DIVISION 08 - OPENINGS

1 STANDARD STEEL FRAMES

- 1.1 Manufacturers
  - 1.1.1 Ceco Door Products
  - 1.1.2 Republic Builders Products
  - 1.1.3 Steelcraft
  - 1.1.4 The MPI Group
  - 1.1.5 Mesker
- 1.2 Accessories
  - 1.2.1 Removable Stops - Rolled steel channel shape, mitered corners; prepared for countersink style tamper proof screws
  - 1.2.2 Bituminous Coating - Non-asbestos fibered asphalt emulsion
  - 1.2.3 Primer - Zinc chromate type
  - 1.2.4 Silencers - Resilient rubber fitted into drilled hole at interior door locations only
  - 1.2.5 Weather-stripping - for all exterior door locations only
    - 1.2.5.1 Glazed Lights - Non-removable stops on non-secure side; sizes and configurations as indicated on drawings; Style - Manufacturers standard
- 1.3 Fabrication
  - 1.3.1 Fabricate frames as welded unit

2 STANDARD STEEL DOORS

- 2.1 Manufacturers
  - 2.1.1 Ceco Door Products
  - 2.1.2 Republic Builders Products
  - 2.1.3 Steelcraft
  - 2.1.4 The MPI Group
  - 2.1.5 Mesker
- 2.2 Accessories
  - 2.2.1 Removable Stops - Rolled steel channel shape, mitered corners; prepared for countersink style tamper proof screws
  - 2.2.2 Primer - Zinc chromate type
  - 2.2.3 Provide edge clearances in accordance with ANSI A250, but no less than 1/8” clear
- 2.3 Fabrication
  - 2.3.1 Fabricate doors with hardware reinforcement welded in place

3 FLUSH WOOD DOORS

- 3.1 Manufacturers
  - 3.1.1 Algoma Hardwoods Inc. Model Commercial Wood Doors
  - 3.1.2 Eggers Industries Model Commercial Wood Doors
  - 3.1.3 Haley Bros. Wood Doors
  - 3.1.4 Oshkosh Door Company
- 3.2 Flush Interior Doors: 1 3/4” thick; solid core, five ply construction
- 3.3 Solid Core, Non-Rated, Type SCL Structural Composite Lumber

4 FIBERGLASS DOORS

- 4.1 Manufacturers

4.1.1 Molded Fiberglass Doors
4.1.1.1 ChemPruf Door Company, Ltd.
4.1.1.2 Tiger Door, LLC
4.1.2 Product
4.1.2.1 Fiberglass construction with reinforced core 1 3/4” nominal
4.1.2.2 Core Material - Manufacturer's standard core material for application indicated
4.1.2.3 Construction - Fiberglass faces laminated to core with an applied gel coating, or molded in one piece including gel coating on each side
4.1.2.4 Face Sheet Texture - Smooth
4.1.2.5 Subframe and Reinforcements - Fiberglass pultrusions, polymer foam, stainless steel, or aluminum; no wood
4.1.2.6 Waterproof Integrity
4.1.2.6.1 Provide factory fabricated edges, cut-outs, and hardware preparations of fiberglass reinforced plastic (FRP).
4.1.2.6.2 Provide cut- outs with joints sealed independently of glazing, louver inserts, or trim.
4.1.2.7 Hardware Preparations
4.1.2.7.1 Factory reinforce, machine, and prepare for door hardware including field installed items.
4.1.2.7.2 Provide solid blocking for each item.
4.1.2.7.3 Field cutting, drilling or tapping is not permitted.
4.1.2.7.4 Obtain manufacturer's hardware templates for preparation as necessary.
4.1.3 Accessories
4.1.3.1 Stops for Glazing and Louver
4.1.3.1.1 Fiberglass, unless otherwise indicated or required by fire rating
4.1.3.1.2 Provided by door manufacturer to fit factory made openings, with color and texture to match door
4.1.3.1.3 Fasteners shall maintain waterproof integrity
4.1.3.1.4 Exterior Doors - Provide non-removable stops on exterior side with continuous compression gasket weather seal
4.1.3.1.5 Glazed Openings - Provide removable stops on interior side
4.1.3.1.6 Fire-Rated Doors - Provide stop kit listed by labeling authority
4.1.3.1.7 Opening Sizes and Shapes - As indicated on drawings
4.1.3.2 Louvers for Non-Fire-Rated Doors
4.1.3.2.1 Same materials, construction, finish, and color as door
4.1.3.2.2 Fixed vanes
4.1.3.2.3 45° sloped vanes
4.1.3.3 Louvers for Fire-Rated Doors - UL (DIR) listed and labeled self-closing fire damper louvers

5 SLIDING AUTOMATIC ENTRANCES

5.1 Includes exterior and interior, bi-parting, sliding automatic entrances with integral transoms
5.2 References
5.2.1 Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated.
5.2.2 Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority.

5.2.3 Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.

5.2.4 Underwriters Laboratories (UL)

5.2.4.1 UL 325 Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems

5.2.4.2 UL/cUL 325 Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems (CAN/CSA-C22.2 No. 247)

5.2.5 American National Standards Institute (ANSI) / Builders' Hardware Manufacturers Association (BHMA)

5.2.5.1 ANSI/BHMA A156.10: Standard for Power Operated Pedestrian Doors

5.2.5.2 ANSI/BHMA A156.5: Standard for Auxiliary Locks and Associated Products

5.2.6 American Society for Testing and Materials (ASTM)

5.2.6.1 ASTM B221 Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes

5.2.6.2 ASTM B209 Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate

5.2.7 American Association of Automatic Door Manufacturers (AAADM)

5.2.8 National Fire Protection Association (NFPA)

5.2.8.1 NFPA 101 Life Safety Code

5.2.8.2 NFPA 70 National Electric Code

5.2.9 International Code Council (ICC)

5.2.10 Building Officials and Code Administrators International (BOCA)

5.2.11 International Organization for Standardization (ISO)

5.2.11.1 ISO 9001 Quality Management Systems

5.2.11.2 ISO 14025 Environmental Labels and Declarations - Type III Environmental Declarations - Principles and Procedures

5.2.11.3 ISO14040 Environmental Management - Life Cycle Assessment - Principles and Framework

5.2.11.4 ISO 14044 Environmental Management - Life Cycle Assessment - Requirements and Guidelines

5.2.11.5 ISO 21930 Sustainability in Buildings and Civil Engineering Works - Core Rules For Environmental Product Declarations Of Construction Products And Services

5.2.12 National Association of Architectural Metal Manufacturers (NAAMM) - Metal Finishes Manual for Architectural and Metal Products

