



LORIENT

Acoustic Sealing Systems For Door Assemblies



Architectural Seals



Company Overview

Lorient Australia is an acknowledged leader in sealing systems for door assemblies, embracing fire protection, smoke control, acoustic insulation, conservation of energy and weather exclusion.

The company also manufactures a complementary range of fire resistant glazing systems for doors, screens and partitions, together with intumescent fire and smoke resistant air transfer grilles and fire dampers for doors, walls, floors, ceilings and ducts.

Lorient products incorporate high standards in design, quality of manufacture, durability and come fully supported with extensive independent testing. The company has a well deserved reputation for innovation, technical ability and product quality through its extensive commitment to research and development.

Lorient Australia currently has operations in Sydney, Melbourne and Brisbane and has an extensive distribution network to cater for your requirements.

**LORIENT**

Architectural Seals

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Acoustic Sealing Principles Design Needs

Doors must have gaps between the leaves and the frame, and between the bottom of the door and the floor. These gaps allow doors to be opened and closed easily, and accommodate normal building movement. However, they also allow the leakage of sound, as well as fire, smoke, cold draughts, dust, rain/wind and light.

Sealing the gaps around a door is of prime importance when reducing the amount of sound entering or leaving a room. Wherever noise influences human activity, effective acoustic sealing is essential.

The Solution

Sealing the gaps around a door is paramount when reducing the amount of sound entering or leaving a room or building. Lorient Integrity™ Architectural Seals provide an excellent and proven barrier to airborne sound and help to ensure acoustic attenuation through the perimeter and bottom of the door is maximized.

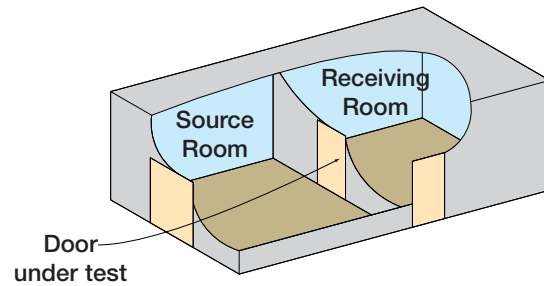
Lorient Integrity™ Architectural Seals also help isolate buildings from external noise, such as the noise generated by roads, railways, aircraft and plant and machinery for example. They also help to isolate rooms from airborne noise generated within a building, such as offices and factory premises, cinemas and theatres, and most essentially on unit entry doors in hotels and multi-occupancy residential buildings, in particular to contain noise in corridors and stairways.

Acoustic Testing

A series of comprehensive test programs to establish the airborne sound insulation performance of Lorient Integrity™ acoustic seals have been carried out at the Royal Melbourne Institute of Technology (RMIT) acoustic laboratory in Australia and Sound Research Laboratories (SRL) in the United Kingdom. Tests were conducted in accordance with:

AS1191.2002 - Acoustics - 'Method for laboratory measurement of airborne sound insulation of building elements'

ISO 140-3:1995 'Acoustics - Methods of measurement of sound insulation in buildings and of building elements. Part 3 'Laboratory measurements of airborne sound insulation of building elements'.



AS1276.1:1999 Acoustics- Rating of sound insulation in buildings & building elements, Part 1: 'Airborne sound Insulation'

ISO 717-1 1997 'Acoustics – Rating of sound insulation in buildings and of building elements', – Part 1: 'Airborne sound insulation'

Test Method

The Australian Standard AS1191.2002 and International Standard, ISO 140-3:1995 test methodology involves installing a door construction within a representative acoustic dividing wall that separates the reverberant source room and reverberant receiving room. Sound waves are generated in the source room and measurements of the sound pressure levels are made in both rooms at one-third octave intervals in the frequency range 100 to 5000 Hertz (Hz). Several microphones are used to obtain an average of the sound pressure level in each room.

From these measurements, the Sound Reduction Index (R) is derived. This is defined as the number of decibels (dB) by which sound energy, randomly incident on the test sample, is reduced in passing through it. The Sound Reduction Index is an expression of the laboratory sound transmission performance of a particular element or construction. It is a function of the mass, thickness, sealing method and installation, and is independent of the overall area of the sample. When a door is installed on site the actual sound insulation performance will depend on surface area: the larger the area the greater the sound energy transmitted, as well as the absorption in the receiving area.

Expression of Results

Perimeter and threshold seals have been tested in conjunction so that a combined performance is established, reflecting the requirements of actual practice. Results in the Lorient acoustic publications and associated system datasheets include both tabulated results and calculated weighted sound reduction indices (R_w) and STC.

Test Doors

In the comprehensive tests programs and subsequent evaluations conducted by RMIT, Sound Research Laboratories (SRL) and PKA Consulting, a wide range of Lorient Integrity™ acoustic seals have been tested and/or evaluated when fitted to various door types, as follows:

- 35mm solid core doors,
- 40mm solid core doors,
- Sound Lock Door systems and,
- 45mm high performance steel acoustic door.

Sound Lock Doors

PKA Acoustic Consulting

“The combination of a double door system to provide a sound lock achieves very high acoustic insulation. The addition of acoustic absorbent linings to the sound locks can also further enhance the sound insulation achieved. Experience has shown that a sound lock arrangement is a preferable way to achieve and maintain high acoustic performance with good trafficability compared to that of a single very high performance acoustic door.

The distance between the two sets of doors influences the performance of a sound lock. Some predictions are included within this brochure for a number of configurations. The assumption is based on the doors being approximately 1 metre apart and that there is no acoustic absorption between the doors. The addition of an acoustic absorbency in the form of carpet and acoustic wall linings can increase the values shown in the results by 6 to 8 dB.

Sometimes a double set of single doors is used to provide an increase in acoustic performance. These are typically used between hotel apartments. Our experience indicates that when the doors are on a common timber frame there is only limited gain in acoustic performance. It appears that the doors should be on separate frames that are not connected across the cavity wall and that the doors are at least 200mm apart. The performance of these doors is very difficult to predict.”

Test Conditions

The door leaves were side hung and fitted with standard operational clearances. The door assemblies were tested in three conditions:-

1. Un-caulked - with no seals present around the door perimeter and threshold,
2. Fully caulked - all perimeter and threshold gaps completely sealed with a high density putty to determine the maximum possible acoustic performance of the door assembly,
3. Un-caulked but with Lorient Integrity™ seals fitted to perimeter gaps and threshold.

By comparing the results obtained in the three conditions it is possible to determine the sound insulation contribution achieved by fitting Lorient Integrity™ seals to the door.

