

## PROPRIETARY ITEM: FIBERSEAL - FS

### AUTOMATIC OVERHEAD COILING TYPE FIRE AND SMOKE CONTAINMENT SCREEN

#### PART 1 - GENERAL

##### 1.01 SUMMARY

- A. Section Includes:
  - 1. Fire alarm or smoke detector-activated, overhead coiling fabric fire and smoke containment screen.
  - 2. Self-closing without auxiliary power.
  - 3. For small and medium protected openings.
- B. Related Requirements:
  - 1. Access Panels.
  - 2. Load Bearing Header Framing
  - 3. Finish: Powder coating of specified components.
  - 4. Detection and Alarm: Provision of fire alarm.
  - 5. Site Electrical: Provision of 240VAC, 10Amp General purpose outlets (GPO's)
  - 6. Product Electrical: System connection including cable glands, junction boxes, conductors, wiring devices, and backup power.

##### 1.02 REFERENCES

- A. National Construction Code and Fire Engineers Report:
  - 1. NCC 2014/2015
  - 2. FE Report Y; Version XX, Dated;
- B. Standards:
  - 1. AS1670 – Automatic detection and alarm systems
  - 2. AS1530.4 – Methods for fire tests on building materials, components and structures, Part 4 Fire-resistance test of elements of construction.
  - 3. AS1905.2 – Fire Shutters.
  - 4. AS3837– Method of test for heat and smoke release rates for materials and products using an oxygen consumption calorimeter
  - 5. AS6905.1 – Smoke Doors
  - 6. AS1530.7 – Methods for fire tests on building materials, components and structures. Part 7 – Smoke control assemblies – ambient and medium temperature leakage test procedure.
  - 7. CE Mark

##### 1.03 SUSTAINABLE DESIGN REQUIREMENTS

- A. ESD: Comply with sustainable design requirements including, without limitation, submittal and documentation requirements.
- B. Credit/Point Goals Applicable To This Section: In addition to global project credit/point goals:
  - 1. Materials & Resources - construction waste management
  - 2. Materials & Resources - recycled content
  - 3. Materials & Resources - regional materials
  - 4. Indoor Environmental Quality - construction IAQ management plan

#### 1.04 SUBMITTALS

- A. Comply with Submittal Procedures:
  - 1. NCC Clause A2.4 Evidence of Suitability – submit full scale fire test report and Formal Opinion from a Registered Testing Authority clearly identifying maximum Fire Resistance Level, air (smoke) leakage performance, maximum allowable sizes and fixing details.
  - 2. Manufacturers Product data
  - 3. Shop drawings:
    - a. Curtain location and unique identification number
    - b. Include opening dimensions
    - c. Show and identify related work performed under other sections of the specifications including access and electrical requirements
  - 4. Quality Assurance/Control Submittals:
    - a. Site Inspection and Test Plan.
    - b. Manufacturers ISO 9001 Certificate of Accreditation

#### 1.05 CLOSEOUT SUBMITTALS

- A. Comply with Project Closeout:
  - 1. Certificate of Compliance with reference to Fire Engineers Report and Evidence of Suitability.
  - 2. Operation and maintenance manual.
  - 3. Manufacturer's warranty.

#### 1.06 QUALITY ASSURANCE

- A. Certifications:
  - 1. AS1530.4 full scale fire test on a complete assembly in a fire rated masonry/concrete slab
  - 2. National Construction Code Clause C1.10 when tested to AS3837
  - 3. AS1530.7 full scale air (smoke) leakage test on a complete assembly
  - 4. Laboratory cycle tested on a 3m x 3m complete assembly
- B. Pre-Installation Meeting:
  - 1. Schedule and convene a pre-installation meeting prior to commencement of field operations with representatives of the following in attendance: Owner, Architect, General Contractor, fire curtain sub-contractor, mechanical sub-contractor, electrical sub-contractor, and ceiling/fitout sub-contractor
  - 2. Review substrate conditions, requirements of related work, installation instructions, storage and handling procedures, and protection measures.
  - 3. Document the responsibilities of various parties and deviations from specifications and installation instructions.

#### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Comply with project delivery, storage, and handling requirements.
- B. Comply with manufacturer's instructions.