5.2.13 American Architectural Manufacturers Association (AAMA)

5.2.13.1 AAMA 606.1 Integral Color Anodic Finishes for Architectural Aluminum

5.2.13.2 AAMA 611 Voluntary Specification for Anodized Architectural Aluminum

5.2.13.3 AAMA 701 Voluntary Specification for Pile Weatherstripping and Replaceable

5.2.14 United Nations Central Product Classification (UNCPC)

5.2.14.1 UNCPC 4212 Product Category Rules for Preparing an Environmental Product Declaration for Power-Operated Pedestrian Doors and Revolving Doors

5.3 Performance Requirements

5.3.1 Provide automatic entrance door assemblies capable of withstanding loads and thermal movements based on testing manufacturer's standard units in assemblies similar to those indicated for this Project

5.3.2 Operating Range - Minus 30°F (Minus 34°C) to 130° F (54°C)

5.3.3 Opening - Force Requirements for Egress Doors: Force shall be adjustable; but, not more than 50 lbf (222 N) required to manually set swinging egress door panel(s) in motion

5.3.4 Closing-Force Requirements - Not more than 30 lbf (133 N) required to prevent door from closing

5.4 Submittals

5.4.1 Shop Drawings - Include plans, elevations, sections, details, hardware mounting heights, and attachments to other work

5.4.2 Color Samples for selection of factory-applied color finishes

5.4.3 Closeout Submittals

5.4.3.1 Owner’s Manual

5.4.3.2 Warranties

5.4.4 Reports - Based on evaluation performed by a qualified agency, for automatic entrance door assemblies

5.4.4.1 Environmental Product Declaration

5.4.4.2 Evaluation Report for compliance with IBC

5.5 Quality Assurance

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

5.5.2 Manufacturer Qualifications - A qualified manufacturer with a manufacturing facility certified under ISO 9001

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

5.5.4 Certifications - Automatic sliding door systems shall be certified by the manufacturer to meet performance design criteria in accordance with the following standards

5.5.4.1 ANSI/BHMA A156.10

5.5.4.2 NFPA 101

5.5.4.3 UL 325 listed

5.5.4.4 IBC

5.5.4.5 BOCA

5.5.5 Environmental Product Declaration (EPD)

5.5.6 Shall be certified by the manufacturer to comply with the following

5.5.6.1 Prepared under Product Category Rule (PCR) UNCPC 4212

5.5.6.2 Conform to ISO standards 14025, 14040, 14044, 21930

5.5.6.3 Life Cycle Assessment Basis: Cradle to Gate, minimum

5.5.7 Source Limitations - Obtain automatic entrance door assemblies through one source from a single manufacturer

5.5.8 Product Options - Drawings shall indicate sizes, profiles, and dimensional requirements of automatic entrance door assemblies and are based on the specific system indicated

5.5.9 Electrical Components, Devices, and Accessories - Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use

5.5.10 Emergency-Exit Door Requirements - Comply with requirements of authorities having jurisdiction for automatic entrances serving as a required means of egress

5.6 Automatic Entrances Products

5.6.1 Manufacturer - Stanley Access Technologies; Dura-Glide™ 3000 Series sliding automatic entrances or prior approved equal product

5.7 Automatic Entrance Door Assemblies

5.7.1 Provide manufacturer's standard automatic entrance door assemblies including doors, sidelights, framing, headers, carrier assemblies, roller tracks, door operators, activation and safety devices, and accessories required for a complete installation.

5.7.2 Sliding Automatic Bi-Parting Entrances

5.7.2.1 Configuration - Two sliding leaves and two full sidelight; bi- parting

5.7.2.2 Traffic Pattern - Two-way

5.7.2.3 Emergency Breakaway Capability - Sliding leaves and sidelights

5.7.2.4 Mounting - Between jambs

5.8 Door Operators

5.8.1 Provide door operators of size recommended by manufacturer for door size, weight, and movement; for condition of exposure; and for long-term, operation under normal traffic load for type of occupancy indicated

5.8.2 Electromechanical Operators - Self-contained overhead unit powered by a minimum of 1/4 horsepower, permanent-magnet DC motor with gear reduction drive, microprocessor controller and encoder

5.8.2.1 Operation - Power opening and power closing

5.8.2.2 Features

5.8.2.2.1 Adjustable opening and closing speeds

5.8.2.2.2 Adjustable open check and close check speeds

5.8.2.2.3 Adjustable hold-open time between 0 and 30 seconds

5.8.2.2.4 Obstruction recycle: On/Off switch to control electric power to operator

5.8.2.2.5 Energy conservation switch that reduces door-opening width

5.8.2.2.6 Closed loop speed control with active braking and acceleration

5.8.2.2.7 Adjustable obstruction recycle time delay

5.8.2.2.8 Self-adjusting stop position

5.8.2.2.9 Self-adjusting closing compression force

5.8.2.2.10 Onboard sensor power supply

5.8.2.2.11 Onboard sensor monitoring

5.8.2.2.12 Optional Switch to open/Switch to close operation

5.8.2.2.13 Fire alarm interface, configurable to safely open or close the entrance on signal from fire alarm system

5.8.2.3 Mounting - Concealed

5.8.2.4 Drive System - Synchronous belt type

5.9 Electrical Controls

5.9.1 Electrical Control System shall include a microprocessor controller and a high-resolution position encoder

5.9.1.1 Encoder shall monitor revolutions of the operator shaft and send signals to microprocessor controller to define door position and speed

5.9.1.2 The high-resolution encoder shall have a resolution of not less than 1024 counts per revolution

5.9.1.3 Systems utilizing external magnets and magnetic switches are not acceptable

5.9.1.4 Shall include a 24 VDC auxiliary output rated at 1 amp

5.9.2 Performance Data - The microprocessor shall collect, and store performance data as follows

5.9.2.1 Counter - A non-resettable counter to track operating cycles.

5.9.2.2 Event Reporting - Unit shall include non-volatile event and error recording including number of occurrences of events and errors, and cycle count of most recent events and errors

5.9.2.3 LED Display - Display presenting the current operating state of the controller

5.9.3 Controller Protection - The microprocessor controller shall incorporate the following features to ensure trouble free operation

5.9.3.1 Automatic Reset Upon Power Up

5.9.3.2 Main Fuse Protection

5.9.3.3 Electronic Surge Protection

5.9.3.4 Internal Power Supply Protection

5.9.3.5 Resettable sensor supply fuse protection

5.9.3.6 Motor Protection, over-current protection

5.9.4 Soft Start/Stop - A “soft-start”, “soft-stop” motor driving circuit shall be provided for smooth normal opening and recycling

5.9.5 Obstruction Recycle

5.9.5.1 Provide system to recycle the sliding panels when an obstruction is encountered during the closing cycle

5.9.5.2 If an obstruction is detected, the system shall search for that object on the next closing cycle by reducing door closing speed prior to the previously encountered obstruction location, and will continue to close in check speed until doors are fully closed, at which time the doors will reset to normal speed

