

  
**TORMAX**  
AUTOMATIC  
SECTION 08 42 29  
SLIDING AUTOMATIC ENTRANCES

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**\*\* NOTE TO SPECIFIER \*\* Tormax Technologies, Inc.; products.**

**This section is based on the products of Tormax Technologies, Inc., which is located at:  
12859 Wetmore Rd.  
San Antonio, TX 78247  
Toll Free Tel: 888-685-3707  
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Web:[www.tormaxusa.com](http://www.tormaxusa.com)  
[\[Click Here\]](#) for additional information.**

## PART 1 GENERAL

### 1.1 SECTION INCLUDES

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

- A. Automatic Sliding Doors

### 1.2 RELATED SECTIONS

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

- A. Section 07 90 00 - Joint Protection
- B. Section 08 32 13 - Sliding Aluminum-Framed Glass Doors.
- C. Section 08 41 00 - Entrances and Storefronts.
- D. Section 08 42 29 - Automatic Entrances.
- E. Section 08 71 53 - Security Door Hardware.
- F. Section 08 83 13 - Mirrored Glass Glazing.
- G. Section 12 48 53.13 - Runners
- H. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables.

### 1.3 REFERENCES

**\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.**

- A. ANSI A117.1 - American National Standard for Accessible and Useable Buildings and Facilities.

- B. ANSI A156.10 - Power Operated Pedestrian Doors.
- C. ANSI/UL 325 - Door, Drapery, Gate, Louver, and Window Operators and Systems - (UL) listed.
- D. ANSI-Z97.1.2 - Safety Performance Specifications and Methods of Test for Safety Glazing Materials Used in Buildings.
- E. Aluminum Association Standard AA DAF-45 - Designation System for Aluminum Finishes.
- F. Miami-Dade County Building Code Compliance Office (BCCO) Notice of Acceptance (NOA)
- G. PA 201-94 - Large and Small Missile Impact Test. Dade County Code Compliance Protocols.
- H. PA 202-94 - Uniform Static Pressure Test. Dade County Code Compliance Protocols.
- I. PA 203-94 - Cyclic Wind Pressure Loading Test. Dade County Code Compliance Protocols.
- J. NFPA 101 - Life Safety Code.
- K. FBC - Florida Building Code Compliance Office.
- L. AAADM - American Association of Automatic Door Manufacturers/

#### 1.4 DESIGN / PERFORMANCE REQUIREMENTS

- A. Automatic sliding door system shall be certified by the manufacturer to meet performance design criteria according to the following test standards: [select, if applicable]:
  - 1. ANSI A156.10.
  - 2. NFPA 101.
  - 3. Underwriter's Laboratories 325 (UL) listed.
  - 4. C-UL certified
- B. Accessibility Requirements: Comply with requirements of Local building code, and Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities.

**\*\* NOTE TO SPECIFIER \*\* Coordinate with mechanical engineer to determine if artificially induced air pressure and suction loads in building interior will adversely affect requirements of the following paragraph.**

- C. System Design: Operate, hold open, and close doors under design wind and suction loads calculated in accordance with applicable building code.
- D. Operating Temperature Range: Minus 30 to plus 130 degrees F (minus 34 to plus 55 degrees C) ambient.
- E. Operators: Fully adjustable for opening and closing speeds, checking speeds, hold open time, and cancellation on activation of fire alarm and smoke detection system.
- F. Electrical: 120 VAC, 60 Hz, 5 Amp service provided to the header.

#### 1.5 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.

3. Installation methods.
  4. Operation and maintenance data.
- C. Shop Drawings: Indicate layout and dimensions; head, jamb, and sill conditions; elevations; components, anchorage, adjacent construction interface, recesses, materials, and finishes, electrical characteristics and connection requirements.

**\*\* NOTE TO SPECIFIER \*\* Delete the following paragraphs if LEED is not applicable.**

- D. LEED Submittals: Provide documentation of how the requirements of Credit will be met:
1. List of proposed materials with recycled content. Indicate post-consumer recycled content and pre-consumer recycled content for each product having recycled content.
  2. Product data and certification letter indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content.

**\*\* NOTE TO SPECIFIER \*\* Delete selection samples if colors have already been selected.**

- E. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- F. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
- G. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- H. Contract Closeout: Submit
1. As-Built Record Documents showing actual installation conditions and wiring.
  2. Manufacturer's Warranty.
  3. Parts lists and maintenance instructions including data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.

## 1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer to have minimum five years documented experience in the fabrication of automatic doors of the type required for this project and be capable of providing field service representation during installation. Automatic Sliding Door Drive And Control System Products shall be manufactured in an ISO 9001 registered manufacturing facility.
- B. Installer Qualifications: Installer to be AAADM certified and who has specialized in the installation of work similar to that required for this project.

**\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.**

- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
1. Finish areas designated by Architect.
  2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
  3. Refinish mock-up area as required to produce acceptable work.

## 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Package hardware items individually with necessary fasteners and installation templates when necessary; label and identify each package with door opening code to match door schedule.

- B. Store products in manufacturer's unopened packaging until ready for installation.
- C. Protect materials from exposure to moisture. Do not deliver until after wet work is complete and dry.
- D. Store materials in a dry, warm, ventilated weathertight location.

#### 1.8 SEQUENCING

- A. Ensure that locating templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
- B. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

#### 1.9 PROJECT CONDITIONS

- A. 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 absolute limits.

#### 1.10 MAINTENANCE MATERIALS

- A. Provide special wrenches and tools applicable to each different or special hardware component.

#### 1.11 COORDINATION

- A. Coordinate work with other directly affected components involving manufacture or fabrication of reinforcement for door hardware and recessed items.
- B. Coordinate work with other directly affected components involving electrical wiring and components.

### PART 2 PRODUCTS

#### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Tormax Technologies, Inc., which is located at: 12859 Wetmore Rd. ; San Antonio, TX 78247; Toll Free Tel: 888-685-3707; Tel: 210-494-3551; Fax: 210-494-5930; Email: [request info \(info@tormaxusa.com\)](mailto:request info (info@tormaxusa.com)); Web: [www.tormaxusa.com](http://www.tormaxusa.com)

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

- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following automatic sliding door systems and delete the ones not required. TORMAX automatic sliding doors are available in narrow stile and medium stile frames in outside slide and inside slide configurations. Door(s) are provided unglazed, coordinate with Section 08 83 13 - Mirrored Glass Glazing to specify proper glazing.**

#### 2.2 AUTOMATIC SLIDING DOOR SYSTEM

- A. TORMAX Series TX9200 Outside Slide: System consists of sliding aluminum door(s) and sidelight(s), header, jambs, locking hardware, TORMAX iMotion direct drive system and

Delta III Sensors. All components factory assembled in the header, adjusted and tested. No field wiring or operator adjustment required other than connection to job-site power.

1. Sliding Aluminum Doors: Provide door panel(s) with corner block construction to sizes indicated. Sliding door panels allow "breakout" to the full open position and provides instant egress at any point in the door's movement. Provide with spring return closers to return panel when broken out for emergency egress. Size doors and fixed sidelights to prevent pinch points at meeting stiles.

a. Door Type:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) Narrow stile with intermediate rail.
  - 2) Medium stile with intermediate rail.
- b. Door Operation:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) Single slide
  - 2) Bi-part slide
- c. Traffic Operation:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) For one-way traffic
  - 2) For two-way traffic
- d. Glazing Thickness: Doors are field glazed as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops for the following glass thickness:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) 1/4 inch (6 mm)
- 2) 5/8 inch (16 mm)
- 3) 1 inch (25 mm).

**\*\* NOTE TO SPECIFIER \*\* Select one of the following standard Locking Hardware or optional Automatic Locking Hardware paragraphs and delete the one not required.**

- e. Locking Hardware: Provide with key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) Bi-part sliding doors provided with a two-point Maximum Security deadlock.
  - 2) Single sliding door provided with a single point Maximum Security deadlock.
- f. Automatic Locking Hardware: Limited Access security consists of electric solenoid lock and flush mount concealed vertical rod exit panic hardware. Electric solenoid locking is a 115 VAC fail-secure solenoid with self-contained solid-state electronic control factory installed inside TX9000 header. Solenoid lock is operational in the "Off" and "Exit" mode of operation. Lock is engaged in the "Off" mode of operation and with the unit in the "Exit" mode, solenoid lock retracts upon receipt of an operate signal from an actuating control allowing doors to open. Upon loss of signal the doors will slide closed. Solenoid lock shall self-latch in the closed position, returning system to locked status. During a power interruption, solenoid lock shall remain locked in the "Off" and "Exit" mode of operation, securing the doors in the closed position. Egress is provided with flush mount panic bar allowing doors to breakout. Lock may be reprogrammed at the job-site for fail-safe type operation.
2. Aluminum Frame and Extrusions: Provide with minimum .125 inch (3 mm) wall

thickness in integral structural sections. Frame shall be 4-1/2 inches (114 mm) deep by 1-3/4 inches wide (44 mm) section.