In many cases, the weakest point in the system is in fact the acoustic performance of the door leaf itself. This is highlighted when sealing system performance equals the performance of the fully caulked door.

For higher acoustic ratings a proprietary acoustic door panel construction is necessary. Lorient have conducted testing in partnership with major acoustic door manufacturers and we can assist you with finding a door solution for your specific requirements.

On-site Conditions

Whilst laboratory testing provides standardised performance data for the purposes of comparison, it is recommended that proposed site conditions should be considered also. Such factors as wall, floor and ceiling construction may influence anticipated performance. Furthermore, differences in door construction, materials, quality of workmanship and installation of the components could also affect the final result.

Certainly the expected frequency bands of the sound or noise which is to be controlled should be taken into account as this could diminish or improve performance in some circumstances.

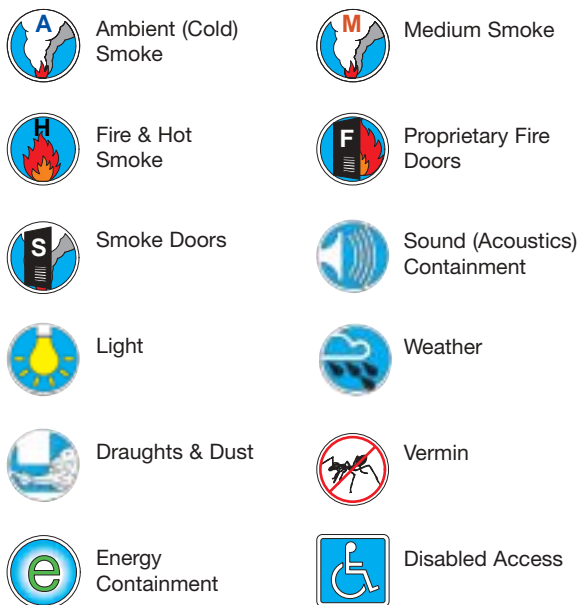
It is commonly accepted in the industry, that on-site test conditions are often 2 to 5 dB lower than laboratory testing. Most of Lorient's test results provide a clear safety factor to the proposed BCA airborne sound insulation requirements which provides confidence in their performance when fitted in the field.

Other Functions

Many doors will have more than one function. For example, they must provide acoustic insulation and fire/smoke protection, whilst at the same time allowing free passage. In specifying door seals there is a need to balance these requirements.

An overriding requirement is obviously that seals should not impede the normal use of the door. For example, the door bottom or threshold seal in a public building should not impede the passage of wheelchairs.

In addition to acoustic insulation, many Lorient Integrity™ acoustic seals provide protection against smoke, fire, weather, draughts, dust, light and even insects. Combinations offering such protection, and those suitable for wheelchair users, are indicated by icons on each page. The seal combinations described in the Lorient literature have been selected to provide a good balance between acoustic performance and other essential functions.



Other Factors Affecting Performance

Door hardware

Interruption of acoustic seals at hinges, locks and strike plates will reduce acoustic performance significantly and impact on other types of containment, for example: smoke leakage performance where BCA smoke leakage performance will require seals to be continuous, particularly at hinge positions.

Glazing

Glazed panels may be incorporated in doors without a major loss of acoustic performance provided that thick enough glass is used, the size

of the panel is limited and a suitable glazing method is used.

Opening and closing forces

It is crucial that the sealing system fitted to a door assembly should have minimal effect on the opening and closing operation of the assembly. Some interference is unavoidable but this needs to be held to the lowest possible level. All Lorient sealing systems are designed with this consideration in mind. Importantly, they are also acoustically tested in their everyday operational mode.

Under laboratory test conditions, it is very easy to achieve deceptively more impressive results, by resorting to the wedging of a door leaf in its frame with the seals in an extreme, highly compressed state. The operation of such a door in everyday service, however, would be untenable. All information in this manual has been derived from full size, fully operational door assemblies.

Further Information

Advice in this manual is based on the use of commonly used architectural door assembly designs, not specifically engineered for outstanding acoustic performance.

Where very high sound insulation performance is required, consultation with the door manufacturer is recommended as there is a limit to the extent which seals alone can improve the performance of a given door assembly.

For further information about fire and smoke containment and their acoustic performance, please consult our technical department for advice.

Note: Recommendations as to methods, use of materials and construction details are based on the experience and knowledge of Lorient and are given in good faith as a general guide and a service to designers, contractors and manufacturers.

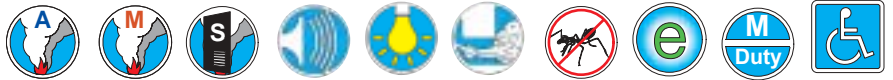
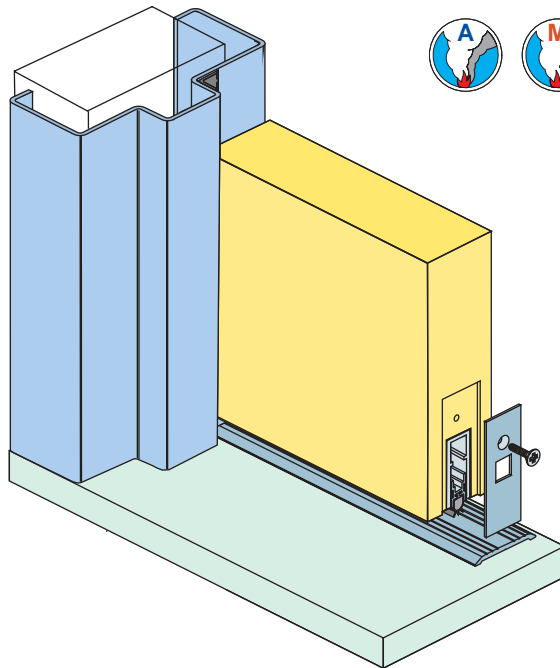
Tested Systems

You will find on the following pages various systems that have been either tested or assessed to comply with various standards outlined earlier. With special thanks to RMIT testing laboratories and PKA Acoustic Consulting.



