SECTION 08 42 33
REVOLVING DOOR ENTRANCES

Specifier Note: This specification document shall serve as a guide specification for typical projects where the CJ Rush Series 2500AG and 3500AG "All Glass" manual revolving door entrance will be the basis of design. Specification must be reviewed for applicability on a per project basis. Specification is not appropriate for projects where a wind force and/or impact rating are required. The specifier is directed to select appropriate options included herein. Consult with the local Stanley Access Technologies Territory Manager or authorized distributor, when options, not specified, are required. See last page of this document for a summary of unspecified options.

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

Specifier Note: Revise paragraph below to suit project requirements. Please note the following basic design considerations for each of the standard products.
- **Manual speed controls, floor mounted.**
- **3-Wing and 4-Wings configurations available for all models.**
- **Maximum diameter for "All Glass" models is 96 inch (2438 mm).**

A. This Section includes conventional, circular, revolving entrance doors of the following configurations and operations:
   1. **[Three] [Four]** wing, manual.
   2. "All Glass" enclosures and door wings.

B. Related Sections:
   1. Division 7 Sections for caulking to the extent not specified in this section.
   2. Division 8 Section "Aluminum-Framed Entrances and Storefronts" for entrances furnished separately in Division 8 Section.
   3. Division 8 Section "Door Hardware" for hardware to the extent not specified in this Section.

1.3 REFERENCES

A. General: Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.

B. American National Standards Institute (ANSI) / Builders' Hardware Manufacturers Association (BHMA):
   1. ANSI/BHMA A156.27: Standard for Power and Manual Operated Revolving Pedestrian Doors.
   2. ANSI/BHMA A156.5: Standard for Auxiliary Locks and Associated Products.
   3. ANSI Z97.1: Standard for Safety Glazing Materials Used In Buildings - Safety Performance Specifications And Methods Of Test.

C. Consumer Product Safety Commission (CPSC):

1. CPSC 16 CFR 1201: Safety Standard for Architectural Glazing Materials.

D. Canadian General Standards Board:
1. CAN/CGSB 19.13 M87 – Sealing Compound, One Component, Elastomeric, Chemical curing.
2. CAN/CGSB 12.3 M91 – Flat, Clear float glass.
3. CAN/CGSB 12.1 for tempered and laminate glass.

E. American Society for Testing and Materials (ASTM):
1. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
2. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
3. ASTM A276 - Standard Specification for Stainless Steel Bars and Shapes.

F. American Welding Society (AWS):
1. AWS A5.10/A5.10M - Specification For Bare Aluminum And Aluminum-Alloy Welding Electrodes And Rods.

G. American Association of Automatic Door Manufacturers (AAADM):

H. National Fire Protection Association (NFPA):
1. NFPA 101 – Life Safety Code.
2. NFPA 70 – National Electric Code.

I. National Association of Architectural Metal Manufacturers (NAAMM):
1. Metal Finishes Manual for Architectural and Metal Products.

J. American Architectural Manufacturers Association (AAMA):
1. AAMA 607.1 - Clear Anodic Finishes for Architectural Aluminum.
2. AAMA 611 Voluntary Specification for Anodized Architectural Aluminum.
3. AAMA 701 Voluntary Specification for Pile Weather-stripping and Replaceable Fenestration Weather seals.

1.4 PERFORMANCE REQUIREMENTS

A. General: Provide revolving entrance door assemblies that have the following capability based on testing manufacturer's standard units similar to those indicated for this Project:

B. Operating Range: Minus 20 deg F to plus 130 deg F (Minus 29 deg C to plus 54 deg C).

1.5 SUBMITTALS

A. General: Submit the following in accordance with Conditions of the Contract and Division 1 Specification Sections.

B. Shop Drawings: Include plans, elevations, sections, details, hardware mounting heights, schedule of hardware, and attachments to other work.

C. Closeout Submittals:
1. Owner’s Manual.
2. Warranties.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative, with certificate issued by AAADM, who is trained for installation and maintenance of units required for this Project.

B. Manufacturer Qualifications: A qualified manufacturer having been in revolving door manufacturing for a minimum of 10 years in North America.

C. Manufacturer shall have in place a national service dispatch center providing 24 hours a day, 7 days a week, emergency call back service.

D. Certifications: Revolving door entrance systems shall be certified by the manufacturer to meet performance design criteria in accordance with the following standards:
1. ANSI/BHMA A156.27.
2. NFPA 101.

E. Source Limitations: Obtain revolving entrance door assemblies through one source from a single manufacturer.

F. Product Options: Drawings indicate sizes, profiles, and dimensional requirements of revolving entrance door assemblies and are based on the specific system indicated. Refer to Division 1 Section "Product Requirements."