## 1.08 WARRANTY

- A. Provide manufacturer's standard one year warranty for Defect Liability Period.
- B. Provide manufacturer's standard 5 year product and installation warranty in conjunction with a Smoke Control's standard 5 + 5 year maintenance contract
- C. Maintenance and Testing:
  - 1. Perform minimum quarterly maintenance and testing on each fire curtain as required by the manufacturer's warranty, AS1851 - Maintenance, and as required by the Fire Engineers Report.
  - 2. Provide Commissioning documentation including Project name, project address, location and curtain number, number of cycles tested, observations, comments (eg: curtain out of alignment), notes (eg: curtain alignment repaired), Pass/fail.
  - 3. Re-certification after the defect liability period

## PART 2 - PRODUCTS

### 2.01 MANUFACTURED UNITS

- A. Proprietary item; Model Fiberseal - FS automatic vertical fire and smoke containment screen.
- B. Manufacturer:
  - Distributed by Smoke Control Systems Pty Ltd, 26 Ferndell St, South Granville, NSW 2142, Australia [www.smokecontrol.com.au](http://www.smokecontrol.com.au)
- C. Label each fire and smoke containment screen with following information:
  - 1. Manufacturer's name and contact details.
  - 2. Curtain location and unique identification number
  - 3. Fire Resistance Level
  - 4. Date of installation

### 2.02 DESIGN CRITERIA

- A. Maximum allowable size: 10,000 mm wide x 6000mm drop.
- B. Head box; Single span, continuous without overlap system of dimensions as follows;
  - i) Less than 6m drop = 260 H x 350 W mm
  - ii) Custom sizes also available
- C. Bearing type: Patented floating bearings with intermediate roller system for fault free operation.
- D. Side guide; Type E 105 mm x 74 mm concealed system

See manufacturer's literature for head box and side guide mounting options.

- E. Side guide restraint system; Patented double stitched pocket and continuous rod system for pressure resistance and premium performance.
- F. Fabric type; 660g/m<sup>2</sup> stainless steel woven fabric, incorporating a coated glassfibre material to reduce radiant heat transmission.
- G. Motor type; Gravigen 240V tubular motor with mechanical upper and lower limit settings

- H. Bottom bar; 65mm wide (at the base) heavy duty triangular section, requiring a 80mm min. slot in the ceiling lining.
- I. Accessories;
  - a. Self-levelling bottom bar cover
  - b. Flush ceiling mounted radial obstruction sensors spaced as required
  - c. Strobes and sounders
  - d. Wall/podium mounted rewind button
- J. Finishes; Dulux Duralloy colour range (Standard)
- K. Load requirements at head = 25kg/m of width
- L. Load requirements at sides (only if side guide required) = 20kg/m of height
- M. Mounting orientation
  - 1. Installation Configuration: Housing attached directly to substrate above opening
  - 2. -/120/120 fire rated bulkhead to be constructed by others in accordance with Smoke Control drawing number XXXX
  - 2. Fabricate and install mounting brackets, hardware, and fasteners needed to attach fire and smoke containment screen assembly to building structure.
- N. Signage on curtain (standard stencils)
  - 1. Green running man (dimensions)
  - 2. Arrows (dimensions)
  - 3. Fire Safety Curtain (dimensions)
  - 4. Push Button (dimensions)

## 2.03 PERFORMANCE CRITERIA

- 1. Fire Resistance Level (FRL): -/120/- Sm
- 2. Smoke leakage:  $\leq 75\text{m}^3/\text{hour}$
- 3. Group Number for fabric: 1 when tested in accordance with AS3837
- 4. Durability; medium – high duty – tested to 2,000 maintenance free cycles
- 5. Maximum pressure when fully deployed;  $\Delta 25\text{Pa}$
- 6. Maximum allowable gap to non-combustible sill 25mm
- 7. Combustible floor coverings permitted at threshold (conditions apply)
- 8. Closing time of 100 - 200mm/sec
- 9. Time delay to required (exhaust/pressurization) fan speed = 60 seconds (min) – 90 seconds (max). Time is dependent on drop height of curtain.
- 10. Time delay for rewind; ensure fan speed is zero + 20 seconds prior to reset of alarm signal from FIP enabling curtain rewind.
- 11. Fail safe close on loss of power and/or signal trip using battery backup.
- 12. Motor rewind automatically on re-set of power and alarm signal, no service call needed.
- 13. Battery backup to reduce nuisance deploys required.
- 14. Commissioning shall be conducted in conjunction with Mechanical services and detection/alarm system. Systems shall be balanced to work together without over pressurizing the fire and smoke containment screen.
- 15. Maintenance shall be conducted quarterly by the Manufacturer and/or their nominated representative to the Manufacturers recommendations.

