



PRODUCT CATALOG NO.80

# SEALING SYSTEMS FOR DOORS AND WINDOWS

When Nothing Else Is Good Enough  
For Long Enough





In 1924 two Hungarian immigrants, starting out with nothing, established a new company and named it "Zero." Over the decades that followed, ZERO INTERNATIONAL pioneered countless innovations for achieving maximum performance in door and window sealing systems. In the process, we earned a worldwide reputation for exacting standards in the design and quality of our products. Today, our end users and their designers ask for "ZERO, no substitutes" when they want the best value in products that perform reliably over years of hard use. And our OEM partners turn to ZERO for expertise and superior quality that give them a competitive market edge.

Experience in this demanding industry proved from the beginning that "one size fits all" does not apply to gasketing. So we look at functionality to design performance-based sealing systems that work right for specific applications to block air, light, water, fire, smoke and sound. Our purpose is always to build the best possible product for its use. Quality remains a constant for ZERO.

As you scan the pages of our catalog, as well as our website and other product literature, you will find that there's more to ZERO than ever before.

We're a full-line company providing a single source for high-performance hinges, saddles and thresholds, in addition to our integrated, specialized door sealing systems. And we now offer as well a wide variety of door louvers and vision lites through our newest company, Advantage Lites & Louvers.

We support all of our product lines using extensive in-house production capabilities combined with engineering strength and ingenuity to solve problems creatively. We make our own rubber extrusions through our IND-EX subsidiary in Middlefield, OH. Our INTUMET division produces our intumescent material for fire and smoke gasketing, as well as firestopping applications. We even make our own photoluminescent material and signage for compliance with requirements for exit path markings already in effect in New York City, and pending in other parts of the country.

These unparalleled capabilities afford unique flexibility in responding to our customers' special requirements. We listen to our customers, and we deliver exactly what they need. And we make sure it lasts.



**When Nothing Else Is Good Enough  
For Long Enough**



## General Information

Introduction.....	2
Product Information.....	73-74
Parts Index.....	75

## Control Systems

ADA Access System.....	51
Air Stop Systems.....	72
Communicating Doors.....	46
Dust Plug.....	48
EMI/RFI Systems.....	53
Equipment Room Doors.....	46
Finger Protection.....	49
Fire Door Seals.....	62
Flood Barrier Shield.....	52
Gasketing for Exterior Inswing Doors.....	44
Gasketing for Exterior Outswing Doors.....	44
Gasketing for Non-Latching Doors.....	44
Handicap Systems.....	51
Hinges.....	39-43
Hurricane Wind-Driven Water Infiltration.....	45
Interior Entry Doors.....	46
Intumescent Systems.....	61-67
Latching Pocket Doors.....	47
Mullion Application.....	48
"Safe Haven" Room Gasketing.....	45
Sliding Hangar Doors.....	50
Sliding and Overhead Doors.....	47-48, 50
Smoke Stop Systems, Draft Control.....	72
Sound Control Systems.....	56-60, 72

## Thresholds

Accessories.....	7
Adjustable.....	10-12
Bulkhead.....	12
Butt & Transition.....	7, 14
Carpet.....	15
Expansion Joint & Covers.....	6
Flat, Utility.....	4-6
Handicap.....	4-6, 8, 13-14, 51
Interlocking.....	7
Rabbeted.....	8, 9
Ramp.....	13-14
Sound.....	57
Thermal Break.....	5, 6, 9
"Traction Tread".....	11
Water Return.....	7
Practical Installation Instruction.....	6

## Sill Protection

Automatic Door Bottoms.....	16-19
Automatic Door Bottom for Sliding Doors.....	47-48
Sweeps.....	20-22
Wheelchair Shower.....	51

## Seals

Head & Jamb, Adjustable Seals.....	24-25, 28
Head & Jamb, Contact Seals.....	25-27, 29
Head & Jamb, Interlocking Seals.....	32
Head & Jamb, Magnetic Sealing.....	24
Head & Jamb, Spring Material.....	23, 31
Kerf Mount Seals Adhesive.....	30
Mullion Application.....	48
Self-Adhesive.....	49
Self-Adhesive Dust Plug.....	48

## Head & Jamb Protection..... 26-29

## Glass Door Gasketing..... 38

## Window Protection

Casement.....	54-55
Double-Hung Wood.....	54-55

## Sound Control Systems - Sound Trap

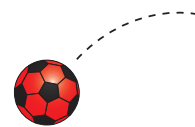
Single Doors.....	56-57
Pairs of Doors.....	58
Windows and Curtain Walls.....	58
Vision Lite.....	59
Sound Barrier Sheet.....	60

## Fire Protection - Intumescent

Door Solutions.....	61-62
Louver Solutions.....	63
Firestopping Applications.....	67
Intumescent Technology.....	65-66
Specialties - Fire Block.....	63
Specialties - Fire Bolt.....	64
Specialties - Fire Plug.....	64

## Photoluminescent Stairway Marking Systems

Directional Signs.....	69
Door Hardware Marking.....	70
Door Signs.....	69
Exit Door Frame Kit.....	70
Floor Demarcation Lines.....	70
Hand Rail Marking.....	70
Obstacle Marking.....	70
Side Edge Marking.....	70
Stair & Landing Edge Marking.....	70
"Traction Tread" Glow.....	70

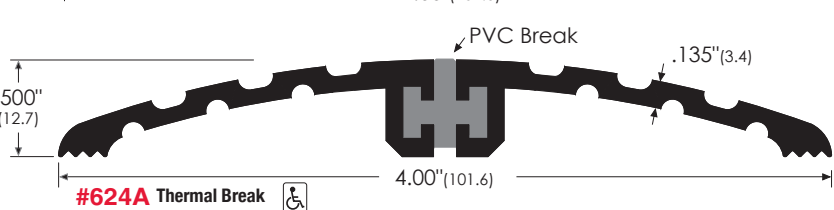
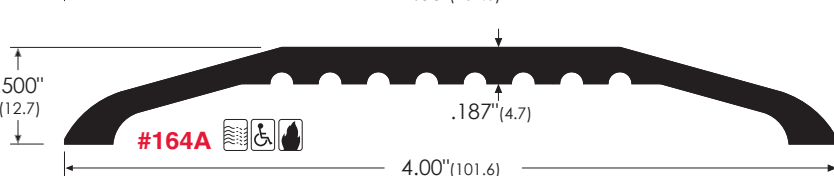
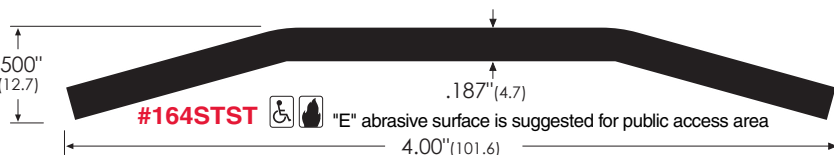
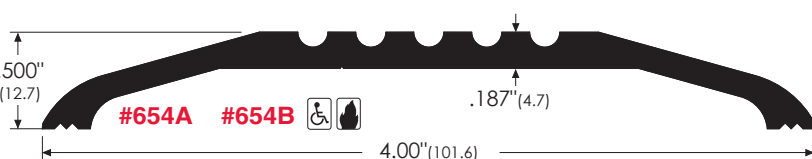
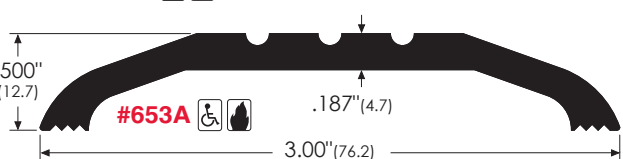
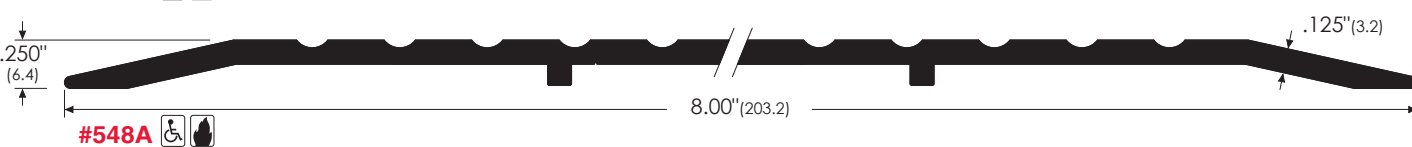
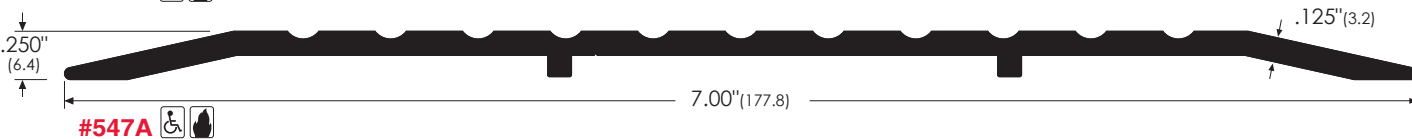
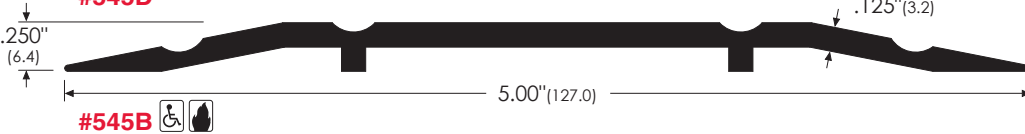
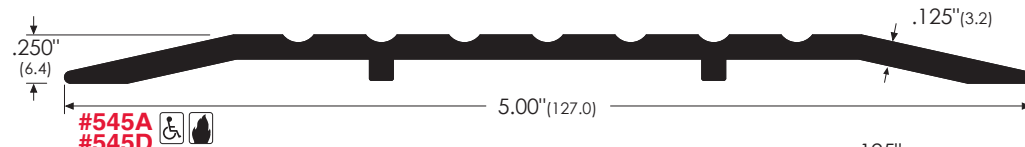
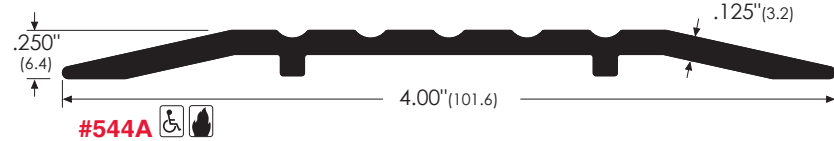
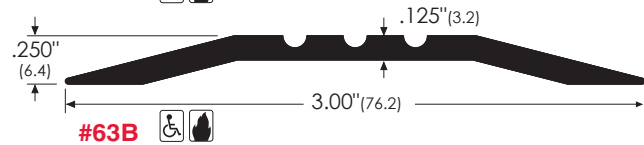
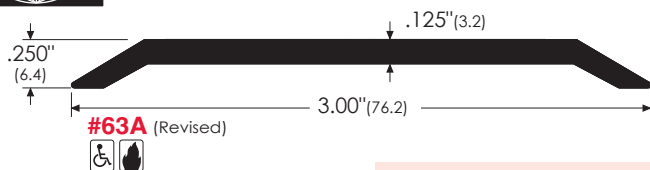
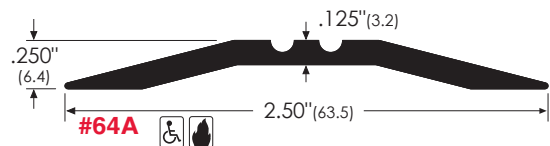


# Utility Thresholds

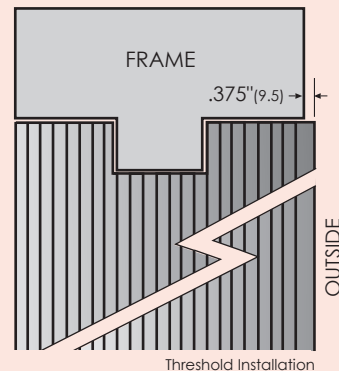


Note: A= Aluminum  
D= Dark Bronze Anodized  
B= Bronze  
STST= Stainless Steel  
Thresholds can be ordered with E (Epoxy) or V3 (Full Body Strength) options.

Thresholds



## Suggested Installation For All Utility Thresholds



## OPTIONS:

■ **Non-Slip Epoxy Abrasive.** Thresholds can be ordered with non-slip epoxy abrasive particles bonded into the grooves. The tread provides a coefficient of friction of 1.02 dry and 0.98 wet to comply with ADA, OSHA and most local building codes requirements. To order, add **-E** after the item number. Example : #546A-E



■ **Full Body Strength.** An aluminum composite filler containing aluminum oxide and silicone carbide. Ideal applications include heavy commercial traffic in supply rooms, manufacturing buildings, schools, cafeterias, automobile dealers, hospitals, industrial facilities. To order, add **-V3** after the item number. Example: #63A-V3

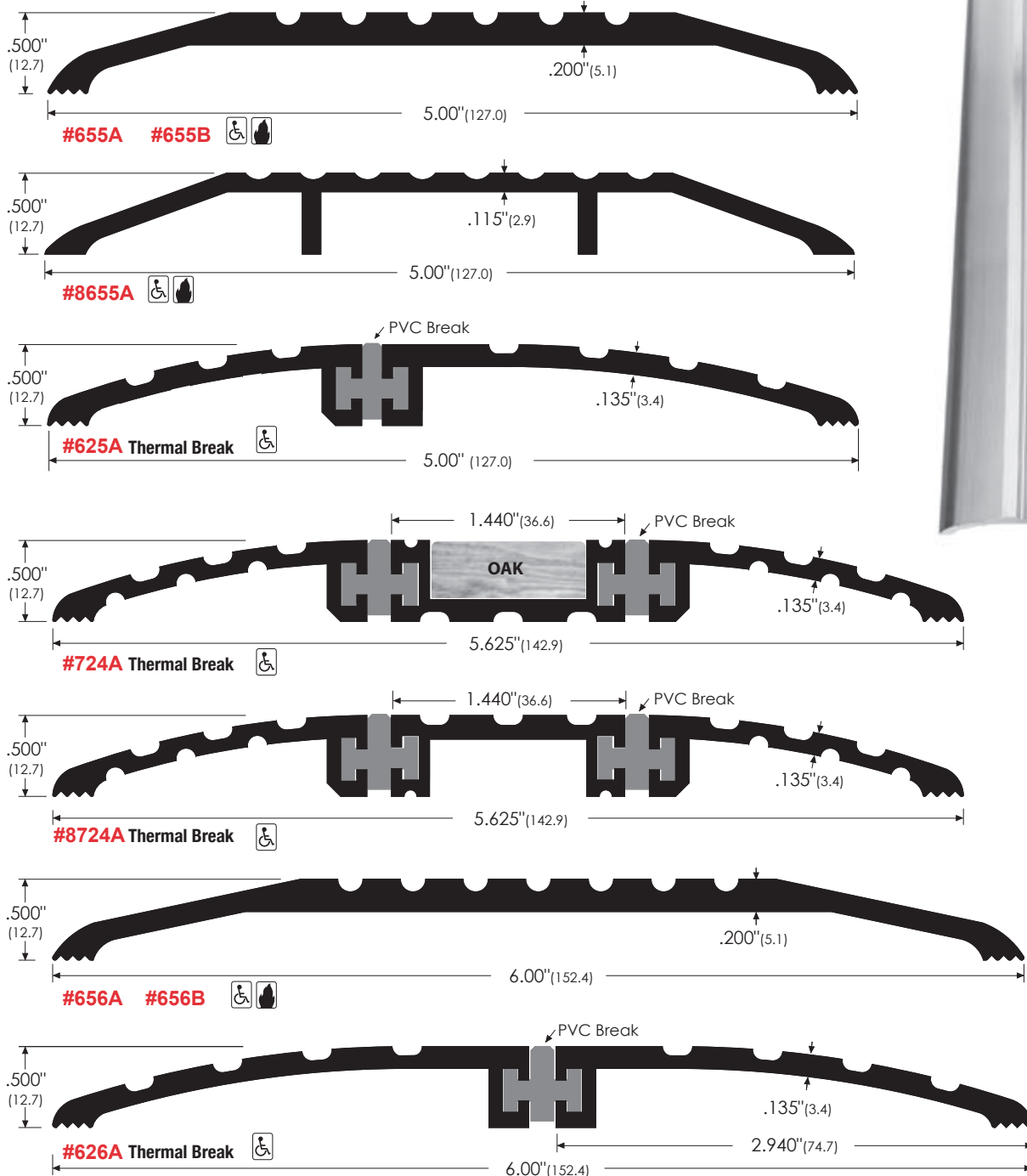




# Utility Thresholds



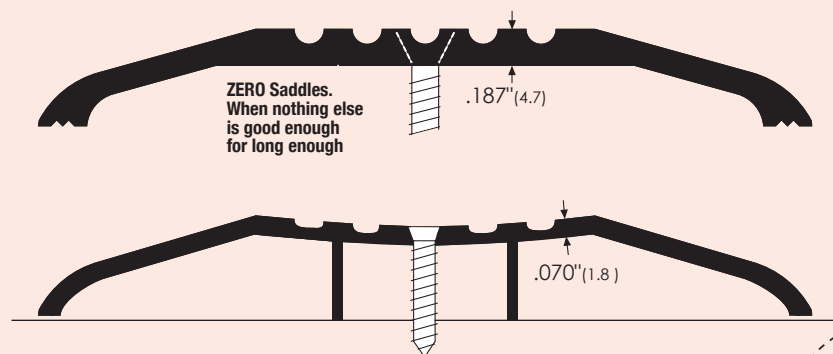
Note: A= Aluminum B= Bronze  
Thresholds can be ordered with E (Epoxy) or V3 (Full Body Strength) options.



Thresholds

## Which would you rather walk on or install?

Both pass the ANSI standard load test, but the ZERO threshold also passes the test of time and weight. The heavier-gauge material in our threshold allows you to drill and screw right through and into concrete. Lighter-gauge thresholds can buckle and often loosen because screws cannot be tightened fully. Be sure you get the best....specify the heavier gauge when you need thresholds.

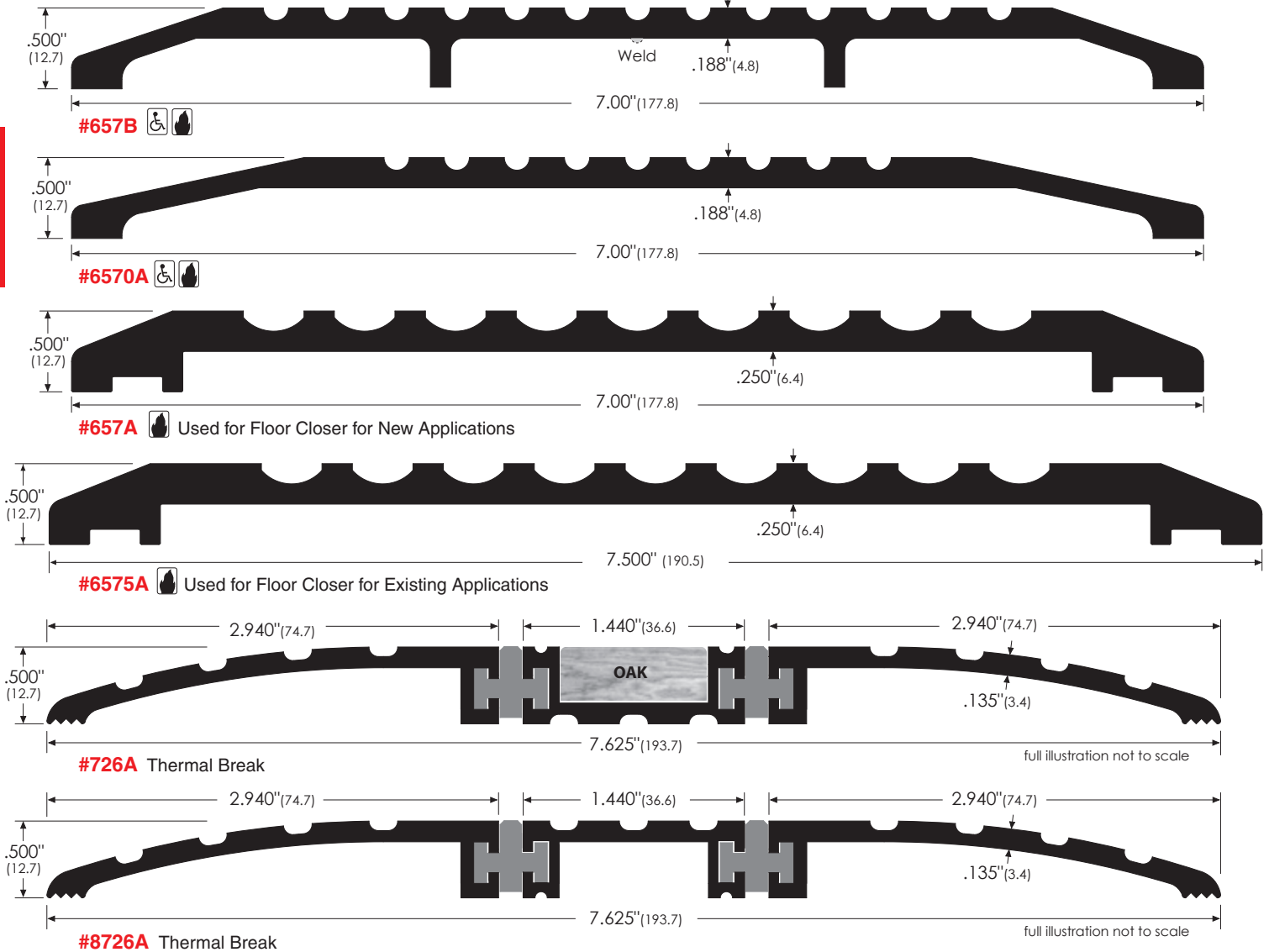


# Utility Thresholds



Note: A= Aluminum B= Bronze  
Thresholds can be ordered with E (Epoxy) or V3 (Full Body Strength) options.

Thresholds



## Floor Closer Cover For #657A, 6575A, 6570A

### TYPE 1

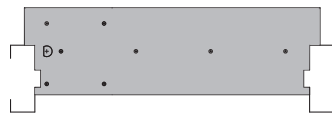
For doors hung in center of frame



Left Hand Shown

### TYPE 3

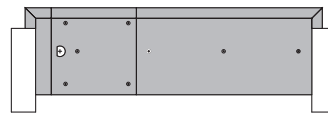
For use with all offset closers and pivot sets



Left Hand Shown

### TYPE 4

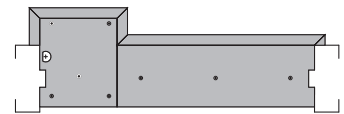
For doors hung flush with face of frame



Left Hand Shown

### TYPE 5

For use with offset closers and pivot sets

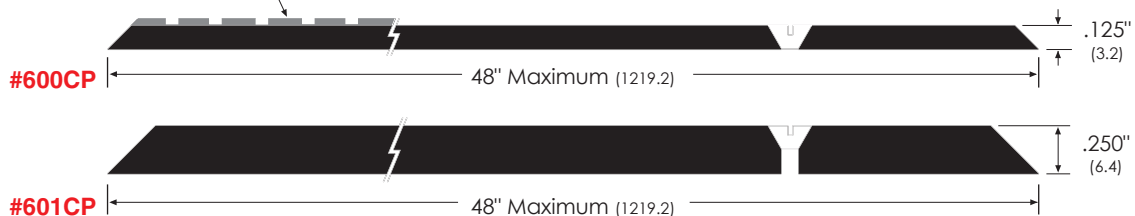


Left Hand Shown

## Aluminum Cover Plates For Expansion Joints

Cover Plates can be ordered with non-slip epoxy abrasive particles bonded to surface. To order, add "E" after item number.

- Available in widths to 48", lengths to 120"
- Edges are not beveled unless specified.
- Plates are not drilled unless specified. (Supply detail).
- Wood screws are supplied unless specified.

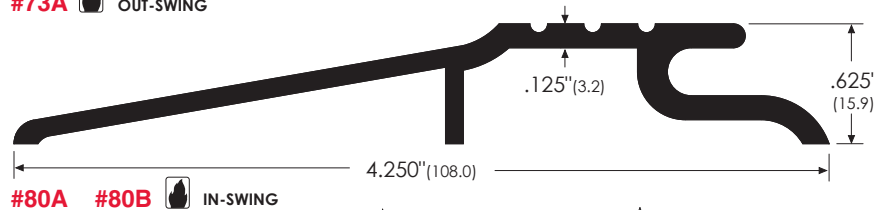
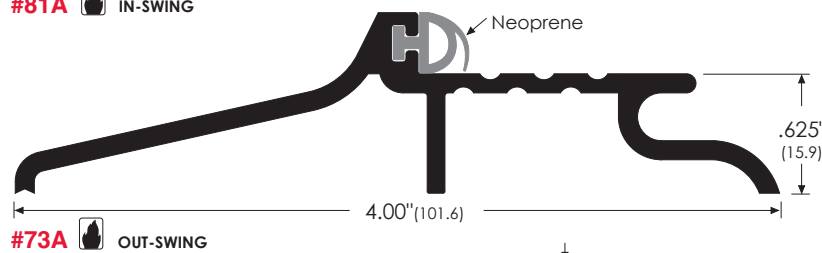
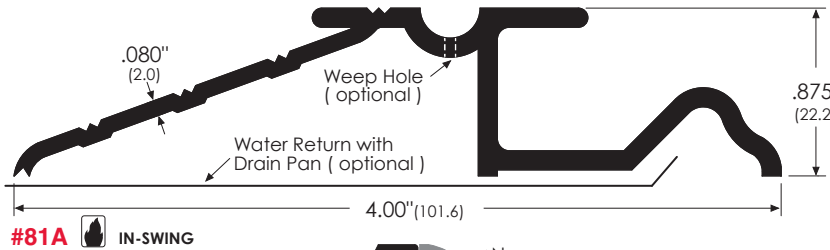
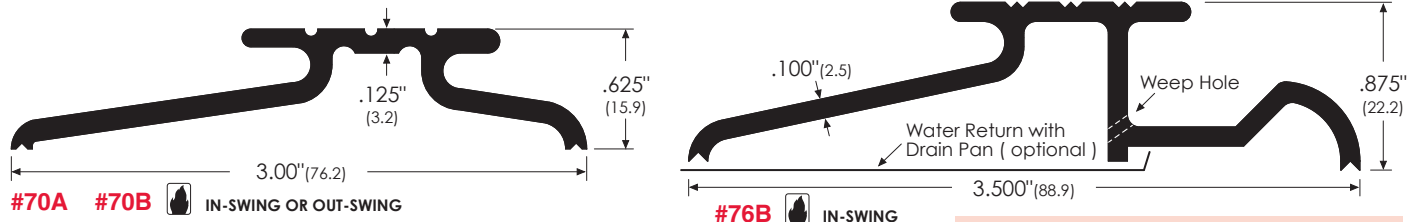




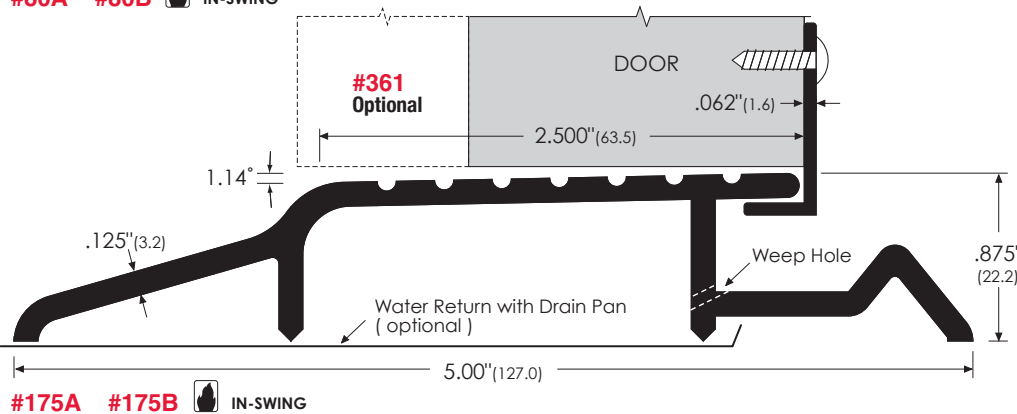
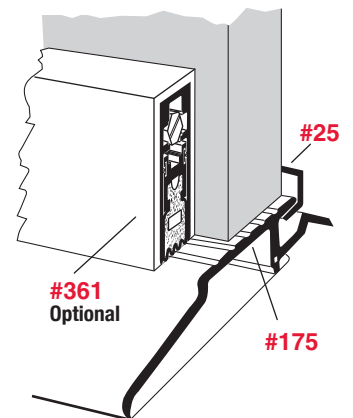
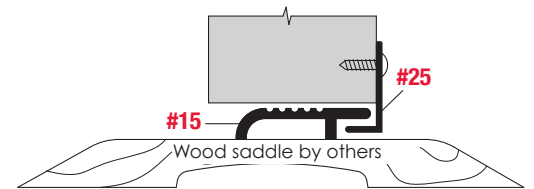
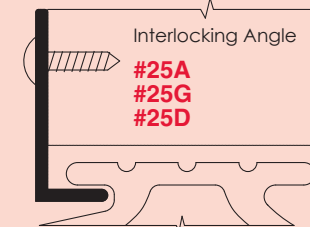
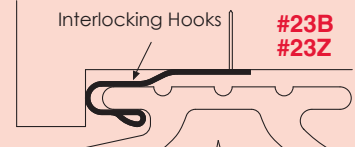
# Butt and Transition Thresholds



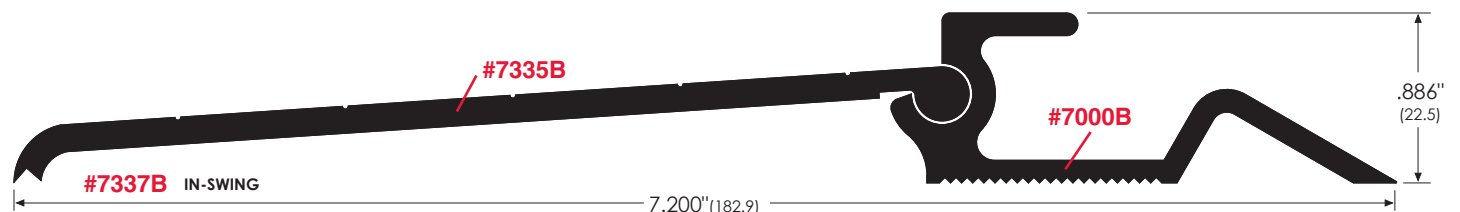
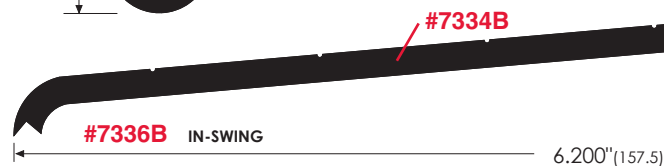
Note: A= Aluminum B= Bronze  
D= Dark Bronze Anodized  
Thresholds can be ordered with E (Epoxy) or V3 (Full Body Strength) options.



## Accessories



## Adjustable Interlocking Thresholds



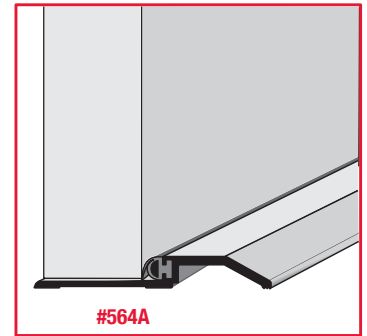
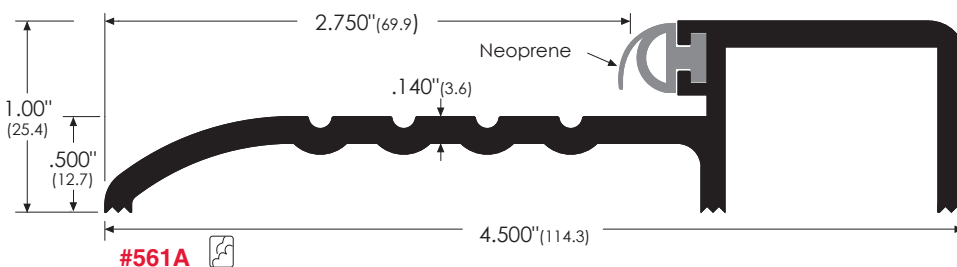
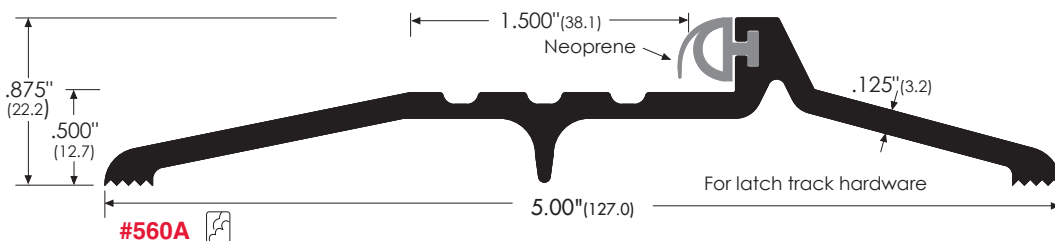
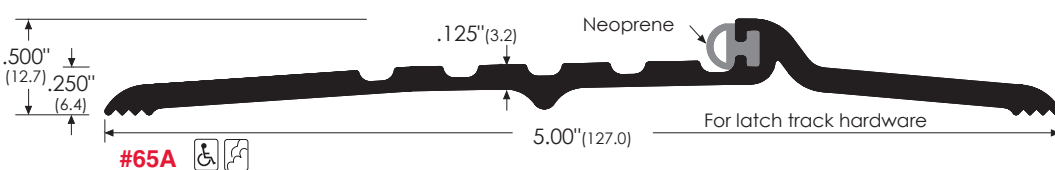
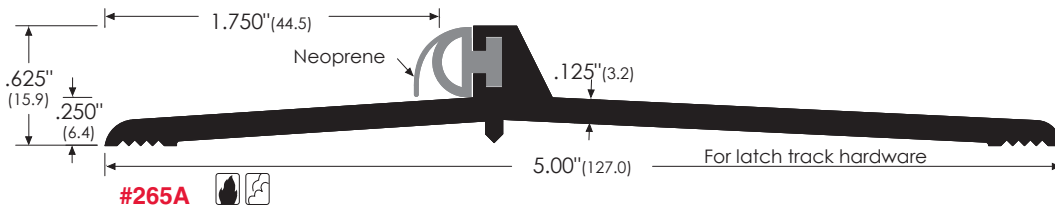
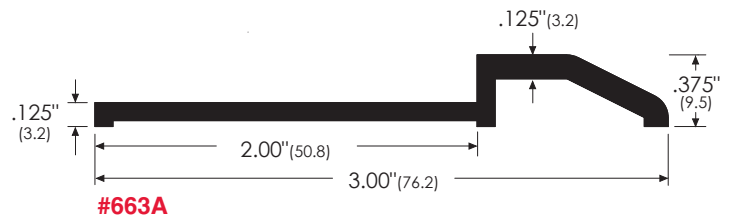
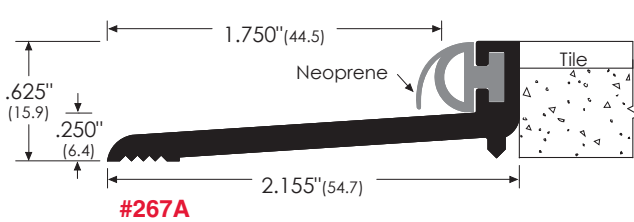
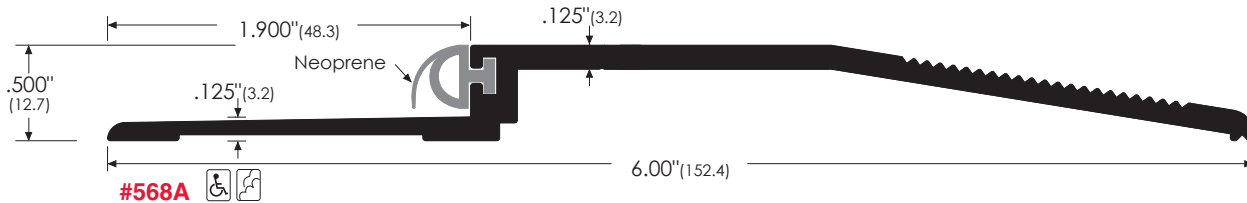
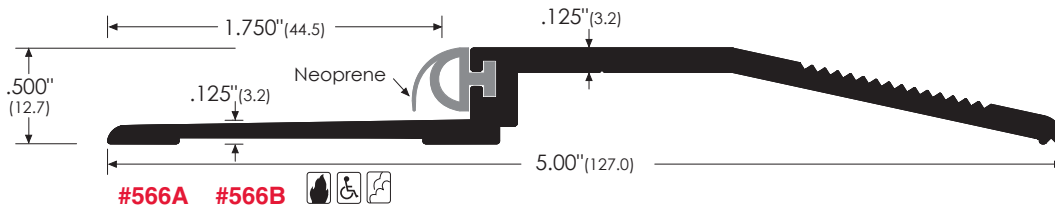
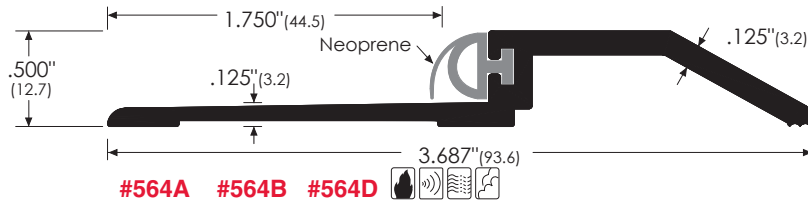
# Rabbeted Thresholds



Note: A= Aluminum B= Bronze  
D= Dark Bronze Anodized

Thresholds can be ordered with E (Epoxy) or V3 (Full Body Strength) options.

Thresholds



**SPECIFY THIS SPECIAL FEATURE**

## EBF= Extruded Bulb/Finger

The Neoprene gasket is designed with an extra lip for double seal protection, and to compensate for any warping or misalignment during installation.

**ZERO Compress-O-Matic®**

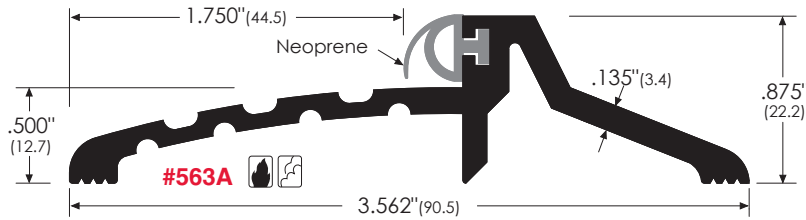


# Rabbeted Thresholds



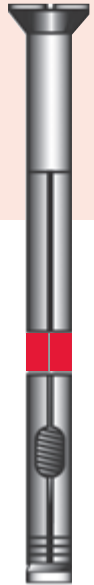
Note: A= Aluminum B= Bronze

Thresholds can be ordered with E (Epoxy) or V3 (Full Body Strength) options.

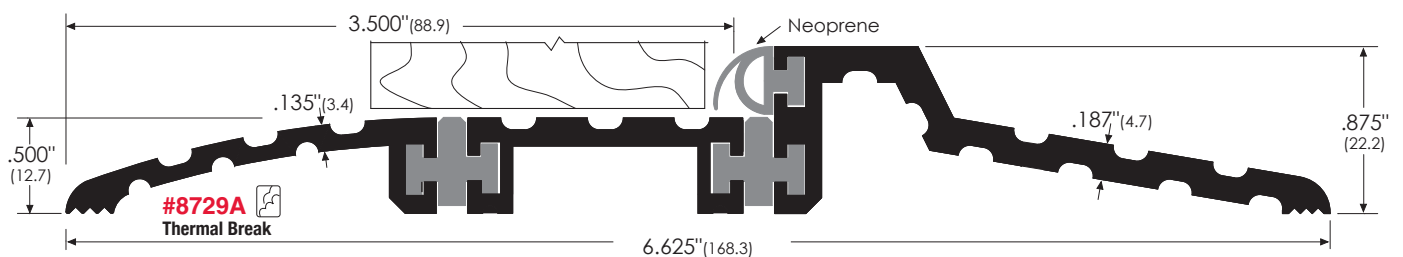
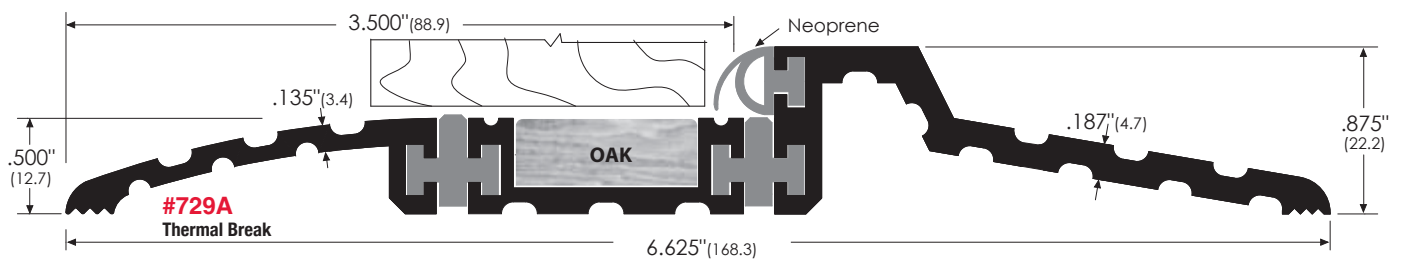
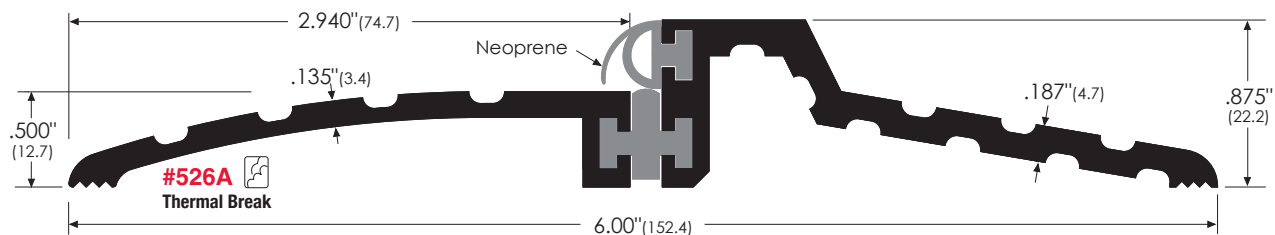
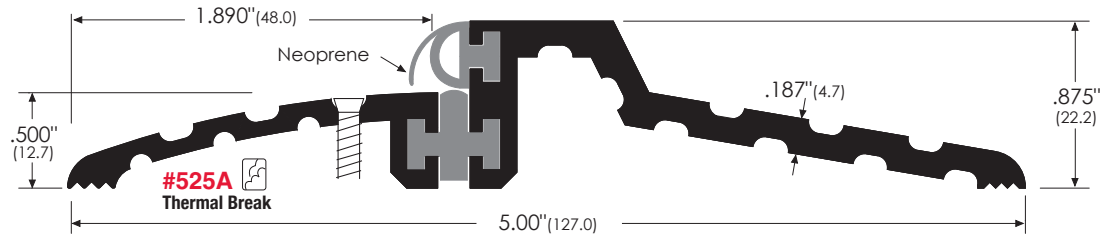
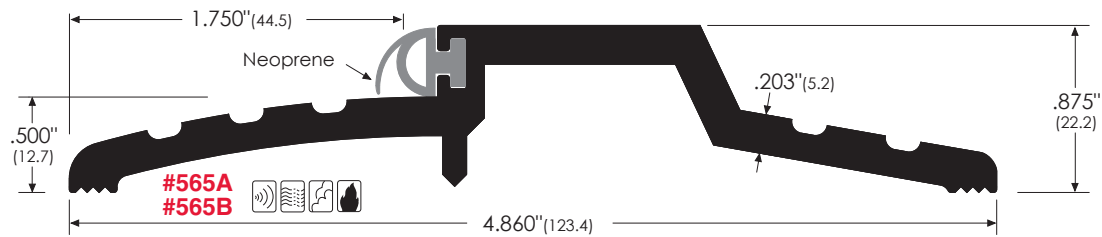
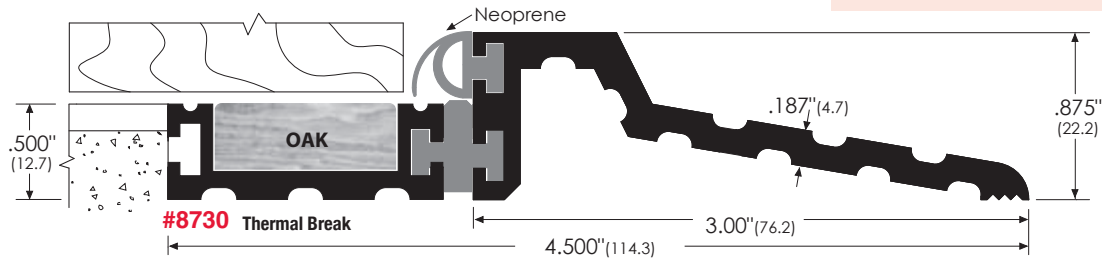


## #226 Stainless Steel Sleeve Anchor Optional for all thresholds

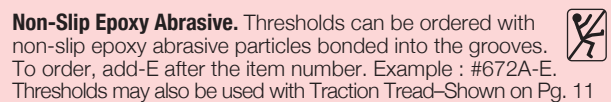
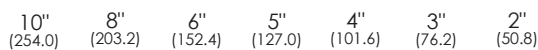
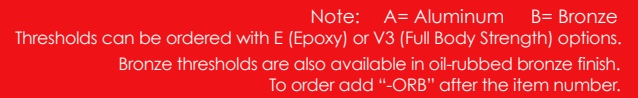
- An expansion anchor and 1/4" - 20 x 3" flat head machine screw in one unit.
- Easy installation. Place threshold in position and drill 1/4" dia. x 3 1/2" deep hole through countersunk hole in threshold. Drop the anchor in place and tighten with screwdriver.



Thresholds



# Thresholds





# Adjustable Thresholds



Note: A= Aluminum B= Bronze  
E= Epoxy

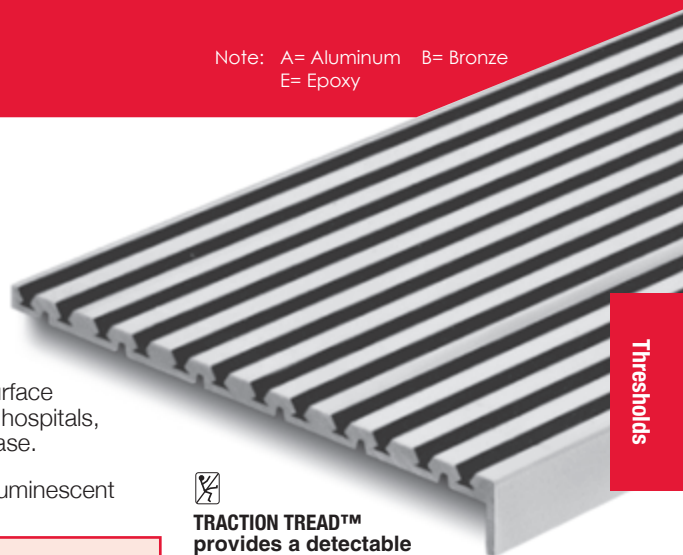
Traction Tread Thresholds and Nosings are available with an epoxy abrasive (non-slip particles) bonded into the grooves, or with formulated rubber inserts.

**RUBBER TRACTION TREAD :** Attractive, smooth, tough rubber inserts that are flush with the aluminum surface for indoor applications. The aluminum / rubber combination is easy to cut and drill at the jobsite. Superior non-slip traction with great longevity.

**ABRASIVE TRACTION TREAD :** The ultimate safety surface. This extremely durable surface provides a high degree of safety for outdoor applications and is ideal for schools, hospitals, industrial buildings. The epoxy abrasive particle mix is bonded to the aluminum base.

**TRACTION TREAD GLOW :** Rubber or Abrasive Traction Tread integrated with photoluminescent tread. For indoor applications. ( See pg. 70 for more details )

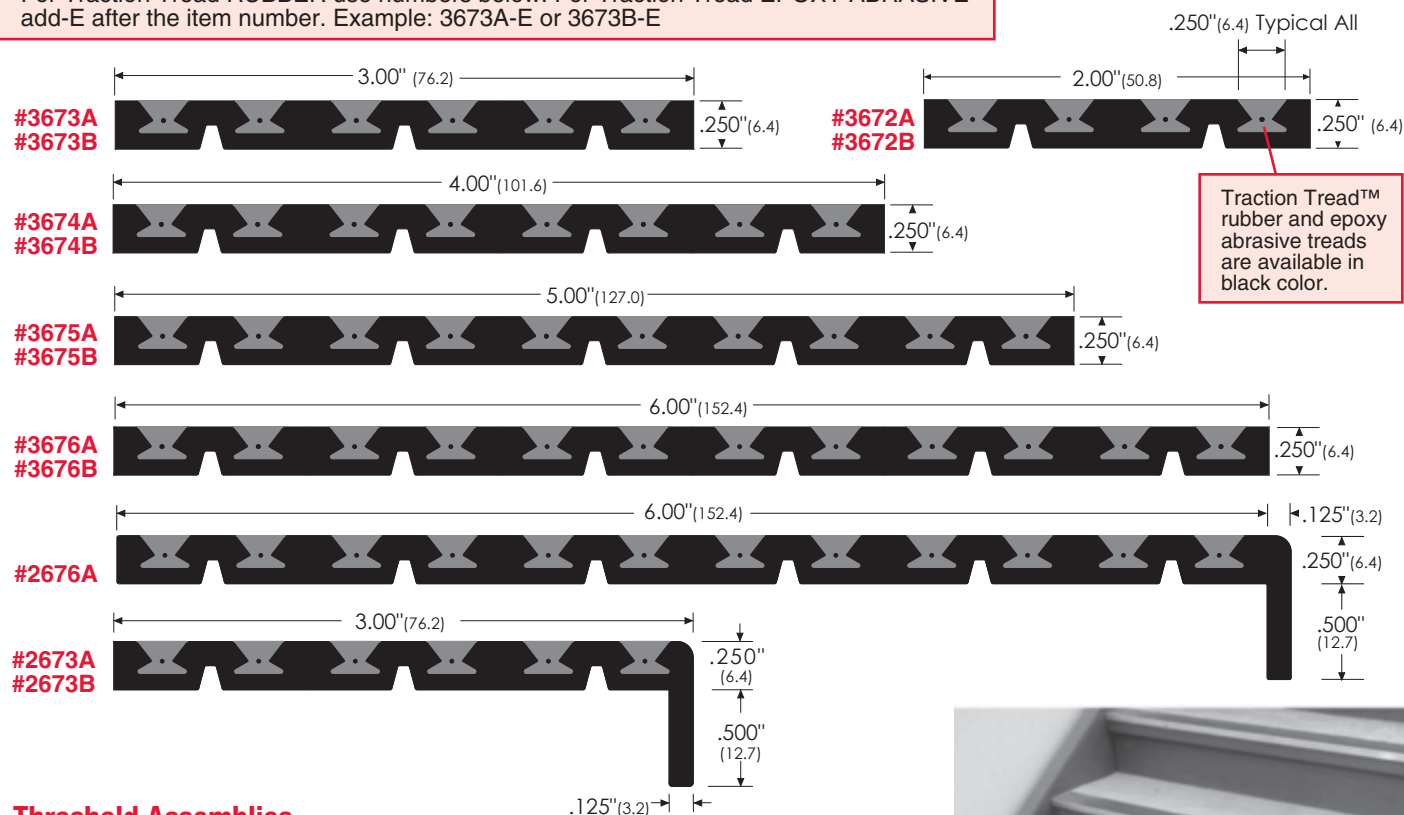
All items shown below can be ordered with rubber or abrasive inserts.  
For Traction Tread RUBBER use numbers below. For Traction Tread EPOXY ABRASIVE add-E after the item number. Example: 3673A-E or 3673B-E



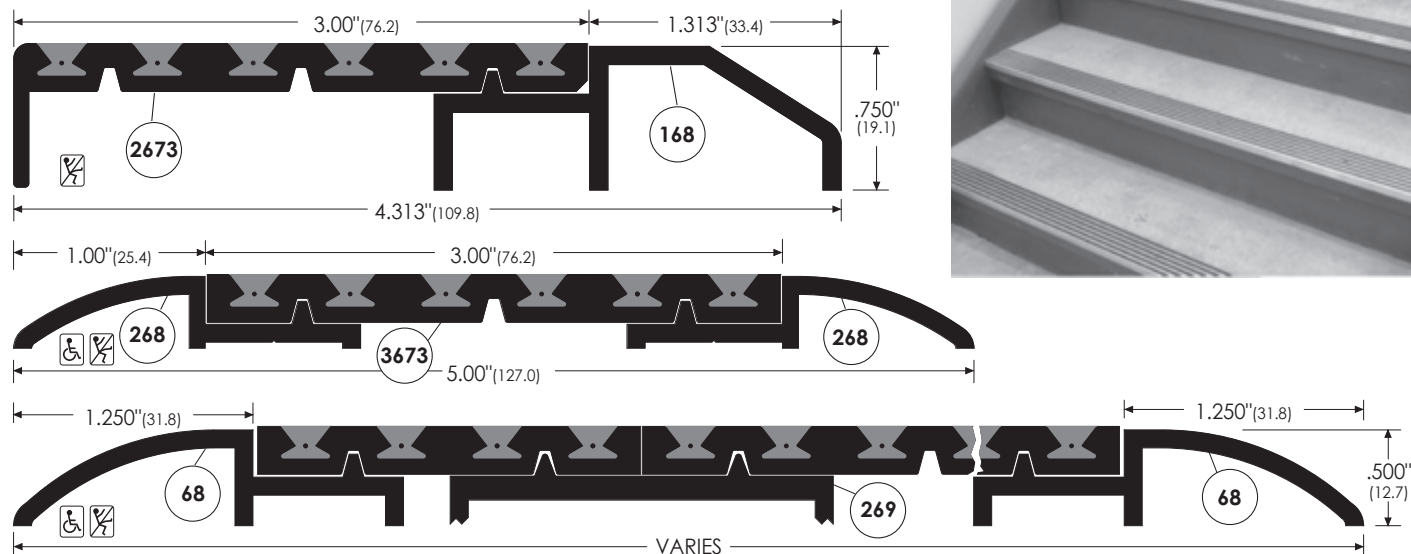
Thresholds



**TRACTION TREAD™**  
provides a detectable  
warning for stairs and ramps



## Threshold Assemblies



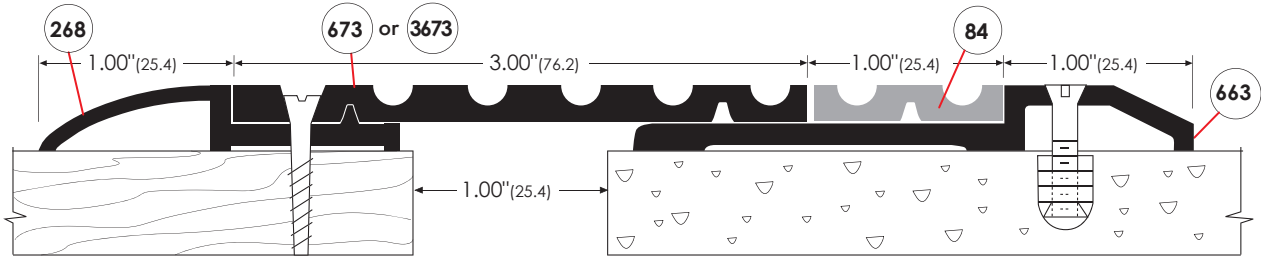
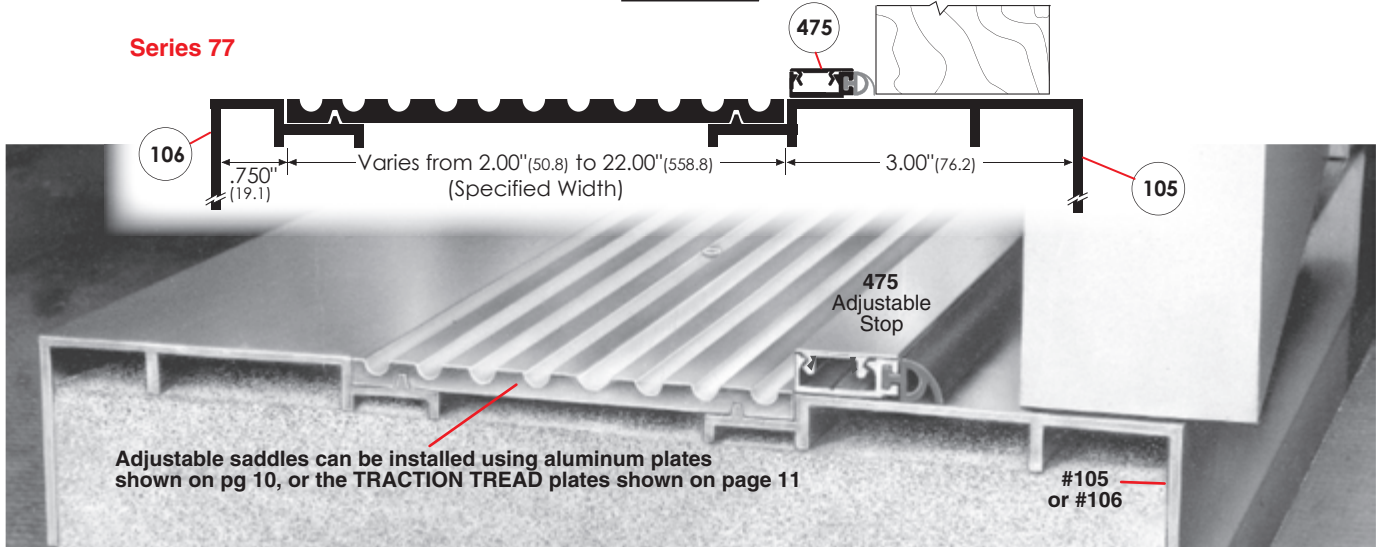
# Bulkhead Door Adjustable Thresholds



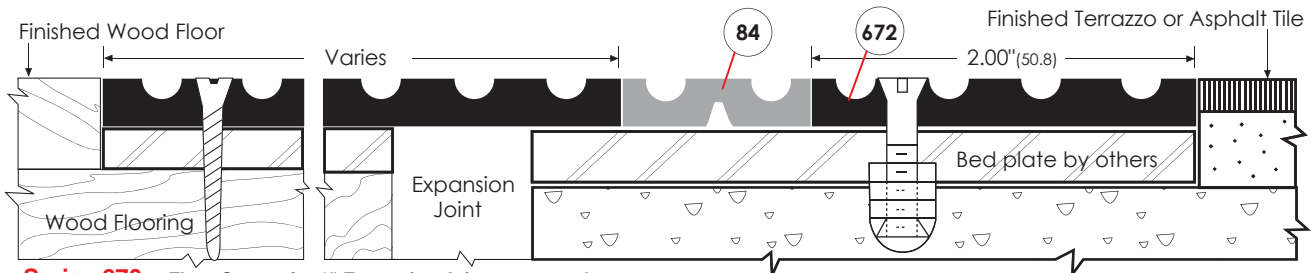
Note: A= Aluminum STST= Stainless Steel  
S= Steel

Thresholds can be ordered with E (Epoxy) or V3 (Full Body Strength) options.

