

# ARCHITECTURAL SPECIFICATION

## CIRCLELOCK SECURITY PORTAL

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YOUR  
ENTRY  
EXPERTS.



## CONTENTS

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CONTENTS.....	1
SECURITY DOORS SECTION 08 42 33.....	2
PART I GENERAL .....	2
1.01 SECTION INCLUDES.....	2
1.02 RELATED SECTIONS .....	2
1.04 QUALITY ASSURANCE .....	2
1.05 SUBMITTALS .....	2
1.06 DELIVERY, STORAGE AND HANDLING .....	2
1.07 PROJECT/SITE CONDITIONS.....	2
1.08 WARRANTY.....	2
PART II – PRODUCTS.....	3
2.01 MANUFACTURER.....	3
2.02 PRODUCT.....	3
2.03 DOOR CONSTRUCTION.....	3
2.04 EQUIPMENT.....	3
2.05 Communication System.....	4
2.06 SECURITY EQUIPMENT .....	5
2.07 SENSOR SYSTEM.....	5
2.10 PERFORMANCE/THROUGHPUT.....	6
2.11 HARDWARE/MATERIALS .....	6
2.12 FINISH.....	6
2.13 ADDITIONAL OPTIONS.....	6
PART III – EXECUTION.....	7
3.01 INSTALLATION .....	7



# **SECURITY DOORS**

## **SECTION 08 42 33**

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### **PART I GENERAL**

#### **1.01 SECTION INCLUDES**

- A. This section covers the furnishing and installation of a complete Automatic Security Door System.
- B. Provide complete system that has been fabricated, assembled, and tested for proper operation at the factory. It includes curved side walls, canopy, ceiling, door wings, glass, motor drive systems, and security system as required for installation.

#### **1.02 RELATED SECTIONS**

- A. Section 07915 - Sealants, Caulking and Seals
- B. Section 08345 – Security Interlocking Doors Systems (Portals)
- C. Section 08400 - Entrances and Storefronts
- D. Section 08710 - Door Hardware
- E. Section 08810 - Glass and Glazing
- F. Section 09600 - Flooring
- G. Section 16123 - Electrical Supply and Termination

#### **1.04 QUALITY ASSURANCE**

- A. Manufacturer shall be a company specializing in the supply of automatic security doors with a minimum of 10 years' experience.

#### **1.05 SUBMITTALS**

- A. Submit project specific shop drawings and finish samples.
- B. Indicate pertinent dimensions, general construction, component connections and locations, anchorage methods and locations, hardware, and installation details.

#### **1.06 DELIVERY, STORAGE AND HANDLING**

- A. Deliver materials to job site in manufacturer's packaging undamaged, complete with installation instructions.
- B. Store off ground, under covered area, protected from weather and construction activities.

#### **1.07 PROJECT/SITE CONDITIONS**

- A. Install security door below finished floor. Floor must be dead level at any point within the footprint of the security revolving door.

#### **1.08 WARRANTY**

Boon Edam warranties its products against defects in material and workmanship for a period of twelve (12) months from the date of shipment of the product. This warranty excludes glass breakage, normal wear on finishes or damage that occurs due to abuse, misuse or acts of God.

## **PART II – PRODUCTS**

### **2.01 MANUFACTURER**

Boon Edam, Inc., 402 McKinney Parkway, Lillington, NC 27546.

(910) 814-3800 Fax: (910) 814-3899 Homepage: [www.boonedam.us](http://www.boonedam.us)

### **2.02 PRODUCT**

Boon Edam Circlelock Automatic Security Portal Models: CL Solo 100 (3'3") or CL Solo 200 (5'0")

Tested and certified to confirm with UL Standard 325 and 2593 and CSA22.2#247(Canada).