## 2.04 COMPONENTS

- A. Curtain Fabric: Ecotex 1100.1 A2 - Glass fibre material with stainless steel wire reinforcement, coated on a single side with polyurethane and incorporating RED cotton stitching for product identification.

- B. Side Guide Assembly: 2.0mm thick Zincalume mild steel incorporating continuous rod and pocket restraint system.
- C. Housing Type: 2.0mm thick galvanized mild steel head box incorporating motor brackets, and single span drive system.
- D. Drive system: Drive shaft system forming a single continuous drive unit once installed. Powered by 240V motors and 240V motor controllers. All concealed within the head box structure.
- E. Bottom Bar: 2.0mm thick heavy duty galvanized mild steel triangular section with optional self levelling cover
- F. Gravigen™ Rewind Motor
  - 1. Tubular motor with fail safe gravity deploy operation.
  - 2. Mechanical upper and lower limit settings
  - 3. 240 VDC.
- G. Control option 1:  
  
RZ-7 Master control with AM-S slave control set
  - 1. Push button user interface and mode indicators
  - 2. Battery backup incorporating low voltage alarm
  - 3. 240 VAC power
  - 4. Normally closed 0 Volt alarm signal
- H. Control Option 2:  
  
AM-S-EV Trigger unit (Master/slave required for widths greater than 16m wide).
  - 1. 240 VAC power
  - 2. Normally closed 0 Vol
  - 3. Optional rewind button

### **PART 3 - EXECUTION**

#### 3.01 EXAMINATION

- A. Examine substrates upon which work will be installed.
  - 1. Verify related work performed under other sections is complete and in accordance with shop drawings.
  - 2. Verify wall surfaces are acceptable for installation of fire and smoke containment screen system components
  - 3. Verify setout point locations.
- B. Coordinate with responsible entity to perform corrective work on unsatisfactory substrates.
- C. Coordinate electrical interface and connection with Electrical sub-contractor.
- D. Coordinate fire and alarm interface with fire sub-contractor.
- E. Commencement of work by installer is acceptance of substrate.

#### 3.02 INSTALLATION

- A. Install fire and smoke containment screen system components in accordance with fire test approvals and manufacturer's installation instructions.

- B. While some Registered Testing Authorities provide Formal Opinions in regards to the expected fire resistance level of fire and smoke containment screens, they do not discuss nor provide a warranty in regards to their reliability. Experience shows that some manufacturer designs of fire and smoke containment screens do not operate reliably once installed and attract extraordinarily high maintenance costs. For this reason multiple barrel, overlapped fire and smoke containment screens are deemed not equivalent to this specification on this project and shall not be substituted for a single barrel continuous span system.
- C. Once installed it shall be demonstrated that the system shall gravity fail safe close on loss of power without the need of 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

### 3.03 FIELD QUALITY CONTROL

#### A. Field Test 1: Calibration

Follow manufacturer's cycle test procedures prior to application of mechanical services.

1. Conduct a minimum of 10 consecutive, error free cycle tests
2. Complete Inspection and Test Plan

#### B. Field Test 2: Balancing test

Test operation on general alarm in conjunction with mechanical services

1. Adjust fan speed and activation timing to ensure pressure does not exceed  $\Delta 25\text{Pa}$  across fire and smoke containment screen and to minimize gaps at the sill.