## Series 77



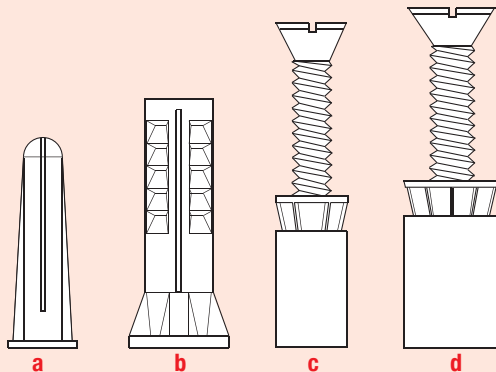
**Series 671** Floor Covers for 1" Expansion Joints, surface



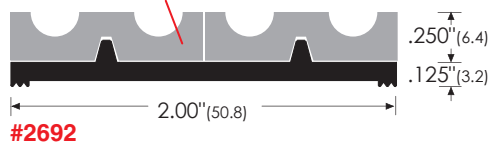
**Series 670** Floor Covers for 1" Expansion Joints, recessed

## Anchors

- a. Plastic shield
- b. Lead shield
- c. MSLA-10  
Anchor w/  
machine screw  
10/24
- d. MSLA-4  
Anchor w/  
machine screw  
1/4"-24

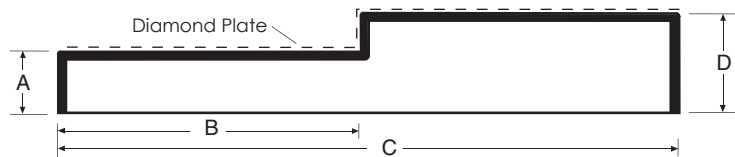


## Traction Tread™ Rubber



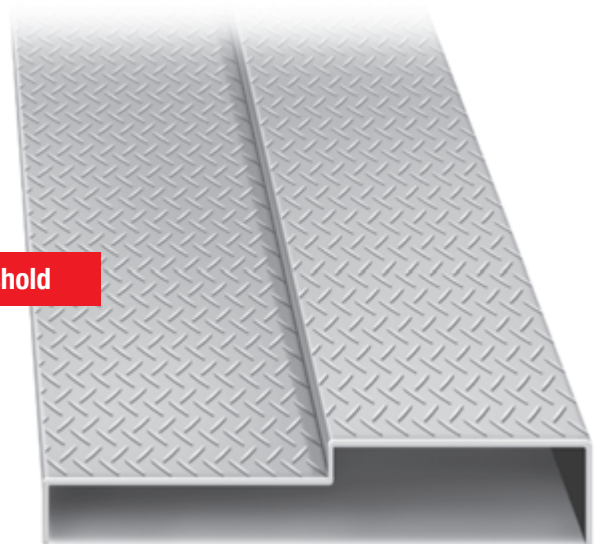
Custom Order  
(specify dimensions)

## Diamond-Plate Bulkhead Threshold



#669 DP-A ( Aluminum )  
#669 DP-S ( Steel )

#669 DP-STST ( Stainless Steel )





# Ramps

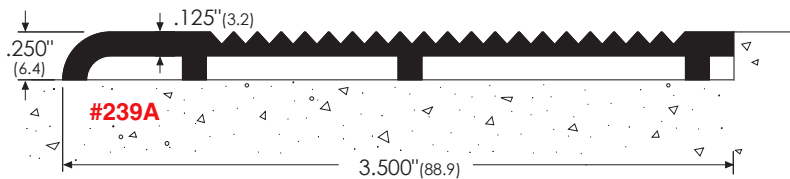
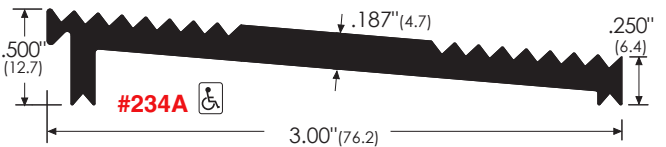
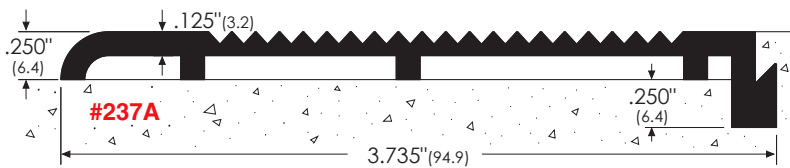
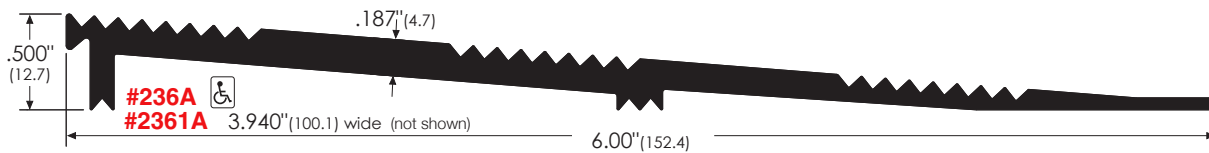
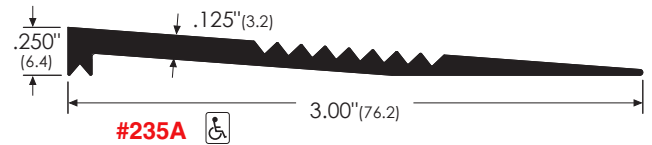
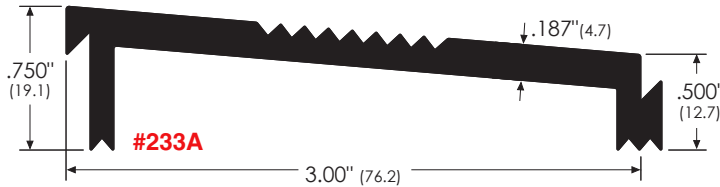


Note: A= Aluminum  
Thresholds can be ordered with E (Epoxy) or V3 (Full Body Strength)  
or L (Photoluminescent) options.



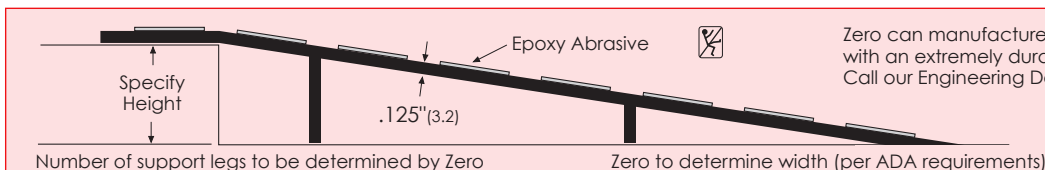
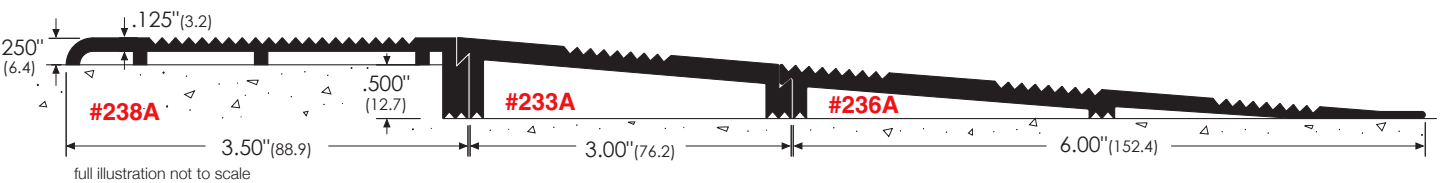
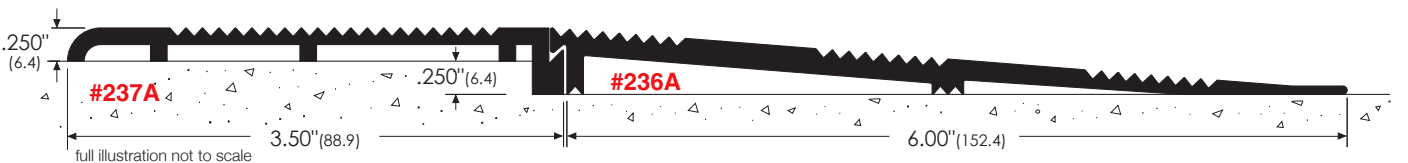
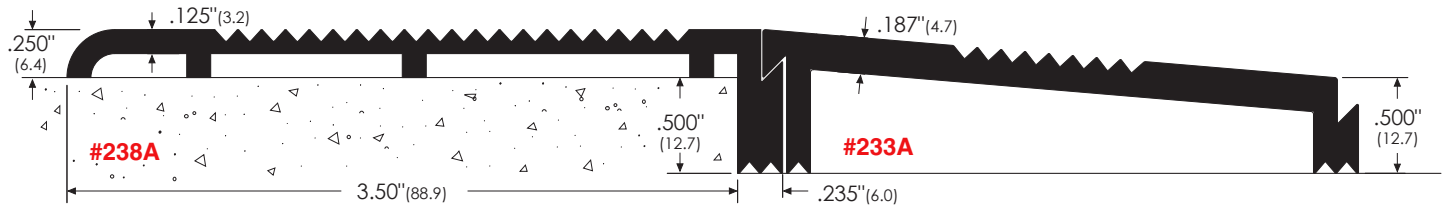
End caps available upon request

Thresholds



## OPTION:

Thresholds can be ordered with **Full Body Strength** option. To order, add **-V3** after the item number. For example : #234A-V3



Zero can manufacture ramps to your specifications, with an extremely durable epoxy abrasive. Call our Engineering Department for information and specs.

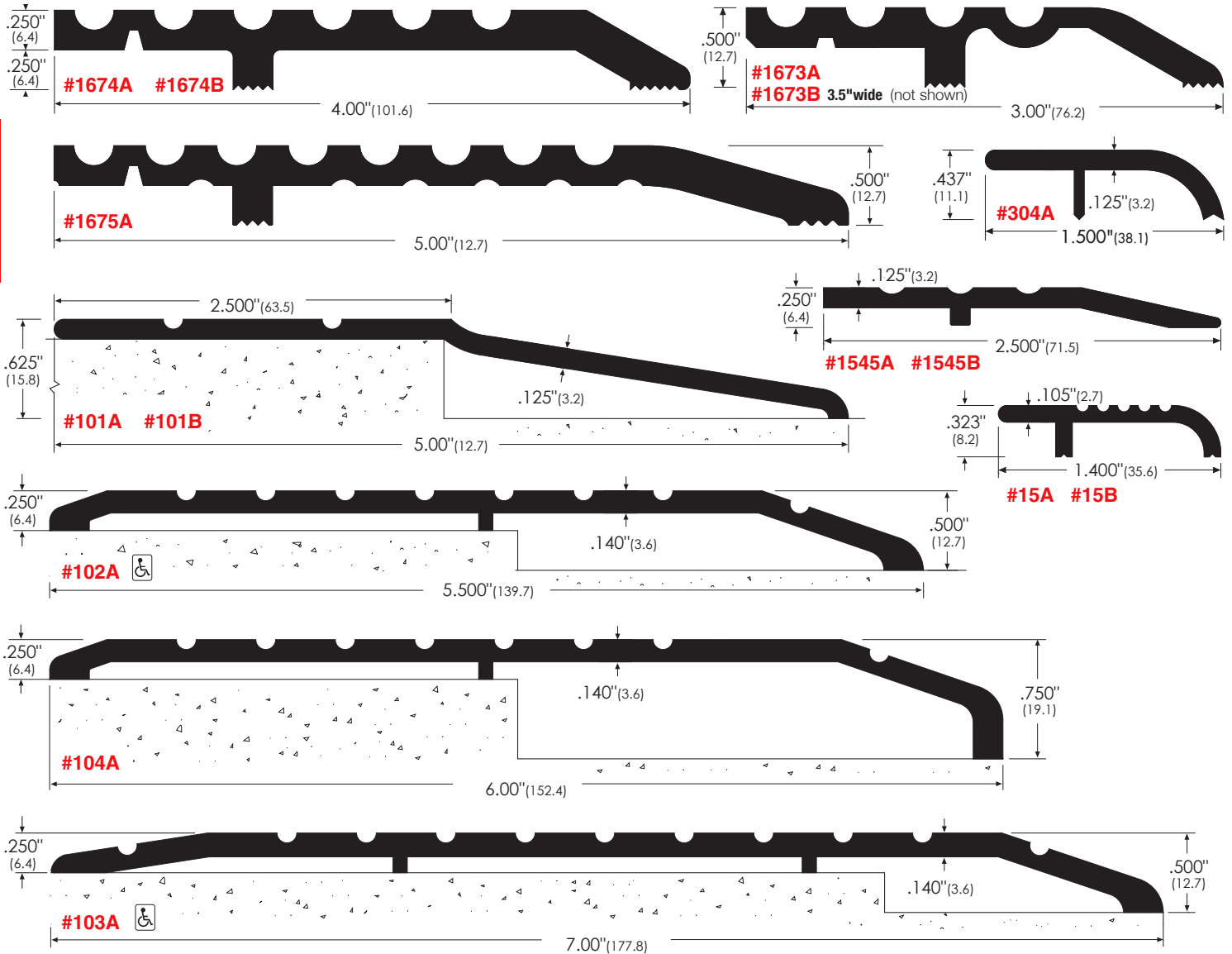
# Butt and Transition Thresholds



Note: A= Aluminum B= Bronze  
R= Rubber

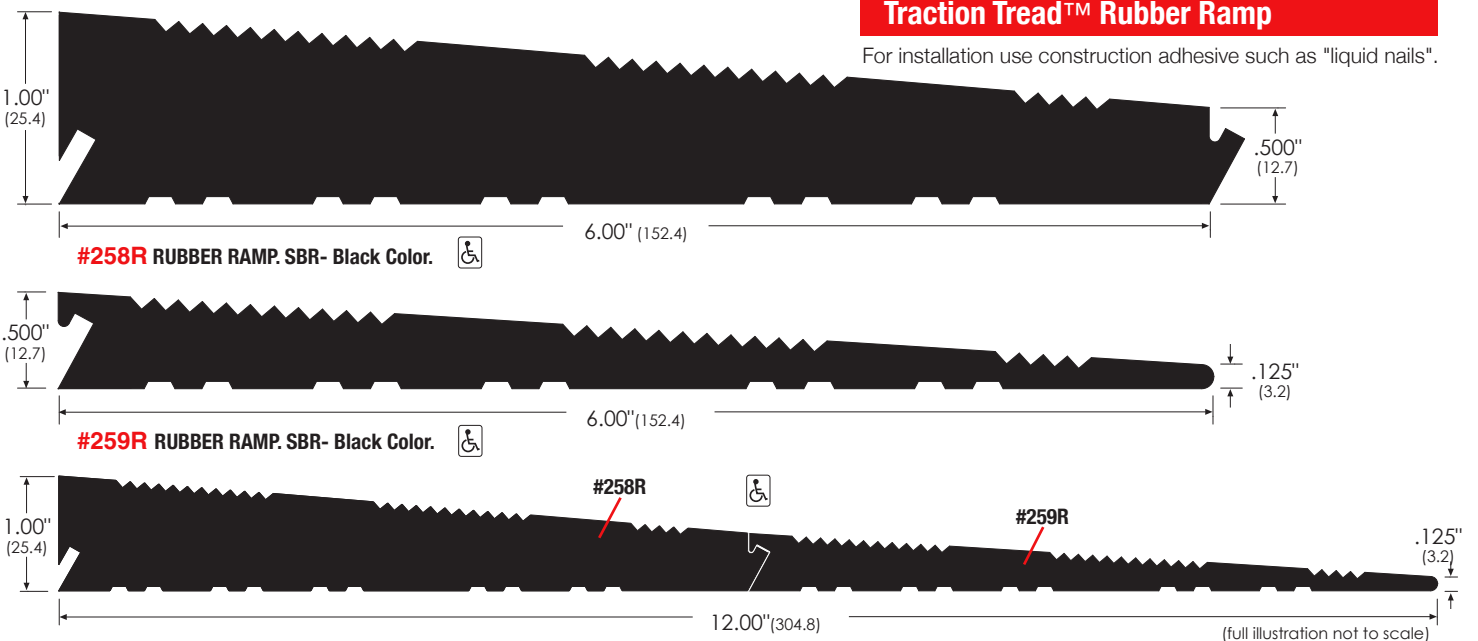
Thresholds can be ordered with E (Epoxy) or V3 (Full Body Strength) options.

Thresholds



## Traction Tread™ Rubber Ramp

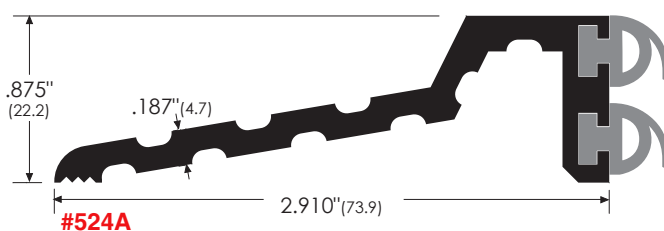
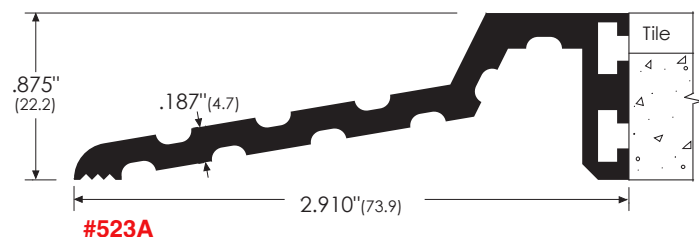
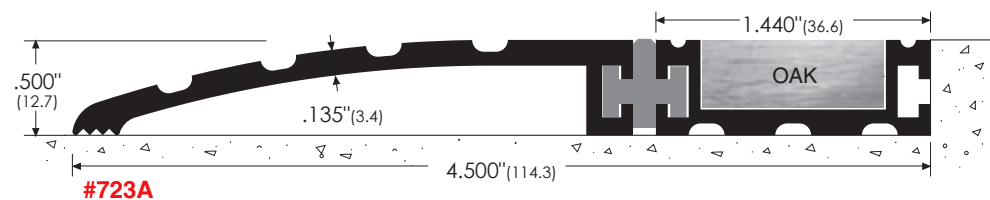
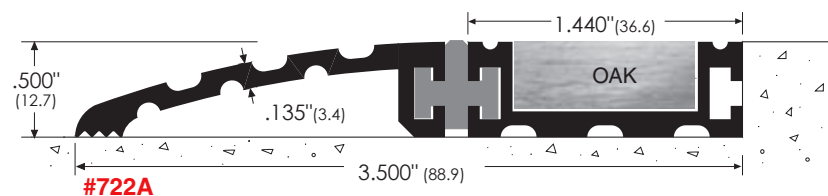
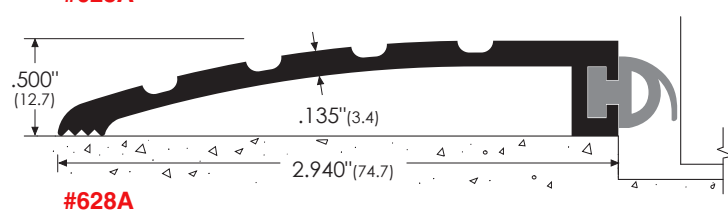
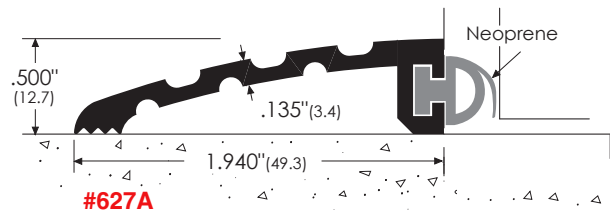
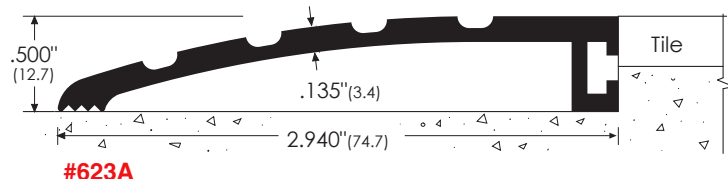
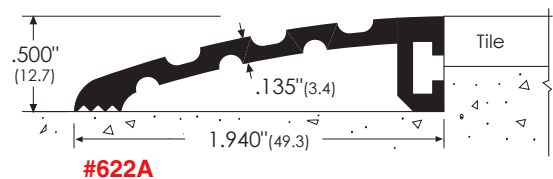
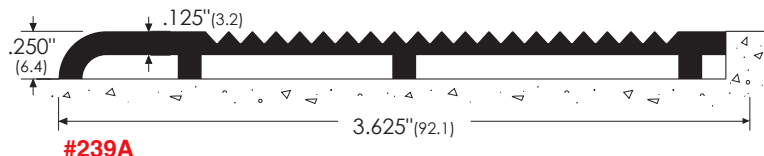
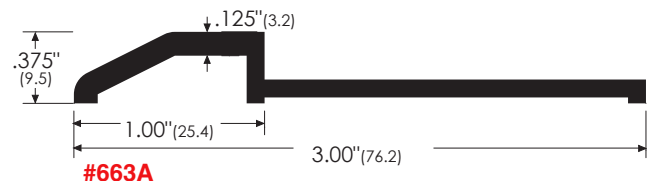
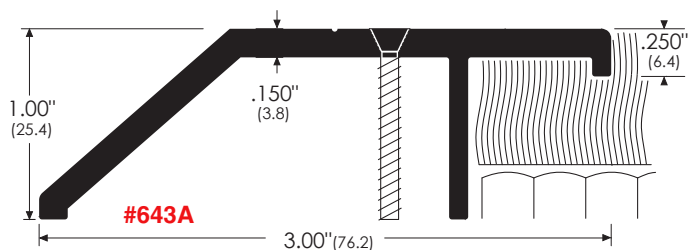
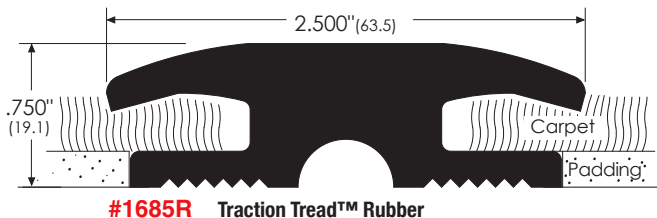
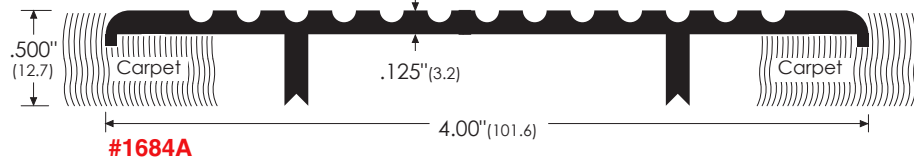
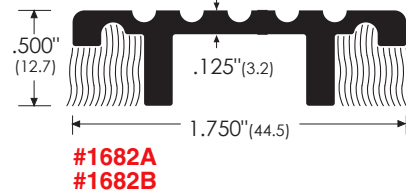
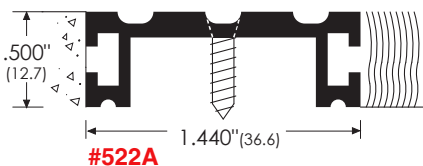
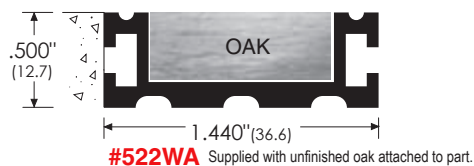
For installation use construction adhesive such as "liquid nails".



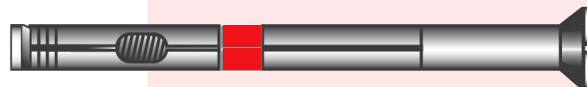
# Thermal Break and Carpet Divider Thresholds



Note: A= Aluminum R= Rubber  
Thresholds can be ordered with E (Epoxy) or V3 (Full Body Strength) options.



## OPTIONAL FOR ALL THRESHOLDS



### #226 Stainless Steel Sleeve Anchor

- An expansion anchor and 1/4" - 20 x 3" flat head machine screw in one unit.
- Easy installation. Place threshold in position and drill 1/4" dia. x 3 1/2" deep hole through countersunk hole in threshold. Drop the anchor in place and tighten with screwdriver.

# Sill Protection Automatic Door Bottoms



Note: AA= Clear Anodized D= Dark Bronze Anodized  
G= Gold Anodized

**ZERO designs and builds door bottoms to last.**  
**Our automatic door bottoms have been tested through 5 million cycles.**  
**You can specify with confidence - these really work!**

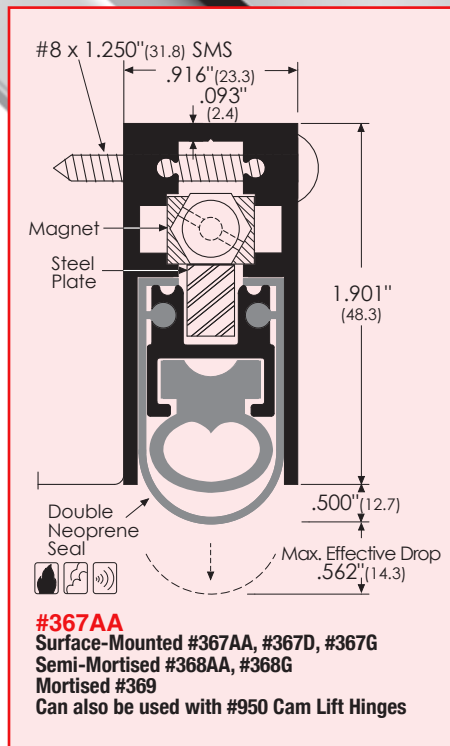
The advanced technology common to all ZERO models utilizes a concealed flat spring mechanism, which activates when the door is closed, lowering a neoprene seal insert against the floor or saddle. A protruding, hinge-side "plunger" is compressed by the frame as the door closes to activate the spring. The seal then drops in a scissors-like motion from the hinge side, adjusting to the floor from a pivoting point. This motion ensures a smooth drop without drag for a tight, secure seal against the saddle or floor. The seal retracts automatically as the door is opened.

Door Bottoms

## Specifications:

- Maximum drop 1".
- Reversible -- same unit used for left or right-handed door.
- #351, 361, 365 -- rated for up to "A" label (3hrs.)
- #360, 364, 367, 369 -- rated for up to "B" label (1 1/2hrs.)
- #360, 361, 362 supplied with closed-cell sponge neoprene, self-extinguishing, under MIL R 6130 Type II Class A, B, C.
- #350, 351, 352, 354, 365, 366, 364 supplied with solid neoprene extrusion, self-extinguishing, under MIL R6855 Type II Class 40 oil resistant.
- All rated for 5 million cycles.

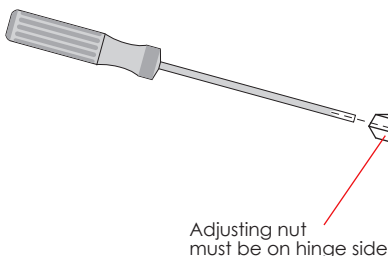
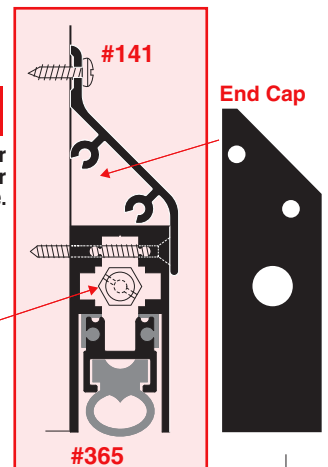
U.S. Patent 34947584



## OPTIONS

Watershed, Locking Key and End Cover options for Surface-Mounted Door Bottoms available.

**#8361 Key**  
Locking Key (fits over adjusting nut)



Adjusting Brass Cylinder Nut has pop-in plastic cushion for a more finished look on architectural doors.

Mounting holes

Magnet  
Steel Plate

Lock Side of Door

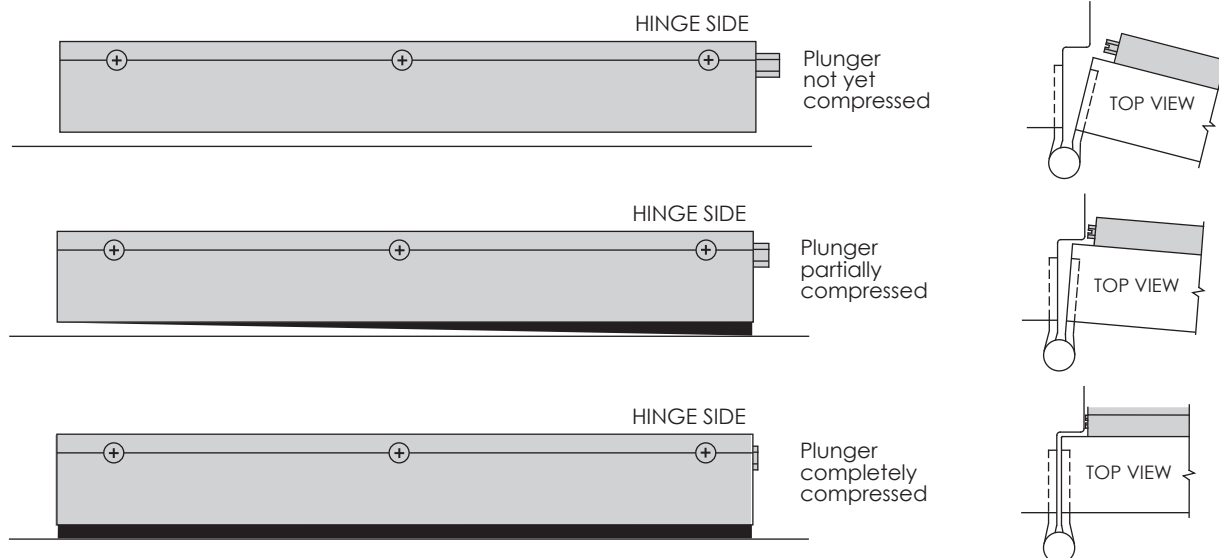
## High Sound Automatic Door Bottom

U.S. Patent 34947584 Foreign Patents Available





All ZERO automatic door bottoms function the same way. The mechanism causes the insert seal to activate on the hinge side first. It prevents the seal from dragging along the floor or threshold while the door is being closed to avoid door hang-up or closing delay.



AUTO. DOOR BOTTOM LENGTH	16" (406)	16"+ to 18" (406+ - 457)	18"+ to 24" (457+ - 508)	24"+ to 30" (508+ - 559)	30"+ to 32" (762+ - 813)	32"+ to 36" (813+ - 914)	36"+ to 42" (914+ - 1067)	42"+ to 48" (1067+ - 1219)
MINIMUM LENGTH AFTER CUTTING	14"	15.5"	17"	22"	26"	29"	34"	40"

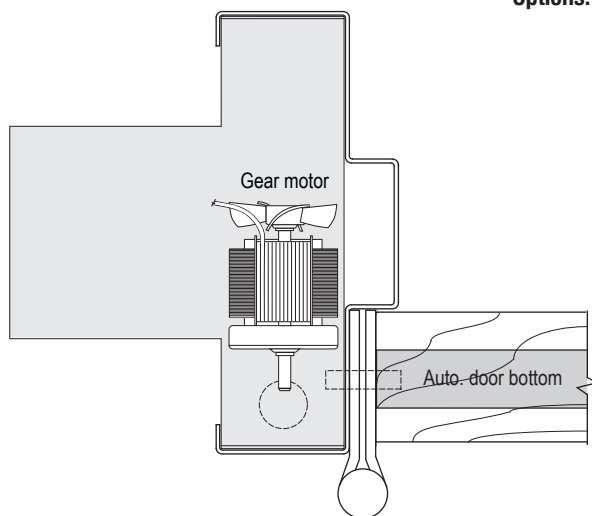
\*Does not apply for Light Spring types or part #367, #368, #369. Special order for 12" - 16" long door bottom, available with maximum length 168".

## Uncommon Applications

### ■ Door Bottom on Standby

Options: **Z46 - Electrical**  
**Z48 - Mechanical**

( Please contact our Engineering Department for additional information and specifications.)



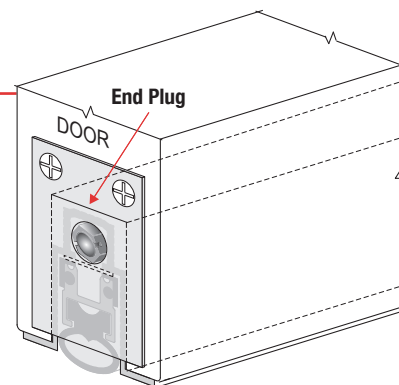
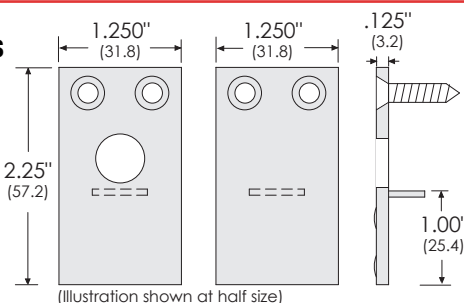
This door bottom features a specially designed geared motor electrically wired to an alarm system. Instead of functioning automatically each time the door opens and closes, the door bottom drops in place and seals the gap under the door only when triggered by the alarm system. Mechanical system (no wiring) is also available.

Designed for applications where gaps under the door are desired for ventilation but must be sealed under specified emergency conditions, this specialized option is ideal for laboratories needing standby systems to help contain spills and related fumes. Also suitable for standby fire and smoke protection for hotel guest rooms in situations where door bottom gaps are normally used to improve air circulation.

### ■ Concealed Door Bottom - Easy Access

Option: **Z49 Holding Plate**

Z49 plates are designed to secure Automatic Door Bottoms to the door using no bottom screws. The unit can be removed from either end without taking the door off the frame. (To order, specify for example #351A - Z49)



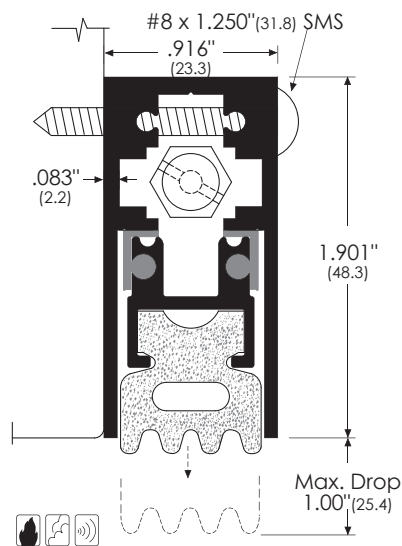
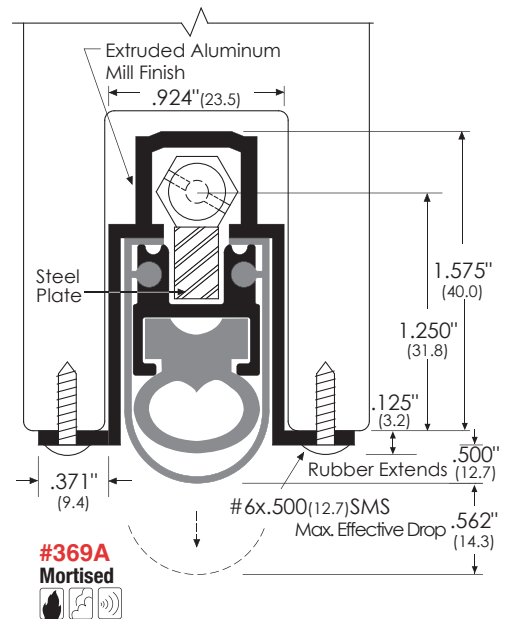
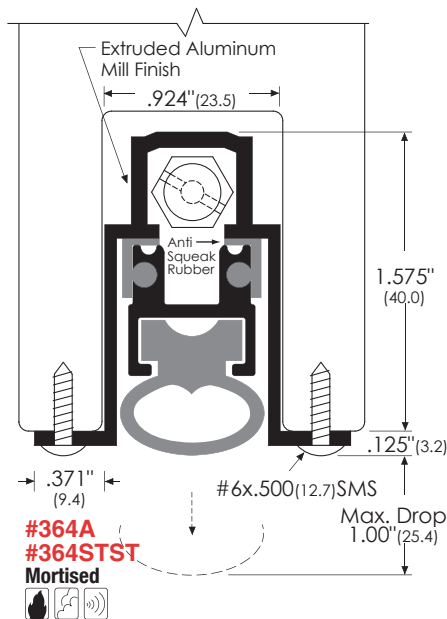
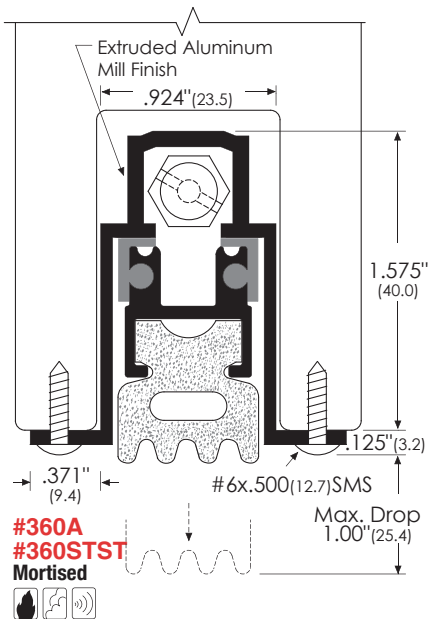
# Sill Protection Automatic Door Bottoms - Heavy Duty



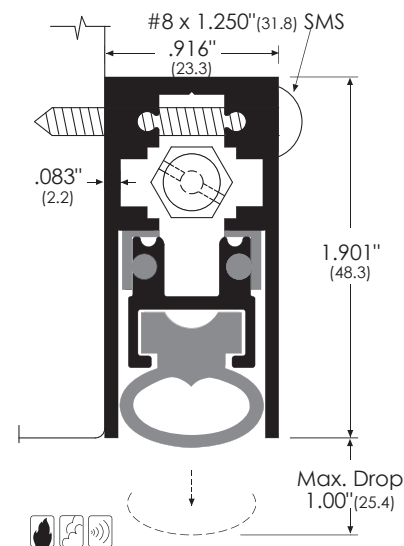
Note: A= Aluminum  
D= Dark Bronze Anodized  
STST = Stainless Steel

AA= Clear Anodized  
G= Gold Anodized

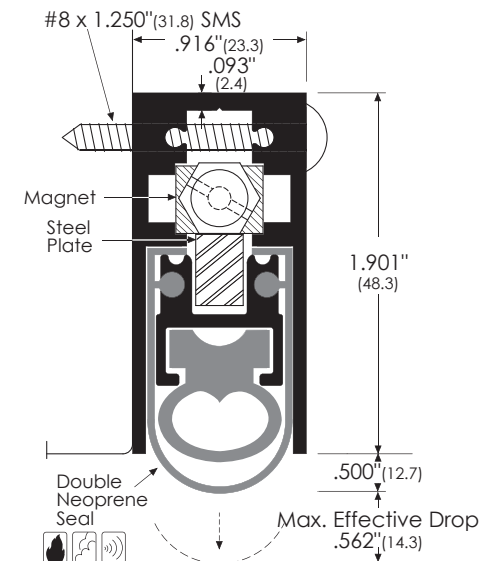
Door Bottoms



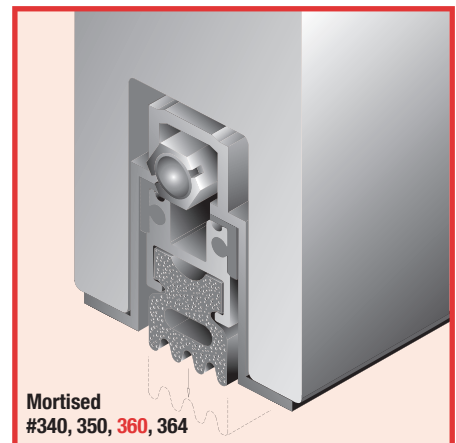
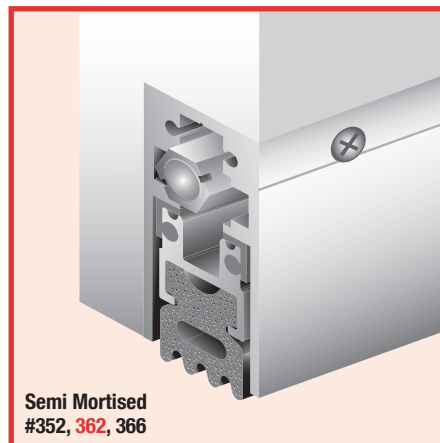
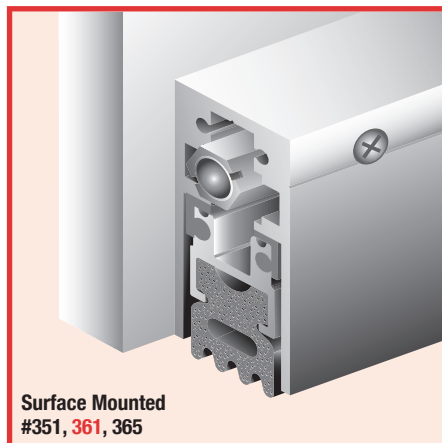
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**#362AA**  
**#362D**  
**#362G**



**Semi-Mortised**  
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**#366G**



**Semi-Mortised**  
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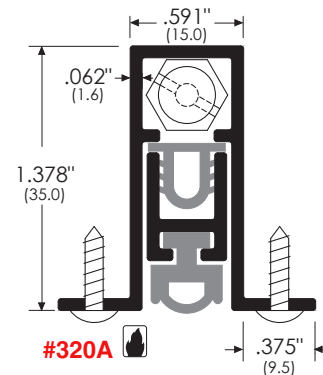
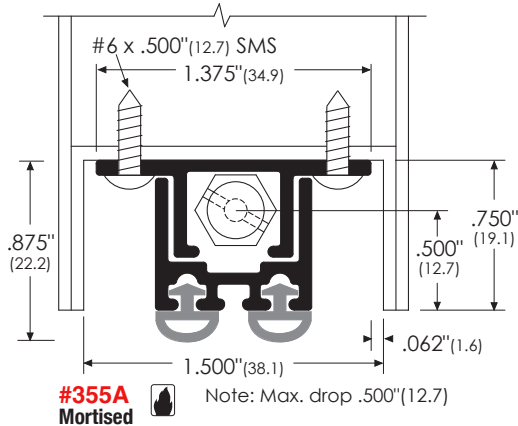
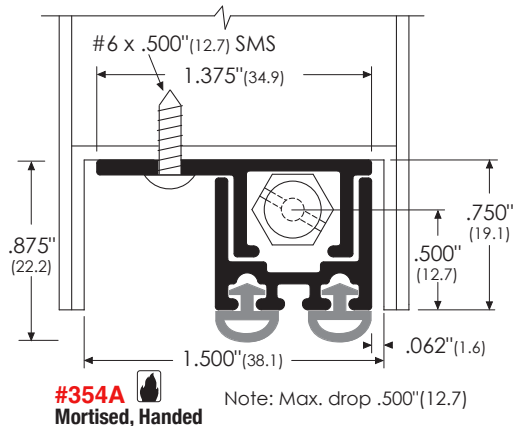
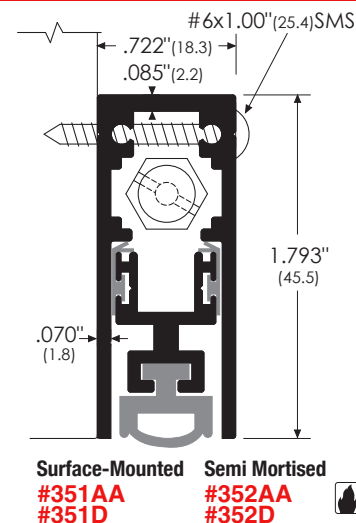
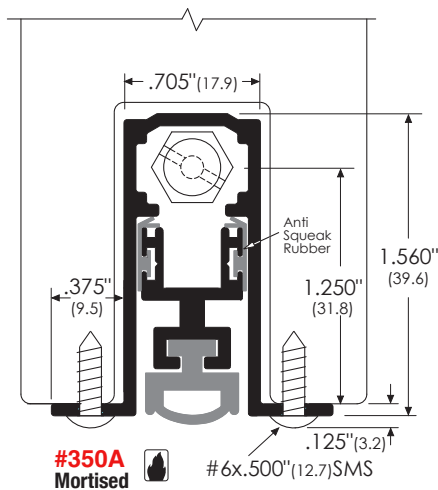
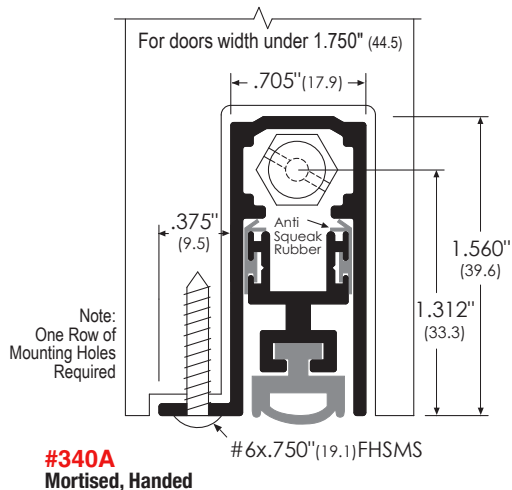


# Sill Protection Automatic Door Bottoms - Regular Duty



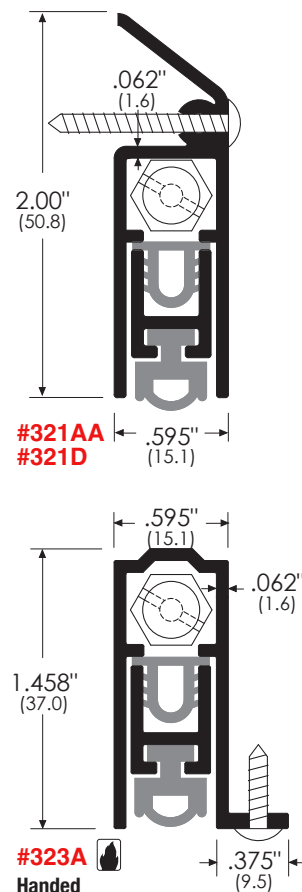
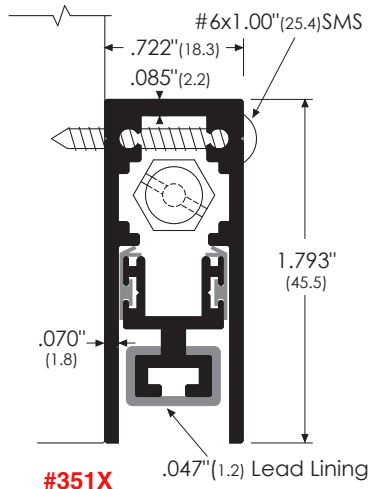
Note: A= Aluminum  
D= Dark Bronze Anodized

AA= Clear Anodized



## Lead-Lined, Regular Duty Automatic Door Bottom #340, #350, #351, #352

Used with lead-lined doors and frames to insure complete X-RAY protection. This feature is also good for rodent control and is available in all regular-duty surface-mounted, semi-mortised and mortised models. Maximum effective drop .250" (6.4).