5.9.5.3 If obstruction is encountered again, the door will come to a full stop

5.9.5.4 The doors shall remain stopped until obstruction is removed and operate signal is given, resetting the door to normal operation

5.9.6 Programmable Controller - Microprocessor controller shall be field programmable.

5.9.6.1 The following parameters may be adjusted

5.9.6.1.1 Operating speeds and forces as required to meet specified ANSI/BHMA standard

5.9.6.1.2 Adjustable and variable features specified

5.9.6.1.3 Reduced opening position

5.9.6.1.4 Fail Safe/Secure control

5.9.6.2 Manual programming shall be available through local interface which has a two-digit display with a selection control including three push buttons

5.10 Aluminum Finishes

5.10.1 Comply with NAAMM Metal Finishes Manual for Architectural and Metal Products for recommendations for applying and designing finishes

5.10.2 Finish designations prefixed by AA comply with system established by Aluminum Association for designing finishes

5.10.3 Class I, Color Anodic Finish - AA-M12C22A42/A44 Mechanical Finish - as fabricated; Chemical Finish - etched, medium matte; Anodic Coating - Architectural Class I, integrally colored or electrolytically deposited color coating 0.70 mils minimum complying with AAMA 611-98, and the following

5.10.3.1 Color - Dark Bronze

5.10.3.2 AAMA 606.1

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

5.10.4 Installation

5.10.4.1 General

5.10.4.1.1 Do not install damaged components

5.10.4.1.2 Fit frame joints to produce joints free of burrs and distortion

5.10.4.1.3 Rigidly secure non-movement joints

5.10.4.2 Entrances

5.10.4.2.1 Install automatic entrances plumb and true in alignment with established lines and grades without warp or rack of framing members and doors. Anchor securely in place

5.10.4.2.2 Install surface-mounted hardware using concealed fasteners to greatest extent possible

5.10.4.2.3 Set headers, carrier assemblies, tracks, operating brackets, and guides level and true to location with anchorage for permanent support

5.10.4.3 Door Operators

5.10.4.3.1 Connect door operators to electrical power distribution system

5.10.4.4 Glazing

5.10.4.4.1 Performed in accordance with sliding automatic entrance manufacturer's instructions

5.11 Field Quality Control

5.11.1 Testing Services - Factory Trained Installer shall test and inspect each automatic entrance door to determine compliance of installed systems with applicable ANSI standards.

5.12 Cleaning and Protection

5.13 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.

5.14 Warranty

5.14.1 Automatic Entrances shall be free of defects in material and workmanship for a period of one (1) year from the date of substantial completion

5.14.2 During the warranty period the Owner shall engage a factory-trained technician to perform service and affect repairs

5.14.3 A safety inspection shall be performed after each adjustment or repair and a completed inspection form shall be submitted to the Owner

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

6 DOOR HARDWARE

6.1 General

6.1.1 It is the intent of this document to provide guidelines for the Architect's specifications section 08710, finish hardware

6.1.2 Products detailed herein are the standard of quality to be used on new projects and renovations or additions to existing buildings

6.1.3 Coordinate all products to meet the requirements of life safety codes, ADA requirements, and applicable building codes

6.1.4 All hardware for aluminum doors shall be specified and provided in this section

6.2 Quality Assurance

6.2.1 Supplier

6.2.1.1 The supplier must be a factory authorized distributor of all materials to be furnished

6.2.1.2 The supplier must have an office and warehouse within a one hundred fifty-mile radius of the project to properly service the projects

6.2.2 Installer

6.2.2.1 Firm with three (3) years' experience in the installation of commercial or institutional grade hardware

6.2.2.2 Hardware must be installed accurately, applied securely, and adjusted properly

6.2.2.3 Install the hardware only with fasteners furnished by the manufacturer. Warranties and/or labels will be void on material installed with unauthorized fasteners

6.2.2.4 The installer will clean and make final adjustments of each item of hardware to insure proper operation and function. Adjust door control devices for final operation after air handling equipment is operational

6.3 Field Quality Control

6.3.1 The finish hardware distributor shall provide the field quality control services as listed

6.3.2 Furnish a complete report to the Architect and General Contractor after each field visit

6.3.3 Prior to installation

6.3.3.1 Visit the project site with the General Contractor and installer and check the hardware for any shortages or shipment damage

6.3.3.2 Instruct the installer on any special conditions and the adjustments required for the proper installation of the finish hardware

6.3.4 After Installation

6.3.4.1 Check the project for the proper application of the finish hardware according to the approved hardware schedule

6.3.4.2 Check that all items, including door control devices, have been properly adjusted and are operating properly

6.3.4.3 Notify the Architect of any hardware not installed in accordance with the approved hardware schedule or properly adjusted

6.3.4.4 If hardware is found that is not installed correctly or properly adjusted, the General Contractor must adjust, repair, or replace, as directed by the Architect

6.3.4.5 Instruct the owner personnel in the proper operation, adjustments, and maintenance of the finish hardware

6.3.5 One Year Review - If requested by the Architect, the hardware distributor and hardware installer shall visit the project and make any final adjustments to the hardware as required

6.4 Finish Hardware Schedule

6.4.1 Prior to approval of the finish hardware schedule, the Architect shall provide a copy to the University's Office of Planning, Design and Construction (PDC) for review - Attention: PDC Project Manager

6.4.2 Finish hardware schedule shall include the following

6.4.2.1 A complete list of all manufacturers used

6.4.2.2 A complete list of all abbreviations used

6.4.2.3 A complete list and description of all finishes used, including base metals

6.4.2.4 A complete set of cut sheets illustrating all products proposed

6.4.2.5 Hardware heading are to be arranged to correspond with specification hardware sets

6.4.2.6 Hardware heading shall include

6.4.2.6.1 A complete description of the opening, including "LSU" room numbers, to be provided by Facility Services and Architect’s room numbers

6.4.2.6.2 Key set numbers (See keying requirements)

6.4.2.6.3 A complete description of the products, including finishes

6.5 Key Cylinders and Keying Requirements

6.5.1 All key cylinders shall be provided from one of the following manufacturers who have established proprietary Great Grand Master Key Systems for the Baton Rouge campus.