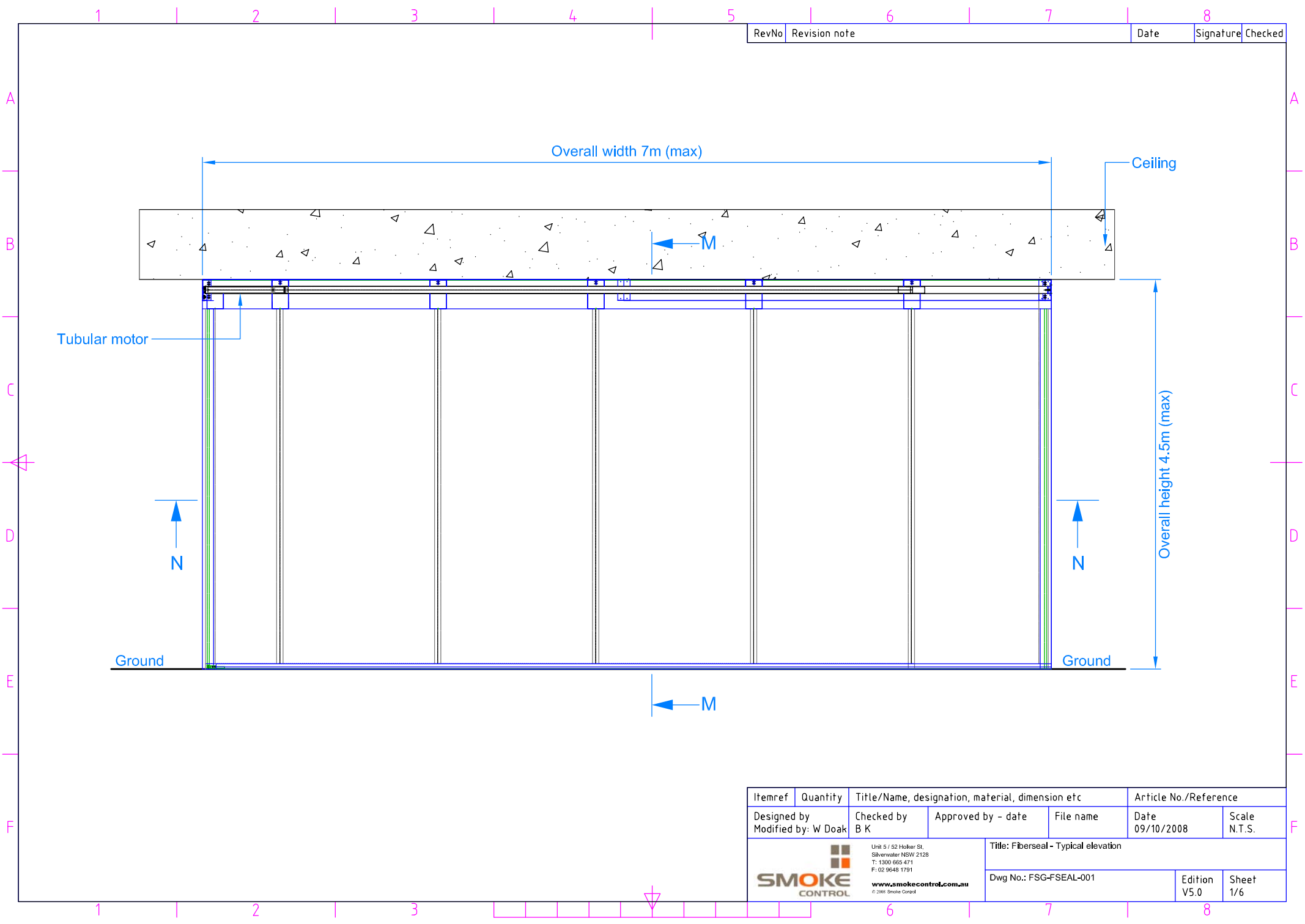
#### C. Field Test 3: Commissioning


Test operation on general alarm (or zone alarm as required by Fire Engineers Report) by activating an adjacent smoke detector

1. Notify Owner's Representative, local Fire Services and alarm sub-contractor minimum one week in advance of scheduled testing.
2. Complete Commissioning submittals.