**\*\* NOTE TO SPECIFIER \*\* Select the following optional transom paragraph if required for the project and delete if not required.**

3. Transom Frame: Pocket flush glaze gasket system. Bi-part transom packages shall contain one vertical transom tube unless otherwise indicated. Transoms are field glazed as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops for the following glass thickness:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- a. 1/4 inch (6 mm)
- b. 1 inch (25 mm).

**\*\* NOTE TO SPECIFIER \*\* Select the following optional sidelight paragraph if required for the project and delete if not required.**

4. Aluminum Sidelights: Provide sidelight panel(s) with corner block construction to sizes indicated.

a. Panel Configuration:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) "O" Panel.
  - 2) "P" Panel
- b. Type:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) Narrow stile with intermediate rail.
  - 2) Medium stile with intermediate rail.
- c. Glazing Thickness: Sidelights are field glazed as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops for the following glass thickness:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) 1/4 inch (6 mm)
  - 2) 5/8 inch (16 mm)
  - 3) 1 inch (25 mm).
5. Header Case: Aluminum extruded header contains the TORMAX iMotion direct drive system and door mounting components over a span of 18 feet (5486 mm) with minimal deflection.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following two Direct Drive paragraphs as required for the project and delete the one not required.**

- a. iMotion 2301 Direct Drive: For use with sliding one single door leaf weighing up to 330 pounds (150 kg) or two bi-parting door leaves weighing up to 286 pounds (130 kg) each.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following three paragraphs as required for the project and delete the ones not required.**

- 1) Concealed Mount Header: Extruded aluminum, 8 inches wide by 7-3/4 inches high (203 mm by 197 mm). Provide with integral extruded aluminum cover with continuous self-locking hinge allowing it to open approximately flush with the top of the header.
- 2) Surface Mount Header: Extruded aluminum, 8 inches wide by 7-3/4 inches high (203 mm by 197 mm). Provide with integral extruded aluminum cover with continuous self-locking hinge allowing it to open approximately flush with the top of the header.
- 3) Flush Mount Header: Extruded aluminum, 6 inches wide by 7-7/8 inches high (152 mm wide by 200 mm high). Provide with extruded aluminum

hinged cover allowing it to open approximately flush with the top of the header.

- b. iMotion 2401 Direct Drive: For use with sliding one single door leaf weighing up to 992 pounds (450 kg) or two bi-parting door leaves weighing up to 661 pounds (300 kg) each.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following three paragraphs as required for the project and delete the ones not required.**

- 1) Concealed Mount Header: Extruded aluminum, 9-1/2 inches wide by 7-3/4 inches high (241 mm by 197 mm). Provide with integral extruded aluminum cover with continuous self-locking hinge allowing it to open approximately flush with the top of the header.
  - 2) Surface Mount Header: Extruded aluminum, 9-1/2 inches wide by 7-3/4 inches high (241 mm by 197 mm). Provide with integral extruded aluminum cover with continuous self-locking hinge allowing it to open approximately flush with the top of the header.
  - 3) Flush Mount Header: Extruded aluminum, 7-3/8 inches wide by 7-7/8 inches high (187 mm wide by 200 mm high). Provide with extruded aluminum hinged cover allowing it to open approximately flush with the top of the header.
6. Door Hanger Wheels:
- a. Each door is suspended from an overhead track by nylon wheels with steel lifetime lubricated ball bearings. iMotion 2301 requires four 2-1/2 inch (64 mm) diameter wheels and held on track by two 7/8 inch (22 mm) diameter nylon anti-riser wheels. iMotion 2401 uses eight 2-1/2 inch (64 mm) diameter nylon wheels and held on track by four 7/8 inch (22 mm) diameter nylon anti-riser wheels. Roller track is field replaceable and isolated in rubber for smooth and quiet operation. Each door supported by a factory adjusted cantilever support pivot assembly that allows doors to swing outward for emergency egress and spring return closed without the need for a lower door pivot support. Door height has an adjustment of 1/2 inch (13 mm).
7. Accessories: Provide with following accessories:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following two paragraphs and delete one not required.**

- a. Weather-stripping: Provide nylon brush on the bottom of each sliding door panel; two rows of wool pile weather-stripping at the leading edge of the active sliding door; wool pile weather-stripping between the header and sliding door carrier; and nylon brush between the lead stiles of the sidelights and the pivot stiles of sliding doors.
- b. Clean Room Seals: Provide two rows of rubber vinyl weather-stripping at the leading edge of the active sliding door; rubber vinyl weather-stripping between the header and sliding door carrier; and nylon brush between the lead stiles of the sidelights and the pivot stiles of sliding doors.

**\*\* NOTE TO SPECIFIER \*\* The following paragraphs are optional. Select those required and delete ones not required.**

- c. Provide with electric lock
  - d. Provide with battery backup
  - e. Provide with door position monitoring
  - f. Provide with I/O module
  - g. Provide with key switch
  - h. Provide with continuous threshold with following profile:
    - 1) Recessed continuous inside jamb to inside jamb
    - 2) Surface double bevel continuous inside jamb to inside jamb
    - 3) Surface combination square/bevel continuous inside jamb to inside jamb
- B. TORMAX Series TX9200 Storm Impact Rated Outside Slide: System consists of sliding aluminum doors and sidelights, header, jambs, locking hardware, TORMAX iMotion direct

drive system and Delta III Sensors. All components factory assembled in the header, adjusted and tested. No field wiring or operator adjustment shall be required.

1. Performance:
  - a. Conforms to Miami-Dade County Building Code Compliance Office NOA NO 12-1107.03 and is rated for Large and Small Missile Impact Resistance. Maximum bi-parting door size is 15 feet 4 inches wide by 8 feet 8 inches high (4674 mm wide by 2642 mm high) and maximum single slide door size is 7 feet 9-3/16 inches wide by 8 feet 8 inches high (2367 mm wide by 2642 mm high) at an allowable pressure of plus 57 PSF / minus 57 PSF.
  - b. Maximum allowable air infiltration rate is 1.2 cfm/ft<sup>2</sup> in accordance with ASTM test methods.
2. Sliding Aluminum Doors: Provide door panels(s) with through bolt reinforced construction to sizes indicated. Sliding door panel(s) shall allow "breakout" to the full open position to provide instant egress at any point in the door's movement. Provide with spring return closer(s) to return the panel when broken out for emergency egress. Door(s) and fixed sidelight(s) shall be sized to prevent pinch points at meeting stiles.
  - a. Door Type:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) Narrow stile.
  - 2) Medium stile.
- b. Door Operation:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) Single slide
  - 2) Bi-part slide
- c. Traffic Operation:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) For one-way traffic
  - 2) For two-way traffic
- d. Glazing: Doors are field glazed with Oldcastle Glass laminated 3/8 inch (10 mm) heat strengthened StormGlass with interior wet glazed with DOW 995 silicone as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops with vinyl bead interior and exterior.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following standard Locking Hardware or optional Automatic Locking Hardware paragraphs and delete the one not required.**

- e. Locking Hardware: Provide with key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) Bi-part sliding doors provided with a two-point Maximum Security deadlock and three flush bolts.
  - 2) Single sliding door provided with a two-point Maximum Security deadlock and one flush bolt.
3. Aluminum Frame and Extrusions: Provide with minimum .125 inch (3 mm) wall thickness in integral structural sections. Frame shall be 4-1/2 inches (114 mm) deep by 1-3/4 inches wide (44 mm) section.