6.5.1.1 All new buildings shall be keyed to a new Building Grand Master

6.5.1.2 All existing buildings shall be keyed to that building’s existing Grand Master Key

6.5.1.3 Acceptable manufacturers for key cylinders. No exceptions will be considered.

6.5.1.3.1 Medeco - All New facilities or complete rekey projects

6.5.1.3.2 Best Lock Co. - All New facilities or complete rekey projects

6.5.1.3.3 Corbin Russwin - Only use when matching existing facility master key systems

6.5.1.3.4 Sargent - Only use when matching existing facility master key systems

6.5.1.3.5 Yale Security - Only use when matching existing facility master key systems

6.5.2 All key cylinders shall be provided with removable cores

6.5.2.1 Cores shall be removable by a control key without removing cylinder from locking device

6.5.3 Construction cores shall be provided to the contractor by the supplier for use during construction

6.5.4 At completion of the project, the General Contractor shall remove the construction cores and install the permanent cores

6.5.5 All permanent keys shall be delivered to LSU's Lock Shop. The Lock Shop will then transmit master control keys to contractor for use on project

6.5.5.1 Two copies of the manufacturer's bitting list shall be included

6.5.5.2 The bitting list shall include the following

6.5.5.2.1 LSU room number (This information will be provided by LSU PDC)

6.5.5.2.2 Key set number

6.5.6 All permanent keys shall be delivered in individual envelopes and tagged as follows

6.5.6.1 Hardware heading number

6.5.6.2 LSU room number and location description

6.5.6.3 Architects room numbers

6.5.6.4 Key change number

6.5.6.5 Number of keys enclosed

6.5.7 All keys and permanent cores shall be stamped as follows

6.5.7.1 Key bows; manufacturers name and key set number only

6.5.7.2 Removable cores; stamp key set number on back of core

6.5.8 Key Quantities

6.5.8.1 Construction Masters (10)

6.5.8.2 Control Keys (3)

6.5.8.3 Change keys per cylinder (2 each)

6.5.8.4 Master and grand master keys (12 each)

6.5.8.5 Key blanks for each cylinder (4 each)

6.5.9 Exception to the above keying requirements

6.5.9.1 When 50 percent or more of a building's hardware is being replaced, provisions must be made to provide new key cylinders for the existing locking devices that are not being replaced

6.5.10 All questions regarding keying shall be directed to

6.5.10.1 LSU's Security Manager, LSU Office of Facility Services, Lock Shop 225-578-7474

6.5.10.1.1 Furnish templates for door and frame preparation to manufacturers and fabricators of products requiring internal reinforcement for door hardware

6.5.11 Provide five extra cylinders and cores of each key way used for LSU inventory

6.5.12 Keying Requirements Meeting

6.5.12.1 This meeting shall be set up by the Architect and coordinated with LSU a minimum of 3 months prior to scheduled completion date

6.5.12.2 Attendance Required

6.5.12.2.1 Contractor

6.5.12.2.2 Owner

6.5.12.2.3 Architect

6.5.12.2.4 Installer's Architectural Hardware Consultant (AHC)

6.5.12.2.5 Hardware Installer

6.5.12.2.6 User Agency

6.5.12.3 Agenda

6.5.12.3.1 Establish keying requirements

6.5.12.3.2 Verify locksets and locking hardware are functionally correct for project requirements

6.5.12.3.3 Verify that keying and programming complies with project requirements

6.5.12.3.4 Incorporate "Keying Requirements Meeting" decisions into keying submittal upon review of door hardware keying system including, but not limited to, the following

6.5.12.4 Access control requirements

6.5.12.5 Key control system requirements

6.5.12.6 Schematic diagram of preliminary key system

6.5.12.7 Flow of traffic and extent of security required

6.5.12.7.1 Record minutes and distribute copies within two days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made

6.5.12.7.2 Deliver established keying requirements to manufacturers

6.6 Acceptable Manufacturers and Products

6.6.1 Continuous Geared Hinges

6.6.1.1 Acceptable manufacturers, models and applications

6.6.1.1.1 Bommer: FS--HD1

6.6.1.1.2 Hager; 780-210HD1

6.6.1.1.3 McKinney; MCK22HD1

6.6.1.1.4 Pemko; FS-HD1

6.6.1.1.5 Stanley; 655HD

6.6.1.2 Provide for all exterior high frequency doors and all exterior doors equipped with exit devices

6.6.1.3 Provide for retrofit work where new doors are being installed into existing frames

6.6.1.4 Provide heavy duty full surface types

6.6.1.5 Finish - Satin aluminum or Dark Bronze for all Storefront or Brown/Bronze Painted Doors

6.6.1.6 Finish to match door, not Hardware

6.6.2 Butt Hinges

6.6.2.1 Acceptable manufacturers, models and applications

6.6.2.1.1 Bommer; BB5005, BB5004, BB5001, & BB5000

6.6.2.1.2 Hager; BB1199, BB1168, BB1191, & BB1279

6.6.2.1.3 McKinney; T4A3386, T4A3786, TA2314, & TA2714

6.6.2.1.4 Stanley; FBB199, FBB168, FBB191 & FBB179

6.6.2.2 Provide anti-friction types for all butt hinges

6.6.2.3 Provide non removable pins for all out swing exterior doors

6.6.2.4 Provide stainless steel types for all restroom doors, toilet doors, and all other areas which may require non-ferrous material

6.6.2.5 Provide heavy weight types for all interior doors equipped with exit devices and all other high frequency doors, such as entrance doors to classrooms, labs, libraries, cafeterias, auditoriums, restrooms, and all doors over 36" wide

6.6.2.6 Size - 4.5" x 4.5" for doors up to 36" wide; 5.0" x 4.5" for all doors over 36" wide

6.6.2.7 Finish

6.6.2.7.1 Satin stainless steel for non-ferrous types

6.6.2.7.2 Satin chrome plated for steel base types

6.6.3 Exterior Security Exit Devices

6.6.3.1 Acceptable manufacturers, models and applications

6.6.3.1.1 Corbin Russwin; ED5200S x M52 series (SecureBolt)

6.6.3.1.2 Yale Security; 7155 series (SquareBolt)

6.6.3.1.3 Precision; Apex 2100

6.6.3.1.4 Von Duprin; CD-xp98 Series

6.6.3.1.5 Provide heavy duty ANSI grade 1, type 28 types

6.6.3.1.6 Provide for all exterior doors requiring exit devices

6.6.3.1.7 Provide devices with direct throw latch bolts; Pullman latches are not acceptable

6.6.3.1.8 Concealed or surface vertical rod devices are not acceptable

6.6.3.1.9 Provide key cylinder dogging, no tool

6.6.3.1.10 Provide offset pull exterior trim

6.6.3.1.11 Finish - Satin stainless steel

6.6.4 Interior Standard and Fire Exit Devices

6.6.4.1 Acceptable manufacturers, models and applications

6.6.4.1.1 Corbin Russwin; ED5200 series

6.6.4.1.2 Sargent; 8800 series

6.6.4.1.3 Von Duprin; 98 series

6.6.4.1.4 Yale Security; 7100 series

6.6.4.1.5 Precision; Apex 2100 series

6.6.4.2 Provide heavy duty, ANSI grade 1 devices

6.6.4.3 Provide all non-rated devices with inside key cylinder dogging feature

6.6.4.4 Provide offset pulls for all high frequency non-rated doors

6.6.4.5 Provide lever trim for all fire rated doors

6.6.4.6 Mount all devices with thru-bolts at all mounting points

6.6.4.7 Concealed vertical rod types are not acceptable

6.6.4.8 Surface applied vertical rod types less bottom rods are acceptable only for use on double egress doors, as required by codes

