# First Impressions Matter

WELCOME





CONTINUING EDUCATION AIA

Continuing Education

- Official AIA Provider

- Credited Course
  - ✓ 1 Learning Hour Unit
  - ✓ 1 Health, Safety & Welfare

*Note: Questions related to specific materials, methods and services will be addressed at the conclusion of this presentation*

## Continuing Education System (CES)





- History of Automatic Doors
- Types of Automatic Doors
- A.A.A.D.M.
- L.E.E.D.

# AGENDA





CONTINUING EDUCATION AIA

Continuing Education

# 1950s

- Limited use of automatic swing doors

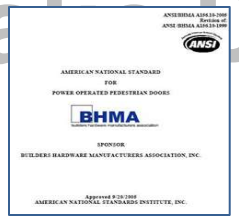
# 1960s

- Introduction of automatic slide doors
- Pneumatic powered door with emergency breakout

# 1970s

- Introduction of electric slide & swing operators
- Introduction of motion detectors & photoelectric beams
- Low energy swing door concept introduced
- First handicapped access door operator
- ANSI standard (A156.10) for power operated doors written





# 1980s

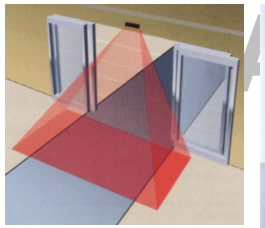
- Active Infrared presence sensors for swing door safety introduced
- Automatic Revolving doors introduced and accepted by market
- Motion detectors for activation becomes a standard on sliding doors

# 1990s

- Introduction of Automatic Folding Doors
- ADA law drives increase in Automatic Door sales
- American Association of Automatic Door Manufacturers (AAADM) founded
- Active infrared sensors become common items on all types of automatic doors
- New ANSI national consensus standard defines and governs requirements for pedestrian automatic door systems

The Evolution of the Automatic Door





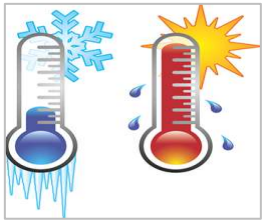

CERTIFIED AAADM INSPECTOR

CONTINUING EDUCATION AIA

Continuing Education

- Convenience
- Image
- Energy Savings
- ADA Compliance
- Aesthetics

## Access for Everyone.

- Sliding – Preferred choice for two-way traffic applications.
- Swinging – Ease of automating a manual swing door
- Folding – Preferred choice when space is at a premium
- Low Energy – ADA compliance
- Revolving – Energy efficient; always open – always closed

# Types of Automatic




# AUTOMATIC SLIDING DOORS



Automatic sliding doors are offered in various configurations. The traditional models are single slide, bi-parting slide and telescopic.

- Require adequate slide room
- Features a breakout function for emergency egress capability
- Effective for two-way traffic applications

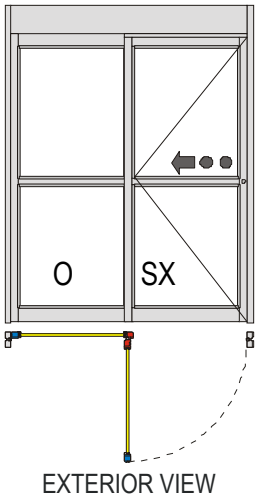
# Automatic Sliding Doors



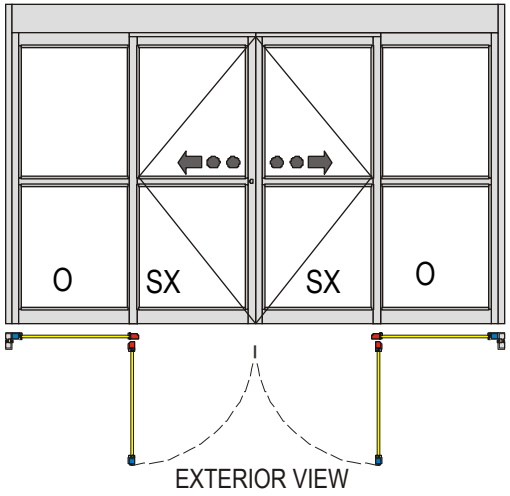
# Fixed Sidelite (FSL)

FSL Single Slide

LH view (RH = SX--O)




FSL Bi-Parting




# Automatic Sliding Door -

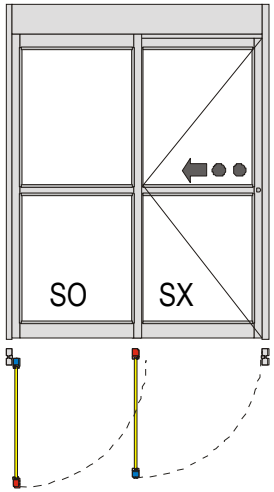
**O-SX** – The swing-slide (SX) panel shall be installed to the exterior of the fixed sidelite (SO). The swing-slide panel(s) shall swing out 90° from any position of the slide movement.

**Need fixed sidelite breakout pictures!!**

# Full Break-Out (FBO)

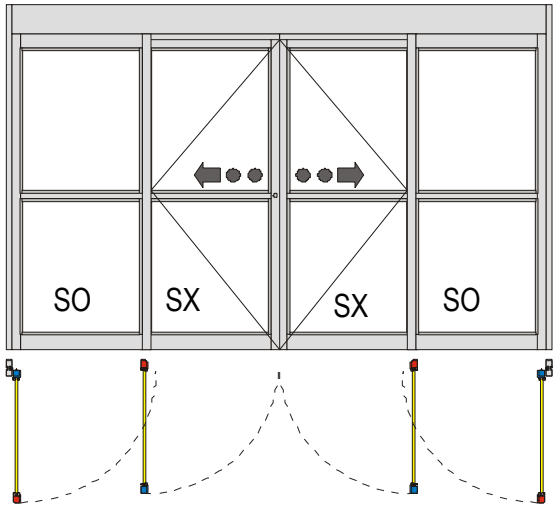
FBO Single Slide

LH view (RH = SX--SO)




EXTERIOR VIEW

FBO Bi-Part




EXTERIOR VIEW

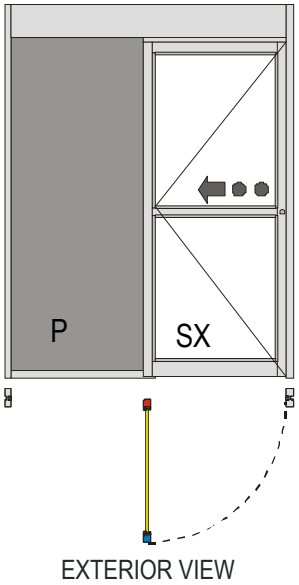


**SO-SX** – The swing out sidelite(SO) shall be installed to the exterior of the swing-slide panel (SX). SO sidelite(s) is (are) provided to allow the sliding panel to swing out from any point of slide travel.

