Fibershield 4 -/240/- Fire Curtain Specification

Integrity Only | Single Coil | Large Span | High Pressure

Performance Requirement

The Fibershield 4 -/240/- Fire & Smoke Curtain system shall be supplied and installed in accordance with the deem-to-satisfy building code requirements under NCC2022 S12C5 (NCC2019 Spec. C3.4: 4) and 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 AS1905.2:2005 Clause 3 Determination of Fire Resistance, it shall provide a minimum Fire Resistance Level (FRL) of -/240/-.

Product Specified

Fibershield 4 -/240/- Fire & Smoke Curtain system by Smoke Control T: 1300 665 471; info@smokecontrol.com.au or approved equivalent.

System Parameters

1) Fire performance (AS1530.4:2014) – -/240/- (or E240)
2) Air leakage performance (EN12101-1:2005): ≤ 25m^3/hr (fabric permeability only)
3) Maximum clear opening size – 30000mm(W) x 4500mm(H)
4) Component dimensions:
    a) Headbox:
        i) System sizes up to 20000mm(W) – 200mm(H) x 190mm(D)
        ii) System sizes >20000mm(W) – please contact technical@smokecontrol.com.au
    b) Side Guides:
        i) System sizes up to 12000mm(W) – 105mm(W) x 74mm(D)
        ii) System sizes up to 20000mm(W) – 160mm(W) x 100mm(D)
        iii) System sizes >20000mm(W) – please contact technical@smokecontrol.com.au
5) Deployment speed:
    a) System sizes up to 20000mm(W) – nominally 150mm/s
    b) System sizes up to 30000mm(W) – nominally 90mm/s
6) Power requirements:
    a) System sizes up to 12000mm(W) – 1 of 240V 10amp GPO, peak current draw 2.1A
    b) System sizes up to 20000mm(W) – 2 of 240V 10amp GPO, peak current draw 2.1A per controller
    c) System sizes up to 30000mm(W) – 1 of 415V 16amp breaker, peak current draw 5.5A
7) Alarm input – 0V nominally closed contacts
8) Maximum pressure resistance:
    a) Deploying – 10Pa
    b) Deployed:
        i) System sizes up to 50m^2 – 100Pa
        ii) System sizes up to 100m^2 – 50Pa
        iii) System sizes >100m^2 – please contact technical@smokecontrol.com.au

9) System weight:
    a) System sizes up to 3000mm(H) – 25kg per metre width
    b) System sizes up to 3500m(H) – 30kg per metre width
    c) System sizes >3500mm(H) – please contact technical@smokecontrol.com.au

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.

10) Approved supporting construction:
    a) Masonry
    b) Concrete
    c) Fire-rated plasterboard with steel or timber stud

11) Approved installation configurations:
    a) Headbox:
        i) Face-fixed to the wall
        ii) Top-fixed under the slab/bulkhead
    b) Side Guides:
        i) Face-fixed to the wall

Ancillary Items Required

1) 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.
2) 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).
3) Battery back-up: Shall be installed to reduce the likelihood of nuisance deployments and allow 5 complete open-close cycles.
4) Rewind switches (operating ΔPa = 10Pa): Shall be installed on 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).
5) 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.
6) Sounders and strobes: Shall be installed on both sides/on the same side as the egress path.
7) Fire-rated bulkhead: Shall be installed to provide an FRL of -/240/240 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.
8) Fire-rated corner posts: Shall be installed at fire curtain junctions in strict accordance with the manufacturer's approvals.
9) 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 manufacturer's recommendations.

Applications

- Protection of openings in external walls in accordance with NCC2022 C4D5 (NCC2019 C3.4)
- Protection of openings in fire compartment walls in accordance with NCC2022 C4D6 (NCC2019 C3.5)
- Non-required stairways, ramps and escalators in accordance with NCC2022 D1.12 & Specification 14 (NCC2019 D1.12 & Spec D1.12)
- Construction of proscenium walls in accordance with NCC2022 Specification 32 (NCC2019 Spec H1.3)
- Servery openings in smoke-proof walls healthcare and residential care buildings in accordance with NCC2022 Specification 11 (NCC2019 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 by an ISO9001 Quality, ISO18001 WHS and ISO14001 Environment 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 regarding the expected fire resistance level of fire curtains, they do not discuss nor provide a warranty regarding 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. The maximum gap permitted at the threshold is 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 fourth side is provided by the concrete slab) to provide a minimum of -/240/240 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 NCC2022 A5G3 & A5G4 (NCC2019 A5.2 & A5.3) and AS1905.2:2005 *Clause 7 Certification*.

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