SECTION 08 33 00

SMOKE AND FIRE CURTAINS

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\*\* NOTE TO SPECIFIER \*\* The BILCO Company; automatic smoke and fire curtains.
This section is based on the products of The BILCO Company, which is located at:
P. O. Box 1203
New Haven, CT 06505-1203
Toll Free Tel: 800-366-6530
Fax: 203-535-1582
Email: [request info (bilco@bilco.com)](http://admin.arcat.com/users.pl?action=UserEmail&company=The+BILCO+Company&coid=30940&rep=&fax=203-535-1582&message=RE:%20Spec%20Question%20(08334bil):%20%20&mf=)
Web: [www.bilco.com](http://www.bilco.com)
 [ [Click Here](http://www.arcat.com/arcatcos/cos30/arc30940.html) ] for additional information.
The BILCO Company has served the building industry since 1926. During these years it has built a reputation among architects, engineers, specifiers, and the construction trades for dependability and for products that are unequaled in design and workmanship. BILCO, a wholly owned subsidiary of AmesburyTruth which is a division of Tyman PLC, has been a pioneer in the development of specialty access products for commercial and residential construction markets.
The BILCO Company continues to be the industry leader in the design and manufacture of specialty access products. In order to better serve its customers, BILCO has added manufacturing facilities and strategic distribution throughout the world, along with establishing an extensive international network of factory-trained representatives. These representatives, combined with BILCO's highly skilled and dedicated personnel, ensure a level of customer service that is unequaled in the industry. As the leader in design innovation, many of BILCO's products incorporate features for which numerous U.S. and international patents have been issued. Years of engineering experience, coupled with manufacturing facilities utilizing the most modern equipment available, allows BILCO to design and fabricate access products for virtually every application.
The BILCO Company is committed to producing access products that are unequaled in quality, design and workmanship. BILCO products are fabricated to consistently high quality standards to ensure complete customer satisfaction. As part of its commitment, BILCO has implemented a LEAN manufacturing quality and continuous improvement system that has achieved ISO 9001 certification.

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for the project.

* + 1. Automatic fire curtains.
		2. Automatic smoke curtains.
		3. Fixed smoke curtains.
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 07 72 30 - Rooftop Pipe Support\*
		2. Section 07 72 26 - Ridge Vents.
		3. Section 07 72 53 - Snow Guards.
		4. Section 08 31 13 - Access Doors and Frames.
		5. Section - .
	1. REFERENCES
		1. European Committee for Standardization (EN):
			1. EN 12101-1 - Smoke and heat control systems. Specification for smoke barriers.
			2. EN 1634-1 - Fire Resistance and Smoke Control Tests for Door and Shutter Assemblies, Openable Windows and Elements of Building Hardware. Fire Resistance Test for Door and Shutter Assemblies and Openable Windows.
			3. EN 13501-2 - Fire Classification of Construction Products and Building Elements.
		2. German Institute of Standardization (DIN):
			1. DIN 4102-18 - Fire Behavior of Building Materials and Components; Fire Barriers, Verification of Automatic Closure (Continuous Performance Test).
		3. Underwriters Laboratories (UL):
			1. UL 10D - Standard for Fire Tests of Fire Protective Curtain Assemblies.
	2. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data: Manufacturer's data sheets on each product to be used, including:
			1. Test reports.
			2. Preparation instructions and recommendations.
			3. Storage and handling requirements and recommendations.
			4. Installation methods:
				1. Instructions for resetting the latch with each unit.
		3. Shop Drawings: Include system components, utility requirements and connections, relationship with adjacent construction. Include required clearances and access for servicing.
	3. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Minimum 5 years experience manufacturing similar equipment.
		2. Installer Qualifications: Minimum 2 years experience installing similar equipment.
	4. DELIVERY, STORAGE, AND HANDLING
		1. Store products in manufacturer's unopened packaging until ready for installation.
	5. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
	6. WARRANTY
		1. Manufacture's standard limited warranty.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: The BILCO Company, which is located at: P. O. Box 1203; New Haven, CT 06505-1203; Toll Free Tel: 800-366-6530; Fax: 203-535-1582; Email: [request info (bilco@bilco.com)](http://admin.arcat.com/users.pl?action=UserEmail&company=The+BILCO+Company&coid=30940&rep=&fax=203-535-1582&message=RE:%20Spec%20Question%20(08334bil):%20%20&mf=); Web: [www.bilco.com](http://www.bilco.com)

