Smokehalt® Modular Smoke Curtain Specification

Single Coil | Overlapped System | Medium Span

Performance Requirement

The Smokehalt® Modular Smoke Curtain with Overlaps 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 overlaps in the smoke curtains shall not be less than 300mm. Gaps as permitted by EN12101-1 or AS1668:2016/AS2665:2001.

The smoke baffles/curtains shall resist a pressure differential of no more than 20 Pa when fully deployed and not deflect more than 15 degrees from the vertical. Side guides shall not be used with an overlapped smoke curtain system. When bottom bars are joined, the smoke curtains shall not deploy to floor level due to know reliability issues with this configuration.

Product Specified

Proprietary System: Smokehalt® Modular Smoke Curtain with Overlaps by Smoke Control T: 1300 665 471; info@smokecontrol.com.au or approved equivalent.

1) Fire performance – N/A
2) Air leakage performance (AS1530.7:2007) – 0.115 $m^3/min/m^2$ @ 200°C, 25Pa (fabric only)
3) Smoke Rating (EN12101-1) – D30, D60, D120 (without side guides)
4) Maximum size:
    a) Individual modules:
        i) 5000mm(W) x 3000mm(H)
        ii) 4000mm(W) x 4000mm(H)
    b) Total run:
        i) Joined bottom bar – 3 modules
        ii) Non-joined bottom bar – Unlimited
5) Deployment speed – nominally 150mm/s
6) Component dimensions:
    a) Headbox – 165mm(D) x 165mm(H)
7) Power requirements – 240V 10amp GPO, peak current draw 2.1amps
8) Alarm Input – 0V nominally closed contact
9) Maximum pressure resistance
    a) Deploying – 0Pa
    b) Deployed – 20Pa
10) System weight:
    a) System sizes up to 3000mm(H) – 20kg per metre width

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b) System sizes up to 4000mm(H) – 25kg per metre width

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

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 smoke curtain to deploy to 2m above the finished floor level, pause for 30 seconds and then deploy to the floor.
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.
5) Exclusion zone sensors: IRS36 shall be installed in accordance with Smoke Control's recommendations to protect each smoke 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) Third-Party Product Listing: The product shall be manufactured under the Third-Party Product Listing scheme known as the Warnock Hersey Mark and shall bear the Warnock Hersey Certification Mark.
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 and G3.4)
- Automatic smoke baffles forming smoke reservoirs for mechanical smoke exhaust systems or natural smoke and heat release vents NCC2022 Specification 21 (NCC2019 Spec E2.2b)

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

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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 is permitted to have overlaps of not less than 300mm. Experience shows that overlapped smoke curtains do not operate reliably if joined at the bottom bar and are intended to deploy to floor level. Reliability of these systems is significantly increased if the deployment is restricted to around 1m to 1.5m.

Installation tolerances/gaps

In accordance with EN12101-1 or AS2665:2016/AS1668:2001 depending on the application.

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.

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