SEALING SYSTEMS FOR SOUND SOLUTIONS

SAFETY • SECURITY • PERFORMANCE • QUALITY

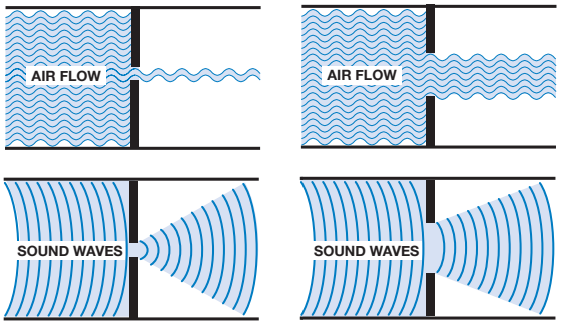
www.zerointernational.com

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, embassies and government buildings.

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.

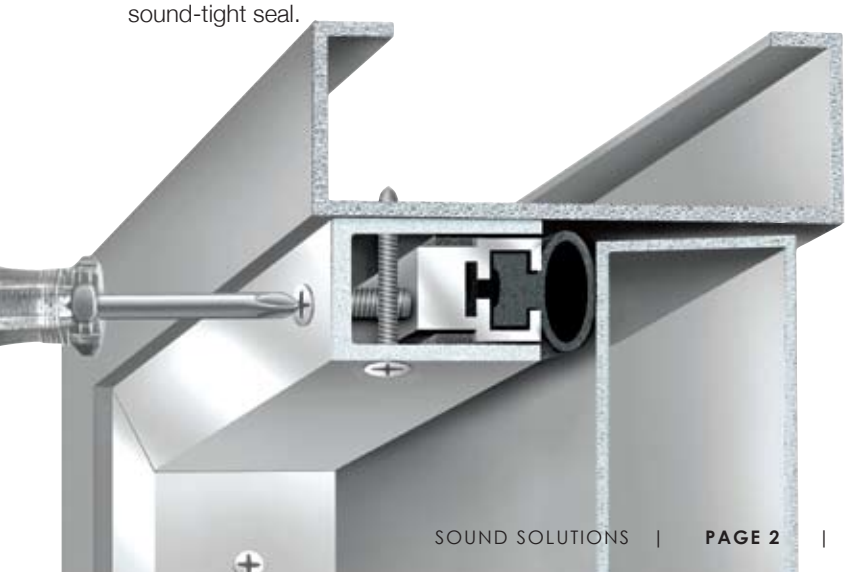
Gaps in sound barriers are a major problem because sound travels through any opening with very little loss. While the amount of air flowing through a gap increases in proportion with the size of the gap, the size of the gap in a sound barrier does not matter. A small hole transmits almost as much sound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

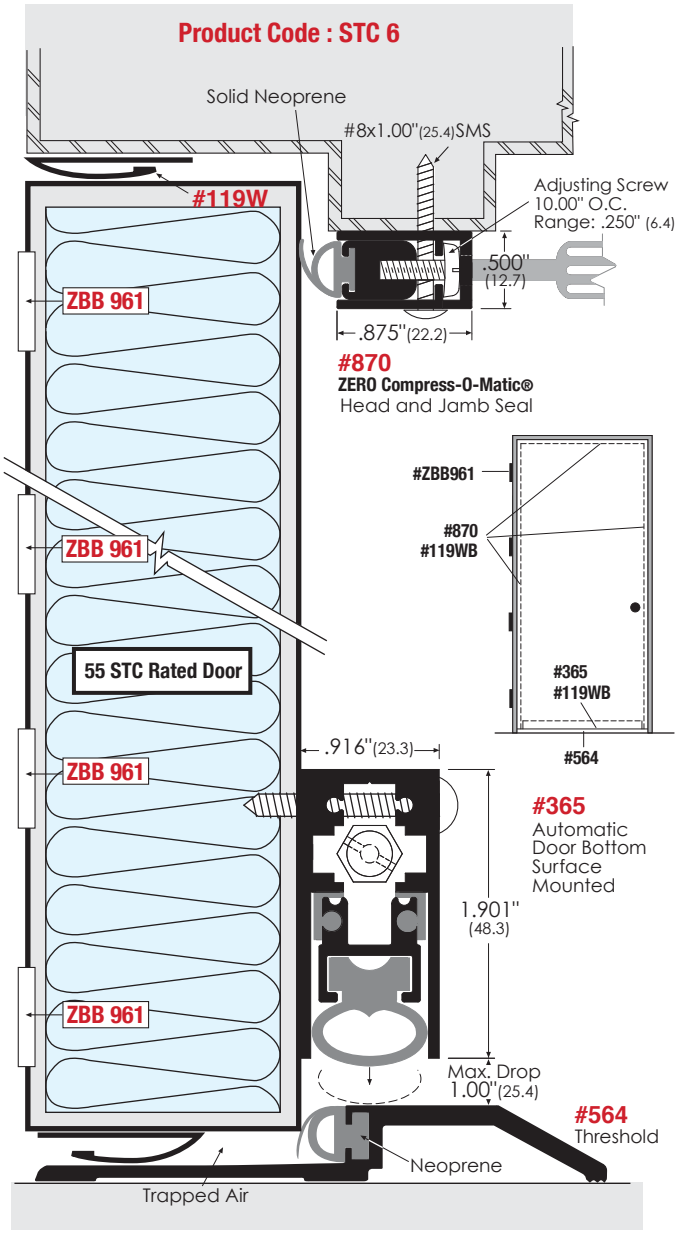
GASKETING SYSTEM	HEAD & JAMB	SADDLE	DOOR BOTTOM	STC RATING
STC 1	3708 &119WB	564B	367	53 STC
STC 2	770 & 119WB	564B	367	52 STC
STC 3	770 & 119WB	656B	367	51 STC
STC 4	170 & 119WB	564B	367	51 STC
STC 5	485 & 119WB	565B	361	49 STC

All systems tested with STC 55 Doors (rated as panels).

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.