G. Welding: Qualify procedures and personnel according to AWS D1.2, "Structural Welding Code--Aluminum."

H. Means-of-Egress Requirements: Comply with requirements of authorities having jurisdiction for revolving entrance doors serving as a component of a means of egress, including capability of collapsing into a book-fold position, minimum exit width, maximum turning speed, and maximum force required to collapse door wings.

I. Safety Glass: Category II materials complying with testing requirements in 16 CFR 1201.
1. Subject to compliance with requirements, permanently mark safety glass with certification label of the Safety Glazing Certification Council or another certification agency acceptable to authorities having jurisdiction.

1.7 PROJECT CONDITIONS

A. Field Measurements: General Contractor shall verify openings to receive revolving door assemblies by field measurements before fabrication and indicate measurements on Shop Drawings.

B. Mounting Surfaces: General Contractor shall verify all surfaces to be plumb, straight and secure; substrates to be of proper dimension and material.

C. Other trades: General Contractor shall advise of any inadequate conditions or equipment.

1.8 COORDINATION

A. Templates: Obtain and distribute, to parties involved, templates for doors, frames, and other work specified to be factory prepared for installing revolving entrance doors. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing revolving entrance doors to comply with indicated requirements.

Specifier Note: Retain reference to recessed "enclosure wall base rail" when specifying Series 2500AG. Coordinate with other sections.

B. Coordinate size and location of recesses in floor construction for recessed, **[enclosure wall base rail,]** floor mounted speed controllers, collapsing mechanisms, including anchorages for frames and supports. Furnish setting drawings, templates, and directions for installing anchorages that are to be embedded into concrete. Deliver such items to Project site in time for installation. Concrete, reinforcement, and formwork requirements are specified in Division 3.

1.9 WARRANTY

A. Revolving Entrance Doors shall be free of defects in material and workmanship for a period of one (1) year from the date of substantial completion.

B. During the warranty period the Owner shall engage a factory-trained technician to perform service and affect repairs. A safety inspection shall be performed after each adjustment or repair and a completed inspection form shall be submitted to the Owner.

C. During the warranty period all warranty work, including but not limited to emergency service, shall be performed during normal working hours.

PART 2 - PRODUCTS

2.1 REVOLVING ENTRANCE DOORS

Specifier Note: Retain reference to appropriate "Series". Coordinate with other sections.

A. Manufacturer: Stanley Rush a division of Stanley Access Technologies; Series **[2500AG] [3500AG]** revolving entrance doors with manual speed control.

2.2 MATERIALS

A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
1. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221 (ASTM B 221M).
2. Sheet and Plate: ASTM B 209 (ASTM B 209M).
3. Welding Rods and Bare Electrodes: AWS A5.10/A5.10M.

B. Stainless Steel:
1. Bars and Shapes: ASTM A 276, Type 304.
2. Welding Electrodes and Rods: AWS A5.9.

C. Fasteners: Manufacturer's standard, of same basic metal as fastened metal, unless otherwise indicated.

2.3 REVOLVING ENTRANCE DOOR ASSEMBLIES

A. General: Provide manufacturer's standard revolving entrance door assembly, complete with door wings, enclosure walls, ceiling, hardware, glass, and accessories as indicated.

Specifier Note: Modify paragraph below to suit project requirements. Under "Construction" note the following:
- **Series 2500AG: All glass with no visible door wing stiles and no visible enclosure bottom rails.**
- **Series 3500AG: All glass with visible enclosure bottom rails but no visible door wing stiles.**

Coordinate with other sections.

B. Revolving Entrance Door Assembly:
1. Operation: Manual with floor mounted speed control.
2. Configuration: **[3 Wing] [4 Wing]**
3. Construction: **[All glass with no visible door wing stiles and enclosure bottom rails] [All glass with visible enclosure bottom rails but no visible door wing stiles]**.

2.4 COMPONENTS

A. All-Glass Door Wings: Manufacturer's standard all-glass doors consisting of 1/2 inch (13 mm) thick, ASTM C 1048, CAN/CGSB 12.3 M91, CAN/CGSB 12.1, Kind FT (fully tempered), Condition A (uncoated surfaces), Type I (transparent flat glass), and 1-1/4 inch (32 mm) thick, top and bottom tubular metal rail members.
1. Material: Extruded aluminum.
2. Rail Design: 4 inch (102 mm) nominal height.

B. Center Shaft: Manufacturer's standard solid stainless steel shaft.

Specifier Note: Modify paragraph below to suit project requirements. Select appropriate "Bottom Rail" design
- **Series 2500AG: 1 inch (25 mm), recessed.**
- **Series 3500AG: 4 inch (102 mm), standard surface mounted.**

Coordinate with other sections.