LE1212 and IS8010si

Single Leaf / Single Swing



	35mm		40mm	
Door Type	STC	Rw	STC	Rw
No Seals	20	20	20	21
Fully Caulked	31	30	33	32

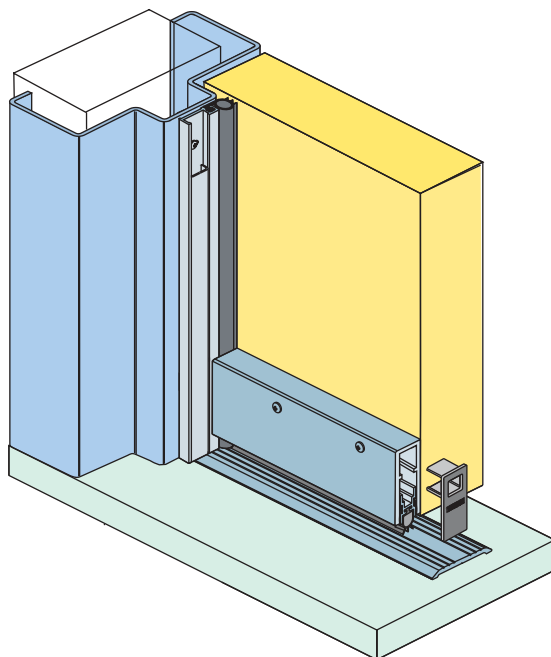
* Fully Mortised

Door Type	Centre Frequency (Hz) / STL (dB)																	STC	Rw	
	100	125	160	200	250	315	400	500	630	800	1k	1.25	1.6	2k	2.5	3.15	4k			5k
35mm Solid Core	18	24	22	26	23	25	24	24	26	26	28	30	32	33	35	36	38	40	29	29
40mm Solid Core	22	24	27	30	27	26	28	27	27	27	28	32	34	35	36	39	41	41	31	31

Lorient recommend the above and below acoustic systems be used in conjunction with an IS4130 threshold plate to achieve the optimum acoustic performance.

IS7025 and IS8011si

Single Leaf / Single Swing



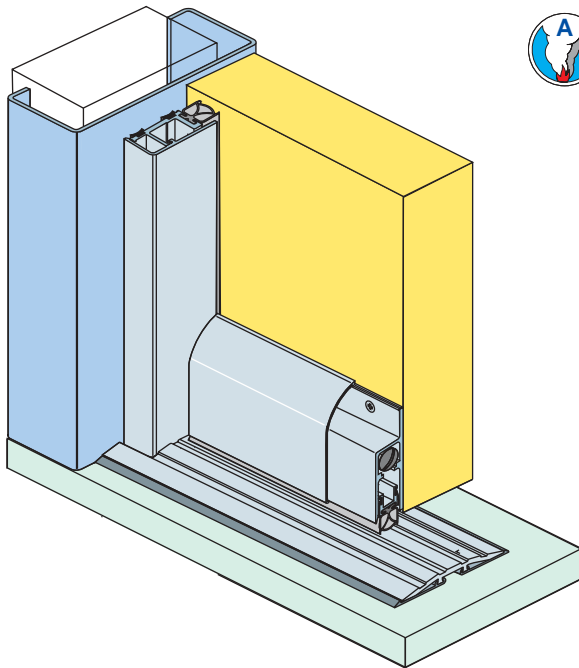
	35mm		40mm	
Door Type	STC	Rw	STC	Rw
No Seals	20	20	20	21
Fully Caulked	31	30	33	32

* Faced Fixed

Door Type	Centre Frequency (Hz) / STL (dB)																	STC	Rw	
	100	125	160	200	250	315	400	500	630	800	1k	1.25	1.6	2k	2.5	3.15	4k			5k
35mm Solid Core	19	24	22	26	23	25	24	24	26	27	27	29	31	34	36	39	39	40	29	29
40mm Solid Core	21	28	28	32	33	33	33	33	31	28	27	30	32	34	37	40	40	41	32	32

IS7190si and IS8091si or IS8020si

Single Leaf / Single Swing



	35mm		40mm	
Door Type	STC	Rw	STC	Rw
No Seals	20	20	20	21
Fully Caulked	31	30	33	32

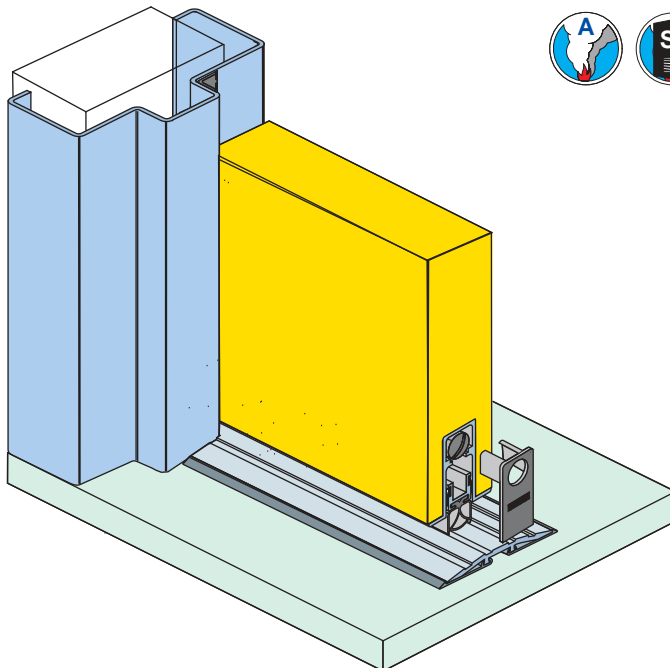
* Faced Fixed

Door Type	Centre Frequency (Hz) / STL (dB)																	STC	Rw	
	100	125	160	200	250	315	400	500	630	800	1k	1.25	1.6	2k	2.5	3.15	4k			5k
35mm Solid Core	19	24	22	26	23	25	24	24	26	26	28	29	31	34	37	38	34	36	29	29
40mm Solid Core	20	24	27	30	27	26	28	27	27	27	28	30	32	35	38	39	35	37	31	30

Lorient recommend the above and below acoustic systems be used in conjunction with an IS4010 threshold plate to achieve the optimum acoustic performance.