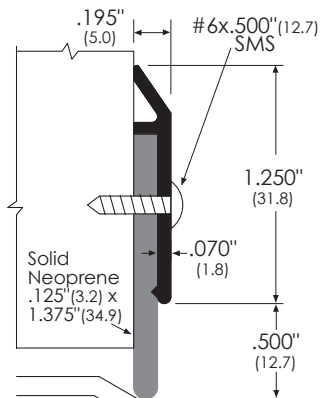
# Sill Protection Sweeps



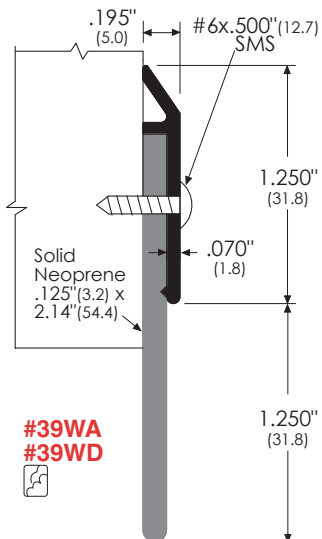
Note: A= Aluminum  
B= Bronze  
D= Dark Bronze Anodized

AA = Clear Anodized  
G = Gold Anodized

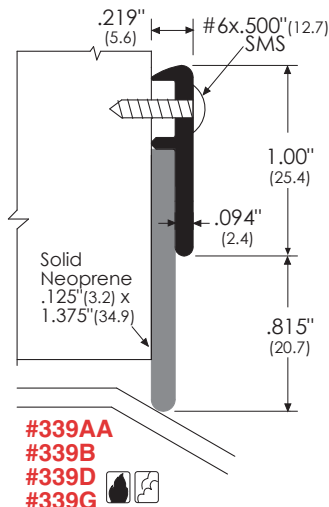
Door Sweeps



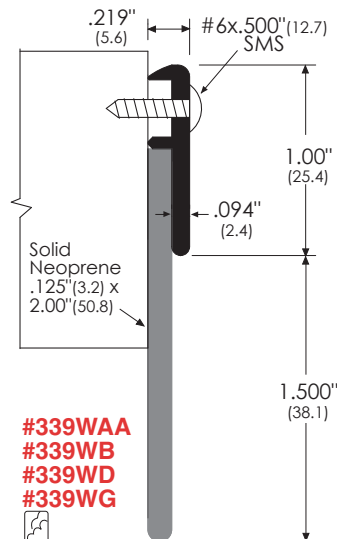
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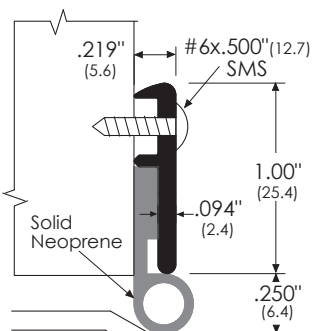
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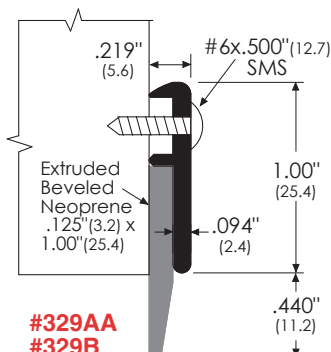
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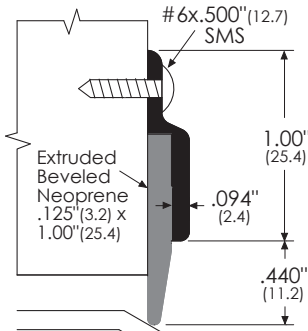
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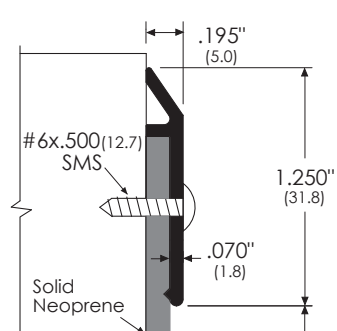
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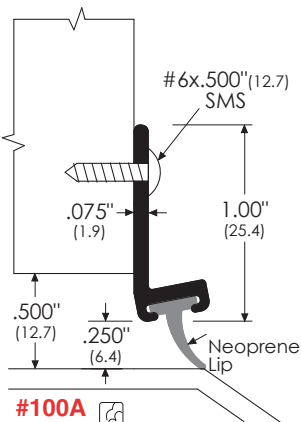
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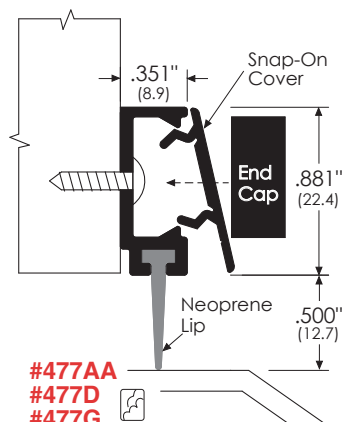
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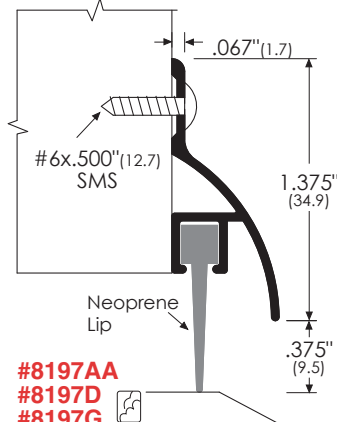
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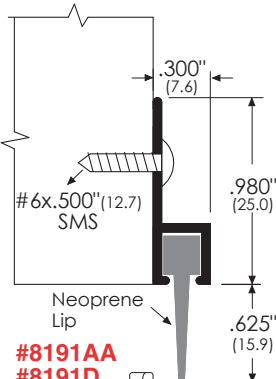
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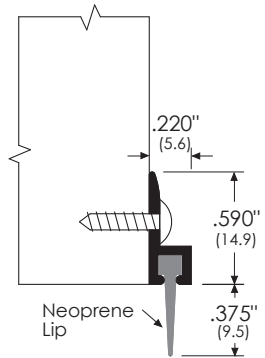
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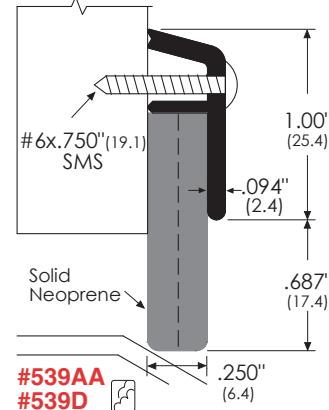
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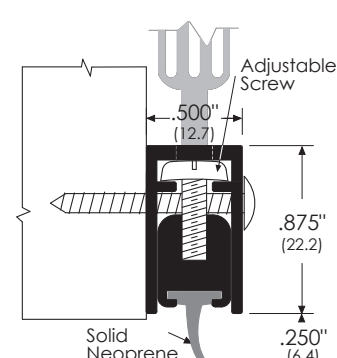
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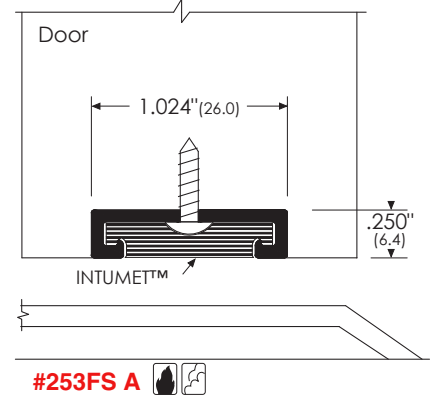
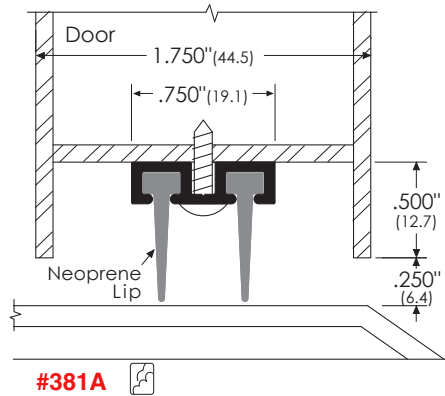
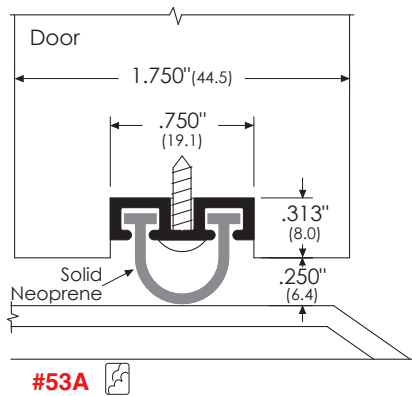
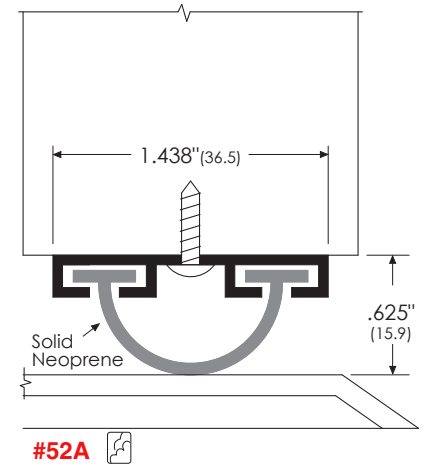
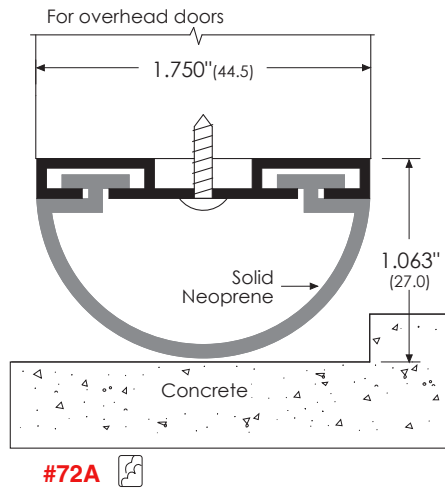
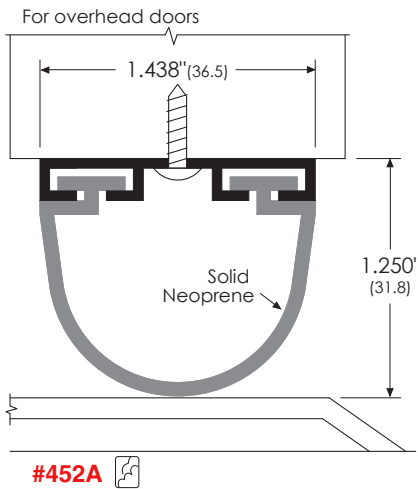
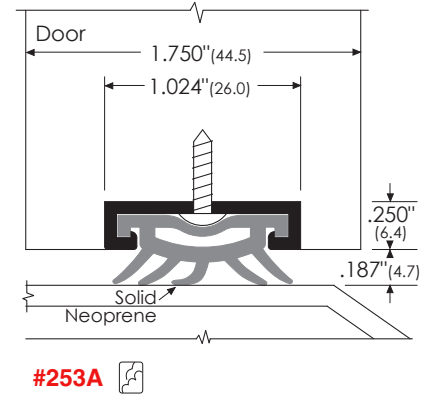
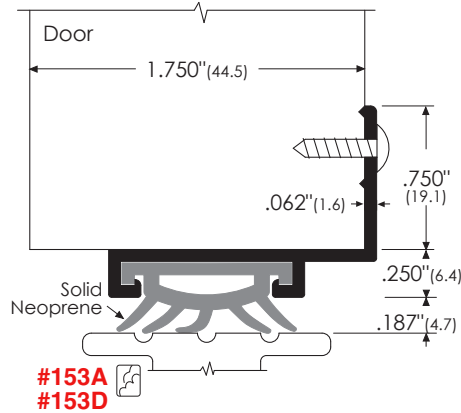
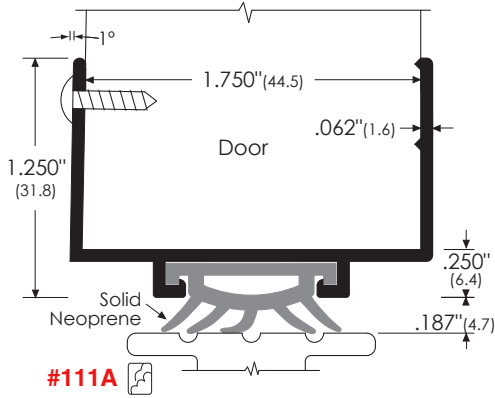


# Sill Protection Sweeps



Note: A= Aluminum  
D= Dark Bronze Anodized

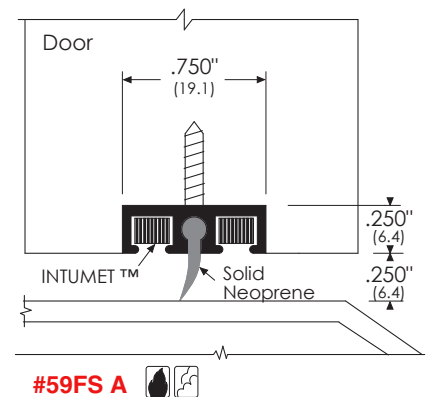
AA= Clear Anodized



**Regain  
Lost Fire Rating**

**Approved for 20 minute  
fire-rated wood doors with  
excessive undercut up to 1.250".  
ITS-listed to positive pressure  
UBC 7-2 1997.**

**#339FS AA  
#339FS D**



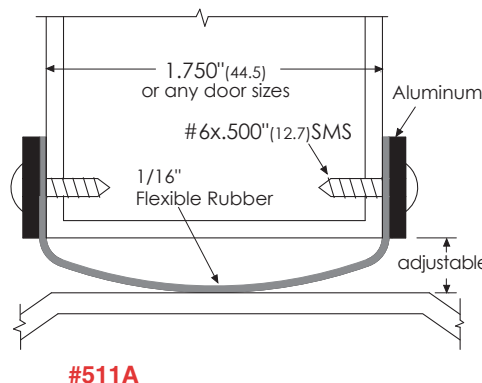
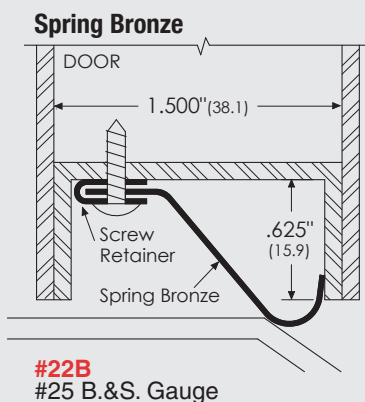
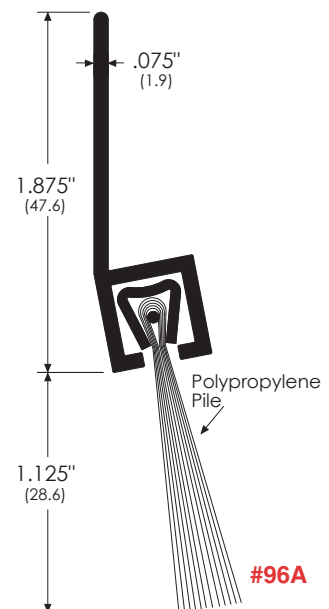
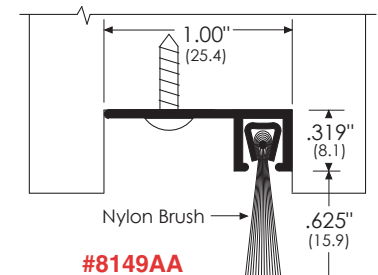
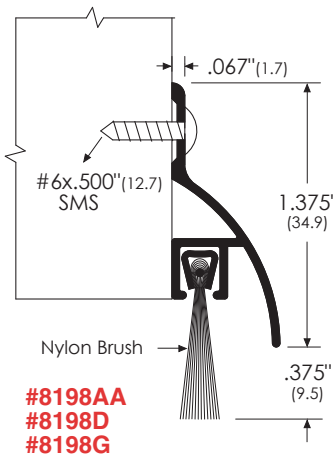
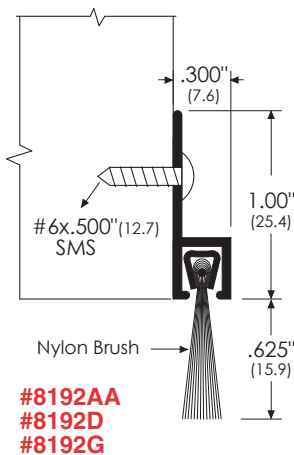
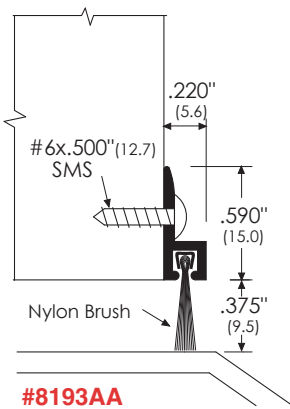
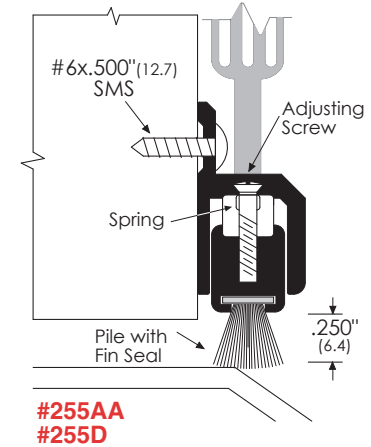
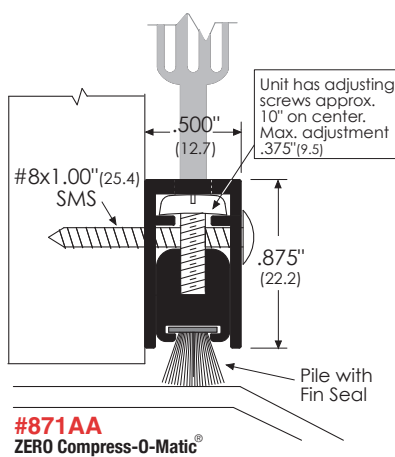
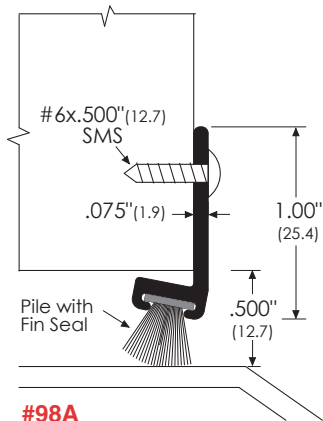
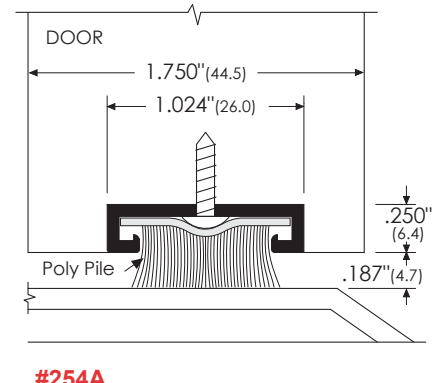
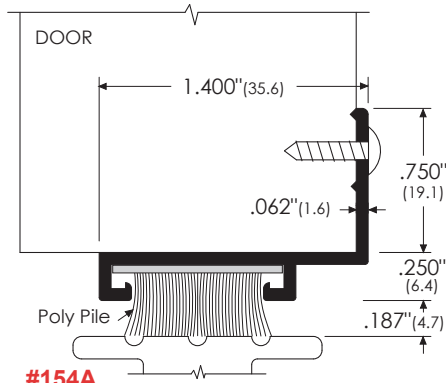
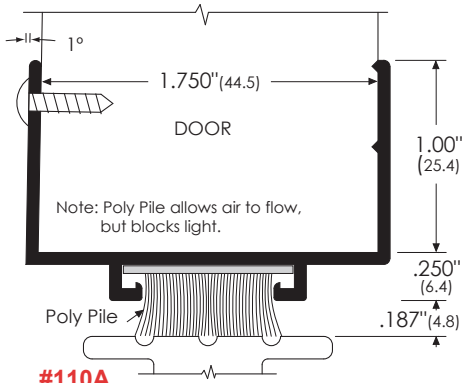
Door Sweeps



# Sill Protection Sweeps



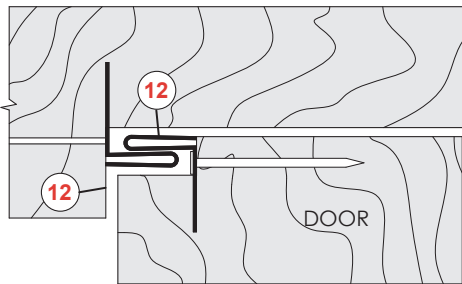
Note: A= Aluminum  
B= Bronze  
S= Silicone  
AA= Clear Anodized  
G= Gold Anodized  
ST= Stainless Steel



Door Sweeps

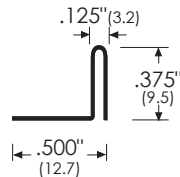
## Series 10F (In-swing, Out-swing)

Specify series 10F & door size

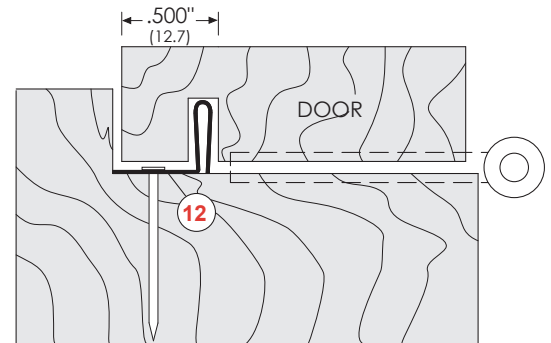


**HEAD & LOCK-SIDE JAMB**

11 Gauge Zinc or  
25 B.&S. Gauge Bronze



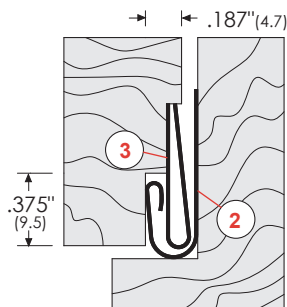
**#12**



**HINGE-SIDE JAMB**

## Series 132 (In-swing)

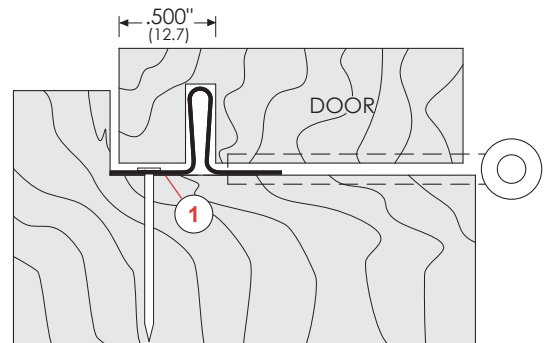
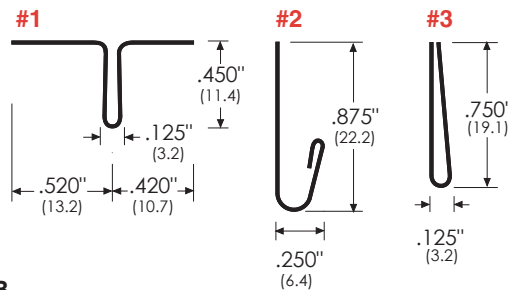
Specify series 132 & door size



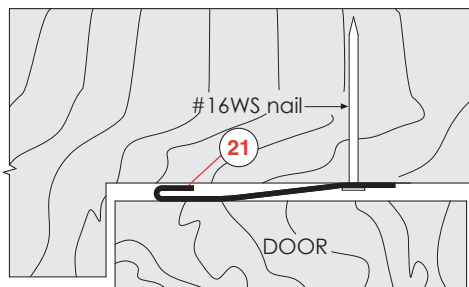
**HEAD & LOCK-SIDE JAMB**

#16 x 7/8" nails 2" O.C.

9 Gauge Zinc or 25 B.&S. Gauge Bronze



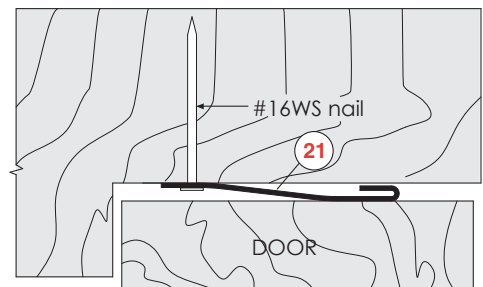
**HINGE-SIDE JAMB**



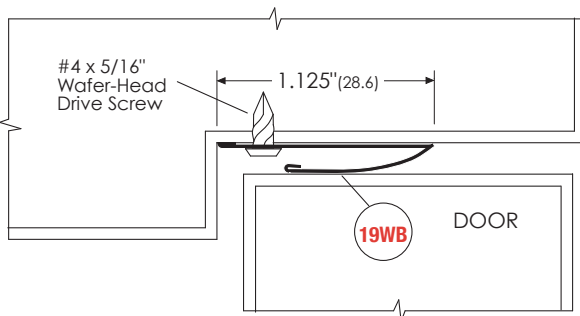
**HEAD & LOCK-SIDE JAMB**



**#21B**  
31 B.&S. Gauge Spring Bronze



**HINGE-SIDE JAMB**



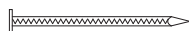
### FOR HOLLOW METAL DOORS

#4 x 5/16" wafer-head drive screws  
used for installation on metal doors

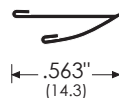


### FOR WOOD DOORS

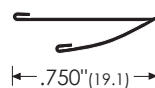
#16 x 7/8" weatherstrip nails  
used for installation on wood doors



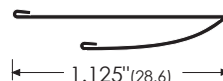
34 B.&S. Gauge Bronze Spring or  
35 B.&S. Gauge Stainless Steel



**#18B**  
**#18S**

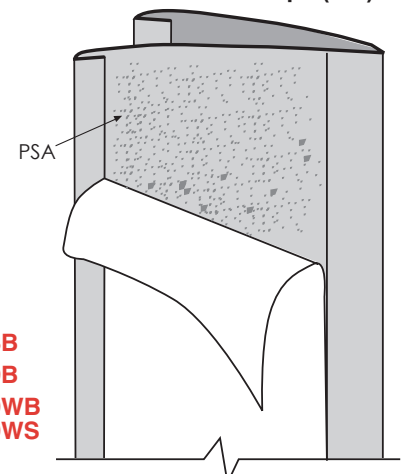


**#19B** (Bronze Only)



**#19WB**  
**#19WS**

Available with self-adhesive tape (PSA)



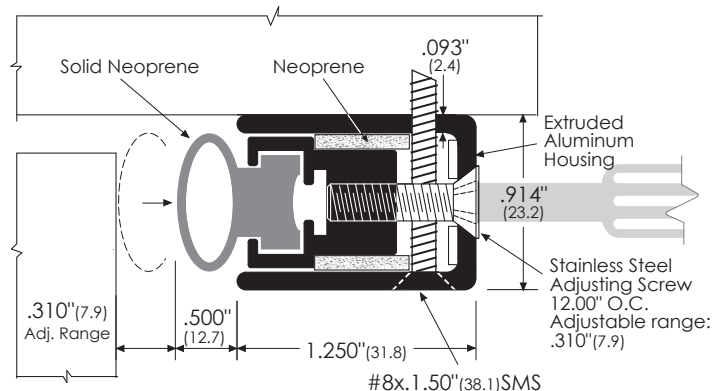
**#118B**  
**#119B**  
**#119WB**  
**#119WS**

See pg. 31 for detail.

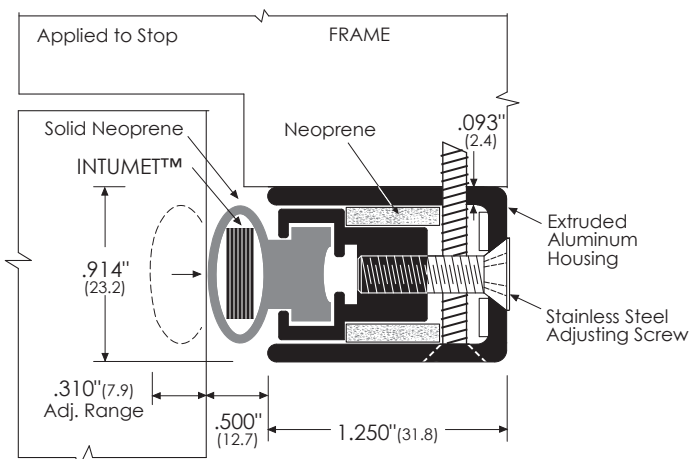
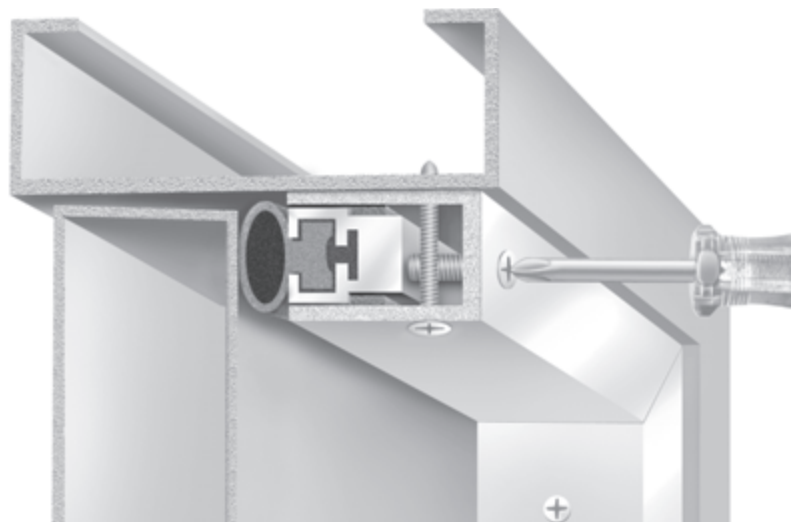
# Adjustable Sealing Systems- Jamb Applied



Note: AA= Clear Anodized G= Gold Anodized STS= Stainless Steel  
D= Dark Bronze Anodized SP= Steel Prime



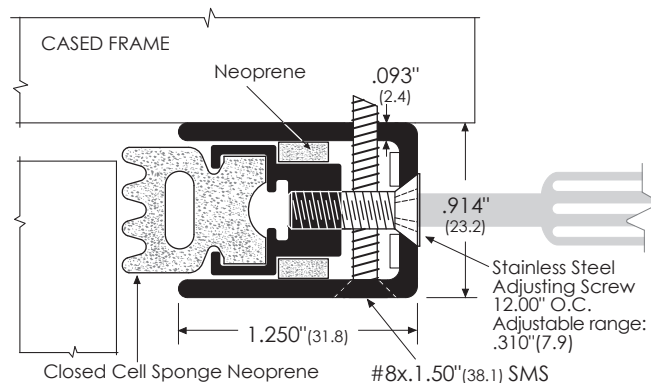
**#770AA #770D**  
**ZERO Compress-O-Matic®**  
45 min. as a stop  
90 min. when applied to stop



**#770FS AA**  
**#770FS D**  
**#770FS G**



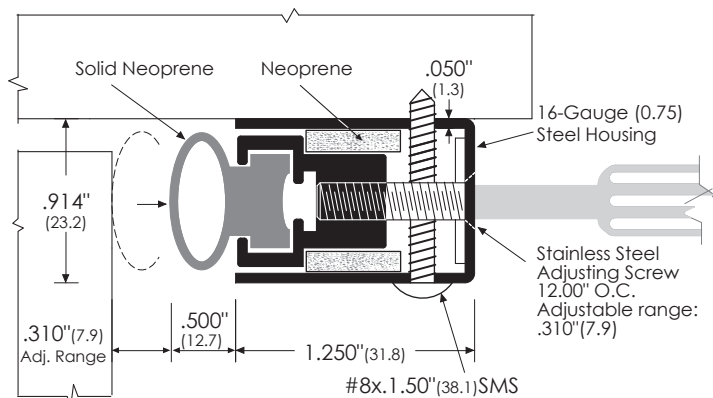
770FS has 180 min. fire rating for metal doors when applied to 5/8" stop



**#170AA**  
**#170D**  
**#170G**

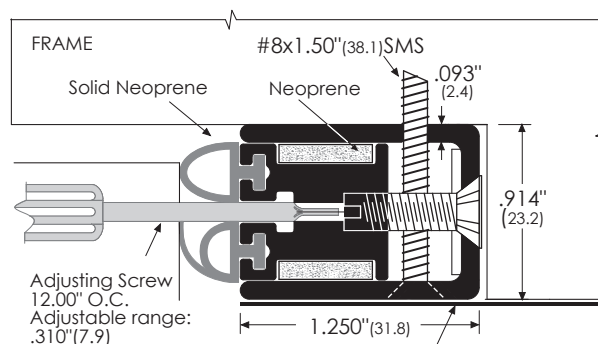


**Positive Pressure Listed for 16 gauge steel cased opening. 45 minutes pairs or 60 & 90 minutes single and pairs. For wood or metal sound-resistant door assemblies.**



**POSITIVE PRESSURE FIRE RATINGS**

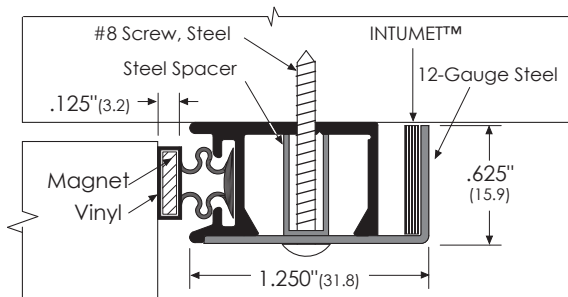
**#770SP #770STST**  
90 min. as a stop to wood & metal doors



**#7770AA**  
**#7770D**  
**#7770G**  
**ZERO Compress-O-Matic®**



Stainless Steel Plate Cover with PSA (optional)



**#837SP**



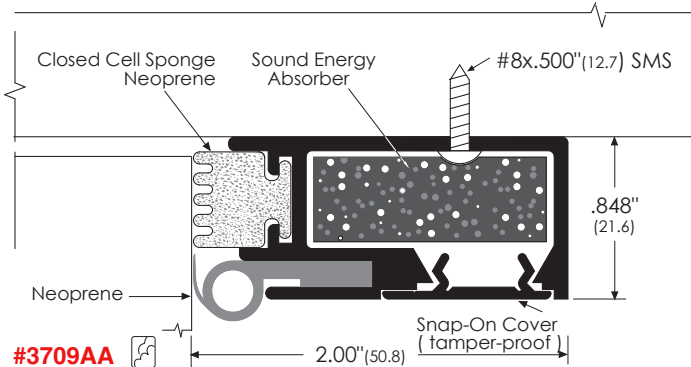
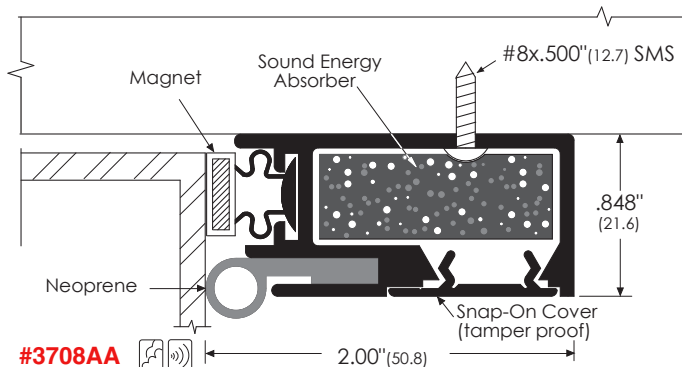
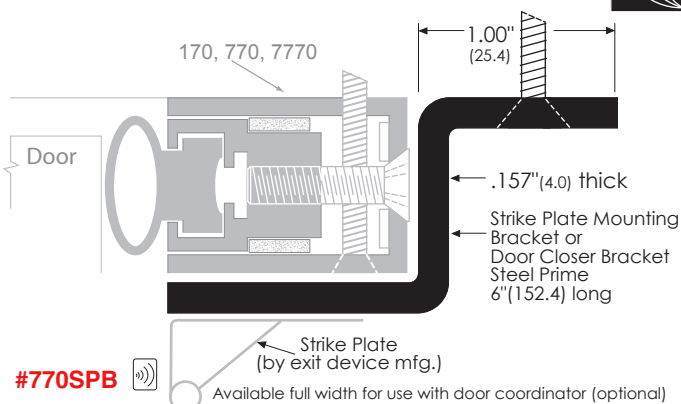


# Adjustable Sealing Systems - Jamb Applied

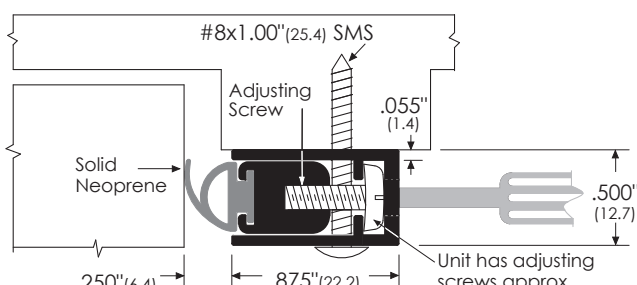
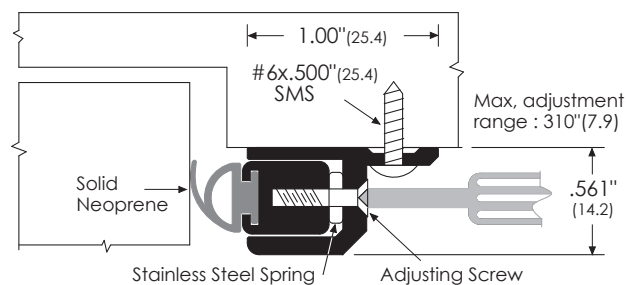
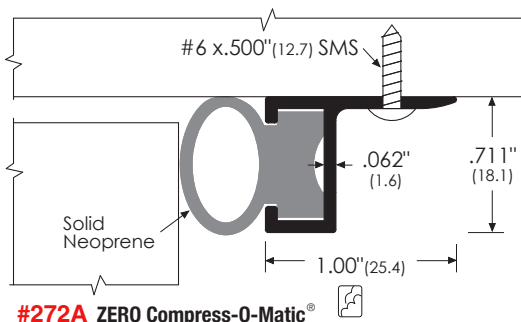
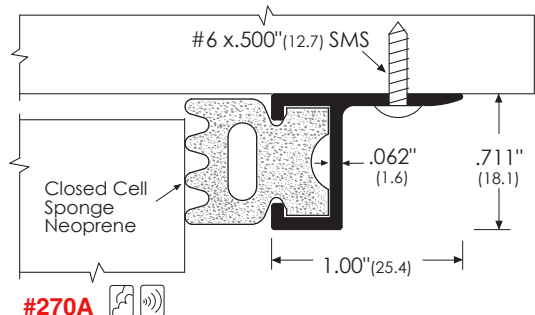
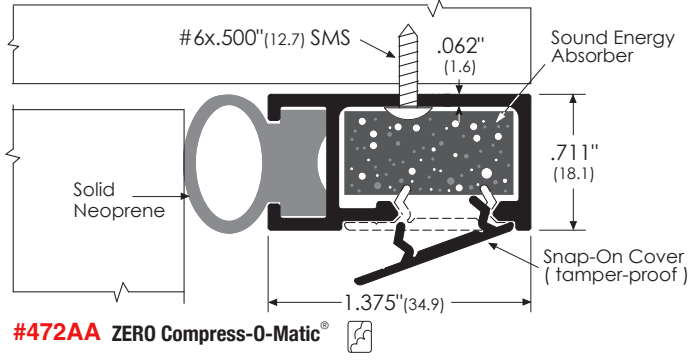
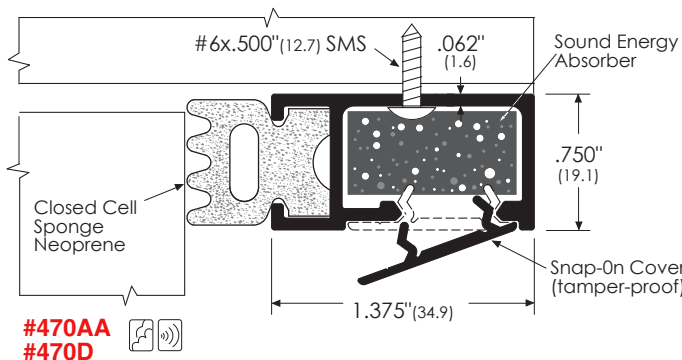


Note: A= Aluminum  
D= Dark Bronze Anodized  
STST= Stainless Steel

AA= Clear Anodized  
SP= Steel Prime



Head / Jamb



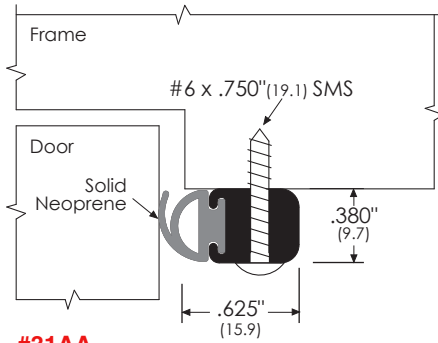
#712AA #712D ADJUSTABLE & SPRING LOADED  
ZERO Compress-O-Matic®  
Use 3 3/4" Backset or Lever Handle (not knobs)

#870AA #870D ZERO Compress-O-Matic®

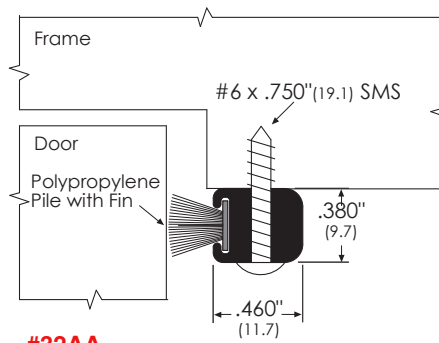
# Head and Jamb Protection



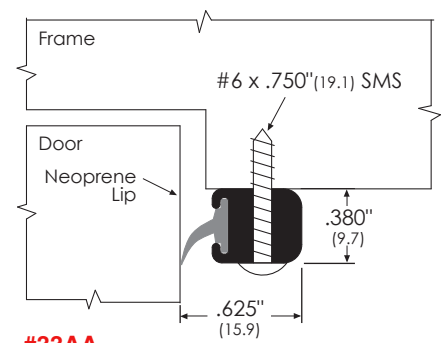
Note: A= Aluminum  
D= Dark Bronze Anodized  
G= Gold Anodized  
AA= Clear Anodized  
FS= Intumet™



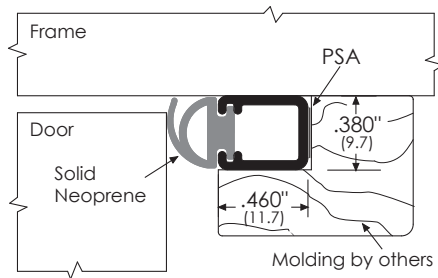
**#31AA**  
**#31D**  
**#31G**  
ZERO Compress-O-Matic®



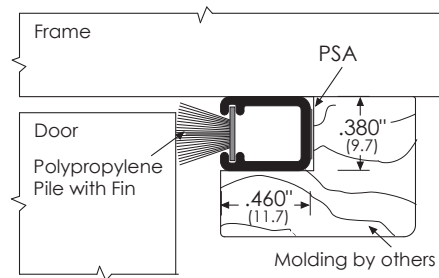
**#32AA**  
**#32D**  
**#32G**



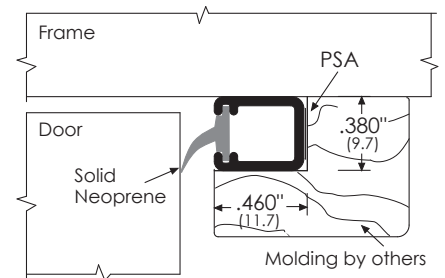
**#33AA**  
**#33D**  
**#33G**



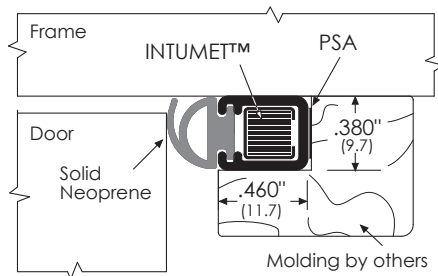
**#5831AA**  
**#5831D**  
**#5831G**  
ZERO Compress-O-Matic®



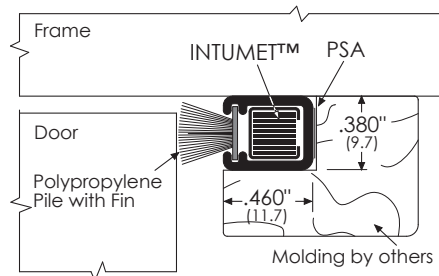
**#5832AA**  
**#5832D**  
**#5832G**



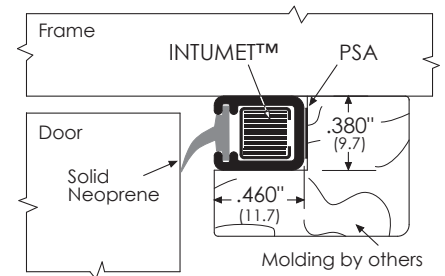
**#5833AA**  
**#5833D**  
**#5833G**



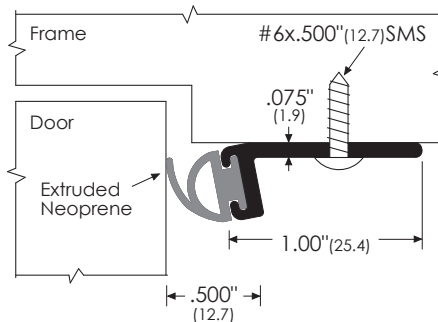
**#5831FS-AA**  
**#5831FS-D**  
**#5831FS-G**  
ZERO Compress-O-Matic®



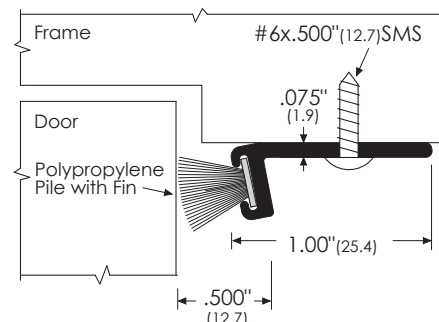
**#5832FS-AA**  
**#5832FS-D**  
**#5832FS-G**



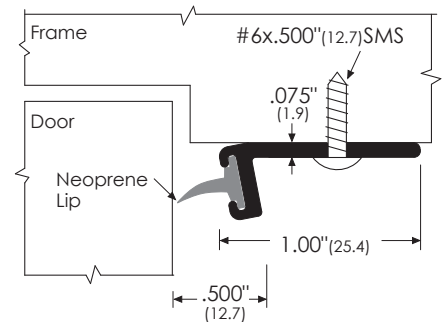
**#58FS-AA**  
**#58FS-D**  
**#58FS-G**



**#98A**  
**#98D**  
ZERO Compress-O-Matic®



**#99A**  
**#99D**



**#100A**  
**#100D**

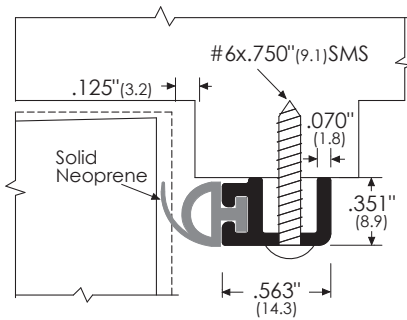
Head / Jamb

# Head and Jamb Protection

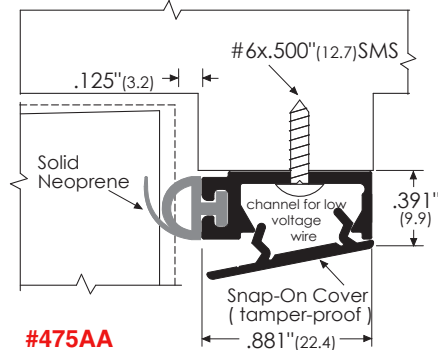


Note: A= Aluminum  
B= Bronze  
G= Gold Anodized

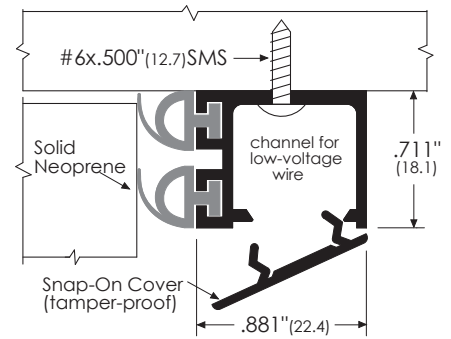
AA = Clear Anodized  
D = Dark Bronze Anodized  
SP = Steel Primed



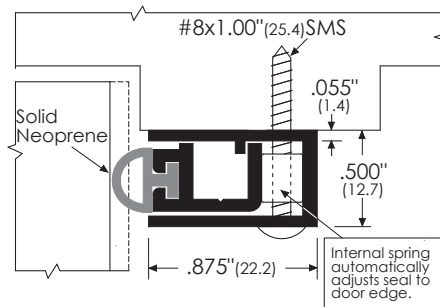
**#485A**  
**#485D**  
**#485G**  
ZERO Compress-O-Matic®



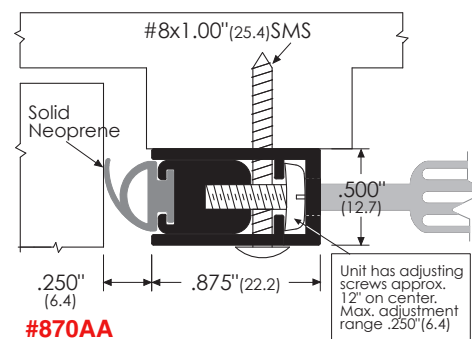
**#475AA**  
**#475D**  
**#475G**  
ZERO Compress-O-Matic®



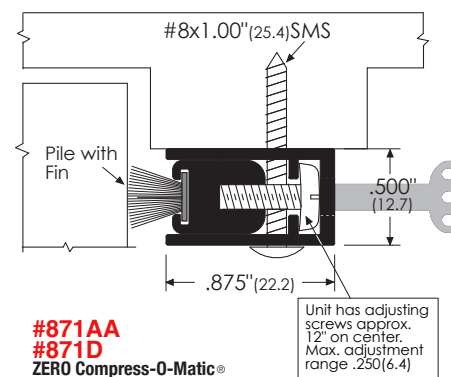
**#478AA**  
**#478D**  
ZERO Compress-O-Matic®



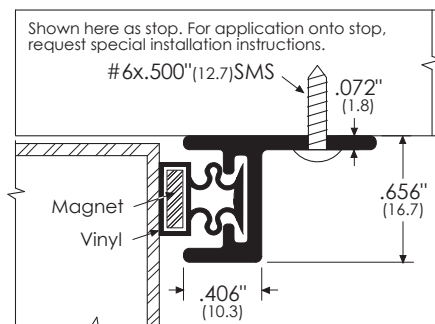
**#570AA**  
ZERO Compress-O-Matic®



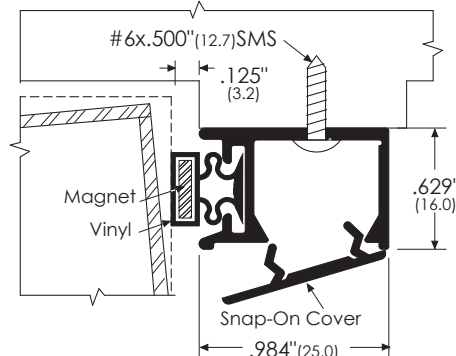
**#870AA**  
**#870D**  
ZERO Compress-O-Matic®



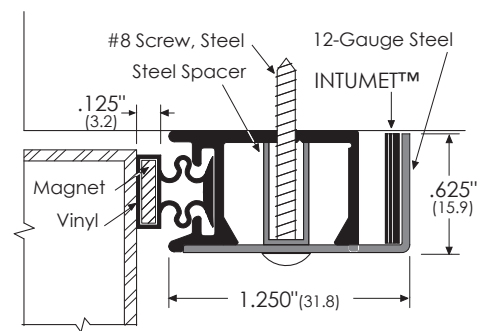
**#871AA**  
**#871D**  
ZERO Compress-O-Matic®



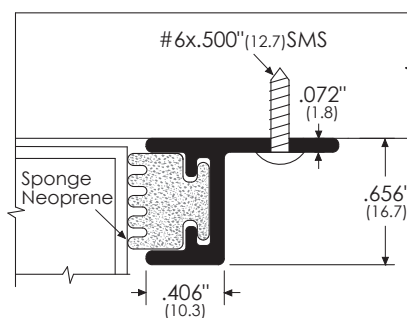
**#370A**  
**#370D**



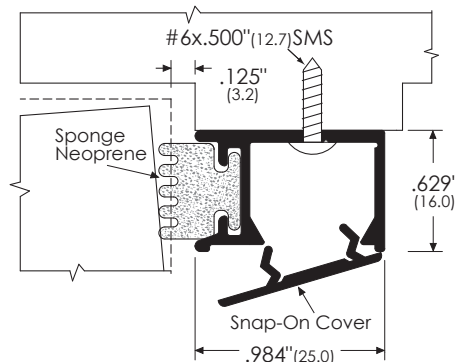
**#375AA**  
**#375D**



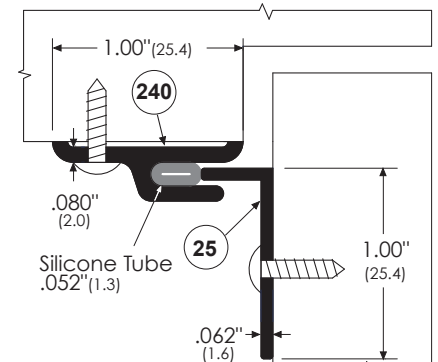
**#837SP**



**#1370A**  
**#1370D**



**#376AA**  
**#376D**



**Series 42** Security seal - when installed with tamper-proof fasteners.

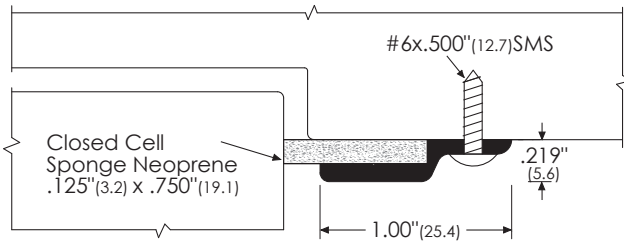
Head / Jamb

# Head and Jamb Protection

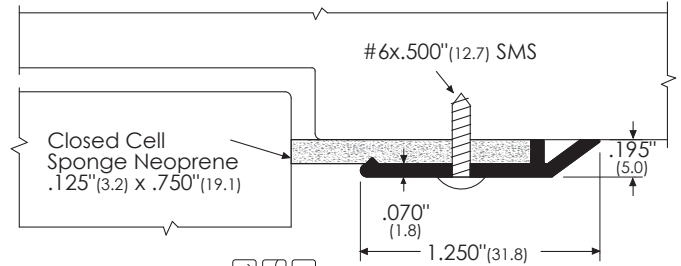


Note: A = Aluminum  
B = Bronze  
FS = Intumet™

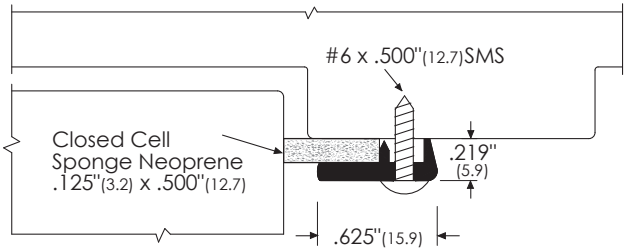
AA = Clear Anodized  
D = Dark Bronze Anodized  
G = Gold Anodized



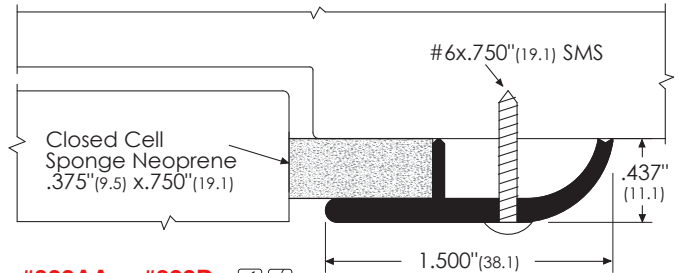
**#50A**



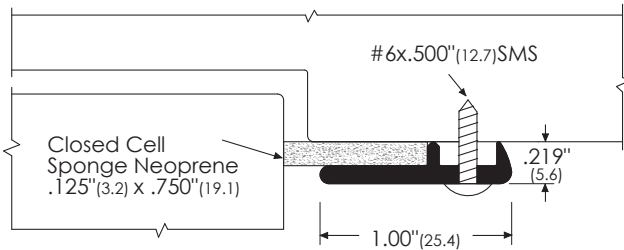
**#139AA #139D**



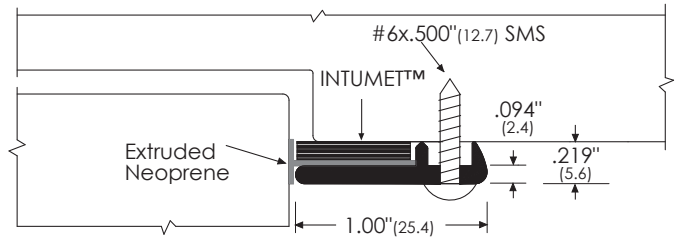
**#312A**



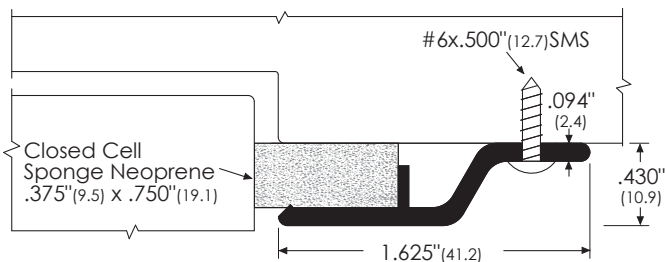
**#322AA #322D**



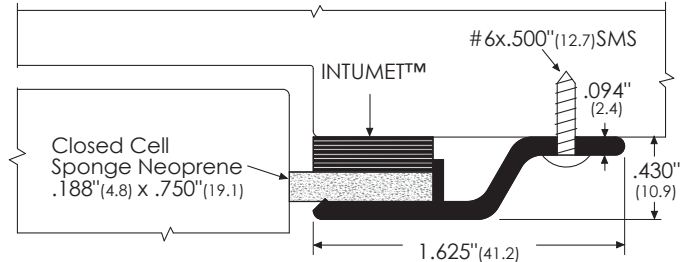
**#314AA #314D  
#314B #314G**



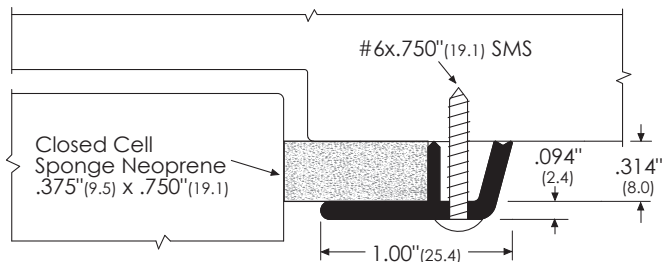
**#302FS AA #302FS D  
#302FS B #302FS G**



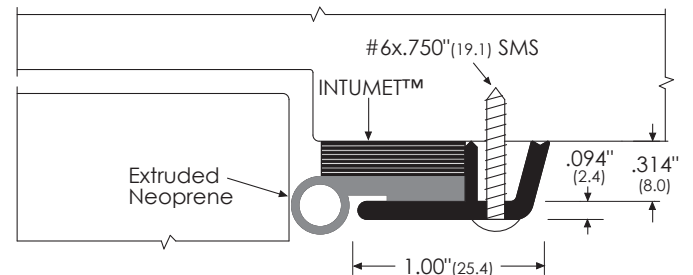
**#140A**



**#140FS A**



**#318AA  
#318D  
#318G**



**#328FS AA  
#328FS D  
#328FS G**

Head / Jamb

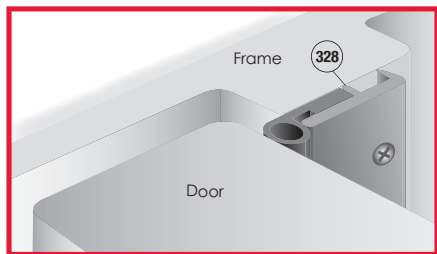


# Head and Jamb Protection

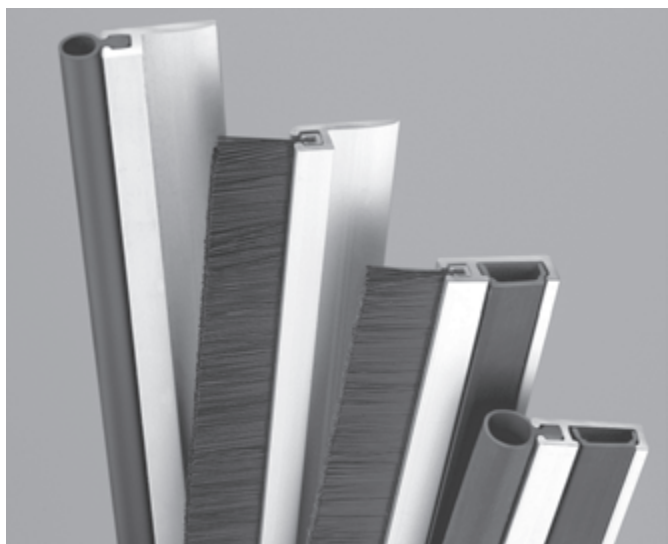
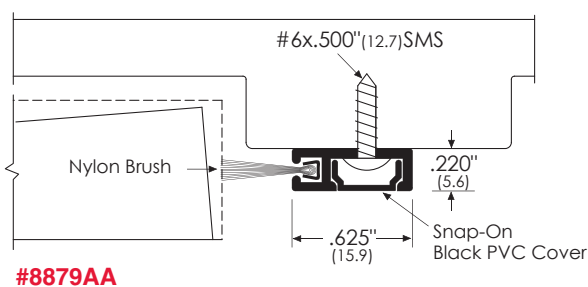
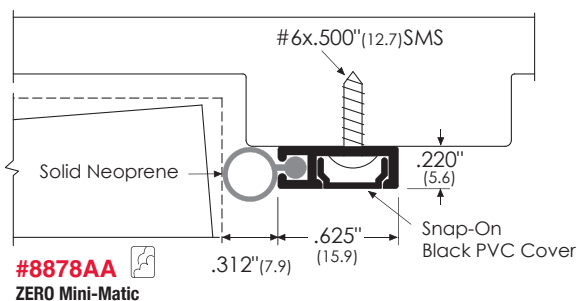
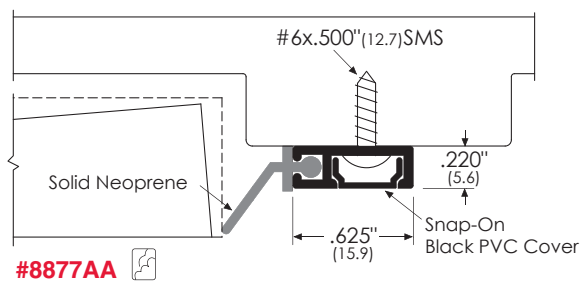
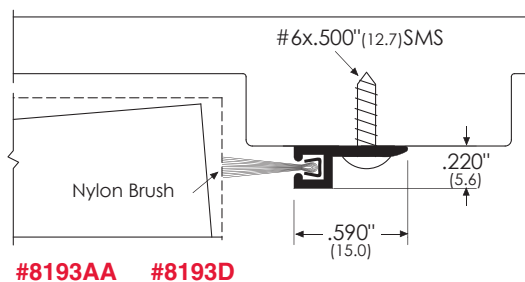
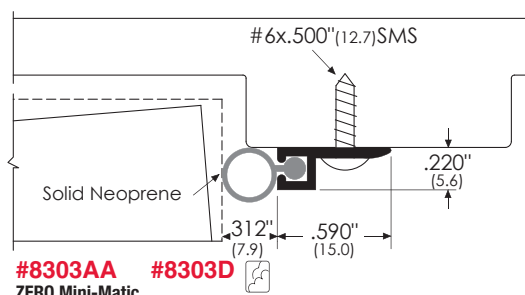
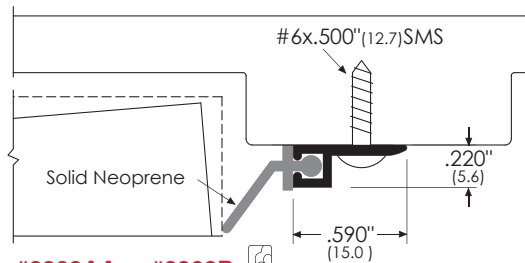
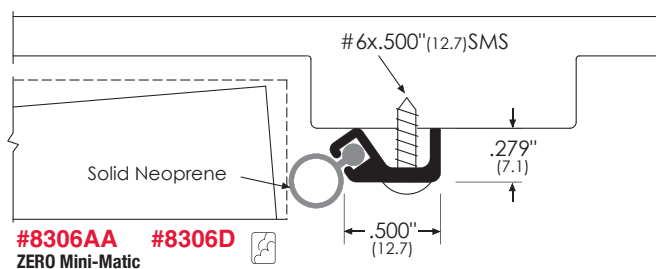
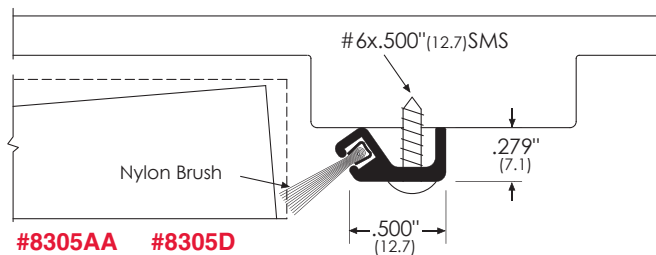
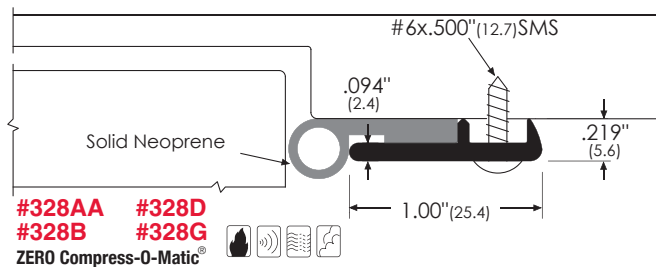
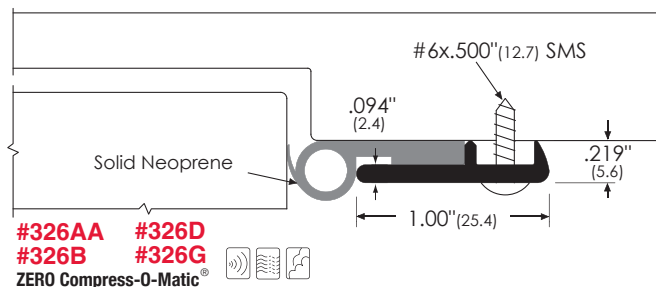