**\*\* NOTE TO SPECIFIER \*\* Select the following optional sidelight paragraph if required for the project and delete if not required. Coordinate sidelight size limitations that are suitable for performance requirements of the opening with the manufacturer.**

4. Aluminum Sidelights: Provide sidelight panel(s) with through bolted reinforced construction to sizes indicated.
  - a. Type:



**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) Narrow stile.
- 2) Medium stile.
- b. Glazing: Sidelight panel(s) are field glazed with Oldcastle Glass laminated 3/8 inch (10 mm) heat strengthened StormGlass with interior wet glazed with DOW 995 silicone as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops with vinyl bead interior and exterior.
5. Header Case: Aluminum extruded header contains the TORMAX iMotion direct drive system and door mounting components over a span of 15 feet 4 inches (4674 mm) with minimal deflection.
  - a. iMotion 2301 Direct Drive: For use with sliding one single door leaf weighing up to 330 pounds (150 kg) or two bi-parting door leaves weighing up to 286 pounds (130 kg) each.
    - 1) Concealed Mount Header: Extruded aluminum, 8 inches wide by 7-7/8 inches high (203 mm by 200 mm). Provide with extruded aluminum hinged cover allowing it to open approximately flush with the top of the header.
6. Door Hanger Wheels:
  - a. Each door is suspended from an overhead track by nylon wheels with steel lifetime lubricated ball bearings. iMotion 2301 requires four 2-1/2 inch (64 mm) diameter wheels and held on track by two 7/8 inch (22 mm) diameter nylon anti-riser wheels. Roller track is field replaceable and isolated in rubber for smooth and quiet operation. Each door supported by a factory adjusted cantilever support pivot assembly that allows doors to swing outward for emergency egress and spring return closed without the need for a lower door pivot support. Door height has an adjustment of 1/2 inch (13 mm).
7. Provide with continuous threshold jamb to jamb with following profile:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the ones not required.**

- a. Recessed
- b. Surface double bevel
- c. Surface combination square/bevel.
8. Accessories: Provide with following accessories:
  - a. Weather-stripping: Provide two rows of nylon brush on the bottom of each sliding door panel; pile-fin single wool weather-stripping at the leading edge of the active sliding door; pile-fin wool weather-stripping between the header and sliding door carrier; and nylon brush between the lead stiles of the sidelights and the pivot stiles of sliding doors.

**\*\* NOTE TO SPECIFIER \*\* The following paragraphs are optional. Select those required and delete ones not required.**

- b. Provide with electric lock
  - c. Provide with battery backup
  - d. Provide with door position monitoring
  - e. Provide with I/O module
  - f. Provide with key switch
- C. TORMAX Series TX9200 Storm Non-Impact Outside Slide: System consists of sliding aluminum doors and sidelights, header, jambs, locking hardware, TORMAX iMotion direct drive system and Delta III Sensors. All components factory assembled in the header, adjusted and tested. No field wiring or operator adjustment shall be required.
1. Performance: Conforms to Miami-Dade County Building Code Compliance Office NOA NO 12-1107.04.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- a. Maximum bi-parting door size of 15 feet 4 inches wide by 8 feet 8 inches high (4674 mm wide by 2642 mm high) and a maximum single slide door size of 7 feet 9-3/16 inches wide by 8 feet 8 inches high (2367 mm wide by 2642 mm high) at an allowable pressure of plus 57 PSF / minus 57 PSF.
  - b. Maximum bi-parting door size of 15 feet 4 inches wide by 7 feet 8 inches high (4674 mm wide by 2337 mm high) and a maximum single slide door size of 7 feet 9-3/16 inches wide by 7 feet 8 inches high (2367 mm wide by 2337 mm high) at an allowable pressure of plus 64 PSF / minus 64 PSF.
2. Sliding Aluminum Doors: Provide door panel(s) with through bolt reinforced construction to sizes indicated. Sliding door panel(s) shall allow "breakout" to the full open position to provide instant egress at any point in the door's movement. Provide with spring return closer(s) to return the panel when broken out for emergency egress. Door(s) and fixed sidelight(s) shall be sized to prevent pinch points at meeting stiles.
- a. Door Type:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) Narrow stile.
  - 2) Medium stile.
- b. Door Operation:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) Single slide
  - 2) Bi-part slide
- c. Traffic Operation:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) For one-way traffic
  - 2) For two-way traffic
- d. Glazing: Doors are field glazed with 1/4 inch (6 mm) Tempered Glass as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops with vinyl bead interior and exterior.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following standard Locking Hardware or optional Automatic Locking Hardware paragraphs and delete the one not required.**

- e. Locking Hardware: Provide with key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) Bi-part sliding doors provided with a two-point Maximum Security deadlock and three flush bolts.
  - 2) Single sliding door provided with a two-point Maximum Security deadlock and one flush bolt.
3. Aluminum Frame and Extrusions: Provide with minimum .125 inch (3 mm) wall thickness in integral structural sections. Frame shall be 4-1/2 inches (114 mm) deep by 1-3/4 inches wide (44 mm) section.

**\*\* NOTE TO SPECIFIER \*\* Select the following optional sidelight paragraph if required for the project and delete if not required. Coordinate sidelight size limitations that are suitable for performance requirements of the opening with the manufacturer.**

4. Aluminum Sidelights: Provide sidelight panel(s) with through bolt reinforced construction to sizes indicated.
- a. Type:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) Narrow stile.
- 2) Medium stile.

- b. Glazing: Sidelight panels are field glazed with 1/4 inch (6 mm) Tempered Glass as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops with vinyl bead interior and exterior.
- 5. Header Case: Aluminum extruded header contains the TORMAX iMotion direct drive system and door mounting components over a span of 15 feet 4 inches (4674 mm) with minimal deflection.
  - a. iMotion 2301 Direct Drive: For use with sliding one single door leaf weighing up to 330 pounds (150 kg) or two bi-parting door leaves weighing up to 286 pounds (130 kg) each.
    - 1) Concealed Mount Header: Extruded aluminum, 8 inches wide by 7-7/8 inches high (203 mm by 200 mm). Provide with extruded aluminum hinged cover allowing it to open approximately flush with the top of the header.
- 6. Door Hanger Wheels:
  - a. Each door is suspended from an overhead track by nylon wheels with steel lifetime lubricated ball bearings. iMotion 2301 requires four 2-1/2 inch (64 mm) diameter wheels and held on track by two 7/8 inch (22 mm) diameter nylon anti-riser wheels. Roller track is field replaceable and isolated in rubber for smooth and quiet operation. Each door supported by a factory adjusted cantilever support pivot assembly that allows doors to swing outward for emergency egress and spring return closed without the need for a lower door pivot support. Door height has an adjustment of 1/2 inch (13 mm).
- 7. Provide with continuous threshold with following profile:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the ones not required.**

- a. Recessed
- b. Surface square/bevel
- c. Surface combination recess/bevel.
- 8. Accessories: Provide with following accessories:
  - a. Weather-stripping: Provide two rows of nylon brush on the bottom of each sliding door panel; pile-fin single wool weather-stripping at the leading edge of the active sliding door; pile-fin wool weather-stripping between the header and sliding door carrier; and nylon brush between the lead stiles of the sidelights and the pivot stiles of sliding doors.

**\*\* NOTE TO SPECIFIER \*\* The following paragraphs are optional. Select those required and delete ones not required.**

- b. Provide with electric lock
  - c. Provide with battery backup
  - d. Provide with door position monitoring
  - e. Provide with I/O module
  - f. Provide with key switch
- D. TORMAX Series TX9300 Inside Slide: System consists of sliding aluminum door(s) and sidelight(s), header, jambs, locking hardware, TORMAX iMotion direct drive system guide threshold track and Delta III Sensors. All components factory assembled in the header, adjusted and tested. No field wiring or operator adjustment shall be required other than connection to job-site power.
- 1. Sliding Aluminum Doors: Provide panel(s) with corner block construction to sizes indicated. Sliding door panels allow "breakout" to the full open position and provides instant egress at any point in the door's movement. Provide with spring return closers to return the panel when broken out for emergency egress. Each door panel includes full-length interlocking extrusion that securely latches the swing out panel(s) to the sliding panel(s) in the fully closed position. Size doors and swing-out sidelights to prevent pinch points at meeting stiles.
    - a. Door Type:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) Narrow stile with intermediate rail.
  - 2) Medium stile with intermediate rail.
- b. Door Operation:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) Single slide
  - 2) Bi-part slide
- c. Traffic Operation:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) For one-way traffic
  - 2) For two-way traffic
- d. Glazing Thickness: Doors are field glazed as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops for the following glass thickness:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) 1/4 inch (6 mm)
- 2) 5/8 inch (16 mm)
- 3) 1 inch (25 mm).