LE1515 and IS8100si

Single Leaf / Single Swing



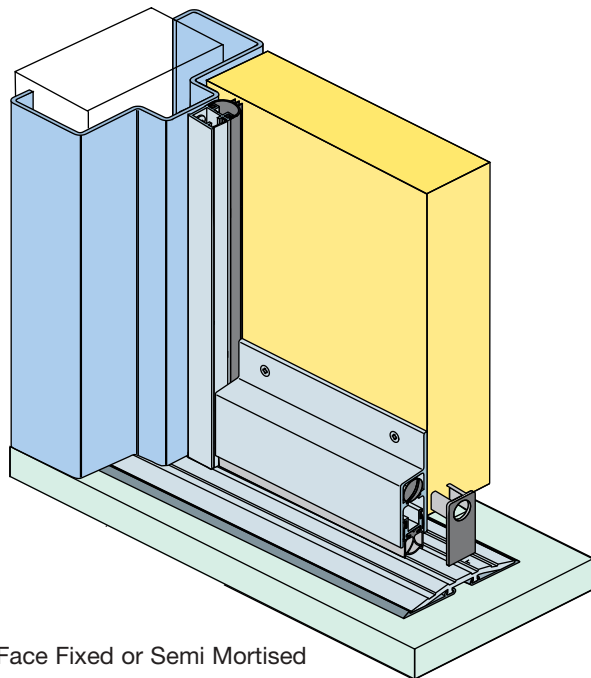
	35mm		40mm	
Door Type	STC	Rw	STC	Rw
No Seals	20	20	20	21
Fully Caulked	31	30	33	32

* Fully Mortised

Door Type	Centre Frequency (Hz) / STL (dB)																	STC	Rw	
	100	125	160	200	250	315	400	500	630	800	1k	1.25	1.6	2k	2.5	3.15	4k			5k
35mm Solid Core	18	23	21	25	22	24	23	23	25	26	27	29	32	33	35	36	38	38	29	29
40mm Solid Core	20	24	27	30	27	26	28	27	27	28	30	33	34	35	36	39	39	40	32	32

IS7080 and IS8090si

Single Leaf / Single Swing



	35mm		40mm	
Door Type	STC	Rw	STC	Rw
No Seals	20	20	20	21
Fully Caulked	31	30	33	32

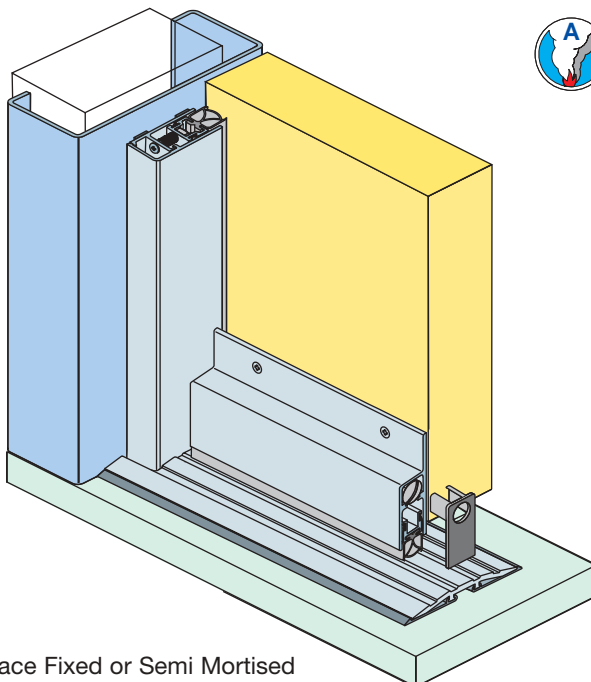
* Face Fixed or Semi Mortised

Door Type	Centre Frequency (Hz) / STL (dB)																	STC	Rw	
	100	125	160	200	250	315	400	500	630	800	1k	1.25	1.6	2k	2.5	3.15	4k			5k
35mm Solid Core	19	23	21	26	23	25	24	24	26	26	29	32	35	37	40	41	43	44	30	30
40mm Solid Core	21	23	25	29	27	26	28	27	27	27	29	34	36	38	41	42	44	45	32	32

Lorient recommend the above and below acoustic systems be used in conjunction with an IS4010 threshold plate to achieve the optimum acoustic performance.

IS7090si and IS8090si

Single Leaf / Single Swing



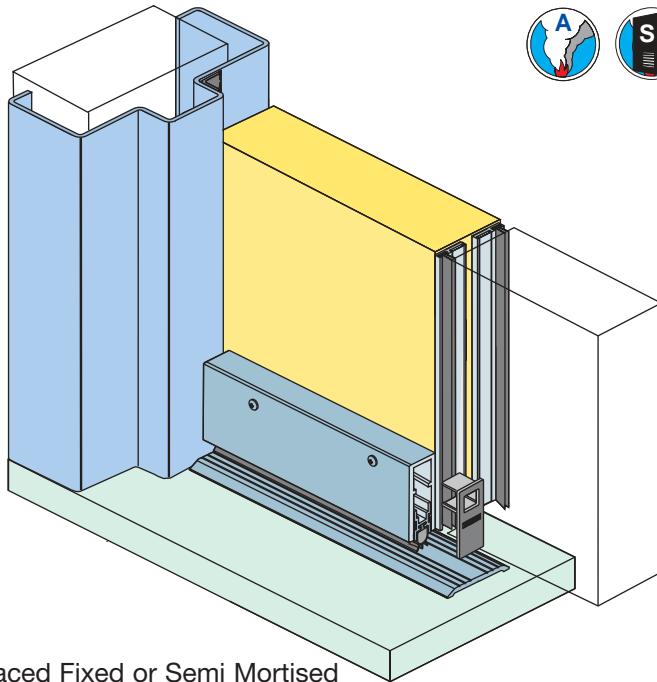
	35mm		40mm	
Door Type	STC	Rw	STC	Rw
No Seals	20	20	20	21
Fully Caulked	31	30	33	32

* Face Fixed or Semi Mortised

Door Type	Centre Frequency (Hz) / STL (dB)																	STC	Rw	
	100	125	160	200	250	315	400	500	630	800	1k	1.25	1.6	2k	2.5	3.15	4k			5k
35mm Solid Core	19	24	22	26	23	25	24	24	26	26	28	29	31	34	37	38	34	36	29	29
40mm Solid Core	20	24	27	30	27	26	28	27	27	27	28	30	32	35	38	39	35	37	31	30

LE1212, IS7070si & IS8011si

Double Leaf / Single Swing



	35mm		40mm	
Door Type	STC	Rw	STC	Rw
No Seals	20	20	20	21
Fully Caulked	31	30	33	32

