



Automatic Door Selection Guide

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Automatic Door Selection Guide

General: The members of AAADM manufacture an assortment of automatic pedestrian doors. This selection guide is intended to acquaint architects, specification writers and owners with the various products available and the process involved in selecting an appropriate [yet cost efficient] automatic door.

Door Types Available

- **Automatic Sliding Doors:**

Automatic sliding doors are available in single slide, bi-part slide and telescopic slide configurations. As a rule, these are furnished as complete packages and can be surface mounted or concealed overhead (in-transom mounted). Slide doors typically include: an operator, header, track, carrier wheels, sliding door panel(s), sidelite panel(s), jambs, lock and activation / safety system. Other options are also available.

- **Automatic Swinging Doors:**

Automatic full-power swinging door operators can either be supplied as complete packages, or simply as the operator with header and drive arm. They can be mounted as overhead-concealed operators for direct drive applications or surface mounted for push and pull applications. Swing door products are designed for single, pair or double egress applications.

When supplied as a complete package, this will generally include: an operator, header, door panel(s), jambs, finger protection [if applicable], lock, guide rails and activation / safety system. When existing door panels are used, then an operator with header and drive arm are supplied - along with an appropriate activation and safety system.

In all instances, guide rails may be required to protect the swing area of the door panel. If the doors swing against a natural protective barrier such as a wall, then perhaps the guide rails can be eliminated.

- **Automatic Folding Doors:**

Automatic folding doors are furnished as complete packages. This includes: the operator, header, pivot hardware, door panels, guide rails, lock and activation / safety system. They are offered in either single fold or bi-fold configurations.

- **Automatic Doors not Covered by ANSI A156.10:**

AAADM has focused on automatic doors that are addressed by the ANSI A156.10 standard. Two other types of automatic doors that are addressed in different standards are

Low Energy Swinging Doors

Automatic low-energy swinging door operators are designed for applications requiring ADA compliance or user convenience. They are available in single, pair or double egress configurations. This type of operator is usually activated with push plates. The unit includes the header, operator and drive arm.

Revolving Doors:

Automatic and manual revolving doors are manufactured as complete packages. In general, they are offered in four-wing, three-wing and two-wing designs. Larger diameter four-wing and three-wing doors can also offer center core displays. Two-wing doors typically have perimeter displays that serve as integral night shields when the door is closed and locked. Revolving doors can be center or perimeter driven – depending on size and design. As a rule, manual and smaller diameter automatic doors have center shaft drive systems. Larger diameter automatic doors have perimeter drive systems. Smaller diameter doors are typically offered in a security version for controlled access.

Uses

In general terms, the various types of automatic doors are used in the following ways:

Sliding Doors:

The automatic sliding door is a very efficient way to accommodate simultaneous two-way traffic flow. It can also be used very effectively in controlling directional traffic situations such as one door for entry-traffic and another door for exit-traffic.

Swinging Doors:

The automatic swinging door is normally used for directional, or one-way pedestrian traffic. Typically, one door is used for ingress and another for egress. The industry does not endorse the use of automatic swinging doors for two-way traffic applications. Exceptions are made; however, the application must be well planned in consultation with experienced designers with perhaps a remote switch / push plate to activate the door well in advance of an approach.

It is recommended that the automatic door manufacturer supply the aluminum swing door panel when an automatic operator is used. This ensures the door is constructed to accommodate the demand of an automatic application. Supplying an operator for use on existing doors is generally limited to applications where there is a preference to have the doors closely match adjacent entrances in the area, or for use on fire labeled doors.

Folding Doors:

Folding doors are considered to be a space saving solution where the opening width is restricted to approximately six (6) to eight (8) feet and there is a desire to move traffic in both directions through a single opening. Single fold doors are best suited for directional or one-way traffic, whereas bi-fold doors are best suited for two-way traffic.

Doors not Covered by ANSI A156.10

Low-Energy:

Low-energy swinging doors are a low cost solution that provide accessibility for physically challenged people - while allowing ordinary pedestrian traffic to use the door as a normal manual swinging door. It is common for low-energy operators to be applied to existing doors in order to meet ADA requirements.

Revolving Doors:

Manual and automatic revolving doors can be used for high-traffic applications requiring simultaneous entry and exit, controlled access, or can be used as an air lock to help manage energy expenses.

Door Construction

Door panels are constructed from extruded aluminum profiles, framed or cold formed steel, stainless steel, fiberglass or other materials as required. The majority of doors furnished by AAADM members are constructed with aluminum profiles and safety glass - which offers good visibility through the door panel. Steel doors are typically provided for fire labeled applications. Stainless steel, both formed and clad, provides a superior non-corrosive finish, but will add expense and weight.

Door Finish

Industry standard anodic finishes are comprised of: 204-R1 class II clear and 313-R1 class I dark bronze. Other finishes are available, including special anodize and paint. Cladding materials such as stainless steel and muntz metal (brass) are available in #4 brushed and #7 polished finishes.

Code Compliance

AAADM has focused its efforts in the training of inspectors for field compliance to ANSI A156.10. It is important for user safety that the specification writer or owner selects equipment that complies with these standards. It is recommended that your automatic pedestrian door comply with the following codes or standards. Consult individual manufacturers for verification of compliance.

