

## SECTION 08 33 44 – AUTOMATIC FIRE CURTAINS

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### PART I: REFERENCE

#### 1.1 Scope of Work

Supply and installation of **Automatic Fire Curtains**, complete with motors, fabric, headboxes, bottom bars, guides, and controls. The system shall be **tested and certified for up to 4 hours fire resistance** and function as a **gravity-fail-safe containment barrier** during fire incidents.

#### 1.2 Related Sections

- **Division 23** – Heating, Ventilating, and Air Conditioning (HVAC) for fire control systems that are part of mechanical equipment.
- **Division 26** – Electrical for fire control systems that are part of electrical equipment.

#### 1.3 References

- **BS EN 1634-1:2014+A1:2018** – Fire resistance tests (Single & Multiple Barrel)
- **BS EN 1363-1:2012** – Fire resistance tests. Part 1: General requirements.
- **BS EN 1634-3:2004** – Smoke leakage test
- **ASTM E84 / UL 723** – Surface Burning Characteristics of Building Materials.

#### 1.4 Submittals

- **Product Data:** Submit manufacturer's technical product data sheets.
- **Shop Drawings:** Submit detailed shop drawings showing plans, elevations, sections, and interfaces with adjacent work.
- **Warranty:** Submit executed copy of the manufacturer's standard warranty.

#### 1.5 Certifications

Submit test reports and certificates from **third-party accredited laboratories**, including:

- BS EN 1634-1 and BS EN 1634-3 test certificates
- ASTM E84/UL 723 certification
- ISO 9001, ISO 14001, ISO 45001 certifications

#### 1.6 Delivery, Storage, and Handling

- Deliver components in **manufacturer-labeled packaging**, indicating product name, size, batch number, and origin.
- Store in **dry indoor environment**, protected from dust, moisture, UV rays, and physical damage.
- Do not install damaged materials; any damaged parts must be removed from the site.
- Follow manufacturer's handling guidelines strictly to avoid deformation or misalignment.

#### 1.7 Quality Assurance

- Product to be tested in full assembly for BS EN 1634-1 and 1634-3 compliance.
- Flame and smoke spread indices shall meet ASTM E84/UL 723 Class A.
- Manufacturer to be certified under ISO 9001, ISO 14001, and ISO 45001.

#### 1.8 Field Conditions

- Contractor shall perform **site measurements** to confirm dimensions before fabrication.
- Verified measurements to be reflected in the shop drawings.

#### 1.9 Warranty

- Provide manufacturer's **minimum 1-year warranty** from date of commissioning.
- Extended warranty options may be discussed based on project requirements.

### PART II: PRODUCTS

## 2.1 Acceptable Manufacturers

Refer to **Approved Vendor List** in project documents or submit for consultant approval.

## 2.2 Automatic Fire Curtains

### A. Description

Electrically operated **HIRA Automatic Fire Curtains** that deploy by **gravity fail-safe** to floor level upon fire alarm signal or power failure, forming a fire and smoke barrier.

### B. Performance

- Fire rating: Up to **4 hours** for **masonry-type construction**
- Tested to **BS EN 1634-1:2014+A1:2018** and **BS EN 1634-3:2004**
- Fabric withstands temperatures up to **1000°C**

### C. Curtain Design

- **Roller Assembly:**
  - Woven fiberglass fabric rolled onto **steel tube**
  - Integrated **24Vdc tubular motor**, heavy-duty bearing, and control board
  - Housed in **galvanized steel headbox** (minimum 190mm x 190mm)
  - Larger headboxes used for >3m drop or multiple barrels
- **Bottom Bar:**
  - Twin inverted **mild steel angle** as weight bar
  - Enables **gravity-based descent** upon signal or failure
- **Side Guides:**
  - **Galvanized metal** with fabric retention system for edge sealing

### D. Control System

#### Group Controller Operation:

- Controller may be located adjacent to or remotely from the curtain (inside ceiling void or dedicated panel room).
- Requires **230V AC**, 3A power supply via fused spur.
- Interface with fire alarm via **normally-closed volt-free contact** that opens on fire signal or failsafe.

#### Controller Capabilities:

- Operates up to:
  - 5 × 20W motors, or
  - 3 × 40W motors (depending on design).
- Includes **battery backup** providing up to **2 hours** of hold time in case of mains failure.
- Curtain automatically descends via gravity if voltage drops below threshold.
- Manual key switch provided for testing and override.
- **No limit switches**; position sensing achieved through electronic current detection.
- Motors to be wired using ring main configuration to minimize voltage drop.

## PART III: EXECUTION

### 3.1 Contractor's Scope of Work

#### Measurement & Fabrication:

- Verify all openings and conditions before fabrication.

#### Installation:

- Fix headbox securely to ceiling structure.
- Install side guides vertically and ensure proper alignment.
- Ensure fabric is centered, smooth, and properly tensioned.

**Electrical Coordination:**

- Coordinate power supply and fire alarm interfacing with electrical contractor.

**Testing & Commissioning:**

- Conduct full operational test of descent and retraction.
- Demonstrate manual override and fail-safe operation.

**Labeling:**

- Each installed curtain to be labeled with manufacturer's name, fire rating, and batch number.

**3.2 Acceptance**

Final inspection and acceptance by **manufacturer's technician or authorized representative** to ensure:

- Installation per manufacturer guidelines
- Full operational compliance
- Proper response to fire alarm and manual activation

**3.3 Warranty**

- Minimum warranty period: **One (1) year**
- Extended warranty may be considered upon agreement between **client, consultant, and manufacturer.**