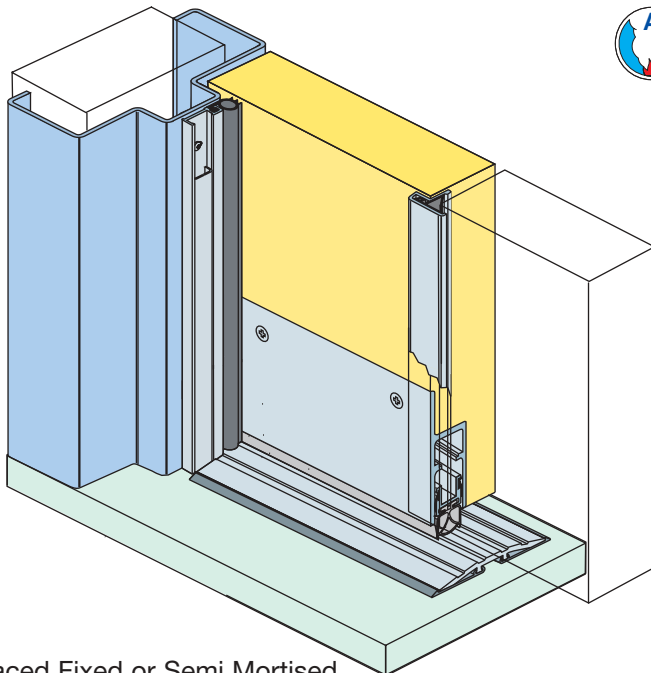
* Faced Fixed or Semi Mortised

Door Type	Centre Frequency (Hz) / STL (dB)																STC	Rw		
	100	125	160	200	250	315	400	500	630	800	1K	1.25	1.6	2K	2.5	3.15			4K	5K
35mm Solid Core	19	24	22	25	23	24	24	24	26	27	29	31	33	35	36	35	36	37	30	30
40mm Solid Core	21	24	26	28	27	25	28	27	27	28	29	32	34	36	36	36	36	38	31	31

Lorient recommend the above acoustic systems be used in conjunction with an IS4130 threshold plate and the below acoustic system be used together with an IS4010 threshold plate to achieve the optimum acoustic performance.

IS7025, IS7061 & IS8090si

Double Leaf / Single Swing



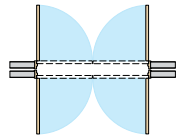
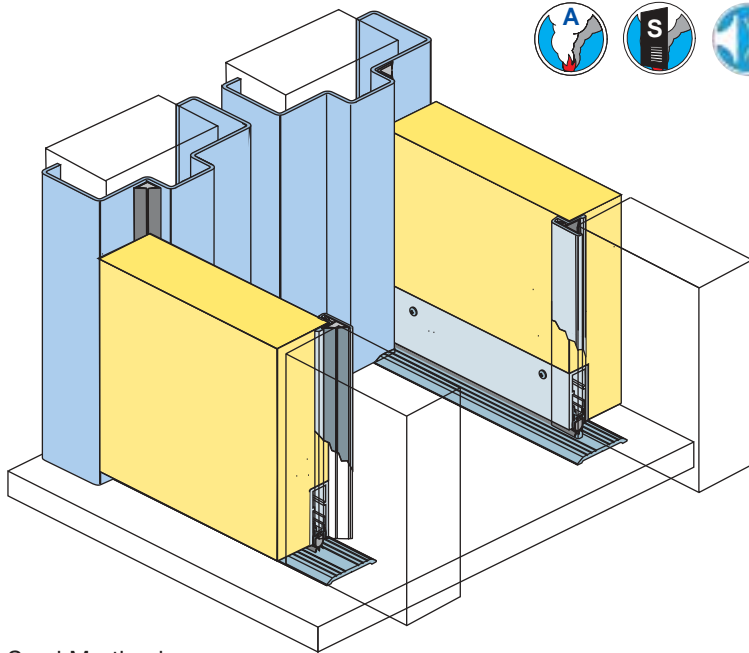
	35mm		40mm	
Door Type	STC	Rw	STC	Rw
No Seals	20	20	20	21
Fully Caulked	31	30	33	32

* Faced Fixed or Semi Mortised

Door Type	Centre Frequency (Hz) / STL (dB)																STC	Rw		
	100	125	160	200	250	315	400	500	630	800	1K	1.25	1.6	2K	2.5	3.15			4K	5K
35mm Solid Core	20	24	22	26	23	25	24	24	26	27	30	32	34	35	37	37	39	39	31	31
40mm Solid Core	22	24	26	29	27	25	28	27	27	28	29	33	34	36	38	39	39	39	31	31

LE1212, IS7061 & IS8011si

Double Leaf / Single Swing



Note: Single leaf door configuration will achieve the same results.

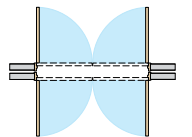
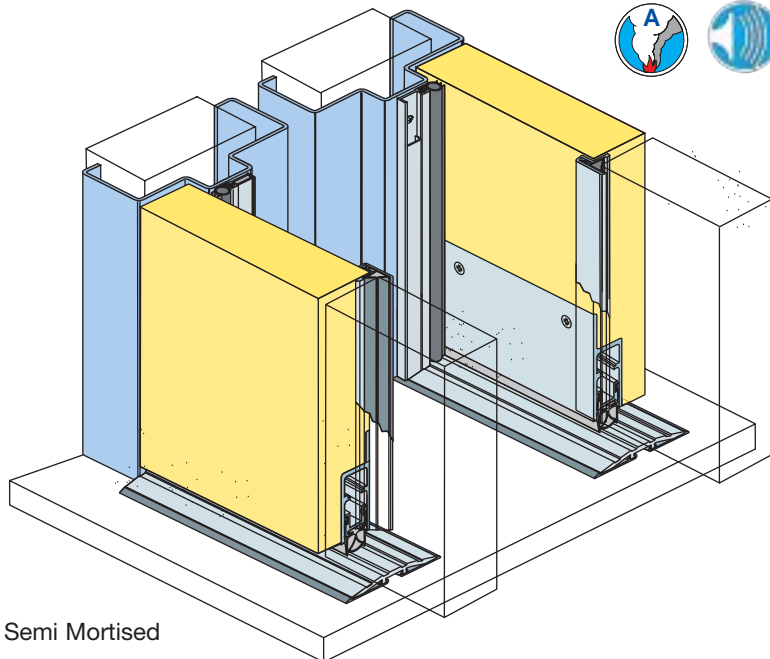
* Semi Mortised

Door Type	Centre Frequency (Hz) / STL (dB)																		STC	Rw
	100	125	160	200	250	315	400	500	630	800	1K	1.25	1.6	2K	2.5	3.15	4K	5K		
35mm Solid Core	22	28	27	33	31	34	35	36	40	43	48	51	55	59	61	64	66	67	42	42
40mm Solid Core	23	28	31	35	35	33	39	40	42	45	50	57	58	60	60	57	58	60	45	45

Lorient recommend the above acoustic system be used in conjunction with an IS4130 threshold plate and the below acoustic system be used together with an IS4010 threshold plate to achieve the optimum acoustic performance.