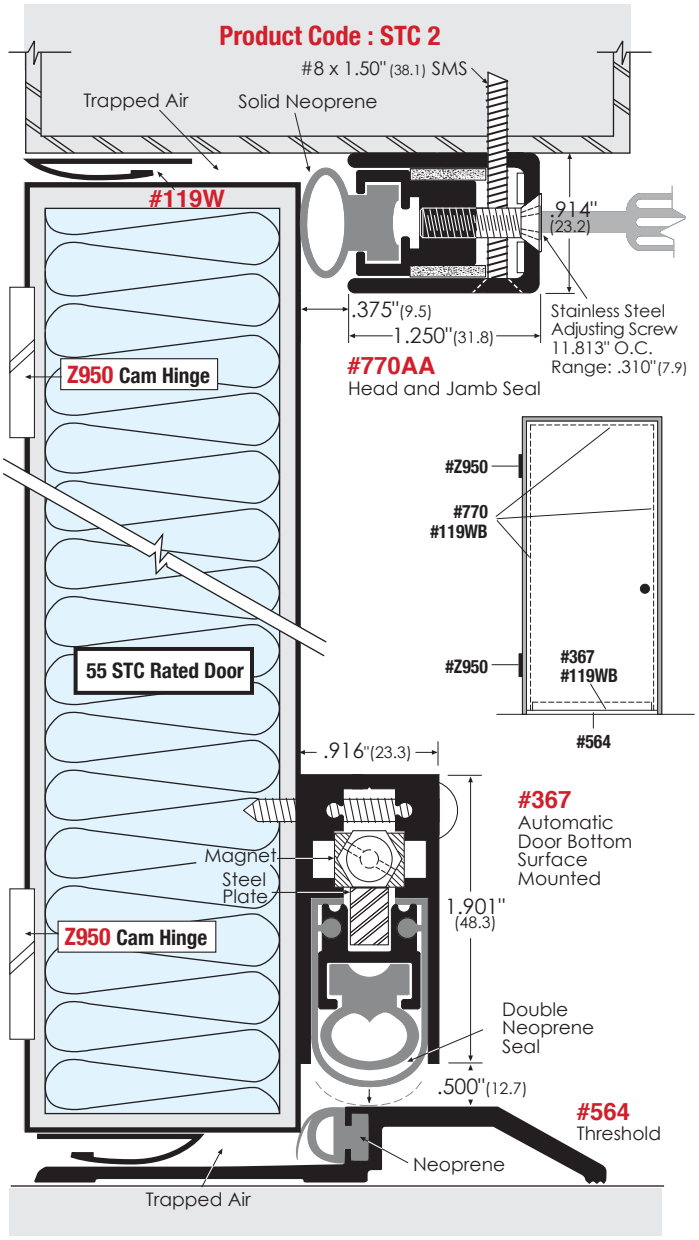
SOUND TRAP 49 STC SEALING SYSTEM

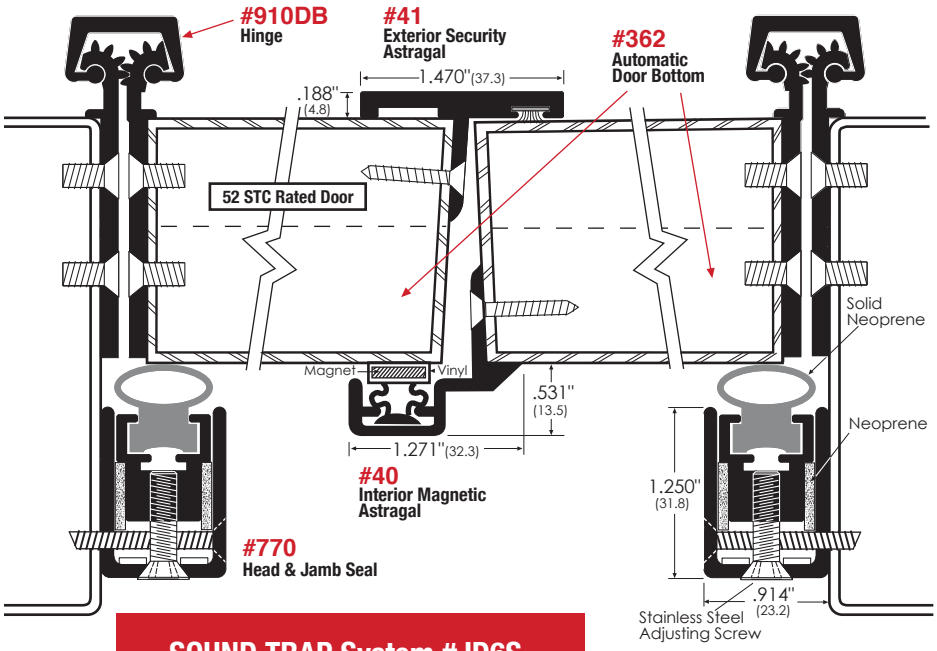
SOUND TRAP 49 STC rated systems for single doors feature several alternative head and jamb seals designed for use with frame stops. The 49 STC value they provide means that loud speech will be heard only faintly and cannot be understood on the opposite side of the door. That level of acoustic performance 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

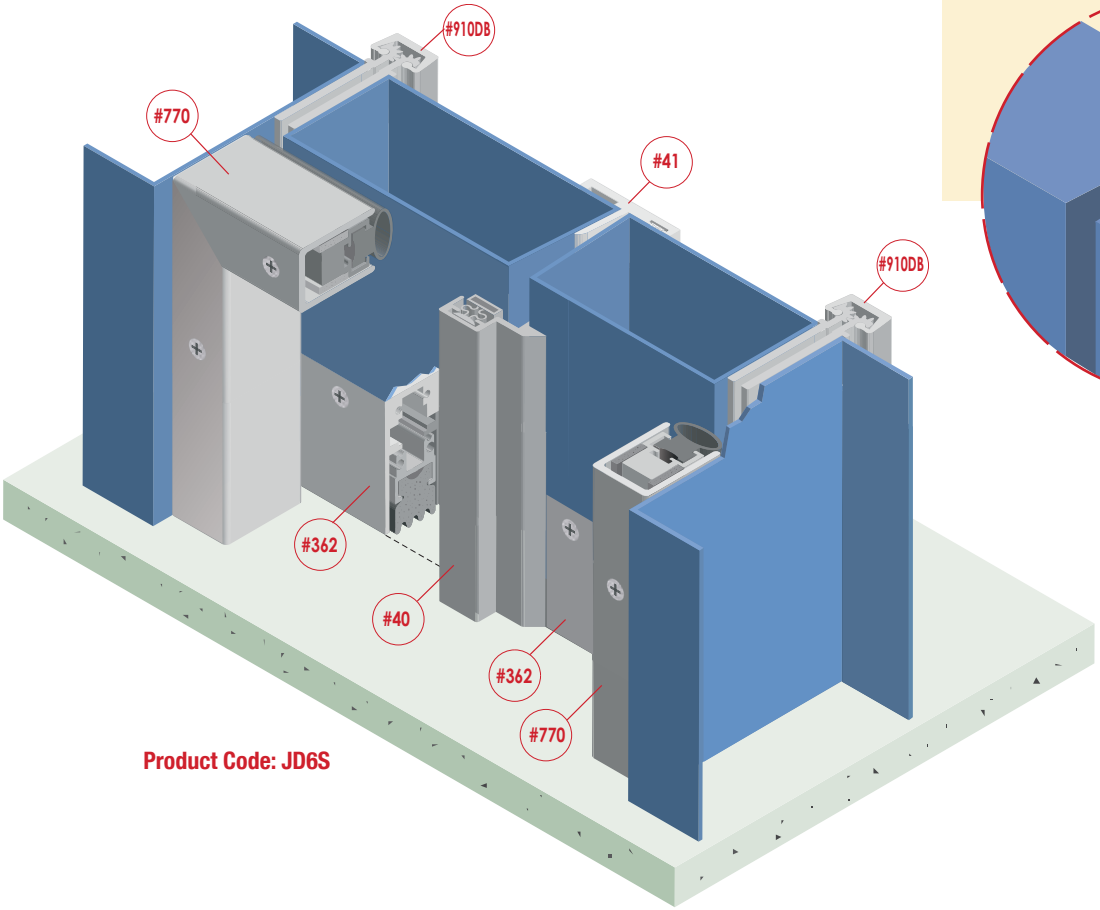
Our **SOUND TRAP 52 STC** rated systems are designed for use with sound-rated single metal doors with a cased-opening frame. They provide an STC 52 rating when properly fitted with STC 55 or higher acoustical doors. That level of sound control means loud sounds will be heard only faintly, or not at all, 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.



