

Determination of the fire resistance of uninsulated doorsets and shutter assemblies

WARRINGTON FIRE RESEARCH TESTING BS 476 Part 22 1987 Clause 8

Introduction

FireMaster fire curtains, the latest revolution in active fire compartmentation, meet and exceed the strictly defined FR requirements for fire shutters, but without the problems of limited sizes, large heavy constructions, columns and outdated drive and control methods.

Advanced fabric technology achieves 4 hr fire resistance and with the unique, heavy duty VarioSpeed gravity fail safe drive system, FireMaster saves constructions costs and allows more flexible, more user friendly fire safety engineering.

Housings are as small as 150 x 150 mm for units 6 metres wide x 5 metres high. The largest span of 54 mtrs x 5 mtrs only uses a 150 x 250 mm housing. 8 metre drops are possible.

Warrington Fire Research testing for FireMaster set the standard for the Coopers progressive development and testing regime, with a full 2 hour FR fire curtain shutter assembly' performance to BS476 : Part 22 : 1987 Clause 8.

FireMaster fire curtains are extensively tested for all aspects of fire shutter performance and, unlike fire shutters, FireMaster fire curtains are also specifically for use as automatic smoke barriers (curtains) BS7346 Part 3 1990. The unique VarioSpeed gravity fail safe drive system is specifically tested to 2 & 4 hr FR therefore FireMaster fire curtains resist fire from either direction

BS 476 Part 22 1987 Clause 8

Warres 104732 September 1998

Summary: A fire resistance test, in accordance with Clause 8 of BS 476 Part 22 has been performed on a single specimen of an asymmetrical, uninsulated drop curtain. The specimen satisfied the performance requirements specified in Clause 8 of BS476 Part 22 1987 for uninsulated doorsets and steel shutters for the following period

Integrity: 120 minutes

Range of Sizes

Warres C106113 January 1999

Conclusions: It is considered that asymmetrical, drop curtain assemblies of spans up to 30 metres and drops up to 6 metres, as described in this report, based on the assembly tested under reference Warres No. 104732, should, if subjected on the coated face of the fabric to a test in accordance with Clause 8 of BS476 : Part 22 : 1987, be capable of providing **120 minutes integrity performance.**

Fire and smoke barriers (curtains)

Warres C1022 December 1998

Conclusions: Based on the tests witnessed by Warrington Fire Research the fire curtain arrangement as described in this report can be said to meet the requirements of Clause 3.2.3 and 4.3 of BS7346 : Part 3 : 1990

Safety in use (Gravity fail safe)

Warres C1022 December 1998

Conclusions: Based on the tests witnessed by Warrington Fire Research the fire curtain arrangement as described in this report can be said to meet the requirements of Clause 3.2.3 and 4.3 of BS7346 : Part 3 : 1990

BS 7346 : Part 3 : 1990

3.2.3 Automatic curtains shall fail safe to their operational position 'on loss of power' . . . at a controlled rate of fall between 0.07m/s and 1m/s.

(BSI Technical Committee –"loss of power does indeed refer to all potential power sources' and that 'for life safety....gravity fail safe is believed to be of paramount importance")

Gravity fail safe applies to total power failure and wiring and control equipment corruption.

Reliability

BS 7346 : Part 3 : 1990

4.3 Automatic curtains shall not fail to operate, nor shall there be any holes or tears in the curtain, when held in its fully retracted position and then moved to its



operational position 2000 times

Installation and drive system

Warres C108336 May 1999

Conclusions: Uninsulated drop curtain assemblies, as previously tested and assessed under references WARRES No. 104732 and WFRC No. C106113 respectively, when incorporating alternative mounting details, as proposed in Section 3 of this report would, if tested in accordance with Clause 8 of BS 476 Part 22 : 1987, be expected to provide the required 120 minutes integrity.

Additional Testing

BS 476 : Part 22 : 1987 Clause 8

Coopers FireMaster fire curtain shutter Assemblies have also been tested at the Loss Prevention Council Building Product Assessment Laboratories, achieving 4 hour fire resistance for a range of spans up to 54 metres wide and drops up to 8 metres high.

Fire resistance of drive unit R6G steel capped tubular motors when fitted in a Coopers Blinds Ltd fire curtain shutter assembly are suitable for use where a fire resistance of up to 240 minutes is specified in accordance with the integrity criterion of BS 476 Part 22 1987 for fire exposure from either direction.

(See Coopers FireMaster data sheet FC002D for further details)