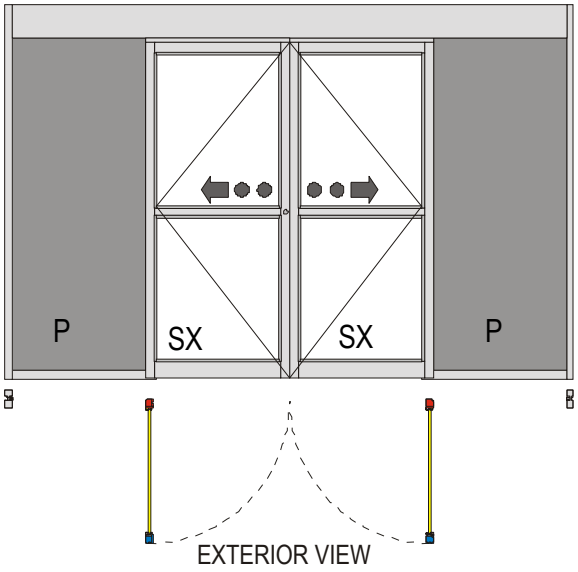
# Active Only (Surface Applied)

## Active Only Single Slide

LH view (RH = SX--P)




## Active Only Bi-Parting



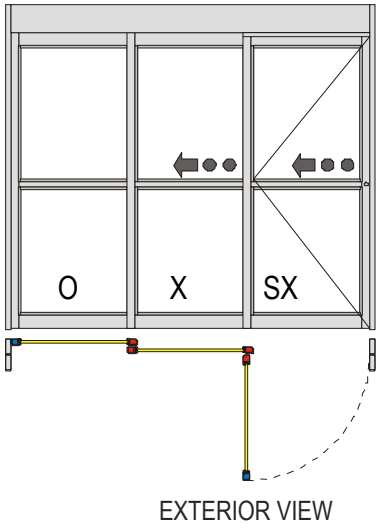

**P-SX** – Mounting of the unit is to the surface of the wall. As the door opens, the sliding panel slides beside the wall.

Need another surface applied photo

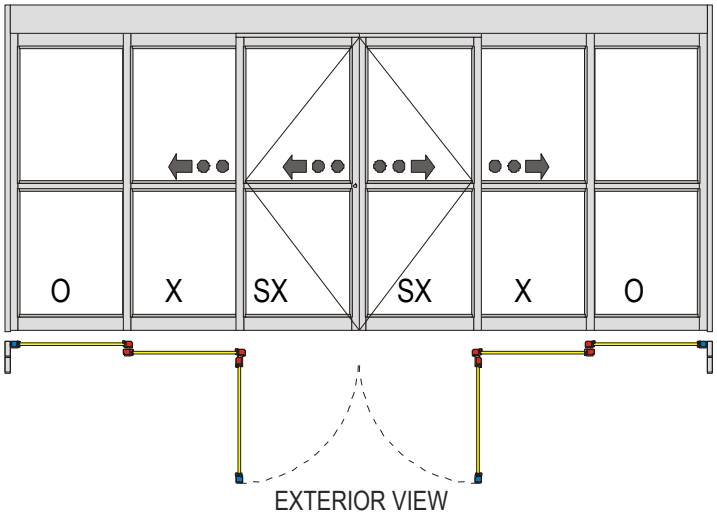
# Telescopic Fixed Sidelite (FSL)

Telescopic FSL Single Slide

LH view (RH = SX—X-O)




Telescopic FSL Bi-Parting





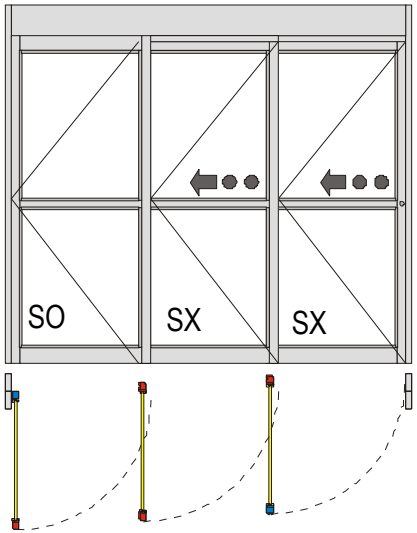

**O-X-SX** – Lead panel swings out in emergency. Lead panel (SX) moves twice the distance as the secondary panel. All panels reach full open at the same time.

**Need fixed sidelite breakout pictures!!**

# Telescopic Full Break-Out (FBO)

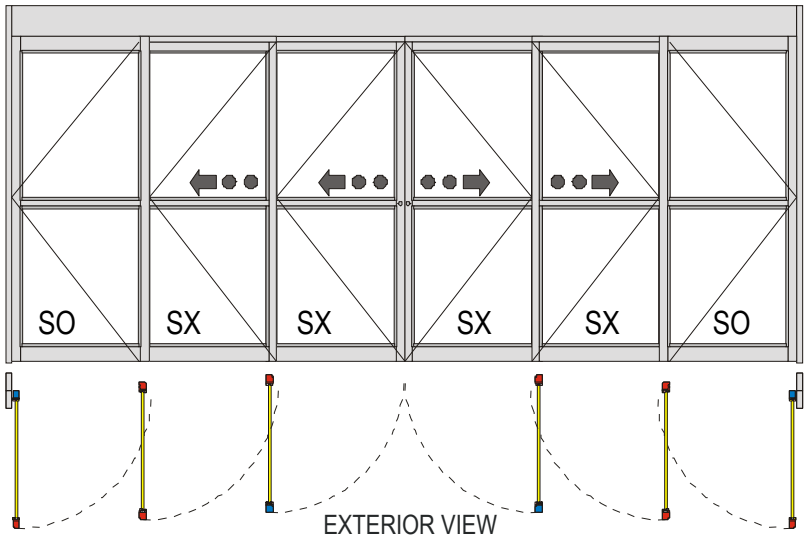
## Telescopic FBO Single Slide

LH view (RH = SX-SX-SO)




EXTERIOR VIEW

## Telescopic FBO Bi-Parting




EXTERIOR VIEW

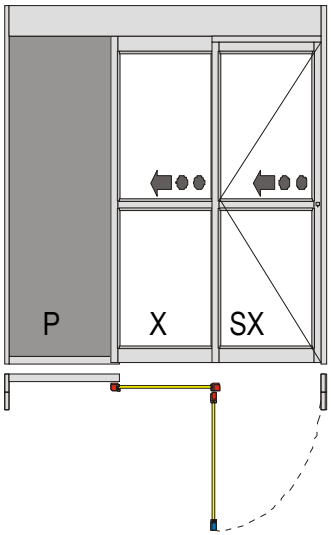


**SO-SX-SX** – All panels swing out in an emergency.

# Active Only (Surface Applied)

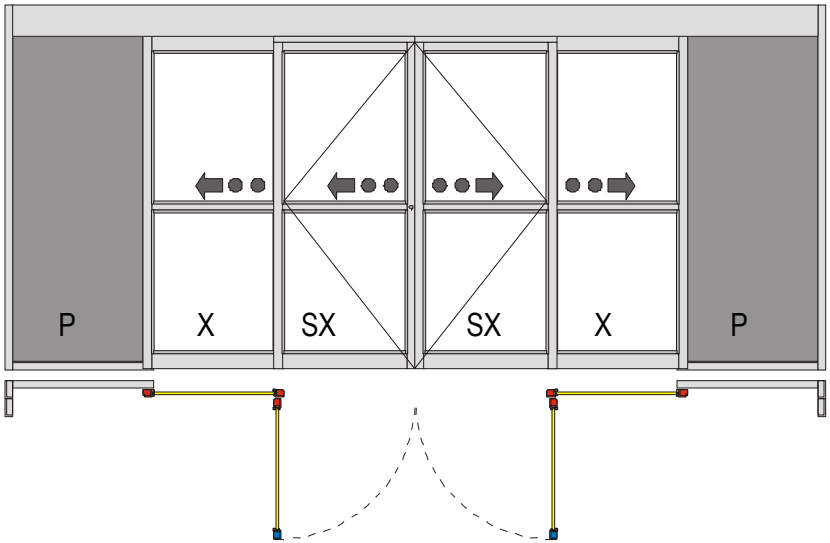
## Telescopic Active Leaf Only Single Slide

LH view (RH = SX-X-P)




EXTERIOR VIEW

## Telescopic Active Leaf Only Bi-Parting




EXTERIOR VIEW

# Automatic Sliding Door -

**P-X-SX** – Mounting of the unit is to the surface of the wall. As the door opens, the sliding panels slide beside the wall.