Note: A= Aluminum  
B= Bronze  
G = Gold Anodized

AA= Clear Anodized  
D= Dark Bronze Anodized



HINGE SIDE



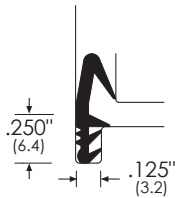
See manufacturer specifications for minimum required clearance between door and frame.  
Most items shown are available in self-extinguishing, non-staining neoprene or silicone.  
Contact factory for custom materials, colors and shapes. Specify quantity. ( Minimum order required )

#8810

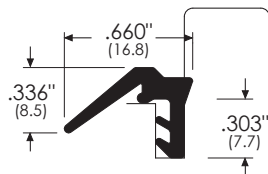
#8800

#8052

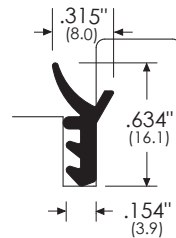
Door Seals



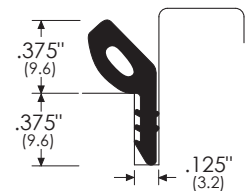
#8043R



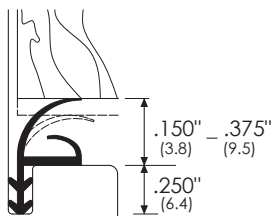
#8045R



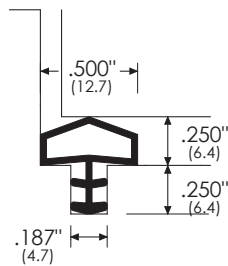
#8046R



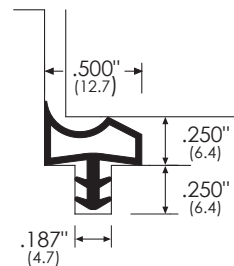
#8052N



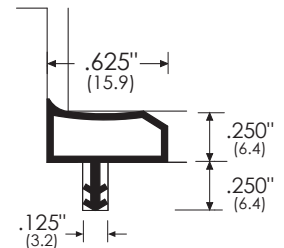
#8004N



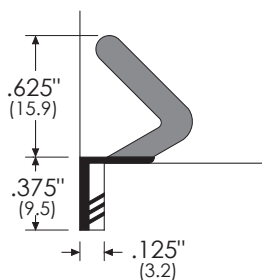
#8810N



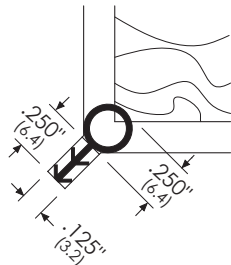
#8811R



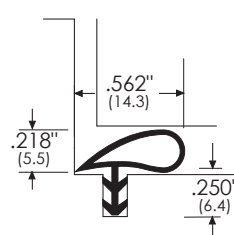
#8812R



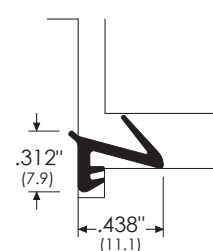
#8053Q



#8054R



#8800N  
ZERO Compress-O-Matic®



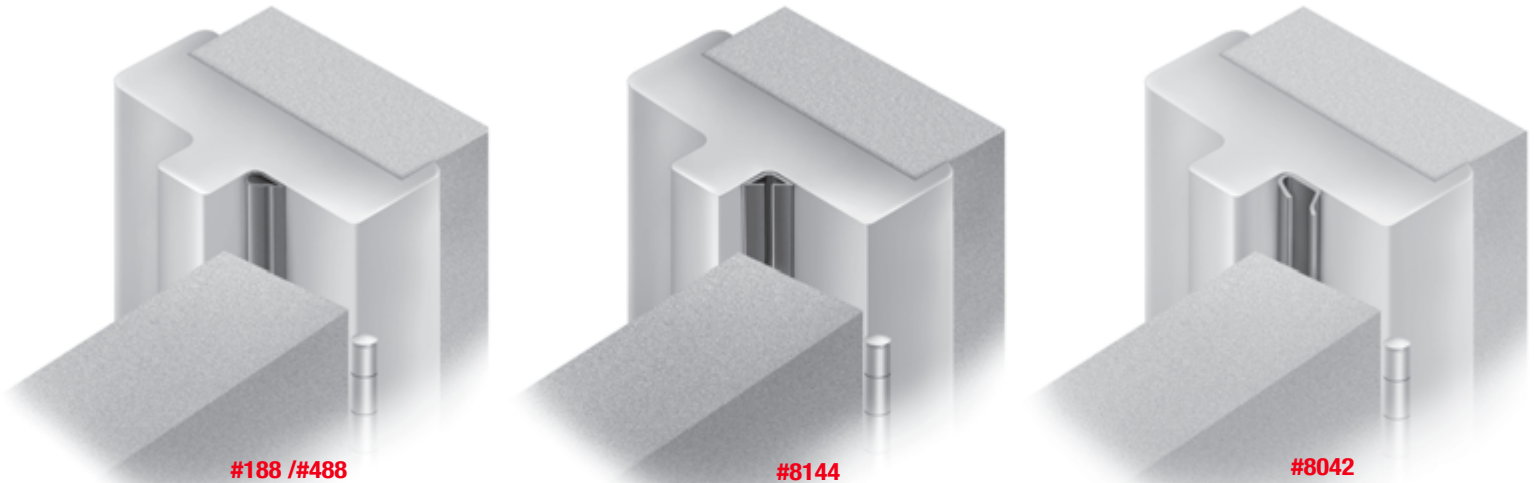
#8841R



# Self-Adhesive Weatherstripping



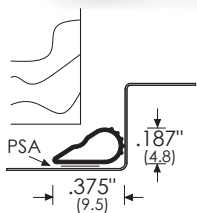
Note: N=Neoprene  
FS= Intumet™ Rubber  
S-Bk= Silicone Black  
S-Br= Silicone Brown  
S-Gy= Silicone Gray  
S-Wh= Silicone White



#188 /#488

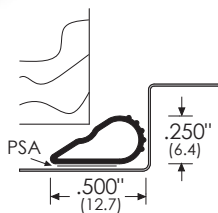
#8144

#8042



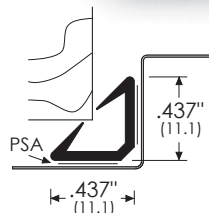
#488S-Bk  
#488S-Br  
#488S-Gy  
#488S-Wh  
#488 FS

ZERO Compress-O-Matic®

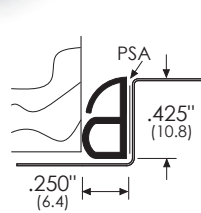


#188S-Bk  
#188S-Br  
#188S-Gy  
#188S-Wh  
#188 FS

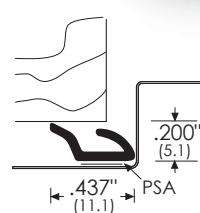
ZERO Compress-O-Matic®



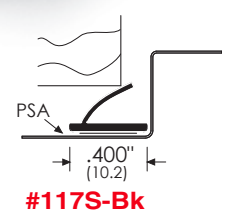
#8144S-Bk  
#8144S-Wh  
#8144 FS



#824N



#8042S-Bk



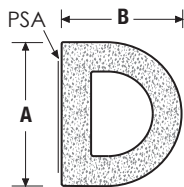
#117S-Bk

#8145S-Bk  
ZERO Compress-O-Matic®

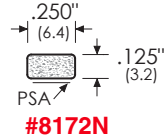


Door Seals

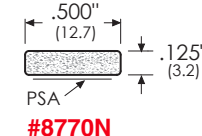
## Closed Cell Sponge Neoprene



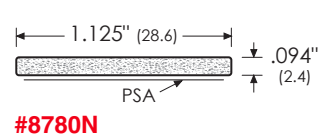
Part#	A	B
#810	.625" (15.9)	.625" (15.9)
#811	.750" (19.1)	.625" (15.9)
#812	1.00" (25.4)	.500" (12.7)
#813	1.250" (31.8)	.625" (15.9)



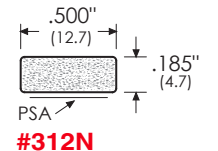
#8172N



#8770N



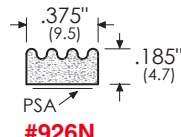
#8780N



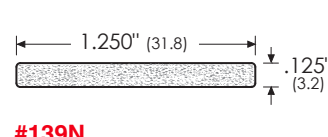
#312N



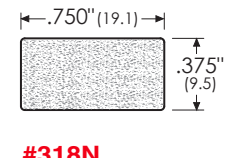
#826N



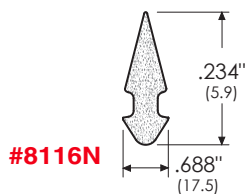
#926N



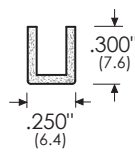
#139N



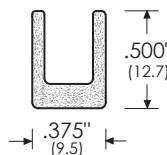
#318N



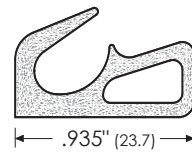
#8116N



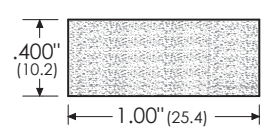
#2071N  
(300 ft. coils)



#2070N  
(300 ft. coils)



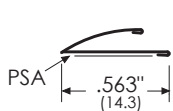
#41004R  
(100 ft. coils)



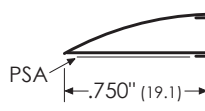
#3708N

## Cushion Spring

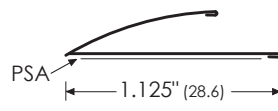
34 B.S. Gauge Bronze Spring



#118B

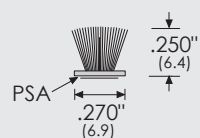


#119B

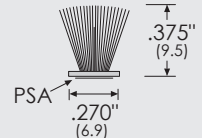


#119WB  
#119WS

## Pile Brush



#137P-Bk  
#137P-Gy

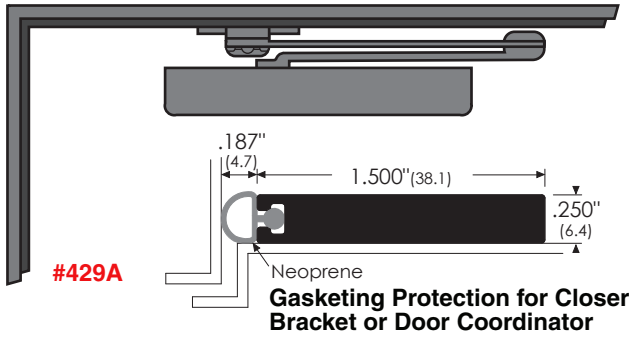


#34P-Bk  
#34P-Gy

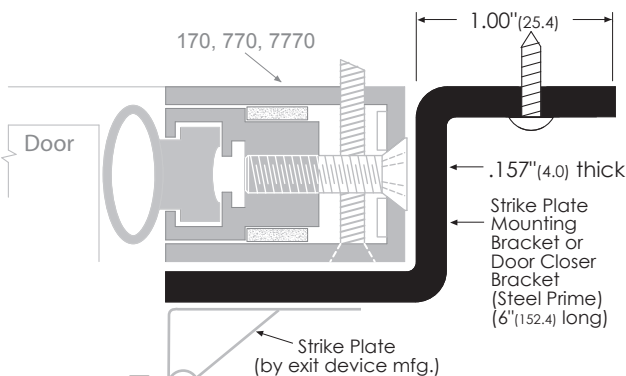
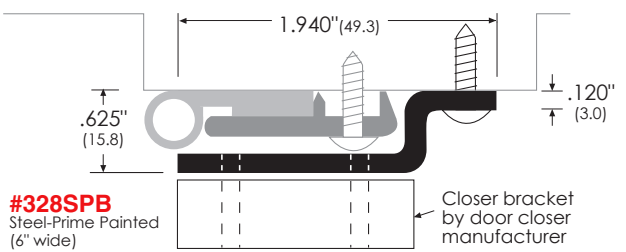
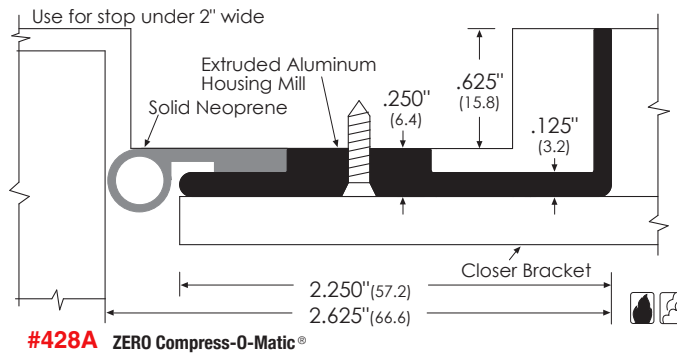
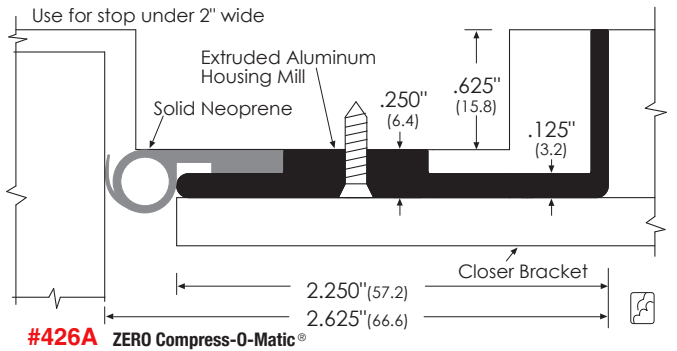
# Specialty Head and Jamb Protection



Note: A = Aluminum  
D = Dark Bronze Anodized  
SP = Steel Primed  
B = Bronze  
G = Gold Anodized

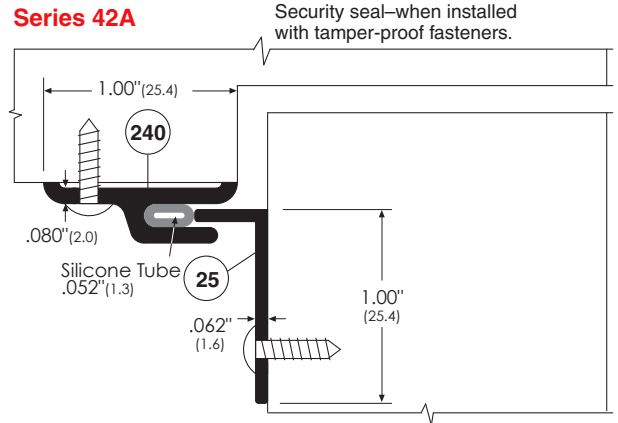


## Head Protection for Closer Bracket or Door Coordinator

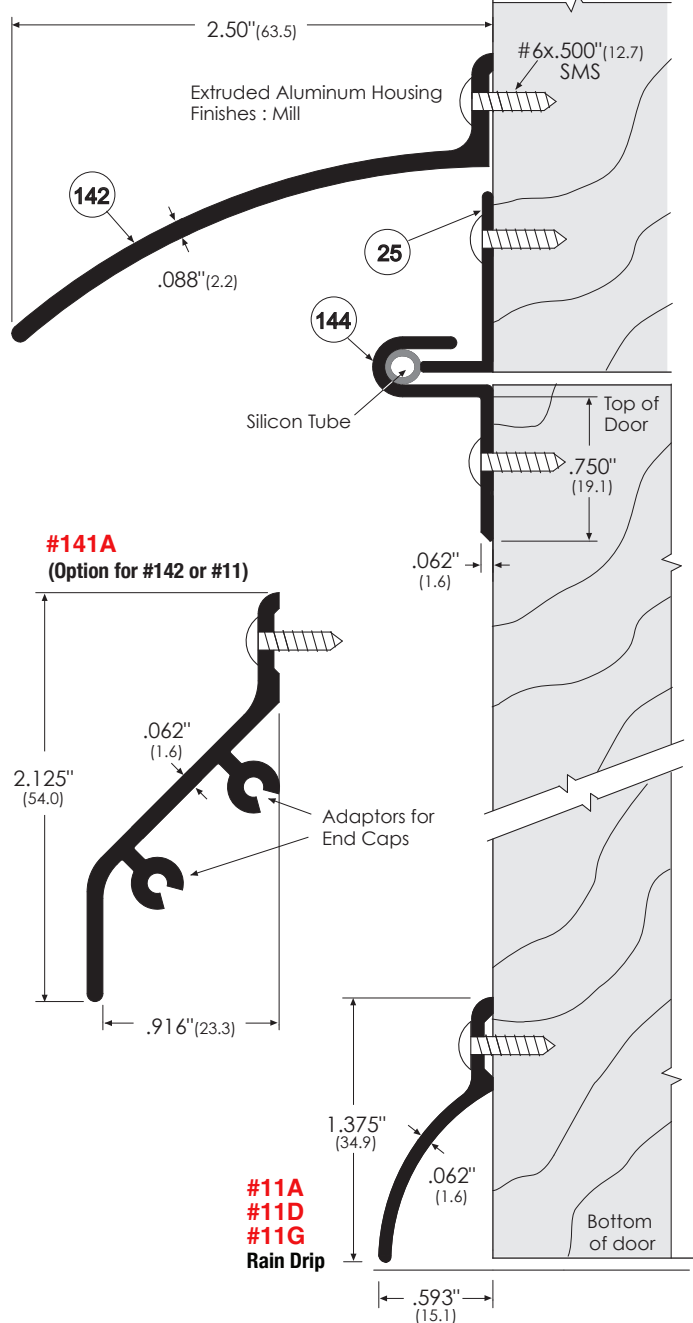


Available in full width for use with door coordinator (optional)

## Series 42A



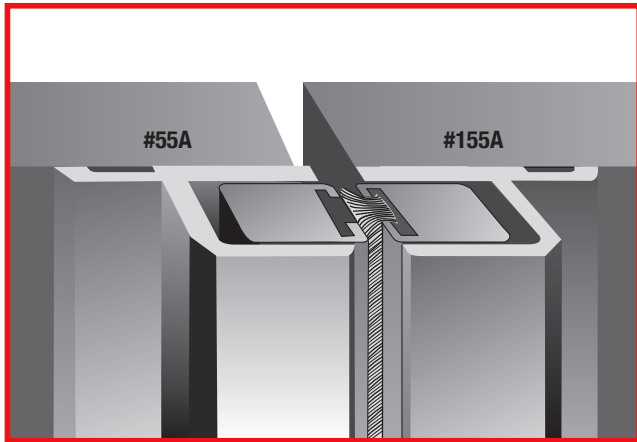
## INTERLOCKING WATER SHED For Outswinging Doors Series 148



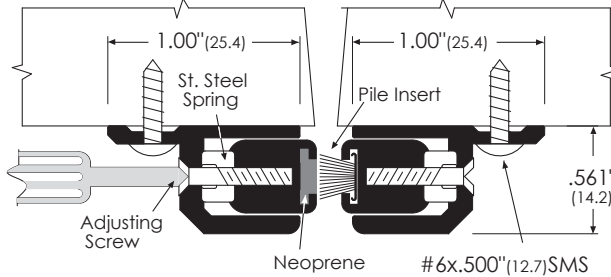
# Meeting Stiles - Both Doors Active



Note: AA = Clear Anodized D= Dark Bronze Anodized  
FS= Intumet™ Rubber G= Gold Anodized



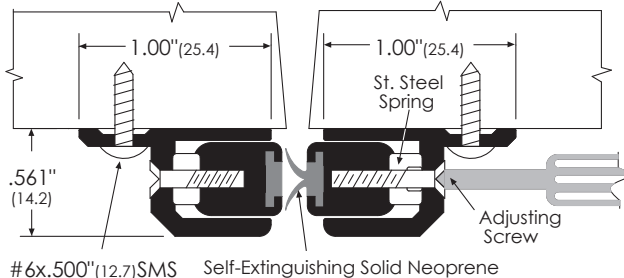
## Adjustable Surface Astragal



**#55AA** Solid Insert  
**#55D**

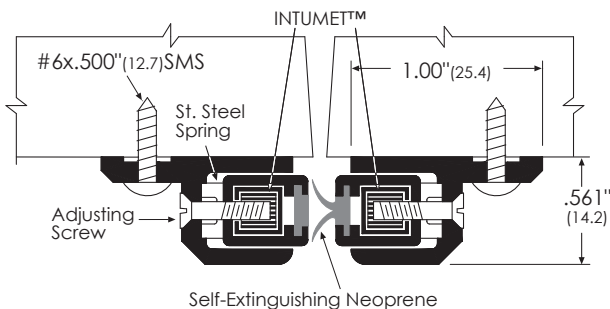
**#155AA** Pile Insert  
**#155D**

## Adjustable Surface Astragal



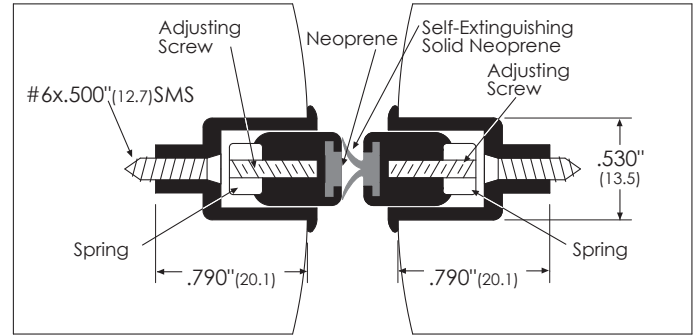
**#55AA** Solid Insert  
**#55D**

**#555AA** Neoprene Insert  
**#555D**



**#55FS AA** Solid Insert  
**#55FS D**

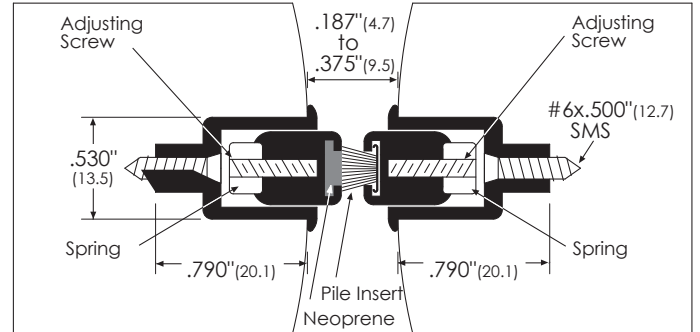
**#555FS AA** Neoprene Insert  
**#555FS D**



**#56AA** Solid Insert  
**#56D**  
**#56G**

**#557AA** Neoprene Insert  
**#557D**  
**#557G**

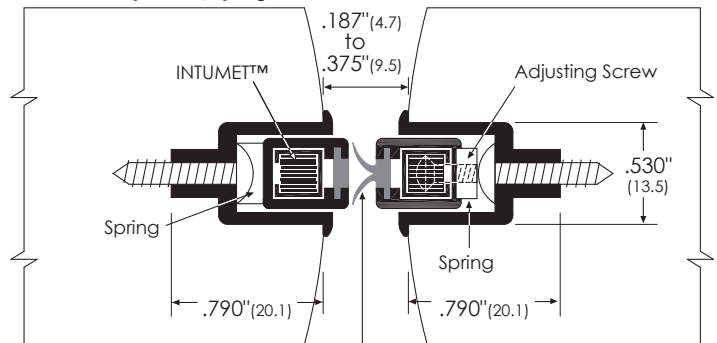
## Adjustable Mortised Astragal



**#56AA** Solid Insert  
**#56D**  
**#56G**

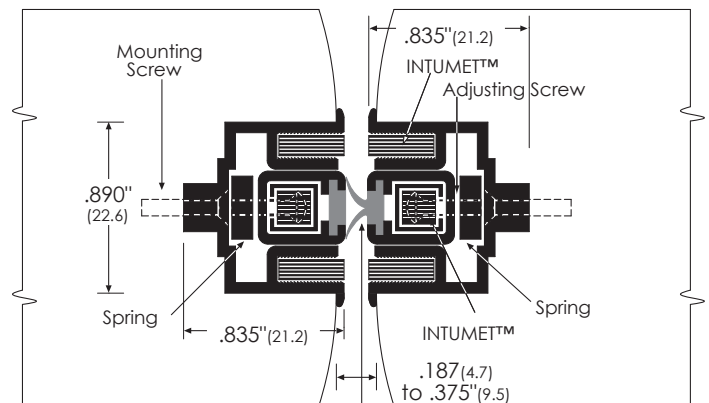
**#156AA** Pile Insert  
**#156D**  
**#156G**

## Mortised. Adjustable, Spring-Loaded



**#56FS AA** Self-Extinguishing Solid Neoprene  
**#56FS D**  
**#56FS G**

**#557FS AA** Self-Extinguishing Solid Neoprene  
**#557FS D**  
**#557FS G**



**#3056FS AA** Self-Extinguishing Solid Neoprene  
**#3056FS D**  
**#3056FS G**

**#3557FS AA** Self-Extinguishing Solid Neoprene  
**#3557FS D**  
**#3557FS G**

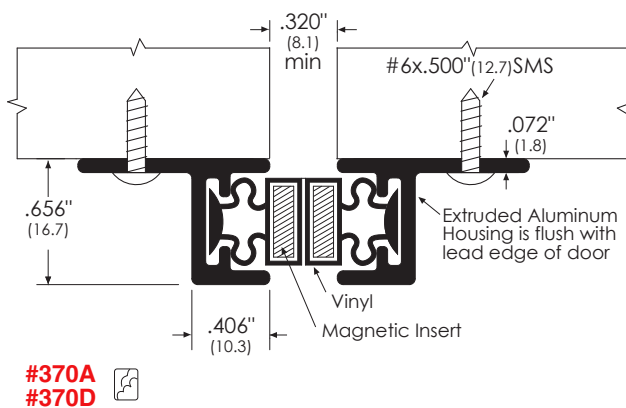
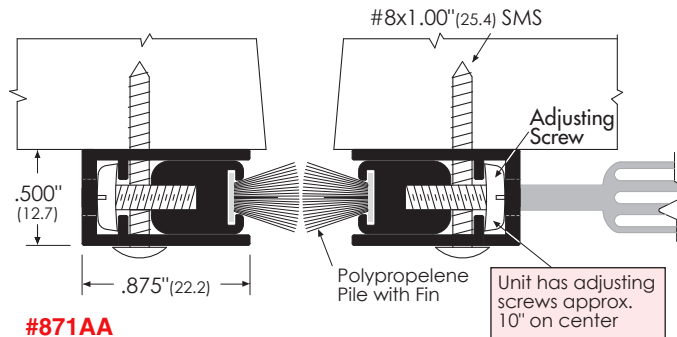
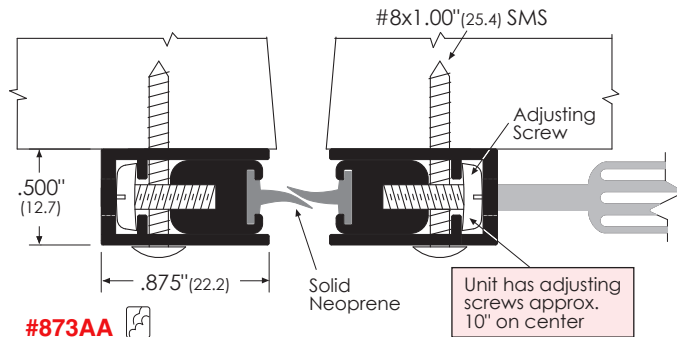
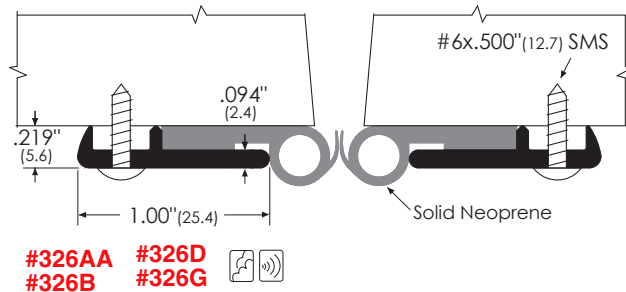
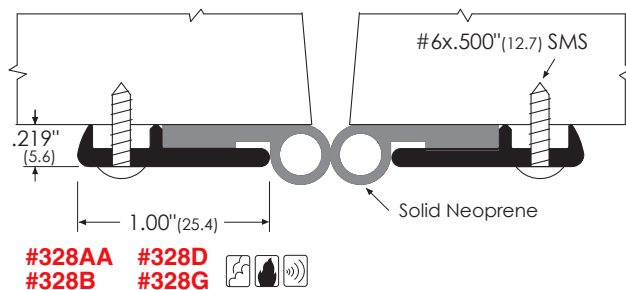
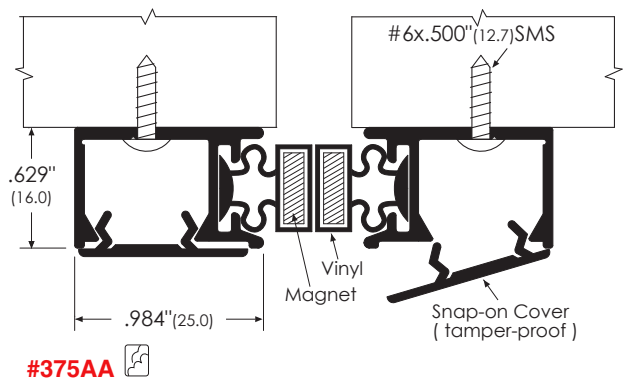
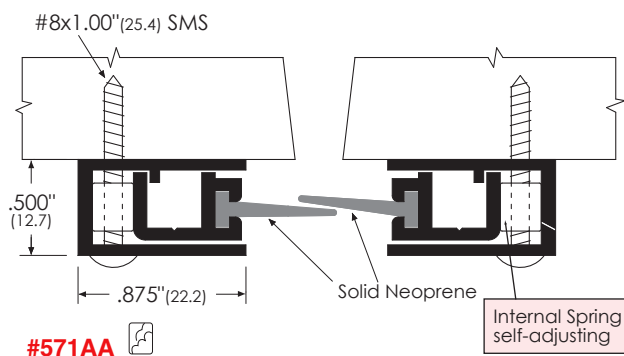
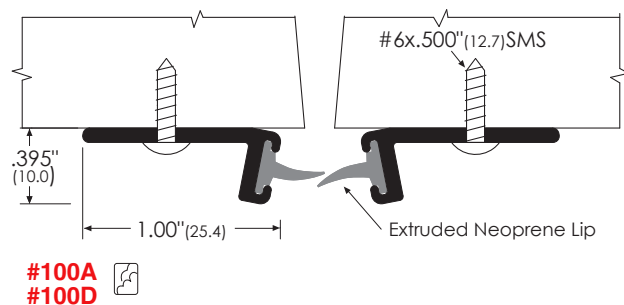
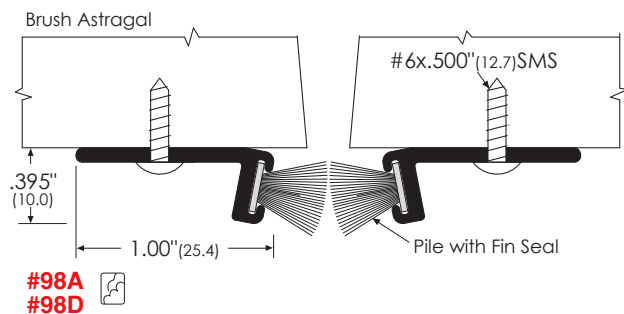
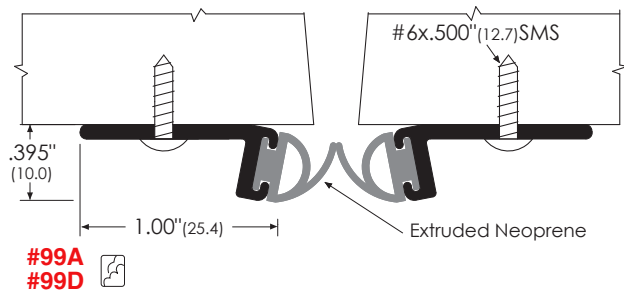


# Meeting Stiles - Both Doors Active



Note: A = Aluminum  
B = Bronze  
G = Gold Anodized

AA = Clear Anodized  
D = Dr. Bronze Anodized

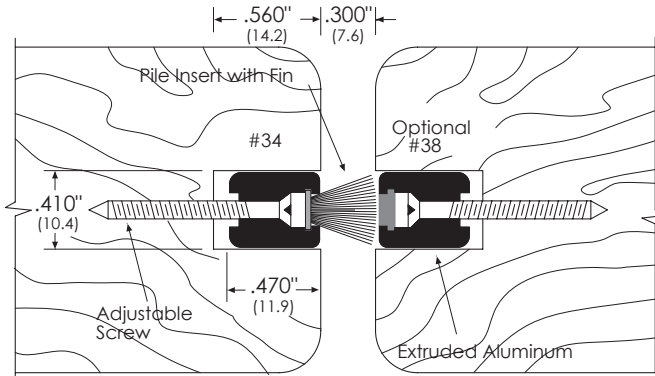


# Meeting Stiles - Both Doors Active



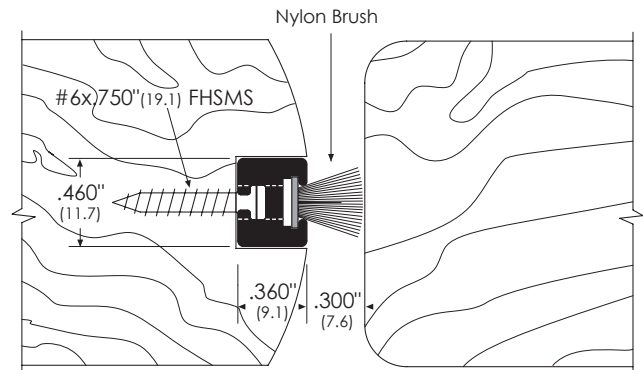
Note: A= Aluminum  
B= Bronze  
G= Gold Anodized

AA= Clear Anodized  
D= Dr. Bronze Anodized

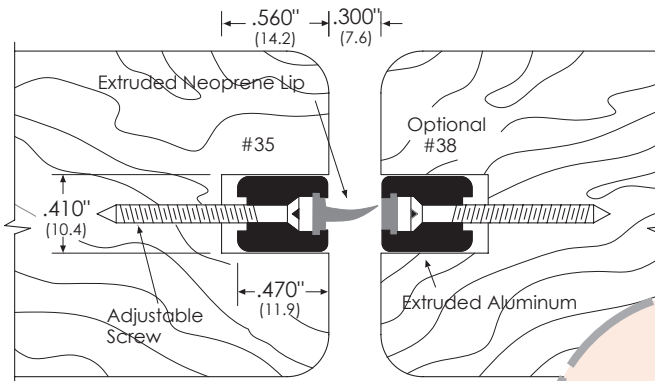


**#34AA #34D #34G**  
Pile with Fin Seal

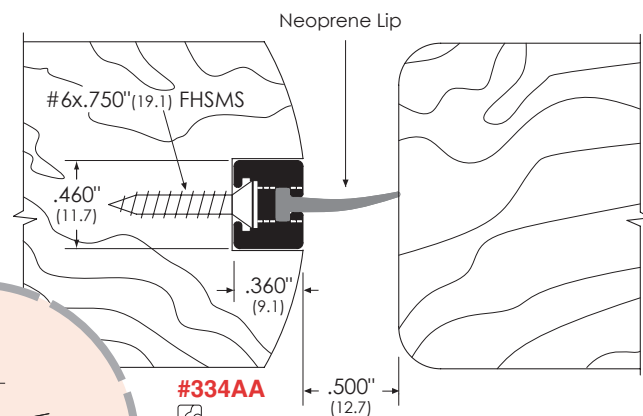
#38 is used when clearance of the door is too large, or to make the doors look the same



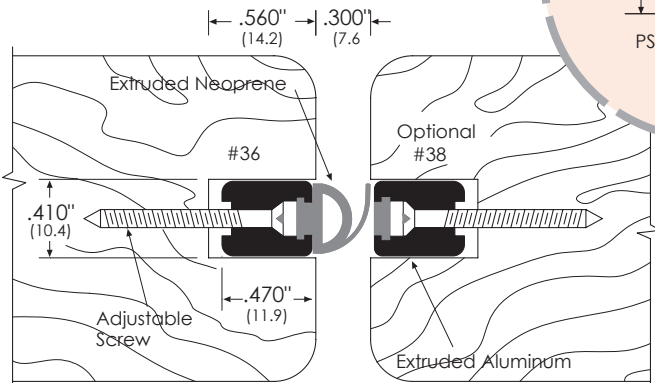
**#335A**



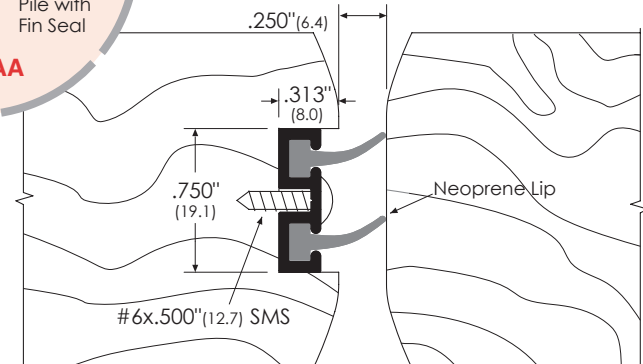
**#35AA #35D #35G**  
Extruded Neoprene Lip



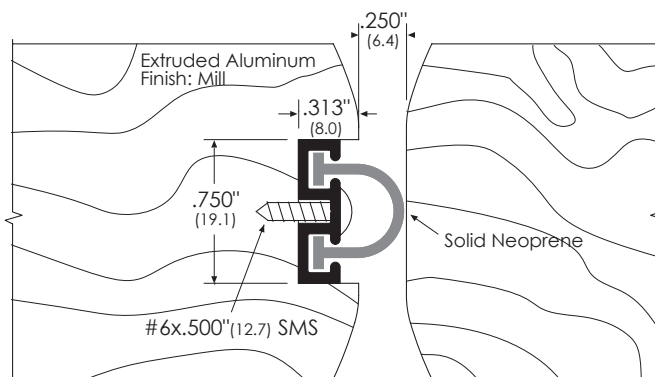
**#334AA**



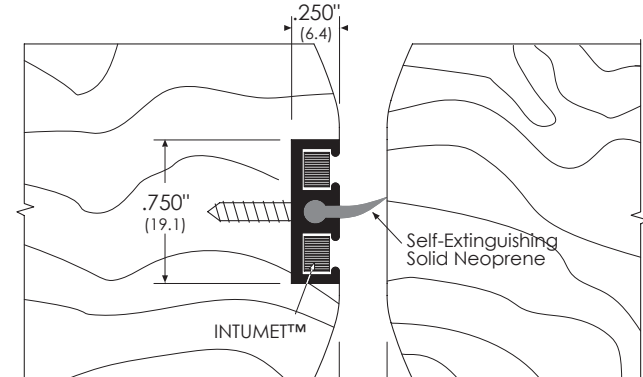
**#36AA #36D #36G**  
Extruded Neoprene



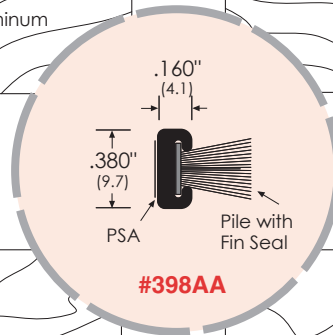
**#381AA**



**#53A**



**#59FS #159FS**  
(without neoprene - not shown)



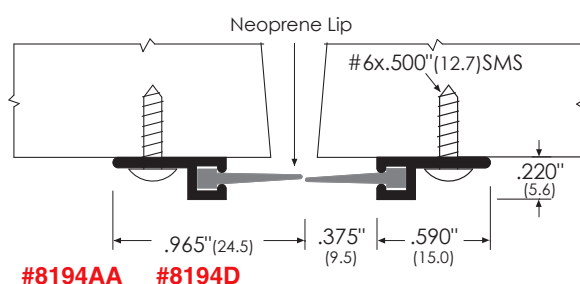
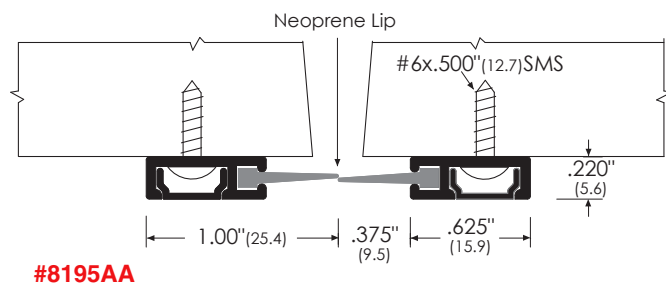
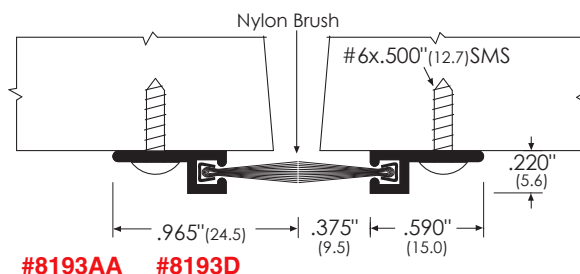
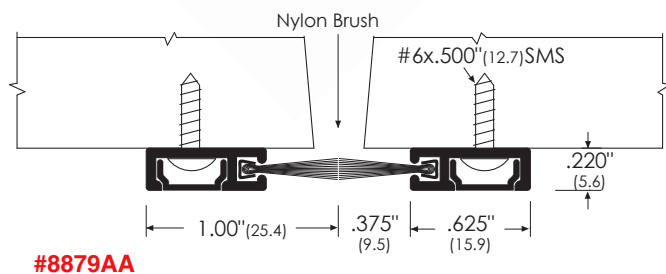
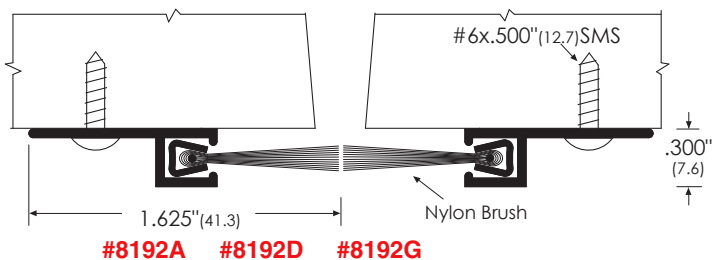
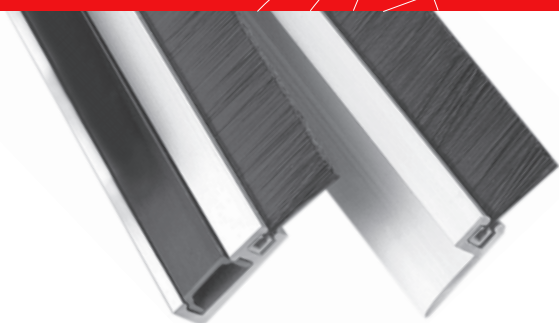
**#398AA**



# Meeting Stiles - Both Doors Active



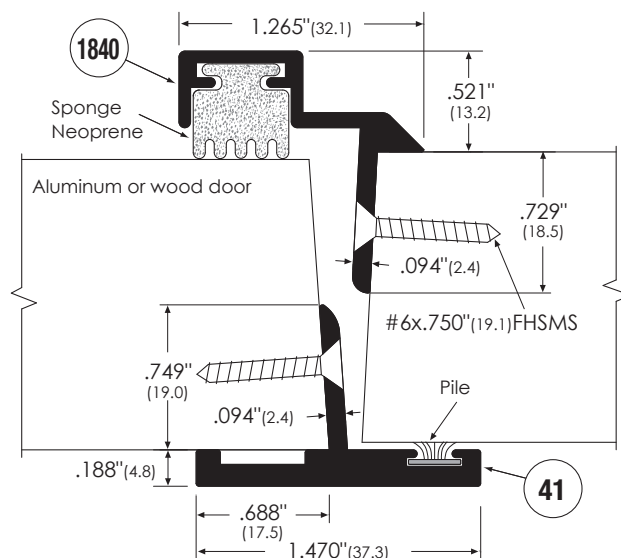
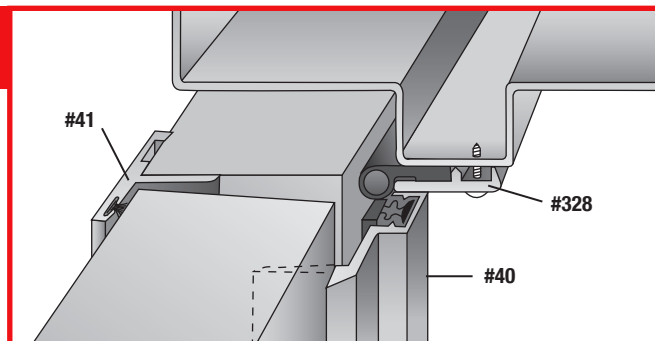
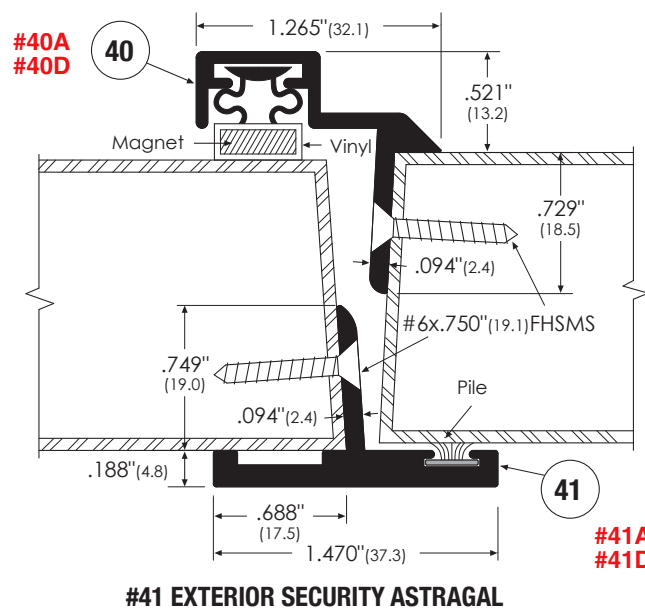
Note: A = Aluminum  
AA = Clear Anodized



## Meeting Stiles - One Door Active

### #40 INTERIOR MAGNETIC ASTRAGAL

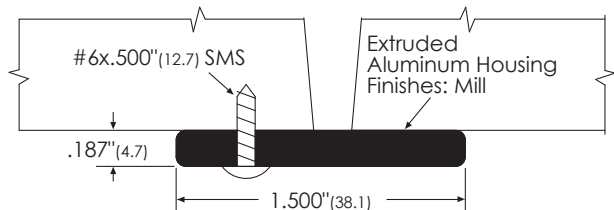
### #41 Exterior Security Astragal



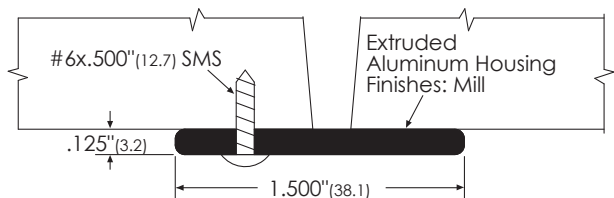
# Meeting Stiles - One Door Active



Note: A = Aluminum  
B = Bronze  
G = Gold Anodized  
SP = Steel Prime  
AA = Clear Anodized  
D = Dark Bronze Anodized  
STST = Stainless Steel  
FS = Intumet™ Rubber

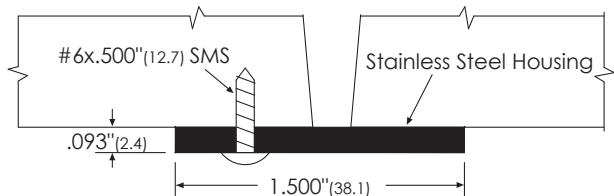


**#905A**

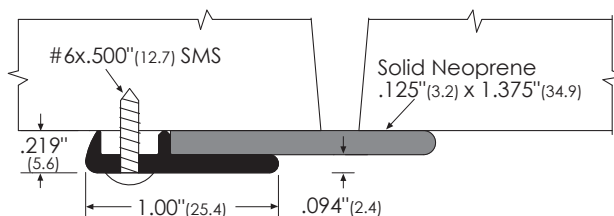


**#44A**

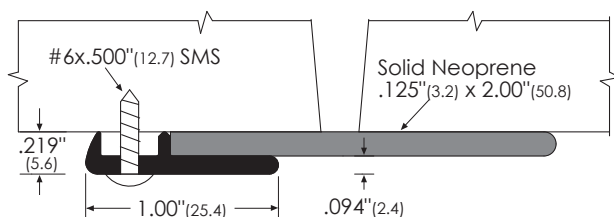
**#47A (not shown) 1.750"(44.5)**



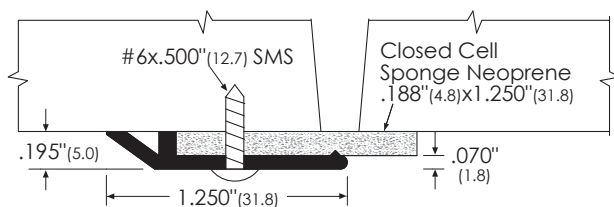
**#44STST**



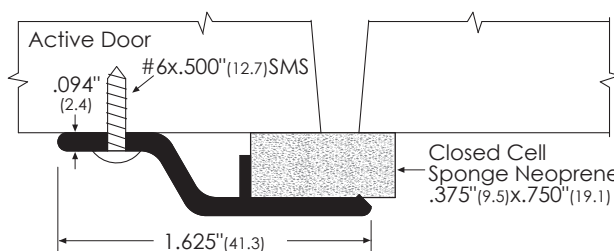
**#339AA #339B #339D #339G**



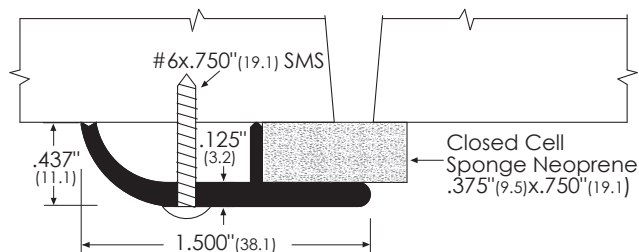
**#339WAA #339WB #339WD #339WG**



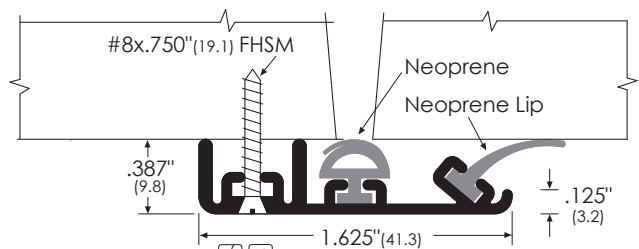
**#139A #139D**



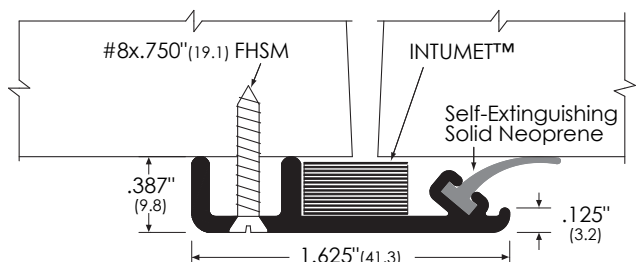
**#140A #140FS A (Not shown. See page 28)**



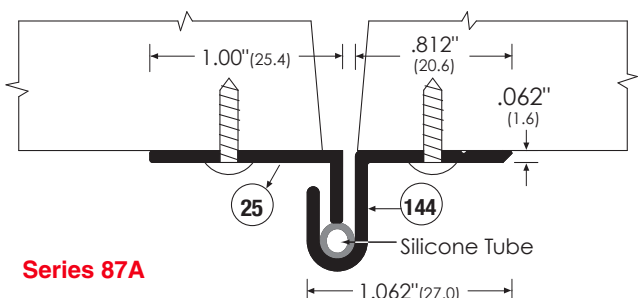
**#322A #322D #322G**



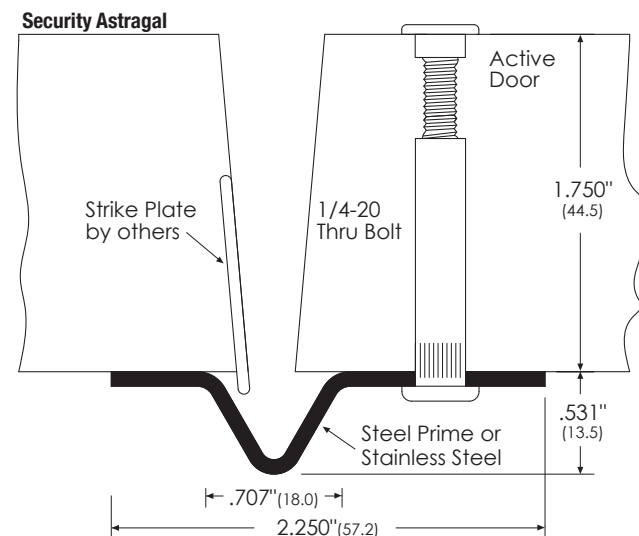
**#383AA #383D**



**#383FS AA #383FS D**



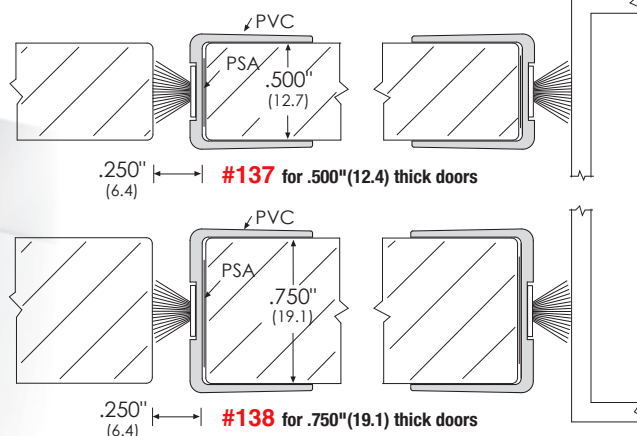
**Series 87A**



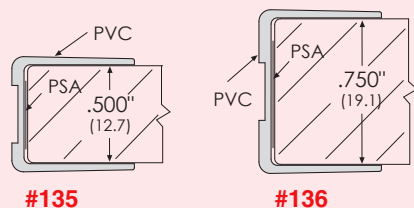
**#43SP Steel #43STST Stainless Steel**

\*No notching or grinding for strike is required

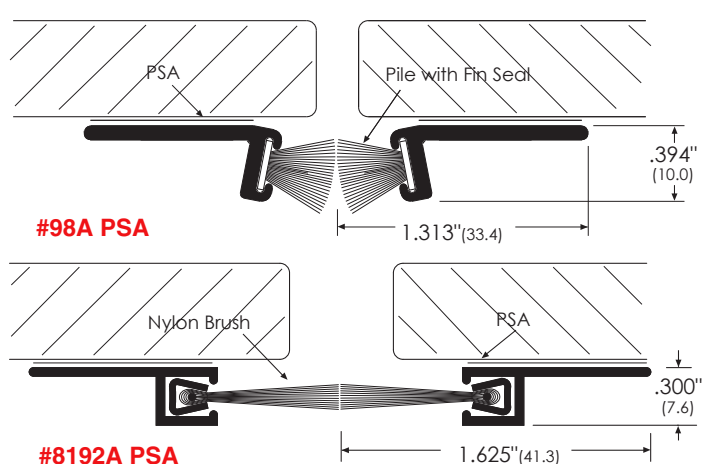
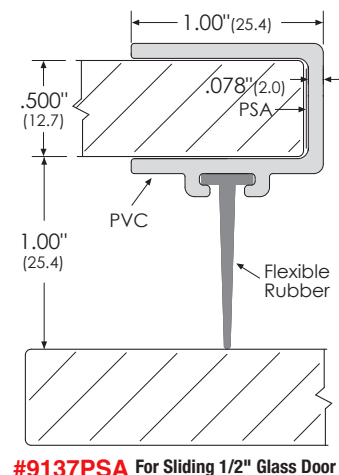
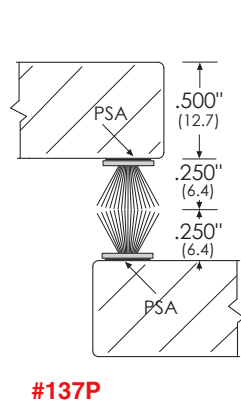
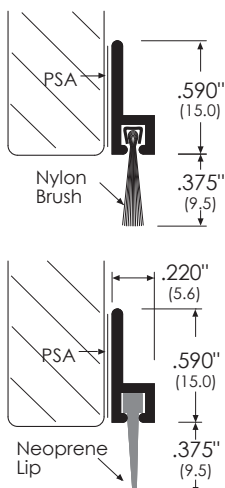
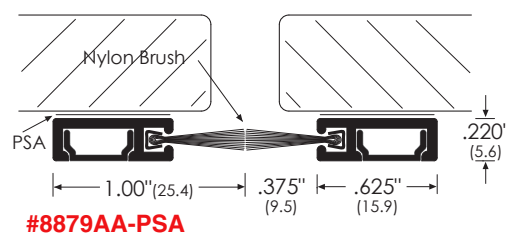
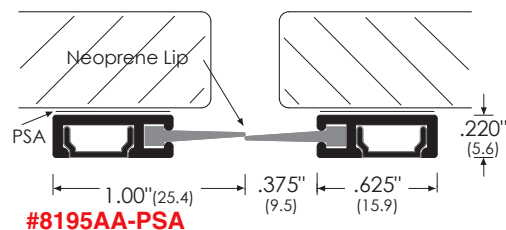
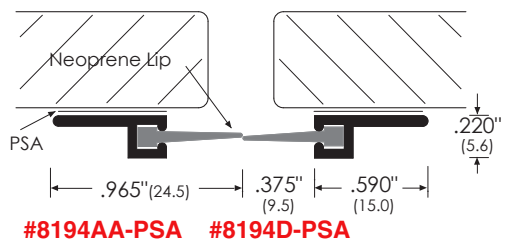
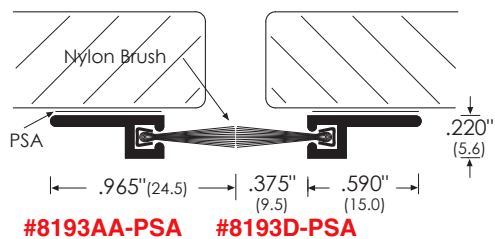
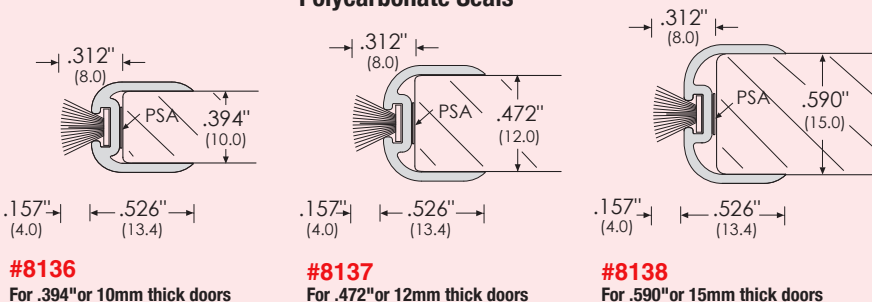
## Flexible, PVC Housing with Poly Pile Seal



## Glass Edge Protection



## Polycarbonate Seals





# Cam Lift Hinge - Mortise Hinge



Note: SP= Steel Prime  
STST= Stainless Steel DB= Double Bearing  
(Heavy Duty)

## ZERO Z950 and Z9500 CAM LIFT Mortise Hinges 5" x 4.5" x .250"

A Mortise-Type Cam Hinge for use with EMI/RFI and sound-insulating doors utilizing acoustical seals. The cam action greatly improves the sealing characteristics along the door perimeter, lifting and lowering the door with the swing. Z950 is designed for doors weighing up to 500 lbs. and the Z9500 for up to 900 lbs. The CAM LIFT Hinge is available for right or left-hand swinging doors. CAM LIFT Hinge will not bind door closures when doors are hung within accepted industry standards (Tested with LCN 4041 Series original) Finish: 630 (32D). Sold in pairs.