**\*\* NOTE TO SPECIFIER \*\* Select one of the following standard Locking Hardware or optional Automatic Locking Hardware paragraphs and delete the one not required.**

- e. Locking Hardware: Provide with key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) Bi-part sliding doors provided with a two-point Maximum Security deadlock.
  - 2) Single sliding door provided with a single point Maximum Security deadlock.
- f. Automatic Locking Hardware: Limited Access security consists of electric solenoid lock and flush mount concealed vertical rod exit panic hardware. Electric solenoid locking is a 115 VAC fail-secure solenoid with self-contained solid-state electronic control factory installed inside TX9000 header. Solenoid lock is operational in the "Off" and "Exit" mode of operation. Lock is engaged in the "Off" mode of operation and with the unit in the "Exit" mode, solenoid lock retracts upon receipt of an operate signal from an actuating control allowing doors to open. Upon loss of signal the doors will slide closed. Solenoid lock shall self-latch in the closed position, returning system to locked status. During a power interruption, solenoid lock shall remain locked in the "Off" and "Exit" mode of operation, securing the doors in the closed position. Egress is provided with flush mount panic bar allowing doors to breakout. Lock may be reprogrammed at the job-site for fail-safe type operation.
2. Aluminum Frame and Extrusions: Provide with minimum .125 inch (3 mm) wall thickness in integral structural sections. Frame shall be 4-1/2 inches (114 mm) deep by 1-3/4 inches wide (44 mm) section.

**\*\* NOTE TO SPECIFIER \*\* Select the following optional transom paragraph if required for the project and delete if not required.**

3. Transom Frame: Pocket flush glaze gasket system. Bi-part transom packages shall contain one vertical transom tube unless otherwise indicated. Transoms are field glazed as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops for the following glass thickness:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- a. 1/4 inch (6 mm)
- b. 1 inch (25 mm).

**\*\* NOTE TO SPECIFIER \*\* Select the following optional sidelight paragraph if required for the project and delete if not required.**

- 4. Aluminum Sidelights: Provide sidelight panel(s) with corner block construction to sizes indicated. Each panel shall include full-length interlocking extrusion that securely latches the swing out panel(s) to the sliding panel(s) in the fully closed position. Sidelight(s) shall swing out and allow the sliding door(s) to "breakout" to the full open position for instant egress at any point in the door's movement per NFPA 101. Sidelight panel(s) shall contain a hydraulic dampener to control the swing of the panel in the event of a breakaway condition.
  - a. Type:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) Narrow stile with intermediate rail.
- 2) Medium stile with intermediate rail.
- b. Glazing Thickness: Sidelights are field glazed as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops for the following glass thickness:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) 1/4 inch (6 mm)
- 2) 5/8 inch (16 mm)
- 3) 1 inch (25 mm).
- 5. Header Case: Aluminum extruded header contains the TORMAX iMotion direct drive system and door mounting components over a span of 18 feet (5486 mm) with minimal deflection.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following two Direct Drive paragraphs as required for the project and delete the one not required.**

- a. iMotion 2301 Direct Drive: For use with sliding one single door leaf weighing up to 330 pounds (150 kg) or two bi-parting door leaves weighing up to 286 pounds (130 kg) each.
  - 1) Concealed Mount Header: Extruded aluminum, 8 inches wide by 7-3/4 inches high (203 mm by 197 mm). Provide with integral extruded aluminum cover with continuous self-locking hinge allowing it to open approximately flush with the top of the header.
- b. iMotion 2401 Direct Drive: For use with sliding one single door leaf weighing up to 992 pounds (450 kg) or two bi-parting door leaves weighing up to 661 pounds (300 kg) each.
  - 1) Concealed Mount Header: Extruded aluminum, 9-1/2 inches wide by 7-3/4 inches high (241 mm by 197 mm). Provide with integral extruded aluminum cover with continuous self-locking hinge allowing it to open approximately flush with the top of the header.
- 6. Door Hanger Wheels:
  - a. Each door is suspended from an overhead track by nylon wheels with steel lifetime lubricated ball bearings. iMotion 2301 requires four 2-1/2 inch (64 mm) diameter wheels and held on track by two 7/8 inch (22 mm) diameter nylon anti-riser wheels. iMotion 2401 uses eight 2-1/2 inch (64 mm) diameter nylon wheels and held on track by four 7/8 inch (22 mm) diameter nylon anti-riser wheels. Roller track is field replaceable and isolated in rubber for smooth and quiet operation. Each door supported by a factory adjusted cantilever support pivot assembly that allows doors to swing outward for emergency egress and spring return closed without the need for a lower door pivot support. Door

- height has an adjustment of 1/2 inch (13 mm).
7. Guide Threshold Track: Provide aluminum threshold track to guide the slide panel(s) from close to open and open to close. Provide in the following profile.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- a. Recessed continuous full width
- b. Recessed partial threshold (under sidelight panel only)
- c. Surface double bevel continuous full width inside jamb to inside jamb
- d. Surface combination bevel/square continuous full width inside jamb to inside jamb.

8. Accessories: Provide with following accessories:

**\*\* NOTE TO Specifier\*\* Select one of the following two paragraphs and delete one not required.**

- a. Weather-stripping: Provide nylon brush on the bottom of each sliding door panel; two rows of wool pile weather-stripping at the leading edge of the active sliding door and back edge of the sidelight panel; wool pile weather-stripping between the header, sidelight top rail and sliding door carrier; and wool pile weather-stripping between the sidelight lead stile and sliding door rear stile.
- b. Clean Room Seals: Provide two rows of rubber vinyl weather-stripping at the leading edge of the active sliding door and rear stile of the swing out panel; rubber vinyl weather-stripping between the header and sliding door carrier and sidelight top rail; between the lead stile of the sidelight and pivot stile of the sliding door.

**\*\* NOTE TO SPECIFIER \*\* The following paragraphs are optional. Select those required and delete ones not required.**

- c. Provide with electric lock
- d. Provide with battery backup
- e. Provide with door position monitoring
- f. Provide with I/O module
- g. Provide with key switch

- E. TORMAX Series TX9300 Storm Impact Rated Inside Slide: System consists of sliding aluminum doors and sidelights, header, jambs, locking hardware, TORMAX iMotion direct drive system and Delta III Sensors. All components factory assembled in the header, adjusted and tested. No field wiring or operator adjustment required other than connection to job-site power.

1. Performance:

- a. Conforms to Miami-Dade County Building Code Compliance Office NOA NO 12-1107.01 and is rated for Large and Small Missile Impact Resistance. Maximum bi-parting door size is 15 feet 4 inches wide by 8 feet 8 inches high (4674 mm wide by 2642 mm high) and maximum single slide door size is 7 feet 9-3/16 inches wide by 8 feet 8 inches high (2367 mm wide by 2642 mm high) at an allowable pressure of plus 55 PSF / minus 55 PSF.
- b. Maximum allowable air infiltration rate is 1.2 cfm/ft<sup>2</sup> in accordance with ASTM test methods.

2. Sliding Aluminum Doors: Provide door panel(s) with through bolt reinforced construction to sizes indicated. Sliding door panel(s) shall allow "breakout" to the full open position to provide instant egress at any point in the door's movement. Provide with spring return closer(s) to return the panel when broken out for emergency egress. Door(s) and swing-out sidelight(s) shall be sized to prevent pinch points at meeting stiles.

- a. Door Type:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) Narrow stile.
- 2) Medium stile.

b. Door Operation:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) Single slide
- 2) Bi-part slide

c. Traffic Operation:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) For one-way traffic
  - 2) For two-way traffic
- d. Glazing: Doors are field glazed with Oldcastle Glass laminated 3/8 inch (10mm) heat strengthened StormGlass with interior wet glazed with DOW 995 silicone as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops with vinyl bead interior and exterior.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following standard Locking Hardware or optional Automatic Locking Hardware paragraphs and delete the one not required.**

- e. Locking Hardware: Provide with key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) Bi-part sliding doors provided with a two-point Maximum Security deadlock and seven flush bolts.
  - 2) Single sliding door provided with a two-point Maximum Security deadlock and three flush bolts.
3. Aluminum Frame and Extrusions: Provide with minimum .125 inch (3 mm) wall thickness in integral structural sections. Frame shall be 4-1/2 inches (114 mm) deep by 1-3/4 inches wide (44 mm) section.

**\*\* NOTE TO SPECIFIER \*\* Select the following optional sidelight paragraph if required for the project and delete if not required. Coordinate sidelight size limitations that are suitable for performance requirements of the opening with the manufacturer.**

4. Aluminum Sidelights: Provide sidelight panel(s) with through bolt reinforced construction to sizes indicated.
- a. Type:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) Narrow stile.
  - 2) Medium stile.
- b. Glazing: Sidelights are field glazed with Oldcastle Glass laminated 3/8 inch (10 mm) heat strengthened StormGlass with interior wet glazed with DOW 995 silicone as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops with vinyl bead interior and exterior.
5. Header Case: Aluminum extruded header contains the TORMAX iMotion direct drive system and door mounting components over a span of 15 feet 4 inches (4674 mm) with minimal deflection.
- a. iMotion 2301 Direct Drive: For use with sliding one single door leaf weighing up to 330 pounds (150 kg) or two bi-parting door leaves weighing up to 286 pounds (130 kg) each.
- 1) Concealed Mount Header: Extruded aluminum, 8 inches wide by 7-7/8 inches high (203 mm by 200 mm). Provide with extruded aluminum hinged cover allowing it to open approximately flush with the top of the header.
6. Door Hanger Wheels:
- a. Each door is suspended from an overhead track by nylon wheels with steel lifetime lubricated ball bearings. iMotion 2301 requires four 2-1/2 inch (64 mm)

diameter wheels and held on track by two 7/8 inch (22 mm) diameter nylon anti-riser wheels. Roller track is field replaceable and isolated in rubber for smooth and quiet operation. Each door supported by a factory adjusted cantilever support pivot assembly that allows doors to swing outward for emergency egress and spring return closed without the need for a lower door pivot support. Door height has an adjustment of 1/2 inch (13 mm).