END OF SECTION

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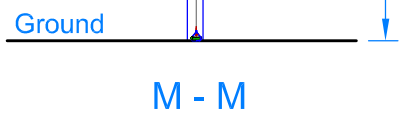
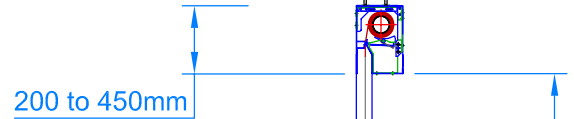
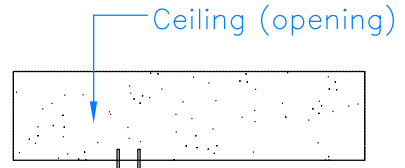


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Designed by Modified by: W Doak	Checked by B K	Approved by - date	File name	Date 09/10/2008	Scale N.T.S.	
 <small>Unit 5 / 52 Hoker St, Silverwater NSW 2128 T: 1300 665 471 F: 02 9548 1791 <a href="http://www.smokecontrol.com.au">www.smokecontrol.com.au</a> © 2008 Smoke Control</small>			Title: Fiberseal - Typical elevation			
			Dwg No.: FSG-FSEAL-001		Edition V5.0	Sheet 1/6

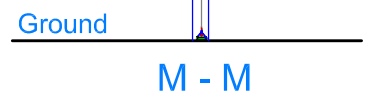
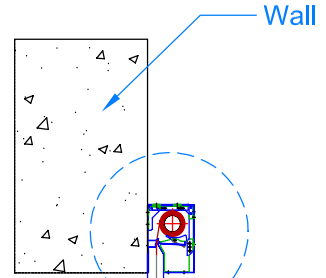
# Header Box mounting option:


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Mounting into the opening



Mounting to the wall



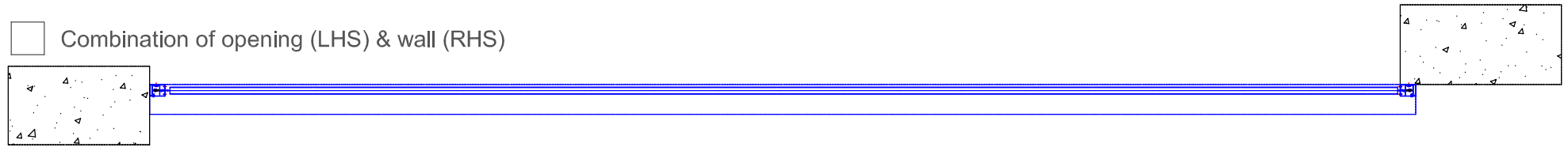
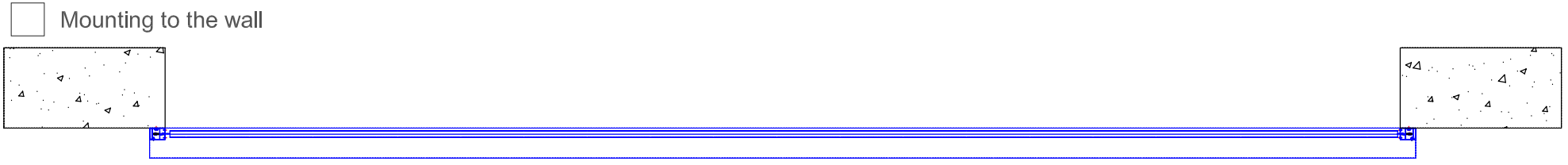
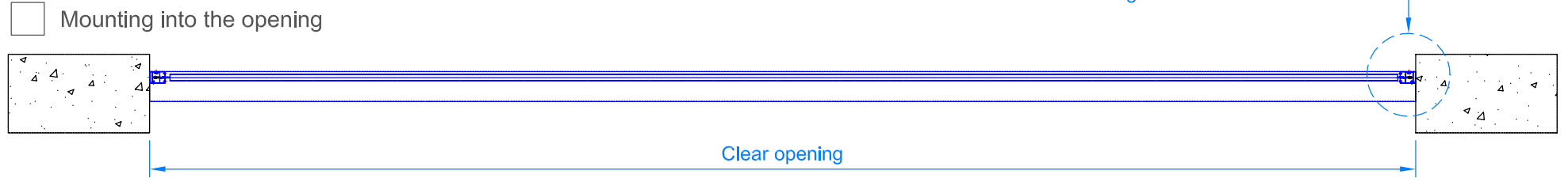
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 Unit 5 / 52 Hoker St, Silverwater NSW 2128 T: 1300 665 471 F: 02 9548 1791 <a href="http://www.smokecontrol.com.au">www.smokecontrol.com.au</a> © 2008 Smoke Control			Title: Fiberseal - Header Box mounting options			
			Dwg No.: FSG-FSEAL-002		Edition V5.0	Sheet 2/6