Need telescopic surface applied photos

ANSI/BHMA A156.10

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**Mission**

***To enhance both the global competitiveness of U.S. business and the U.S. quality of life by promoting and facilitating voluntary consensus standards and conformity assessment systems, and safeguarding their integrity.***

# ANSI A156.10 - Slide Door

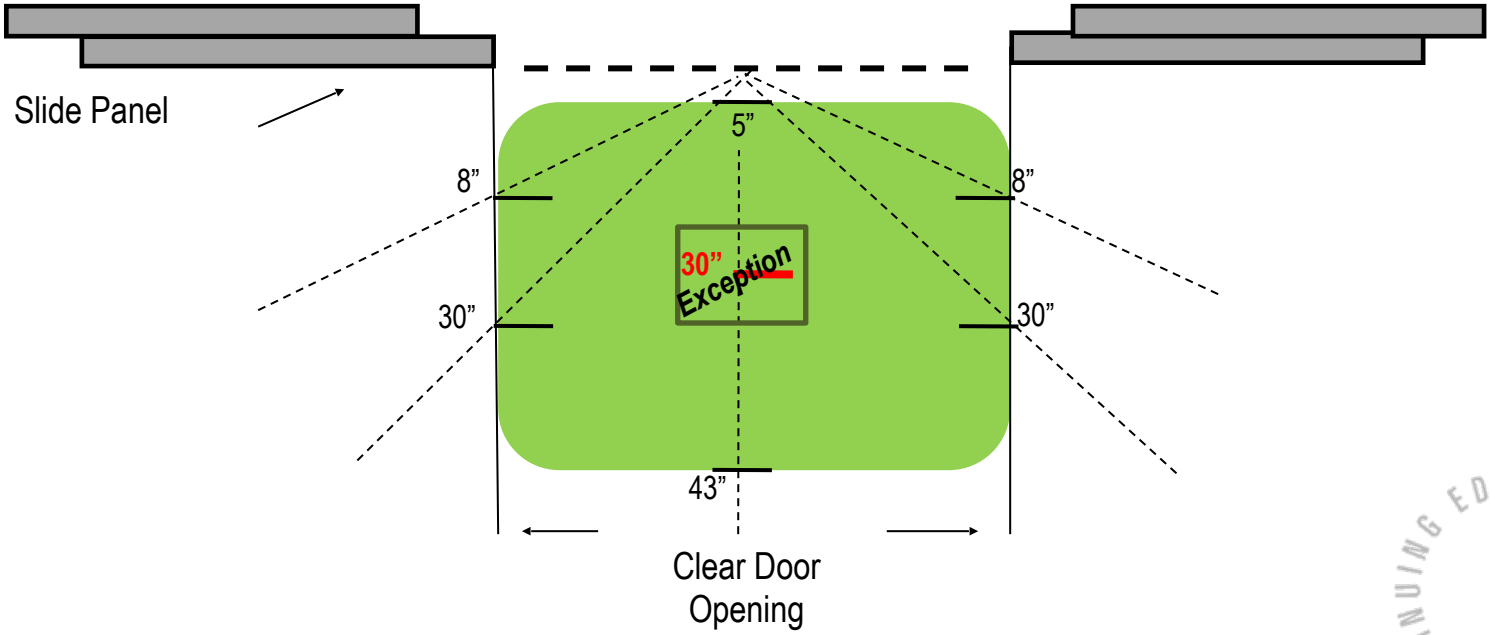
## Continuing Education Overview

# ACTIVATION ZONES:

Minimum width equal to the width of the clear door opening

- Measured 8” and 30” perpendicular
- Length shall be 43” minimum measured from the face of the door at the center of the clear opening
- Effective to within 5” from the face of the door
- 28” high person moving at a rate of 6” per second towards the center of the door

**Exception:** If the 43” activation zone length is not practical, the zone can be reduced to 30”, along with an additional sign stating **“AUTOMATIC CAUTION DOOR”**