7. Provide with continuous threshold jamb to jamb with following profile:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the ones not required.**

- a. Recessed
  - b. Surface square/bevel
  - c. Surface combination recess/bevel.
8. Accessories: Provide with following accessories:
- a. Weather-stripping: Provide one row of nylon brush on the bottom of each sliding door panel; two rows of nylon brush on the bottom of each swing out panel, pile-fin single wool weather-stripping at the leading edge of the active sliding door; pile-fin wool weather-stripping between the header and sliding door carrier; and nylon brush between the lead stiles of the sidelights and the pivot stiles of sliding doors.

**\*\* NOTE TO SPECIFIER \*\* The following paragraphs are optional. Select those required and delete ones not required.**

- b. Provide with electric lock
- c. Provide with battery backup
- d. Provide with door position monitoring
- e. Provide with I/O module
- f. Provide with key switch

- F. TORMAX Series TX9300 Storm Non-Impact Rated Inside Slide: System with reinforcements consists of sliding aluminum doors and sidelights, header, jambs, locking hardware, TORMAX iMotion direct drive system and Delta III Sensors. All components factory assembled in the header, adjusted and tested. No field wiring or operator adjustment required other than connection to job-site power.

1. Performance: Conforms to Miami-Dade County Building Code Compliance Office NOA NO 12-1107.02.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- a. Maximum bi-parting door size of 15 feet 4 inches wide by 8 feet 8 inches high (4674 mm wide by 2642 mm high) and a maximum single slide door size of 7 feet 9-3/16 inches wide by 8 feet 8 inches high (2367 mm wide by 2642 mm high) at an allowable pressure of plus 55 PSF / minus 55 PSF.
  - b. Maximum bi-parting door size of 15 feet 4 inches wide by 7 feet 8 inches high (4674 mm wide by 2337 mm high) and a maximum single slide door size of 7 feet 9-3/16 inches wide by 7 feet 8 inches high (2367 mm wide by 2337 mm high) at an allowable pressure of plus 62 PSF / minus 62 PSF.
2. Sliding Aluminum Doors: Provide door panel(s) with through bolt reinforced construction to sizes indicated. Sliding door panel(s) shall allow "breakout" to the full open position to provide instant egress at any point in the door's movement. Provide with spring return closer(s) to return the panel when broken out for emergency egress. Door(s) and swing-out sidelight(s) shall be sized to prevent pinch points at meeting stiles.
- a. Door Type:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) Narrow stile.
- 2) Medium stile.



b. Door Operation:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) Single slide
- 2) Bi-part slide

c. Traffic Operation:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) For one-way traffic
  - 2) For two-way traffic
- d. Glazing: Doors are field glazed with 1/4 inch (6 mm) tempered glass as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops with vinyl bead interior and exterior.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following standard Locking Hardware or optional Automatic Locking Hardware paragraphs and delete the one not required.**

- e. Locking Hardware: Provide with key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) Bi-part sliding doors provided with a two-point Maximum Security deadlock and seven flush bolts.
  - 2) Single sliding door provided with a two-point Maximum Security deadlock and three flush bolts.
3. Aluminum Frame and Extrusions: Provide with minimum .125 inch (3 mm) wall thickness in integral structural sections. Frame shall be 4-1/2 inches (114 mm) deep by 1-3/4 inches wide (44 mm) section.

**\*\* NOTE TO SPECIFIER \*\* Select the following optional sidelight paragraph if required for the project and delete if not required. Coordinate sidelight size limitations that are suitable for performance requirements of the opening with the manufacturer.**

4. Aluminum Sidelights: Provide sidelight panels with through bolt reinforced construction to sizes indicated.
- a. Type:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) Narrow stile.
  - 2) Medium stile.
- b. Glazing: Sidelights are field glazed with 1/4 inch (6 mm) tempered glass as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops with vinyl bead interior and exterior.
5. Header Case: Aluminum extruded header contains the TORMAX iMotion direct drive system and door mounting components over a span of 15 feet 4 inches (4674 mm) with minimal deflection.
- a. iMotion 2301 Direct Drive: For use with sliding one single door leaf weighing up to 330 pounds (150 kg) or two bi-parting door leaves weighing up to 286 pounds (130 kg) each.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following three paragraphs as required for the project and delete the ones not required.**

- 1) Concealed Mount Header: Extruded aluminum, 8 inches wide by 7-7/8 inches high (203 mm by 200 mm). Provide with extruded aluminum hinged cover allowing it to open approximately flush with the top of the header.
6. Door Hanger Wheels:
- a. Each door is suspended from an overhead track by nylon wheels with steel lifetime lubricated ball bearings. iMotion 2301 requires four 2-1/2 inch (64 mm)

diameter wheels and held on track by two 7/8 inch (22 mm) diameter nylon anti-riser wheels. Roller track is field replaceable and isolated in rubber for smooth and quiet operation. Each door supported by a factory adjusted cantilever support pivot assembly that allows doors to swing outward for emergency egress and spring return closed without the need for a lower door pivot support. Door height has an adjustment of 1/2 inch (13 mm).

7. Provide with continuous threshold jamb to jamb with following profile:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the ones not required.**

- a. Recessed
  - b. Surface double bevel
  - c. Surface combination square/bevel.
8. Accessories: Provide with following accessories:
- a. Weather-stripping: Provide one row nylon brush on the bottom of each sliding door panel; two rows of nylon brush on the bottom of each sidelight panel, pile-fin single wool weather-stripping at the leading edge of the active sliding door; pile-fin wool weather-stripping between the header and sliding door carrier; and nylon brush between the lead stiles of the sidelights and the pivot stiles of sliding doors.

**\*\* NOTE TO SPECIFIER \*\* The following paragraphs are optional. Select those required and delete ones not required.**

- b. Provide with electric lock
  - c. Provide with battery backup
  - d. Provide with door position monitoring
  - e. Provide with I/O module
  - f. Provide with key switch
- G. TORMAX Series TX9420TL Telescoping Trackless Outside Slide: System consists of sliding aluminum door(s) and sidelight(s), header, jambs, locking hardware, aluminum guide. TORMAX iMotion direct drive system, synchronized 2:1 gear reduction unit, actuating and safety controls. All components factory assembled in the header, adjusted and tested. No field wiring or operator adjustment required other than connection to job-site power.
1. Sliding Aluminum Doors: Provide door panel(s) with corner block construction to sizes indicated. The outer fast sliding door panels allows "breakout" to the full open position and provides instant egress at any point in the door's movement. Provide with spring return closers to return the panel when broken out for emergency egress. Size doors and fixed sidelights to prevent pinch points at meeting stiles.
- a. Door Type:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) Narrow stile with intermediate rail.
  - 2) Medium stile with intermediate rail.
- b. Door Operation:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) Single slide
  - 2) Bi-part slide
- c. Traffic Operation:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) For one-way traffic
  - 2) For two-way traffic
- d. Glazing Thickness: Doors are field glazed as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops for the following glass thickness:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) 1/4 inch (6 mm)
- 2) 5/8 inch (16 mm)
- 3) 1 inch (25 mm).

**\*\* NOTE TO SPECIFIER \*\* Select one of the following standard Locking Hardware or optional Automatic Locking Hardware paragraphs and delete the one not required.**

- e. Locking Hardware: Provide with key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) Bi-part sliding doors provided with a two-point Maximum Security deadlock.
- 2) Single sliding door provided with a single point Maximum Security deadlock.
- f. Automatic Locking Hardware: Limited Access security consists of electric solenoid lock and flush mount concealed vertical rod exit panic hardware. Electric solenoid locking is a 115 VAC fail-secure solenoid with self-contained solid-state electronic control factory installed inside TX9000 header. Solenoid lock is operational in the "Off" and "Exit" mode of operation. Lock is engaged in the "Off" mode of operation and with the unit in the "Exit" mode, solenoid lock retracts upon receipt of an operate signal from an actuating control allowing doors to open. Upon loss of signal the doors will slide closed. Solenoid lock shall self-latch in the closed position, returning system to locked status. During a power interruption, solenoid lock shall remain locked in the "Off" and "Exit" mode of operation, securing the doors in the closed position. Egress is provided with flush mount panic bar allowing doors to breakout. Lock may be reprogrammed at the job-site for fail-safe type operation.
2. Aluminum Frame and Extrusions: Provide with minimum .125 inch (3 mm) wall thickness in integral structural sections. Frame shall be 8 inches (204 mm) deep by 2 inches wide (51 mm) section.