# Installation configurations: (side guides)

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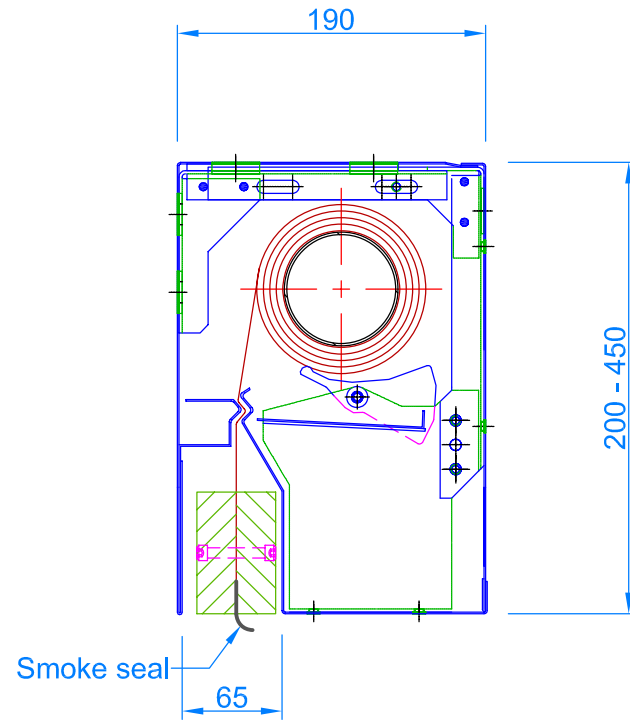
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 Unit 5 / 52 Hoker St, Silverwater NSW 2128 T: 1300 665 471 F: 02 9548 1791 <a href="http://www.smokecontrol.com.au">www.smokecontrol.com.au</a> © 2008 Smoke Control			Title: Fiberseal - Side guide mounting options			
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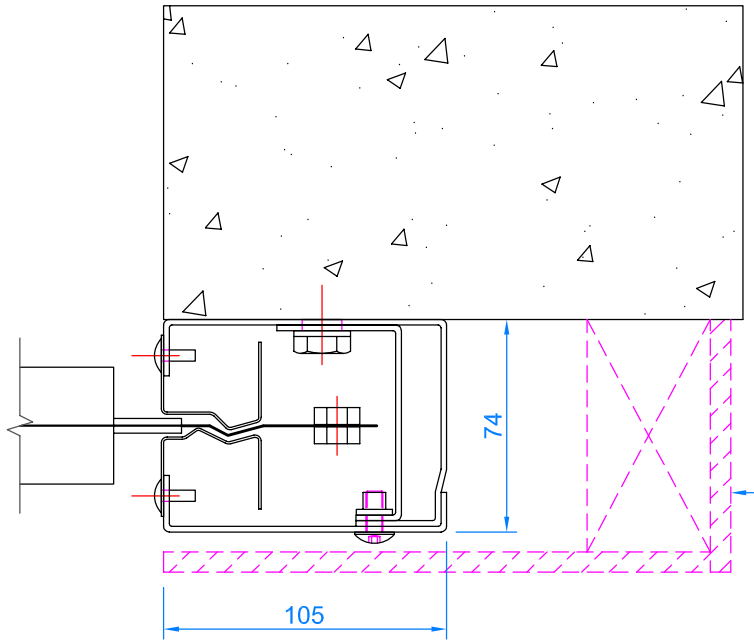


Detail: A

**Notes:**  
 (i)- Typical head box dimensions shown, this may increase with drop heights over 4m.  
 (ii)- Optional head mounting details (refer to Dwg No.: FSG-FSEAL-006)

