



402 McKinney Parkway, Lillington, NC 27546 • (910) 814-3800 • FAX (910) 814-3899

ARCHITECTURAL SPECIFICATION

Circlelock Combi Security Portal

SECTION 08 42 33 – SECURITY DOORS

PART I – GENERAL

1.01 SECTION INCLUDES

- A. This section covers the furnishing and installation of a complete Automatic Security Door System (portal) intended to be combined with an existing swinging door.
- 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. Access Control Point to Point drawings
 - 2. Fire Alarm tie-in

1.03 QUALITY ASSURANCE

- A. Manufacturer shall be a company specializing in the supply of automatic high security portals with a minimum of 10 years' experience.
- B. Service and adjustment must be able to be performed from within the portal once installed

1.04 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.

1.05 DELIVERY, STORAGE AND HANDLING

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

1.06 PROJECT/SITE CONDITIONS

- A. Install security door **on existing** finished floor. Floor must be dead level at any point within the footprint of the security door system.

WARRANTY

Boon Edam warrants 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

Circlelock Combi Automatic Security Door Models: CL Combi (5'-2" O.D.).

Made in the USA by:

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

Direct Factory Contacts: (910) 814-3800 Fax: (910) 814-3899 Homepage: www.boonedam.us

2.02 DOOR CONSTRUCTION

- A. Curved Side Walls and Canopy: Shall be manufactured from six (6) extruded aluminum posts, four (4) 12" high one-piece extruded aluminum canopies and two (2) extruded aluminum bottom rails.
- B. Door Leaf: One, non-collapsing sliding door leaf manufactured of 1 3/4" wide aluminum extrusions.
- C. Ceiling: Shall be fabricated of formed aluminum sheet. Ceiling must be secured in position and removed only by authorized personnel.
- D. Floor Mount: Surface applied portals: threshold and track system provided.

2.03 EQUIPMENT

- A. Drive System: Overhead drive system with one 1/4 HP AC motor(s) attached to the internal structural framing. The door shall be powered by a 120VAC (optional 208VAC), 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: The Circlelock Combi mounts onto an existing wall and a swing door (provided by others) that contains its own separately-powered locking mechanism that will be connected to the Combi's control system (which ultimately is tied into the access control system). The locking assembly behavior of the Combi is fail-safe (it can be pushed open manually) whether the Combi is mounted on the non-secure or secure side.

Both the automatic sliding leaf of the Combi and the attached swinging door are to remain locked at all times 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. (The locking of the swing door will depend on the selection of the hardware to be included – it can be Fail-Lock or Fail-Safe).

- C. 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
 - 4. Remote access capabilities

2.04 SECURITY EQUIPMENT

- A. StereoVision 2 Anti-Piggybacking System: The StereoVision 2 (SV2) anti-piggybacking system shall determine if more than one person is trying to pass through the compartment of the Circlelock Combi on one authorization. The StereoVision utilizes a near infrared and digital camera technology to create three-dimensional images of the interior of the Circlelock Combi. The microprocessor analyzes the images and determines if the authorized person passing through the Combi is actually alone or with another person. StereoVision must be active in both directions for the operation.

ENTRY FROM SWING DOOR SIDE: Upon activation from the ACS on the swing door side, the sliding door (if open) will continue its rotation cycle into the closed position and the swing door will unlock to allow entry. If the authorized person is verified to be alone, the sliding door will rotate open for the user to gain entry. If piggybacking is detected, an alarm signal will sound and the swing door will remain unlocked allowing both persons to exit the portal via the swing door.

ENTRY FROM SLIDING DOOR SIDE: If the authorized person enters the portal and is verified to be alone, the sliding door will continue its rotation cycle into the closed position and swing door will be unlocked for the user to gain entry. If piggybacking is detected, an alarm signal will sound and the sliding door will open allowing both persons to exit the portal.

B. Actuation:

External mount: door actuation by external card reader.

Internal mount: verification of user by an internally-mounted biometric reader (provided by customer).

Although tied into the Circlelock Combi and accompanying swing door, the Access Control authorization actuation, programming, point-to-point drawings, and devices are not by Boon Edam.

2.05 PROGRAMMING

The Access Control System programming must properly provide timings and settings to all authorization devices, which are consistent with the Boon Edam PLC and StereoVision 2 Anti-Piggybacking System. (Integration Programming to be provided by the Customer).

2.06 SENSOR SYSTEM

Sensor Switches - S.R.T. (Safety Rail Turning Wall): A multi-directional, closed-contact, pressure sensitive switch contained within a black rubber profile mounted on the edge of the sliding door leaf that will immediately stop the door's movement if compressed.

2.07 EMERGENCY SYSTEM

- A. Emergency Egress Door(s): Fail Safe - The swing door unlocks and the Combi's sliding door leaf opens automatically to allow for egress in cases of a building fire alarm.
- B. "Push to Reverse" Anti-Entrapment Button: Located on the interior vertical center midpost (or optional interior Bio-post, if installed), and in the event of an entrapment; a "Push to Reverse" button will allow the user to exit the Circlelock Combi in the same direction they came from. The Circlelock Combi will always provide egress from the same direction the user entered.
- C. Power Loss: The Combi is provided with an Uninterruptible Power Supply (UPS). If there is a power failure, a signal is given to the door control system to open/unlock the fail-safe door, which can . After this last action, the fail-safe door can be operated by hand, so it is always possible to exit the Circlelock.
- D. Option: Fail Secure. The selected non-secure side door will automatically slide open (Combi) or unlock (swing door) to allow any user egress in case of a building fire alarm. The secure side door will remain locked and secure. This will also occur during a loss of power failure. This provides for a fail secure design, but prevents entrapment.