6.6.4.9 Finish - Satin stainless steel

6.6.5 Removable Mullions

6.6.5.1 Acceptable manufacturers, models and applications

6.6.5.1.1 Precision KR822, KR822F

6.6.5.1.2 Corbin Russwin; 710KM, 707AKM, or 808

6.6.5.1.3 Sargent; L980, 12-L980, or 650A

6.6.5.1.4 Von Duprin; KR4954, KR9954, or 656

6.6.5.1.5 Yale Security; KRM100, KRM100F, or M300

6.6.5.2 Provide key removable types

6.6.5.3 Provide wall mounting brackets to store mullion when out of the opening

6.6.5.4 Provide removable mullions with stabilizers

6.6.5.5 Finish

6.6.5.6 Primed for painting, steel mullions

6.6.5.7 Satin aluminum, for aluminum mullions

6.6.6 Lock Sets

6.6.6.1 No Cylindrical Locks unless given consent by Facility Services Acceptable manufacturers, products and applications

6.6.6.2 Acceptable manufacturers, models and applications

6.6.6.2.1 Best; 45H series x 3J lever trim

6.6.6.2.2 Corbin Russwin; ML2000 series x LSM lever trim

6.6.6.2.3 Sargent; 8200 series x LS1J lever trim
6.6.6.2.4 Yale Security; 8800FL series x CRxCN lever trim
6.6.6.2.5 Schlage; L9000 Series x 03N lever trim
6.6.6.2.6 Provide heavy duty ANSI grade 1 mortise types
6.6.6.2.7 Provide key cylinders, as required. See keying requirements.
6.6.6.2.8 Provide lever trim that meets ADA requirement
6.6.6.2.9 Provide cast levers x wrought escutcheon trim, thru-bolted to door
6.6.6.2.10 Provide wrought box strikes for all locks
6.6.6.2.11 All locks shall be free for egress from inside room at all times
6.6.6.2.12 Finish - Satin chrome plated

6.6.7 Door Closers
6.6.7.1 Acceptable manufacturers, models and applications
6.6.7.1.1 Corbin Russwin; DC6000 series
6.6.7.1.2 LCN; 4040 series
6.6.7.1.3 Sargent; 351 series
6.6.7.1.4 Yale Security; 4400 series
6.6.7.1.5 Stanley QDC111
6.6.7.1.6 Provide top jamb mounted closers for exterior swing out doors
6.6.7.1.7 Provide top jamb mounted closers for interior swing out corridor doors
6.6.7.1.8 Provide regular arm mounted closers for all other doors
6.6.7.1.9 Parallel arm closers are allowed in situations where limit arms are needed as well as situations where door swings into a hallway
6.6.7.1.10 Provide heavy duty barrier free & field adjustable types
6.6.7.1.11 Provide closers UL listed for fire rated doors.
6.6.7.1.12 Provide mounting brackets or plates, as required by opening and mounting conditions
6.6.7.1.13 All closers shall be equipped with adjustable back check
6.6.7.1.14 Hold open closers shall be held to a minimum
6.6.7.1.15 Fusible link closers are not acceptable
6.6.7.1.16 All closers shall comply with ADA requirements
6.6.7.1.17 Provide sex nut & bolt mounting to doors
6.6.7.1.18 Finish - Satin aluminum painted

6.6.8 Overhead Holders and Stops
6.6.8.1 Acceptable manufacturers, models and applications
6.6.8.1.1 ABH 9000 Series
6.6.8.1.2 Glynn Johnson; 900 series
6.6.8.1.3 Rixson; 9 series
6.6.8.1.4 Sargent; 590 series
6.6.8.1.5 Provide heavy duty, surface applied types
6.6.8.1.6 Provide thru bolted to doors
6.6.8.1.7 Provide size as required by opening conditions
6.6.8.1.8 Finish - Satin stainless steel, for exterior doors; Satin chrome plated, for interior doors

6.6.9 Door Trim and Auxiliary Items

6.6.9.1 Acceptable manufacturers, models and applications

6.6.9.1.1 Hager; 30S, 33G, 190S, 269F, 259F

6.6.9.1.2 Ives; 8200, 8302, 8500, FS18S

6.6.9.1.3 Rockwood; 70, 107x70, K1050, 466, 480

6.6.9.1.4 Trimco; 1001, 1017B, K0050, 1209, 1214

6.6.9.1.5 All plates .050 thick

6.6.9.1.6 Push plates; 6" x 16", door stile permitting

6.6.9.1.7 Door pulls; 8" pull mounted on 4" x 16" plate

6.6.9.1.8 Thru bolt mounting for all pulls

6.6.9.1.9 Kick plates; 12" high

6.6.9.1.10 Mop plates; 4" high

6.6.9.1.11 Armor plates; 34"

6.6.9.1.12 Provide heavy duty door stops

6.6.9.1.13 Finishes - Satin stainless steel / push, pulls, & protection plates

6.6.9.1.14 Black rubber / heavy duty floor stops

6.6.9.1.15 Grey rubber / door silencers

6.6.9.1.16 Primed for paint / coordinators

6.6.9.1.17 Satin chrome plated / all other items

6.6.10 Door Seals and Thresholds

6.6.10.1 Acceptable manufacturers, models and applications

6.6.10.1.1 Hager; 896SS, 891SV, 627S, 421S, 520SV

6.6.10.1.2 McKinney; MCK316AS, MCK303AV, MCK1715A, MCK171A, MCK2005AV

6.6.10.1.3 National Guard; 137NA, 135NA, 425E, 896N

6.6.10.1.4 Pemko; 316AS, 303AV, 1715A, 171A, 2005AV

6.6.10.1.5 Fire & smoke seals to meet positive pressure requirements

6.6.10.1.6 All seals to be screw in types. Adhesive mounted types are not acceptable.

6.6.10.1.7 Heavy duty thresholds for all corridor entrance doors and all other heavy traffic doors

6.6.10.1.8 Thresholds must meet handicap requirements

6.6.10.1.9 Finishes - Slip resistant finish, similar to Pemko’s "PemKote" or Hager's "Sure Step" for thresholds; Satin aluminum for all other items

6.6.11 Electric Hardware

6.6.11.1 General requirements for electric hardware

6.6.11.2 All electric hardware shall be pre-wired at the factory with standardized connector

6.6.11.3 Devices used for Card Access - These Devices should use low in rush voltage to open and hold open (under 1.2 amps)