- ANSI A156.10 Standard for Power Operated Pedestrian Doors encompasses automatic sliding, swinging and folding doors.

- ANSI A156.19 Standard for Power Assist and Low Energy Power Operated Doors encompasses doors that operate at a slow speed with low power and can be remotely activated by a push switch / plate or other remote activation device.
- ANSI A156.27 Standard for Revolving Doors.
- ANSI A117.1 or ADA compliance for accessibility.
- Code approval is required to meet the means of egress, ADA and fire codes.
- UL or ETL Listing, or equivalent, is a requirement.
- Wind load and impact testing are becoming a common part of the code requirements in Dade County Florida, as well as other coastal areas.

Intended Uses for Automatic Doors:

- High Traffic: Applications where more than two (2) persons per minute are moving through an opening, cart traffic such as grocery stores, or doors weighing up to approximately 150 pounds per moving panel.
- Medium Traffic: Applications that have one (1) person per minute moving through the opening and lighter weight doors usually weighing less than 125 pounds per moving panel.
- Low traffic: Applications where one (1) person every five minutes moves through the opening and for doors weighing less than 125 pounds per moving panel.
- Fire and smoke door applications.
- ADA compliance.
- Energy conservation.
- Security, directional or card access pedestrian control.

The width of the specification object will determine the net opening required. ADA regulations call for a minimum net opening of 32" (the two panels of a bi-part sliding door comply with this standard).

Door weight has an affect on the operator's speed, durability and performance. Heavier doors (over 160 lbs.) require a slower closing speed as prescribed in ANSI A156.10. Note: 1/4" glass weighs about 3.00 pounds per square foot, whereas insulated glazing using 1/4" glass doubles that weight. Standard sized door panels that breakaway can weigh from 65 to 85 pounds per panel without glass.

Certification Compliance

- UL, ETL or equivalent mark on the product
- Certification of compliance with ANSI A156.10 by a certified AAADM inspector after the door is installed and commissioned.

Wind Load

- Test by a nationally recognized laboratory.

Quality Assurance

- Manufacturers and installer warranty.

Installation

- By an approved factory authorized representative.
- By an AAADM certified inspector

Installation Conditions

- The floor should be level across the entire width of the automatic door opening.
- Minimally, the floor should be flat and level at least five feet in front of the breakout or swing area of the door(s). A slight slope away from the door [for drainage purposes] is acceptable and recommended.
- The rough opening should be approximately one-inch (1”) larger than the overall door package width and one-half inch ($\frac{1}{2}$) larger in height.
- Each door will require an electrical supply on a separate 120volts, 60 hertz, 15-amp circuit.

Design Life

Design life will vary depending upon application, use, environmental conditions, maintenance, etc. Contact the manufacturer to obtain information regarding design life for your application. Replacement parts should always be from the original equipment manufacturer.

Vestibule Depth

The distance between doors should be a minimum of 9 feet. The preferred depth is 12 feet, in order to develop some form of a vestibule air lock and provide an adequate detection zone for the motion sensors.

Door Sizes

The following dimensions may vary slightly from one AAADM manufacturer to the other. This depends on jamb size, glass stop size, stile dimensions and general design. For the most part, the overall size versus net slide opening will typically fall within the ranges shown.

Automatic Sliding Doors				
	Door Type	Overall Width	Net Slide Opening	Net Breakout Opening
1	<i>single slide packages</i>	7'-0"	36"	39"
2		8'-0"	42"	45"
3		8'-6"	45"	48"
4		9'-0"	48"	51"
5	<i>bi-part slide packages</i>	9'-0"	42"	49"
6		10'-0"	48"	55"
7		12'-0"	60"	67"
8		14'-0"	72"	79"
9		16'-0"	84"	91"
<p>NOTE: The above net breakout opening dimensions are calculated for fixed sidelite designs only. For full breakout doors, one can assume approximately 90% of the overall width dimension will be available for a net breakout opening. Medium and wide stile doors will cause the net slide opening dimension to decrease in order to accommodate finger protection.</p>				

Automatic Swinging Doors				
	Door Type	Overall Width	OHC Net Swing Panel	Butt Hinge
1	<i>single doors</i>	3'-0"	31 ½"	34 ¼"
2		3'-6"	37 ½"	40 ¼"
3		4'-0"	43 ½"	46 ¼"
4	<i>pair of doors</i>	6'-0"	66 ½"	68 ½"
5		7'-0"	78 ½"	80 ½"
6		8'-0"	90 ½"	92 ½"
<p>NOTE: The above OHC dimensions are based upon an overhead concealed (ohc) / center pivoted door design with 1 ¾ wide jambs and 1" finger protection. the net swing panel is defined as the area between the jambs and is considered the actual net door width. for butt hinge doors, the overall door width less the door panel thickness (1 ¾) is used to calculate the available net opening.</p>				

Automatic Folding Doors				
	Door Type	Overall Width	Net Fold Opening	Net Breakout
1	<i>single fold doors</i>	3'-8"	32"	35"
2		4'-0"	38"	41"
3		5'-0"	43"	46"
3	<i>bi-fold doors</i>	6'-0"	52"	59"
4		7'-0"	64"	71"
5		8'-0"	76"	83"
<p>NOTE: All door heights should provide a net opening of 7'-0". Add door height of 7'-0" plus manufacturer's header height to obtain the overall height.</p>				