### **2.03 DOOR CONSTRUCTION**

- A. **Curved Side Walls and Canopy:** Shall be manufactured from six (6) extruded aluminum posts, four (4) 12" (300mm) high one-piece extruded aluminum canopies and four (4) extruded aluminum bottom rails. Overall Height 8'6"tall.
- B. **Door Panels:** Two non-collapsing sliding door panels manufactured of 1 3/4" wide aluminum extrusions.
- C. **Ceiling:** Shall be fabricated of formed aluminum sheet. Ceiling must be secured using keyed locks on access panel, keys not to be removable in the unlocked position. Access panel to contain safety catches and be removed only by authorized personnel.

### **2.04 EQUIPMENT**

- A. **Drive System:** Overhead drive system with two 1/4 HP AC motors attached to the internal structural framing. The door shall be powered by a 110VAC (208-230 VAC available), single phase with ground service. The motor shall utilize a Frequency Controller to provide for the following characteristics:
  1. Adjustment of door speed through a digital setting
  2. Constant regulation of door speed
- B. **Locking Assembly:** Locking of the interior door (secured side) shall be by a fail-secure lock. Locking of the exterior door (non-secured side) shall be by a fail-safe lock. Both door panels to remain locked until unlocked by authorized signal from an access control device or building/fire/smoke alarm. Loss of power will unlock the fail-safe locking unit only, to prevent entrapment. (Option: Both doors can be fail-safe)
- A. **Controls:** Microprocessor-based electronics utilizing a Programmable Logic Controller (PLC) with the following characteristics:
  1. RAM & ROM memory
  2. Self-diagnostics for quick detection of problem source
  3. Visual display of problem source
- C. **Ceiling Lights:** Two (2) LED ceiling lights. Lights require a separate 120V or 240V power.
- D. **Battery Backup:** (15 minute maximum) to automatically open the non-secure (fail safe) door during power outage. The door is recommended to be connected to a permanent emergency power source (UPS or emergency generator).

## 2.05 COMMUNICATION SYSTEM

1. Authorized entry method: Upon presenting a valid card, biometric method or any other authorized entry method, the door shall signal the user when the door receives the authorized access signal from the access control system.
2. The visual signal must be located 60" above the floor on the vertical jamb of the door entrance and signal the user to step into the door.
  - a) Standby – Endpost visual LED's Illumminate RED
  - b) Authorization – Endpost visual LED's Illumminate GREEN
3. Voice annunciation and visual signals must be utilized in the event of an unauthorized entry attempt or security violation. In addition, a violation light signal must be activated within the unauthorized entry compartment.
4. Voice annunciation should play messages
  - a) Piggybacking scenario (Potential two person entry): "*Potential Security Violation, Please Exit the Portal and Try again*".
  - b) Canceled Authorization (Emergency Button, Biometric Rejection, Time Exceeded in Cabin, Safety Rail Activation) : "*Portal entry attempt failed. Please exit the portal and try again*".

E. **Security Reporting:** The door must have the capability of providing security violation and other door status alerts to the access control system or an on-site remote panel (not supplied by Boon Edam). Standard alarms include:

1. Piggyback Alarm: In the event of an attempted entry of two-persons, the door shall provide a closed dry contact signal to the Access Control System.
2. Biometric Rejection: In the event a biometric rejected signal is received, the door shall be capable of providing a closed dry contact signal to the Access Control System to validate the rejection.
3. Authorized Passage (Return Signals): When an authorized user successfully passes, the door shall provide a 500ms closed pulse to the Access Control System to validate passage.
4. Time Exceeded In Cabin: When an authorized user fails to receive a Biometric approved signal, the door shall provide a closed dry contact signal to the Access Control System.
5. Safety Rail Activation: In the event the door reopens upon activation of the safety rail, the door shall provide a closed dry contact signal to the Access Control System.
6. Emergency Button: An alarm signal is available to notify the emergency button has been activated.
7. Power Loss: An alarm signal is available to notify that the mains power has been lost or disconnected.
8. Inferred Sensor Hung: An alarm signal is available to notify that one or more of the inferred sensors has been activated for an extended time.
9. Presence In Cabin: A signal is available to notify presence is being detected inside the cabin
10. Biometric Device Start: A signal to notify the Access Control System when to activate an internal identity scanning device, such as a facial recognition or fingerprint scanner.
11. Door Position Status: A signal to monitor the open/closed status of each door. A separate signal is provided for both the exterior and interior doors.

F. **Boon Connect:** (Available on USA models only) IP-addressable, software system that provides diagnostic and configuration tools for the technician and facility manager. Users can access door operations and events using devices such as a PC, laptop or tablet via peer-to-peer connection or through a secured corporate network. Must include remote-diagnostics for ease of troubleshooting without having to access the door. Technical diagnostics and tuning capabilities should evaluate door's sensors, door-panel position, motor, logic controller, and drive systems without having to remove the ceiling panels. Remote monitoring software must provide visibility to number of activations and alarm events.

## 2.06 SECURITY EQUIPMENT

- A. **IRS Infrared Sensor System**: Ceiling mounted infrared sensors capable of performing the following functions:
  1. Detecting the presence of a person in a compartment in order to track the person's presence and position within the door, and to ensure that the authorized person does not become entrapped.
  2. Sensors other than infrared are not acceptable.
- B. **Actuation**: Door actuation actuation by external card reader, biometric reader, key pad or remote push button. Although tied into the Circlelock, actuation devices are not by Boon Edam.
- C. **StereoVision Anti-Piggybacking System**: The StereoVision shall determine if more than one person is trying to pass through the compartment of the Circlelock on one authorization. The StereoVision utilizes a near infrared and digital camera technology to create three dimensional images of the interior of the Circlelock. The microprocessor analyzes the images and determines if the authorized person passing through the Circlelock is actually alone or with another person. If the authorized person is verified to be alone, the door will continue by opening the second door and the user will gain entry. If piggybacking is detected, an alarm signal will sound and the original door entered will reopen allowing both persons to exit the door. The StereoVision system shall be capable of logging data and setting adjustment enhancement analysis (Systems utilizing pressure mats or weight systems for detecting piggybacking are not considered equal or acceptable).
- D. **Two Factor Authentication (Optional)**: An internal post is supplied for mounting the biometric reader/card reader for authentication after the portal has determined one person is inside. Although tied into the Circlelock, actuation devices are not by Boon Edam. Two Factor Authentication can be configured to:
  - a) Disabled
  - b) Inbound only
  - c) Outbound only
  - d) Inbound & Outbound
- E. **Anti-Passback System**: Provide a signal from the door to the access control system indicating that the authorized user has successfully passed through the door. Connection to access control system is by access control system integrator.

## 2.07 SENSOR SYSTEM

- A. **Safety Switches**: A system of pressure sensitive switches enclosed in a rubber profile which is mounted to the leading edge of the sliding door panel. Upon compression of the switches, the movement of the door panel will stop, and the door panel will reverse direction to the fully open position. All switches must be tied into the Programmable Logic Controller. In the event of a malfunction of the switch, a visual signal will be given, the door will fully open and will not activate until the malfunction are corrected. System components shall be incorporated as follows:
  1. **S.R.T. - Safety Rail Turning Wall**: A multi-directional closed-contact pressure sensitive switch contained within a black rubber profile mounted to the leading edge of each door panel that will immediately stop the door's movement if compressed.
- B. **Emergency Egress Doors**: The two (2) doors shall be automatically slide open and allow for unobstructed egress in cases of building fire alarm signal. This will not occur during loss of power.
- C. **Emergency Button**: A flush mounted button recessed in the vertical mid-post that initiates opening of one (1) of the doors in the event that a person or object is entrapped in the compartment.

## 2.10 PERFORMANCE/THROUGHPUT

The security portal unit must be a 2-panel TWO-WAY TRAFFIC door. Throughput is defined as the number of people per minute which can pass through a door in *one direction only*.