C. Enclosure Walls: Manufacturer's standard 1-1/2 inch (38 mm) thick, glazed framing with tubular members.
1. Configuration: Curved with single-bend glass lites.
2. Material: Extruded aluminum.
3. Glazing: ASTM C 1048; Quality Q3;CAN/CGSB 12.3 M91:CAN/CGSB 12.1; Kind FT float glass, laminated.
   a. Bent Glass: ASTM C 1464; Kind BFT.
   b. Class 1 (clear).
   c. Thickness: 7/16 inch (11mm) laminated glass.
4. **[Bottom Rail Design: 1 inch (25 mm) nominal height, designed for recessed installation; flush with finished floor.]**
5. **[Bottom Rail Design: 4 inch (102 mm) nominal height.]**

D. Ceilings: Manufacturer's standard glass ceiling, ASTM C 1048; Quality Q3; CAN/CGSB 12.1: Kind FT (fully tempered), Condition A (uncoated surfaces), Type I (transparent flat glass) float glass.
1. Class 1 (clear).
2. Thickness: 13/16 inch (21 mm) laminated ceiling glass; one piece.
3. Provide button fasteners and structural silicone sealant to secure ceiling glass to curved glass enclosure walls.

E. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, non-staining, non-bleeding fasteners and accessories compatible with adjacent materials.

F. Signage: Provide signage in accordance with ANSI/BHMA A156.27.

2.5 EQUIPMENT

Specifier Note: Modify manual speed control requirements to suit project. Select Maximum Speed (rpm) based on the following:						
Manual Revolving Doors						
Door Diameter (ft)	**6**	**7**	**8**			
Diameter (mm)	**1829**	**2134**	**2438**			
Speed (rpm):	**12**	**11**	**10**			

A. Manual Speed-Control Unit: Provide a hydraulic floor mounted speed regulator that allows free rotation of door wings up to a predetermined rate of speed and that engages a brake to prevent rapid acceleration of door wings.
   1. Maximum Speed: **[##]** rpm.
   2. Location: Recessed, floor mounted.

B. Panic-Collapsing Mechanism: Manufacturer's standard concealed device that permits all door wings to automatically release from their normal positions and move outward into the book-fold position when pressure is applied to outer stiles. Unit shall allow pressure adjustment from 100 to 180 lbf (445 to 800 N) and shall be set in accordance with ANSI/BHMA A156.27. Systems incorporating visible collapsing mechanism attached to the door wings or between door wings are not permitted.

C. Push Bars: Manufacturer's standard push bars.
   1. Material: 304 Stainless Steel.
   2. Shape: Round bars, 1 inch (25 mm) in diameter.
   3. Mounting: Horizontally mounted, through glass.

D. Locks: Manufacturer's standard deadbolt locks to receive cylinders; minimum of two for each revolving entrance door.
   1. Cylinders: Comply with requirements in Division 8 Section "Door Hardware."
   2. Mounting: Mortised.
   3. Location: Extend bolt from bottom of door wing into base of wall enclosure.

E. Weather Seals: Manufacturer's standard replaceable components as follows:
   1. Top Rail and Vertical Stile: Rubber and felt combination.
   2. Bottom Rail and Shaft: Rubber.

2.6 FABRICATION

A. General: Fabricate revolving entrance door assembly components to designs, sizes, thicknesses, and configurations indicated.
   1. Main Extrusions and Tubing: Minimum wall thickness of 0.125 inch (3.2 mm).

B. Prefabrication: Provide revolving entrance doors as prefabricated assemblies. Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations.
   1. Prefit all hardware at the factory. Remove surface-mounted hardware and carefully package for reinstallation at Project site.
   2. Perform fabrication operations in manner that prevents damage to exposed finish surfaces. For hardware, perform these operations before applying finishes.
   3. Form profiles that are sharp, straight, and free of defects or deformations.
   4. Prepare components to receive concealed fasteners and anchor and connection devices.
   5. Fabricate components with accurately fitted joints with ends coped or mitered to produce hairline joints free of burrs and distortion.

6. Fabricate exterior components to drain water passing joints and condensation and moisture occurring or migrating within the system to the exterior.
7. Provide anchorage and alignment brackets for concealed support of assembly from the building structure.
8. Allow for thermal expansion of exterior units.

C. Welding: Weld components to comply with referenced AWS standard. Weld before finishing components to greatest extent possible. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.

D. Welded Construction: Weld reinforcement firmly in place. Weld corners. Grind and polish welds to produce an invisible joint. Mechanically finish exposed surfaces after fabrication to eliminate surface blemishes caused by welding, rolling, bending, and forming.

E. Mechanically Joined Construction: Joints shall be tightly bolted together.

F. Fasteners: Provide concealed fasteners for interconnecting metal components and for attaching them to other work, unless otherwise indicated.
1. Reinforcement: Reinforce members as required to retain fastener threads.
2. Exposed Fasteners: Do not use exposed fasteners unless unavoidable for assembly of units and for application of hardware. For exposed fasteners, use countersunk Phillips flat-head machine screws finished to match framing members or hardware being fastened, unless otherwise indicated. Equally space exposed fasteners.