IS7025, IS7061 & IS8090si

Double Leaf / Single Swing



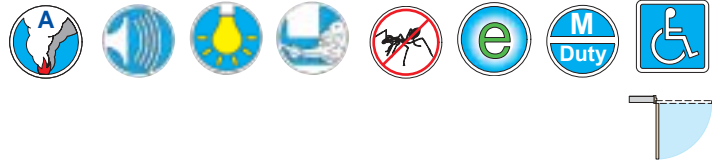
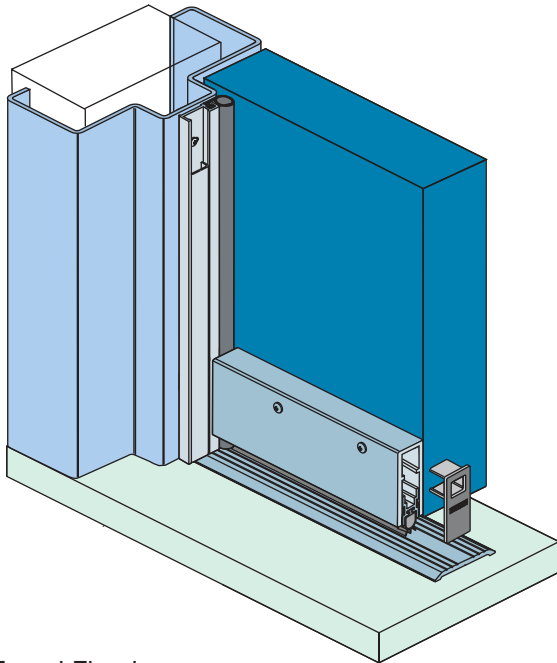
Note: Single leaf door configuration will achieve the same results.

* Semi Mortised

Door Type	Centre Frequency (Hz) / STL (dB)																		STC	Rw
	100	125	160	200	250	315	400	500	630	800	1K	1.25	1.6	2K	2.5	3.15	4K	5K		
35mm Solid Core	22	28	27	33	31	34	35	36	40	43	49	53	57	60	63	64	67	67	42	42
40mm Solid Core	24	28	33	38	36	36	40	40	41	44	49	54	57	61	65	66	67	66	46	45

**IS7110 & IS8011si**

Single Leaf / Single Swing



	45mm	
Door Type	STC	Rw
No Seals	20	21
Fully Caulked	52	50

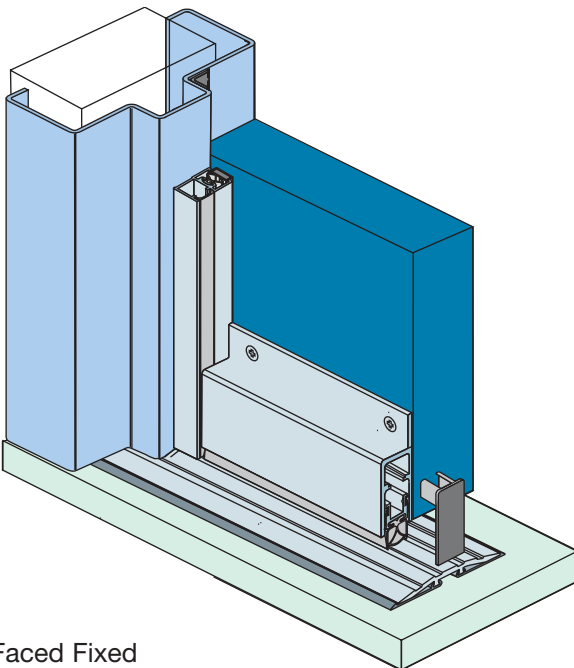
* Faced Fixed

Door Type	Centre Frequency (Hz) / STL (dB)																STC	Rw		
	100	125	160	200	250	315	400	500	630	800	1K	1.25	1.6	2K	2.5	3.15			4K	5K
45mm Acoustic Door	18	29	34	43	44	49	47	47	47	45	42	39	38	40	43	47	46	41	42	42

Lorient recommend the above acoustic system be used in conjunction with an IS4130 threshold plate and the below acoustic system be used together with an IS4010 threshold plate to achieve the optimum acoustic performance.

LE1515, IS6030 & IS8090si

Single Leaf / Single Swing



	45mm	
Door Type	STC	Rw
No Seals	20	21
Fully Caulked	52	50

* Faced Fixed

Door Type	Centre Frequency (Hz) / STL (dB)																STC	Rw		
	100	125	160	200	250	315	400	500	630	800	1K	1.25	1.6	2K	2.5	3.15			4K	5K
45mm Acoustic Door	21	29	37	42	43	47	44	43	42	42	43	44	41	40	42	44	45	44	42	42

Duty	Sealing System	Centre Frequency (Hz) / STL (dB)																	STC	RW
		100	125	160	200	250	315	400	500	630	800	1k	1.3	1.6	2k	2.5	3.2	4k		

40mm Single Door in Single Frame

	No Seals	16	17	19	20	22	21	21	21	22	21	22	23	24	20	17	17	19	18	20	21
	*Fully Caulked (with mastic)	22	24	28	30	27	26	28	27	27	28	31	34	37	38	41	43	44	46	33	32

Medium Duty	LE1212 + IS8011si (FF)	21	26	29	31	31	31	32	31	29	27	28	31	34	35	36	39	40	41	32	32
	IS7025 + IS8011si (FF)	21	28	28	32	33	33	33	33	31	28	27	30	32	34	37	40	40	41	32	32
	IS7080 + IS8011si (FF)	23	27	28	31	32	33	33	33	30	27	27	29	32	34	37	38	38	40	32	32
	LE1212 + IS8011si (SM)	22	24	27	30	27	26	28	27	27	27	28	32	34	35	36	39	41	41	31	31
	IS7025 + IS8011si (SM)	21	24	27	30	27	26	28	27	27	28	27	30	32	35	37	40	40	41	31	30
	IS7080 + IS8011si (SM)	22	24	27	30	27	26	28	27	27	27	28	29	33	35	37	39	38	41	31	30
	LE1212 + IS8010 (FM)	22	24	27	30	27	26	28	27	27	27	28	32	34	35	36	39	41	41	31	31
	IS7025 + IS8010si (FM)	21	24	27	30	27	26	28	27	27	28	27	30	32	35	37	40	40	41	31	30
IS7080 + IS8010si (FM)	22	24	27	30	27	26	28	27	27	28	29	33	35	37	39	38	41	41	31	30	