**\*\* NOTE TO SPECIFIER \*\* Select the following optional transom paragraph if required for the project and delete if not required.**

3. Aluminum Transom Frame with surface applied glazing: Provide transom to sizes indicated. Bi-part transom packages contains one vertical transom tube unless otherwise indicated.
  - a. Glazing Thickness: Transom(s) are field glazed as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops for the following glass thickness:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) 1/4 inch (6 mm)
- 2) 5/8 inch (16 mm)
- 3) 1 inch (25 mm).
4. Aluminum Sidelights: Provide sidelight panel(s) with corner block construction to sizes indicated.
  - a. Panel Configuration

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) "O" Panel.
- 2) "P" Panel
- b. Type:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) Narrow stile with intermediate rail.
- 2) Medium stile with intermediate rail.
- c. Glazing Thickness: Sidelights are field glazed as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops for the following glass thickness:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) 1/4 inch (6 mm)
  - 2) 5/8 inch (16 mm)
  - 3) 1 inch (25 mm).
5. Header Case: Aluminum extruded header contains the TORMAX iMotion direct drive system and door mounting components over a span of 14 feet (4267 mm) with minimal deflection.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following two Direct Drive paragraphs as required for the project and delete the one not required.**

- a. iMotion 2301 Direct Drive: For use with sliding one single door leaf weighing up to 220 pounds (100 kg) or two bi-parting door leaves weighing up to 176 pounds (80 kg) each.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following two paragraphs as required for the project and delete the ones not required.**

- 1) Concealed Mount Header: Extruded aluminum, 11-5/8 inches wide by 8 inches high (295 mm by 203 mm). Provide with extruded aluminum hinged cover allowing it to open approximately flush with the top of the header.
  - 2) Surface Mount Header: Extruded aluminum, 11-5/8 inches wide by 8 inches high (295 mm by 203 mm). Provide with extruded aluminum hinged cover allowing it to open approximately flush with the top of the header.
- b. iMotion 2401 Direct Drive: For use with sliding one single door leaf weighing up to 265 pounds (120 kg) or two bi-parting door leaves weighing up to 220 pounds (100 kg) each.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following two paragraphs as required for the project and delete the ones not required.**

- 1) Concealed Mount Header: Extruded aluminum, 13 inches wide by 8 inches high (330 mm by 203 mm). Provide with extruded aluminum hinged cover allowing it to open approximately flush with the top of the header.
  - 2) Surface Mount Header: Extruded aluminum, 13 inches wide by 8 inches high (330 mm by 203 mm). Provide with extruded aluminum hinged cover allowing it to open approximately flush with the top of the header.
6. Door Hanger Wheels:
- a. Each door is suspended from an overhead track by nylon wheels with steel lifetime lubricated ball bearings. iMotion 2301 requires four 2-1/2 inch (64 mm) diameter wheels and held on track by two 7/8 inch (22 mm) diameter nylon anti-riser wheels. iMotion 2401 uses eight 2-1/2 inch (64 mm) diameter nylon wheels and held on track by four 7/8 inch (22 mm) diameter nylon anti-riser wheels. Roller track is field replaceable and isolated in rubber for smooth and quiet operation. Each door supported by a factory adjusted cantilever support pivot assembly that allows doors to swing outward for emergency egress and spring return closed without the need for a lower door pivot support. Door height has an adjustment of 1/2 inch (13 mm).
  - b. Synchronized 2:1 Gear Reduction Unit: Sequencing of the outer "fast" panel and "inner" slow panel(s) shall be controlled by the 2:1 gear reduction unit. Unit shall permit both panels to arrive at the full open position together providing. Pulley or cable systems are not permitted.

7. Accessories: Provide with following accessories:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following two paragraphs and delete one one not required.**

- a. Weather-stripping: Provide nylon sweep on the bottom of each sliding door panel; two rows of wool pile weather-stripping at the leading edge of the active sliding door; wool pile weather-stripping between the header and sliding door carrier; and nylon brush between the lead stiles of the sidelights and the pivot stiles of sliding doors.
- b. Clean Room Seals: Provide two rows of rubber vinyl weather-stripping at the leading edge of the active sliding door; rubber vinyl weather-stripping between the header and sliding door carrier; and rubber vinyl weather-stripping between the lead stiles of the sidelights and the pivot stiles of sliding doors.

**\*\* NOTE TO SPECIFIER \*\* The following paragraphs are optional. Select those required and delete ones not required.**

- c. Provide with electric lock
- d. Provide with battery backup
- e. Provide with door position monitoring
- f. Provide with I/O module
- g. Provide with key switch
- h. Provide with continuous threshold jamb to jamb with following profile:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the ones not required.**

- 1) Recessed continuous inside jamb to inside jamb
- 2) Surface double bevel continuous inside jamb to inside jamb
- 3) Surface combination square/bevel continuous inside jamb to inside jamb

- H. TORMAX Series TX9430 Telescoping Inside Slide: System consists of sliding aluminum door(s) and sidelight(s), header, jambs, locking hardware, aluminum guide threshold, TORMAX iMotion direct drive system, synchronized 2:1 gear reduction unit, actuating and safety controls. All components factory assembled in the header, adjusted and tested. No field wiring or operator adjustment required other than connection to job-site power.
  - 1. Sliding Aluminum Doors: Provide door panel(s) with corner block construction to sizes indicated. Outer fast and inner slow sliding door panels allow "breakout" to the full open position and provides instant egress at any point in the door's movement. Provide with spring return closers to return the panel when broken out for emergency egress. Each door panel includes full-length interlocking extrusion that securely latches the swing out panel(s) to the sliding panel(s) in the fully closed position. Size doors and swing-out sidelights to prevent pinch points at meeting stiles.
    - a. Door Type:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) Narrow stile with intermediate rail.
- 2) Medium stile with intermediate rail.
- b. Door Operation:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) Single slide
- 2) Bi-part slide
- c. Traffic Operation:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) For one-way traffic
- 2) For two-way traffic
- d. Glazing Thickness: Doors are field glazed as specified in Section 08 83 13 -

Mirrored Glass Glazing. Provide with security glass stops for the following glass thickness:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) 1/4 inch (6 mm)
- 2) 5/8 inch (16 mm)
- 3) 1 inch (25 mm).

**\*\* NOTE TO SPECIFIER \*\* Select one of the following standard Locking Hardware or optional Automatic Locking Hardware paragraphs and delete the one not required.**

- e. Locking Hardware: Provide with key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) Bi-part sliding doors provided with a two-point Maximum Security deadlock.
  - 2) Single sliding door provided with a single point Maximum Security deadlock.
  - f. Automatic Locking Hardware: Limited Access security consists of electric solenoid lock and flush mount concealed vertical rod exit panic hardware. Electric solenoid locking is a 115 VAC fail-secure solenoid with self-contained solid-state electronic control factory installed inside TX9000 header. Solenoid lock is operational in the "Off" and "Exit" mode of operation. Lock is engaged in the "Off" mode of operation and with the unit in the "Exit" mode, solenoid lock retracts upon receipt of an operate signal from an actuating control allowing doors to open. Upon loss of signal the doors will slide closed. Solenoid lock shall self-latch in the closed position, returning system to locked status. During a power interruption, solenoid lock shall remain locked in the "Off" and "Exit" mode of operation, securing the doors in the closed position. Egress is provided with flush mounted panic bar allowing doors to breakout. Lock may be reprogrammed at the job-site for fail-safe type operation.
2. Aluminum Frame and Extrusions: Provide with minimum .125 inch (3 mm) wall thickness in integral structural sections. Frame shall be 8 inches (204 mm) deep by 2 inches wide (51 mm) section.

**\*\* NOTE TO SPECIFIER \*\* Select the following optional transom paragraph if required for the project and delete if not required.**

3. Transom Frame: Surface applied gasket system. Bipart transom packages shall contain one vertical transom tube unless otherwise indicated.
  - a. Glazing Thickness: Transoms are field glazed as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops for the following glass thickness:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) 1/4 inch (6 mm)
- 2) 5/8 inch (16 mm)
- 3) 1 inch (25 mm).