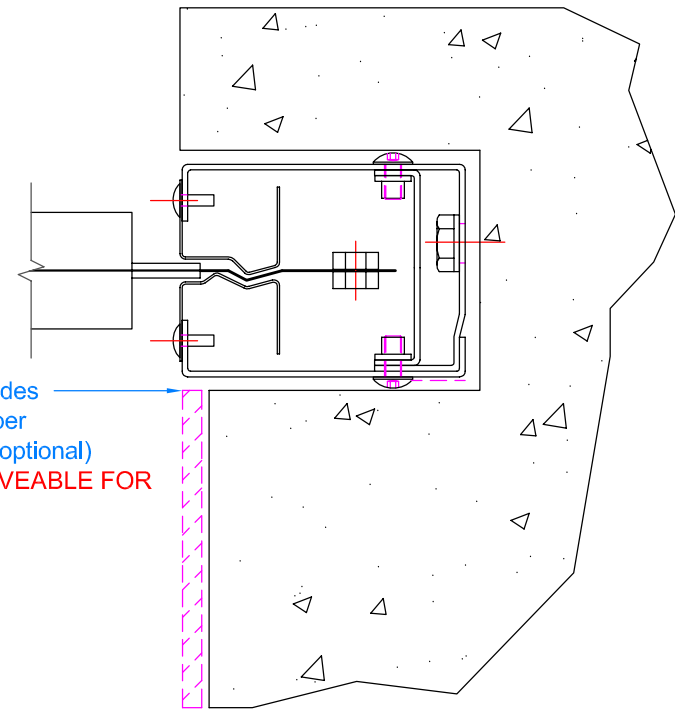
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 Unit 5 / 52 Hoker St, Silverwater NSW 2128 T: 1300 665 471 F: 02 9548 1791 <a href="http://www.smokecontrol.com.au">www.smokecontrol.com.au</a> © 2008 Smoke Control			Title: Fiberseal - Header Box dimensions			
			Dwg No.: FSG-FSEAL-004		Edition V5.0	Sheet 4/6


# Mounting side guides:



Conceal Side Guides with cladding as per Architects detail (optional)  
**MUST BE REMOVEABLE FOR MAINTENANCE**

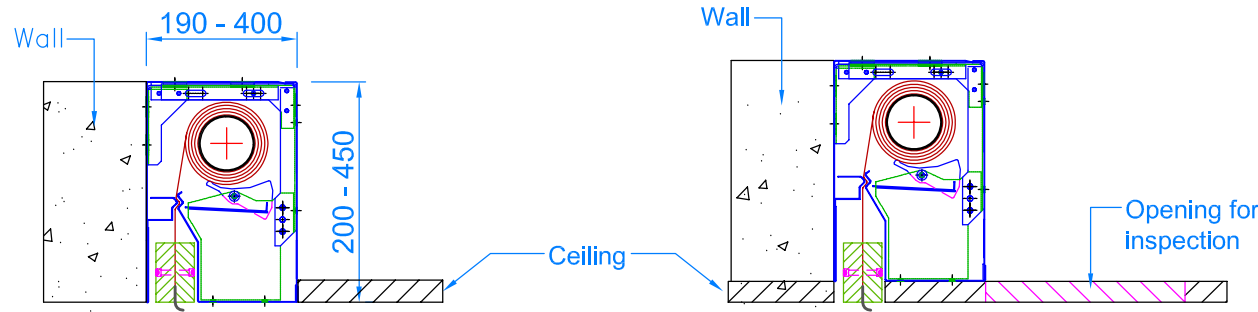
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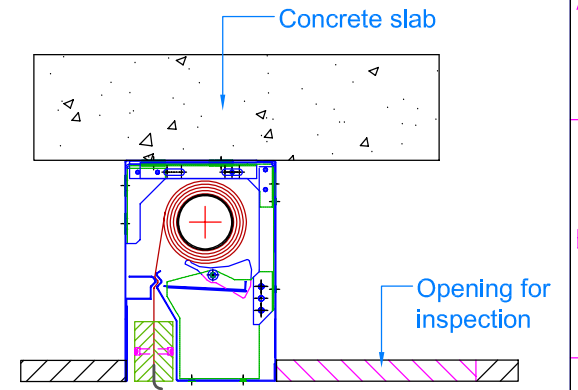
### Wall mounted:

### Ceiling mounted:



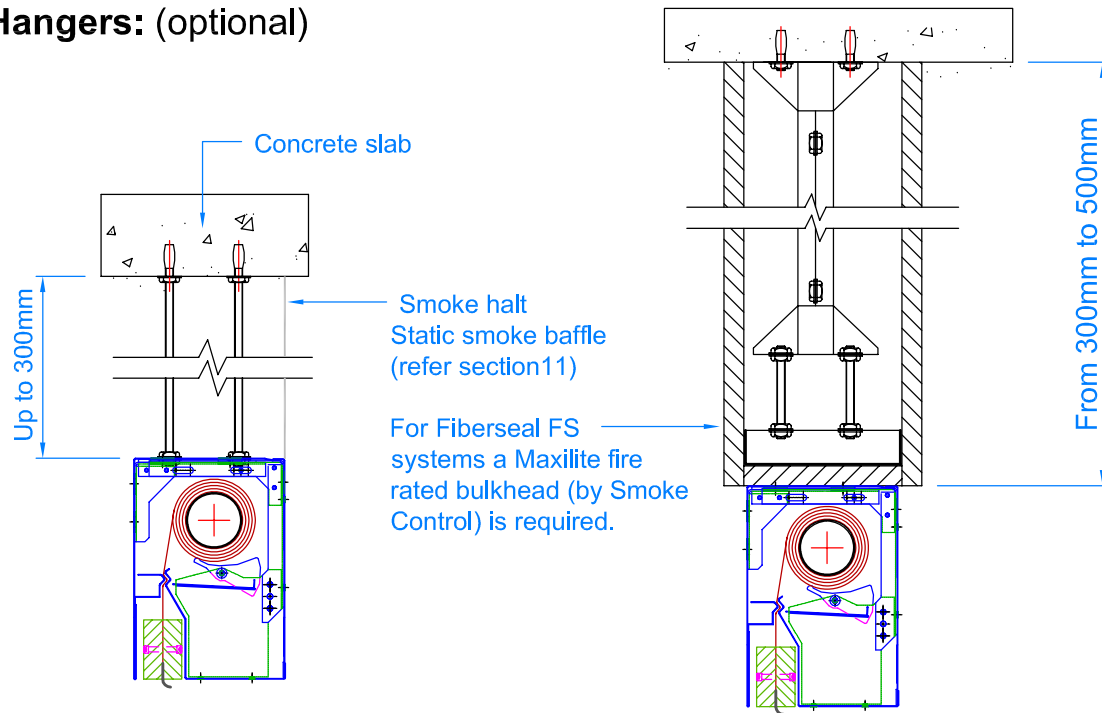
Option 1A: Mounted to the wall (semi-concealed)

Option 1B: Mounted to the wall (semi-concealed)



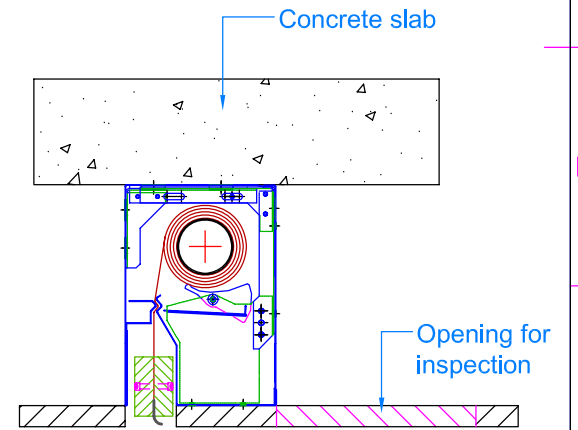
Option 2A: Mounted to the ceiling (semi-concealed)

### Hangers: (optional)




Option 3A: Extension up to 300mm (From the slab above)

Option 3B: Extension from 300mm to 500mm. (From the slab above)



Option 2B: Mounted to the ceiling (fully-concealed)

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Modified by: W Doak	B K			09/10/2008	N.T.S.
 <small>Unit 5 / 52 Hoker St, Silverwater NSW 2128 T: 1300 665 471 F: 02 9548 1791 www.smokecontrol.com.au © 2008 Smoke Control</small>		Title: Fiberseal - Header Box finish options			
		Dwg No.: FSG-FSEAL-006	Edition V5.0	Sheet 6/6	