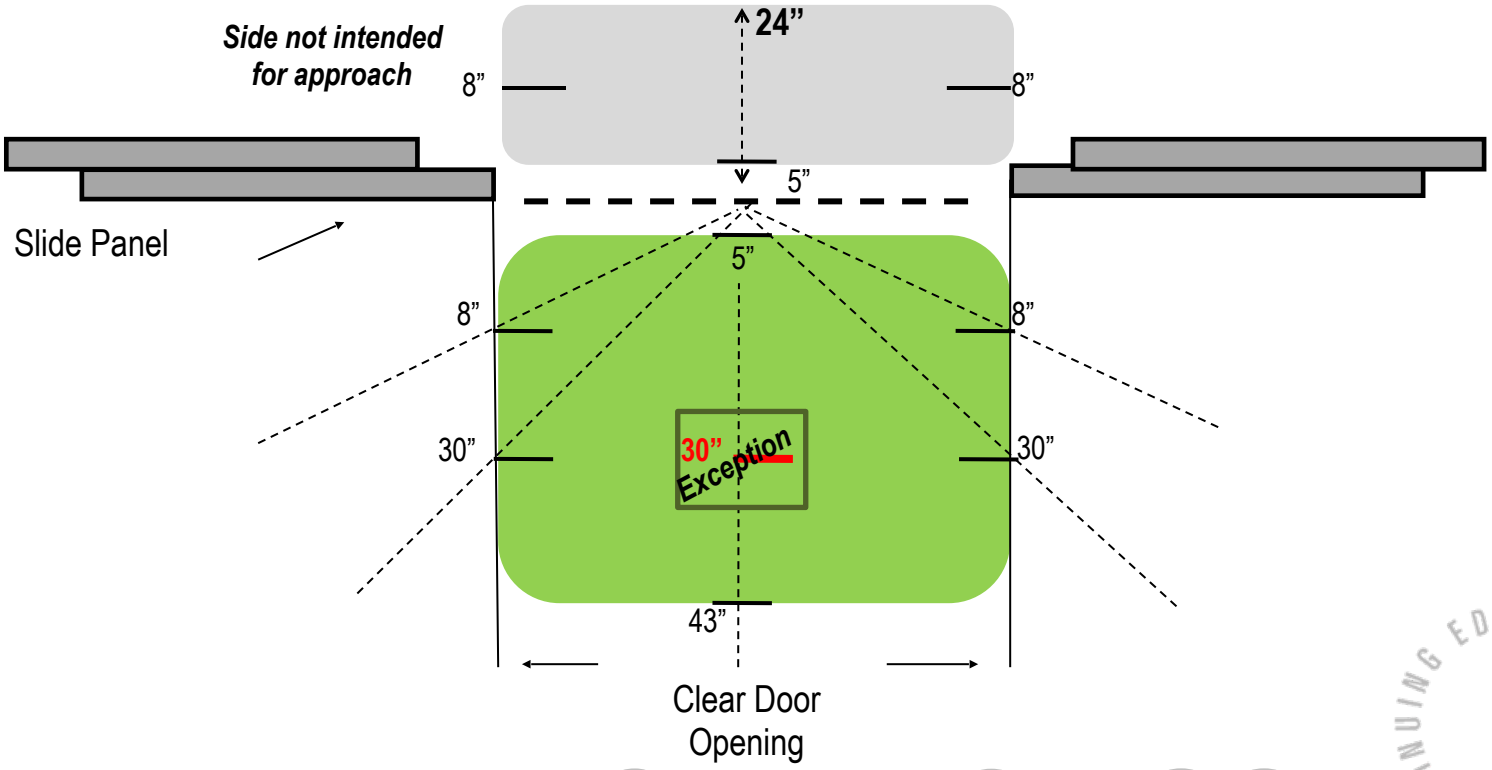


# ONE WAY TRAFFIC:

Sliding doors used for one-way traffic are required to have a secondary activating zone on the side not intended for approach.

**Reentry zone**

- 24” and 5” from face of the door
- Detection has minimum width equal to width of clear door opening as measured at 8” perpendicular to face of closed doors
- Sensor is deactivated when the door is 6” from close

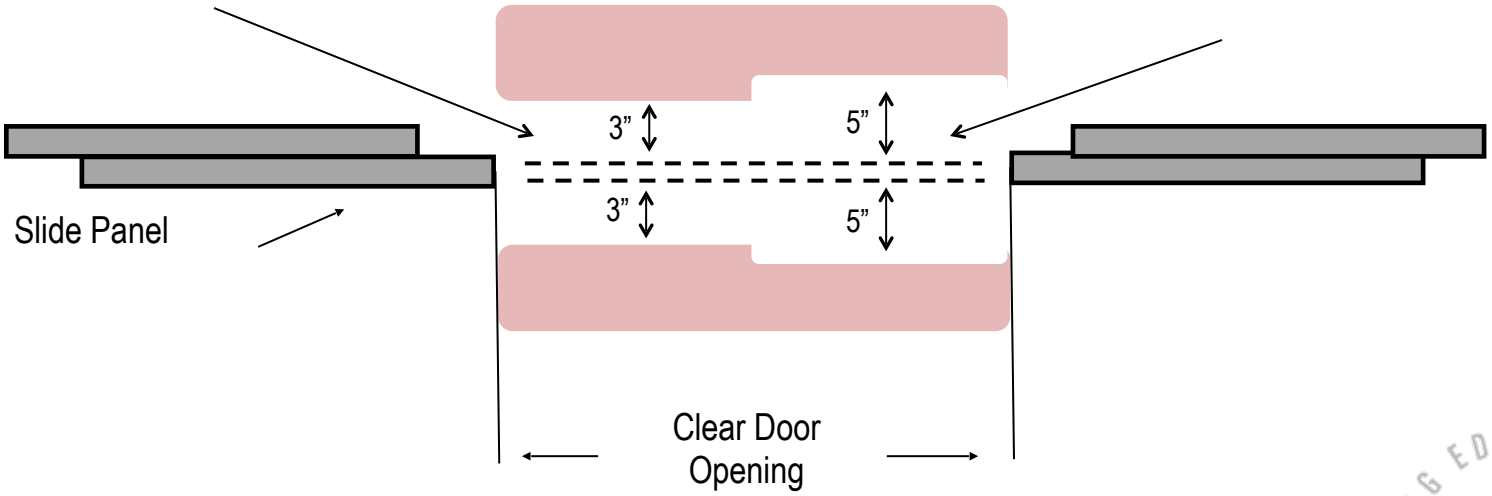


# PRESENCE ZONES

A presence sensor shall be used to detect a person fully in the space between two non-overlapping activating zones for the width of the clear door opening.

If photo electric beams are not installed, the inactive area cannot exceed 3” from the face of the moving panel.

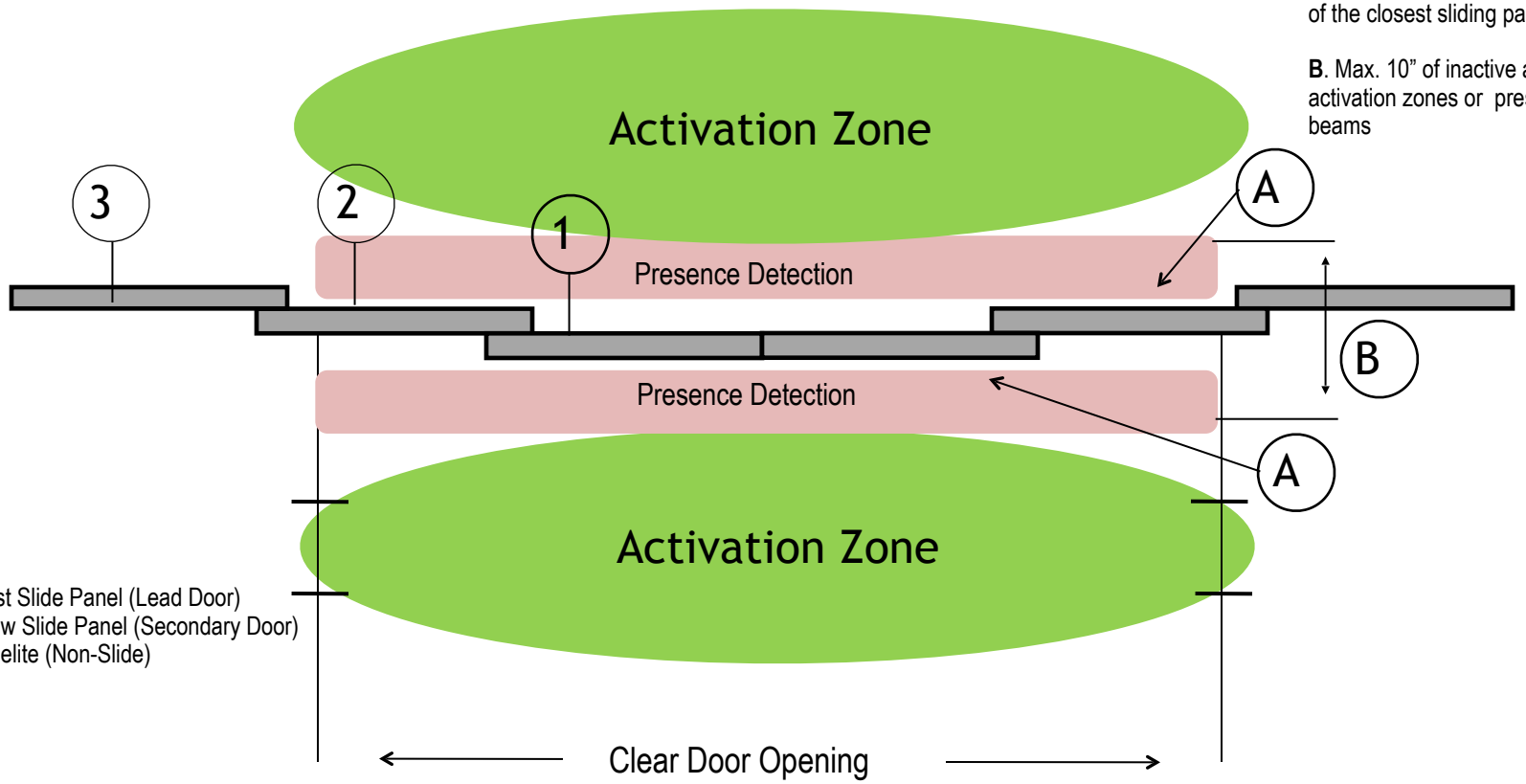
If the inactive area exceeds 3” but is no more than 5” from the moving panel, dual photo electric beams are required.



