1

-fabric tested to BS476-7

Product Performance:

Complete product tested to BS EN1634-1:2008 and achieved up to 1000° C for 60 minutes and is ASB 1 and 3 classified. Designed to operate for 1500 cycles at normal ambient temperatures.

The fabric has a class 1 surface spread of flame when tested to BS 476: Part 7 and a fire propagation index I =1.4 when tested to BS 476: Part 6. The results of the tests demonstrate that the product complies with the requirements for Class 0, as defined in paragraph A13(b) of Approved Document B, 'Fire Safety', to the building Regulations 2000 edition consolidated with 2000 and 2002 amendments.

General Description: The active fire curtain barrier consists of X32K woven glass fibre fabric. The fabric is tested to withstand temperatures of up to 1000°C for a period of 60 minutes minimum, this is wound onto a steel tube, each of which will incorporate a 24 volt d.c. motor, a sealed heavy duty ball bearing assembly, and an electronic control circuit.

The active roller assembly, incorporating the fabric, is housed in galvanised mild-steel head box which is normally bolted to the fabric of the building. Standard head box sizes are 150mm x 150mm. Larger head boxes may be required where the curtain drop is in excess of three metres. Also, the lower edge of the curtains incorporates a twin inverted mild steel angle which acts as a weight bar to enable the curtain to unwind upon receipt of a signal from the fire alarm panel or total mains and battery failure. Various oversize assessments have been conducted.

Metal side guides with a fabric retaining system shall be installed to provide a seal between the curtain fabric and the building construction.

Control system:

Operation of the curtains is via the Group Control Panel which can either be mounted adjacent to the fire curtain head box within the ceiling void, allowing access for maintenance, or mounted in a remote position from the curtain.

The panel requires a local 230v ac supply rated at 3 amps via an un-switched fused spur on a maintained supply installed by others. For operational purposes the G.C.P. must be connected to a normally-closed volt-free contact within the fire alarm control panel configured to open on fire and fail safe.

Each control panel is capable of operating up to six rollers and includes battery back-up which will maintain the curtains in their retracted position for a period of three hours during a mains failure. It is also possible to manually operate the curtains for twenty cycles during this period.

Should the battery voltage fall below a predetermined limit, a low voltage cut off circuit will activate the curtain, which will descend in a controlled manner under the force of gravity.

The roller motors, which are 24 volt d.c., must be wired from the G.C.P. in a ring main using suitably sized cable to ensure a voltage of 24v d.c -10%.

The curtains descend upon receipt of a signal from the fire-alarm panel and retract when the signal is removed. During ascent the motors are controlled via a synchronised speed circuit to ensure all curtains are raised at similar rates. In the event of mains and battery backup failure, the curtains descend under the force of gravity.

Limit switches are not used to control the upper and lower positions of the curtain.

There is a manual key operation from GCP to facilitate override and testing.