

ICC-ES Evaluation Report


ESR-2740

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<p>DIVISION: 08 00 00— OPENINGS</p> <p>Section: 08 42 29— Automatic Entrances</p>	<p>REPORT HOLDER:</p> <p>ASSA ABLOY ENTRANCE SYSTEMS US INC.</p>	<p>EVALUATION SUBJECT:</p> <p>BESAM™ POWER OPERATORS FOR DOORS AND BESAM™ POWER-OPERATED EGRESS-DOOR ASSEMBLIES</p>	
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1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2012 and 2009 [International Building Code® \(IBC\)](#)
- 2013 *Abu Dhabi International Building Code (ADIBC)*†

†The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

Properties evaluated:

- Operational characteristics

2.0 USES

BESAM Power Operators and BESAM Power-operated Egress-door Assemblies are used as means of egress components as alternatives to side-hinged swinging doors in accordance with IBC Section 1008.1.2, Exception 7.

3.0 DESCRIPTION

BESAM Power Operators may be used with new or existing, swinging or sliding, pedestrian doors in accordance with ANSI/BHMA A156.10 or ANSI/BHMA A156.19 requirements. The door operators accommodate manual door operation in accordance with IBC Section 1008.1.4.2.

3.1 Swinging-Door Operators:

The BESAM SM900, SwingMaster MP, PowerSwing, SW100 and SW200i operators are pedestrian swinging-door operators. The operators allow the doors to be opened and closed manually in the event of a power failure. Under manual control, a force to set the door in motion must not exceed 50 pounds (222 N) in accordance with IBC Section 1008.1.4.2. For power-assisted and low-energy applications, the door must be set in motion when subjected to a 30-pound (133 N) force. The door must swing to a fully open position when subjected to a 15-pound (67 N) force. Forces must be applied to the latch side in accordance with IBC Section 1008.1. The SM900, the SwingMaster MP, the SW100 and the SW200i are electro-mechanical type operators. The PowerSwing is an electro-hydraulic type operator. The operators are available separately or as parts of BESAM swinging-door assemblies with doors and jambs constructed of 6063-T5 aluminum extrusions. The maximum width of a swinging door panel must be 48 inches (1219 mm).

3.2 Sliding-Door Operators:

The BESAM UniSlide and SL500 operators are electro-mechanical belt-drive power-operated door operators. Under manual operation, the door may be opened for emergency egress with a force not to exceed 50 pounds

(222 N) in accordance with IBC Section 1008.1.4.2. The operating mechanism is available separately or as part of a BESAM assembly with doors and jambs constructed of 6063-T5 aluminum extrusions.

UniSlide and SL500 sliding door assemblies are available in single-sliding-door, bi-parting-door, telescoping or non-telescoping panel configurations. The assemblies range in width, including sidelights, from a nominal 7 feet to a nominal 16 feet (2134 to 4877 mm). The maximum width of a sliding door panel is 48 inches (1219 mm). The minimum single door opening width is 32 inches (813 mm).

4.0 INSTALLATION

BESAM Power Operators for Doors and BESAM Power-operated Egress-door Assemblies must be installed and adjusted by ASSA ABLOY Entrance Systems US Inc. approved installers. Installation must comply with this report, the applicable code, and the manufacturer's published installation instructions, which must be available at the jobsite at all times during installation.

Door assemblies, whether already existing at the jobsite or provided as part of a BESAM assembly, must have maximum size and weight as described in this report and must meet the egress and entrapment protection requirements outlined in IBC Section 1008.1 and ANSI/BHMA A156.10 or ANSI/BHMA A156.19. The installer must inspect, at a minimum:

- The method of operation.
- The latch release, set-in-motion, opening, and operation-prevention forces.
- The actuating control configuration, location, and sensitivity.
- The safety zone areas and need for finger guards as required.
- Opening and closing delays, speeds, and times.
- Latch check and back check.
- Automatic operation interrupt; and
- Signage characteristics.

The installer also must certify that the finished assemblies meet the applicable standards in accordance with the applicable code and Sections 5.2 and 5.11.

The operators may be surface-mounted or concealed in the door transom, depending on the model. A separate operator must be installed on each swinging door panel. Standard sliding door operators are available for one or two sliding door panels. Telescopic sliding door operators are available for two or four sliding door panels. All operators must be connected to the building electrical system in accordance with the applicable code and installed, configured, and maintained as described in the installation instructions. The operators may be activated by control mats; motion or presence sensors; or "knowing act" activation devices, such as push plates or wall switches. The operators may also be activated by remote switching systems. The doors must swing in the direction of egress travel in Group H occupancies or where serving an occupant load of 50 or more in accordance with IBC Section 1008.1.2, or for sliding door assemblies, emergency break-out capabilities must be provided in accordance with IBC Section 1008.1.4.2.

4.1 Swinging-Door Operators:

4.1.1 PowerSwing: The maximum door weight with which the PowerSwing operator may be used is 220 pounds (100 kg). The PowerSwing operator, including the hydraulic settings, must be adjusted manually, as required, at installation.

4.1.2 SM900 and SwingMaster MP: The maximum door weight with which the operators may be used is 215 pounds (98 kg). The SwingMaster MP must be programmed digitally at installation, and the SM900 must be adjusted manually.

4.1.3 SW100 and SW200i: The maximum door weight with which the SW100 operators may be used is 200 pounds (91 kg). The maximum door weight with which the SW200i operators may be used is 700 pounds (312.5 kg). The SW100 and SW200i have an automatic-learn mode, which is used at installation to cycle through the door functions and establish the proper door settings to meet the ANSI/BHMA A156.10 or ANSI/BHMA A156.19 requirements. The door must then be checked for compliance by the installer, who makes manual adjustments as necessary.

4.2 UniSlide and SL500 Operators:

The maximum door weight with which the operators may be used is 220 pounds (100 kg) per leaf for bi-parting systems (two doors) or 330 pounds (150 kg) for single sliding doors. Both the UniSlide and SL500 operators must be programmed digitally, then adjusted manually as necessary.

5.0 CONDITIONS OF USE:

The BESAM Power Operators for Doors and BESAM Power-operated Egress-door Assemblies described in this report comply with, or are acceptable alternatives to what is specified in, the code indicated in Section 1.0 of this report, subject to the following conditions:

- 5.1 Installation must comply with this report, the manufacturer's published installation instructions, the requirements of ANSI/BHMA A156.10 or ANSI/BHMA A156.19 and the IBC. In the event of a conflict between the manufacturer's published installation instructions and this report, this report governs.
- 5.2 Doors and operators must be installed by ASSA ABLOY Entrance Systems US Inc. approved, AAADM certified inspectors, who install then certify the doors for compliance with IBC Section 1008.1.4. and ANSI/BHMA A156.10 or ANSI/BHMA A156.19. An AAADM Inspection Form for Power Operated Doors must be completed for each door installation and made available to the code official for inspection.
- 5.3 Signage must be provided in accordance with ANSI/BHMA A156.10 or ANSI/BHMA A156.19. Additionally, when the door is permitted by the code official to be equipped with a key-operated locking device, signage in accordance with IBC Section 1008.1.9.3 must be provided. When locked, the locking device must be readily distinguishable as being locked.
- 5.4 Where installed, panic hardware must comply with IBC Section 1008.1.10.
- 5.5 Glass doors must comply with the safety glazing requirements in IBC Section 2406.
- 5.6 Activating control systems must comply with the American National Standard for Power Operated Pedestrian Doors, ANSI/BHMA A156.10, or the American National Standard for Power Assist and Low Energy Power Operated Doors, ANSI/BHMA A156.19, as applicable.
- 5.7 Doors used as required means of egress must be sufficient for the occupant load in accordance with the code and must provide a clear opening not less than 32 inches (812 mm) wide and 80 inches (2032 mm) high. Door width for use with beds in I-2 occupancies is a minimum of 41.5 inches (1054 mm).
- 5.8 The fire-resistance of the operators and door assemblies is outside of the scope of this report.
- 5.9 Where required by the code official, the door operators and door assemblies must meet the requirements of UL 325 and be listed or labeled by a nationally recognized independent testing laboratory.
- 5.10 Where required by the code official, the door operators and door assemblies must be under a periodic examination service after installation.
- 5.11 Installation must be in accordance with the applicable requirements of Chapter 10 of the IBC, and where a door is required to be accessible, compliance must be with Chapter 11 of the IBC and ICC/ANSI A117.1, verified by a certified inspector. A copy of the report of inspection must be provided to the code official.
- 5.12 The operators and door assemblies are manufactured in Monroe, North Carolina, under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

- 6.1 Data in accordance with UL 325 on the operators and assemblies.
- 6.2 Documentation on ASSA ABLOY Entrance Systems jobsite inspection requirements.
- 6.3 Manufacturer's published installation instructions and descriptive literature.
- 6.4 Manufacturer's quality documentation.

7.0 IDENTIFICATION

- 7.1 The BESAM Power Operators and BESAM Power-operated Egress-door Assemblies described in this report must be identified by a label bearing the manufacturer's name (ASSA ABLOY Entrance Systems US Inc.), the product name, the product model number, and the evaluation report number (ESR-2740).
Electrical components must be listed and labeled in accordance with NFPA 70.
- 7.2 The report holder's contact information is the following:
ASSA ABLOY ENTRANCE SYSTEMS US INC.
1900 AIRPORT ROAD
MONROE, NORTH CAROLINA 28110
(704) 290-5542
www.assaabloynentrance.com