# TELESCOPIC SLIDING DOORS

**A.** Inactive area cannot be more than 3" from the face of the closest sliding panel

**B**. Max. 10" of inactive area between activation zones or presence sensor beams




1. Fast Slide Panel (Lead Door)
2. Slow Slide Panel (Secondary Door)
3. Sidelite (Non-Slide)

# AUTOMATIC SWINGING DOORS





Continuing Education

# Automatic swinging doors have a variety of configurations.

- Single Swing: In or Out / Push or Pull / Right or Left handed
- Pair of Doors: Simultaneous
- Dual Egress: Most common for 2-way traffic applications

The door operator is either concealed or surface applied. The doors are either:

- Center pivoted
- Off-set hung
- Balanced
- Hinged

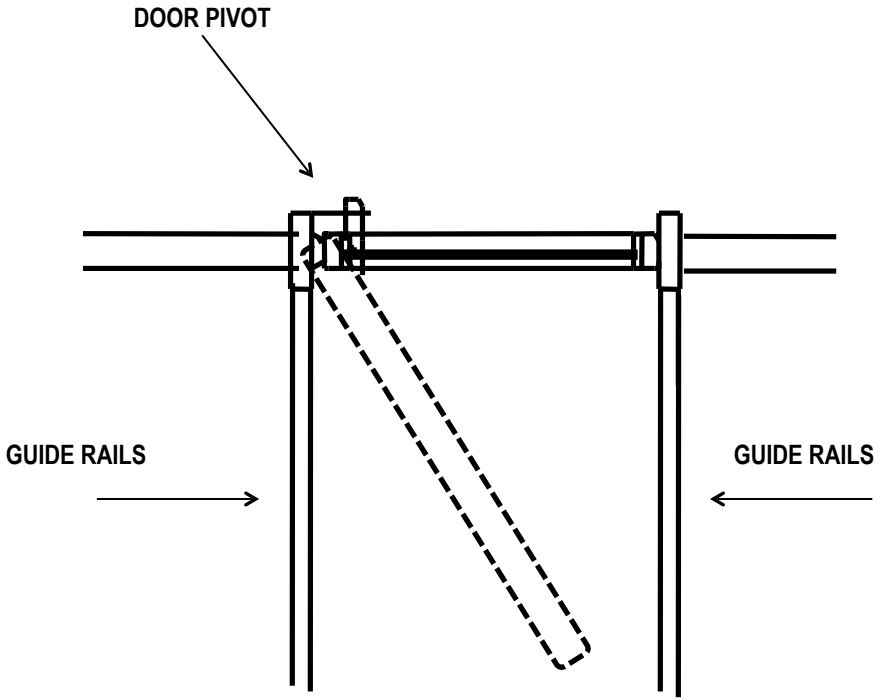






# Single Door

A single door swinging in or out, left-handed or right-handed.



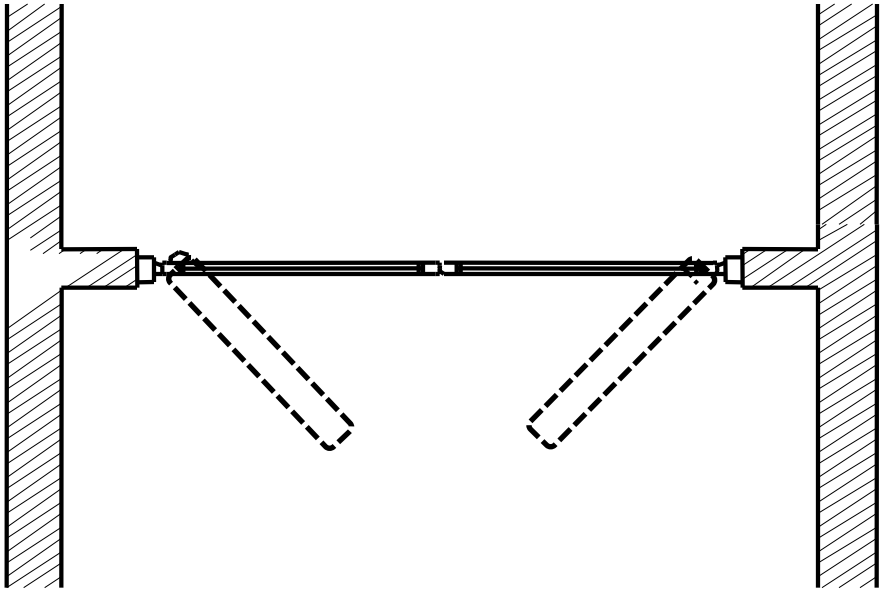

# Automatic Swinging Door Configurations





# Pair of Doors: Simultaneous

A pair of doors simultaneously swinging in the same directions.



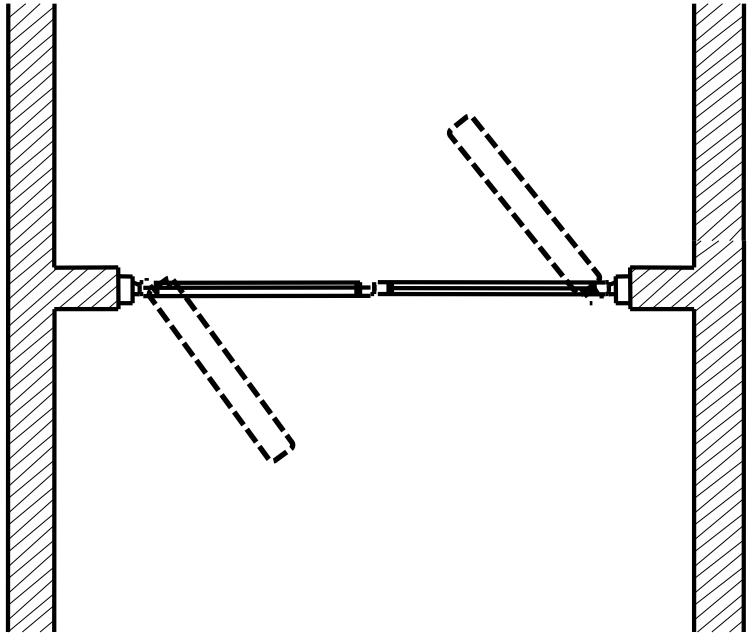
## Automatic Swinging Door Configurations





# Dual Egress

A pair of doors simultaneously swinging in opposite directions.