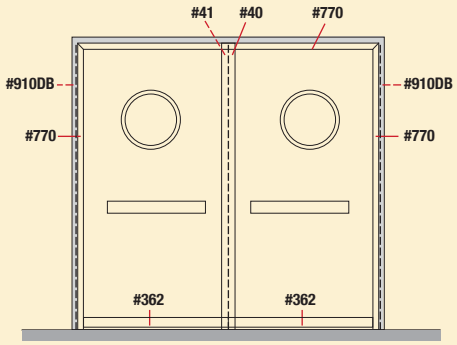


SOUND TRAP System #JD6S

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.

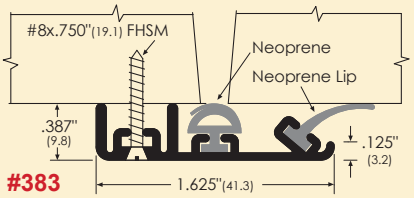


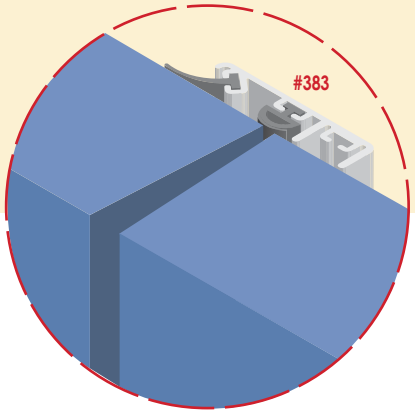
Product Code: JD6S



Elevation From Push Side of Door

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.





Note: AA = Clear Anodized
D = Dark Bronze Anodized

#200STC - Acoustical Louvers

#200STC
#200STC-G Galvanized

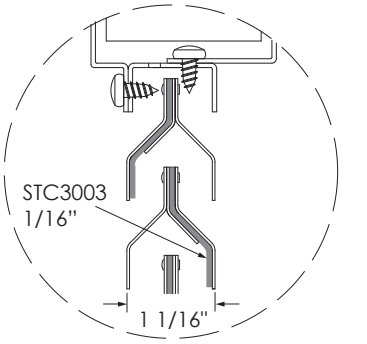
For use with:
1 3/8" and 1 3/4" doors

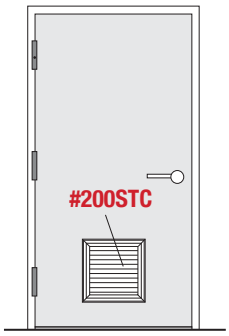
Construction:
Cold Rolled Steel
Frame 20 gauge. Blades 20 gauge
0.62" thick STC3003 sheet

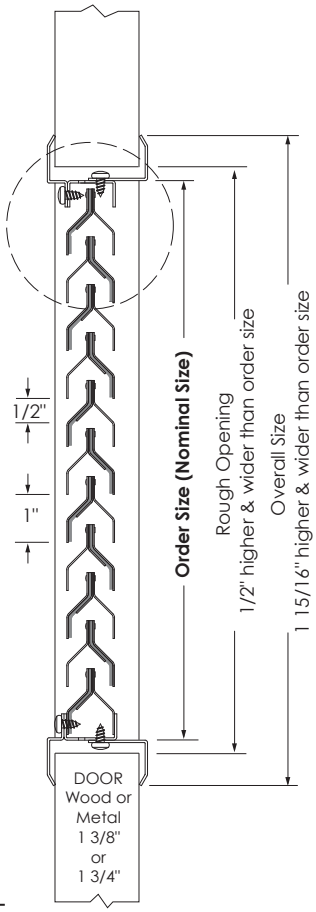
Finish:
Grey Powder-Coated primer.
Other colors available upon request.

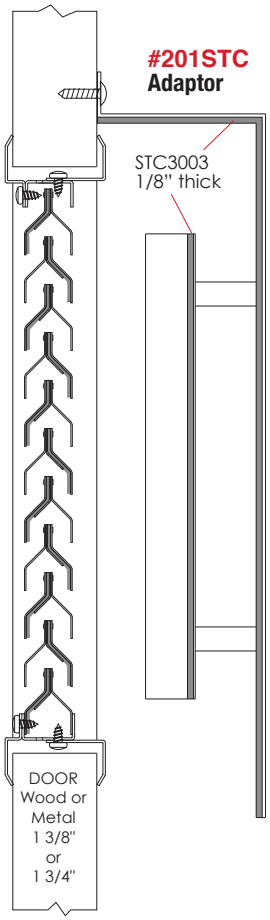
Tested Rating:	
Door with standard louver	0 STC
Door with 200STC louver	9 STC
Door with 200STC louver & 201 STC Adaptor	16 STC