6.6.11.4 Coordinate with door and frame manufacturers for wiring harness

6.6.11.5 Wiring Elevations - Provide, as part of the hardware schedule, a door and frame elevation that shows location of each item of electric hardware, including a written description of operation

6.6.11.6 Wiring Diagrams - Provide point-to-point wiring instructions with all electric hardware

6.6.11.7 Coordinate all electrical hardware with access control supplier (Johnson Controls) specified in other section

6.6.12 Single Use Restroom Hardware

6.6.12.1 Hardware - Assa Abloy Yale 8800 Series Grade 1; Mortise Lock Catalog

6.6.12.2 Finish - 626

6.6.12.3 Lockset - CR CN 8822FL

6.6.12.4 Trim Retrofit - CN 88-260

6.6.12.5 Cylinder - Best Small Format

6.6.12.6 Lock Core - Medeco 7 Pin 33N70000006-26-BDU

6.7 Facility Management System (Access Control Controllers)

6.7.1 The Access Control capabilities shall include, but are not be limited to

6.7.1.1 Access controllers terminal interfaces, card readers, conduit, wire and accessories required to provide a complete operational system

6.7.2 The equipment and installation shall comply with the current applicable provisions of the following standards

6.7.2.1 National Electric Code

6.7.2.2 Local and state building codes

6.7.2.3 All requirements of the local authority having jurisdiction

6.7.2.4 Underwriters Laboratories, Inc.

6.7.2.5 The system and all components shall be listed by Underwriters Laboratories, Inc., for use in Access Control Systems under the following standards as applicable. UL 294 Access Control System Unit

6.7.3 All access controller panels shall be housed in a cabinet designed for mounting directly to a wall or vertical surface

6.7.4 Its doors shall contain a key lock

6.7.5 The integrated intelligent access controller shall provide or be capable of expansion to the following capacities

6.7.5.1 Card Readers - 16

6.7.5.2 Card Capacity - 16,000

6.7.5.3 Alarm Points - 128

6.7.5.4 Access Levels - Unlimited

6.7.5.5 Time Zones - 8

6.7.5.6 Password Levels - 2

6.7.5.7 Card Issue Levels - 8

6.7.5.8 Reports - 5

6.7.6 The system shall be capable of storing 16,000 cards per intelligent access control panel

6.7.7 The system shall be capable of storing a maximum of 640,000 card transactions on a single operator workstation file

6.7.8 A user definable limit shall cause the operator interface to warn the operator when the number of transactions in the file has exceeded that limit

6.7.9 The intelligent central access controller shall be able to interface directly into the same Operator Workstation used for the HVAC and fire functions. Please refer to the Operator Interface section of this specification for more detail

6.7.10 The entire database of the intelligent central access controller shall be definable at the Operator Workstation

6.7.11 The operator interface shall allow the operator to perform commands including, but not limited to, the following

6.7.11.1 Override All Doors to the Access Mode of Operation

6.7.11.2 Release Overrides

6.7.11.3 Command Door to Access Mode

6.7.11.4 Command Door to Secure Mode

6.7.11.5 Command Door to Temporarily Open

6.7.11.6 Silence Local Alarms

6.7.12 System operators shall, from the operator interface, be able to manually unlock controlled doors for a variable time period, or program an event to automatically unlock and lock doors during a particular time period

6.7.13 Reports

6.7.13.1 Shall be generated automatically or manually, and directed to either OWS displays, printers, or disk files

6.7.13.2 At minimum, the system shall allow the user to easily obtain the following

6.7.13.2.1 List of all cardholders

6.7.13.2.2 List of all transactions currently available

6.7.14 The system shall provide on-line query generation which can be used to obtain specific information from the above logs based on user defined parameters. These queries, once defined, may be stored and used again when needed

6.7.15 The system shall be provided complete with all equipment and documentation necessary to allow an operator to independently perform the following additional functions

6.7.15.1 Add/Delete/Modify Access Control Panels

6.7.15.2 Add/Delete/Modify Smart Terminal Interfaces/Readers

6.7.15.3 Add/Delete/Modify Cardholder User Data

6.7.16 Graphical programming shall be used to define processes whereby other FMS functions may be controlled by a valid card transaction

6.7.17 Up to 64 cardholder groups shall be definable per intelligent access control panel connected

6.7.18 The Access Controller shall communicate with the Smart Terminal Units of the system

6.7.19 Failure of a Smart Terminal Unit shall be detected and reported to the printer connected to the OWS

6.7.20 When a card is read at a reader, the card number and issue level are sent to the controller. If the reader is equipped with a keypad, a 4 or 5 digit PIN number may be entered and verified at the reader. The controller, which shall be programmed to control access by both location and time periods, shall verify all information and immediately grant or deny access and record the transaction including date, time and location. The option of having the transactions printed as they occur shall also be provided. If access is granted, the controller shall send a signal to the appropriate reader to activate the door lock. If access is denied, the transaction will be recorded and/or printed identifying the reason.

6.7.21 The system shall be capable of supporting Magnetic Stripe card to be the existing LSU ID Card. The system shall be designed to maintain access control through two levels of degradation. The intelligent terminal controller shall continue to provide, using its local data base, a full level of access control upon loss of communications with the Facilities Management System. Upon loss of communications with the intelligent terminal controller, the readers shall continue to control access using verification of the facility code in the card and, if used, a PIN entry.

6.7.22 The system shall be able to designate certain readers to control only entry or exit, and shall require a cardholder using a card at an entry reader to subsequently use it at an exit reader before again entering the secured area. This shall prevent “passing back” a card to an unauthorized second user

6.7.23 Individual cards may be programmed for special privileges to override access level and time zone parameters

6.7.24 The controller shall provide an interface which permits data to be stored on a tape cartridge.

6.7.25 In the event of a power loss, a backup battery shall provide full controller operation for up to eight hours, and memory retention up to 24 hours

6.7.26 Cards shall be programmed into the controller individually; additions, deletions, and changes shall be completed rapidly

6.7.27 Alarms may be programmed by the user for suppression during specific time periods. The intelligent terminal controller shall provide an output for annunciation of alarms

6.7.28 The intelligent terminal controller shall provide a buffer to store 1000 historical transactions if communication is lost with the Facilities Management System

6.7.29 The card readers shall consist of an intelligent terminal interface and magnetic stripe readers.

6.7.30 The intelligent terminal interface shall control the electric door lock, visual access indicators, access and shunt timers, and an auxiliary access input

6.7.31 The intelligent terminal interface shall monitor door status via a door or lock contact. An alarm shall be reported when the door is not closed and locked, and when the door is forced open

6.7.32 All readers (except proximity) shall provide a red and green visual indicator for granted and denied access, and tamper detection capability

6.7.33 Readers shall be surface or flush mounted. Outdoor readers shall be supplied with special weather-resistant housings. Where required, readers shall be configured with integral 16-position keypads.