## Automatic Swinging Door Configurations





ANSI/BHMA A156.10

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# ANSI A156.10 - Swing Door

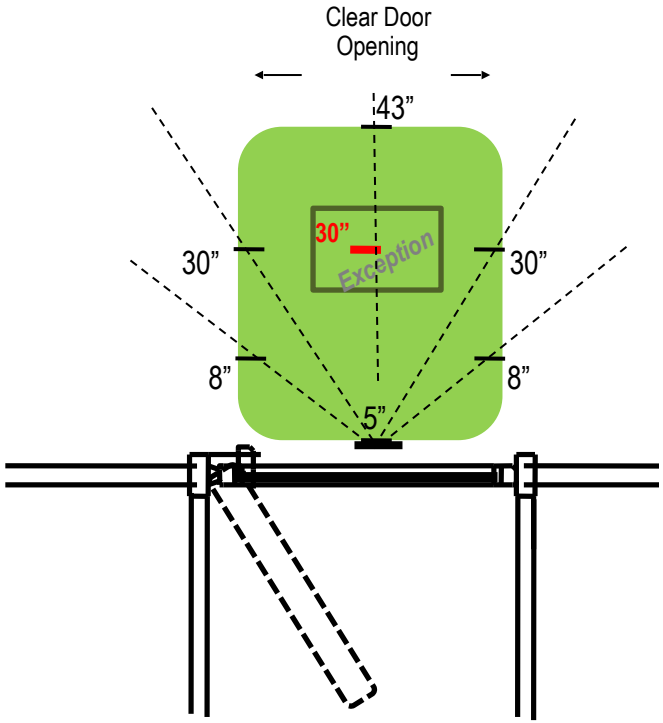
## Continuing Education Overview

## ACTIVATION ZONES:

Minimum width equal to the width of the clear door opening

- Measured 8” and 30” perpendicular
- Length shall be 43” minimum measured from the face of the door at the center of the clear opening
- Effective to within 5” from the face of the door
- 28” high person moving at a rate of 6” per second towards the center of the door

**Exception:** If the 43” activation zone length is not practical, the zone can be reduced to 30”, along with an additional sign stating **“AUTOMATIC CAUTION DOOR”**



# GUIDE RAILS:

Single Doors:

- Shall have a guide rail on each side of the door

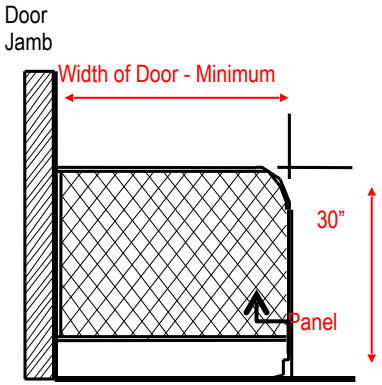
Pairs or Double Egress Doors:

- Shall have one rail on each hinge side

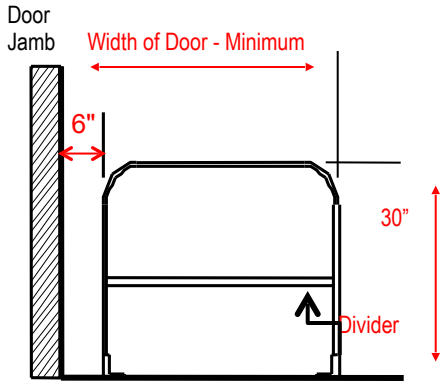
Rails will project at least to the leading edge of the widest door in the full open position.

**Exceptions:**

- A wall or separator can be used in place of the rail
- Two-way traffic – leading edge plus 55”
- Dual egress or pairs installed in a hallway – no rails required if when doors in the open position have a 10” or less distance to the wall



JAMB / FLOOR MOUNTED



FREE STANDING / FLOOR MOUNTED

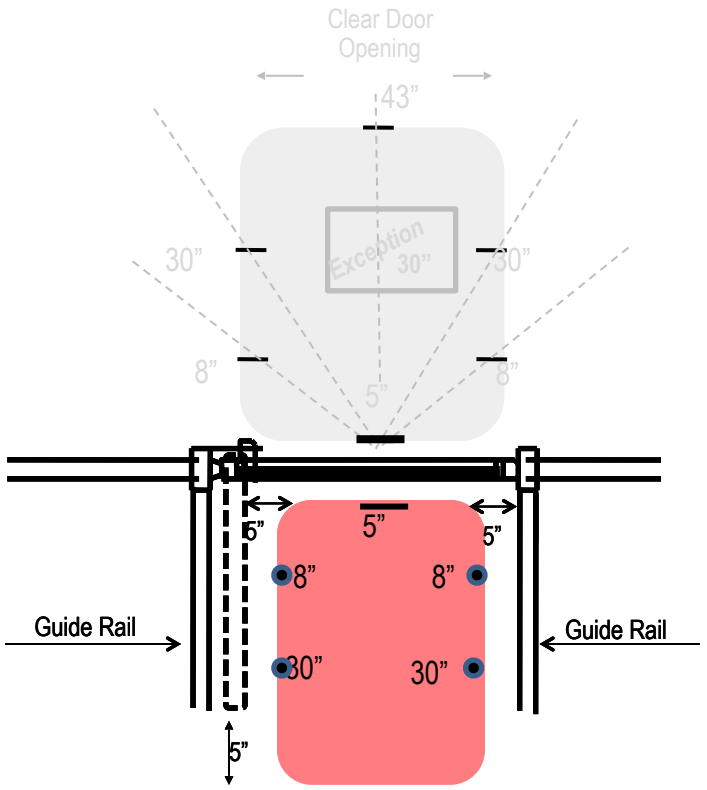


# ANSI A156.10 - SWINGING DOORS

## PRESENCE ZONES:

Safety zone provided by an overhead presence sensor:

- Measured to within 5” of the face of the closed door at the center of the door opening
- Zone shall extend 5” beyond the lead edge of the open door
- The width shall be the door opening less 5” maximum (total 10”) from each side measured parallel to the face of the door at 8” and 30”
- When the zone is occupied by a 28” minimum high person fully in the safety zone (door opened or closed), the door operator will not operate