Louver free flow area: 43%

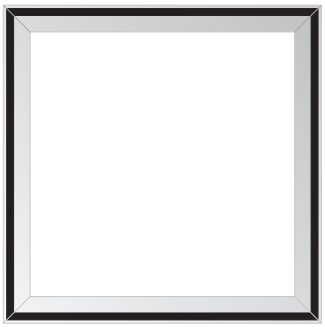






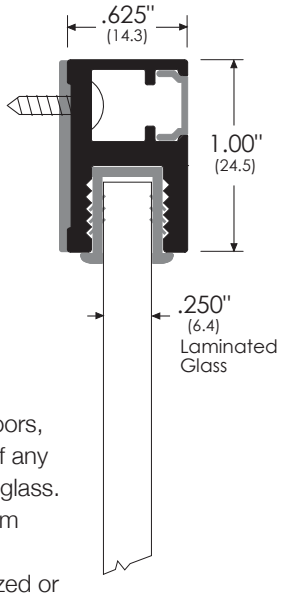


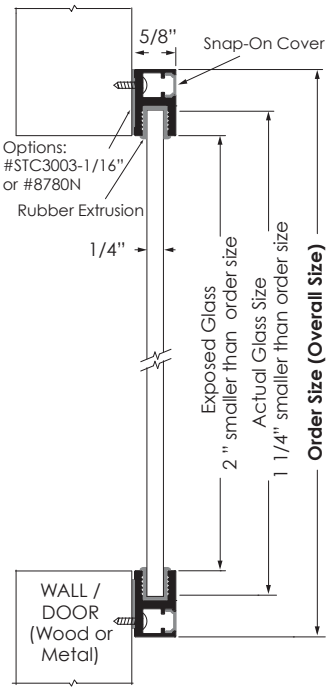
#8880 - Vision Lite for Doors, Walls and Acoustical Windows



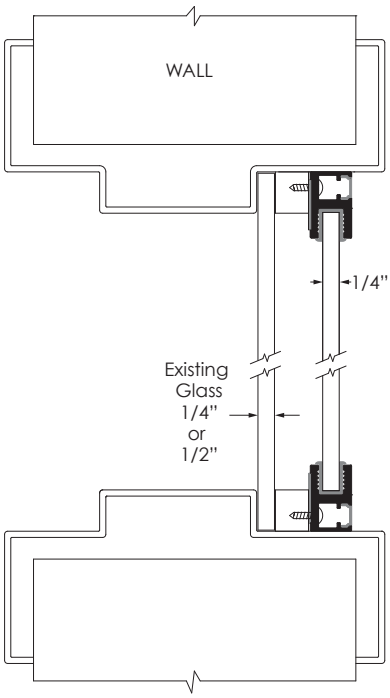
#8880AA
#8880D

To increase sound rating for doors, walls and acoustical windows of any thickness. Used with 1/4" thick glass. (Glass sold separately.) Aluminum extrusion frame with concealed screws. Available in clear anodized or dark anodized finish.



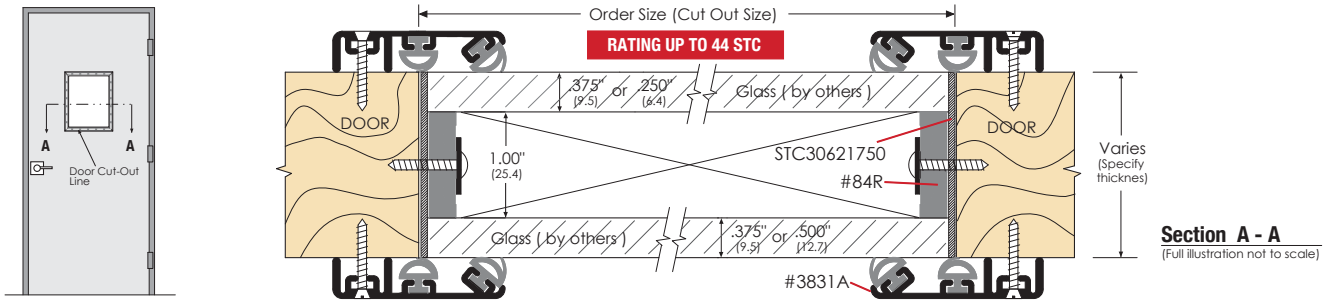


● **APPLICATION ON DOOR**
Surface mounted.

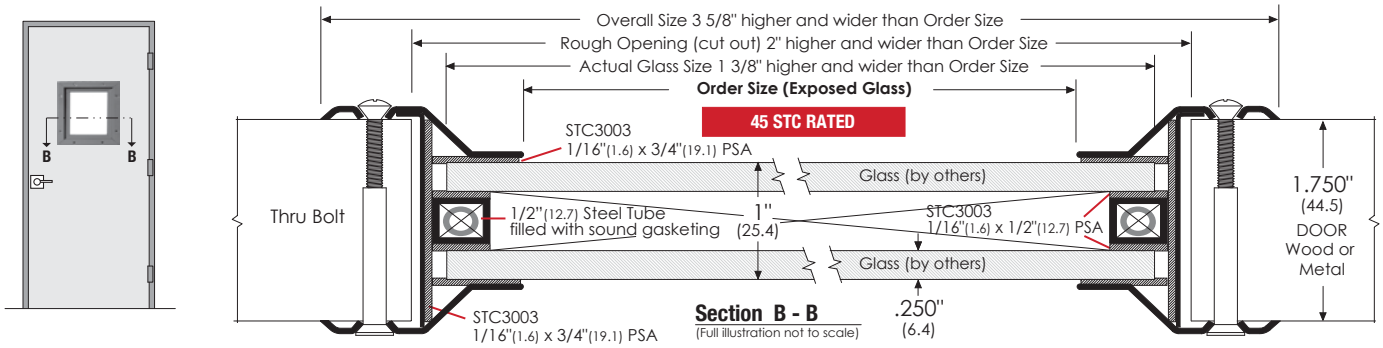


● **APPLICATION ON WINDOW**
Surface mounted on any edge of window frames.