6.7.34 Readers with 16-position keypads shall be able to verify PIN codes even during loss of communications with the intelligent terminal controller. If the readers lose communications with intelligent terminal controller, they shall be able to determine authorized access based on the facility code and PIN, if used, which shall be verified at the reader

6.7.35 Proximity readers that are capable of proper operation without the need of standoffs when mounted to walls containing substantial amounts of metal construction shall be available.

6.7.36 Magnetic Stripe Cards for this security system shall be constructed of top quality, durable, and resilient PVC laminated with a magnetic stripe of low coercivity material designed for use with magnetic stripe readers

6.7.37 Each shall be encoded with a facility code unique to the security system, an individual card number, and one of eight issue level numbers. At the system owner's request, the manufacturer shall provide the equipment necessary for the system owner to encode magnetic stripe cards for use only in the owner's system

6.7.38 Standard cards shall be available with minimal printing and permanently marked with respective card number and reference code. The standard LSU ID card is to be used

6.7.39 The manufacturer shall provide custom print cards, in accordance to the manufacturer's guidelines, to meet the needs specified by the system owner

6.7.40 All Card Access Control parts shall comply with the following

6.7.40.1 Normally Secure Electronic Strikes are the preferred hardware method for card access doors and must be compatible with access system and wiring harness

6.7.40.2 Magnetic Lock: No magnetic locks are to be used unless authorized by LSU and State Fire Marshal Office

6.7.40.3 Crash Bar and Cable: Provide double pole, double throw with release button

6.7.40.4 Door contacts - Provide door status contacts that mount to surface of door and frame.

6.7.40.5 Provide 2" x 2" button for egress where called for

6.7.40.6 Power Supply - Provide 12/24-volt power supplies with independent load switches and battery backup

6.8 Warranties

6.8.1 Manufacturers' standard warranties to cover defects in materials and workmanship

6.8.1.1 Warranty period to begin at date of substantial completion

6.8.1.2 Copies of all warranties shall be provided to the University at completion of the project

6.8.2 Minimum ten years

6.8.2.1 Heavy duty surface mounted door closers

6.8.3 Minimum five years

6.8.3.1 Heavy duty grade one mortise locks

6.8.3.2 Heavy duty grade one exit devices

6.8.4 Minimum one year

6.8.4.1 Electrical products

6.8.4.2 All other items not listed above

7 AUTOMATIC DOOR OPERATORS

7.1 General

7.1.1 Products detailed herein are the standard of quality to be used on new projects and renovations or additions to existing buildings

7.1.2 Coordinate all products to meet the requirements of life safety codes, ADA requirements, and applicable building codes

7.1.3 All hardware for automatic door operators shall be specified and provided in this section.

7.2 Quality Assurance

7.2.1 Installer Qualifications

7.2.1.1 Manufacturer's authorized representative, with certificate issued by AAADM, who is trained for installation and maintenance of units required for the project

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

7.2.1.3 Certifications; Automatic door operators shall be certified by the manufacturer to meet performance design criteria in accordance with the following standards: ANSI/BHMA A156.19, NFPA 101, UL 3225 Listed, UL 10C Listed, IBC and BOCA

7.2.1.4 Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use

7.2.2 Field Quality Control

7.2.2.1 Field Measurements: Verify openings to receive automatic door operators by field measurements before fabrication and indicate measurements on Shop Drawings

7.2.2.2 Verify all surfaces to be plumb, straight and secure; substrates to be of proper dimension and material

7.3 Warranties

7.3.1 Manufacturers' standard warranties to cover defects in materials and workmanship

7.3.1.1 Warranty period to begin at date of substantial completion

7.3.1.2 Copies of all warranties shall be provided to the University at completion of the project

7.3.1.3 Automatic door operators shall be free of defects in material and workmanship for a period of one (1) year

7.3.1.4 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

7.4 Manufacturer

7.4.1 Stanley Access Technologies; M-Force Series automatic door operator or prior approved equal product

7.5 Components

7.5.1 Header Case; Header case shall not exceed 6" (152 mm) square in section and shall be fabricated from extruded aluminum with structurally integrated end caps, designed to conceal door operators and controls. The operator shall be sealed against dust, dirt, and corrosion within the header case. Access to the operator and electronic control box shall be provided by a full- length removable cover, edge rabbetted to the header to ensure a flush fit. Removable cover shall be secured to prevent unauthorized access

7.5.1.1 Door Arms - A combination of door arms and linkage shall provide positive control of door through entire swing; units shall permit use of butt hung, center pivot, and offset pivot-hung doors

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

7.5.1.3 Signage - Provide signage in accordance with ANSI/BHMA A156.19

7.6 Swinging Door Operators

7.6.1 General

7.6.1.1 Provide door operators of size recommended by manufacturer for door size, weight, and movement; for condition of exposure; and for long-term, maintenance-free operation under normal traffic load for type of occupancy indicated

7.6.2 Electromechanical Operators - Self-contained unit powered by a minimum 3/16 horsepower, permanent-magnet DC motor; through a high torque reduction gear system

7.6.2.1 Operation - Power opening and spring closing

7.6.2.2 Operator Type - Low energy; readily convertible to full energy; no tools required to change type

7.6.2.3 Handing - Non-handed; no tools required to change handing

7.6.2.4 Capacity - Rated for door panels weighing up to 700 lb (318 kg)

7.6.2.5 Mounting - Visible

7.6.2.6 Features

7.6.2.6.1 Adjustable opening and closing speeds

7.6.2.6.2 Adjustable opening and closing force

7.6.2.6.3 Adjustable back-check

7.6.2.6.4 Adjustable hold-open time between 0 and 30 seconds

7.6.2.6.5 Reverse on obstruction

7.6.2.6.6 Time delay for electric lock integration

7.6.2.6.7 Force compensation and closed loop speed control with active braking and acceleration

7.6.2.6.8 Power Close

7.6.2.6.9 Slam Protection

7.6.2.6.10 Power Assist

7.6.2.6.11 Lock Release

7.6.2.6.12 Stall Sensor Ignore

7.6.2.6.13 Electronic Coordination

7.6.2.6.14 Optional Switch to open/Switch to close operation

7.6.2.6.15 Optional push to activate operation

7.6.2.6.16 Fire alarm interface, configurable to safely open or close doors on signal from fire alarm system

7.6.2.7 Field Adjustable Spring Closing Operation - The operator shall close the door by spring energy employing the motor, as a dynamic brake to provide closing speed control. The closing spring shall be a helical compression spring adjustable for positive closing action. The spring shall be adjustable, without removing the operator from the header, to accommodate a wide range of field conditions