Heavy Duty	LE1515 + IS8090si (FF / SM)	21	24	27	30	27	26	28	27	27	28	30	33	35	35	36	39	40	40	32	31
	IS7080 + IS8090si (FM/SM)	21	23	25	29	27	26	28	27	27	27	29	34	36	38	41	42	44	45	32	32
	IS7090si + IS8090si (FF / SM)	20	24	27	30	27	26	28	27	27	27	28	30	32	35	38	39	35	37	31	30
	IS7190si + IS8090si (FF / SM)	20	24	27	30	27	26	28	27	27	27	28	30	32	35	38	39	35	37	31	30
	LE1515 + IS8091si / IS8020si (FF)	21	24	27	30	27	26	28	27	27	28	30	33	35	35	36	39	40	40	32	31
	IS7090si + IS8091si / IS8020si (FF)	20	24	27	30	27	26	28	27	27	27	28	30	32	35	38	39	35	37	31	30
	IS7190si + IS8091si / IS8020si (FF)	20	24	27	30	27	26	28	27	27	27	28	30	32	35	38	39	35	37	31	30
	LE1515 + IS8100si (FM)	20	24	27	30	27	26	28	27	27	28	30	33	34	35	36	39	39	40	32	32
	IS7090si + IS8100si (FM)	19	24	27	30	27	26	28	27	27	27	28	30	32	35	38	39	35	37	30	30
IS7190si + IS8100si (FM)	19	24	27	30	27	26	28	27	27	27	28	30	32	35	38	39	35	37	30	30	

40mm Double Doors (Pairs)

	No Seals	16	17	19	20	22	21	21	21	22	21	22	23	24	20	17	17	19	18	20	21
	*Fully Caulked (with mastic)	22	24	28	30	27	26	28	27	27	28	31	34	37	38	41	43	44	46	33	32

Medium Duty	LE1212 + IS8011si + IS7061	21	24	24	27	26	24	27	27	27	28	30	34	35	36	35	34	34	35	31	31
	LE1212 + IS8011si + IS7070si	21	24	26	28	27	25	28	27	27	28	29	32	34	36	36	36	36	38	31	31
	LE1212 + IS8011si + IS7060	22	24	24	28	26	24	27	27	27	28	30	34	34	31	32	32	33	36	30	30

Heavy Duty	LE1515 + IS8090si + IS7061	22	24	26	29	27	26	28	27	27	28	30	34	35	35	37	38	39	39	32	31
	LE1515 + IS8090si + IS7070si	21	24	26	28	27	25	28	27	27	28	30	34	35	35	36	36	36	37	32	31
	LE1515 + IS8090si + IS7060	22	24	26	30	27	26	28	27	27	28	30	33	34	31	33	34	34	38	31	30
	IS7025 + IS8090si + IS7061	22	24	26	29	27	25	28	27	27	28	29	33	34	36	38	39	39	39	31	31
	IS7025 + IS8090si + IS7070si	21	24	26	28	27	25	28	27	27	28	29	33	34	36	38	36	36	37	31	31
	IS7025 + IS8090si + IS7060	22	24	26	30	27	25	28	27	27	28	29	32	33	31	33	34	34	37	30	30

40mm Sound Lock Doors

Medium Duty	LE1212 + IS8011si + IS7061	23	28	31	35	35	33	39	40	42	45	50	57	58	60	60	57	58	60	45	45
	LE1212 + IS8011si + IS7070si	23	28	33	37	36	35	40	40	42	44	48	54	57	60	62	61	62	64	45	45
	LE1212 + IS8011si + IS7060	24	28	30	36	35	33	40	40	42	45	50	56	56	53	55	55	56	60	45	45

Heavy Duty	LE1515 + IS8090si + IS7061	24	28	33	38	36	36	40	40	42	44	49	56	58	60	62	65	67	66	46	45
	LE1515 + IS8090si + IS7070si	23	28	33	37	36	36	40	40	42	45	49	56	58	60	62	61	61	63	46	45
	LE1515 + IS8090si + IS7060	24	28	33	39	37	36	40	40	42	45	49	56	56	52	56	57	64	64	46	46
	IS7025 + IS8090si + IS7061	24	28	33	38	36	36	40	40	41	44	49	54	57	61	65	66	67	66	46	45
	IS7025 + IS8090si + IS7070si	23	23	33	37	36	36	40	40	41	44	49	54	57	61	64	61	61	63	46	45
	IS7025 + IS8090si + IS7060	24	28	33	39	37	36	40	40	41	44	49	54	55	53	57	58	57	64	46	45

* A fully caulked door represents the theoretical maximum a door can achieve.

Lorient Australia has carried out an extensive testing program of door panels and door seals at the N.A.T.A. accredited Acoustic Facilities of RMIT University Melbourne. Tests were performed in accordance with Australian Standard AS1191-2002 and ISO 140:3-1995. The door systems tested included standard commercially available 35mm and 40mm (2040mm x 820mm) solid core timber doors, plus a high performance 45mm proprietary steel acoustic door, all fitted in steel frames.

Definitions

FF: Face Fixed SM: Semi-Mortised FM: Fully-Mortised

Medium Duty: seals designed for use in commercial buildings with medium traffic thoroughfare.

Heavy Duty: seals designed for use in buildings with heavy traffic thoroughfare.

Silicone Gaskets

Substitution of silicone gaskets (si) where available will not detrimentally affect acoustic performance of the tested systems.

Smoke Sealing

If seals are to be used on smoke doors, the Lorient silicone gaskets will fulfill the current BCA deemed to satisfy requirements of C.3.4 (200°C for 30 minutes). However recent testing to AS1530.7 (Smoke control doors and shutter assemblies: *Ambient and medium temperature leakage test procedure*) has demonstrated that doors subjected to these conditions are susceptible to significant warpage, it is highly recommended that our technical department is contacted and appropriate sealing systems selected.

Duty	Sealing System	Centre Frequency (Hz) / STL (dB)																	STC	RW
		100	125	160	200	250	315	400	500	630	800	1k	1.3	1.6	2k	2.5	3.2	4k		

35mm Single Door in Single Frame

	No Seals	13	17	17	19	20	20	20	20	20	21	21	22	22	20	18	19	19	18	20	20
	*Fully Caulked (with mastic)	20	24	22	26	23	25	24	24	26	27	30	32	35	37	40	41	43	44	31	30

Medium Duty	LE1212 + IS8011si (FF / SM)	19	24	22	26	23	25	24	24	26	27	29	31	34	35	37	38	40	40	30	30
	IS7025 + IS8011si (FF / SM)	19	24	22	26	23	25	24	24	26	27	27	29	31	34	36	39	39	40	29	29
	IS7080 + IS8011si (FF / SM)	20	24	22	26	23	25	24	24	26	26	27	28	32	34	36	38	37	40	29	29
	LE1212 + IS8010si (FM)	18	24	22	26	23	25	24	24	26	26	28	30	32	33	35	36	38	40	29	29
	IS7025 + IS8010si (FM)	18	24	22	26	23	25	24	24	26	26	28	29	30	33	35	38	38	38	29	29
	IS7080 + IS8010si (FM)	19	24	22	26	23	25	24	24	26	25	26	27	30	33	35	37	35	38	29	29