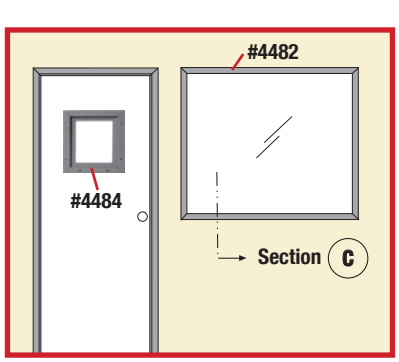
System #4483 - Vision Lite™ Sound Trap™ For Doors Over 1¾" Thick



System #4484 - Vision Lite™ Sound Trap™ For 1¾" Doors



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



SOUND TRAP SYSTEMS RATING

For Glass Partition Max. Opening 48" x 48"

GLASS TYPE (A)	AIR SPACE	GLASS TYPE (B)	STC RATING (Estimated)
1/4" Anneal	1 3/4"	1/8" Anneal	34 STC
1/4" Anneal	1 3/4"	1/4" Anneal	35 STC
1/4" Laminated	1 3/4"	1/8" Anneal	37 STC
1/4" Laminated	1 3/4"	1/4" Anneal	38 STC
1/4" Laminated	1 3/4"	1/4" Laminated	41 STC
3/8" Laminated	1 3/4"	3/8" Laminated	44 STC

Note: R = Rubber

Structural Acoustics

Sound-damping materials and products used to isolate or insulate structural elements in floors and walls perform a vital role in reducing vibrations to minimize sound transmission. Zero's structural acoustical solutions use proprietary extruded rubber formulated for optimal sound absorption and maximum durability.

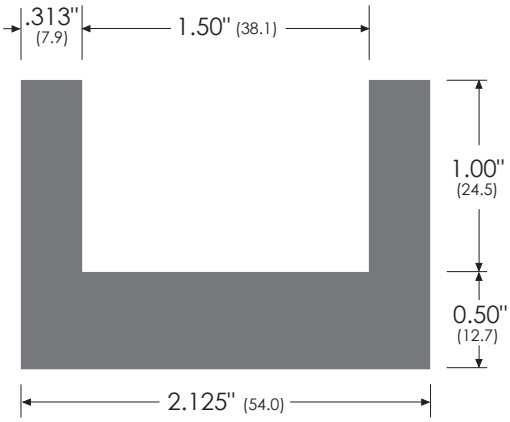
Use U-Shoe Suspension Isolators to "decouple" and acoustically isolate floor joists from the rest of the structure. Structural Silencing Tape can be applied directly to both floor joists and wall studs to absorb and dampen vibrations.

U-Shoe Suspension Isolators #1020R

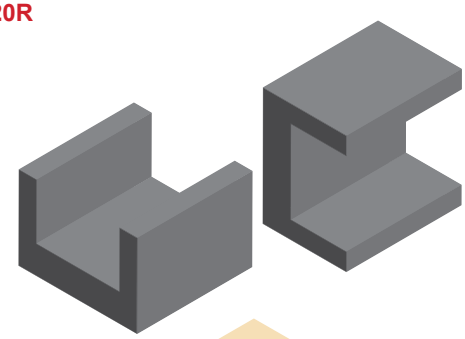
- "Damping shoes" support and acoustically isolate floor framing members, i.e., joists.
- Extruded EPDM rubber formulated to reduce or eliminate vibrations.
- Shaped to accommodate standard joint dimensions.

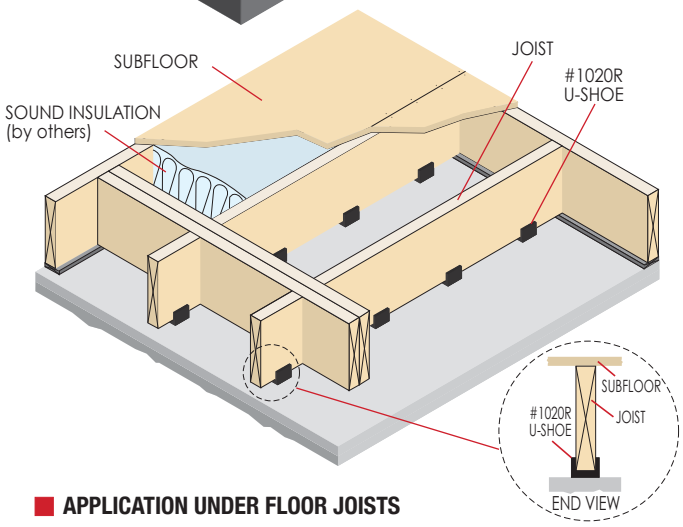
Dimension: 1.50"(38.1) wide x 2.125"(54.0) high x 2"(50.08) long

Color: Black



#1020R





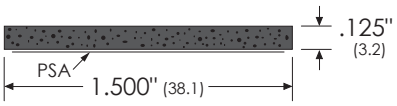
APPLICATION UNDER FLOOR JOISTS

Structural Silencing Tape #1050R

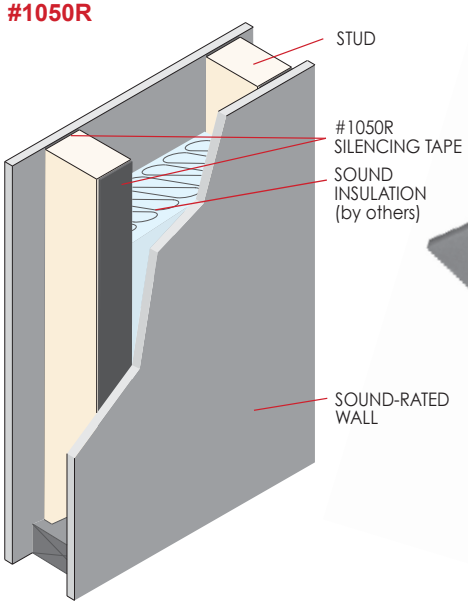
- Extruded low-density, high-elasticity neoprene rubber, self-adhesive one side.
- Absorbs and dampens vibrations.
- Designed for application to floor joists and wall studs.
- Apply to joists or studs, and install floor or wall construction as usual.
- Supplied in 75-foot coils.