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. AUTOMATIC FIRE CURTAINS
		1. Basis of Design: FA Automatic Fire Curtains by the Colt Group, and distributed by The BILCO Company.
			1. Electrically operated automatic fire curtain, seals off an area on fire, preventing fire from spreading. The curtain gravity falls in controlled manner to predetermined level when fire is detected or on loss of power. Curtain drops to floor from ceiling for fire containment.
			2. Performance Characteristics:
				1. Tested and in compliance with UL 10D for one and three hour ratings.
				2. Successful continuous performance test of 10,000 cycles
			3. Dimensions and Size Range: Provide size suitable for project requirements; refer to the Drawings.
			4. Curtain Type:

\*\* NOTE TO SPECIFIER \*\* Select single units (type SI), or double vertical (type DV) units, where continuous runs with overlapped fabric forms a continuous barrier, or double horizontal (type DH) units, where there is a premium on space under the ceiling. Delete types not required.

* + - * 1. Single Unit (type SI).

Width: Up to 236 in (5994)

Drop: Up to 472 in (11988).

* + - * 1. Double Vertical (type DV).

Where continuous runs with overlapped fabric to form a continuous barrier are required.

Width: Up to 708 in (17983)

Drop: Up to 472 in (11988).

* + - * 1. Double Horizontal (DH).

Where continuous runs with overlapped fabric to form a continuous barrier are required and there is a premium on space under the ceiling.

Width: Up to 708 in (17983)

Drop: Up to 472 in (11988).

\*\* NOTE TO SPECIFIER \*\* Delete bottom bar type not required.

* + - 1. Bottom Bar Type: ID bottom bar (fabric loop).
			2. Bottom Bar Type: U bottom bar (aluminum profile).
			3. Bottom Bar Type: UK bottom bar (aluminum profile).

\*\* NOTE TO SPECIFIER \*\* Delete fire rating not required.

* + - 1. Fire Rating: 1 hour, UL 10D.
			2. Fire Rating: 3 hours, UL 10D.

\*\* NOTE TO SPECIFIER \*\* Delete control type not required.

* + - 1. Control Type: Control panel with integrated microprocessor designed to operate automatic smoke- or fire curtains in a safe and correct manner. The control panel shall be prepared for connection to a fire alarm system and designed to enable the implementation of additional operational functions.
				1. Power supply for 24V DC output for direct connection to the fire alarm system.
				2. Control panel can be wired to allow multiple curtains to operate as an integrated part of a smoke control and fire management system.
				3. In event of power failure, an uninterruptible power supply (UPS) can be supplied and connected so that the curtain remains retracted for a predetermined period (nominally 30 minutes). If signalled to descend during this time, the smoke curtain shall drop in a controlled manner to its fire operational position in a fail-safe manner.
				4. A key switch for manual operation can be connected to an uninterruptible power supply to maintain the curtains in their raised positions in the event of a main power outage.
			2. Fabrication:
				1. Fabricate frames to fit in openings of sizes indicated, with allowances made for fabrication and installation tolerances, adjoining material tolerances, and perimeter sealant joints. Assemble units in factory to minimize field splicing and assembly.
				2. Disassemble units as necessary for shipping and handling limitations.
				3. Clearly mark units for reassembly and coordinated installation.
				4. Include anchors and accessories required for complete assembly.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. AUTOMATIC SMOKE CURTAINS
		1. Basis of Design: Smokemaster SM-5 Automatic Smoke Curtains by the Colt Group, and distributed by The BILCO Company.
			1. Electrically operated, to prevent the movement of smoke and heat from one area to another in a fire.
			2. Performance Characteristics:
				1. Tested to and in compliance with EN 12101-1 and CE marked.

Achieved Ratings:

D120 1112 degrees F (600 degrees C) for 120 minutes.

DH 60 1920 degrees F (1049 degrees C) for 60 minutes.

DH 120 1920 degrees F (1049 degrees C) for 120 minutes.

* + - * 1. Designed to operate for 1,000 cycles at normal ambient temperatures in the range from 23 degrees F (minus 5 degrees C) to 140 degrees F (60 degrees C).
				2. Designed to withstand hot air and smoke at temperatures up to 1920 F (1049 degrees C) for 120 minutes once only.
				3. Fabric Fire Resistance to Fire: A2-s1, d0 when tested in accordance with EN 13501-1.
			1. Dimensions and Size Range: Provide size suitable for project requirements; refer to Drawings.
			2. Curtain Type:

Select single units (type SI), or double vertical (type DV) units, where continuous runs with overlapped fabric forms a continuous barrier, or double horizontal (type DH) units, where there is a premium on space under the ceiling. Delete types not required.

* + - * 1. Single Unit (type SI):

Width: 59 in (1500 mm) to indefinite width.

Drop: 20 to 590 in (500 to 1500 mm).

* + - * 1. Double Vertical (type DV):

Where continuous runs with overlapped fabric to form a continuous barrier are required.