7.6.2.8 Independent Adjustable Closing and Latching Speed Control: The operator shall employ a rheostat module to allow for independent field adjustment of closing and latching speeds using the motor as a dynamic brake

7.6.2.9 Field Adjustable Open Stop: The operator shall provide a field adjustable open stop to accommodate opening angles from 80° to 135° without the need for additional components

7.6.2.10 Consistent Cycle - The operator shall deliver an even, consistent open manual push force across the entire transition from door fully closed to door fully open. Additionally, the force shall be field adjustable to accommodate a wide range of on-site conditions

7.6.2.11 Quiet Performance: The operator shall be designed to output audible noise ratios less than or equal to 50dba

7.6.2.12 Manual Use: The operator shall function as a manual door closer in the direction of swing with or without electrical power. The operator shall deliver an even, consistent open force across the entire transition from door fully closed to door fully open

7.6.2.13 Electrical service to door operators shall be provided under Division 26 Electrical. Minimum service to be 120 VAC, 5 amps

7.7 Electrical Controls

7.7.1 Electrical Control System - Electrical control system shall include a microprocessor controller and a high-resolution position encoder. The encoder shall monitor revolutions of the operator shaft and send signals to microprocessor controller to define door position and speed

7.7.1.1 The high-resolution encoder shall have a resolution of not less than 1024 counts per revolution. Systems utilizing external magnets and magnetic switches are not acceptable.

7.7.1.2 Electrical control system shall include a 24 VDC auxiliary output rated at 1 amp.

7.7.2 Performance Data - The microprocessor shall collect, and store performance data as follows

7.7.2.1 Counter - A non-resettable counter to track operating cycles

7.7.2.2 Event Reporting: Unit shall include non-volatile event and error recording including number of occurrences of events and errors, and cycle count of most recent events and errors

7.7.2.3 LED Display - Display presenting the current operating state of the controller

7.7.3 Controller Protection - The microprocessor controller shall incorporate the following features to ensure trouble free operation

7.7.3.1 Automatic Reset Upon Power Up

7.7.3.2 Main Fuse Protection

7.7.3.3 Electronic Surge Protection

7.7.3.4 Internal Power Supply Protection

7.7.3.5 Resettable sensor supply fuse protection

7.7.3.6 Motor Protection, over-current protection

7.7.4 Power Close - When enabled, engages the operator to close a door that does not close completely at the end of a cycle

7.7.5 Force Compensation - Utilizing the closed loop speed control, the operator shall maintain constant opening and closing speeds when subjected to excessive outside forces, such as positive or negative stack pressures

7.7.6 Slam Protection - The operators speed control system prevents door from slamming at the full open or full closed position

7.7.7 Power Assist - Operator mode that lowers opening forces when the door is used manually. Power assist is active only while pushing or pulling the door. The door will close when an opening force is no longer applied

7.7.8 Lock Release - On doors with electric locking, operator shall include a closing function to release tension on a latch mechanism prior to opening the door

7.7.9 Stall Sensor Ignore: Adjustable setting to disable swing side safety sensors at a specific angle

7.7.10 Electronic Coordination: On pairs of doors, allows independent timing of opening and closing of each leaf as required for astragal coordination

7.7.11 Soft Start/Stop - A “soft-start” “soft-stop” motor driving circuit shall be provided for smooth normal opening and recycling

7.7.12 Obstruction Recycle - Provide system to recycle the swinging panels when an obstruction is encountered during the closing cycle

7.7.13 Programmable Controller: Microprocessor controller shall be field programmable.

7.7.13.1 The following parameters may be adjusted

7.7.13.1.1 Operating speeds and forces as required to meet specified ANSI/BHMA standard

7.7.13.1.2 Adjustable and variable features specified

7.7.13.2 Manual programming shall be available through local interface which has a two-digit display with a selection control including three push buttons

7.7.14 Emergency Breakout Switch - A cam actuated emergency breakout switch shall be provided to disconnect power to the motor when an in-swinging door is manually pushed in the emergency out direction. The operator will then automatically reset, and power will be resumed

7.7.15 Control Switch

7.7.15.1 Shall be equipped with a three-position function switch to control the operation of the door

7.7.15.2 Shall provide three modes of operation - Automatic, Off and Hold-Open

7.7.16 Power Switch

7.7.17 Shall be equipped with a two position On/Off switch to control power to the door

7.8 Activation Devices

7.8.1 Push Plates

7.8.1.1 Provide 4 3/4”(121 mm) square push plates with UL recognized SPDT switch

7.8.1.2 Face plates and mounting studs shall be stainless steel

7.8.1.3 Face plates shall be engraved with the international symbol for accessibility and “Push To Open”

7.8.1.4 Shall be wall mounted in single or double gang electrical boxes and hardwired to door operator controls

7.8.1.5 Shall be similar or better than PBS Series 10PBS1 as manufactured by BEA

7.9 Aluminum Finishes

7.9.1 Comply with NAAMM Metal Finishes Manual for Architectural and Metal Products for recommendations for applying and designing finishes

7.9.2 Finish designations prefixed by AA comply with system established by Aluminum Association for designing finishes

7.9.3 Class I, Color Anodic Finish - AA-M12C22A42/A44

7.9.4 Mechanical Finish - as fabricated

7.9.5 Chemical Finish - etched, medium matte

7.9.6 Anodic Coating - Architectural Class I, integrally colored or electrolytically deposited color coating 0.70 mils minimum complying with AAMA 611-98

7.9.7 Color - Dark Bronze

7.9.8 AAMA 606.1

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

7.10 Installation

7.10.1 Do not install damaged components

7.10.2 Fit joints to produce hairline joints free of burrs and distortion

7.10.3 Rigidly secure non-movement joints

7.10.4 Mounting - Install automatic door operators/headers plumb and true in alignment with established lines and grades; Anchor securely in place

7.10.4.1 Install surface-mounted hardware using concealed fasteners to greatest extent possible.

7.10.4.2 Set headers, arms and linkages level and true to location with anchorage for permanent support

7.10.5 Door Operators - Connect door operators to electrical power distribution system as specified in Division 26 Sections

7.11 Field Quality Control

7.11.1 Testing Services - Factory Trained Installer shall test and inspect each swinging automatic entrance door to determine compliance of installed systems with applicable ANSI standards

7.11.2 Adjust door operators, controls, and hardware for smooth and safe operation, for tight closure, and complying with requirements in specified ANSI/BHMA operating standard by AAADM Certified Technician

7.11.3 Clean surfaces promptly after installation

7.11.4 Remove excess sealant compounds, dirt, and other substances

7.11.5 Repair damaged finish to match original finish