Dimension: 1.500"(38.1) wide x .125"(3.2) thick

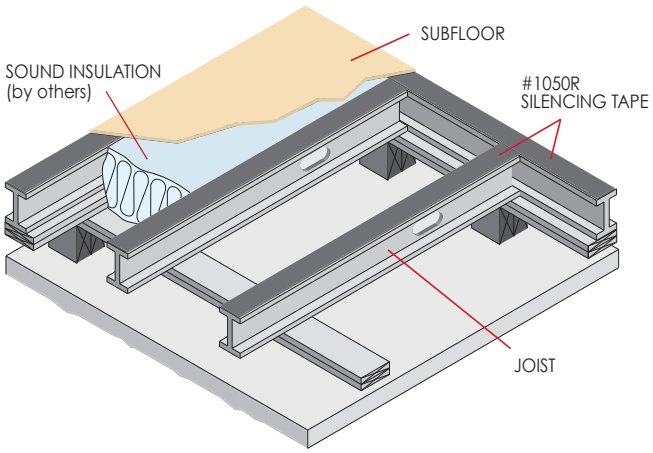
Color: Grey



#1050R



APPLICATION ON WALL STUDS

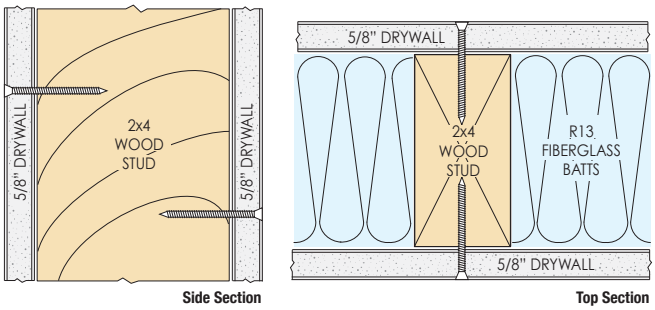


APPLICATION ON FLOOR JOISTS

Note: R = Rubber

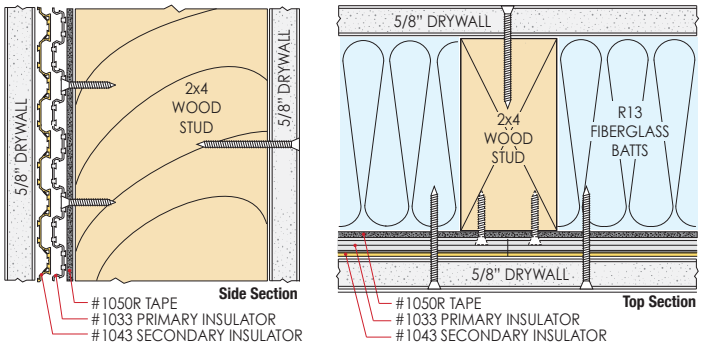
Standard Wall Construction

Tested System at **40 STC**



Zero Sound Trap Insulator System #1053

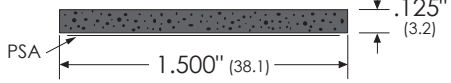
Tested System at **52 STC**

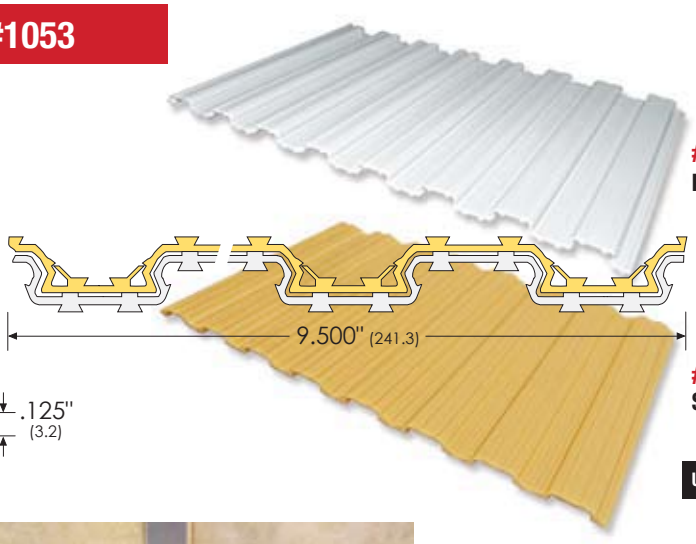


SOUND TRAP Insulator System #1053

The system contains 3 parts

#1050R
Self-Adhesive Tape, Grey color





#1033
Primary Insulator

#1043
Secondary Insulator

US Patent # 7726079

1 #1050R Self-Adhesive Tape, applied to the studs

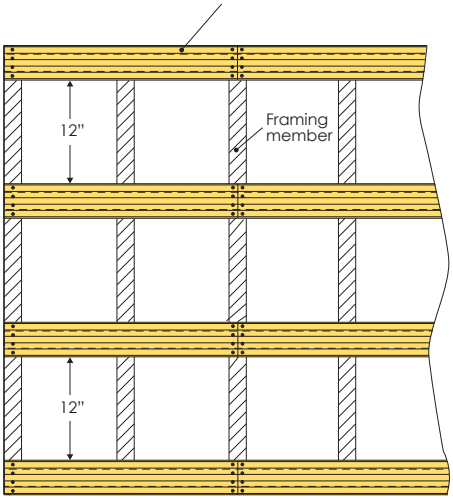
2 #1033 - Primary Insulator, fastened horizontally to the studs

3 #1033 - Primary Insulator

4 #1043 - Secondary Insulator, snapped on primary insulator

Wall Framing

#1033 / #1043



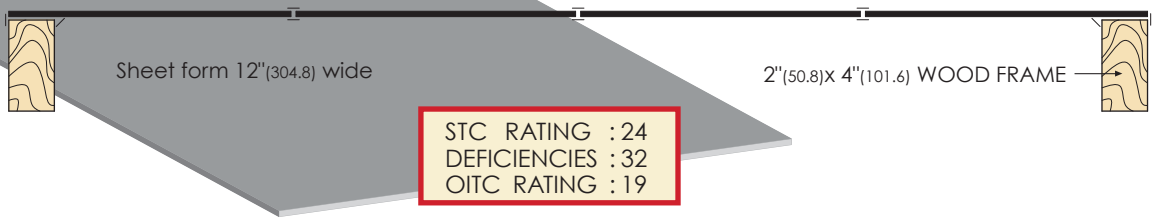
Fasten the drywall with 1 7/8" drywall screws, 12.00" O.C. per standard.

STC 3003 - 1/16"(1.5mm)

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)



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.

Available in standard black color sheets, size of 12"(304.8) x 96"(2438.4) or 36"(914.4) x 84"(2133.6) and in various thicknesses: 1/16"(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 for 1 3/4" thick doors.

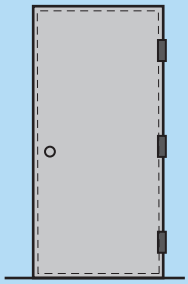
FOR METAL DOORS

Use two pieces of 1/4"(6.3) thick STC3003 for a rating of 48 STC.

FOR PANEL WOOD DOORS

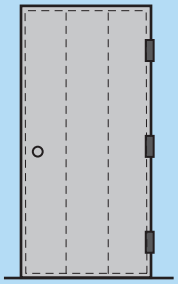
Use one sheet of 3/16"(4.8) thick as part of the core for a rating of 37 STC.