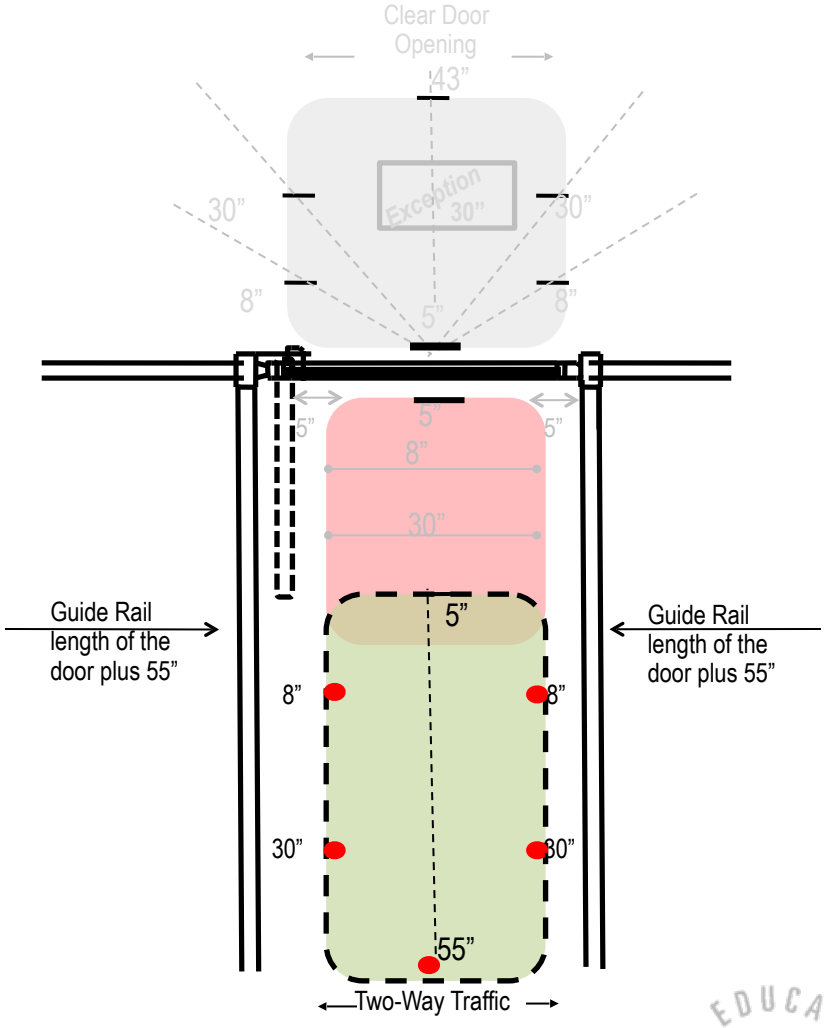



# ANSI A156.10 - SWINGING DOORS

## TWO-WAY TRAFFIC:

Swinging doors serving both egress and ingress utilizing overhead presence sensors shall have:

- A safety zone as previously stated
- An activating zone that starts adjacent to the safety zone and extends 55” from the leading edge of the door while in the open position
- The activating zone will have a minimum width equal to the width of the clear opening measured at 8” and 30” from the interface of the safety and activating zones
- The guide rail length will be extended an additional 55” beyond the leading edge of the open door.



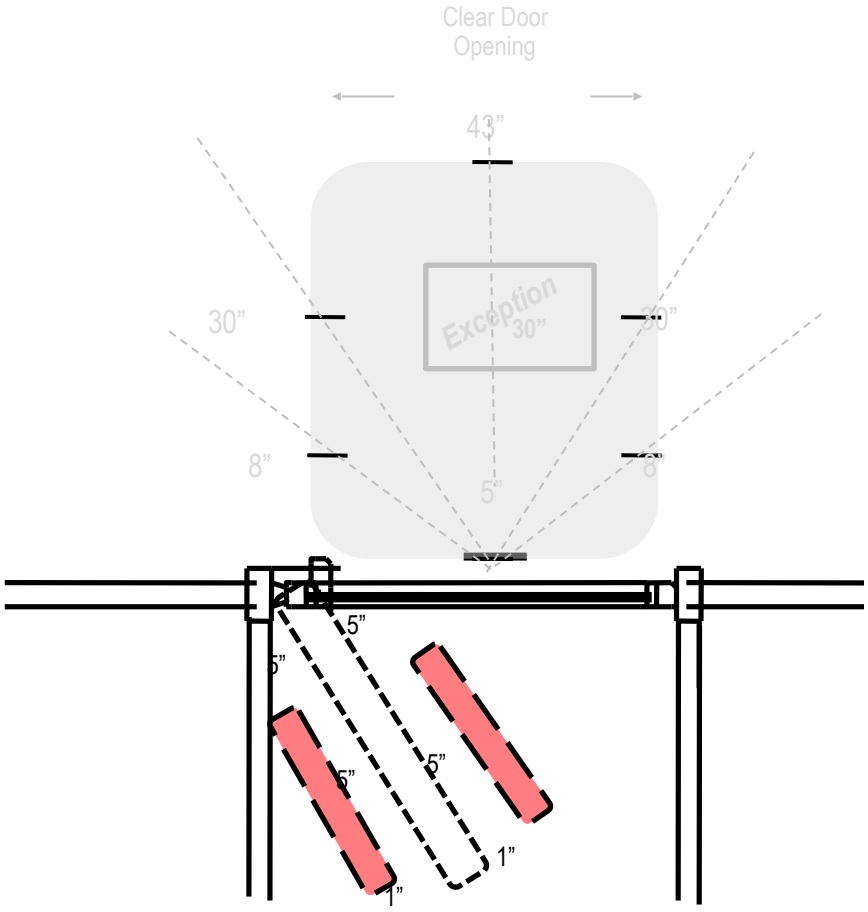

# ANSI A156.10 - SWINGING DOORS

Continuing Education

## PRESENCE ZONES:

Safety zone provided by door mounted presence sensors:

- Safety zone will be effective to within 5” from the face of the door for the width of the door
- Less 5” from the pivot point
- Within 1” of the lead edge
- Shall detect a 28” high person fully in the swing path during the opening or closing cycle
- Detection shall cause the door to reverse direction, stop or slow down to 4” per second



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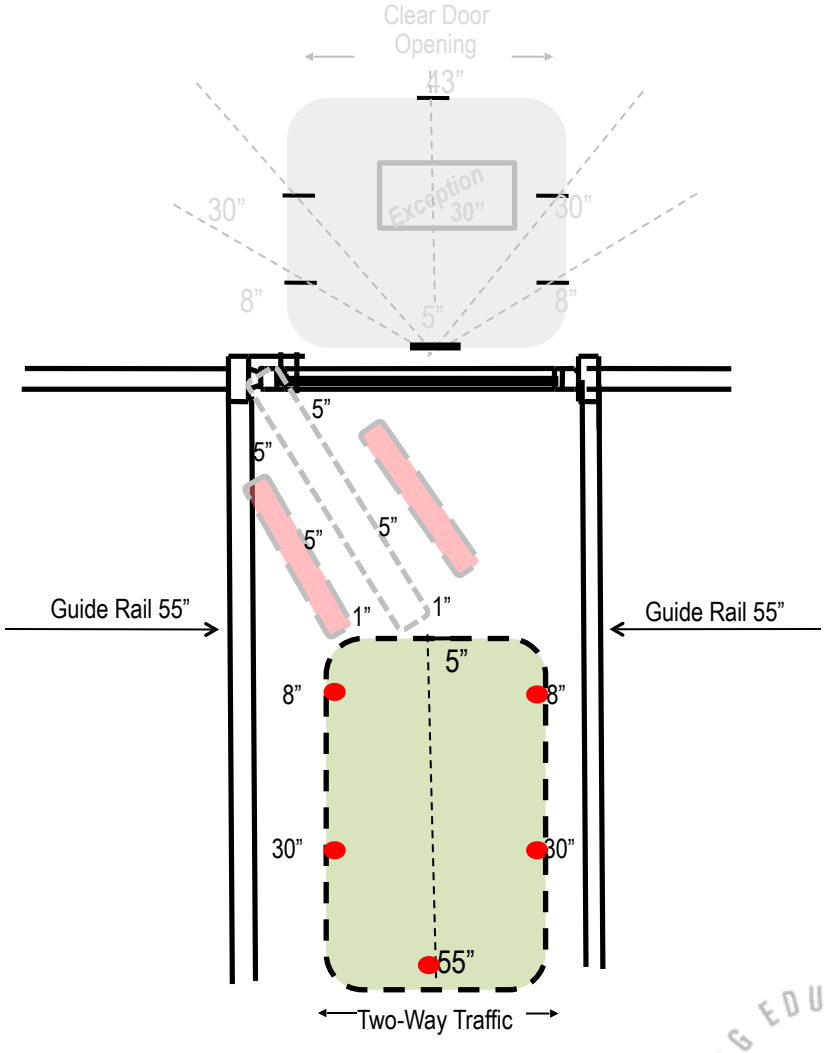
- An activating zone that starts adjacent to the safety zone and extends 55” from the leading edge of the door while in the open position
- The activating zone will have a minimum width equal to the width of the clear opening measured at 8” and 30” from the interface of the safety and activating zones
- The guide rail length will be extended an additional 55” beyond the leading edge of the open door.



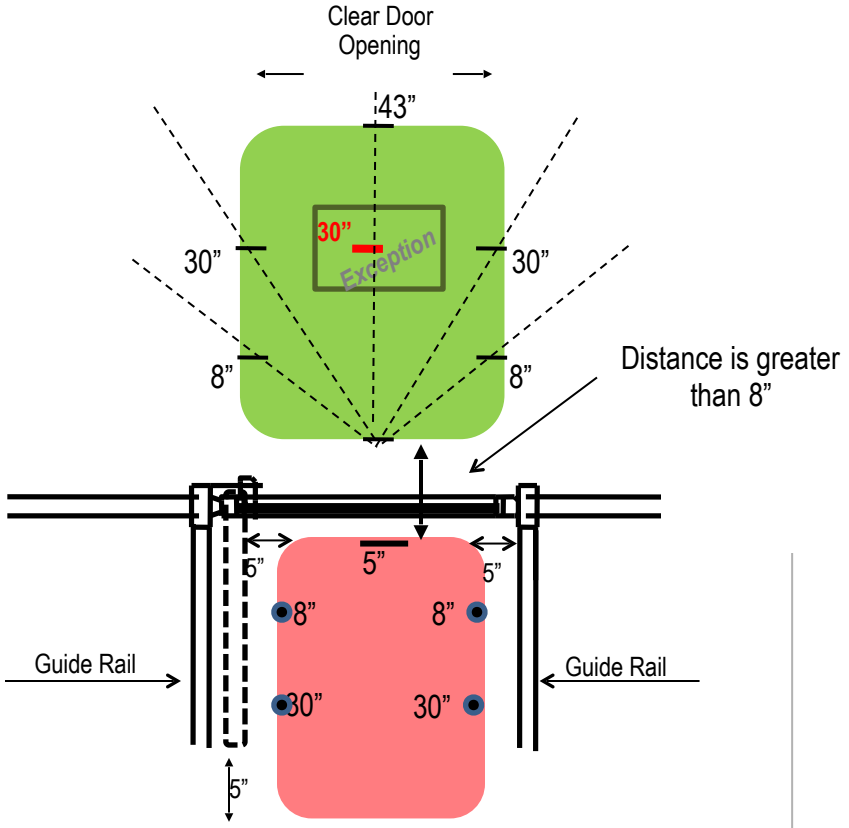



# ANSI A156.10 - SWINGING DOORS

## SENSORS PROVIDING ACTIVATION AND SAFETY:

When sensors are providing both activation and safety, if the distance between two non overlapping zones exceed 8” the door:

- Must be equipped with a safety control mat **OR**
- A presence sensor across the door opening **OR**
- Have a door closing cycle delay of 4 seconds minimum after the activating zone is clear **OR**
- Have a door mounted sensor on the non-swing side



# AUTOMATIC FOLDING DOORS





Automatic folding doors are made of two or more separate panels of which one panel swings and the other panel slides. Folding doors have a variety of configurations:

- Single Fold: In or Out / Left or Right Handed
- Bi-Fold: A pair of doors simultaneously folding in or out

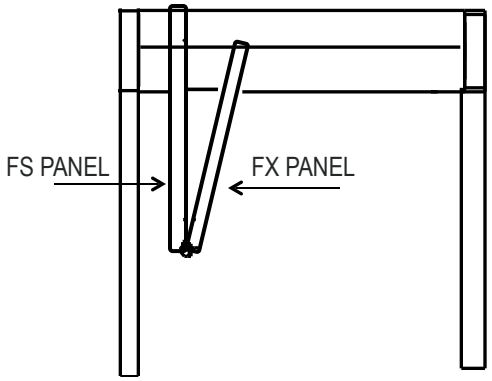
# UTOMATIC FOLDING DOORS





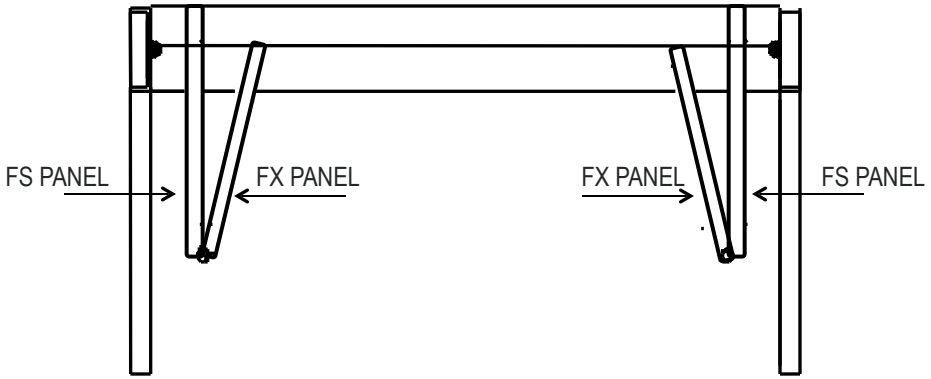
# FOLDING DOOR CONFIGURATIONS

Single Fold – Left Hand Pkg.




EXTERIOR VIEW

Bi-Fold Pkg.




EXTERIOR VIEW

FS = Fold swing panel
FX = Fold slide panel

UTOMATIC FOLDING DOORS





# LOW ENERGY DOORS




VIDEO


CONTINUING EDUCATION

AIA

Continuing Education

# REVOLVING DOORS





# AAADM

*American Association of Automatic Door Manufacturers*




CONTINUING EDUCATION

AIA

**Continuing Education**

# LEED

*Leadership in Energy and Environmental Design*






Continuing Education

Established by the United States Green Building Council (USGBC), LEED is by far the most widely accepted standard used to establish a sustainability rating for buildings. Currently, there are six LEED rating systems:

- LEED for New Construction and Major Renovations
- LEED for Existing Buildings
- LEED for Commercial Interiors
- LEED for Core & Shell
- LEED for Homes
- LEED for Neighborhood Development