**\*\* NOTE TO SPECIFIER \*\* Select the following optional sidelight paragraph if required for the project and delete if not required.**

4. Aluminum Sidelights: Provide sidelight panel(s) with corner block construction to sizes indicated. Each panel shall include a full-length interlocking extrusion that securely latches the swing out panel(s) to the sliding panel(s) in the fully closed position. Sidelight(s) shall swing out and allow the sliding door(s) to "breakout" to the full open position for instant egress at any point in the door's movement per NFPA 101. Sidelight panel(s) shall contain a hydraulic dampener to control the swing of the panel in the event of a breakaway condition.

a. Type:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) Narrow stile with intermediate rail.
  - 2) Medium stile with intermediate rail.
- b. Glazing Thickness: Sidelights are field glazed as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops for the following glass thickness:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) 1/4 inch (6 mm)
  - 2) 5/8 inch (16 mm)
  - 3) 1 inch (25 mm).
5. Header Case: Aluminum extruded header contains the TORMAX iMotion direct drive system and door mounting components over a span of 14 feet (4267 mm) with minimal deflection.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following two Direct Drive paragraphs as required for the project and delete the one not required.**

- a. iMotion 2301 Direct Drive: For use with sliding one single door leaf weighing up to 220 pounds (100 kg) or two bi-parting door leaves weighing up to 176 pounds (80 kg) each.
    - 1) Concealed Mount Header: Extruded aluminum, 11-5/8 inches wide by 8 inches high (295 mm by 203 mm). Provide with extruded aluminum hinged cover allowing it to open approximately flush with the top of the header.
  - b. iMotion 2401 Direct Drive: For use with sliding one single door leaf weighing up to 265 pounds (120 kg) or two bi-parting door leaves weighing up to 220 pounds (100 kg) each.
    - 1) Concealed Mount Header: Extruded aluminum, 13 inches wide by 8 inches high (330 mm by 203 mm). Provide with extruded aluminum hinged cover allowing it to open approximately flush with the top of the header.
6. Door Hanger Wheels:
- a. Each door is suspended from an overhead track by nylon wheels with steel lifetime lubricated ball bearings. iMotion 2301 requires four 2-1/2 inch (64 mm) diameter wheels and held on track by two 7/8 inch (22 mm) diameter nylon anti-riser wheels. iMotion 2401 uses eight 2-1/2 inch (64 mm) diameter nylon wheels and held on track by four 7/8 inch (22 mm) diameter nylon anti-riser wheels. Roller track is field replaceable and isolated in rubber for smooth and quiet operation. Each door supported by a factory adjusted cantilever support pivot assembly that allows doors to swing outward for emergency egress and spring return closed without the need for a lower door pivot support. Door height has an adjustment of 1/2 inch (13 mm).
7. Guide Threshold Track: Provide aluminum threshold track to guide the sliding panels from close to open and open to close. Provide with continuous threshold with following profile:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete ones not required.**

- a. Recessed partial threshold, 2/3 opening.
  - b. Recessed continuous full width inside jamb to inside jamb.
  - c. Surface double bevel continuous full width inside jamb to inside jamb.
  - d. Surface combination surface bevel/square continuous full width inside jamb to inside jamb.
8. Synchronized 2:1 Gear Reduction Unit: Sequencing of the outer "fast" panel and "inner" slow panel(s) shall be controlled by the 2:1 gear reduction unit. Unit shall permit both panels to arrive at the full open position together providing. Pulley or cable

systems are not permitted.

9. Accessories: Provide with following accessories:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following two paragraphs and delete one one not required.**

- a. Weather-stripping: Provide nylon sweep on the bottom of each sliding door panel; two rows of wool pile weather-stripping at the leading edge of the active sliding door and the back edge of the sidelight panel; wool pile weather-stripping between the header and sidelight top rail; wool pile weather-stripping between the lead stile of the sidelight an the pivot stile of the of sliding doors.
- b. Clean Room Seals: Provide two rows of rubber vinyl weather-stripping at the leading edge of the active sliding door and rear stile of the swing out panel; rubber vinyl weather-stripping between the header and the sidelight top rails.

**\*\* NOTE TO SPECIFIER \*\* The following paragraphs are optional. Select those required and delete ones not required.**

- c. Provide with electric lock
  - d. Provide with battery backup
  - e. Provide with door position monitoring
  - f. Provide with I/O module
  - g. Provide with key switch
- I. TORMAX Series TX9500AG All Glass Sliding Doors: System consists of sliding All Glass door(s) and fixed sidelight(s) glazed with 1/2 inch thick tempered glass, header, jambs, locking hardware, TORMAX iMotion direct drive system and Delta III Sensors. All components factory assembled in the header, adjusted and tested. No field wiring or operator adjustment required other than connection to job-site power.
- 1. Sliding All Glass Doors: Provide All Glass sliding door units to sizes indicated with corresponding 1/2 inch (12 mm) thick tempered glazing. All Glass sliding door(s) shall "breakout" to the full open position and provides instant egress at any point in the door's movement. . Door(s) shall have top and bottom aluminum door rails. Size All Glass door(s) and fixed sidelights to prevent pinch points. Include a single-point MS deadlock securing the bottom rail to the finished floor. Provide with a key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101..
    - a. Door Operation:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) Single slide
- 2) Bi-part slide
- b. Traffic Operation:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required and delete the one not required.**

- 1) For one-way traffic
- 2) For two-way traffic
- 2. Aluminum Frame and Extrusions: Provide with minimum .125 inch (3 mm) wall thickness in integral structural sections. Frame shall be 4-1/2 inches (114 mm) deep by 1-3/4 inches wide (44 mm) section.

**\*\* NOTE TO SPECIFIER \*\* Select the following optional transom paragraph if required for the project and delete if not required.**

- 3. Transom frame shall be a pocket flush glaze gasket system. Bi-part transom packages shall contain one vertical transom tube unless otherwise indicated.
  - a. Glazing Thickness: Transoms are field glazed as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops for the following glass thickness:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**



- 1) 1/4 inch (6 mm)
- 2) 1 inch (25 mm).

**\*\* NOTE TO SPECIFIER \*\* Select the following optional sidelight paragraph if required for the project and delete if not required.**

4. All Glass Fixed Sidelights: Provide All Glass fixed sidelight units to sizes indicated with corresponding 1/2 inch (12 mm) thick tempered glazing. Sidelights shall have top and bottom aluminum door rails.
  - a. Panel Configuration:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.**

- 1) "O" Panel.
- 2) "P" Panel
5. Header Case: Aluminum extruded header contains the TORMAX iMotion direct drive system and door mounting components over a span of 18 feet (5486 mm) with minimal deflection.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following two Direct Drive paragraphs as required for the project and delete the one not required.**

- a. iMotion 2301 Direct Drive: For use with sliding one single door leaf weighing up to 330 pounds (150 kg) or two bi-parting door leaves weighing up to 286 pounds (130 kg) each.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following three paragraphs as required for the project and delete the ones not required.**

- 1) Concealed Mount Header: Extruded aluminum, 8 inches wide by 7-3/4 inches high (203 mm by 197 mm). Provide with integral extruded aluminum cover with continuous self-locking hinge allowing it to open approximately flush with the top of the header.
- 2) Surface Mount Header: Extruded aluminum, 8 inches wide by 7-3/4 inches high (295 mm by 197 mm). Provide with integral extruded aluminum cover with continuous self-locking hinge allowing it to open approximately flush with the top of the header.
- b. iMotion 2401 Direct Drive: For use with sliding one single door leaf weighing up to 992 pounds (450 kg) or two bi-parting door leaves weighing up to 661 pounds (300 kg) each.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following three paragraphs as required for the project and delete the ones not required.**

- 1) Concealed Mount Header: Extruded aluminum, 9-1/2 inches wide by 7-3/4 inches high (241 mm by 197 mm). Provide with integral extruded aluminum cover with continuous self-locking hinge allowing it to open approximately flush with the top of the header.
- 2) Surface Mount Header: Extruded aluminum, 9-1/2 inches wide by 7-3/4 inches high (241 mm by 197 mm). Provide with integral extruded aluminum cover with continuous self-locking hinge allowing it to open approximately flush with the top of the header.
6. Door Hanger Wheels:
  - a. Each door is suspended from an overhead track by nylon wheels with steel lifetime lubricated ball bearings. iMotion 2301 requires four 2-1/2 inch (64 mm) diameter wheels and held on track by two 7/8 inch (22 mm) diameter nylon anti-riser wheels. iMotion 2401 requires eight 2-1/2 inch (64 mm) diameter wheels and held on track by four 7/8 inch (22 mm) diameter nylon anti-riser wheels. Roller track is field replaceable and isolated in rubber for smooth and quiet operation. Each door supported by a factory adjusted cantilever support pivot assembly that allows doors to swing outward for emergency egress and spring return closed without the need for a lower door pivot support. Door height has an adjustment of 1/2 inch (13 mm).
7. Accessories: Provide with following accessories:

- a. Weather-stripping: Provide nylon sweep on the bottom of each sliding door panel; single row of wool pile weather-stripping at the leading edge of the active sliding door; wool pile weather-stripping between the header and sliding door carrier; and vinyl weather-stripping between the lead edge of the sidelights and the pivot edge of sliding doors..