1 ¾"(44.5) Metal Door with Lead Lining

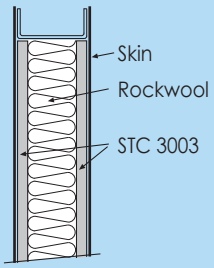


Weight : 360 lbs.
STC Rating : 56

1 ¾"(44.5) Metal Door with STC 3003 Lining



Weight : 280 lbs.
STC Rating : 55



Door section

A reliable and adjustable SHIELDING SYSTEM for continuous-use doors

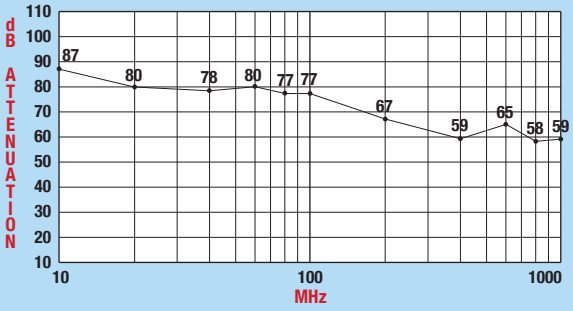
The **#1011 EMI/RFI Door Sealing System** consists of multiple head, jamb and saddle seals that block electromagnetic and radio frequency interference at door openings. The system has practical applications for laboratories, hospitals, brokerage houses, embassies, and rooms in companies using sensitive electronic equipment.

All aluminum parts have a chromate conversion coating 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.

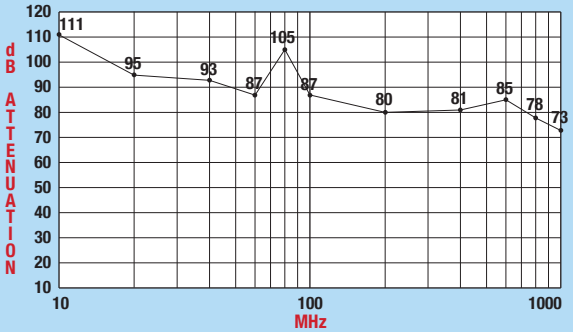
Tested in accordance with requirements of MIL-STD-285 (ATTENUATION MEASUREMENT FOR ENCLOSURES, ELECTROMAGNETIC SHIELDING) and NSA SPECIFICATIONS 73-2A performed for electric field attenuation over the frequency range 10 MHz to 1 GHz.

Certificate of compliance is available upon request.

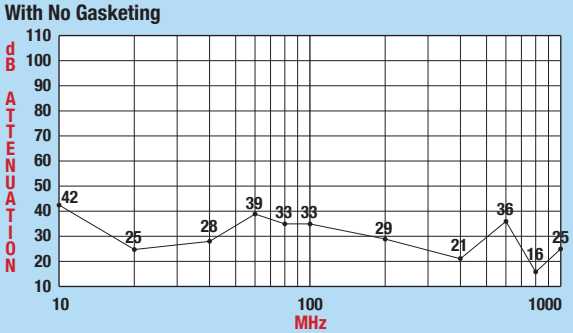
With #564B Threshold, #770EMI Head/Jamb, #365EMI Door Bottom, #950 Cam Hinge



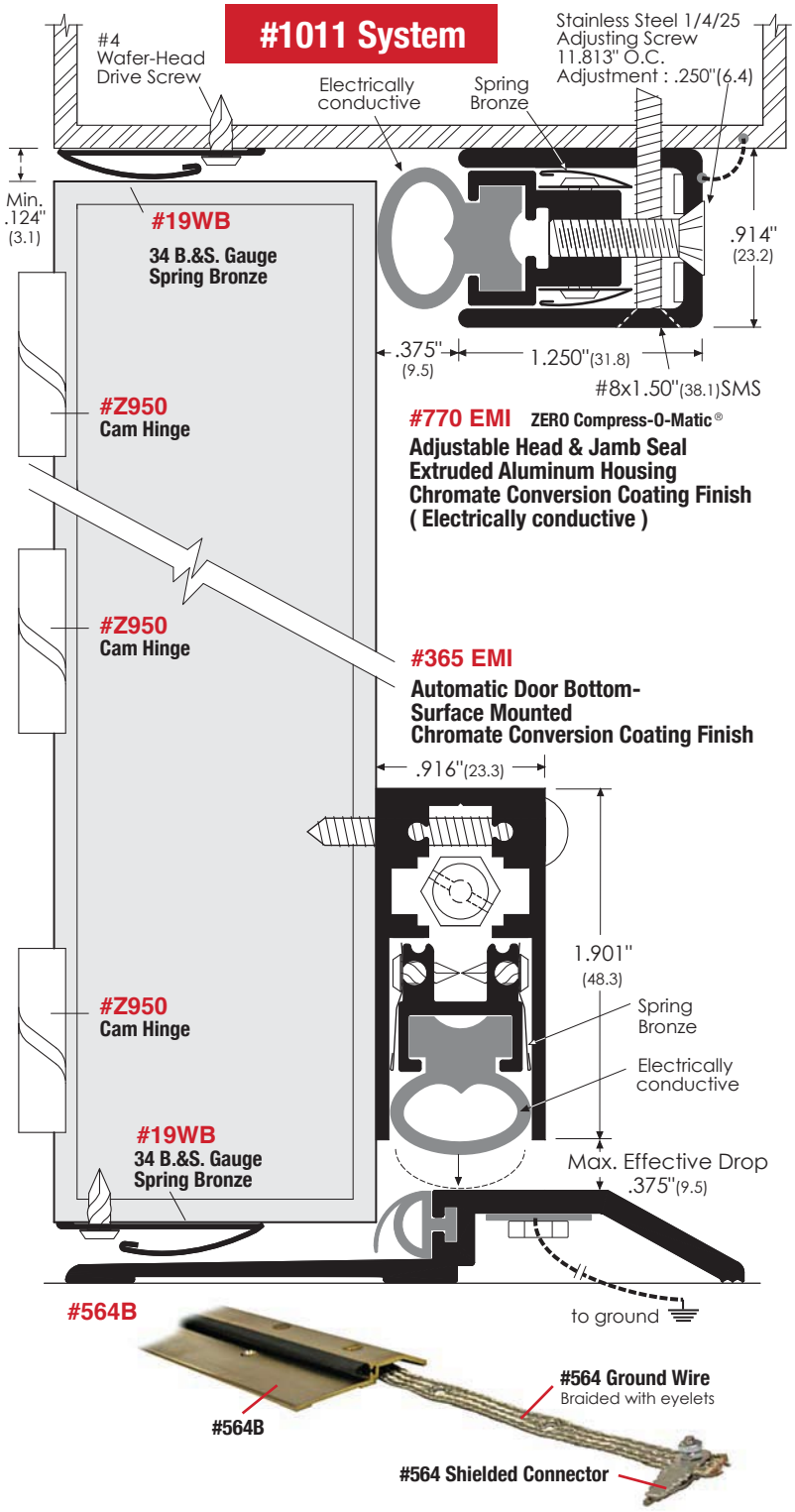
With #564B Threshold, #770EMI Head/Jamb, #19W Head/Jamb/Sill, #365EMI Door Bottom, #950 Cam Hinge



With No Gasketing



#1011 System



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

ZERO has designed and tested its systems against air, light, smoke, fire and sound 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.