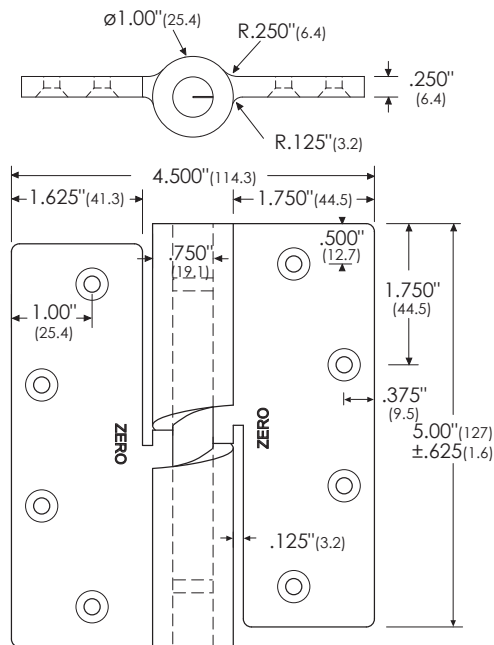
### Screw Attachment

**Z950 : 12-24 x 3/4"**

**Z9500 : 5/16-20 x 3/4"**

#### Note for both:

Screws must be engaged no less than .350" in ASTM A-36 steel reinforcement.



### Z950 CAM LIFT HINGE

**HINGE:** 1020 Stainless Steel, precision investment cast

**PIN:**  $\phi 1/2"$  hardened tool steel. Hardened & chrome finished to Rockwell C 60 to meet ASME/ANSI B 18.3 specs.

**PLUG:** Hardened Steel with slot for lubrication.

**TYPE:** Mortise/Handed - specify right or left hand.

**SCREW:** 12-24 countersunk x 3/4".

**RATING:** Up to 300 lbs. per pair. Up to 500 lbs. per pair & a half

**WEIGHT:** 2.25 lbs. (each)

**SPECIFICATIONS:** Minimum clearance at head of frame is 3/16" for doors greater than 1-3/4" 1/4" lift over 90° opening, max. lift 3/8" over 180°.

Part #	Door Rating ( 1 1/2 pairs )	Screw Size
<b>Z950</b>	Up to 500 lbs.	12-24 x 3/4"
<b>Z9500</b>	Up to 900 lbs.	5/16-20 x 3/4"
<b>Z955</b>	Up to 300 lbs.	12-24 x 3/4"



## Z 955 Stainless Steel CAM LIFT Hinge

A good hinge to replace mortise hinge if door drags.

**FINISH:** 629 (US32)

**SIZE:** 4.5"(114.3) x 4.5"(114.3) x .134"(3.4)

**GAUGE:** .134"(3.4)

**SPECIFICATIONS:** 1/8" lift over 90° opening, max. lift 1/4" over 180°.

## Full Mortise Hinge

Stainless Steel and Steel hinges. Five knuckle, two ball bearings with an NRP pin. A non-ball bearing hinge is also available.

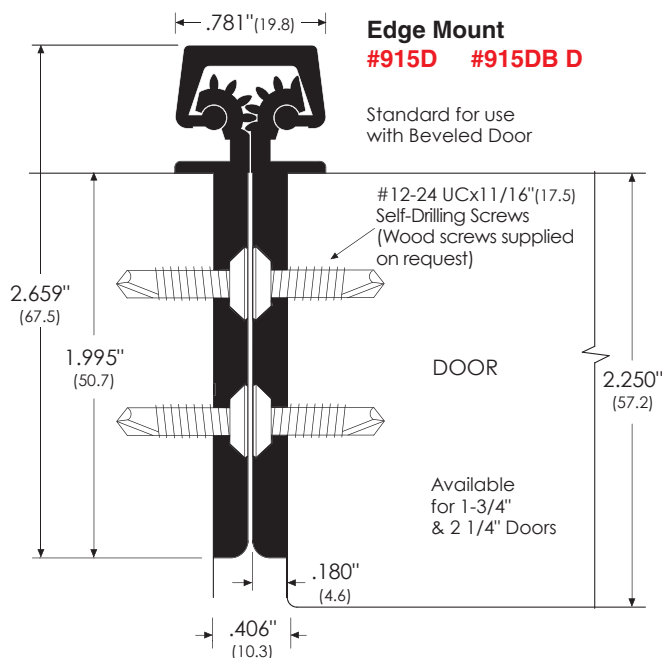
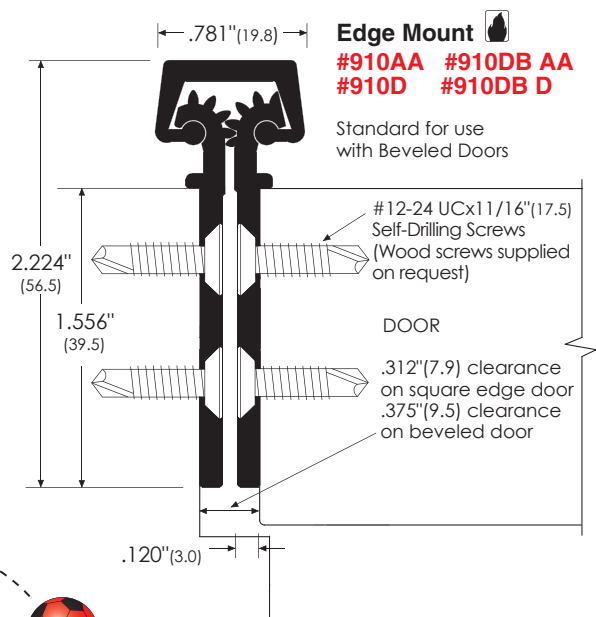
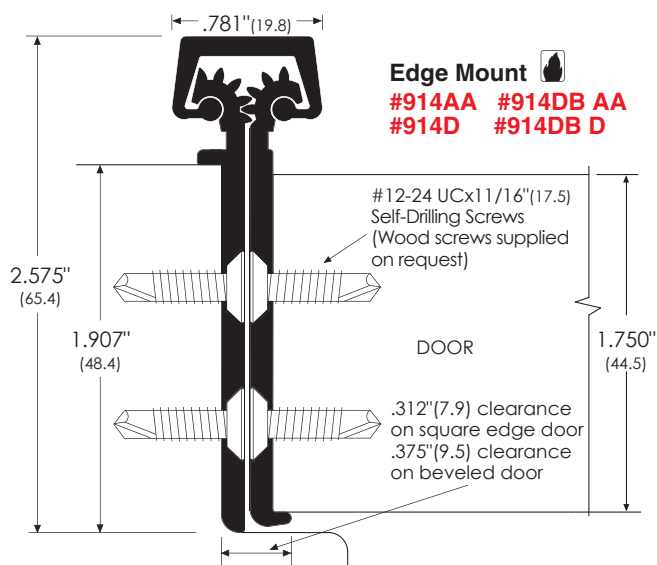
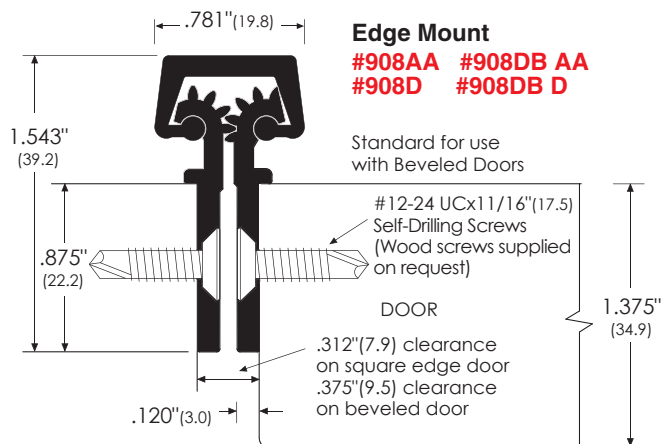


<b>ZBB 960</b>	630 (32D)	Stainless Steel	4.5"(114.3) x 4.5"(114.3)	.134"(3.4) Gauge
<b>ZBB 961</b>	600 (USP)	Steel Primed	4.5"(114.3) x 4.5"(114.3)	.134"(3.4) Gauge
<b>ZBB 961</b>	626 (26D)	Steel Dull Chrome	4.5"(114.3) x 4.5"(114.3)	.134"(3.4) Gauge
<b>ZBB 991</b>	626 (26D)	Steel Dull Chrome	5.0"(127) x 4.5"(114.3)	.134"(3.4) Gauge
<b>Z 961</b>	600 (USP)	Steel Primed	4.5"(114.3) x 4.5"(114.3)	.134"(3.4) Gauge

Packed AWS & AMS - Boxed pair & half

**UNIGEAR HINGES** High-performance, heavy-duty, integrated door hinges that dissipate kick-back and impact shock while maintaining smooth, effortless door swing. Unlike conventional hinges, the UNIGEAR hinge spreads stress along the full length of the door and frame. Heavy-gauge aluminum alloy with solid support blocks of self-lubricating DELRIN™, UNIGEAR is perfect for new or retrofit construction. Options include "fire-rated," hospital tips (HT) and electrified pass-through hinges (EPT). The UNIGEAR is tamperproof and weather-resistant and is available for doors up to nine feet.

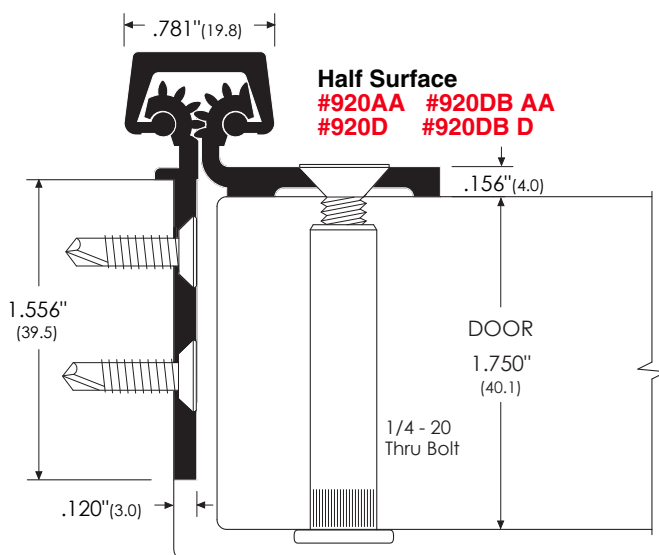
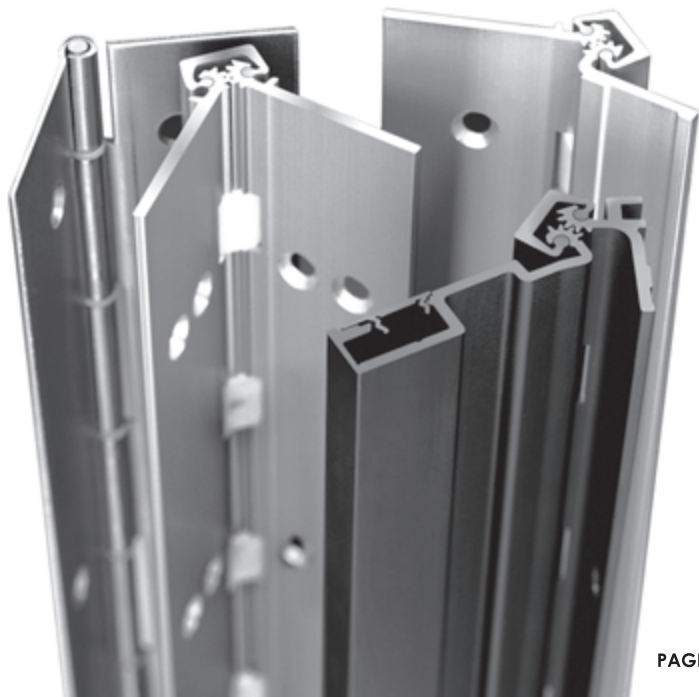
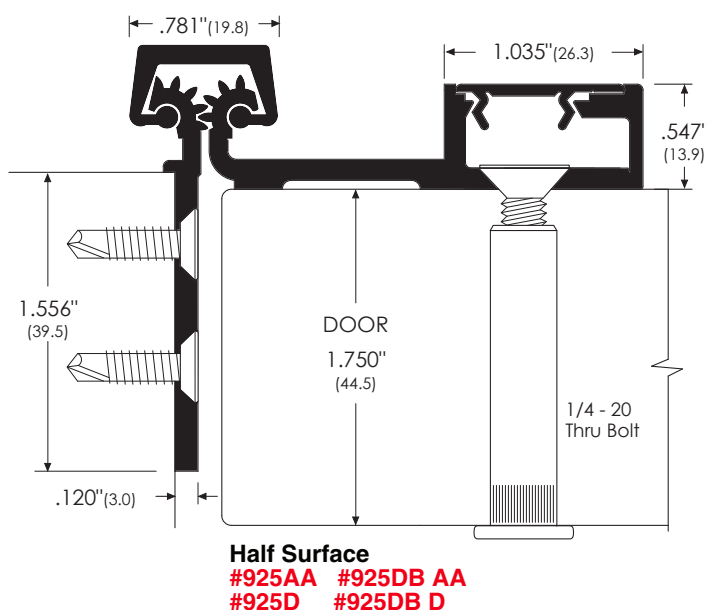
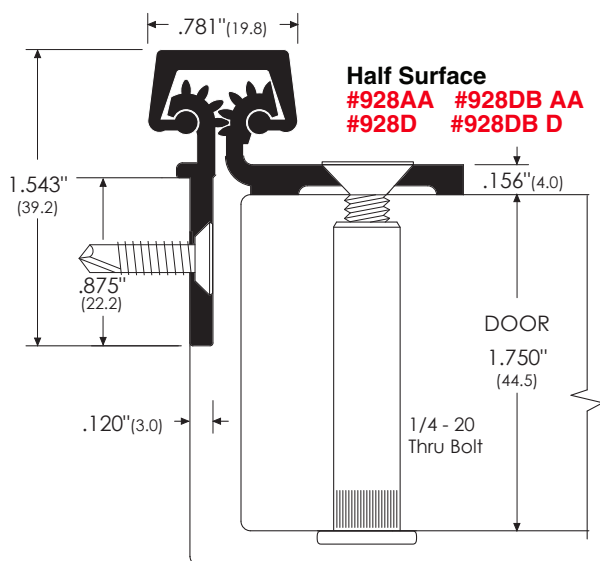
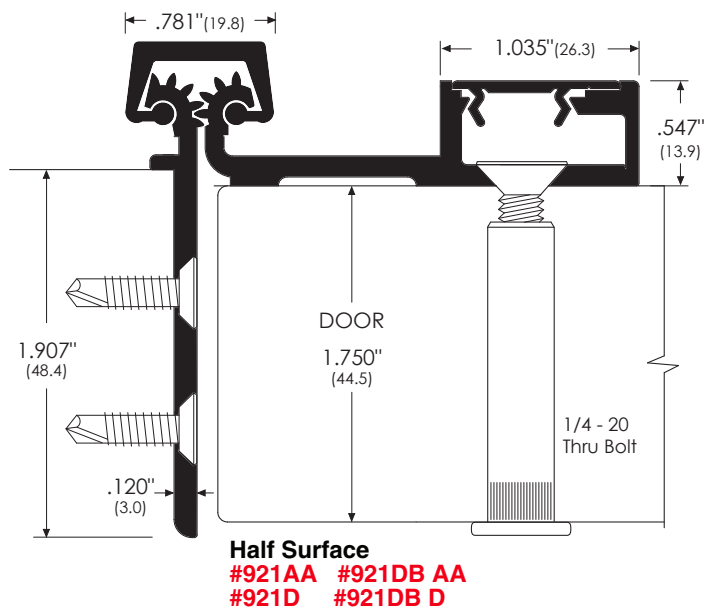
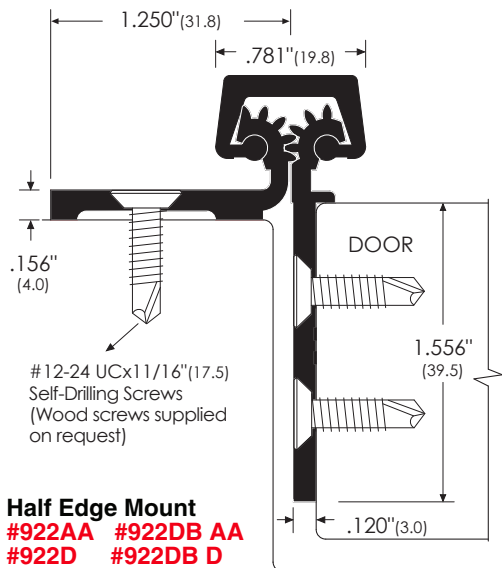
- All hinges are supplied with template screw holes, on request.
- Custom lengths available on request.
- Door / frame reinforcements are not required.



# Continuous Hinges



Note: AA= Clear Anodized DB= Double Bearing (Heavy Duty) D= Dark Bronze Anodized



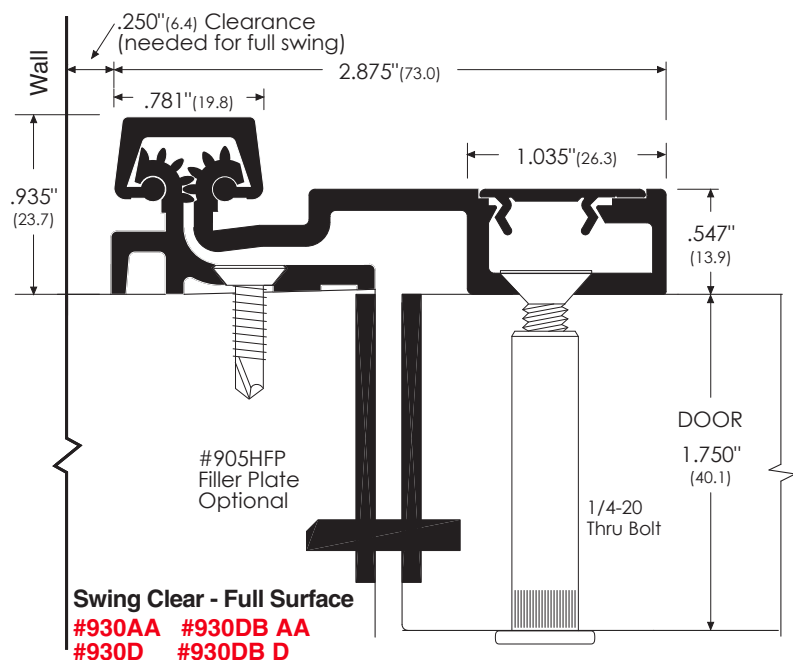
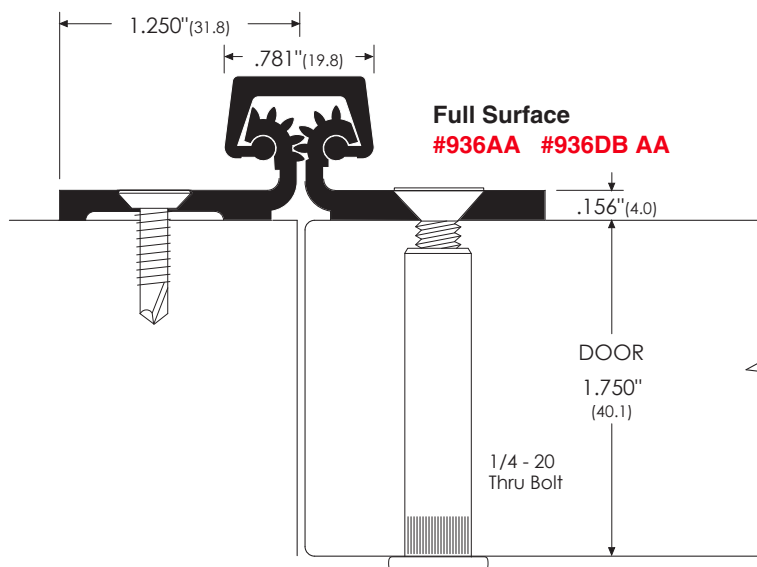
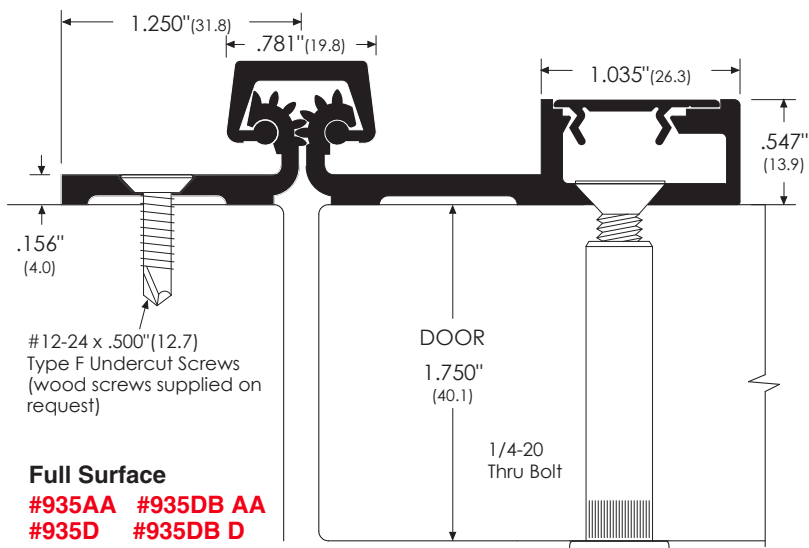
Hinges

# Continuous Hinges

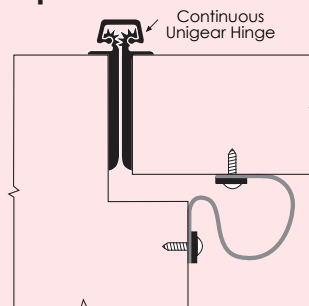


Note: AA= Clear Anodized  
D= Dark Bronze Anodized  
DB= Double Bearing (Heavy Duty)

SP= Steel Prime  
STST= Stainless Steel



## Options:



### SC - School Option

The UNIGEAR can be specified with a non-removable cap at the hinge top to guard against foreign material being dropped in.

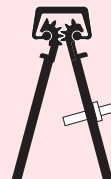
### #51A Child Finger Guard

( see pg. 49 )



### CE (Concealed Electric) - UNIGEAR Hinge Formerly #912

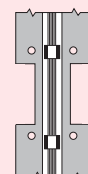
Electrified Feature enables hook-up of alarms, buzzers and locks. 26 gauge wires. (typical 6)



### #911 Fire-Rated UNIGEAR Hinge

Multi-point, hardened steel pins for an added measure of security. For 3 hr. doors, 108" or less.

3hrs.



### EPT (Electric Power Transfer) - UNIGEAR Hinge #910

Cut out to accommodate Von Duprin (or equivalent) power transfer unit. Specify hand opening when ordering.

## Note :

UNIGEAR Continuous Hinges are available with the "standard" number of bearings, and with double the number "DB" of bearings per length. DB hinges are recommended for heavy-duty or high-traffic doors. Available in any length.

Regular-duty hinges are used on standard-use doors and doors up to 220 lbs.

Double-bearing (DB) hinges are used on medium or high-use doors and doors up to 475 lbs.

Template hole pattern allows for advance door and frame preparation.

### Standard

83" - 16 bearings  
95" - 18 bearings  
107" - 21 bearings

### "DB" (Double Bearing)

83" - 32 bearings  
95" - 36 bearings  
107" - 42 bearings

### Tests:

Dynamic and static load test for compliance with ANSI A156.1(BHMA 101) for 350,000 cycles at 15 cycles per minutes.

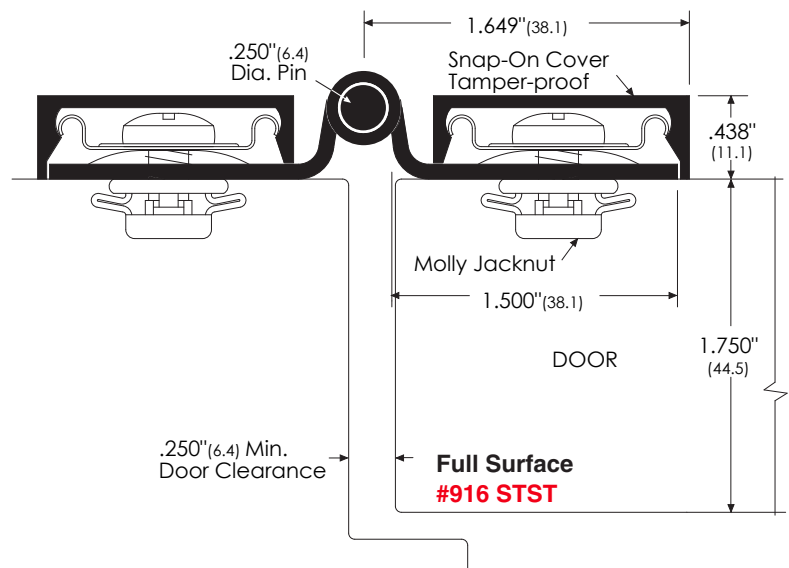
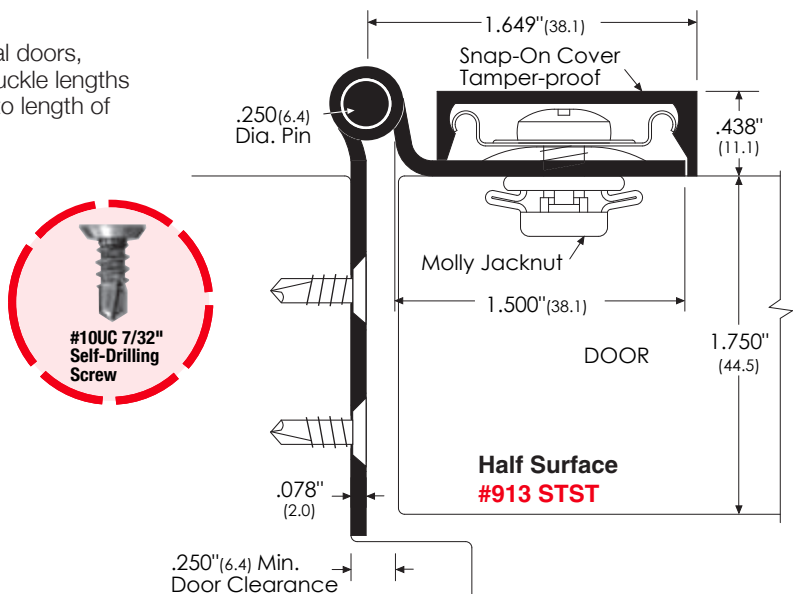
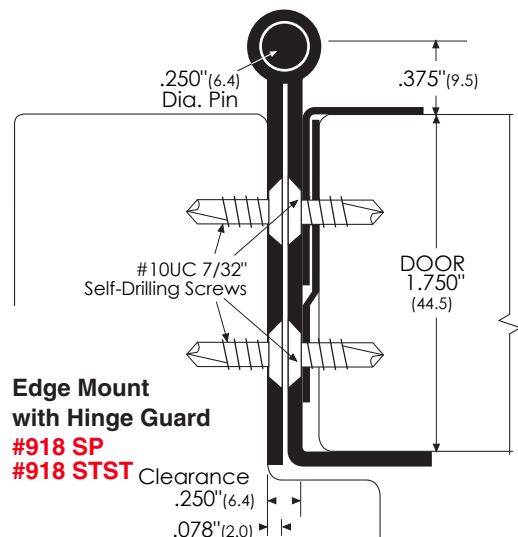
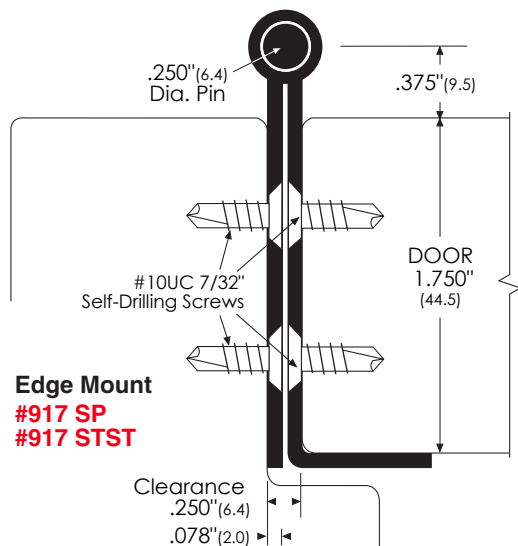
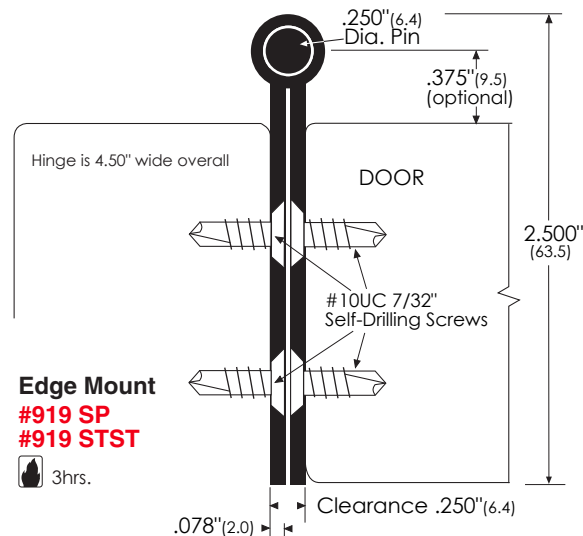
	RESULTS	ALLOWED
Dynamic load lateral	0.007	0.062
Dynamic load vertical	0.028	0.105
Static load lateral	0.015	0.062
Static residual lateral	0.000	0.062

All hinges meets this requirement.

All UNIGEAR and UNIPIN Hinges are supplied with #12x24x1/2" Type F screws (self-cutting thread).

## UNIPIN (Barrel-Type Hinge)

Heavy-duty continuous hinge for high-traffic wood or metal doors, 304-type stainless steel, has nylon washers with 2.00" knuckle lengths and .250" diameter stainless steel pin which runs parallel to length of hinge. Door frame reinforcements are not required.



## FIRE RATING FOR HINGES



### FIRE RATINGS

(910, 919 Type) Tested under ASTM 152, UL10B, for up to 3 hours.  
(914 Type) Tested under UBC7-2, NFPA 25-2, UL10B for up to 45 min.

- 20 Minutes:** - Steel doors & steel frames in drywall or masonry.  
- Wood doors & steel frames in drywall or masonry.
- 45 Minutes:** - Steel doors & steel frames in drywall or masonry.  
- Wood doors & steel frames in drywall or masonry.
- 60 Minutes:** - Steel doors & steel frames in drywall or masonry.  
- Wood doors & steel frames in drywall or masonry.
- 90 Minutes:** - Steel doors & steel frames in drywall or masonry.  
- Wood doors & steel frames in drywall or masonry.
- Limitations:** - Minimum 16 gauge steel for 90-minute rating.  
- Maximum opening for single door - 4'0" x 8'0"  
- Maximum opening for pair of doors - 8'0" x 8'0"

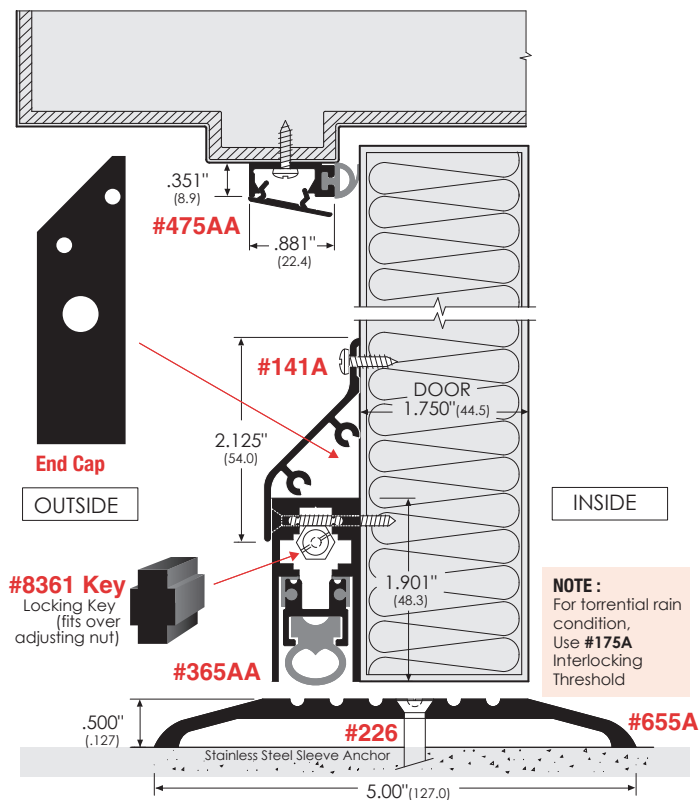


### FIRE RATINGS (911 Type with multi-point pin)

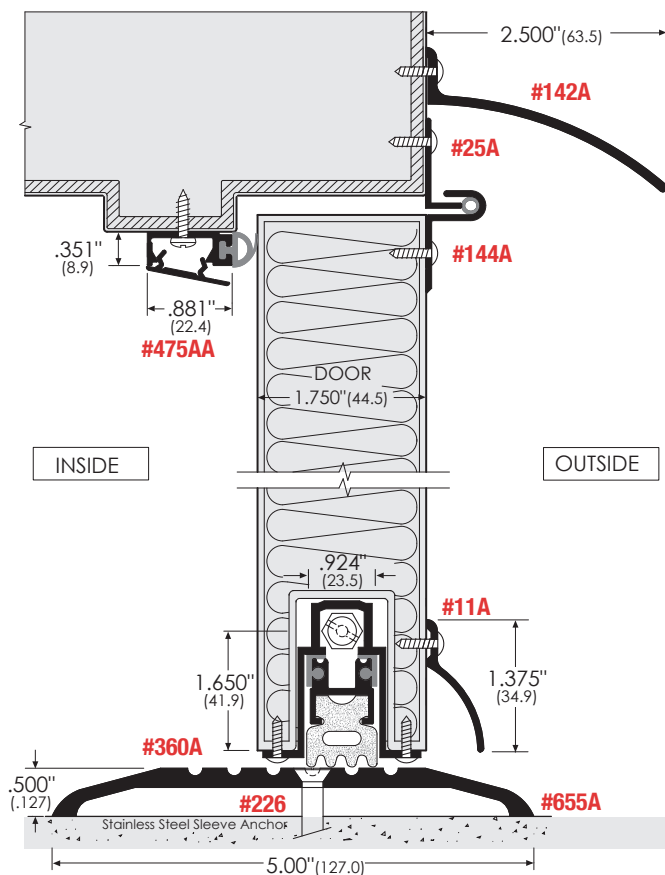
- 3 Hours:** - Steel doors & steel frames in masonry.  
- Minimum 16 gauge steel frames and doors.
- Limitations:** - Maximum opening for single door - 3'0" x 9'0"



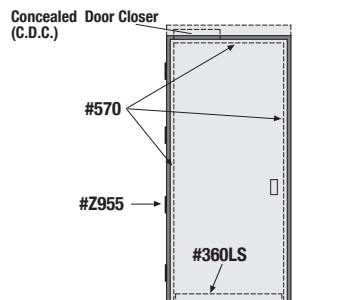
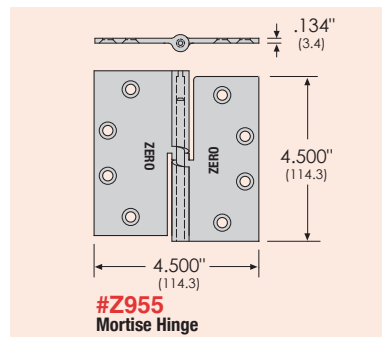
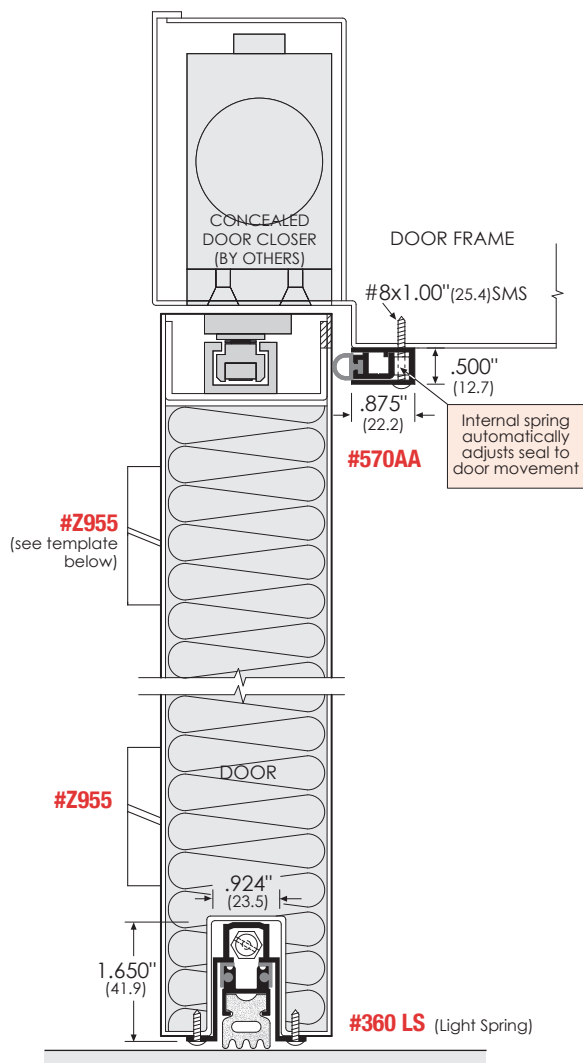
## Typical Gasketing for Exterior Inswing Door



## Typical Gasketing for Exterior Outswing Door

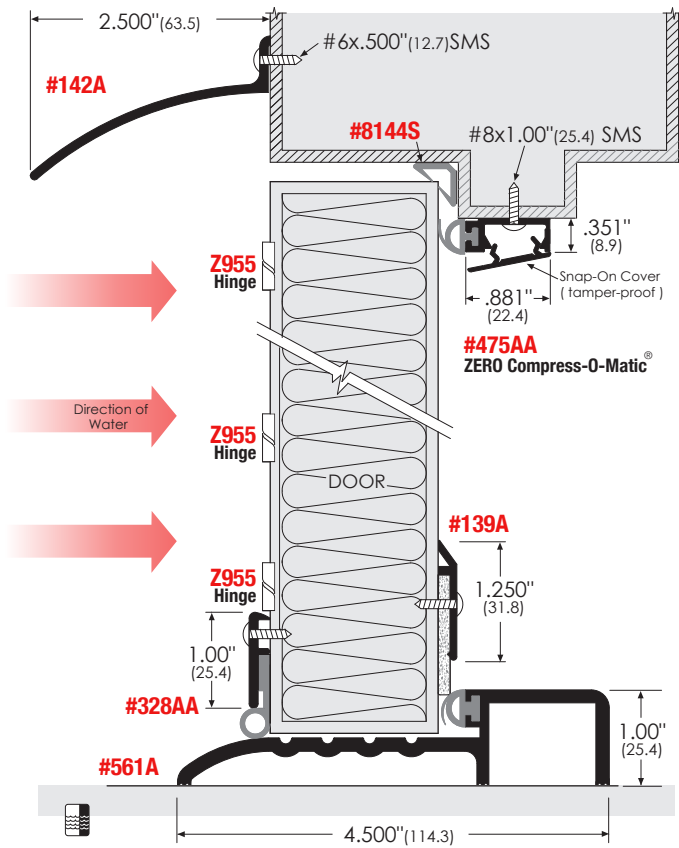


## Gasketing for Non-Latching Doors

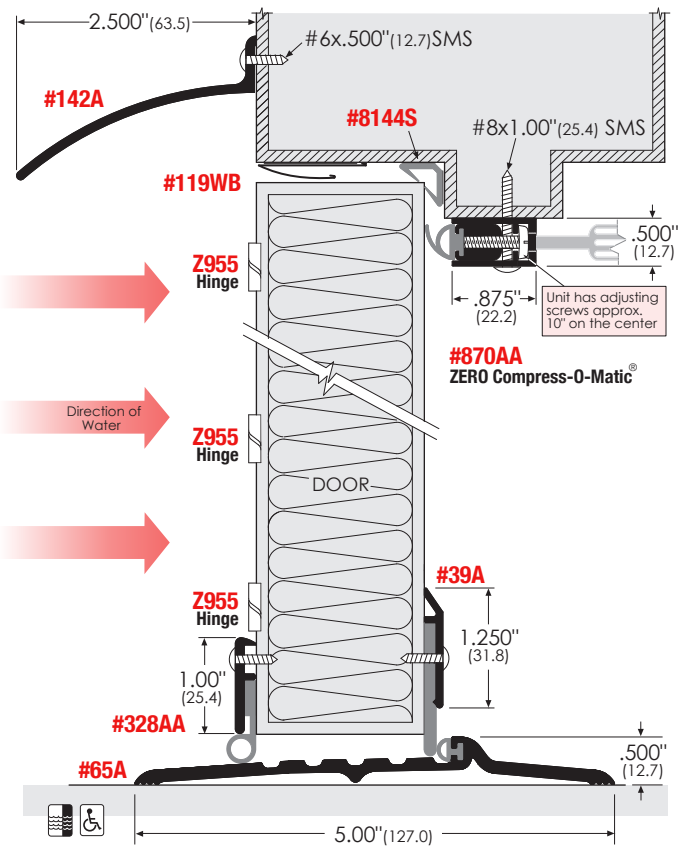


Full illustrations not to scale

**OPTION 1**



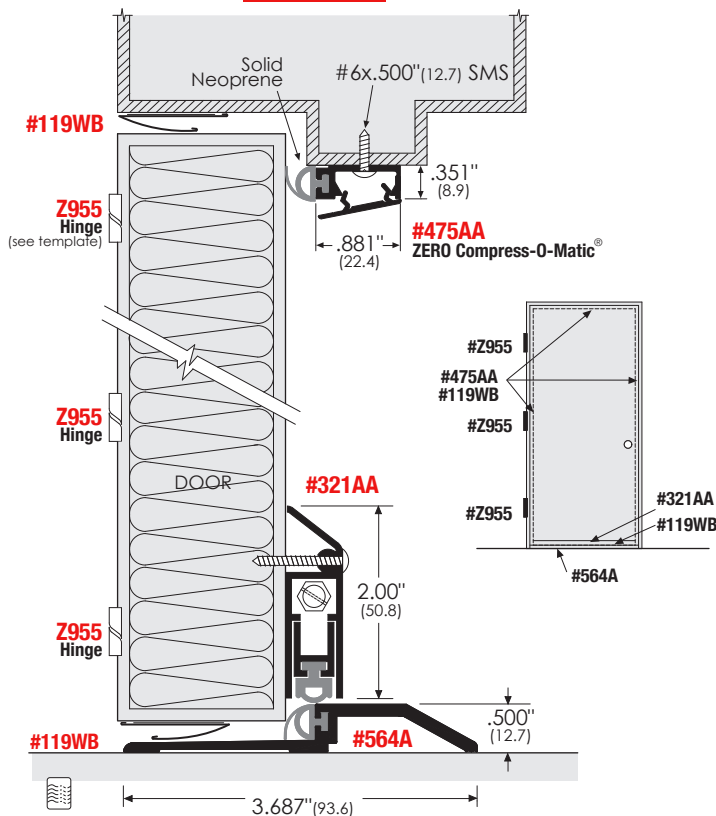
**OPTION 2**



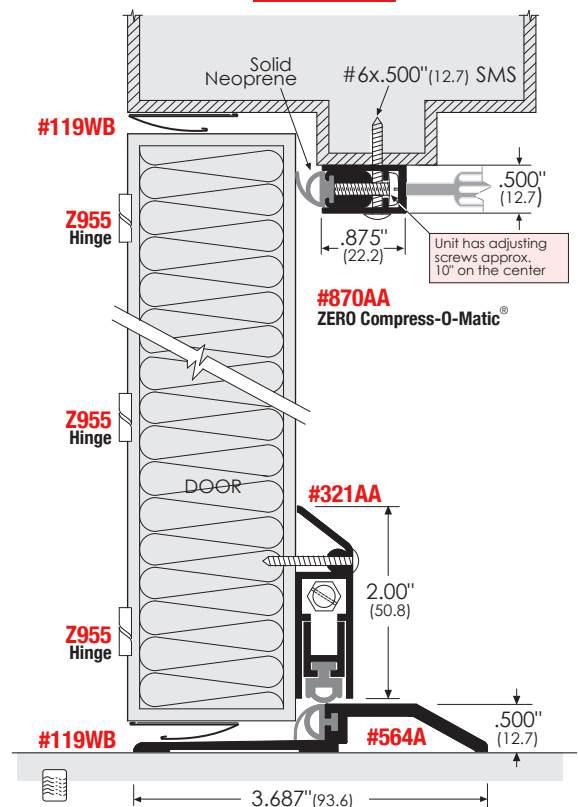
## "Safe Haven" Room Gasketing

AIR INFILTRATION - 100 MPH (165KM/H) Wind Velocity - Air Leakage 0.50 CFM (2.8CMH)

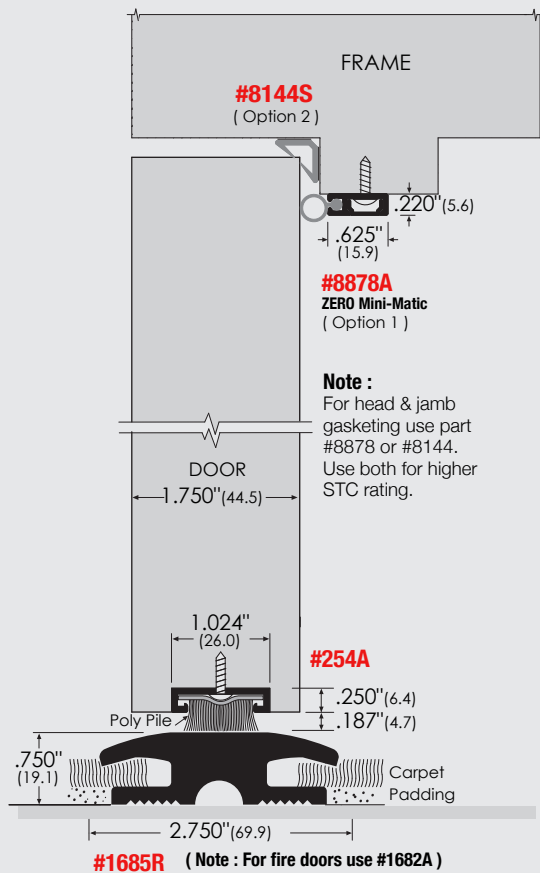
**OPTION 1**



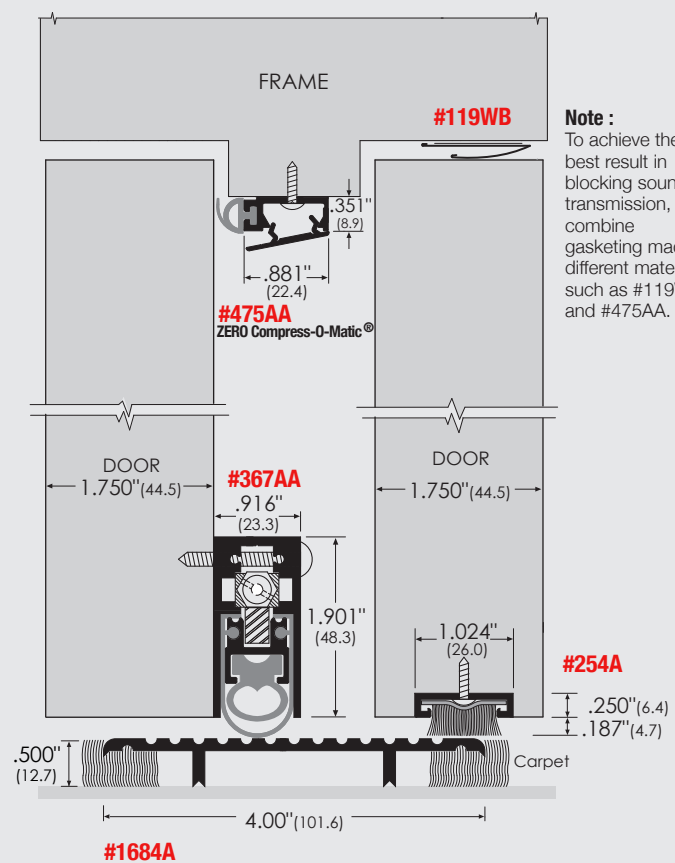
**OPTION 2**



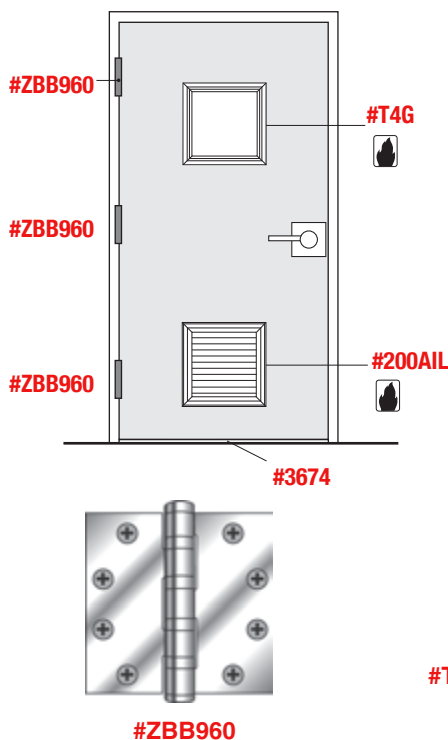
## Interior Entry Doors



## Communicating Doors



## Equipment Room Doors



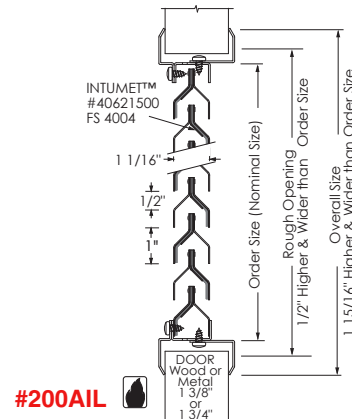
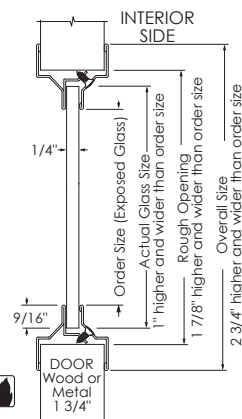
**Louver and lite for 1 3/4" Doors**

**20 Gauge Cold Rolled Steel**

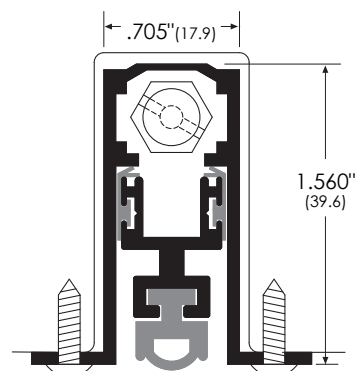
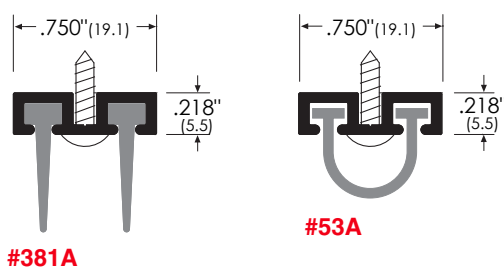
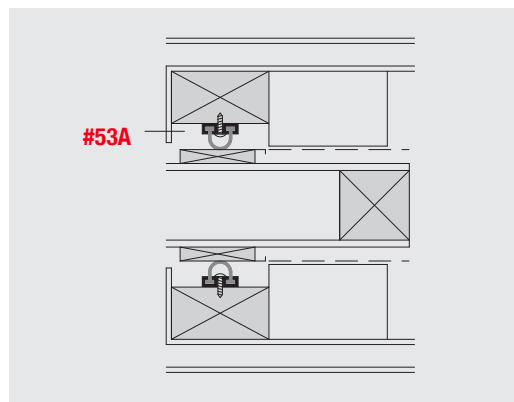
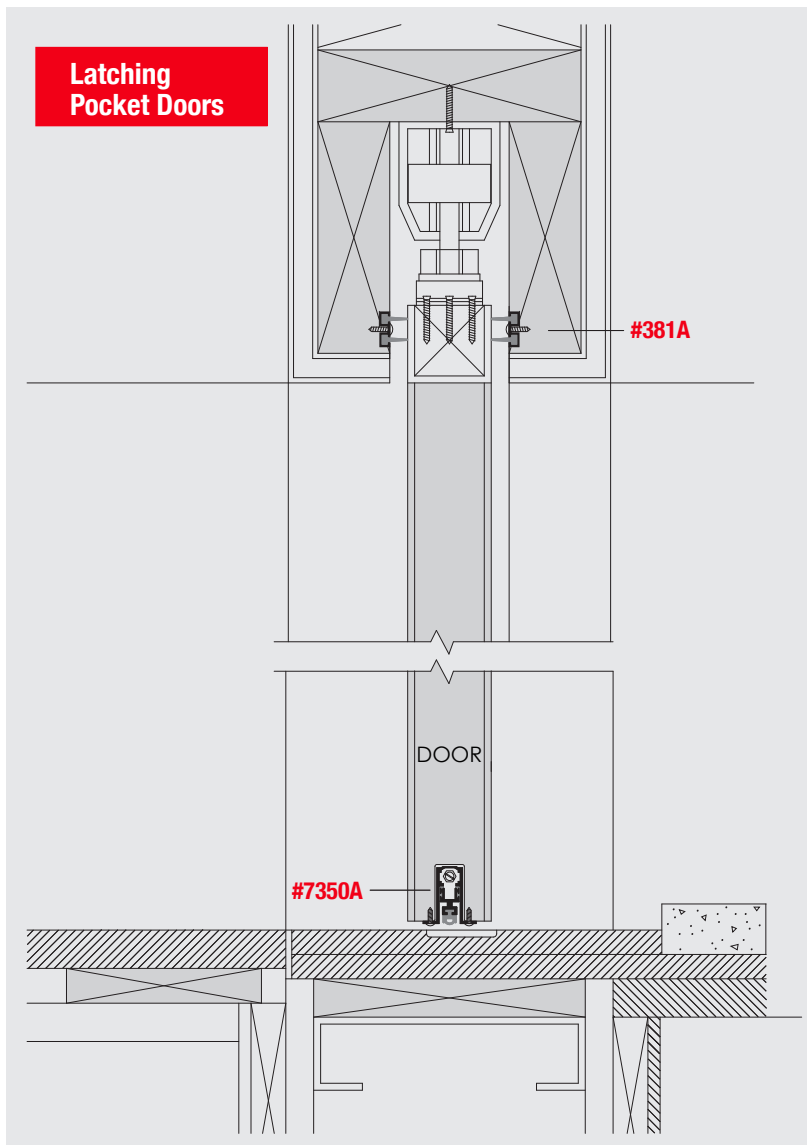
**No Screws visible on exterior side**

**Low Profile**

**Grey powder-coated or colors available**

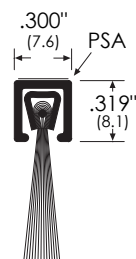
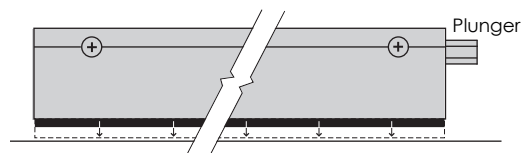


## Latching Pocket Doors

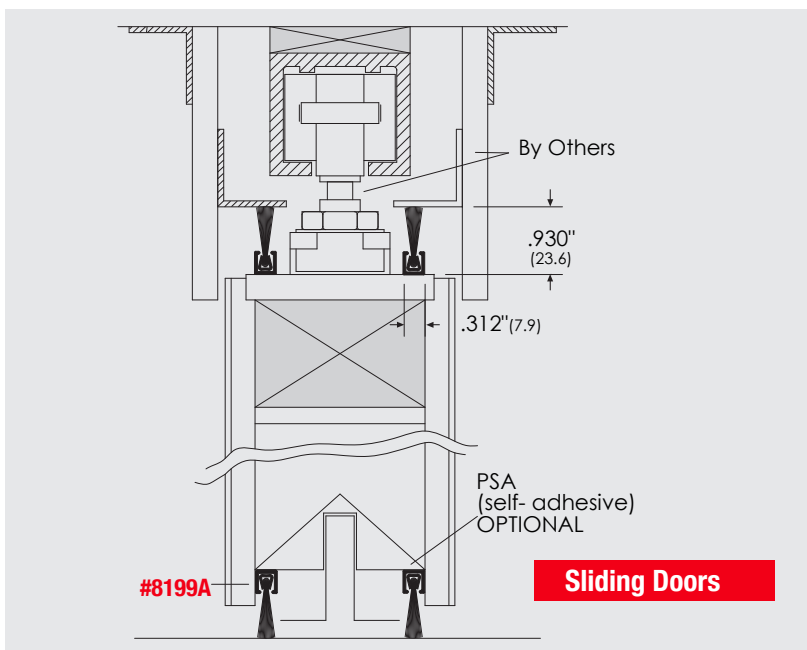


**#7350A**  
Automatic door bottom for sliding doors

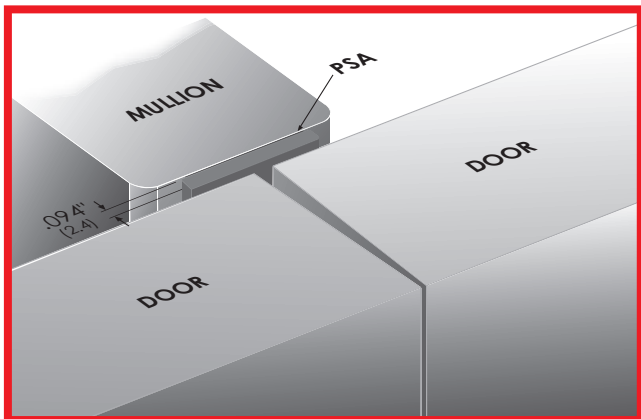
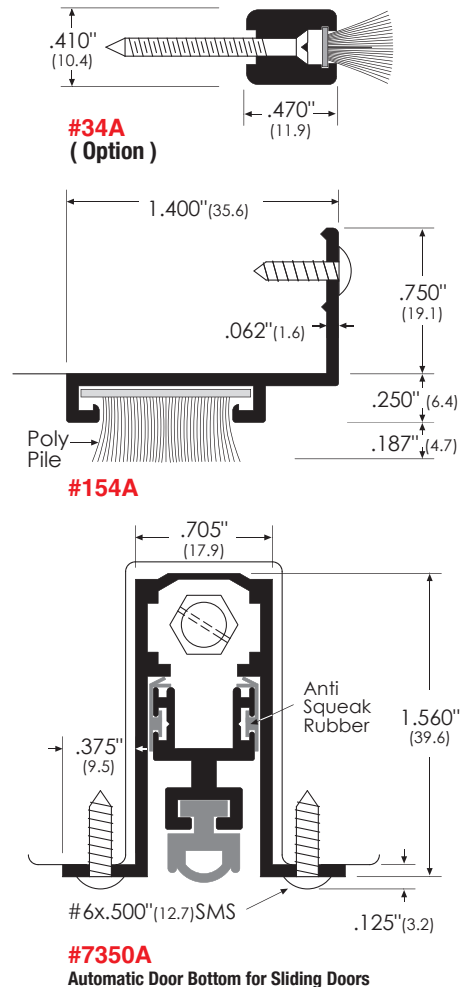
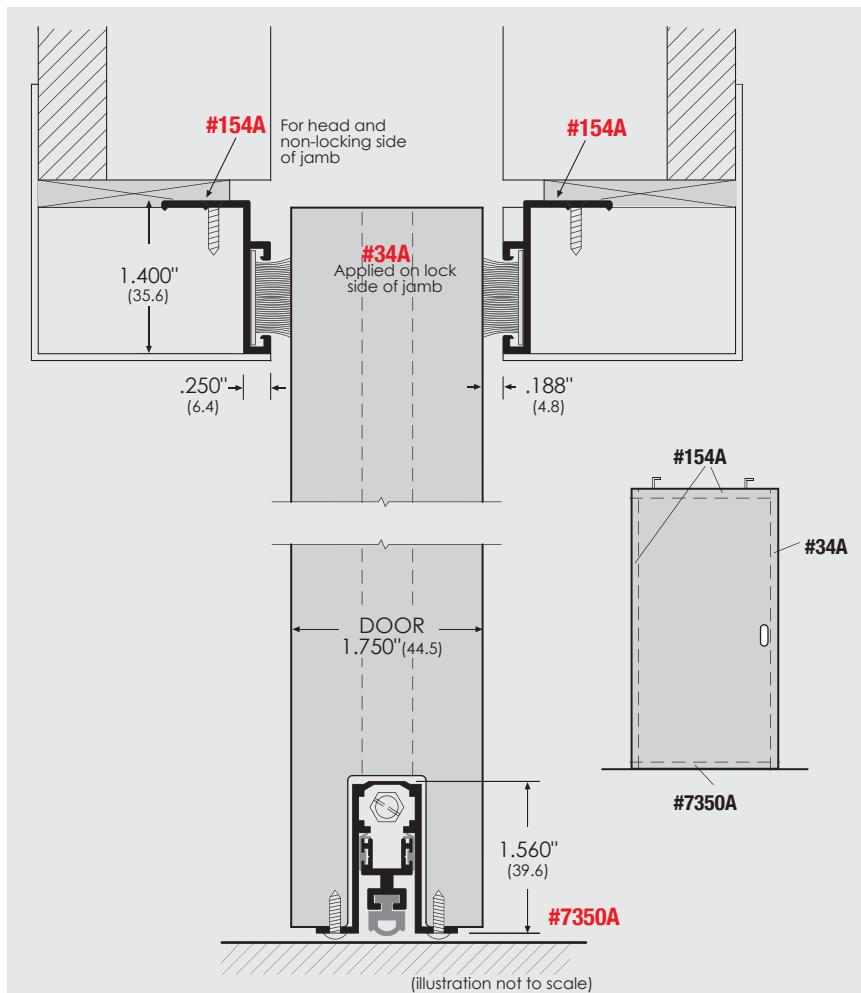
This automatic door bottom functions differently from the rest of all ZERO door bottoms. When the plunger is compressed, the mechanism causes the insert seal to activate and drop evenly along the door bottom.



**#8199A**

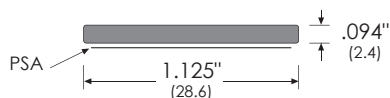


## Sliding Doors

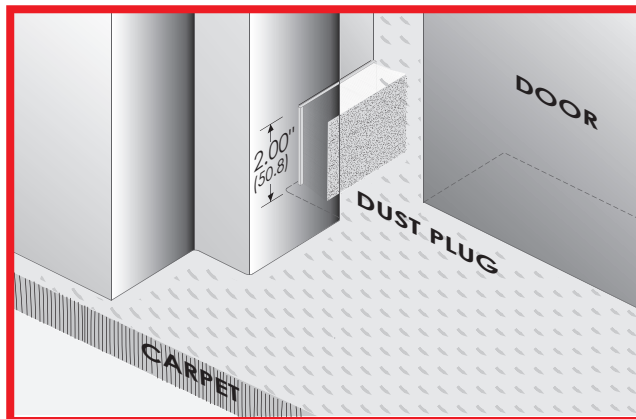


## SEAL FOR MULLION APPLICATION

The new **#8780** is a closed cell sponge neoprene strip 1-1/8"(28.6) wide x 3/32"(2.4) thick with self-adhesive tape for mounting directly to the face of the mullion at point of contact with closed doors.

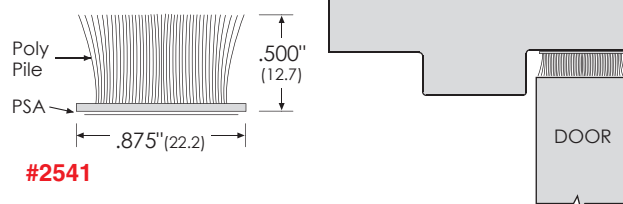


**#8780N**



## SELF-ADHESIVE DUST PLUG

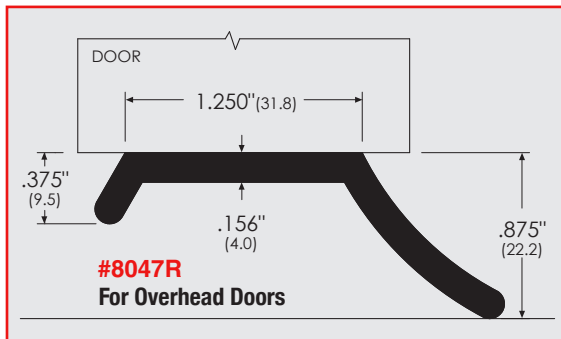
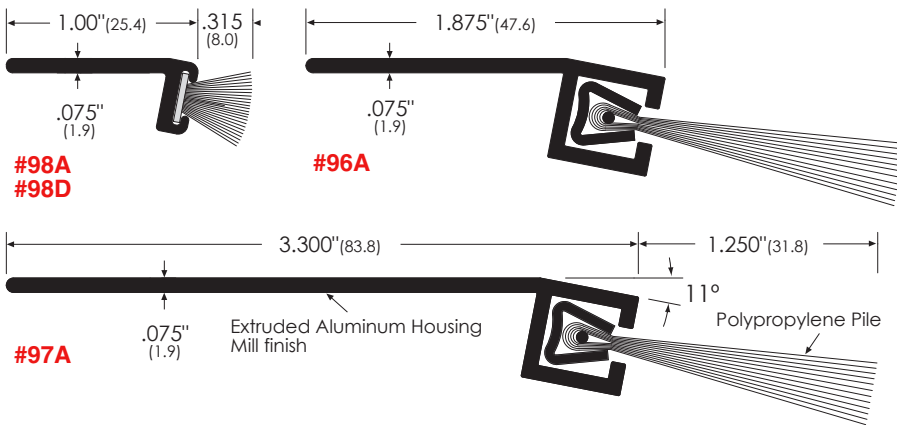
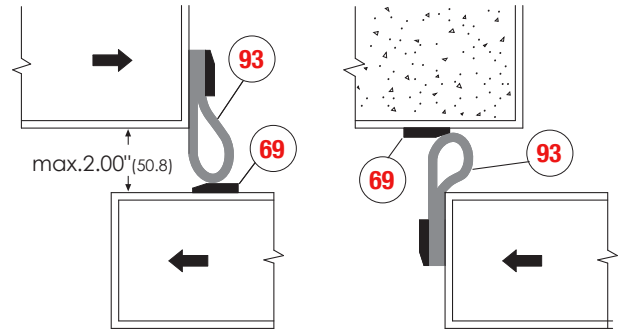
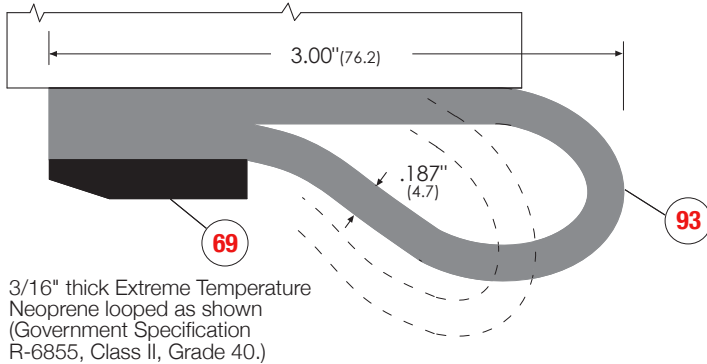
Polypropylene pile with pressure-sensitive adhesive backing. Eliminates any gaps created during installation. .875" wide x 2.00" high.



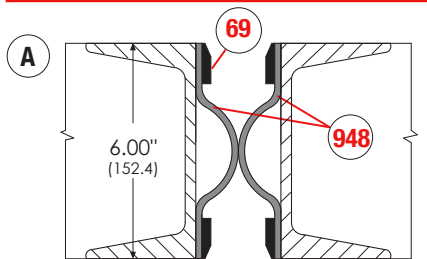
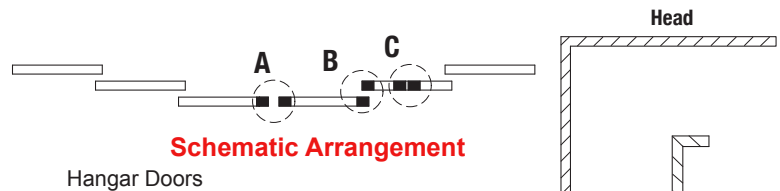
**#2541**



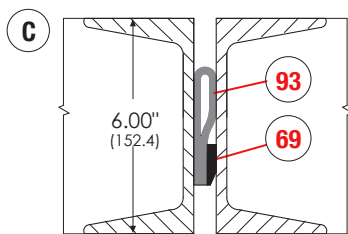
## Series 93



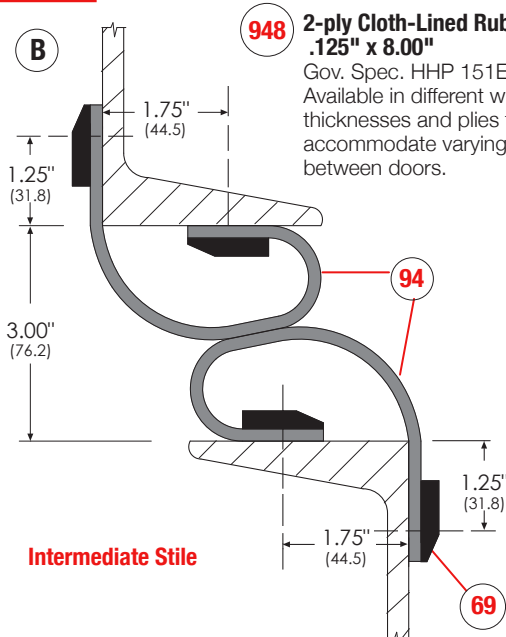
## SLIDING HANGAR DOORS



**Meeting Stile** 2-ply Cloth-Lined Rubber .125" x 8.00"

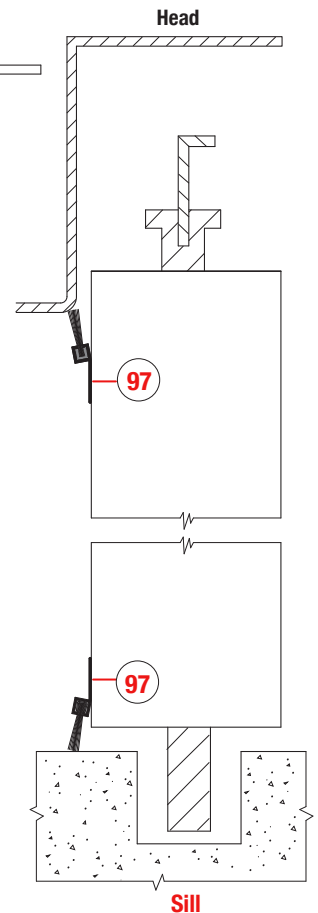


10' Door Sections Permanently Fastened Together



**Intermediate Stile**

**948** 2-ply Cloth-Lined Rubber .125" x 8.00"  
Gov. Spec. HHP 151E Class II  
Available in different widths, thicknesses and plies to accommodate varying spaces between doors.



## Child Finger-Guard

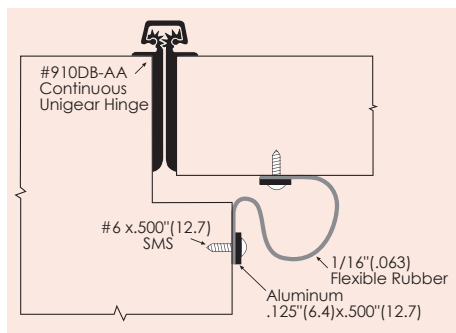
Hand and finger protection for child care, school safety, hospitals, and the workplace. A commercial-quality, maintenance-free product. Aluminum and flexible rubber available in black.

**#51A-120 (6" wide)** For door opening to 120°

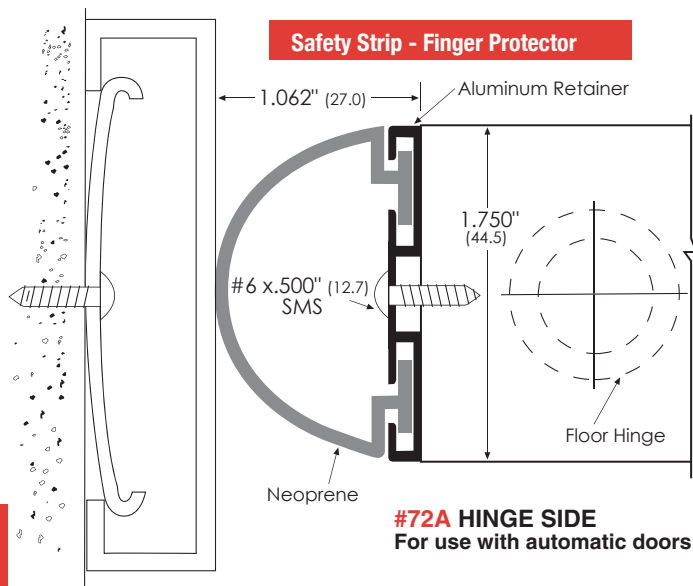
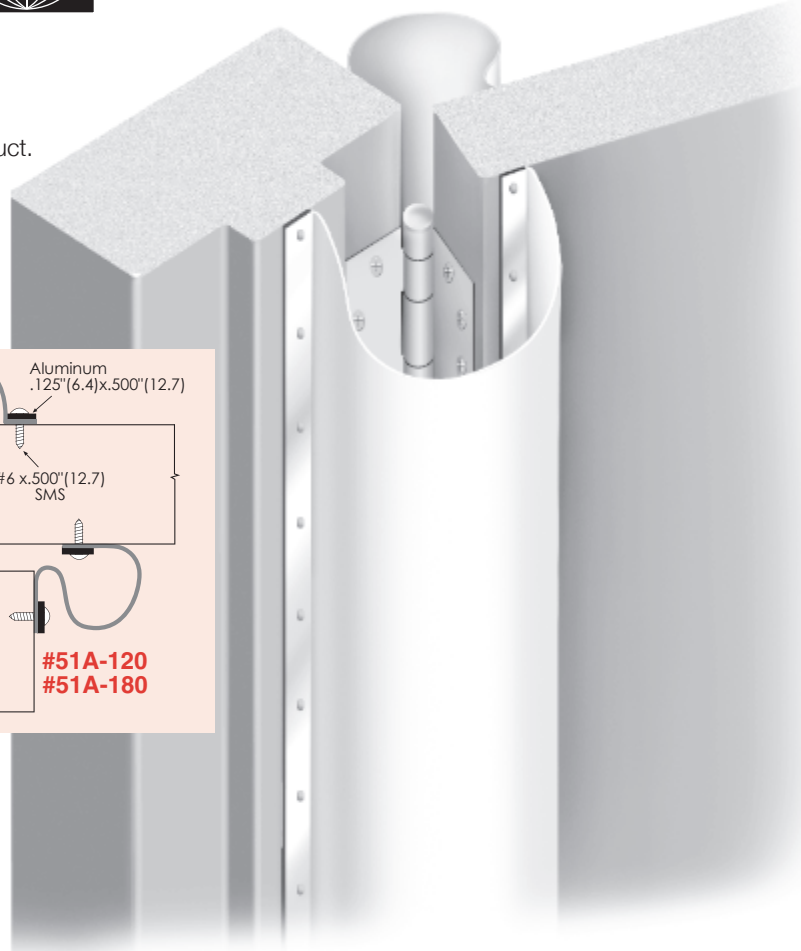
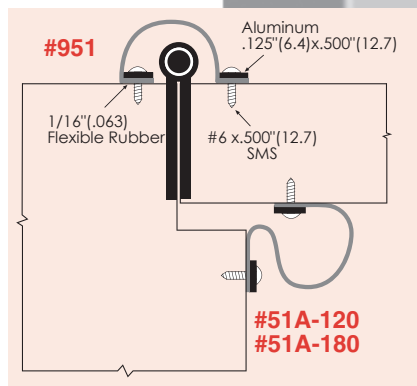
**#51A-180 (8" wide)** For door opening to 180°

**#951** Cover for mortise type hinges

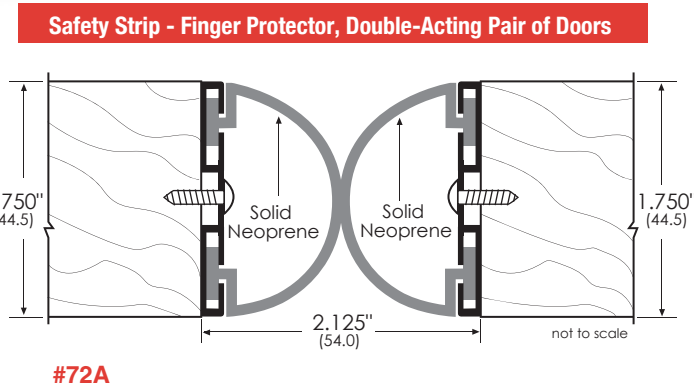
Meets Child Care Center Design Guide (PBS-P140)



**#51A-120** 6" wide rubber  
**#51A-180** 8" wide rubber



**#72A HINGE SIDE**  
For use with automatic doors



**#72A**

Finger-Guard





ZERO's ADA Access Systems help solve the challenge of meeting the American Disability Act Requirements for access into public buildings. The components work together to minimize required door-opening and closing force and threshold height, and fully satisfy the ANSI, ADA standards.

## AMERICAN NATIONAL STANDARD INSTITUTE (ANSI), AMERICAN WITH DISABILITIES ACT (ADA), ICC/ANSI A117.1-1998

### Requirements are as follows:

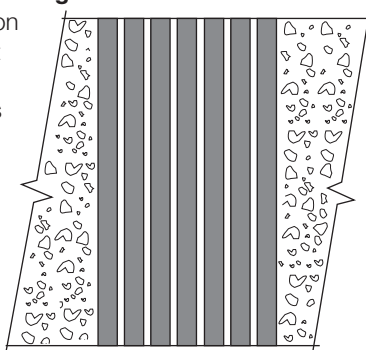
- 1** Fire doors shall have the minimum opening force allowable by the appropriate administrative authority. Other doors:
  - (a) Exterior hinged doors : 8.5 lbf (37.8N)
  - (b) Interior hinged doors : 5 lbf (22.2N)
  - (c) Sliding or folding doors : 5 lbf (22.2N)
 These forces do not apply to the force required to retract latch bolts or disengage other devices that may hold the door in a closed position.
- 2** Thresholds at doorways shall be 1/2" (13 mm) high maximum for other types of doors. Changes in level of 1/4" (6mm) high maximum shall be permitted to be vertical. Changes in level between 1/4" (6mm) high minimum and 1/2" (13mm) high maximum shall be beveled with a slope not steeper than 1:2.

## DETECTABLE WARNINGS (ANSI A 117.1 1-1986, ADA)

To help comply with detectable warnings requirements under ANSI A117.1-1986. ZERO can supply raised and textured, hard rubber strips that can be applied to walking surfaces. #3672A OR #3672A-E strips can be secured onto appropriate surfaces or embedded into concrete surfaces to the required width.

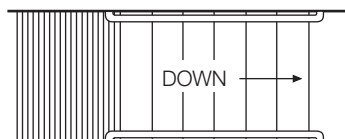
### Detectable Warnings on Walking Surfaces

Detectable warning textures on walking surfaces shall consist of exposed aggregate concrete, cushioned surfaces made of rubber or plastic, raised strips or grooves. Textures shall contrast with that of surrounding surfaces.



### Detectable Warnings at Stairs

All stairs, except those in dwelling units, in enclosed stair towers, or set to the side of the path of travel shall have a detectable warning at the top of stair runs.



## "LIGHT SPRING" "LS" Automatic Door Bottoms For ADA Approved Doors

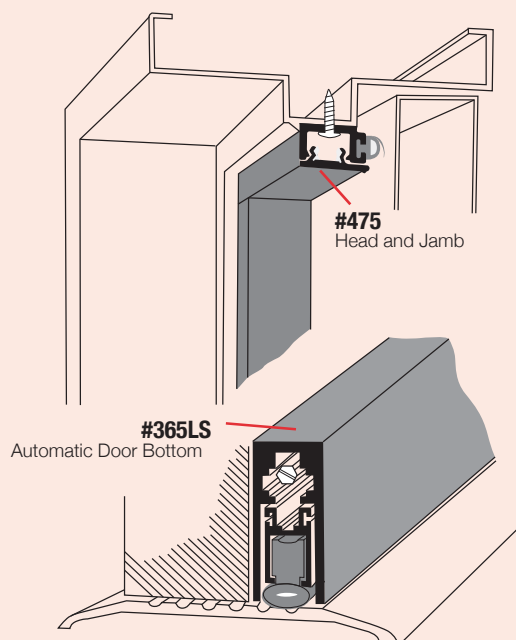
### 350LS, 351LS, 364LS, 365LS, 366LS

"LS" models require lower operating force. "LS" models are suitable for both sliding doors and swinging doors. Outside dimensions are unchanged from standard products.

TEST DOOR: 36" X 84" X 1 3/4"		opening force (lbs.)	closing force (lbs.)
TEST RESULTS:			
TEST 1	#475 Head and Jamb	1.75	7.90
TEST 2	#475 Head and Jamb #365LS Automatic Door Bottom	1.90	9.05
TEST 3	#475 Head & Jamb #365LS Auto. Door Bottom & Door Closer	9	9.35
TEST 4	Closing force with no seals	-	6.75

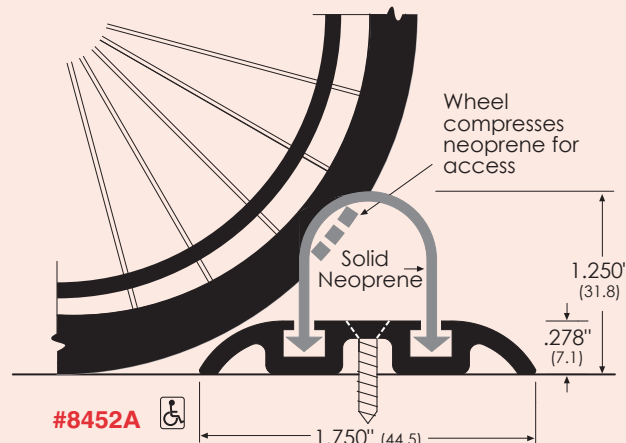
## System #ADA 1000

#475 and #365LS 1.9 lbs. opening force



## Wheelchair Accessible Shower Threshold

Designed for use when a shower must be accessible to a wheelchair. The neoprene gasket will keep water in while allowing the wheel to pass over easily.



## Flood Barrier Shield for Doors Helps Safeguard Building Contents

This removable barrier answers pleas from builders for help in protecting doors and building contents from water ingress in flood-prone areas. When water from heavy rains accumulates, the **#2070 Flood Barrier Shield** effectively blocks up to a foot or more of flood waters from permeating door openings.

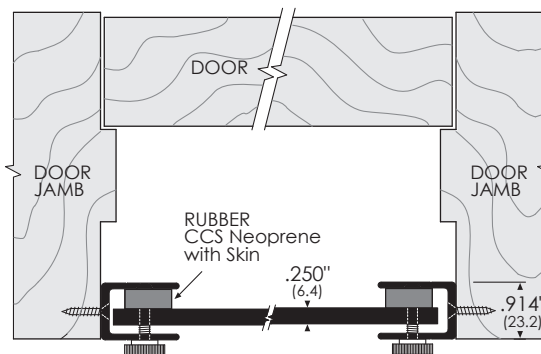
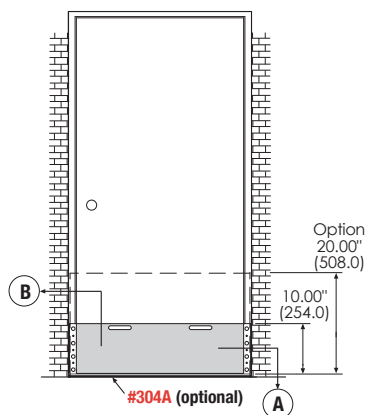
Available in 10 and 20 inch high barriers (other sizes available upon request), the lightweight aluminum shield requires no tools or muscle strength for insertion into premounted vertical channels attached to either the door frame or adjacent walls.

**The unit complies with standards of the Federal Emergency Management Agency (FEMA) and Federal Insurance Administration (FIA) for use on doors in flood-prone areas.**

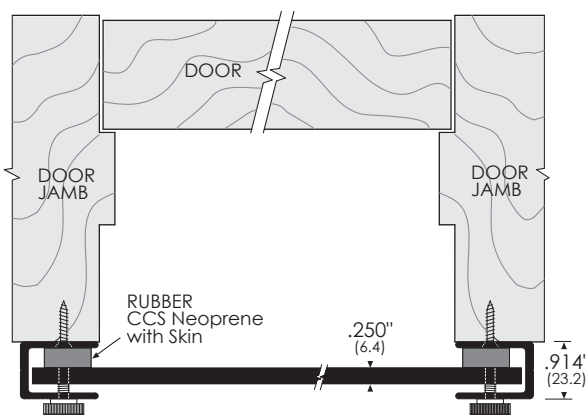
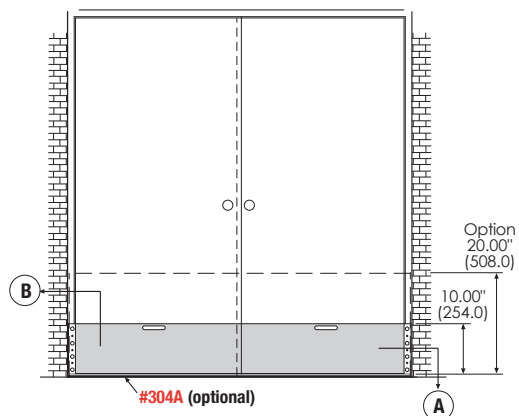
The key to the shield's impermeability is the use of closed cell sponge (CCS) neoprene rubber engineered by Zero to ensure a water-tight seal. The rubber lines the aluminum channel brackets and the bottom of the shield. The neoprene also compensates for gaps at the threshold.

**Part# 2070A - 10 10" High**  
**2070A - 20 20" High**

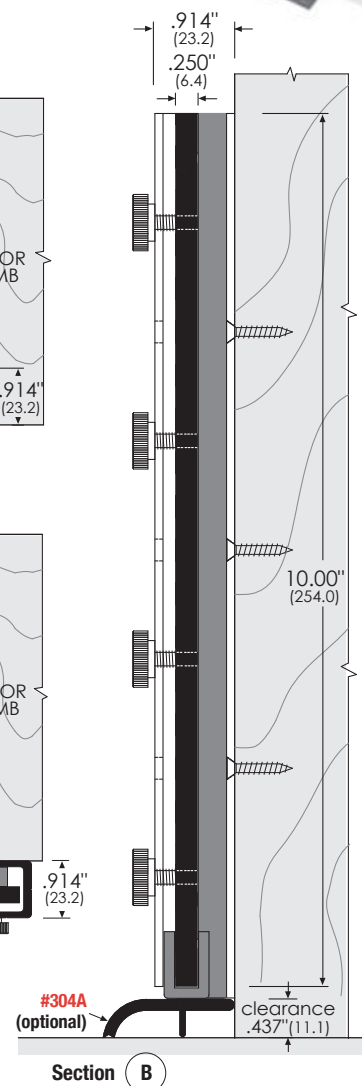
Each Flood Barrier Shield is custom fabricated  
Specify exact width needed and installation option required.



**Section A Installation option 1 - INSIDE MOUNT**



**Section A Installation option 2 - OUTSIDE MOUNT**



**Section B**

Full illustrations not to scale

**EMI - Electromagnetic Interference**  
**RFI - Radio Frequency Interference**

## A reliable and adjustable SHIELDING SYSTEM for continuous-use doors

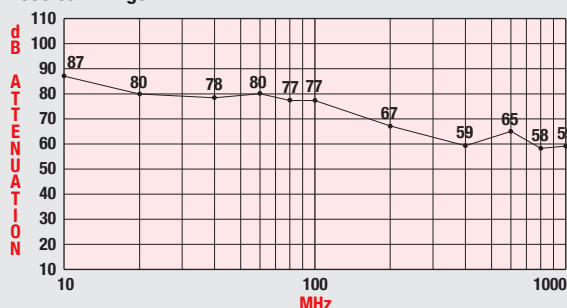
The EMI/RFI door sealing system consists of multiple head, jamb and saddle seals that block electromagnetic and radio frequency interference at door openings. The system has practical applications for laboratories, hospitals, brokerage houses, embassies, and rooms in companies using sensitive electronic equipment.

All aluminum parts have an irradate finish (MIL-C5541 CLASS III) to ensure maximum electrical conductivity across the gasket-flange interface. This coating also keeps the metal from forming an insulating oxide film that might act to break the circuit. Solid carbon-filled silicone rubber gaskets complete the electrical circuit while forming a tight seal against the door and saddle. The system is adjustable to compensate for any door or frame misalignment. Installation consultation is available from ZERO.

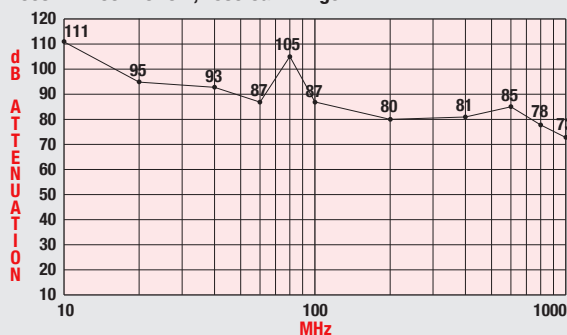
Tested in accordance with requirements of MIL-STD-285 (ATTENUATION MEASUREMENT FOR ENCLOSURES, ELECTROMAGNETIC SHIELDING) and NSA SPECIFICATIONS 73-2A performed for electric field attenuation over the frequency range 10 MHz to 1 GHz.

Certificate of compliance is available upon request.

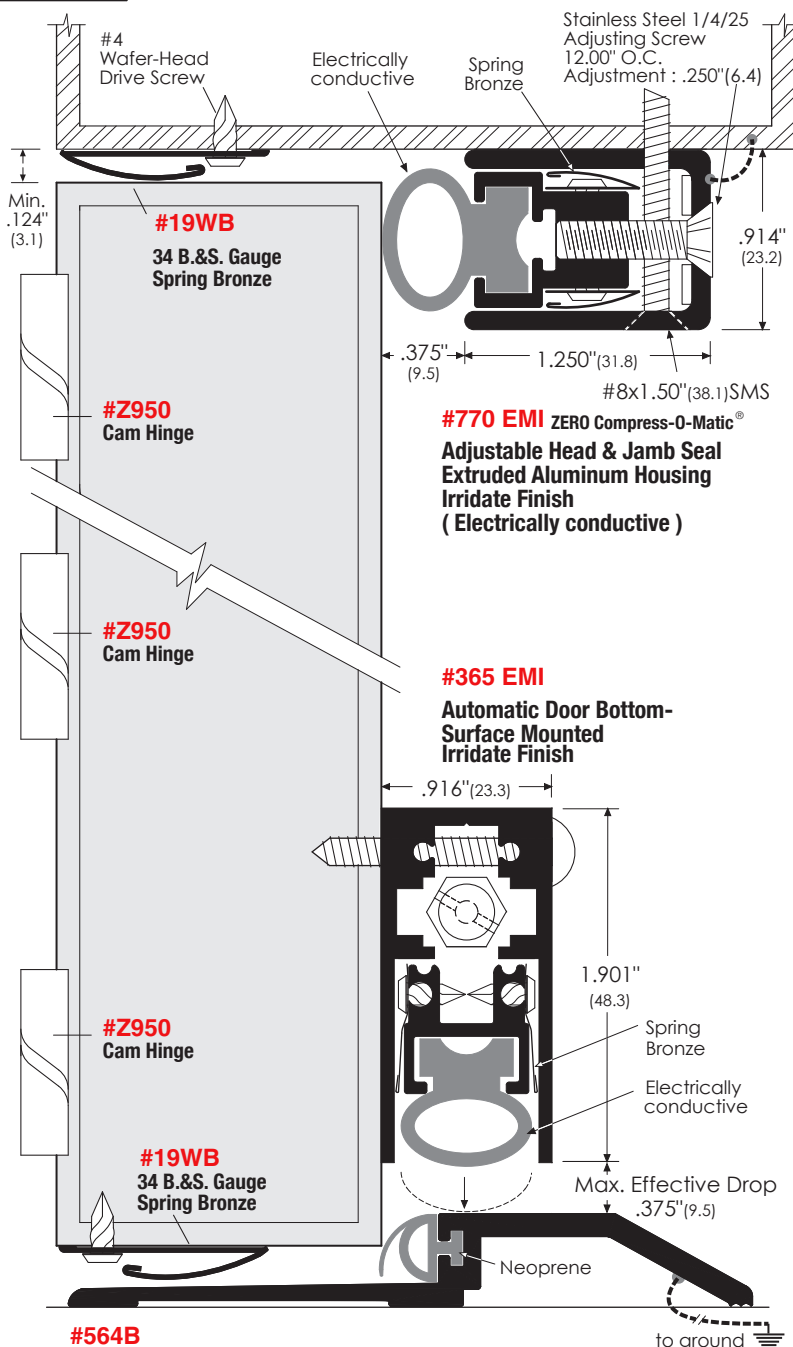
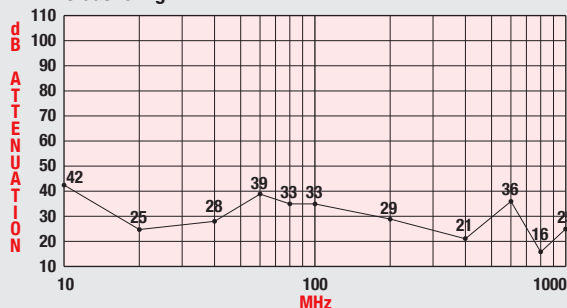
**With #564B Threshold, #770EMI Head/Jamb, #365EMI Door Bottom, #950 Cam Hinge**



**With #564B Threshold, #770EMI Head/Jamb, #19W Head/Jamb/Sill, #365EMI Door Bottom, #950 Cam Hinge**



**With No Gasketing**



### EMI Gasketing: Silicone Rubber, Solid Carbon-Filled

Property	Test Method	Silicone Rubber
Volume-Resistivity, (ohm-cm)	ASTM D991	5.0
Durometer, Shore A	ASTM D2240	60
Tensile, Strength, (psi, min.)	ASTM D412	800
Elongation, (%)	ASTM D412	300
Tear Strength, (ppi)	ASTM D624	70
Compression Set, 70h @212, (%)	ASTMD395D	22
Shielding Effectiveness, 20 MHz-10GHz, E-field, (dB, min.)	MIL-G-83528	40

EMI Product





# Weatherstripping Double-Hung Wood Windows

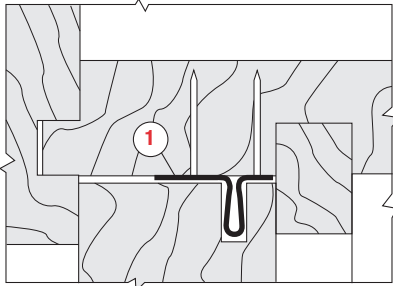


Note: B= Bronze Z= Zinc

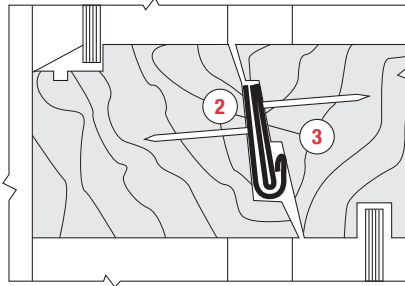
## Series 6

Material: 9 gauge zinc or bronze

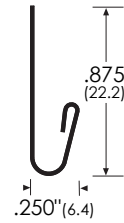
Window Protection



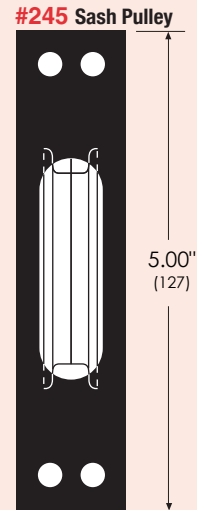
HEAD AND SILL



MEETING RAILS



#2B  
#2Z

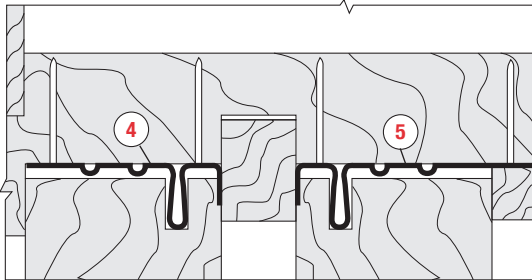


Pulley illustration shown at half size

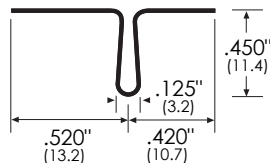
**#245**  
Sash Weight-120 lbs.  
Std. Finish-Satin Brass  
**#245 BB**  
Ball Bearing Pulley  
Sash Weight-250 lbs.  
Std. Finish-Polished & Lacquered

**#635 Chain**  
100 lb. rating  
Copper Dip

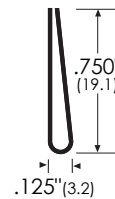
**#645 Chain**  
500 lb. rating  
Copper Dip



JAMB



#1B  
#1Z



#3B  
#3Z

Option for #4 & #5

#400B  
#400Z  
#500B  
#500Z

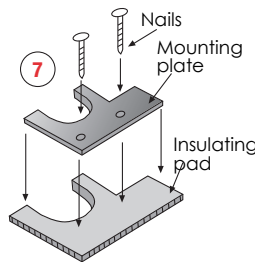
#4000B  
#4000Z  
#5000B  
#5000Z

#4B #4Z 1.750" (44.5) width  
#5B #5Z 2.125" (53.1) width

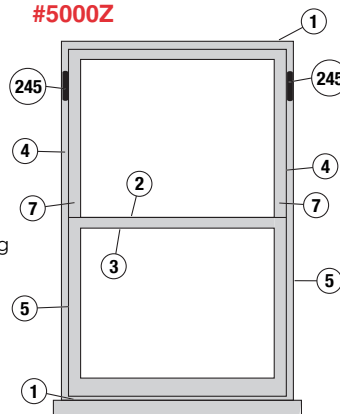
To comply with the Board of Education,  
City Of New York, Standard 8F-04,  
specify as follows:

1S-Sill : Use .045" material (#16 gauge)  
1H-Head : Use .028" material (#12 gauge)  
2-Meeting : Use .020" material (#10 gauge)  
3, 4, 5 : Use .018" material (#9 gauge)

Material : Zinc

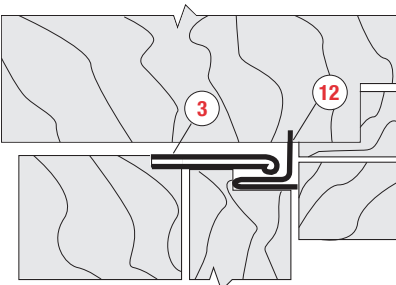


WEATHER CHECK

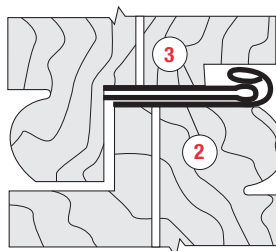


## Series 30 Casement-Type Wood Window - Open Out

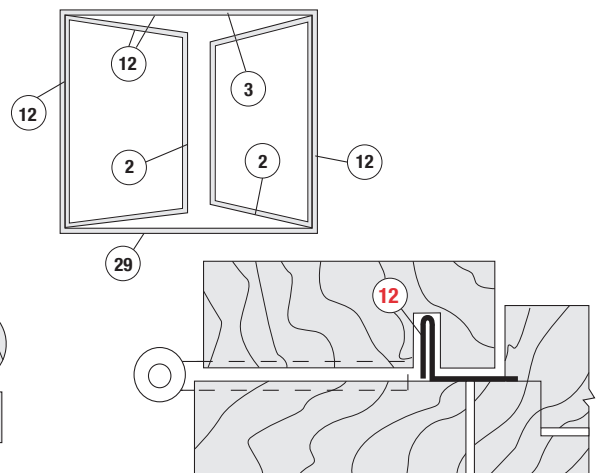
Material: 9 gauge zinc and 25 gauge bronze & steel



HEAD & LOCK-SIDE JAMB



MEETING STILES



HINGE-SIDE JAMB

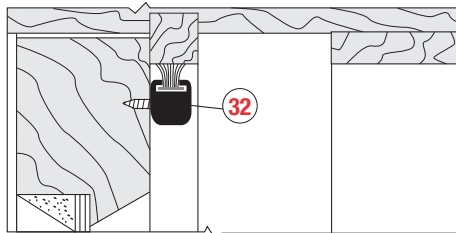
# Weatherstripping Double-Hung Wood Windows



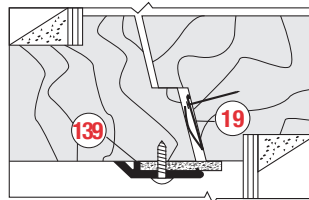
Note: A= Aluminum  
D= Dark Bronze Anodized

AA= Clear Anodized  
G= Gold Anodized

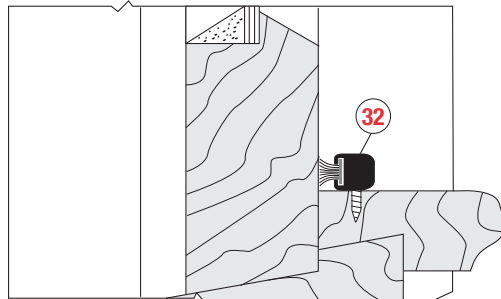
## Series 20 Double-Hung Wood Windows



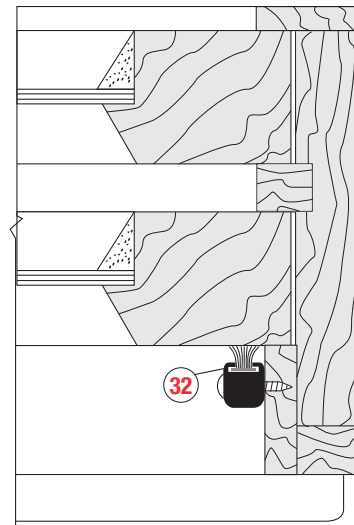
HEAD



MEETING RAIL



SILL



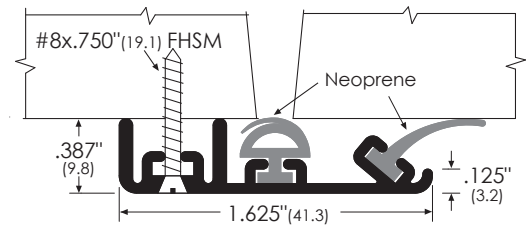
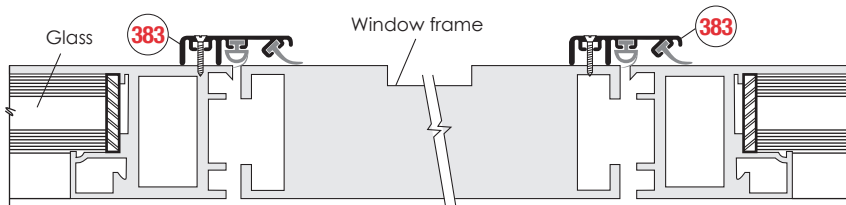
JAMB

### Options For Lower Sash



Window Protection

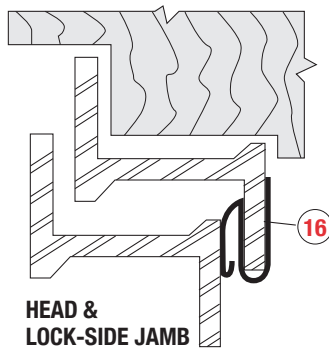
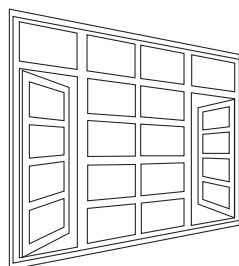
## Pivoting-Type Wood Windows



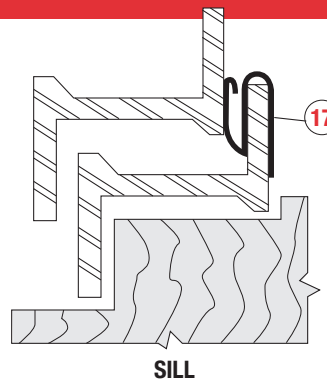
#383AA #383D

## Series 17 Casement-Type Metal Windows

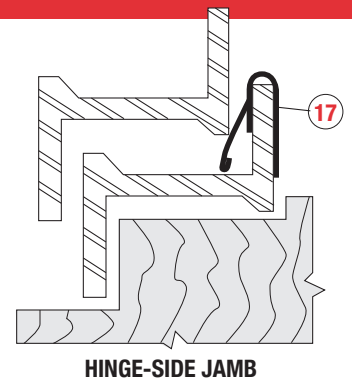
34 B. & S. Gauge Spring Bronze



HEAD &  
LOCK-SIDE JAMB



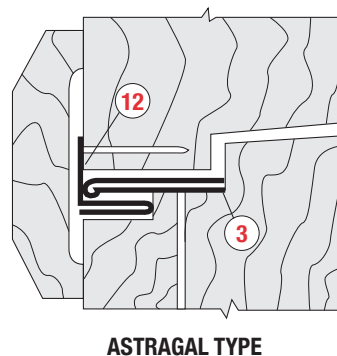
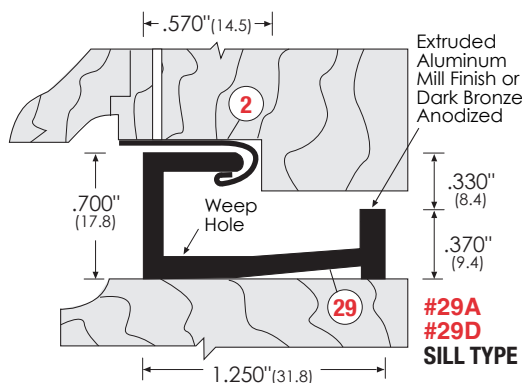
SILL



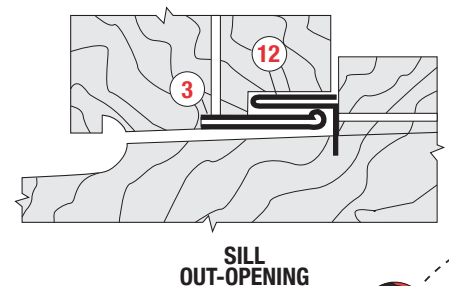
HINGE-SIDE JAMB

## Series 30 Casement-Type Wood Window - Open In

Material: 9 gauge zinc and 25 gauge bronze & steel



ASTRAGAL TYPE



SILL  
OUT-OPENING

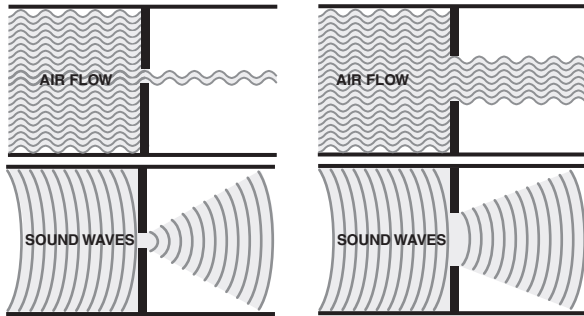


ZERO's **SOUND TRAP sound control systems** are solving sound problems in all types of facilities—including performing arts centers, recording studios, commercial offices, hospitals, schools, churches, hotels and apartment buildings, as well as industrial plants.

## ADJUSTABLE GASKETING: KEY TO OUR SUCCESS

Nobody does sound control better than ZERO. Our sound seals and systems are built to withstand the stress of the installation process and perform reliably. We use advanced technology to master two critical challenges: creating an effective sound barrier at the perimeter of the door AND preventing gaps in that barrier for the life of the assembly.

Gaps in sound barriers are a major problem because sound travels through any opening with very little loss. While the amount of air flowing through a gap increases in proportion with the size of the gap, the size of the gap in a sound barrier does not matter. A small hole transmits almost as much sound as a much larger gap.



Because of this phenomenon, any unsealed gaps effectively cancel out the noise reduction benefits of even the highest-rated sound doors. To be effective, acoustical door assemblies require gasketing that provides a **complete, uninterrupted and air-tight** seal around head, jamb and sill. If all sides of the door are not sealed, the gasketing used will provide little or no sound-control value.

Imperfect alignment is a common cause of gaps even in newly installed gasketing. Problems can also surface later on as buildings shift and settle and doors cycle through changes in temperature and humidity. ZERO solves the problem efficiently with adjustable gasketing.

Models such as the **#770 adjustable jamb-applied gasket** are designed to perform consistently over time. When clearances increase, a few turns of a screwdriver is all it takes to restore a sound-tight seal.

## PROVEN SOLUTIONS FOR SEALING THE GAPS

Our featured SOUND TRAP gasketing systems can satisfy a wide range of commercial and industrial sound-control applications for single swinging doors—as well as provide privacy behind double doors for typical office applications.

### SOUND TRANSMISSION CLASS (STC) TABLE

STC	PERFORMANCE	DESCRIPTION
50 - 60	Excellent	Loud sounds heard faintly or not at all.
40 - 50	Very Good	Loud speech heard faintly but not understood.
35 - 40	Good	Loud speech heard but hardly intelligible.
30 - 35	Fair	Loud speech understood fairly well.
25 - 30	Poor	Normal speech understood easily and distinctly.
20 - 25	Very Poor	Low speech audible.

Sound Transmission Class (STC) ratings indicate the ability to prevent the transfer of sound from one area to another. For example, 12 inches of reinforced concrete would be rated at 56 STC, while 1/4" plate glass is 26 STC.

### ZERO SOUND TRAP SYSTEMS HIGH LEVEL RATING

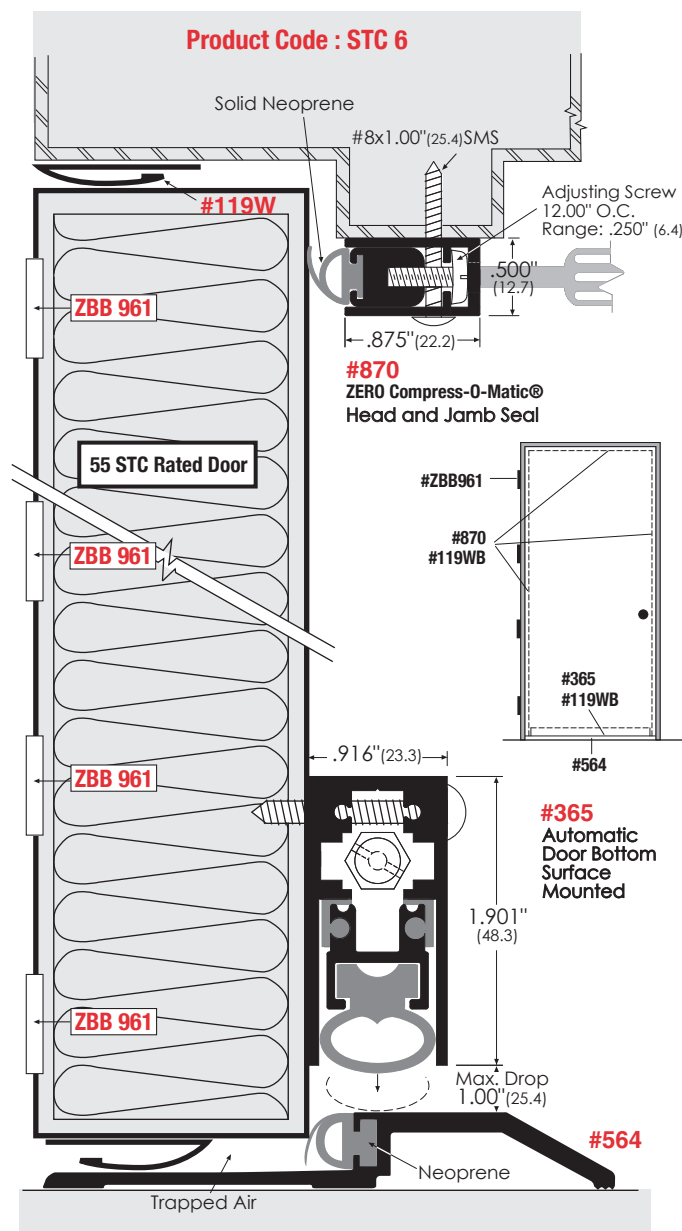
GASKETING SYSTEM	HEAD & JAMB	SADDLE	DOOR BOTTOM	STC RATING
STC 1	3708 & 119WB	564B	367	53 STC
STC 2	770 & 119WB	564B	367	52 STC
STC 3	770 & 119WB	656B	367	51 STC
STC 4	170 & 119WB	564B	367	51 STC
STC 5	485 & 119WB	565B	361	49 STC

All systems tested with STC 55 Doors (rated as panels).  
Note : Other Sound ratings for single and double doors on page 72.

The integrity of the system, properly installed, is essential to its sound rating. ZERO guarantees the performance of SOUND TRAP systems in rated assemblies provided that other manufacturers' gasketing products are not combined with ZERO components.

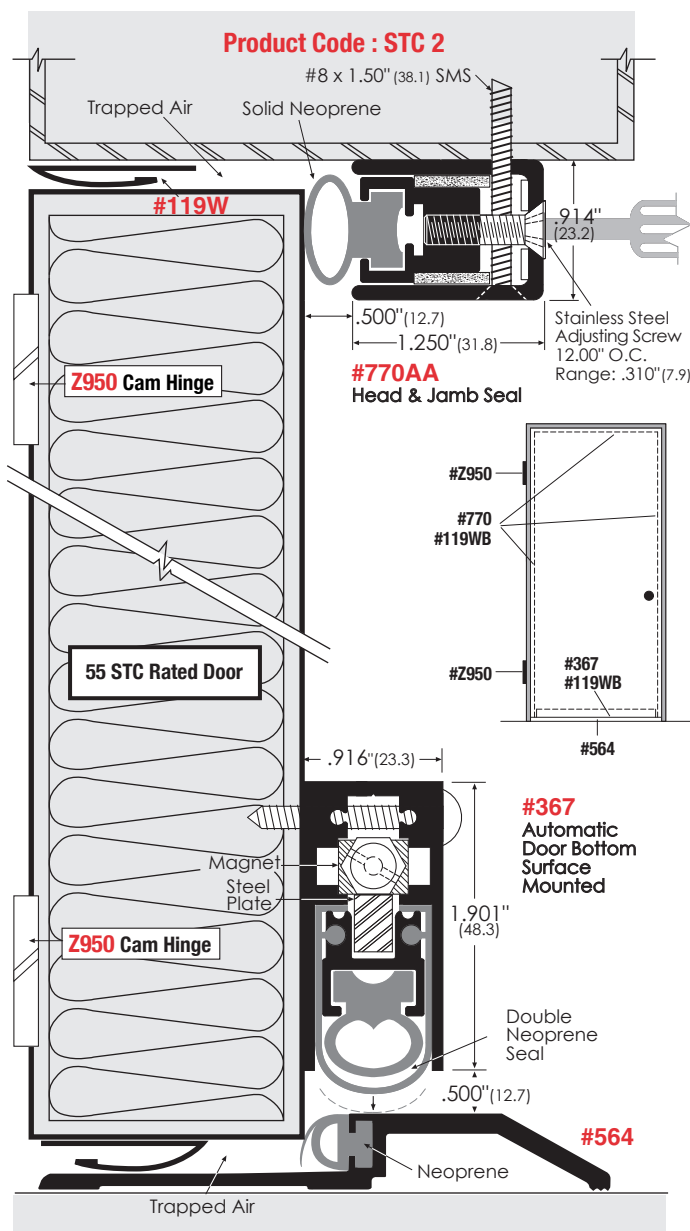
## SOUND TRAP 49 STC SEALING SYSTEM

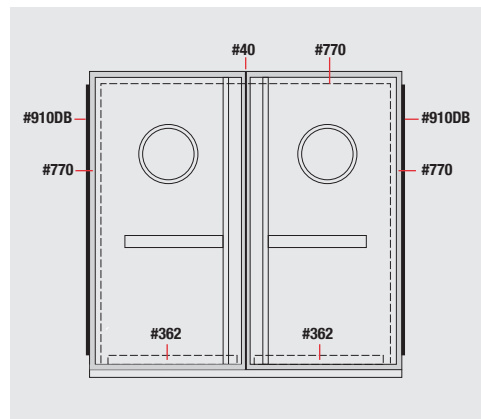
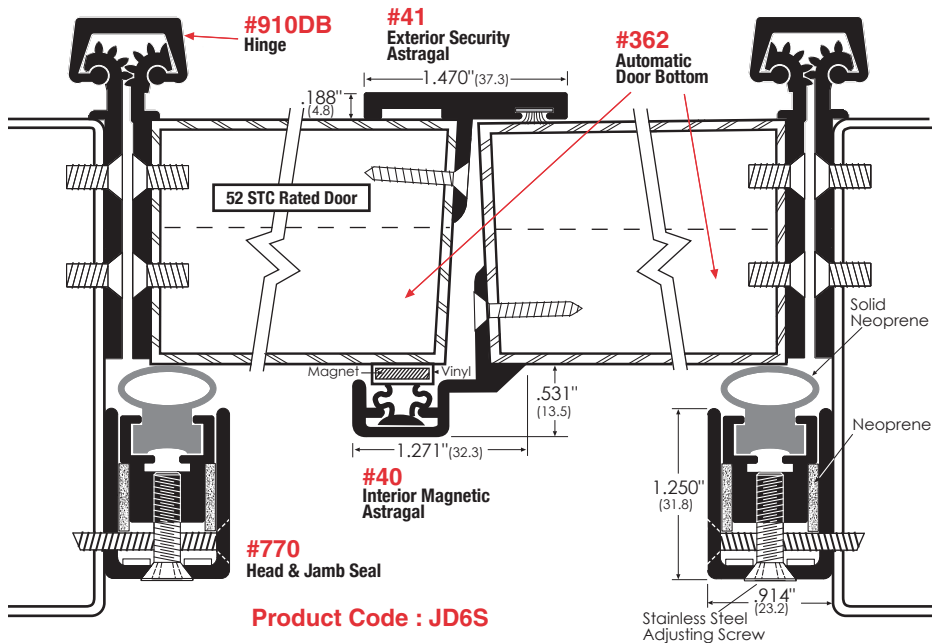
**SOUND TRAP 49 STC** rated systems for single doors feature several alternative head and jamb seals designed for use with frame stops. The 49 STC value they provide means that loud speech will be heard only faintly and cannot be understood on the opposite side of the door. That level of acoustic performance provides very good sound control suitable for a variety of applications ranging from busy schools to multi-family residential buildings and any settings requiring private conversations, such as doctors' offices, counseling centers and churches. A metal frame **with a stop** is required.



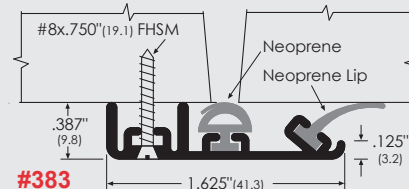
## SOUND TRAP 52 STC SEALING SYSTEM

Our **SOUND TRAP 52 STC** rated systems are designed for use with sound-rated single metal doors with a cased-opening frame. They provide an STC 52 rating when properly fitted with STC 55 or higher acoustical doors. That level of sound control means that loud sounds will be heard only faintly, or not at all, on the opposite side of the door, which satisfies the typical needs of recording studios and performance halls. It is also suitable for office buildings and other commercial facilities that need to mute very loud noise originating from outside, such as the sound of aircraft overhead or heavy traffic nearby, as well as interior equipment noise. A metal frame **without a stop** is required in order to use the Model #770 adjustable head and jamb seal, which is an important component in this system. The #770 is recommended for ensuring the highest possible rating for most purposes.



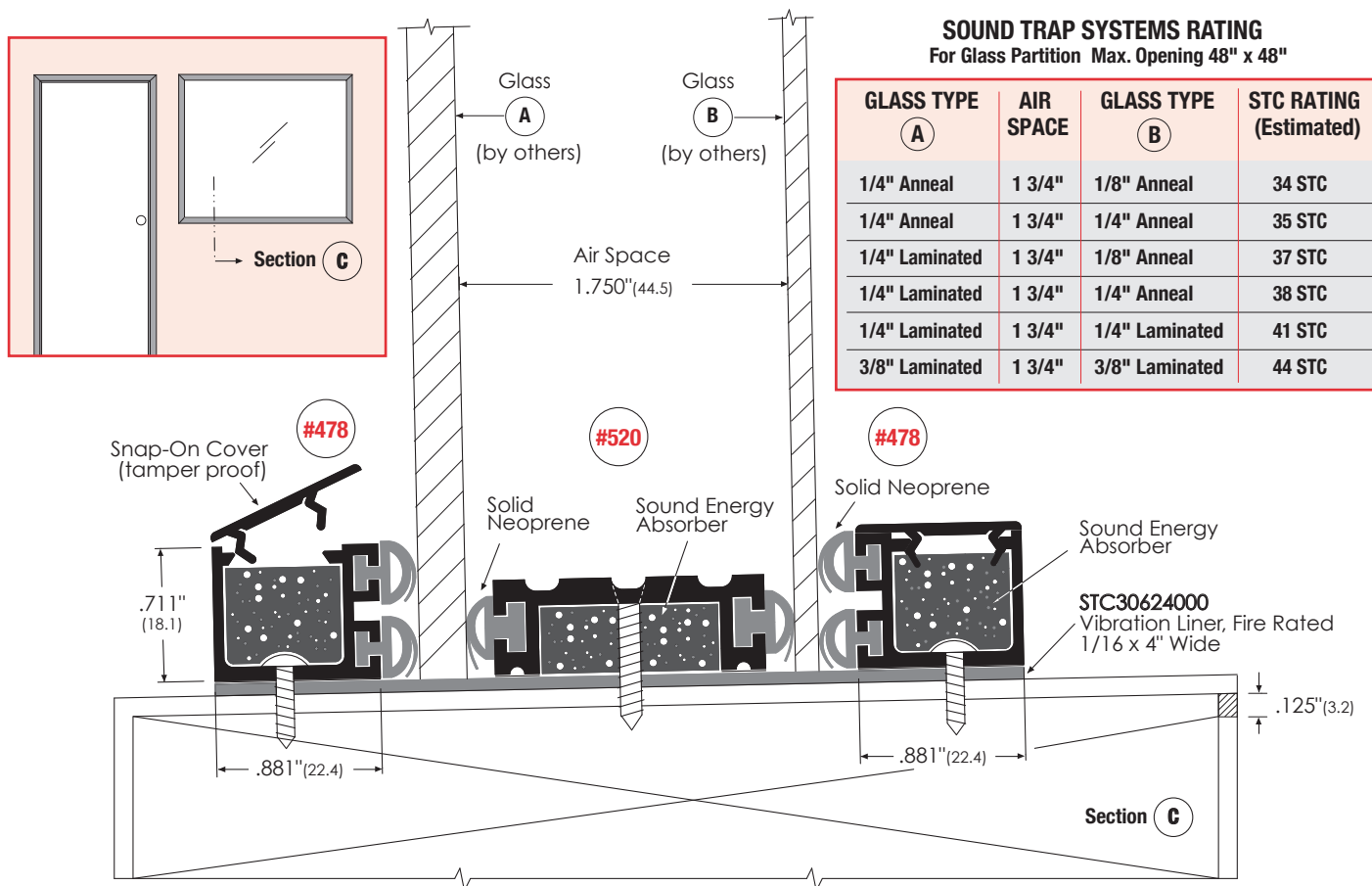


For a pairs configuration with suitable wood doors, you need Model #383 astragals for the meeting stile. #383 provides three sets of seals to block sound: the neoprene bulb with extra "lip" of neoprene in the primary seal at the meeting edge, plus another neoprene "finger" for added sound cushioning against the active door.



Pairs of doors pose additional challenges for sound control because there are more openings to seal. The need for a meeting stile means there will always be relatively more sound leakage through pair assemblies than with single doors. Properly fitted with STC 52 or higher acoustical doors, ZERO's **SOUND TRAP-PAIRS** system for metal doors achieves an office-friendly STC rating of 41 with an optimal configuration that balances those limitations with appropriate, cost-effective technology.

## System #4482 - Window and Curtain Wall Sound-Rated Performance Partition





## SOUND DOORLITE SYSTEMS: Let the Light In

Our attractive Slimport circular frames containing a special SOUND SHEET sound barrier can be used to install lites in sound-rated doors. Manufactured in the U.K. by Zero Seal Systems, Ltd., these frames are suitable for installation in partitions and doors. They feature a unique, flush-fitting design with countersunk holes and mounting screws around the bevel on one side only for a clean appearance.

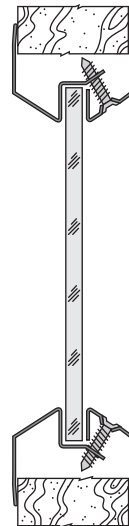
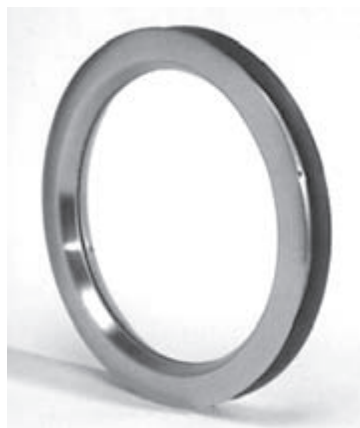
Slimport frames are available in four finishes.

Number	Cut-Out Diameter	Glass Diameter	Frame Diameter
<b>SP250</b>	9.84"(250mm)	8.78"(223mm)	11.22"(285mm)
<b>SP350</b>	13.77"(350mm)	12.72"(323mm)	15.15"(385mm)
<b>SP450</b>	17.71"(450mm)	16.65"(423mm)	19.09"(485mm)
<b>SP550</b>	21.65"(550mm)	20.59"(523mm)	23.03"(585mm)

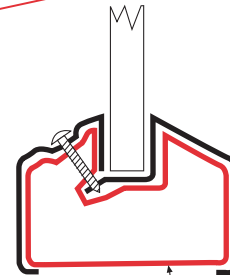
### Material & Finish

(add suffix to number code)

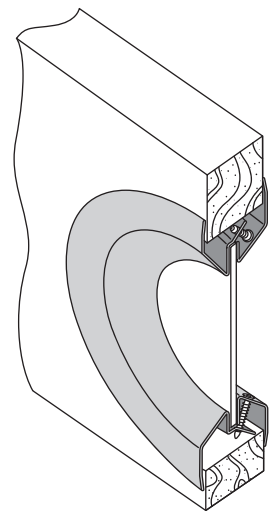
- **GV: 18GA** cold rolled steel, zinc plated finish (for color coating)
- **CP: 18GA** cold rolled steel, chrome pearlite silver plated (to match Satin Anodized Aluminum)
- **SS: Grade 304** stainless steel, satin finish
- **PC: 18 GA** cold rolled steel, polished chrome plated



The ZERO standard for a vision light with a sound rating

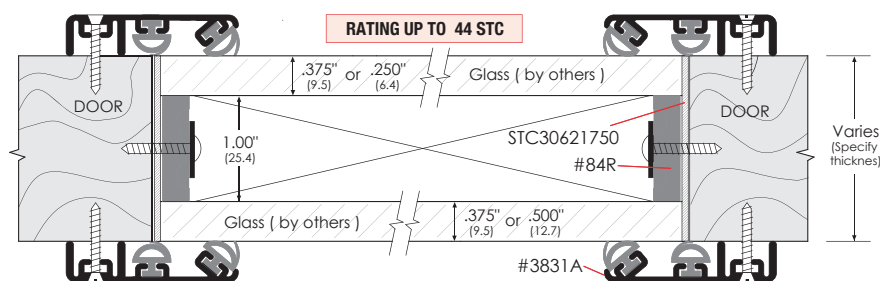
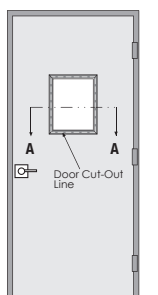


Sound Sheet



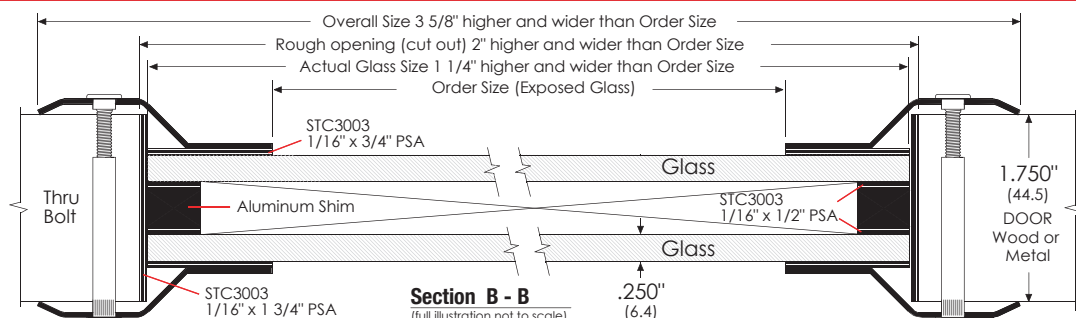
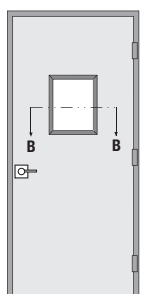
Sound Control

## System #4483 - Vision Lite™ Sound Trap™



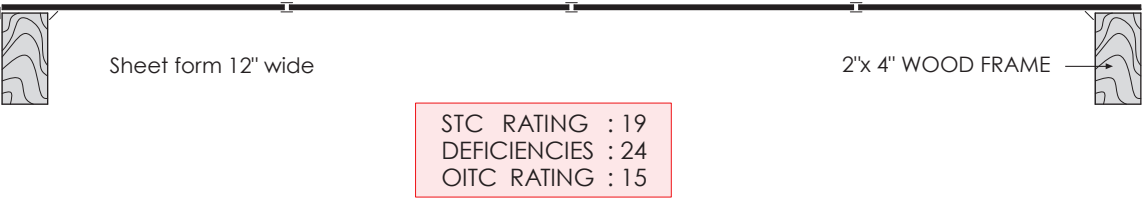
## System #4484 - Vision Lite™ Sound Trap™

Note: Glass not included





STC 3003 - 1/16"(1.5mm)



STC RATING : 19  
DEFICIENCIES : 24  
OITC RATING : 15

Sound Transmission COEFFICIENT	
Frequency	STC
125 Hz	10 db
250 Hz	10 db
500 Hz	16 db
1000 Hz	19 db
2000 Hz	24 db
4000 Hz	31 db
Sound Trans. Class:	19

STC 3003 - 1/8"(3mm)



STC RATING : 24  
DEFICIENCIES : 32  
OITC RATING : 19

Sound Transmission COEFFICIENT	
Frequency	STC
125 Hz	14 db
250 Hz	15 db
500 Hz	20 db
1000 Hz	23 db
2000 Hz	37 db
4000 Hz	33 db
Sound Trans. Class:	24

STC 3003 SOUND SHEET Sound Barrier

offers OEM manufacturers a lighter-weight, high-performance alternative to conventional sound core materials in their acoustical doors. Suitable for layering during construction, SOUND SHEET is a fireproof INTUMET™ intumescent material that acts as a dense sound barrier layer. It is nearly as effective as solid lead in stopping the transmission of sound and can dramatically increase STC values. As the STC 3003 material weighs much less than lead, it provides major cost savings in shipping, as well as easier manufacturing and installation.

In some cases, SOUND SHEET can also be applied as an outer layer to existing doors. If your door does not measure up to expectations, contact our Engineering Department to discuss possibilities for enhancing its performance with the addition of one or two layers of our sound-blocking material.

Available in standard black 12"(304.8) x 96"(2438.4) sheets and in various thicknesses: 1/6"(1.5), 1/8"(3), 1/4"(6.3), and 3/8"(9.5).

This product has been tested in metal doors up to STC 56, as well as wood doors up to STC 46.

1 3/4" Metal Door with Lead Lining

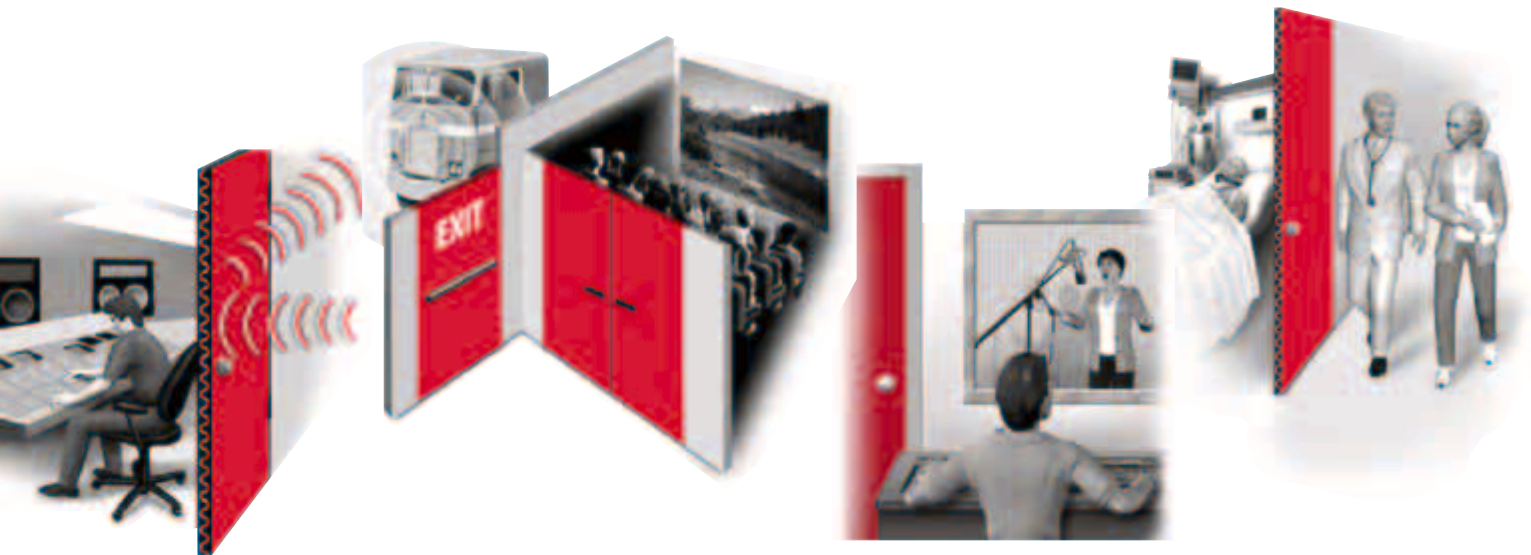
Weight : 360 lbs.  
STC Rating : 56

1 3/4" Metal Door with STC 3003 Lining

Weight : 280 lbs.  
STC Rating : 55

Door section

Skin  
Rockwool  
STC 3003





## Positive Pressure Fire Solutions for Doors



ZERO's many years of leadership and innovations in developing fire and smoke seals for international and U.S. positive pressure code requirements have produced top-quality components and engineered gasketing systems that meet the highest standards of design and life safely.

Our expertise in intumescent technology provides special value for the entire building team spanning a wide range of fire protection applications. We manufacture our proprietary INTUMET™ intumescent materials at our New York facility, ensuring convenient sourcing and stable pricing for our domestic customers. And when standards or specific applications require intumescent protection for door openings, our **SOFT PUFF™** INTUMET material delivers the performance best suited for most fire and smoke doors.

Zero's positive pressure seals are tested and listed according to U.S. listing agencies' classifications for Category G edge sealing systems and Category H smoke and draft control systems. (See box at right for category definitions.) Category G edge seals are required for use on Category B wood core doors. Category H smoke seals are required for all positive-pressure doors carrying "S" labels.

Our INTUMET™ material is used in OEM Category A doors to eliminate the need for add-on seals to achieve positive-pressure ratings. Smoke seals may still be required.

Products tested for fire and smoke are identified in our catalog by these symbols:

-  Fire-rated (See website for fire listings & performance details)
-  Smoke-rated

Our website provides up-to-date information for those parts, including specific listings and positive pressure classifications.

Use our PDF Drawing Finder on the website to view information for each part. In addition, the Intumescent Solutions section of the website provides a useful Selection Guide for help in identifying listed products needed for specific applications.

## U.S. POSITIVE PRESSURE TESTING DEFINITION OF LISTING CATEGORIES

### CATEGORY A

#### Doors - No additional edge-sealing system required

This category includes doors that do not require the use of any intumescent in either the frame or the door. It also includes doors evaluated with intumescent incorporated into the edge of the door by the manufacturer. Category A doors are eligible to bear the "S" label for Smoke & Draft Control assemblies if a listed Category H "Smoke & Draft Control Gasket" has been applied to the assembly.

### CATEGORY B

#### Doors - Additional edge-sealing system required

This category includes doors that require add-on intumescent sealing systems either surface-applied or built into the frame in order to meet positive-pressure fire test requirements. Category B doors are eligible to bear the "S" label for Smoke & Draft Control assemblies if a listed Category H "Smoke & Draft Gasket" has been applied to the assembly.

### CATEGORY G

#### Edge-Sealing Systems

This category includes systems that are surface-applied (such as kerf applied, adhesive backed or mechanically attached) to frames or doors. It includes meeting edge seals for use in pair and double-egress assemblies.

### CATEGORY H

#### Smoke and Draft Control Gasketing

This category includes gasket systems that are surface-applied (such as kerf applied, adhesive backed or mechanically attached) to frames or doors. It includes gasketing for the meeting edge for use in pair and double-egress assemblies. These gasket systems have been evaluated in accordance with UBC 7-2, Parts I-II. NOTE: This category covers gasket systems that have been evaluated for use in positive-pressure-rated assemblies but do not "provide" an edge-sealing system to the opening (see Category G).

## Testing and Compliance

### ■ U.S.

- UL 10B** *Standard for Fire Tests of Door Assemblies*
- UL 10C** *Standard for Positive Pressure Fire Tests of Door Assemblies*
- UBC 7-2 1997** *Fire Test Standard for Swinging Fire Doors*
- UBC 43-2 1991** *Fire Test of Door Assemblies*
- IBC 2000** *International Building Code*
- NFPA 105** *Standard for the Installation of Smoke Door Assemblies*
- NFPA 252** *Standard Methods of Fire Tests of Door Assemblies*
- ASTM E152** *Methods of Fire Test of Door Assemblies*

### ■ International

- |   |  |
|---|--|
| <b>International Standards Organization</b><br><b>ISO 3008 1976</b>                       | <i>Fire-Resistance Tests - Door and Shutter Assemblies</i>   |
| <b>British Standard Institute</b><br><b>BS 476-PART 22 1987</b>                           | <i>Methods for Determination of the Fire Resistance of Non-Load Bearing Elements of Construction</i> |
| <b>British Standard Institute</b><br><b>BS 476-PART 31 1983</b>                           | <i>Methods for Measuring Smoke Penetration Through Doorsets and Shutter Assemblies</i>               |
| <b>BS EN 1634</b>   | <i>Fire-Resistance Tests for Door and Shutter Assemblies</i>   |
| <b>The Ministry of Construction</b><br><b>Notice No.1125 Of 1990</b>                      | <i>Fireproof Performance Test (Japan)</i>  |
| <b>Japanese Industrial Standard</b><br><b>JIS-A1131-3</b>                                 | <i>Method of Fire Protecting Test of Fire Door for Buildings</i>                                     |
| <b>Building and Regulatory Test</b><br><b>Australia / New Zealand</b><br><b>AS 1530.4</b> | <i>Fire Resistance Test</i>  |

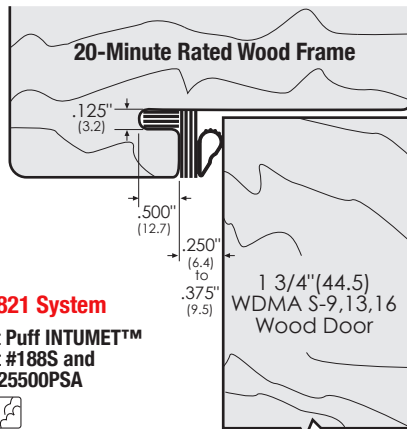


## Fire-Rated Smoke and Draft Control Systems

Our engineered systems can be used to incorporate concealed closers and concealed vertical rods into designs for both singles and pairs of 20-minute doors. Note: Seals applied with pressure-sensitive adhesive cannot be used alone for these applications.

### FS 821 SYSTEM

Designed for use with hemlock and other woods with minimum density of 26.2 pcf, such as walnut, oak, birch and maple.



#### FS 821 System

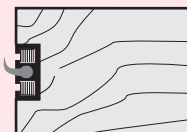
Soft Puff INTUMET™  
Part #188S and  
#3125500PSA



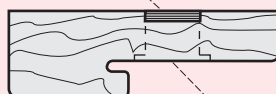
For singles & pairs of doors

### Hardware Installations 820, 821, 850, 851

ZERO 59FS Astragal  
on one leaf (pairs only)

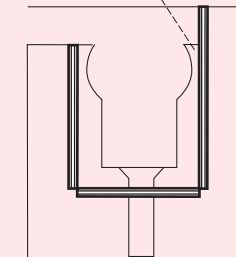


FS3003 INTUMET™ strip in  
strike cutout of wood frame  
header (1/16" thick strip)



3/4" dia. hole

FS3003  
INTUMET strips

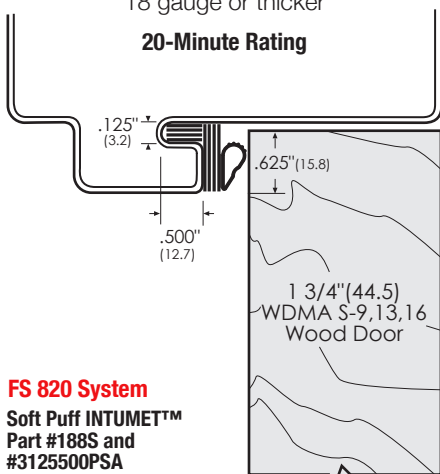


Concealed  
Track Arm

### FS 820 SYSTEM

Designed for use with metal frames of  
18 gauge or thicker

20-Minute Rating



#### FS 820 System

Soft Puff INTUMET™  
Part #188S and  
#3125500PSA

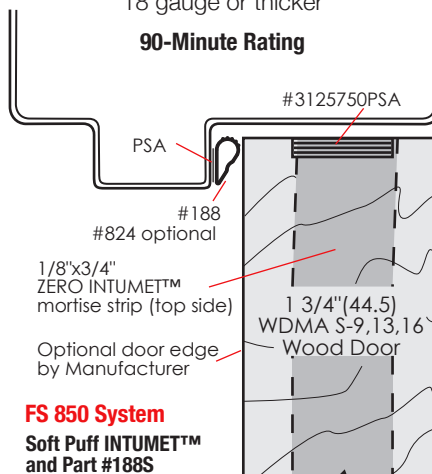


For singles & pairs of doors

### FS 850 SYSTEM

Designed for use with metal frames of  
18 gauge or thicker

90-Minute Rating



#### FS 850 System

Soft Puff INTUMET™  
and Part #188S

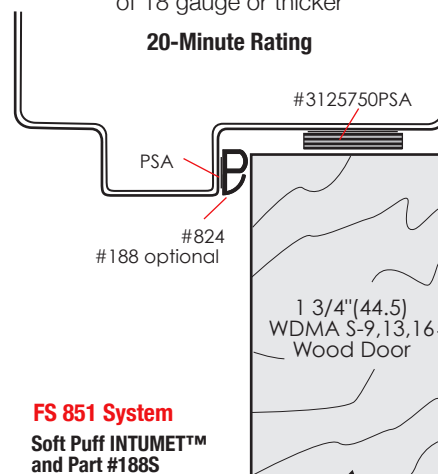


For singles & pairs of doors

### FS 851 SYSTEM

Designed for use with metal frames of  
18 gauge or thicker

20-Minute Rating



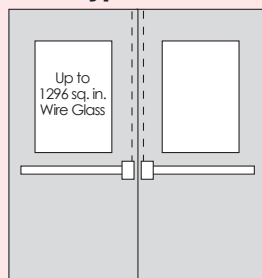
#### FS 851 System

Soft Puff INTUMET™  
and Part #188S



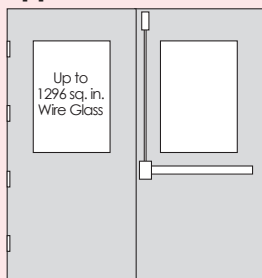
For singles & pairs of doors

## Typical Hardware Applications- FS 820, 821 Kerf or FS 850 Dado Systems



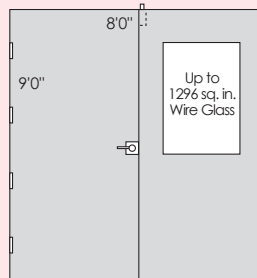
#### Pairs in the Same Direction

Concealed & surface exit  
devices, less bottom rod



#### Double Egress

Concealed & surface exit  
devices, less bottom rod



#### Pairs in the Same Direction

Mortise, cylindrical lock  
Auto FB, manual FB (without  
intumescent) or surface bolt  
(LBR) with no thermal bolt



#### Single

Mortise, cylindrical locks  
Mortise, rim and vertical  
rod exit devices (LBR)

## Typical for All Applications

**Butts:**  
NFPA 80, plus 4x4 (.134)  
steel ball bearing

**Closers:**  
Surface with through bolts  
or 5" top blocking concealed  
slide track, spring hinges

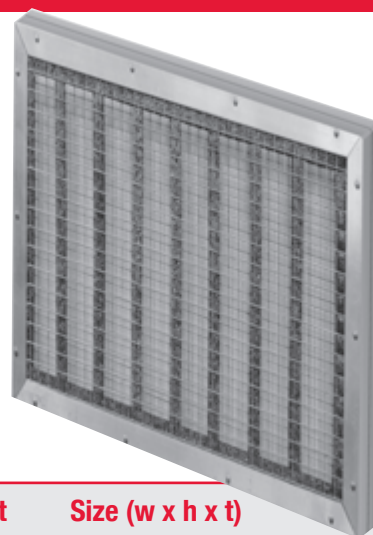
**Lite Kits:**  
Advantage Lites & Louvers  
model #T4G with INTUMET™  
Glazing System



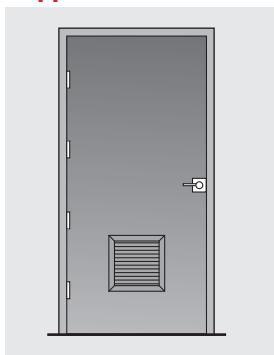
## FB Intumescent Block

ZERO's **FB Intumescent Block** can be used to achieve fire ratings for door louvers in metal doors of 1.750" (44mm) or greater thickness. The 0.55" (14mm) thick FB Intumescent Block is designed to layer inside a two-part metal louver set attached to both sides of the door. A reinforcing inverted channel is required at the bottom of the cut-out to support the FB Intumescent Block. There is no limit on door thickness; additional lateral support is needed for louvers in doors with greater thickness.

The FB Intumescent Block has been assessed up to four-hour fire rating by UK Warrington Fire Research Centre as part of the Fire Block Louver System (FBLs) for fire-rated steel doors with apertures up to 18" x 60" (0.46 x 1.5m). A copy of the Warrington test report C129754 is available on request. Assessed to BS 476: Part 22 1987.



### Applications:



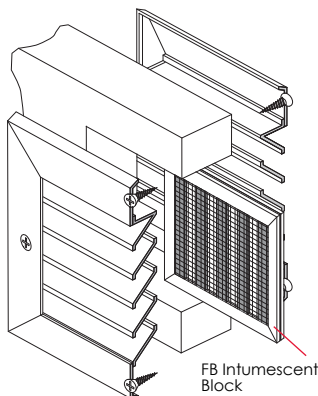
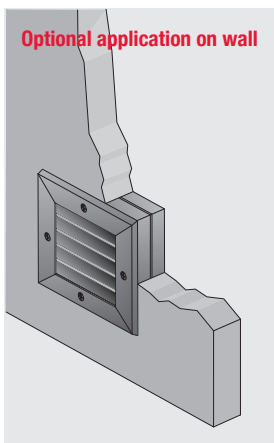
#### Specification

<b>Door Thickness</b>	Minimum 1.750" (44.5mm) metal doors.
<b>Fire Rating (representative)</b>	Four hours on steel doors, maximum aperture size 18" x 60" (457 x 1524mm)
<b>Free Air Flow</b>	40% free area

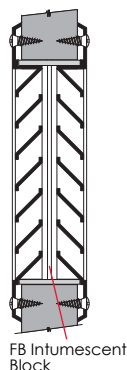
#### FB Intumescent Size (w x h x t)

<b>FB 1212</b>	12" (301) x 12" (301) x .55" (14)
<b>FB 1610</b>	16" (402) x 10" (250) x .55" (14)
<b>FB 1808</b>	18" (453) x 8" (199) x .55" (14)
<b>FB 1810</b>	18" (453) x 10" (250) x .55" (14)
<b>FB 1818</b>	18" (453) x 18" (453) x .55" (14)
<b>FB 1836</b>	18" (453) x 36" (910) x .55" (14)
<b>FB 1860</b>	18" (453) x 60" (1520) x .55" (14)
<b>FB 2020</b>	20" (504) x 20" (504) x .55" (14)
<b>FB 2424</b>	24" (606) x 24" (606) x .55" (14)

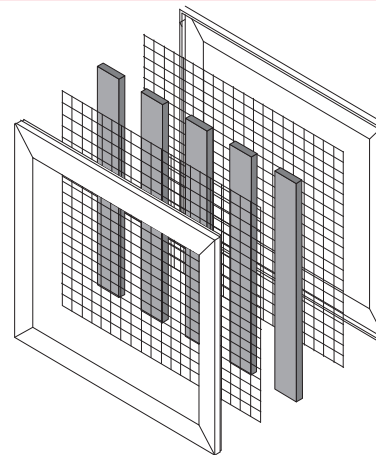
#### Optional application on wall



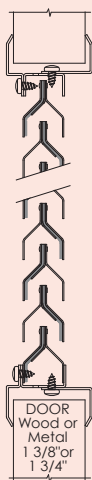
Fire Block Louver System



Louver




FB Intumescent Block



Louver shows INTUMET expansion after fire-test.



#200AIL  US & International Patent Pending

## Advantage Intumescent Louver

Fire-rated 90 minutes UL 10C

Vision-proof louver inverted "Y" design with concealed INTUMET™ fire seal. Front frame attached to the lower core with concealed screws.

#### Size (w x h)\*

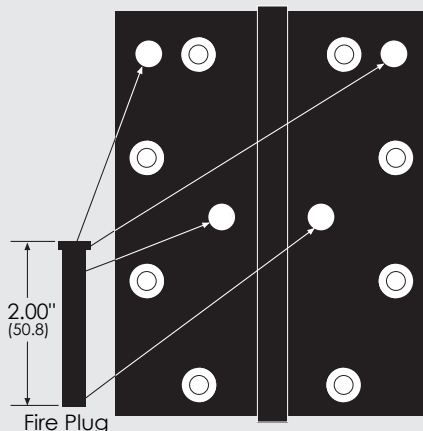
12" (301) x 12" (301)
18" (457) x 12" (301)
18" (457) x 18" (457)
24" (607) x 12" (533)
24" (607) x 18" (457)
24" (607) x 24" (607)

\*Sizes in stock

**ADVANTAGE**  
LITES & LOUVERS





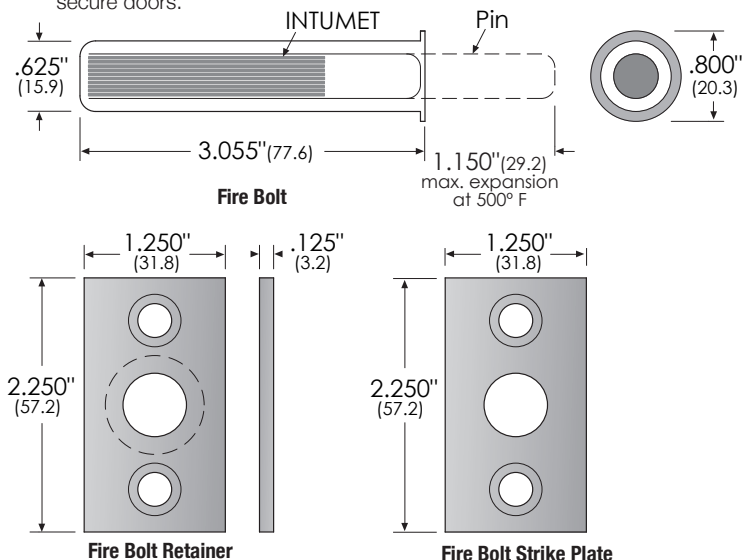


## #903FS INTUMET Fire Plug

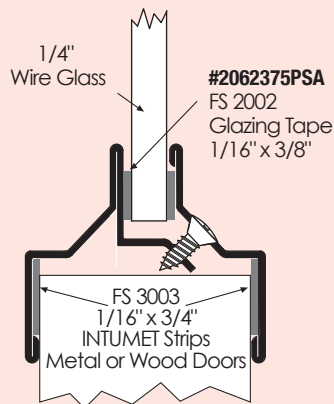
Protects area covered by hinge when INTUMET™ is mortised into door. Brass rod inserts into 3/8" holes drilled in hinge. INTUMET in rods will activate completing perimeter seal. Four per hinge recommended.

## #357FS INTUMET Fire Bolt

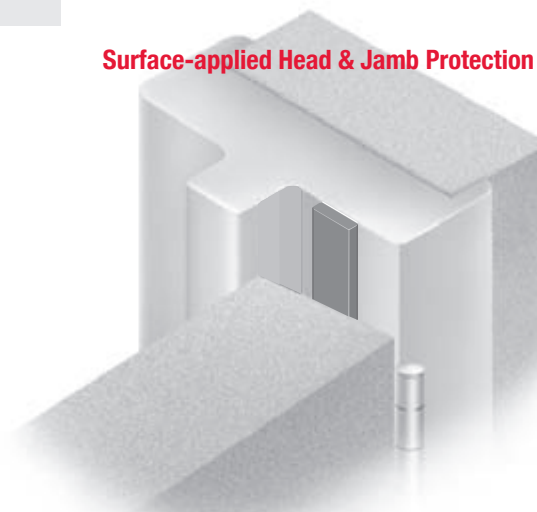
Mortised into doors, the Fire Bolt is activated when INTUMET expands in fire conditions. Pin is pushed into strike plate to secure doors.



## FS860 Doorlite System (20-minutes & 45-minutes)

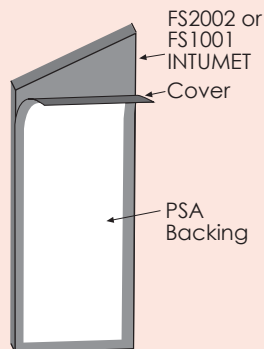


## Surface-applied Head & Jamb Protection



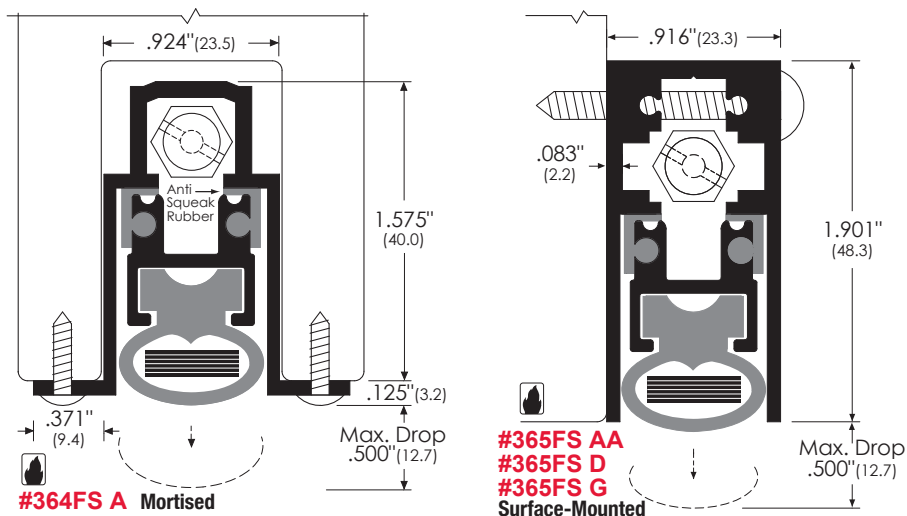
- #3062500PSA .062"(1.6)x.500"(12.7)
- #3062750PSA .062"(1.6)x.750"(19.1)
- #30621000PSA .062"(1.6)x1.00"(25.4)
- #30621750PSA .062"(1.6)x1.750"(44.5)
- #3125500PSA .125"(3.2)x.500"(12.7)
- #3125750PSA .125"(3.2)x.750"(19.1)
- #31251000PSA .125"(3.2)x1.00"(25.4)

## Glazing Tape (20-minutes)



Glazing Tape supplied in strips or coils of any length

## Automatic Door Bottoms - Intumescent Sill Protection



## Technology for Specialized Solutions

ZERO's approach to intumescent products and solutions is different from other manufacturers. Where other companies market one product for all purposes, we concluded from our own R & D that one size really does not fit all needs – not if you want best performance in every case. Recognizing that optimum performance is application-specific, we engineered separate products using different formulations and materials to meet specific needs and conditions. We manufacture all these products at our main manufacturing facility in Bronx, New York, USA.

One of our four specialized INTUMET intumescent materials will most likely give you exactly the performance you need. The primary characteristics that distinguish different INTUMET formulations are:

- Activation temperature
- Expansion – volume and force
- Char – hard, or soft and fluffy
- Capacity for continued expansion (i.e., stable char)

**FS1001 INTUMET** is designed for blocking the effects of heat where little or no expansion is needed or desirable. For example, where undercutting for fitting automatic door bottoms subjects wood doors to accelerated heat transfer, lining the vulnerable U-channel restores the integrity of the door's fire resistance.

**FS2002 INTUMET** is well-suited for applications where explosive expansion would jeopardize the integrity of the fire and smoke seal, yet require a firm char for resistance to external pressure. This material is ideal for glazing.

We developed our **FS3003 SOFT PUFF™ INTUMET** specifically for doors. This rubber matrix material begins intumescenting at relatively low temperatures where organic materials begin to emit combustible and noxious gases. It expands gradually to fill all gaps with moderate force that will not unlatch the door, and has sufficient reservoir capacity to continue intumescenting if escape door are closed again. FS3003 also stands up well to the stringent requirements for protecting fire doors on oil rigs, which are subject to especially intense heat and flames.

**FS4004 INTUMET** is graphite-based material formulated to expand to approximately 80 times its original volume. This expansion rate works very well for filling lock-side top corner gaps typical of metal doors exposed to extreme heat. Because FS4004 expands with strong force, it is also the best intumescent material to use for protecting fire-wall through-penetrations, such as PVC pipe. Its forceful expansion chokes the pipe and completely blocks the passage of smoke and fire.

Superior expansion value makes FS4004 the right intumescent material as well for installation in electrical boxes. In the event of a spark-generated fire inside the box, intumescent lining the interior expands instantly and at high volume, filling the box with flaky char, choking the fire, and sealing all holes and wire connections from spreading flames.

FS4004 is the product to use for protecting fire-rated safes. It is also used to laminate the slats of louvers in fire walls where it will expand with sufficient force and volume to seal the air passages from spread of flames.

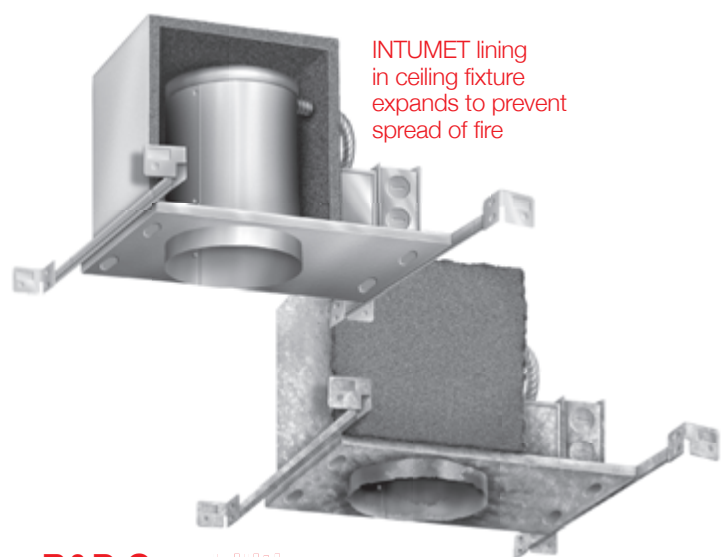
## Practical advantages

All INTUMET intumescent products are asbestos-free and meet NFPA 105 and British test standards. In developing our formulations, we also took care to build in a lot of practical features that benefit both our OEM partners and their customers. Unlike other products available in the marketplace that require special sheathing because of short shelf life, FS3003 INTUMET is a very stable material. INTUMET products are rubber-like in texture and are easy to cut and glue, where other products tend to be brittle and more difficult to handle. And we offer our product in a variety of convenient standard sizes and volumes.

## Problem-Solving Resources and Know-How

One of the things ZERO does best is solve problems. Applying the right INTUMET™ for the particular job is all it takes to resolve many fire protection challenges. In other cases, we apply creative thinking to devise unique, cost-effective solutions.

- When the U.S. Navy needed protection for its shipboard aluminum doors, we found that FS2002 works best for the Navy's requirements. Intumescent liners protecting the doors provide the needed expansion—some but not a lot—with a reserve for stability after the intumescent has activated.
- In the aftermath of devastating fire storms in California, ZERO consulted with local designers to integrate "intumescent fire barrier strips" into eave soffit venting to satisfy new fire code requirements. The low activation temperature of FS3003 made it the most appropriate material for these residential applications. The success of the FS3003 restored the ability for builders to use traditional overhangs in place of roof-mounted venting.
- Architectural and structural designers knew they could turn to us for expert help in addressing the unique challenges of fire protection for rotating apartment buildings in-the-round, where every floor runs on bearings protected by rubber. Our solutions included using FS3003 intumescent linings to increase the smoke resistance of the rubber for all the bearings.



## R&D Capabilities

You will most likely find the answer for your specific application in one of our four standard INTUMET varieties. But if our OEM partners do need something more, we have the R&D capabilities and the manufacturing flexibility to design and produce customized INTUMET formulations.

## INTUMET™ Material Definitions and Physical Properties

	FS1001	FS2002	FS3003	FS4004
Activation Temperature	450°F (232°C)	350°F (176°C)	250°F (121°C)	550°F (288°C)
Expansion volume	2-3 X	6-8 X	20 X	80 X
Expansion pressure	27 PSI (.0187 N/mm <sup>2</sup> )	27 PSI (.0187 N/mm <sup>2</sup> )	27 PSI (.0187 N/mm <sup>2</sup> )	131 PSI (.09 N/mm <sup>2</sup> )
Multi or controlled directional	√	√	√	√
Stability after expansion	Excellent	Very Good	Very Good	Poor
Char	Very Hard	Hard	Hard	Soft & Fluffy
Flame-resistant	√	√	√	√
Moisture-resistant	√	√	√	√
Chemically inert / paintable	√	√	√	√
Non-carcinogenic	√	√	√	√
Long-life (no deterioration)	√	√	√	√
Odor-free	√	√	√	√
Color – standard	White	Brown	Black	Silver, Gray

### SPECIFICATIONS:

Stock Sizes: **Thickness** .062"(1.6), .125"(3.2), .250"(6.4)  
**Width** .375"(9.5), .500"(12.7), .750"(19.1), 1.00"(25.4), 1.50"(38.1), 2.00"(50.8)

All INTUMET intumescent material is available in various thickness (millimeters or inches) and in any color as special order.  
All material is available in red for European specification.

Intumescent



## INTUMET Firestopping Solutions

ZERO is the ideal partner for companies seeking a reliable U.S. source of top-quality intumescent firestopping—or whose customers' specialized needs require custom solutions.

Our location and capabilities as the **ONLY** major U.S. intumescent manufacturer offer a unique package of benefits for OEM partners in the U.S.:

- immediate availability of standard materials and products
- fast turnaround on custom orders
- economical pricing
- predictable costs – no variables from currency exchange fluctuations

ZERO's intumescent technology allows virtually unlimited product design flexibility. We welcome inquiries for assistance in solving fire protection challenges in **firewalls**, as well as **electrical and plumbing through-penetrations**.

We can work with you to refine or overhaul product design to satisfy code requirements or testing agency parameters. We can also collaborate in testing for F ratings (flame penetration), T ratings (temperature rise) and L ratings (air leakage) under U.S. standards:

- ASTM International E814 *Standard Test Method for Fire Tests of Through-Penetration Fire Stops*
- Underwriters Laboratories UL 1479, *Standard for Fire Tests of Through-Penetration Firestops*

ZERO is actively seeking OEM partners for cooperative research, development and testing to explore applications of mutual interest. Contact us to discuss opportunities for innovative, cost-effective fireproofing solutions for any industry, including:

- Shipbuilding
- Bridge-building
- Train and subway construction



## INTUMET™ WS - Wrap Strip

Wrap strip is a highly intumescent firestop material. It expands when exposed to heat and forms a hard char to seal off the annular spaces and prevent the spread of flames and hot gases.

### Application:

For plastic and insulated pipe. Tightly wrap the required number of strips around the penetrant to completely fill the annular space.

### Size (roll) :

- #WS148 1"(25.4) x 1/4"(6.4) x 8'(2438.4)
- #WS248 2"(50.8) x 1/4"(6.4) x 8'(2438.4)
- #WS128 1"(25.4) x 1/2"(12.7) x 8'(2438.4)

**Color:** Black



## INTUMET™ JS - Joint Strip

Joint Strip is a highly intumescent firestop material used in concrete and masonry control joints up to 1". It forms a strong char that prevents the passage of flame, smoke and hot gases between control joints.

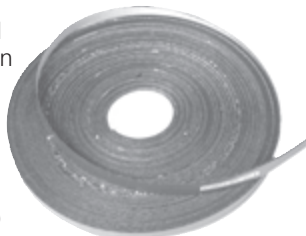
### Application:

For curtain wall panels and vertical concrete and masonry construction joint applications.

### Size:

- #JS06210008 1/16"(1.6) x 1"(25.4) x 8'(2438.4)
- #JS06215008 1/16"(1.6) x 1 1/2"(38.1) x 8'(2438.4)

**Color:** Black



## INTUMET™ PC - Pipe Collar

Pipe Collar is a prefabricated device for through-penetrations of non-metallic pipes. It contains a heavy-gauge metallic collar filled with pliable intumescent.

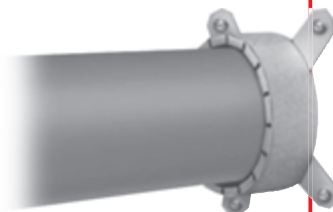
### Application:

For through penetrations, with plastic pipe

### Size:

- #PCC05 1/2"(12.7) nominal O.D. pipe
- #PCC2 2"(50.8) nominal O.D. pipe
- #PCC3 3"(76.2) nominal O.D. pipe
- #PCC4 4"(101.6) nominal O.D. pipe
- #PCC6 6"(152.4) nominal O.D. pipe

**Color:** Silver



## INTUMET™ DPW - Duct & Plenum Wrap

This foil-encapsulated, non-combustible, flexible wrap is used for grease ducts, air ducts and plenum air spaces.

### Application:

For through-penetrations, with plastic pipe.

### Size:

- #DPW218 1/8"(3.2) x 1 1/2"(38.1) x 2'(609.6)
- #DPW418 1/8"(3.2) x 1 1/2"(38.1) x 4'(1219.2)
- #DPW228 1/8"(3.2) x 2"(50.8) x 2'(609.6)
- #DPW428 1/8"(3.2) x 2"(50.8) x 4'(1219.2)

Supplied in 8 ft. rolls.

**Color:** Black

## INTUMET™ FP - Firestop Pillows

INTUMET FP is a compressible firestop device used for installations where frequent changes may be required. Enclosed in a strong polythelene bag.

### Application:

For large openings with cables, cable trays, blank openings

### Size:

- #FP294 2"(50.8) x 9"(228.6) x 4"(101.6)
- #FP296 2"(50.8) x 9"(228.6) x 6"(152.4)
- #FP396 3"(76.2) x 9"(228.6) x 6"(152.4)

10 per case

**Color:** Fire Red



## INTUMET™ EB - Electrical Box Insert

Electrical Box Insert is a highly intumescent, protective pad.

### Application:

For use in metallic electrical boxes. Installed in back of the box with PSA tape.

### Size:

- #EB248 2"(50.8) x 4"(101.6) x 1/8"(3.2)
- #EB448 4"(101.6) x 4"(101.6) x 1/8"(3.2)
- #EB244 2"(50.8) x 4"(101.6) x 1/4"(6.4)
- #EB444 4"(101.6) x 4"(101.6) x 1/4"(6.4)

50 pads / carton

**Color:** Fire Red



## INTUMET™ CS - Composite Sheet

Soft Puff 3003 intumescent material is laminated during manufacturing to a galvanized steel sheet. The product is reinforced with fire-resistant fiberglass wire mesh to control and direct expansion during fire.

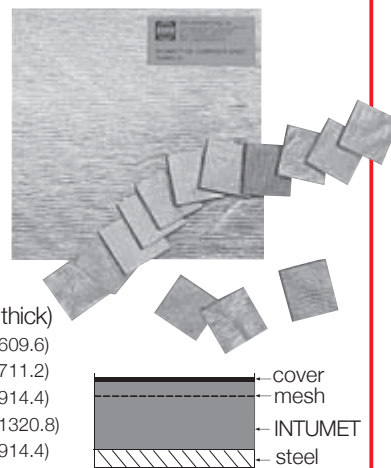
### Application:

For penetrations in fire-rated walls and floors, openings in concrete blocks and slabs.

**Size:** (All material is .3125"(7.9) thick)

- Part# CS1224 12"(304.8) x 24"(609.6)
- Part# CS1628 16"(406.4) x 28"(711.2)
- Part# CS2436 24"(609.6) x 36"(914.4)
- Part# CS2852 28"(711.2) x 52"(1320.8)
- Part# CS3636 36"(914.4) x 36"(914.4)
- Part# CS3641 36"(914.4) x 41"(1041.4)

**Color:** Grey



## INTUMET™ FS - Firestop Sheet

Highly intumescent firestop material in sheet form for fire blanket.

### Application:

Fire blanket for floors and walls, architectural joint systems and others.

**Size:** #FS3003-0621296 12"(304.8) x 96"(2438.4) x .062"(1.6)

#FS3003-1251296 12"(304.8) x 96"(2438.4) x .125"(3.2)

Expands 20 times

#FS4004-0621296 12"(304.8) x 96"(2438.4) x .062"(1.6)

#FS4004-1251296 12"(304.8) x 96"(2438.4) x .125"(3.2)

Expands 80 times

**Color:** Red, Black, Grey, Brown, White

ZERO photoluminescent systems facilitate safe emergency exits during building evacuations when power systems have failed. Designed for compliance with Building Code Standard RS 6-1/1A of New York City Building Code Section 27-383(b) for photoluminescent exit path markings adopted in May, 2005, for both new construction and renovations.

ZERO's solutions to these requirements include a variety of self-adhesive signage and marking systems designed for specific uses, as well as non-slip **TRACTION TREAD™ GLOW** stair nosings.

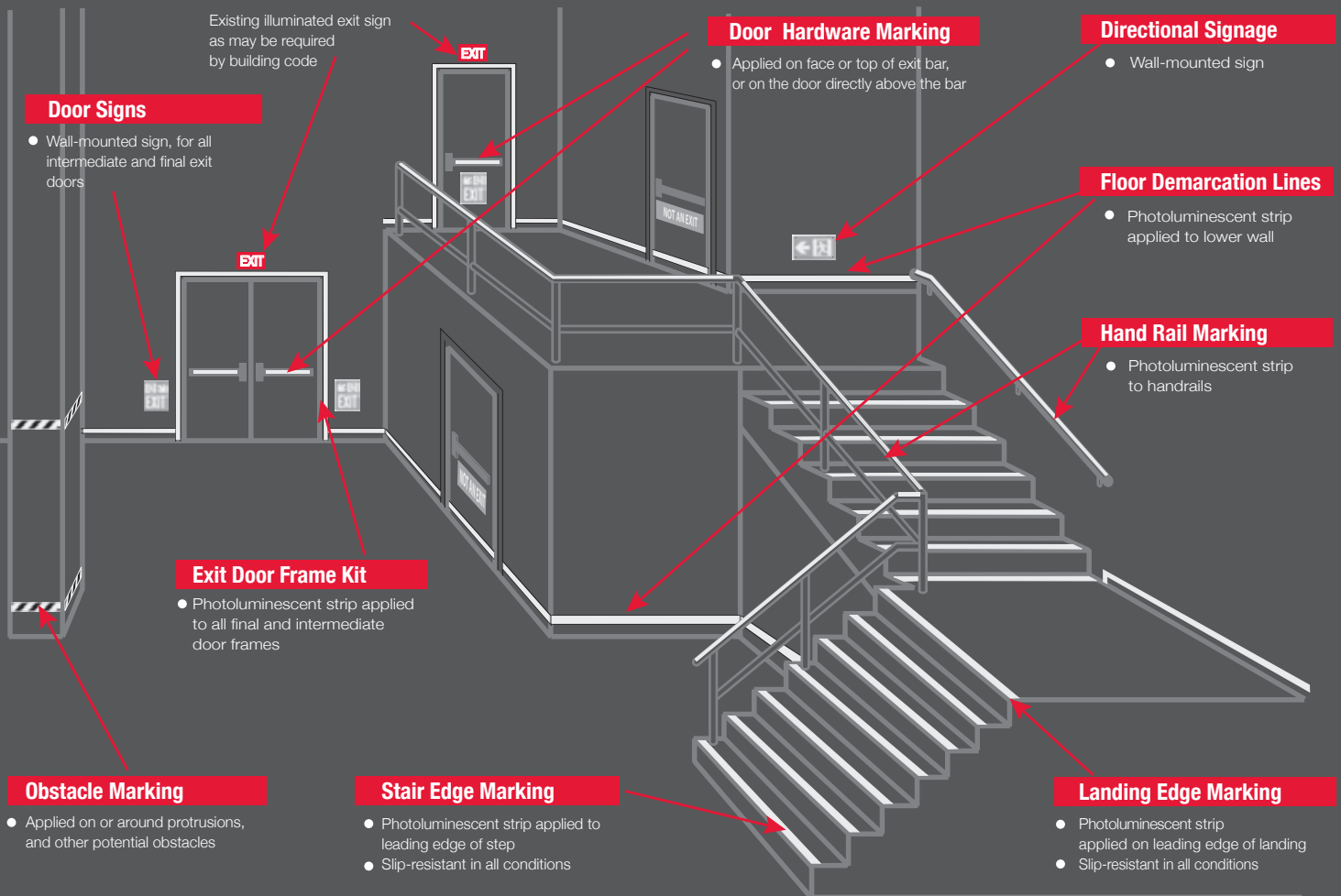
Photoluminescent material is charged by exposure to ambient light and emits luminescence after the activating light source is no longer available. Made with top-grade strontium pigments, the material in our systems is non-electric, non-toxic and non-radioactive. It is designed for easy maintenance, maximum durability and good slip resistance in all conditions.

Our photoluminescent strips and signs feature aluminum backing and foam tape for superior adhesion to the uneven surfaces, including brick, found in many buildings. This backing system consistently outperforms typical vinyl materials, which are best applied to smooth, clean surfaces. Our systems can also be mechanically fastened, if preferred.

**TRACTION TREAD™ GLOW** stair nosings are recommended for high-traffic installations that demand maximum non-slip safety. The photoluminescent markings are integrated in the outside four grooves as installed on the stair step.

Accepted For Use  
City of New York  
Department of Buildings  
MEA 8-06-M

Photoluminescent



All systems designed to meet NYC Building Code Standard RS 6-1/1A, Stairway Exit Path Marking Requirements. Marking shall be installed in consistent and uniform manner in dimensions, distances and location, throughout the same exit.





All systems designed to meet NYC Building Code Standard RS 6-1/1A, Stairway Exit Path Marking Requirements.

## DIRECTIONAL SIGNAGE

Photoluminescent directional signs shall be placed in the stairwell or exit at every entrance, visible upon opening the door into the stairwell or exit. Not required for existing building; however this exception shall not apply to below-grade stories.



**#1220**  
Progress to the Right  
10"(254) x 5.5"(139.7)



**#1221**  
Progress Down and to the Right  
10"(254) x 5.5"(139.7)



**#1222**  
Progress Up and to the Right  
10"(254) x 5.5"(139.7)



**#1223**  
Progress to the Left  
10"(254) x 5.5"(139.7)



**#1224**  
Progress Down and to the Left  
10"(254) x 5.5"(139.7)



**#1225**  
Progress Up and to the Left  
10"(254) x 5.5"(139.7)



**#1226**  
Progress Forward  
10"(254) x 5.5"(139.7)



**#1227**  
Progress Down from here  
10"(254) x 5.5"(139.7)

Photoluminescent

## DOOR SIGNS

### Final Exit Door Wall Mounted



**#1228**  
FINAL EXIT  
(with pictogram)  
9.5"(241.3) x 16"(406.4)



**#1229**  
EXIT THROUGH LOBBY  
(with pictogram)  
19.5"(495.3) x 8.5"(215.9)

### Not An Exit



**#1233**  
NOT AN EXIT  
12.0"(304.8) x 4"(101.6)  
Not required for existing building

### Intermediate Exit Door Wall-Mounted



**#1230**  
EXIT - Left Arrow  
(with pictogram)  
12"(304.8) x 9.7"(246.4)



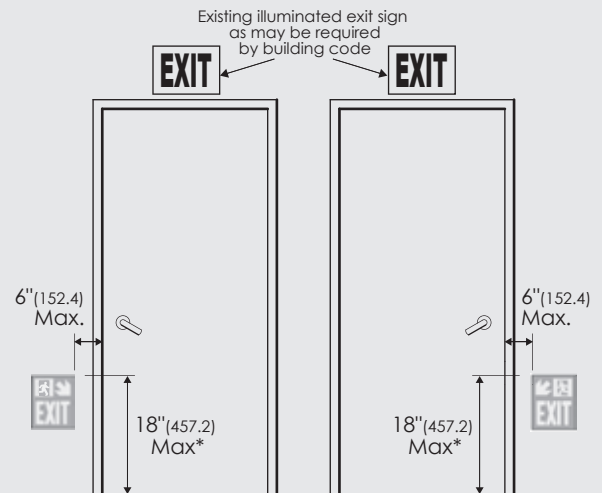
**#1231**  
EXIT - Right Arrow  
(with pictogram)  
12"(304.8) x 9.7"(246.4)

### Door-Mounted

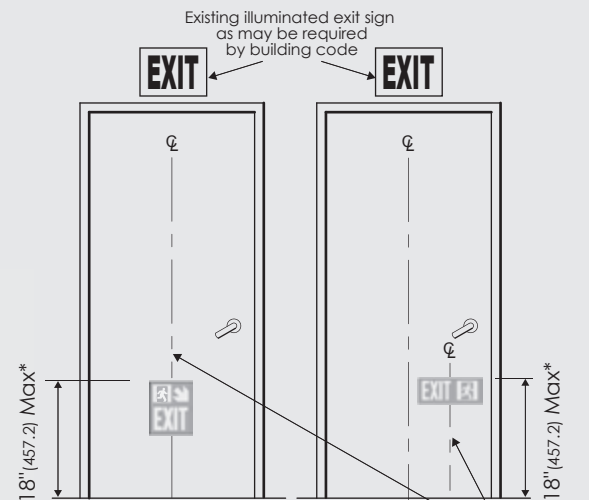


**#1232**  
EXIT (with pictogram)  
13.5"(342.9) x 5.5"(139.7)

### Placement for Door Signs



Wall-Mounted



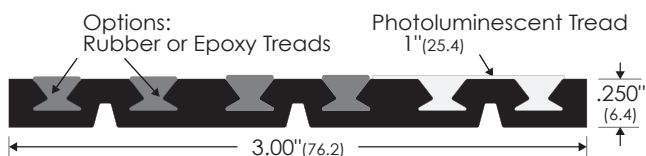
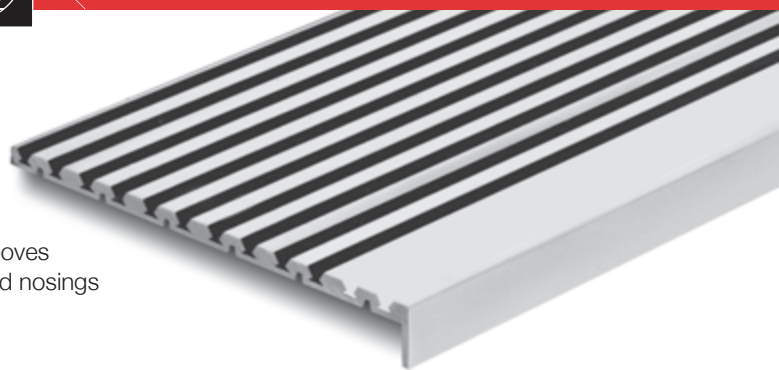
Door-Mounted

\* 26" (660.4) Max. for existing buildings

Vertical center line of sign centered with door or located in half of door containing latch

## TRACTION TREAD™ glow

Non-slip stair nosings that satisfy New York City Standard RS 6-1/1a and other building code standards for **photoluminescent exit path markings**. Profiled grooves with rubber or epoxy inserts provide durable, attractive surfaces that do not collect dirt or water. One inch wide photoluminescent tread is integrated in the outer 2 grooves along stair edges. Available in standard aluminum finish, Traction Tread nosings are designed for easy cutting and drilling onsite.

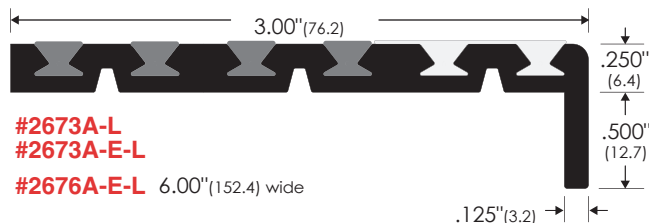


#3673A-L  
#3673A-E-L

#3674A-L 4.00" (101.6) wide  
#3674A-E-L

#3675A-L 5.00" (127.0) wide  
#3675A-E-L

#3676A-L 6.00" (152.4) wide  
#3676A-E-L



#2673A-L  
#2673A-E-L

#2676A-E-L 6.00" (152.4) wide

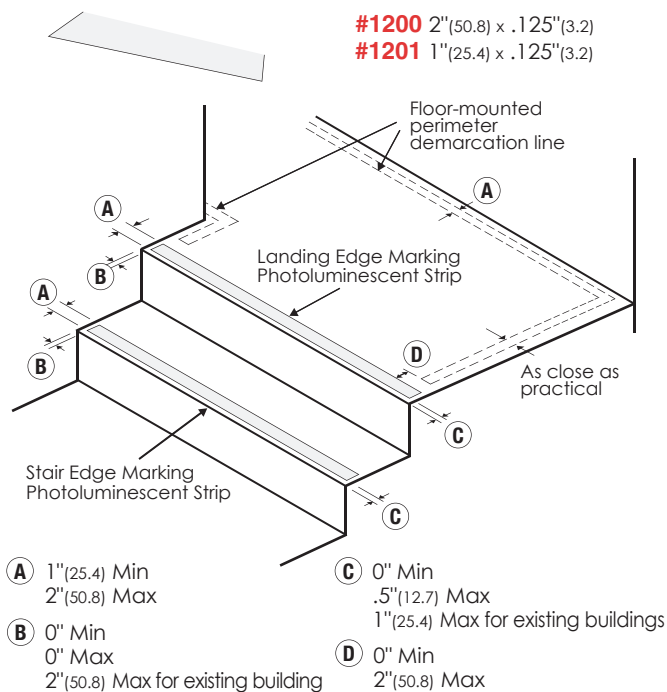
Note:

A-L = Aluminum finish. Rubber / Photoluminescent Treads insert  
A-E-L = Aluminum finish. Epoxy / Photoluminescent Treads insert

## STAIR & LANDING EDGE MARKING

For existing and new buildings.

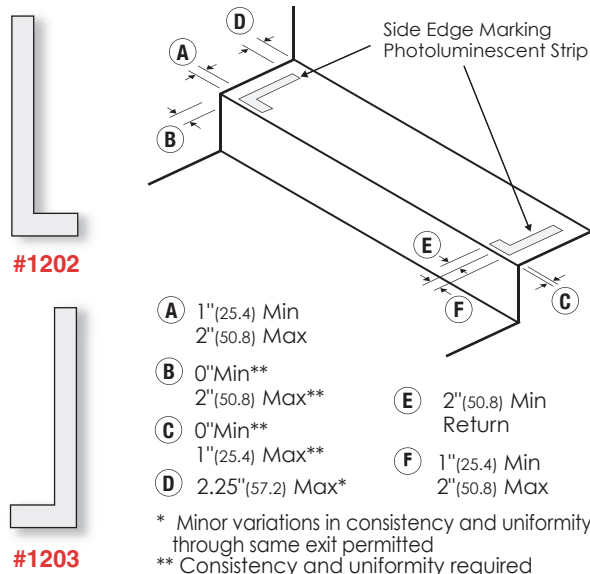
Identifies the limits of steps and leading edge of landings.



## SIDE EDGE MARKING

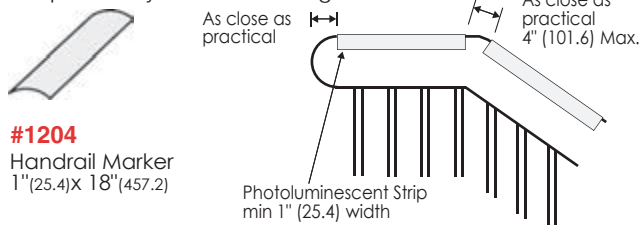
Alternative for existing buildings.

Designed to meet the minimum requirement for existing buildings to illuminate the ends of the stair tread surface, providing visual cues for each stair step during a blackout. Available in 8.5" (215.9) x 3.6" (91.4) x 1.5" (38.1)



## HAND RAIL MARKING

Ultra-thin, contoured all-aluminum design with beveled-finish edge provides maximum durability and hand grip comfort. Required only for new buildings.

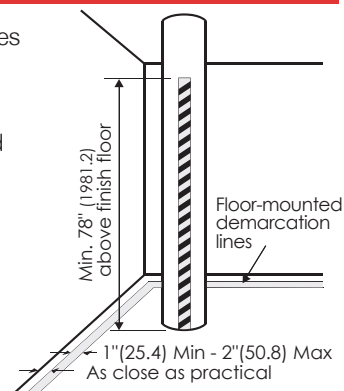


## OBSTACLE MARKING

Required for marking obstacles along the egress route. Examples of such obstacles include standpipes, hose cabinets, wall projections and restricted height areas.

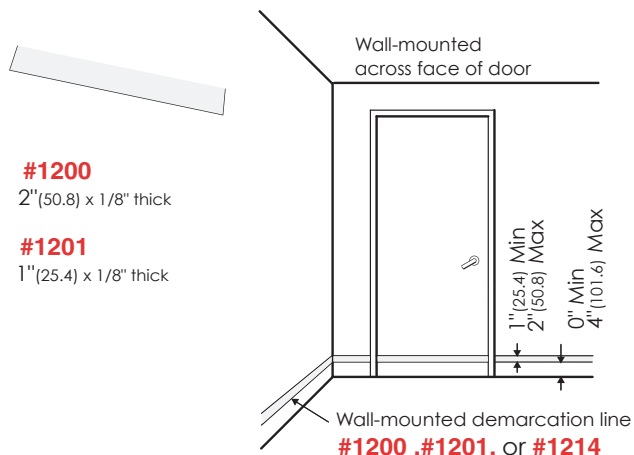


#1213  
1" (25.4) x 39" (990.6)



## FLOOR DEMARCATION LINES

Suitable for both wall and floor-mounted applications.

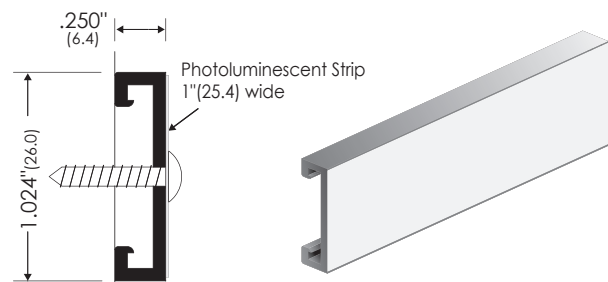


**#1200**

2" (50.8) x 1/8" thick

**#1201**

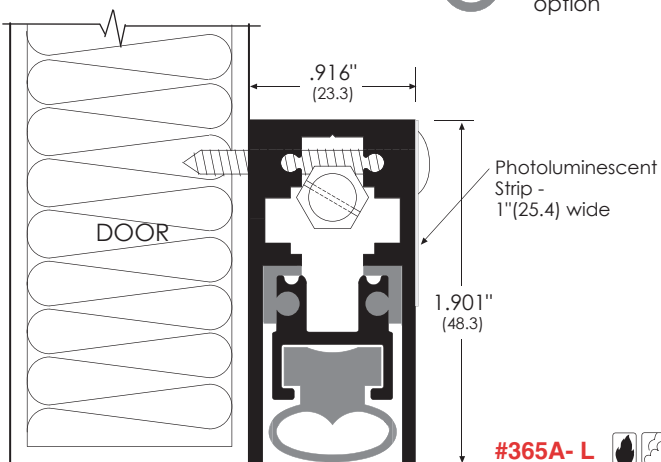
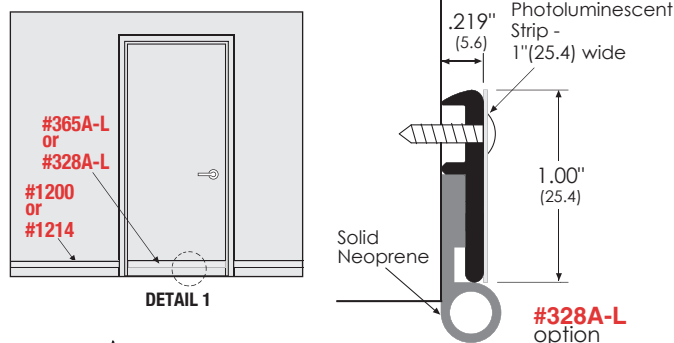
1" (25.4) x 1/8" thick



**#1214**

Wall-mounted.  
Aluminum extrusions with Photoluminescent Strip for permanent installation on uneven surfaces using screws (provided)

## Photoluminescent Sill Protection

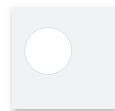


DETAIL 1

## DOOR HARDWARE MARKING

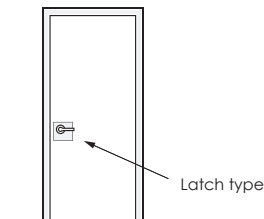
Illuminates door opening mechanisms for better visibility, required for all intermediate and final exit doors. Located behind, immediately adjacent to, or on the door handle and/or escutcheon.

### Latch Type



**#1207**

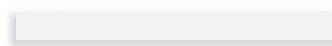
7.8" (198.1) x 6" (152.4) x .125" (3.2)



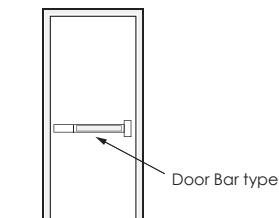
### Door Bar Types

#### PUSH TO OPEN

**#1208** 1" (25.4) x 39" (990.6)  
"PUSH TO OPEN"



**#1201** 1" (25.4) x .125" (3.2)



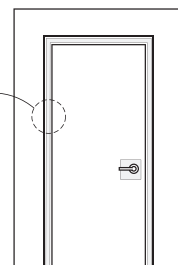
## EXIT DOOR FRAME KIT

Required for intermediate and final exit doorways.

**#1200** 2" (25.4) Solid and continuous  
**#1201** 1" (25.4) Solid and continuous

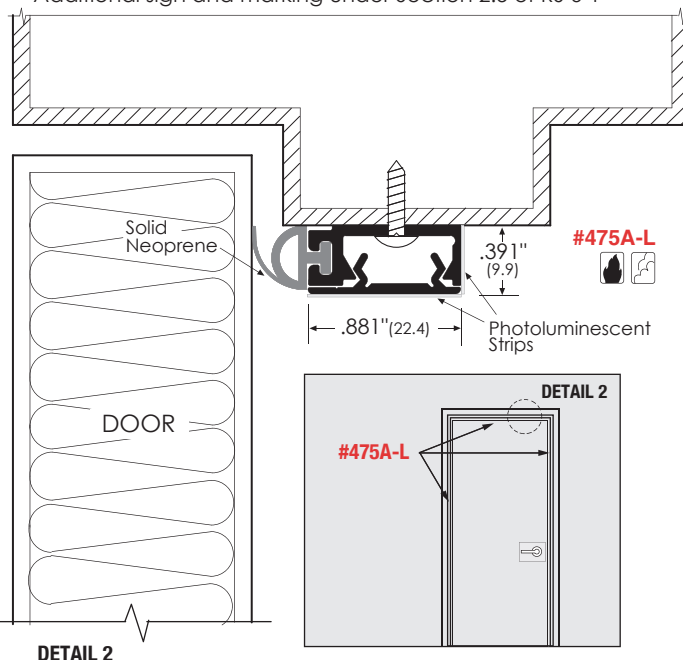
Photoluminescent Strip  
1" (25.4) Min

Door Frame

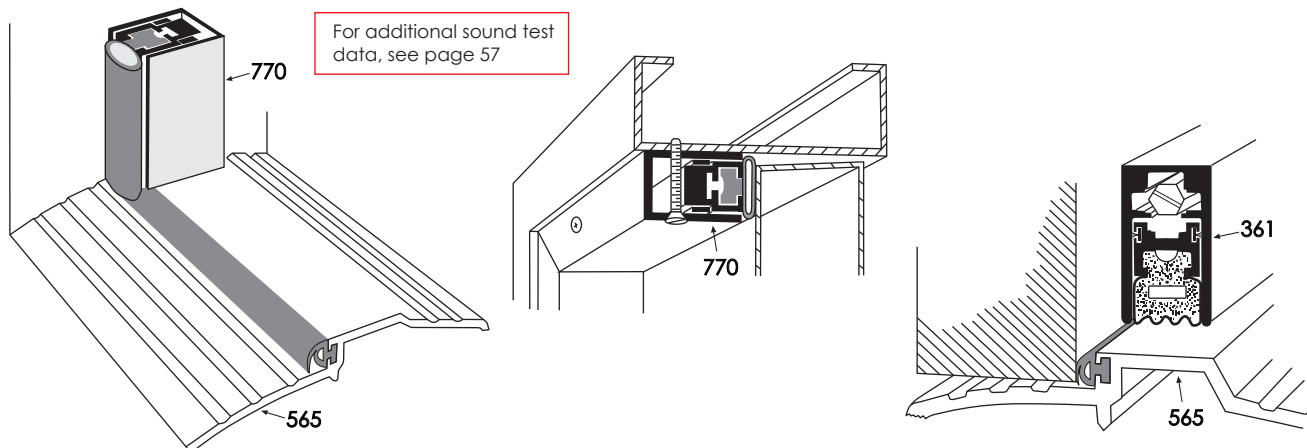


## Photoluminescent Head & Jamb Seal

Additional sign and marking under Section 2.5 of RS 6-1



DETAIL 2



ZERO has designed and tested its systems against air, sound, fire, light and smoke (see pg. 72) to demonstrate the effectiveness of these products and materials. By specifying a complete "Control System", you are assured that the components installed for head, jamb and sill will perform properly together. All tests were performed in accordance with nationally accepted standards by independent laboratories. Results are available upon request.



## Sound - Single Doors

SYSTEM NO.	DOOR RATING	TYPE OF DOOR	HEAD & JAMB	DOOR BOTTOM	THRESHOLD	STC
STC1	55	METAL	3708 +119WB	367	564B	53
STC2	55	METAL	770 + 119WB	367	564B	52
STC3	55	METAL	770 + 119WB	367	564B	51
STC4	55	METAL	170 + 119WB	367	564B	51
STC5	55	METAL	485 + 119WB	361	565B	49
1T	52	METAL	770A	367A	564A	47
9R	46	METAL	375	367	164	45
2T	52	METAL	870	361	565	44
2U	52	METAL	485	361	565	44
1R	51	METAL	770	361	565	44
2J	51	METAL	770	362/352	None	44
4R	51	METAL	370	361	565	43
5S	52	METAL	328	361	565	42
5T	52	METAL	312	351	565	42
11R	46	METAL	375	361+119WB	164	42
7R	51	METAL	328	351	663	40
10R	46	METAL	375	361	164	39
7J	51	METAL	475	362	None	37
12R	38	WOOD	188N	None	564A	37
13R	38	WOOD	188N	254A+839A	544A	36
14R	38	WOOD	475A	364A(or365A)	544A	36
15R	36	WOOD	188N+119WB	None	564A	35
	52	None	None	None	None	21



## Sound - Double Doors

SYSTEM NO.	DOOR RATING	TYPE OF DOOR	HEAD & JAMB	DOOR BOTTOM	THRESHOLD	STC
RM1	770		367/364	383/139/118B		47
JD6S	770		362	40		41
JD7S	475		362	40/40		41
JD8S	475		362	156/56		36
AT4	188/119WB		564	383		36+*
AT5	485/119WB		564	383		35+*
AT7	485/119WB		839/544	383		35+*

**\*\* TESTED WITH 37 STC DOOR**  
(119WB FOR HINGE SIDE ONLY)



## Air Infiltration - Positive Pressure

System	Head & Jamb	Door Bottom	Threshold	Leakage CFM/LFC (25 MPH)	Leakage CMH/LMC (25 MPH)
A	3000	361	565	0.03	0.17
B	770	361	565	0.04	0.22
C	3000	53J	164	0.05	0.28
D	3000	154	164	0.07	0.39
E	3000	361	164	0.17	0.95
F	318	351	564	0.25	1.39
G	312	351	565	0.35	1.95
H	870	361	565	0.50	2.79
K	None	None	None	11.36	63.28



## Air Exfiltration - Negative Pressure

System "Z"	Head & Jamb	ADB	Threshold	Leakage CFM/LFC at 25 MPH WIND VELOCITY	Leakage CMH/LMC (25 MPH)
Z-1	475	365	565	.02	0.11
Z-2	370	365	565	.07	0.39
Z-3	770	365	565	.09	0.50
Z-4	328/119W	365	565	.12	0.67
Z-5	475	365	*None	.05	0.28
Z-6	370	365	*None	.47	2.62
Z-7	770	365	*None	.55	3.06
Z-8	328	365	*None	.59	3.29
Z-9	98	365	*None	.98	5.46
	No Seals	No Seals	No Seals	Leakage Too High Gauge Cannot Record	

**\*NOTE:** Where threshold is not shown, threshold can be used if needed as long as it has no sealing features (ex. 653, 654, 655, 656).  
CFM / LFC = Cubic Foot per Minute / Linear Foot of crack  
CMH / LMC = Cubic Meter per Hour / Linear Meter of crack

## Applications

- AIR INFILTRATION** (Positive Pressure) Where high pressure pushes door against seal.
- AIR EXFILTRATION** (Negative Pressure) Where high pressure pushes door away from seal, including computer rooms, halon systems, entrance doors in hotel rooms, and apartment doors in residential buildings.
- SMOKE**- All doors that must be smoke-sealed under fire codes.
- SOUND**- All types of openings that have a sound-reduction requirement, including theaters, TV stations, recording studios, offices, and factories.



## Legend / Product Symbols:



Fire



International positive-pressure standard



Smoke and Draft Control Gasketing



Air Seal



Sound Seal



Light Seal



Handicap Accessibility



Slip Resistant



Door Opening Force



Water Infiltration



**LISTED** Underwriters Laboratories



Intertek Warnock Hersey

## Regulatory Standards

### Fire



**UL10B** Standard for Fire Tests of Door Assemblies

**UL10C** Standard for Positive Pressure Fire Test of Doors

**UBC 43-2** Fire Test of Door Assemblies

**UBC 7-2-97 PART I** Fire Test Standard for Swinging Fire Doors



**ASTM E152** Method of Fire Test of Door Assemblies

**ASTM E2074** Standard Test Method for Fire Tests of Door Assemblies, including Positive Pressure Testing of Side Hinged and Pivoted Swinging Door Assemblies

**IBC 2000** International Building Code

**NFPA 80** Standard for Fire Doors and Fire Windows

**NFPA 101** Life Safety Code

**NFPA 105** Recommended Practice for the Installation of Smoke and Draft Control Door Assemblies

**NFPA 252** Standard Method of Fire Tests of Door Assemblies

**BS476 Part 22 1987** Methods for Determination of the Fire Resistance of Non Load-Bearing Elements of Construction (British)

**SDI 118** Basic Fire Door Requirements

**JIS-A1311-3** Method of Fire Protecting Test of Fire Doors for Buildings (Japan)

**The Ministry of Construction Notice No.1125 of 1990** Fireproof Performance Test (Japan)

**Building and Regulatory Test AS 1530.4** Fire Resistance Test (Australia / New Zealand)

### Smoke



**UL1784** Standard for Air Leakage Tests of Door Assemblies

**IBC 2000** International Building Code

**UBC 7-2-97 PART II** Method of Smoke and Draft Control Tests of Door Assemblies

**BS476 Part 31 Section 31.1 1983** Methods for Measuring Smoke Penetration Through Doorsets and Shutter Assemblies (British)

### Air Leakage



**ASTM E 283** Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen

**ANSI/UL 1784-1997** Air Leakage Tests of Door Assemblies

**ANSI/ASHRAE/IESNA** Standard 90 P Energy Conservation in New Building Design *Section 4*

**IBC 2000** International Building Code

### ADA Access



**ADAAG-1998**

**ICC/ANSI A117.1-1998** Standard for Accessible and Usable Buildings and Facilities

**IBC 2000** International Building Code

### Acoustic



**ASTM E90** Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements

**ASTM E336** Standard Test for Measurement of Airborne Sound Insulation in Buildings

**ASTM E413** Standard Classification for Rating Sound Insulation

**ASTM E1332** Standard Classification for Determination of Outdoor-Indoor Transmission Class

**ASTM E1408** Standard Method for Laboratory Measurement of Sound Transmission Loss of Door Panels and Door Systems

**SDI 128** Guidelines for Acoustical Performance of Standard Steel Doors & Frames

**IBC 2000** International Building Code

All acoustical tests of Zero products are conducted by laboratories accredited by the National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP)

### Slip Resistant



**ASTM F-609** Standard for Safety for Slip Resistance of Floor Surface

**MIL-D 23003 A** Deck Covering Compound, Non-Slip, Rollable

**UL 410** Standard for Safety for Slip Resistance of Floor Surface

### Water Infiltration



**ASTM E-547** Water Penetration Resistance of Exterior Doors by Cyclic Static Air Pressure Differential

**ASTM E 331** Water Penetration of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference

### Door Opening Force



**ANSI A117.1-1986** Door Opening Force Test Standard







## ALUMINUM

All aluminum shapes are extruded. The alloy is 6063, and the hardness is T5 or T6. Finishes are available in mill, anodized 204R1 clear, anodized 204R1 bronze, and anodized 2-step dark bronze. Meets AMMA 603 Specification. Not all finishes are available in all shapes. See part numbers.

## BRONZE

Bronze extrusions are actually brass alloy 380, technically known as architectural bronze, containing 57.5% copper, 41% zinc, 1.3% lead, and 0.2% aluminum. Furnished in mill finish, a light golden color, which oxidizes in time to a rich darkened bronze. Rolled bronze for cushion and spring material is technically known as commercial bronze. The alloy is 85-90% copper and 10-15% zinc.

## ZINC

Rolled zinc is alloy 191, and is highly resistant to weather and atmospheric corrosion. When exposed to the atmosphere, a zinc carbonate film is formed which provides long-term protection. Zinc is also ideal for EMI/RFI shielding.

## NEOPRENE

DuPont's polychloroprene is a multi-purpose synthetic rubber with a balanced combination of properties. The properties of the finished neoprene product will depend on the exact type and amount of neoprene and other ingredients used during the compounding. The neoprene supplied by ZERO is available in two types: closed-cell sponge and solid, both in an extruded form. All neoprene is black in color and, by virtue of its chlorine content, is flame-resistant, self-extinguishing and non-staining. Specifications are as follows:

- CLOSED CELL-Sheet and Extruded  
ASTM D-01056-78  
Mil R 6130B Type II Grade A, B, or C  
Mil R 6130B = Sponge  
Type II = Closed Cell  
Grade A = -30° to +150°F Oil-Resistant  
and Self-Extinguishing  
Grade B = -30° to +150°F Non Oil-Resistant  
Grade C = -67° to +170°F Low Temperature
  - SOLID  
Mil R 6855 Class II Grade 55 Soft, Oil-Resistant, -67°
- Where neoprene is glued to housing, it is to facilitate installation. Fasteners, not glue, hold neoprene permanently in place.

## POLYPROPYLENE BRUSH

Insert polymer which will not deteriorate under harsh climatic conditions. Consists of a "brush" of polypropylene fiber held by a carrier of the same material. Together they are welded into a homogeneous bond which will not corrode, unlike the metal carrier of traditional brush.

The polypropylene fin running down the center of the fibers is unique. It is every bit as flexible as the fibers themselves but, more important, makes the material twice as effective as a "traditional brush" in air infiltration tests.

## FASTENERS

Sheet metal screws are supplied for all extruded head and jamb material, color-matched to item, in the following finishes: zinc-plated steel, brass-plated steel, black oxide-plated steel, stainless steel. Screw heads supplied: Phillips, slotted, flat, truss and pan.

Phillips flathead wood screws and 1" plastic anchors are supplied for all saddles at no charge. #10, 1.24" -1.75" depending on height of saddle. Lead shields, machine screws and anchors supplied upon request at additional cost.

## General Properties of Neoprene

PROPERTIES		NEOPRENE
Tensile Strength (PSI)	Pure Gum	Over 3000
	Black Loaded	Over 3000
Hardness Range	(Shore A)	40-95
Specific Gravity	(Base Material)	1.23
Adhesion to Metal		Excellent
Tear Resistance		Good
Abrasion Resistance		Excellent
Compression Set		Fair
Rebound	Cold	Very Good
	Hot	Very Good
Dielectric Strength		Good
Electrical Insulation		Fair
Permeability to Gases		Low
Acid Resistance		Good
RESISTANCE TO	Swell in Lubrication Oil	Good
	Oil & Gasoline	Good
	Animal & Vegetable Oils	Good
	Water Absorption	Good
	Oxidation	Excellent
	Ozone	Excellent
	Sunlight Aging	Very Good
	Heat Aging	Excellent
	Flame	Good
	Heat	Excellent
	Cold	Good

## Finish Designations / Abbreviations :

<b>A</b>	= Aluminum, Mill finish
<b>AA</b>	= 204 R1 Clear Anodized finish
<b>AP</b>	= Aluminum, Polished finish
<b>B</b>	= Architectural Bronze, Mill finish
<b>BK</b>	= Aluminum, Black Anodized finish
<b>BP</b>	= Architectural Bronze, Polished finish
<b>CE</b>	= Concealed Electric
<b>D</b>	= Aluminum Dark Bronze Anodized ( Dark Brown ) finish
<b>E</b>	= Epoxy Abrasive
<b>EBF</b>	= Extruded Bulb Finger
<b>EPT</b>	= Electric Power Transfer
<b>G</b>	= 204 R1 Gold Anodized finish
<b>ORB</b>	= Oil Rubbed Bronze finish
<b>PB</b>	= Polished Unlacquered Bronze (bright) finish
<b>PC</b>	= Powder Coating finish. Specify color
<b>SC</b>	= School Option
<b>SP</b>	= Steel Prime
<b>STST</b>	= Stainless Steel
<b>Z</b>	= Zinc
<b>V3</b>	= Aluminum Oxide Filler, Full Body

## Trademarks : TM ®

- Zero International
- ZERO
- ZERO Compress-O-Matic
- ZERO Mini-Matic
- Traction Tread
- INTUMET
- Free Flow
- Soft Puff
- SOUNDTRAP
- SLIMPORT



# Parts Index

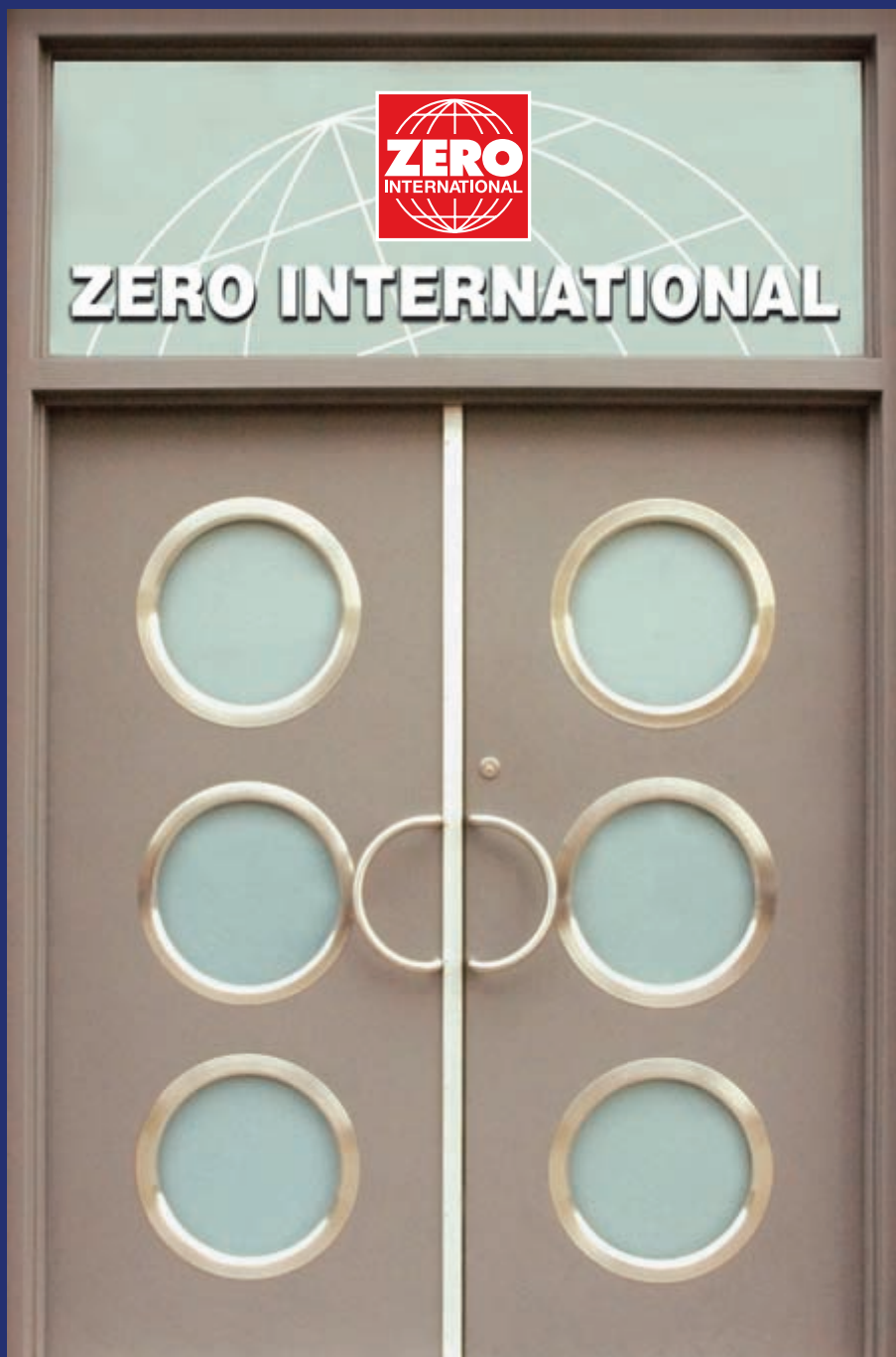
Full catalog drawings and CAD version  
are available on our world website  
[www.zerointernational.com](http://www.zerointernational.com)

Part#	Page	Part#	Page	Part#	Page	Part#	Page	Part#	Page	Part#	Page	Part#	Page
1.....	23, 54	102.....	14	329.....	20	560.....	8	928.....	41	6710.....	10	CS2852.....	67
2.....	23, 54, 55	103.....	14	334.....	35	561.....	8, 45	930.....	42	7000.....	7	CS3636.....	67
3.....	23, 54, 55	104.....	14	335.....	35	563.....	9	935.....	42	7332.....	7	CS3641.....	67
4.....	54	105.....	10, 12	339.....	20, 37	564.....	8, 45, 53, 57	936.....	42	7335.....	7	DPW218.....	67
5.....	54	106.....	10, 12	339FS.....	21	565.....	9, 72	948.....	49	7336.....	7	DPW228.....	67
6.....	54	110.....	22	339W.....	20, 37	566.....	8	951.....	50	7337.....	7	DPW418.....	67
7.....	54	111.....	21	340.....	18, 19	568.....	8	1200.....	70, 71	7350.....	47, 48	DPW428.....	67
10F.....	23	117.....	31	350.....	16, 18, 19	570.....	27, 44	1201.....	70, 71	7770.....	24	EB244.....	67
11.....	32, 44	118.....	23, 31	350LS.....	51	571.....	34	1202.....	70	8004.....	30	EB248.....	67
12.....	23, 54, 55	119.....	23, 31	351.....	16, 18, 19	600CP.....	6	1203.....	70	8042.....	31	EB444.....	67
15.....	7, 14	119W.....	23, 31, 45, 46, 57	351LS.....	51	601CP.....	6	1204.....	70	8043.....	30	EB448.....	67
16.....	55	132.....	23	351X.....	19	622.....	15	1207.....	71	8045.....	30	FB1212.....	63
17.....	55	135.....	38	352.....	19	623.....	15	1208.....	71	8046.....	30	FB1610.....	63
18.....	23	136.....	38	354.....	16, 19	624.....	4	1213.....	70	8047.....	49	FB1808.....	63
19.....	23, 55	137.....	38	355.....	19	625.....	5	1214.....	71	8052.....	30	FB1810.....	63
19W.....	23, 53	137P.....	31, 38	357FS.....	64	626.....	5	1220.....	69	8053.....	30	FB1818.....	63
20.....	55	138.....	38	360.....	16, 18, 44	627.....	15	1221.....	69	8054.....	30	FB1836.....	63
21.....	23	139.....	28, 37, 45, 55	360LS.....	44	628.....	15	1222.....	69	8116.....	31	FB1860.....	63
22.....	22	139N.....	31	361.....	7, 16, 18, 72	635.....	54	1223.....	69	8136.....	38	FB2020.....	63
23.....	7	140.....	28, 37	362.....	16, 18, 58	639W.....	20	1224.....	69	8137.....	38	FB2424.....	63
25.....	7, 27, 32, 44	140FS.....	28, 37	364.....	16, 18	643.....	15	1225.....	69	8138.....	38	FP294.....	67
29.....	54, 55	141.....	16, 32, 44	364FS.....	64	645.....	54	1226.....	69	8144.....	31, 45, 46	FP296.....	67
30.....	54, 55	142.....	32, 44, 45	364LS.....	51	653.....	4	1227.....	69	8144FS.....	31	FP396.....	67
31.....	26, 55	144.....	32, 44	365.....	16, 18, 44, 57	654.....	4	1228.....	69	8145.....	31	FS820.....	62
32.....	26, 55	148.....	32	365A-L.....	71	655.....	5, 44	1229.....	69	8149.....	22	FS821.....	62
33.....	26	153.....	21	365EMI.....	53	656.....	5	1230.....	69	8172.....	31	FS850.....	62
34.....	35, 48	154.....	22, 48	365FS.....	64	657.....	6	1231.....	69	8191.....	20	FS851.....	62
34P.....	31	155.....	33	365LS.....	51	663.....	8, 12, 15	1232.....	69	8192.....	22, 36	FS860.....	64
35.....	35	156.....	33	366.....	16, 18	669DP.....	12	1233.....	69	8192PSA.....	38	FS1001.....	64-66
36.....	35	159FS.....	35	366LS.....	51	670.....	12	1370.....	27	8193.....	22, 29, 36	FS2002.....	64-66
38.....	35	164.....	4	367.....	16, 18, 46, 57	671.....	12	1545.....	14	8193PSA.....	38	FS3003.....	62, 64-66
39.....	20, 45	168.....	10, 11	368.....	18	672.....	10, 12	1673.....	14	8194.....	20, 36	FS3003-0621296.....	67
39W.....	20	170.....	24	369.....	18	673.....	10, 12	1674.....	14	8194PSA.....	38	FS3003-1251296.....	67
40.....	36, 58	175.....	7	370.....	27, 34	674.....	10	1675.....	14	8195.....	36	FS4004.....	65, 66
41.....	36, 58	188.....	31, 62	375.....	27, 34	675.....	10	1682.....	15	8195PSA.....	38	FS4004-0621296.....	67
42.....	27, 32	188FS.....	31	376.....	27	676.....	10	1684.....	15, 46	8197.....	20	FS4004-1251296.....	67
43.....	37	200AIL.....	46, 63	381.....	21, 35, 47	678.....	10	1685.....	15, 46	8198.....	10, 22	JD6S.....	58
44.....	10, 37	226.....	9, 15, 44	383.....	37, 55, 58	712.....	25	1840.....	36	8199.....	47	JS06210008.....	67
44STST.....	37	233.....	13	383FS.....	37	722.....	15	2070.....	52	8302.....	29	JS06215008.....	67
47.....	37	234.....	13	398.....	35	723.....	15	2070N.....	31	8303.....	29	PCC05.....	67
50.....	28	235.....	13	400.....	54	724.....	5	2071N.....	31	8305.....	29	PCC2.....	67
50M.....	20	236.....	13	426.....	32	726.....	6	2361.....	13	8306.....	29	PCC3.....	67
51.....	42, 50	237.....	13	428.....	32	729.....	9	2541.....	48	8361.....	16, 44	PCC4.....	67
52.....	21	238.....	13	429.....	32	770.....	24, 56-58, 72	2673.....	11	8452.....	51	PCC6.....	67
53.....	21, 35, 47	239.....	13	452.....	21	770EMI.....	53	2673A-L.....	70	8655.....	5	SP250.....	59
55.....	33	240.....	27, 32	469.....	10	770FS.....	24	2676.....	11	8724.....	5	SP350.....	59
55FS.....	33	245.....	54	470.....	25	770SP.....	24	2676A-L.....	70	8726.....	6	SP450.....	59
56.....	33	253.....	21	472.....	25	770SPB.....	25, 32	2692.....	12	8729.....	9	SP550.....	59
56FS.....	33	253FS.....	21	475.....	12, 27, 44-46	810.....	31	3056FS.....	33	8730.....	9	STC1.....	56, 72
58FS.....	26	254.....	22, 46	51, 55	51, 55	811.....	31	3557FS.....	33	8770.....	31	STC2.....	56, 57, 72
59FS.....	21, 35, 62	255.....	22	475A-L.....	71	812.....	31	3672.....	11, 51	8780.....	31, 48	STC3.....	56, 72
63.....	4	258.....	14	477.....	20	813.....	31	3673.....	11, 12	8800.....	30	STC4.....	56, 72
64.....	4	259.....	14	478.....	27, 58	824.....	31, 62	3673A-L.....	70	8810.....	30	STC5.....	56, 72
65.....	8, 45	265.....	8	485.....	27, 55	826.....	31	3674.....	11, 46	8811.....	30	STC6.....	57
68.....	10, 11	267.....	8	488.....	31	837SP.....	24, 27	3674A-L.....	70	8812.....	30	STC3003.....	60
69.....	10, 49	268.....	10-12	488FS.....	31	870.....	25, 27, 45, 57	3675.....	11	8841.....	30	T4G.....	46
70.....	7	269.....	10, 11	500.....	54	871.....	22, 27, 34	3675A-L.....	70	8877.....	29	WS128.....	67
72.....	21, 50	270.....	25	511.....	22	873.....	20, 34	3676.....	11	8878.....	29, 46	WS148.....	67
73.....	7	272.....	25	520.....	58	903FS.....	64	3676A-L.....	70	8879.....	29, 36	WS248.....	67
76.....	7	302FS.....	28	522.....	15	905.....	10, 37	3708.....	25	8879PSA.....	38	Z46.....	17
77.....	12	304.....	14, 52	522W.....	15	908.....	40	3708N.....	31	9137PSA.....	38	Z48.....	17
80.....	7	312.....	28	523.....	15	910.....	40, 43, 58	3709.....	25	41004.....	31	Z49.....	17
81.....	7	312N.....	31	524.....	15	911.....	42	3831.....	59	2062375PSA.....	64	Z950.....	39, 53, 57
84.....	12	314.....	28	525.....	9	913.....	43	4000.....	54	3062500PSA.....	64	Z955.....	39, 44-46
84R.....	59	318.....	28	526.....	9	914.....	40, 43	4482.....	58	3062750PSA.....	64	Z961.....	39
87.....	37	318N.....	31	539.....	20	915.....	40	4483.....	59	30621000PSA.....	64	Z9500.....	39
93.....	49	320.....	19	544.....	4	916.....	43	4484.....	59	30621750PSA.....	64	ZBB960.....	39, 46
94.....	49	321.....	19, 45	545.....	4	917.....	43	5000.....	54	3125500PSA.....	62, 64	ZBB961.....	39, 57
96.....	22, 49	322.....	28, 37	546.....	4	918.....	43	5831.....	26	3125750PSA.....	64	ZBB991.....	39
97.....	49	323.....	19	547.....	4	919.....	43	5831FS.....	26	31251000PSA.....	64		
98.....	22, 26, 34, 49	326.....	29, 34	548.....	4	920.....	41	5832.....	26			Anchors.....	12
98PSA.....	38	328.....	20, 29, 34, 36, 45	555.....	33	921.....	41	5832FS.....	26	ADA1000.....	51	Bolts.....	41
99.....	26, 34	328A-L.....	71	555FS.....	33	922.....	41	5833.....	26	CS1224.....	67	Screws.....	39, 40, 43
100.....	20, 26, 34	328SPB.....	32	557.....	33	925.....	41	6570.....	6	CS1628.....	67		
101.....	14	328FS.....	28	557FS.....	33	926.....	31	6575.....	6	CS2436.....	67		

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MEMBER



MEMBER



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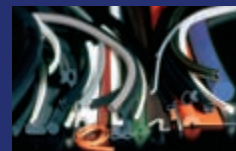
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