**\*\* NOTE TO SPECIFIER \*\* The following paragraphs are optional. Select those required and delete ones not required.**

- b. Provide with electric lock
- c. Provide with battery backup
- d. Provide with door position monitoring
- e. Provide with I/O module
- f. Provide with key switch
- g. Provide with continuous threshold jamb to jamb with following profile:
  - 1) Recessed continuous inside jamb to inside jamb
  - 2) Surface double bevel continuous inside jamb to inside jamb
  - 3) Surface combination square/bevel continuous inside jamb to inside jamb

### 2.3 AUTOMATIC SLIDING DOOR DRIVE AND CONTROL SYSTEM

- A. Direct Drive System: TORMAX iMotion Direct Drive System consists of a gearless direct drive AC Synchronous motor with a frequency converter to control door speeds and a self-learning fully programmable iMotion microprocessor control unit. System includes an integrated distance measuring system that shall be protected against external interference to guarantee maximum operational performance. System maintains optimal performance at all times by use of an on-board self-adjusting closed loop fully programmable iMotion microprocessor control system that periodically checks the doors operating limits and makes automatic adjustments to compensate for temperature, wind, dust, stack pressure and other outside factors which may alter systems performance.
  - 1. iMotion Direct Drive Type:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the weight of the doors specified above and delete the one not required.**

- a. iMotion 2301 Direct Drive 1/4 HP motor.
- b. iMotion 2401 Direct Drive .40 HP motor.
- 2. Control Unit: iMotion Microprocessor Control is fully programmable system that monitors doorway holding beams, door position, electric lock position, activators, motor temperature, condition of battery, and emergency off button. Control system continual performs self-diagnostic system checks and displays faults by flashing LED's on an external illuminated seven-segmented function control panel. Torque is factory set as per ANSI A156.10. Control unit and integrated distance measuring system automatically calibrates the opening and closing check positions, and the full open and full closed position of door system. Controller provides four programmable inputs for activators, key switch and mode of operation, four programmable inputs for safety and two auxiliary output signals for door position status, alarm, etc.

**\*\* NOTE TO SPECIFIER \*\* The following two paragraph are optional; Select if required or delete if not required.**

- a. Provide with optional I/O module with four additional inputs and four additional outputs.
- b. Doorway Holding Beams: Doorway holding beams will be factory installed when required by design at 24 inches (610 mm) and 48 inches (1219 mm) from finished floor. When interrupted beams inhibit open door from closing. Beams are disabled in door-closed position. TORMAX iMotion microprocessor control monitors the performance for proper function of each DHB every 20 seconds and before each closing cycle. If DHB fault is detected door(s) will close in a creep speed.
- c. Reverse on Obstruction Open and Close with Safety Search Circuitry: Doors

- stop and recycle open if an obstruction is encountered during the closing cycle. Safety search feature allows doors to cycle close at creep speed. If an obstruction is encountered while opening, doors will stop, reverse direction and close. Safety search feature allows doors to cycle open at creep speed. After obstruction is removed a new calibration is run and doors returned to normal operation. Reverse on obstruction sensitivity is adjustable and programmed from the function control panel.
- d. Door Motion Adjustments: An illuminated seven-segmented function control pane provides for six operating modes, system configuration and auto-diagnostics and the following adjustments; opening and closing speeds, hold open time for full door opening width, hold open time for reduced door opening width, reduced door opening width size and manual operation (free wheeling). iMotion microprocessor controller shall optimize all other motion setting such as, acceleration and braking distances. Control panel provides for auto-diagnostics and is protected against unauthorized manipulation by an integrated access code and/or optional key switch.
  - e. Mode of Operation: Illuminated seven-segmented function control panel provides six modes of operation.
    - 1) OFF - Door opening activators inhibited. If doors are open when activators are inhibited DHB remains functional until doors are fully closed.
    - 2) AUTOMATIC - Standard two way automatic operation (open/time out/close)
    - 3) AUTORED - Doors automatically open at a reduced width.
    - 4) EXIT - (One-Way Traffic) Egress side activation sensor is inhibited when doors are in fully closed position without use of switches and magnets.
    - 5) OPEN - Doors power open and stay open. Door opening width is dependent on previously selected operating mode (AUTO or AUTORED)
    - 6) MANUAL OPERATION - Doors used manually "friction free manual operation" Door activating sensors are inhibited.
3. Delta III Sensor: Unit is selectable for bi-directional or unidirectional detection and consists of five rows of focused active infrared with motion and presence detection. Threshold safety provides by two rows of presence detection closest to face of door. Motion and presence detection performance meets or exceeds ANSI/BHMA A156.10, Sections 8.1.1, 8.1.2, 8.1.3 and 8.3.2.3. Unit has dipswitch selectable rain and snow modes for extreme environments and four dipswitch selectable frequencies to eliminate interference from other infrared devices. Unit provides an extra-wide pattern to cover the door opening and sidelights, with detection for fast approaching traffic from any angle. Response time is less than .3 seconds in both directions with a relay hold time of .5 to 2 seconds. Approach width is adjusted by dipswitch. Shutters adjust the width of the motion presence area. Vertical angle adjustment are plus or minus 15 degrees for approach area and plus 5/ minus 8 degrees for motion/presence area. Supply voltage is 12-24 VAC or 12-30 VDC. Maximum power consumption is 250mA. Cover is black ABS plastic. Size is 11-31/32 inches W (304 mm) by 2-3/4 inches H (70 mm) by 2-19/32 inches D (66 mm).

**\*\* NOTE TO SPECIFIER \*\* Select the finish required from the following paragraphs as required for the project and delete the finishes not required.**

## 2.4 FACTORY FINISH

- A. Provide aluminum finishes in accordance with Aluminum Association Standard AA DAF-45.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the ones not required. Contact the manufacturer for availability of custom finishes and insert finish type and color required.**

1. AA-M12-C22-A31 Clear anodized.
2. AA-M12-C22-A44 Dark Bronze anodized.

3. AA-M12-C22-A44 Black anodized.
4. Custom Anodized Color: \_\_\_\_\_.

B. Painted Aluminum Surfaces: As fabricated mechanical finish, chemically cleaned, and prepared for applied coating; with organic coating.

**\*\* NOTE TO SPECIFIER \*\* Select one of the following 2 paragraphs for the coating finish required and delete the finish not required.**

1. Organic Coating:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs for the organic finish required and delete the one not required.**

- a. Manufacturer's standard power coat finish.
- b. Thermosetting modified acrylic enamel.
2. High Performance Organic Coating:
  - a. Fluoropolymer coating system with minimum 70 percent polyvinylidene fluoride resin.
3. Color:

**\*\* NOTE TO SPECIFIER \*\* Select one of the following color paragraphs and delete those not required.**

- a. As selected from manufacturer's standard range.
- b. Custom color as selected by the Architect.

C. Exposed Operator and Components: Finish

**\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs for the finish required and delete the one not required.**

1. To match door and door hardware finish.
2. As selected from manufacturer's standard range.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify that other trades are complete with their required work before installing the automatic door operating system.
- C. Mounting surfaces shall be plumb, straight and secure; substrates shall be of proper dimension and material; material which door is anchored to shall be capable of supporting the automatic door system and associated loads.
- D. Verify electric power is available and has correct characteristics.
- E. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

### 3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

### 3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Set all units plumb, level and secure.

- C. Provide all fasteners required for installation of the automatic sliding door system.
- D. After repeated operation of the completed installation, inspect door operators and controls for optimum operating condition and safety.
- E. Adjust door equipment for correct function and smooth operation.
- F. Clean all metal surfaces promptly after installation.
- G. Remove temporary protection, clean exposed surfaces.

#### 3.4 FIELD QUALITY CONTROL

- A. Manufacturers representative to verify that installation of doors and controls are in conformance to the manufacturer's recommendations.

#### 3.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION