Fiberseal FS

Integrity only single coil high performance fire and smoke curtain specification

PERFORMANCE REQUIREMENT:

The vertical fire & smoke curtains shall be supplied and installed in accordance with AS1905.2:2005 except that the primary means of activation is to be from an AS1670.1:2018 smoke detection system. When fire tested in accordance with Clause 3 Determination of Fire Resistance they shall provide a minimum Fire Resistance Level (FRL) of -/120/- and radiation transmission of no more than 2.8kW/m2 measured at 3m at 30 minutes.

Tested System Size: 3000mm W x 3000mm H			
Exposure Temperature	**Leakage Rate Q (m^3/h) at pressure differential of:**		
	10Pa	**25Pa**	**50Pa**
Ambient (20°C)	6.52	11.86	20.19
Medium (200°C)	3.94	8.94	15.37

Tested System Size: 7000mm W x 4500mm H			
Exposure Temperature	**Leakage Rate Q (m^3/h) at pressure differential of:**		
	10Pa	**25Pa**	**50Pa**
Ambient (20°C)	12.31	22.40	38.18
Medium (200°C)	7.44	16.88	29.02

The fire curtains shall resist a pressure differential of no more than 50 Pa

PRODUCT SPECIFIED

Fiberseal fire and smoke curtain by Smoke Control T: 1300 665 471; info@smokecontrol.com.au or approved equivalent.

System parameters;

a) -/120/- FRL AS1530.4:2005
b) Smoke leakage; as per table in Performance Requirement
c) Maximum size;
    i) 7m W x 4.5m H
d) Deployment speed;
    i) Sizes up to 7m W x 4.5m H- nominally 150mm/s
e) Dimensions
    i) Headbox;
        i. Width up to 3.5m, Height up to 3.5m; 290mm H x 190mm W
        ii. Width up to 5m, Height up to 4.5m; 200mm H x 285mm W
        iii. Width up to 7m, Height up to 4.5m; 260mm H x 350mm W
    ii) Side Guide;
        i. 105mm W x 74mm D
f) Power requirements;
    i) Sizes up to 10m W, 1 of 240v 10amp GPO, peak current draw 2.1A
g) Alarm Input – 0V nominally closed contacts
h) Pressure resistance maximum;
    i) Deploying – 10Pa
    ii) Deployed;
        i. 50Pa
        ii. >50Pa to Smoke Control Technical department
i) System weight;
    i) 30kg/m of system width up to 3m H
    ii) 35kg/m of system width up to 4.5m H

Note: for applications where pressure differentials are expected consideration should be given to the induced loading on the surrounding structure of this pressure to ensure appropriate restraint of the system.

j) Supporting construction type;
   i) Masonry
   ii) Concrete
   iii) Fire rated plasterboard with steel or timber stud.

k) Approved installation configuration;
   iv) Headbox;
      i. Face fixed to the wall
      ii. Fixed under the slab/into the wall
   v) Side guides;
      i. Face fixed to the wall
      ii. Fixed in the opening

Ancillary items required; (delete not applicable)

l) Control system: Shall allow fail safe operation on receipt of a general building alarm signal and automatic rewind on reset of the alarm from the Fire Indicator Panel (FIP) without the assistance of a technician.

m) Staged Deployment: Staged deployment shall allow the fire curtain to deploy to 2m above the finished floor level, pause for 30 seconds and then deploy to the floor (other configurations available on request).

n) Battery back up; Shall be installed to reduce the likelihood of nuisance deployments and allow 5 complete open-close cycles.

o) Rewind switches (operating ΔPa = 10Pa): shall be installed on *(delete not applicable)* both sides/one side of the nominated smoke containment screens. They shall allow the system to rewind no more than 2.1m and redeploy within 20 seconds. (other configurations available on request).

p) Exclusion Zone Sensors; IRS36 shall be installed in accordance with Smoke Control's recommendations to protect each fire curtain asset during normal building use and significantly increase the likelihood of full deployment when in fire mode.

q) Sounders and strobes: Shall be installed on *(delete not applicable)* both sides/on the same side as the egress path

r) Fire Rated Bulkhead; shall be installed to provide an FRL of -/120/120 when fire tested in accordance with AS1530.4 and shall facilitate any service penetrations to be installed and certified in accordance with AS4072.1:2005

s) Fire Rated Corner posts: shall be installed at fire curtain junctions in strict accordance with the manufacturers approvals.

t) Maintenance: All fire curtains shall be listed on the Essential Services Register and shall be maintained by competent technicians in accordance with AS1851:2012 and the manufacturers recommendations

APPLICATIONS

- Protection of openings in fire compartment walls (NCC C3.5)
- Servery openings in smoke-proof walls health-care and residential care buildings (NCC Spec C2.5)

Note: Some applications listed above may require a Performance Solution to be compliant. Please check with your Certifier prior to specifying this product.

INSTALLATION

Fire Curtains

The fire curtains shall be installed, certified, commissioned and tagged in accordance with AS1905.2 -2005 and this Fire Engineering Report by an ISO9001 Quality Accredited manufacturer.

When installed the system shall consist of a single overhead barrel for the full width of the opening. While some Registered Testing Authorities provide Formal Opinions in regards to the expected fire resistance level of fire curtains, they do not discuss nor provide a warranty in regards to their reliability. Experience shows that some manufacturer designs of fire curtains do not operate reliably once installed and attract extraordinarily high maintenance costs. For this reason, multiple barrel, overlapped fire curtains are deemed not equivalent to this specification on this project and shall not be substituted for a single barrel continuous span system.

Threshold

Unless addressed as part of an appropriate performance solution the curtain must deploy onto a fire rated or non-combustible threshold as per requirements of AS1905.2:2005 and AS1530.4:2014. Maximum gap permitted at threshold 25mm.

Fire Rated Bulkheads

Installation of the fire curtains suspended below the concrete slab shall only be permitted if the system has been fire tested in this configuration and approved by a Registered Testing Authority for the sizes required in this project. That is; the suspension system fully exposed to fire from both directions without protection of a fire rated wall/bulkhead. If the system has not been fire tested in this configuration, a fire rated bulkhead shall be installed to support the fire curtain system. For clarity, the fixing of the fire curtain head box shall be directly to the fire rated bulkhead as per the fire tested prototype.

The fire rated bulkhead shall be installed as a 3-sided bulkhead (the forth side is provided by the concrete slab) to provide a minimum of -/120/120 fire resistance level when tested in accordance with AS1530.4 and provide complete encasement of the fire curtain suspension system. This configuration will allow for certification of any service penetrations which will also be required to be certified in accordance with AS4072.1:2005

COMMISSIONING

Once installed it shall be demonstrated that the system shall fail safe close on loss of power using mains power in combination with battery backup and on the receipt of an alarm signal. On reset of power and the alarm signal the system shall automatically rewind to its standby position without the assistance of an occupant or technician.

The fire curtains shall also be commissioned in conjunction with the building's smoke management system. The smoke management system shall be balanced to operate without adverse effects to the fire curtain. The fire curtains must be tested a minimum of 3 consecutive times on general building alarm without failure.

The building's smoke management system shall not impede the operation of the fire curtain. A time delay of 60 seconds shall be incorporated into the smoke management system before it operates to allow the fire curtain to deploy to its fire mode position without interference. This shall be programmed within the Fire Indicator Panel. Consideration shall be made for the staged deployment of the fire curtain.

Similarly, a time delay of 60 seconds shall be incorporated into the reset of the alarm signal to fire curtain to ensure the smoke management system has ceased operation and the effects of pressure differentials have been dispersed prior to rewind of the curtain.

Certificates of Compliance shall be issued by the sub-contractor in accordance with National Construction Code 2019 A5.2 and A5.3 Evidence of Suitability and AS1905.2:2005 Clause 7 Certification.

All details and approvals are current as of the date displayed. This document supersedes all previous versions.