Sound - Single Doors

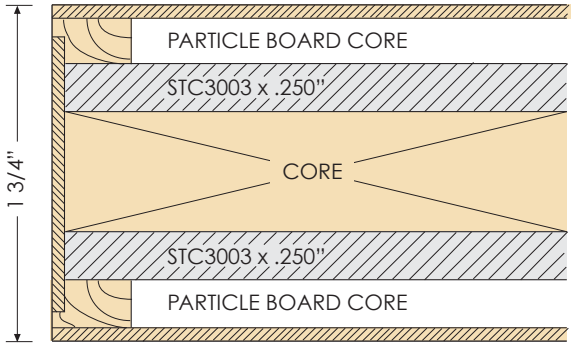
SYSTEM NO.	DOOR RATING	TYPE OF DOOR	HEAD & JAMB	DOOR BOTTOM	THRESHOLD	STC
STC1	55	METAL	3708 + 119WB	367	564B	53
STC2	55	METAL	770 + 119WB	367	564B	52
STC3	55	METAL	770 + 119WB	367	564B	51
STC4	55	METAL	170 + 119WB	367	564B	51
STC5	55	METAL	485 + 119WB	361	565B	49
1T	52	METAL	770	367	564A	47
9R	46	METAL	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
GP397	42	WOOD	475 + 119WB	369	None	41
7R	51	METAL	328	351	663	40
GP394	40	METAL	8145S + 119WB	369	None	40
10R	46	METAL	375	361	164	39
KD421	39	METAL	118FS	369	None	38
7J	51	METAL	475	362	None	37
12R	38	WOOD	188S	None	564A	37
SU299	38	WOOD	188S	None	564A	37
13R	38	WOOD	188S	254 + 839	544A	36
14R	38	WOOD	475	364 / 365	544A	36
15R	36	WOOD	188S + 119WB	None	564A	35
TR298	35	WOOD	188S	253	1685R	35
LG302	36	WOOD	188S	369	None	35
	52	None	None	None	None	21

Sound - Double Doors

SYSTEM NO.	HEAD & JAMB	DOOR BOTTOM	MEETING STILES	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+*

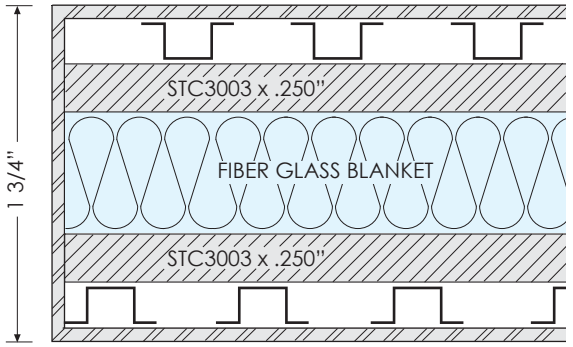
* TESTED WITH 37 STC DOOR (119WB FOR HINGE SIDE ONLY)

Acoustical Ratings Achieved with STC 3003 Sound Sheet



37 STC

WOOD DOOR



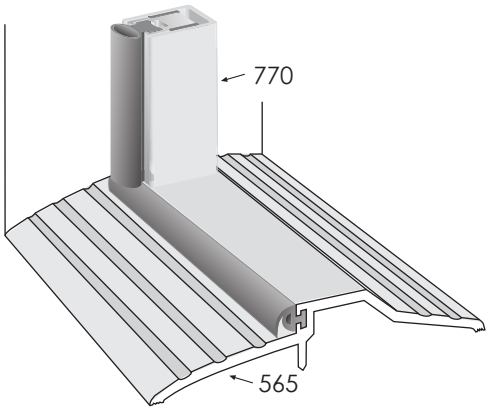
48 STC

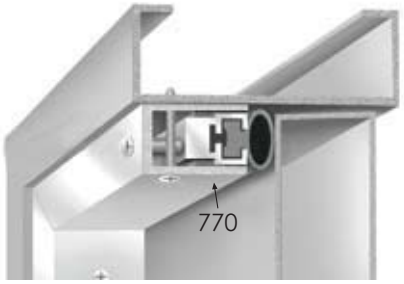
METAL DOOR

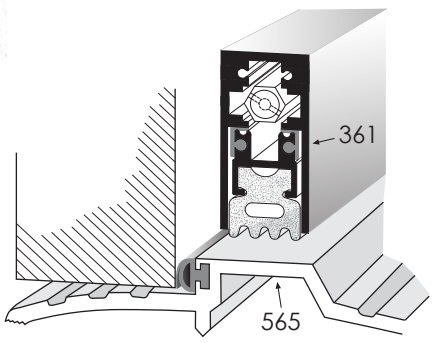
Higher ratings can be achieved with different construction method.

Applications

All types of openings with a sound-reduction requirement, including:
- high-performance sound blocking, such as recording and broadcast studios, theaters and concert halls, commercial and industrial factories.
- privacy and security needs, such as doctors' offices, corporate offices, school counseling offices, embassies and military.







System 1R

ZERO'S commitment to the highest standards throughout our more than 85-year history has made our name synonymous with QUALITY and PERFORMANCE in our industry. In projects where those standards are important, specifications for door and window gasketing stipulate "ZERO, no substitutes." We are also recognized for providing expert technical support for both the specification and application of all our products.

Our sales team has the expertise to assist facility owners, as well as architects and designers, with new construction, retrofit and maintenance requirements. ZERO sales representatives are well-equipped to demonstrate the benefits of using the correct products to minimize life-cycle costs — and the unique value in ZERO quality. ZERO products are sold worldwide.

Contact us for the name of a representative near you.

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