G. Hardware: Factory install hardware to greatest extent possible; remove only as required for final finishing operation and for delivery to and installation at Project site. Cut, drill, and tap for factory-installed hardware before applying finishes.
1. Provide sliding weather stripping, mortised into stiles and rails of door wings, to be adjustable and replaceable without dismantling door wings.

H. Doors: Factory fabricated and assembled in profiles indicated. Reinforce as required to support imposed loads and for installing hardware.

I. Enclosure Walls and Ceilings: Fabricate tubular and channel frame assemblies in configuration indicated, with welded or mechanical joints according to manufacturer's standards and as specified. Provide subframes and reinforcement of types indicated or, if not indicated, as required for a complete system to support required loads.

J. Glazing Channels: Provide minimum clearances for thickness and type of glass indicated according to GANA's "Glazing Manual."

K. Factory-Glazed Door Fabrication: Glaze door wings at the factory. Comply with glazing requirements specified.

2.7 ALUMINUM FINISHES

A. General: Comply with NAAMM Metal Finishes Manual for Architectural and Metal Products for recommendations for applying and designing finishes. Finish designations prefixed by AA comply with system established by Aluminum Association for designing finishes.

B. Class II, Clear Anodic Finish: AA-M12C22A31 Mechanical Finish: as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class II, clear coating 0.40 mils minimum complying with AAMA 611-98, and the following:
1. AAMA 607.1

2. Applicator must be fully compliant with all applicable environmental regulations and permits, including wastewater and heavy metal discharge.

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine conditions for compliance with requirements for installation tolerances, and other conditions affecting performance of revolving entrance doors.

B. Examine rough-in for recessed, floor mounted speed-control units to verify actual unit location before equipment installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Do not install damaged components. Fit frame joints to produce joints free of burrs and distortion. Rigidly secure non-movement joints.

B. Recessed, Floor-Mounted Speed-Control and Pivot Bearing Unit: Insert control unit in rough-in floor opening set on level bed of non-shrink, nonmetallic grout. Fill annular space between control unit and sides of recess with non-shrink, nonmetallic grout. Mix and place grout to comply with grout manufacturer's written instructions.

C. Entrances: Install revolving entrance doors plumb and true in alignment with established lines and grades without warp or rack of framing members and doors. Anchor securely in place.
1. Install surface-mounted hardware using concealed fasteners to greatest extent possible.
2. Cut and trim framing during installation only with approval of manufacturer and according to manufacturer's written instructions.
    a. Restore finish and remove and replace members, as directed, where cutting and trimming have impaired strength or appearance.
    b. Do not install members that are warped, bowed, deformed, or otherwise damaged or defaced to such an extent as to impair strength or appearance. Remove and replace members, as directed, that have been damaged during installation.

D. Glazing: Glaze revolving entrance doors in accordance with, the Glass Association of North America (GANA) Glazing Manual, and published recommendations of glass product manufacturer.

E. Sealants: Comply with requirements specified in Division7 Section "Joint Sealants" and CAN/CGSB 19.13 M87.

3.3 FIELD QUALITY CONTROL

A. Testing Services: Factory Trained Installer shall test and inspect each revolving entrance door to determine compliance of installed systems with applicable ANSI standards.

3.4 ADJUSTING

A. Adjust speed control units, controls, and hardware for smooth and safe operation, for tight closure, and complying with requirements in ANSI/BHMA A156.27.

3.5 CLEANING AND PROTECTION

A. Clean glass and aluminum surfaces promptly after installation. Remove excess glazing and sealant compounds, dirt, and other substances. Repair damaged finish to match original finish. Comply with requirements in Division 8 Section “Glazing”, for cleaning and maintaining glass.

END OF SECTION 08 42 33

Available options not specified in this document are summarized as follows:

1. Finish Options (Class 2 Clear Anodized Specified):
    a. Class 1 Clear Anodized
    b. Color anodizing options; “Champagne” to “Black”
    c. Multi-coat Fluoropolymer painted finishes.
    d. Cladding; Stainless Steel, Bronze.
2. Bottom rail options for door wings and enclosure (3500AG only).
3. Patch fittings available for door wings in lieu of bottom rails.
4. Trim ring support for glass ceilings.
5. Adjacent entrances and storefront.
6. Finish options (Standard Options Specified):
    a. Color anodizing options; “Champagne” to “Black”
    b. Multi-coat Fluoropolymer painted finishes.
    c. Cladding; Stainless Steel or Copper Alloy Bronze.
7. Floor grills and mats.
8. Push bar options, material and shape options.
9. Glazing options for door wings and enclosure.

Contact your local CJ Rush Entrance Systems Ltd. representative for more information on specifying the right revolving door entrance for your project.