1. Throughput is a function of the time required for a complete passage divided into a one-minute time frame. Given that a complete passage takes 10-15 seconds the maximum throughput in any one direction is 5-6 people per minute. Taking into consideration two factor authentication, the average expected throughput in any one direction may be reduced to 3 to 4 people per minute.
2. Active/Passive Piggyback detection. For throughput enhancement, the door shall be capable of selective control which allows switching between actively rejecting piggyback attempts, or passive detection with allowed passage and alarm notification to Security of a potential piggyback attempt. Selective control is managed through the Access Control System.

## 2.11 HARDWARE/MATERIALS

- A. Safety Glass: All curved glass shall be  $\frac{1}{4}$ " clear bent tempered safety glass. All glass shall meet ANSI standard Z 97.1.
- B. Laminated Glass: All curved glass shall be  $\frac{7}{16}$ " clear laminated safety glass. All glass shall meet UL972 Standard for Burglar Resistant Glazing Material (European Standard Classification EN 356, P6B).
- C. Bullet Resistant: Comparable to UL Level 3 for all glass used within the door. Bullet resistant security products shall meet HPW-TP-0500.02, ASTM C 1036-97, WMFL.
- D. Aluminum Extrusions: All commercial grade extrusions shall be of aluminum alloy 6063-T6 per ASTM B-221.
- E. Aluminum Sheets: Shall meet ASTM B-209 and be of .063 minimum thickness.
- F. Weather Stripping: Genuine mohair weather stripping on all required edges of door wings to provide a seal between door wings and drum that meets ASTM E-283.

## 2.12 FINISH

The following finishes are available for the enclosure walls, door panels and ceiling.

- A. Anodized Coatings
  1. AAMA 611 Architectural Class 1 Clear anodized Type AA-M10C22 A41
  2. AAMA 611 Architectural Class 1 anodized Type AA-M10C22 A44: Light, Medium and Dark Bronze, Black and Champagne.
- B. Painted Coatings
  1. AAMA 2605 Superior Performing Organic Coatings (e.g.: Duranar, Fluropone; 70% Kynar Fluoropolymers).
  2. AAMA 2604 High Performance Organic Coatings (e.g.: Powder Coating).
- C. Stainless Steel Clad Type 304
  1. #4 Brushed Satin
  2. #8 Highly Polished (mirror finish)
- D. Bronze Clad Alloy #280 (Muntz Metal)
  1. #4 Brushed Satin
  2. #8 Highly Polished (mirror finish)

## 2.13 ADDITIONAL OPTIONS

The following are additional features and options available with the Circlelock.

1. Free exit pushbutton
2. Loose control panel for remote mounting
3. Internal pedestal for biometric reader
4. Fail-Safe / Fail Safe motor combination

## **PART III – EXECUTION**

### **3.01 INSTALLATION**

- A. **Inspection**: Installer must examine the location and advise the Contractor of any site conditions unacceptable for proper installation of product. The minimum conditions necessary to initiate installation are:
  1. Floor must be dead level at any point within the footprint of the door.
  2. Finished floor must be installed.
  3. Exterior grade for adequate drainage must be properly designed.
  4. Power supply must be installed.
- B. **Erection**: Install revolving doors in accordance with manufacturer's printed instructions. Set units level, plumb, and with uniform hairline joints. Anchor securely into place. Use only factory trained installers.
- C. **Adjustment**: Installer shall adjust door, hardware and sensors for smooth operation and proper performance.
- D. **Instruction**: A factory-trained installer shall demonstrate to the owner's maintenance crew the proper operation of the door and the necessary service requirements such as lubrication, cleaning, and inspection of components upon completion of installation.
- E. **Cleaning**: Clean metal and glass surfaces carefully after installation to remove excess caulk, dirt and labels.

**Boon Edam, Inc. reserves the right to change this specification at any time without notice.**