Width: Unlimited

Drop: 20 to 590 in (500 to 15000 mm).

* + - * 1. Double Horizontal (DH):

Where continuous runs with overlapped fabric to form a continuous barrier are required and there is a premium on space under the ceiling.

Width: Unlimited

Drop: 20 to 590 in (500 to 15000 mm).

* + - 1. Curtain: Flexible heat resistant fabric impervious to smoke and hot gases, wound around a circular tube and positioned within a compact galvanized steel headbox and bottom bar.

For application with the likelihood of high air velocities across the curtain. Delete if not required.

* + - 1. Side Guides: Ensure that curtain does not deflect significantly due to high air velocities across curtain.
			2. Bottom Bar: Comprised of two sections of folded .08 in (2 mm) thick galvanized angles attached to lower edge of curtain material. Ensures curtain unrolls correctly and stays stable, level, and fully extended when rolled down. Designed to reduce deflection caused by air currents. Barely visible and spring loaded to accommodate unevenness in soffit when curtain is rolled up.
			3. Motor Drive: Gravity fall (G version) in controlled manner to a predetermined level in a fire situation or on loss of power, in accordance with ASB 1/3 of EN 12101-1.
				1. Pre-wired to reduce on-site installation time.
			4. Motor Drive: Drive down (D version), in controlled manner to a predetermined level upon receipt of a signal, in accordance with ASB 2/4 of EN 12101-1. Can be programmed for a drop down to an intermediate level for a predetermined amount of time prior to dropping to the full height.
				1. Pre-wired to reduce on-site installation time.
			5. Control Type: Curtain stays in place when in rolled up position and automatically unwinds to operational position upon receiving signal from fire detection system.
				1. Power supply for 24V DC output for direct connection to the fire alarm system.
				2. Control panel can be wired to allow multiple curtains to operate as an integrated part of a smoke control and fire management system.
				3. In event of power failure, an uninterruptible power supply (UPS) can be supplied and connected so that the curtain remains retracted for a predetermined period (nominally 30 minutes). If signalled to descend during this time, the smoke curtain shall drop in a controlled manner to its fire operational position in a fail-safe manner in accordance with BS EN 12101-1.
				4. A key switch for manual operation can be connected to an uninterruptible power supply to maintain the curtains in their raised positions in the event of a main power outage.
			6. Fabrication:
				1. Fabricate frames to fit in openings of sizes indicated, with allowances made for fabrication and installation tolerances, adjoining material tolerances, and perimeter sealant joints. Assemble units in factory to minimize field splicing and assembly.
				2. Disassemble units as necessary for shipping and handling limitations.
				3. Clearly mark units for reassembly and coordinated installation.
				4. Include anchors and accessories required for complete assembly.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. FIXED SMOKE CURTAINS
		1. Basis of Design: Smokemaster SM-ST Fixed Smoke Curtains by the Colt Group, and distributed by The BILCO Company.
			1. Fixed smoke curtain, to prevent the movement of smoke and heat from one area to another in a fire.
			2. Performance Characteristics:
				1. Tested to and in compliance with EN 12101-1 and CE marked.

Achieved Ratings:

D120 1112 degrees F (600 degrees C) for 120 minutes

DH 120 1920 degrees F (1049 degrees C) for 120 minutes.

* + - * 1. Designed to withstand hot air and smoke at temperatures up to 1112 degrees F (600 degrees C) for 120 minutes once only.
				2. Fabric Fire Resistance to Fire: A2-s1,d0 when tested in accordance with EN 13501-1.
			1. Dimensions and Size Range: Provide size suitable for project requirements; refer to the Drawings.
				1. Overall Curtain Width: 59 in (1500 mm) to unlimited lengths.
				2. Drop: 20 to 590 in (500 to 1500 mm).
			2. Fabrication:
				1. Fabricate frames to fit in openings of sizes indicated, with allowances made for fabrication and installation tolerances, adjoining material tolerances, and perimeter sealant joints. Assemble units in factory to minimize field splicing and assembly.
				2. Disassemble units as necessary for shipping and handling limitations.
				3. Clearly mark units for reassembly and coordinated installation.
				4. Include anchors and accessories required for complete assembly.
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until substrates and openings have been properly prepared.
		2. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
	2. PREPARATION
		1. Clean surfaces thoroughly prior to installation.
		2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
	3. INSTALLATION
		1. Install in accordance with manufacturer's instructions. Test for proper operation.
	4. PROTECTION
		1. After installation, clean as recommended by the manufacturer.
		2. Remove and legally dispose of construction debris from project site.
		3. Protect installed products until completion of project.
		4. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION