Supercoil Long Span Smoke Curtain Specification

Single Coil | Large Span | High Pressure

Performance Requirement

The Supercoil Vertical Smoke Curtain 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 and the fire rating is not required.

The vertical smoke curtain shall comply with the NCC2022 Specification 21 (NCC2019 Spec E2.2b) requirements for smoke baffles/curtains, and AS2665:2001/ AS1668:2016. The fabric barrier shall have fire hazard properties of a Group 1 rating when tested in accordance with NCC2022 S7C4 (NCC2019 Spec C1.10: 4).

The system shall deploy to 2.1m above floor level, or the required depth dictated by AS2665:2001/AS1668:2016.

The smoke baffle/curtain shall not deflect more than 15 degrees from the vertical. When installed, gaps along the vertical sides shall not exceed 30mm.

Product Specified

Supercoil Vertical Smoke Curtain by Smoke Control T: 1300 665 471; info@smokecontrol.com.au or approved equivalent.

System Parameters

1) Fire performance – N/A
2) Air leakage performance (EN12101-1) – ≤ 25m^3/hour (fabric only)
3) Smoke Rating (EN12101-1):
    a) Without side guides – D30, D60, D120
    b) With side guides – DH30, DH60, DH120
4) Maximum size – 50000mm(W) x 10000m(H)
5) Component dimensions:
    a) Headbox:
        i) System sizes up to 3500mm(H) – 200mm(H) x 190mm(D)
        ii) System sizes up to 6000mm(H) – 250mm(H) x 190mm(D)
        iii) System sizes up to 9000mm(H) – 290mm(H) x 235mm(D)
        iv) System sizes >20000mm(W) or >9000mm(H) – please contact technical@smokecontrol.com.au
    b) Side Guides:
        i) System sizes up to 12000mm(W) x 6000mm(H) – 105mm(W) x 74mm(D)
        ii) System sizes up to 20000mm(W) x 10000mm(H) – 160mm(W) x 100mm(D)
        iii) System sizes >20000mm(W) – please contact technical@smokecontrol.com.au
6) Deployment speed:
    a) System sizes up to 20000mm(W) x 6000mm(H) – nominally 150mm/s
    b) System sizes up to 30000mm(W) x 10000mm(H) – nominally 90mm/s
7) 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

8) Alarm Input – 0V nominally closed contacts

9) Maximum pressure resistance:

a) Deploying – 10Pa

b) Deployed:

i) System sizes up to 50m^2(A) – 100Pa

ii) System sizes up to 100m^2(A) – 50Pa

iii) System sizes >100m^2(A) – please contact technical@smokecontrol.com.au

10) System weight:

a) System sizes up to 3000mm(H) – 25kg/m

b) System sizes up to 4000mm(H) – 35kg/m

c) System sizes up to 6000mm(H) – 45kg/m

d) System sizes >6000mm(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.

11) Approved supporting construction:

a) Masonry

b) Concrete

c) Fire rated plasterboard with steel or timber stud

12) Approved installation configurations:

a) Headbox:

i) Face fixed to the wall

ii) Fixed under the slab/into the wall

b) Side guides:

i) Face fixed to the wall

ii) Fixed in the opening

Required Ancillary Items

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 = 0): 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 from top position.

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 and operate on a signal from the FIP.

7) Smoke baffles above the headbox: Shall be installed to provide an effective smoke seal to any gaps between the head box and the slab and should be of non-combustible construction. Where services penetrate this baffle, they shall be treated to ensure that there are no gaps between the service penetration and baffle.

8) Corner posts: When side guides are required, corner posts shall be installed at smoke curtain junctions and shall also provide a seal against smoke movement.

9) Maintenance: All smoke curtains shall be listed on the Essential Services Register and shall be maintained by competent technicians in accordance with AS1851 and the manufacturer's recommendations.

Applications

- Atrium separation in leu of bounding walls in accordance with NCC2022 G3D3 & G3D4 (NCC2019 G3.3 & G3.4)
- Automatic smoke baffles forming smoke reservoirs for mechanical smoke exhaust systems or natural smoke and heat release vents in accordance with NCC2022 Specification 21 (NCC2019 Spec E2.2b)
- Removal of smoke lobbies for lifts in accordance with NCC2022 D2D12 & D3D7 (NCC2019 D1.7 & D2.6)
- 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

Smoke 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. Experience shows that some manufacturer designs of smoke curtains do not operate reliably once installed and attract extraordinarily high maintenance costs. For this reason, multiple barrel, overlapped smoke curtains are deemed not equivalent to this specification on this project and shall not be substituted for a single barrel continuous span system.

Gaps at Perimeter of Curtain Systems

Where leakage is permitted through a performance solution (no side guides), smoke curtains may be installed in accordance with gaps and spacing as indicated in EN12101-1, Section 5.5 – Smoke Leakage (containment efficiency).

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.

Smoke Resistant Bulkheads

The smoke resistant bulkhead shall be installed using smoke wall construction as defined by the NCC or by utilising the same fabric material utilised in the smoke curtains. Any service penetrations shall be treated so that there are no gaps between the services and the baffle.

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 smoke 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 smoke curtain. The smoke 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 smoke curtain. A time delay of 60 seconds shall be incorporated into the smoke management system before it operates to allow the smoke 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 smoke curtain.

Similarly, a time delay of 60 seconds shall be incorporated into the reset of the alarm signal to smoke 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.