2.08 SEQUENCE OF OPERATION

- A. In-Bound Entry and Exit Sequences of Operation with two-way StereoVision 2:

1. Accepted Entry through the Sliding Door side

Authorization device is outside (provided by owner).

1. User presents credential at the reader mounted on the outside of the Circlelock Combi.
2. The credential is authorized by the ACS system and the sliding door leaf automatically opens.
3. The StereoVision (SV2) starts detecting when the user steps in. (The user needs to stand still in a normal manner and keep hands and luggage low and shoulder carry-on's as close to the body as possible). The user waits until the first door has completely closed.
4. SV2 determines if the user is completely alone.
5. Optional – the user confirms their identity via a secondary biometric technology (by others) mounted on an optional Bio-post.
6. When SV2 confirms the user is alone, and identity is confirmed by the ACS, the swinging door unlocks.
7. The user opens the swinging door to exit the portal and enters the secure area of the building.

NOTE: Anti-passback should be activated and utilized based on sequence step number 6, which activates the opening of the second door. This validates that the passage transaction to the secure area was complete, and the person entered the secured area.

2. Piggybacking rejection from the sliding door side

1. Two users approach the Circlelock Combi. One user presents credential at the reader mounted on the outside of the Circlelock Combi.
2. The credential is affirmed and the sliding door leaf opens.
3. The StereoVision (SV2) starts detecting when both users step in. Upon detection of two users inside the portal, the sliding door leaf slides back into the open position until both users exit the door.
4. The users exit the door and the sliding door closes. The authorization is lost.

3. Accepted Exit from the Swinging Door side

Authorization device outside (provided by owner).

1. User presents their credential at the reader mounted on the outside of the swing door.
2. The credential is authorized by the ACS and the swing door unlocks.
3. The user steps inside and closes the swing door.
4. The StereoVision (SV2) starts detecting the compartment to ensure the user is alone. (The user needs to stand still in a normal manner and keep hands and luggage low and shoulder carry-on's as close to the body as possible).
5. Optional – the user confirms their identity via a secondary biometric technology (by others) mounted on an optional Bio-post.
6. When SV2 confirms the user is alone, and identity is confirmed by the ACS, the Circlelock Combi sliding door leaf slides open.
7. The user exits to the non-secure area.

4. Piggybacking rejection from the swinging door side

1. Two users approach the swing door. One user presents credential at the reader mounted on the outside of the swing door.
2. The credential is affirmed and the swing door unlocks.
3. Both users step inside the Circlelock Combi.
4. The StereoVision (SV2) starts detecting when both users step in. Upon detection of two users inside the portal, the sliding door leaf remains closed and the swing door remains unlocked.

5. The users exit via the swing door and the closes and relocks. The authorization is lost.

.09 HARDWARE/MATERIALS

- A. Tempered Glass: All curved glass shall be 1/4" clear bent tempered safety glass. All glass shall meet ANSI standard Z 97.1.
- B. Laminated Glass (Optional): 7/16" clear curved laminated safety glass is available as an option. All glass shall meet ANSI standard Z 97.1.
- C. Bullet Resistant Glazing (Optional): Bullet resistant glazing comparable to UL Level 3 is an available option.
- 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 or rubber weather stripping on all required edges of door wings to provide a seal between door wings and drum.

NOTE: The interior swing door, frame and hardware are to be provided by others.

2.10 FINISH

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

A. Painted Coatings

1. AAMA 2605 Superior Performing Organic Coatings (e.g.: Duranar, Fluropon; 70% Kynar Fluoropolymers).
2. AAMA 2604 High Performance Organic Coatings (e.g.: Powder Coating). Google standard color is flat black, coating number RAL 9005.

B. Anodized Coatings

1. AAMA 611 Architectural Class 1 Clear anodized Type AA-M10C22 A41
2. AAMA 611 Architectural Class 1 anodized Type AA-M10C22 A42: Light, Medium and Dark Bronze, Black and Champagne.

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)

2.11 ADDITIONAL OPTIONS

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

1. Internal pedestal for biometric reader (bio-post)

PART III – EXECUTION

3.01 INSTALLATION

Provided by related contractors and trades:

- A. Inspection: Installer must examine the location and advise the Contractor of any site conditions unacceptable for proper installation of product. These conditions include but are not limited to the following:
1. Floor must be dead level at any point within the footprint of the door. This is imperative for the proper functionality of the surface-applied track system.
 2. Mains power must be stubbed in above the canopy.
 3. Access control Point-to-Point connections must be completed by others after the completed erection of the unit.
 4. Fire alarm tie-in connections must be completed by others after the completed erection, mains power hook-up, and Point-to-Point access control wiring is completed. This is necessary for proper testing.

Installation shall not begin until these unacceptable conditions are rectified.

Provided by Boon Edam:

- B. Erection: Install the mantrap portal 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. Inspection: Installer will inspect all related wiring internal to the Boon Edam portal that was performed by related contractors and trades.

NOTE: Boon Edam cannot proceed with any owner instruction or training until all inspection issues have been properly remedied by the related contractors and trades.

- E. 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.
- F. 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.