Heavy Duty	LE1515 + IS8090si (FF / SM)	19	24	22	26	23	25	24	24	26	27	29	31	34	35	37	38	40	40	30	30
	IS7080 + IS8090si (FF / SM)	19	23	21	26	23	25	24	24	26	26	29	32	35	37	40	41	43	44	30	30
	IS7090si + IS8090si (FF / SM)	19	24	22	26	23	25	24	24	26	26	28	29	31	34	37	38	34	36	29	29
	IS7190si + IS8090si (FF / SM)	19	24	22	26	23	25	24	24	26	26	28	29	31	34	37	38	34	36	29	29
	LE1515 + IS8091si / IS8020si (FF)	19	24	22	26	23	25	24	24	26	27	29	31	34	35	37	38	40	40	30	30
	IS7090si + IS8091si / IS8020si (FF)	19	24	22	26	23	25	24	24	26	26	28	29	31	34	37	38	34	36	29	29
	IS7190si + IS8091si / IS8020si (FF)	19	24	22	26	23	25	24	24	26	26	28	29	31	34	37	38	34	36	29	29
	LE1515 + IS8100si (FM)	18	23	21	25	22	24	23	23	25	26	27	29	32	33	35	36	38	38	29	29
	IS7090si + IS8100si (FM)	18	23	21	25	22	24	23	23	25	26	27	28	30	32	35	36	32	34	28	28
	IS7190si + IS8100si (FM)	18	23	21	25	22	24	23	23	25	25	27	28	30	32	35	36	32	34	28	28

35mm Double Doors (Pairs)

	No Seals	13	17	17	19	20	20	20	20	20	21	21	22	22	20	18	19	19	18	20	20
	*Fully Caulked (with mastic)	20	24	22	26	23	25	24	24	26	27	30	32	35	37	40	41	43	44	31	30

Medium Duty	LE1212 + IS8011si + IS7061	20	24	22	26	23	25	24	24	26	27	29	31	33	35	36	37	39	39	30	30
	LE1212 + IS8011si + IS7070si	19	24	22	25	23	24	24	24	26	27	29	31	33	35	36	35	36	37	30	30
	LE1212 + IS8011si + IS7060	20	24	22	26	23	25	24	24	26	27	29	31	32	31	33	33	34	38	29	29

Heavy Duty	LE1515 + IS8090si + IS7061	19	23	22	26	23	25	24	24	26	27	29	32	34	35	37	38	39	40	30	30
	LE1515 + IS8090si + IS7070si	19	23	22	25	23	24	24	24	26	27	29	32	34	35	37	35	36	37	30	30
	LE1515 + IS8090si + IS7060	19	23	22	26	23	25	24	24	26	27	29	32	33	31	33	33	33	38	29	29
	IS7025 + IS8090si + IS7061	20	24	22	26	23	25	24	24	26	27	30	32	34	35	37	37	39	39	30	30
	IS7025 + IS8090si + IS7070si	19	24	22	25	23	25	24	24	26	27	30	32	34	35	37	35	36	37	30	30
	IS7025 + IS8090si + IS7060	20	24	22	26	23	25	24	24	26	27	30	32	33	31	33	33	34	38	29	29

35mm Sound Lock Doors

Medium Duty	LE1212 + IS8011si + IS7061	22	28	27	33	31	34	35	36	40	43	48	51	55	59	61	64	66	67	42	42
	LE1212 + IS8011si + IS7070si	21	28	27	33	31	34	35	36	40	43	48	51	55	59	61	60	61	64	42	42
	LE1212 + IS8011si + IS7060	22	28	30	36	35	33	40	40	42	45	50	56	56	53	55	55	56	60	45	44

Heavy Duty	LE1515 + IS8090si + IS7061	21	26	27	33	31	34	35	36	40	43	48	53	57	60	63	65	66	67	42	42
	LE1515 + IS8090si + IS7070si	21	26	27	33	31	34	35	36	40	43	48	53	57	60	62	60	61	64	42	42
	LE1515 + IS8090si + IS7060	21	26	27	34	31	34	35	36	40	43	48	53	55	52	56	56	57	65	42	42
	IS7025 + IS8090si + IS7061	22	28	27	33	31	34	35	36	40	43	49	53	57	60	63	64	67	67	42	42
	IS7025 + IS8090si + IS7070si	21	28	27	33	31	34	35	36	40	43	49	53	57	60	63	60	61	63	42	42
	IS7025 + IS8090si + IS7060	22	28	27	34	31	34	35	36	40	43	49	52	55	53	56	57	58	64	42	42

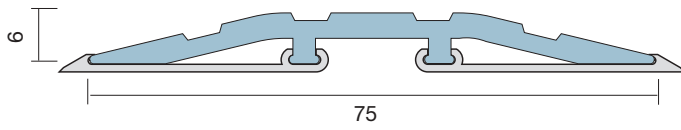
45mm High Performance Steel Acoustic Door

	No Seals	17	19	21	22	23	23	22	22	23	23	23	23	21	16	16	18	19	17	20	21
	*Fully Caulked (with mastic)	22	29	36	42	44	46	47	51	52	53	54	52	52	51	54	57	59	57	52	50

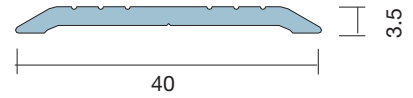
Medium Duty	IS7110 + IS8011si	18	29	34	43	44	49	47	47	47	45	42	39	38	40	43	47	46	41	42	42
	IS7025si + IS8011si	20	29	35	46	47	49	46	50	48	44	39	37	38	41	44	46	43	41	41	41
	IS7025si + IS3080	21	29	33	46	47	50	46	50	48	44	41	37	37	40	43	46	44	43	40	41
	IS7020si + IS8011si	19	29	33	42	44	46	47	49	46	44	39	34	34	37	42	43	40	38	38	39
	IS7080si + IS8011si	20	29	32	42	43	48	43	41	37	36	34	33	37	41	43	40	37	39	37	38
	IS7085 + IS8011si	19	28	34	44	44	49	44	45	44	43	41	38	39	42	43	43	43	41	41	41
	IS6015 + IS8011si	19	29	33	44	44	45	42	42	40	39	35	32	34	37	39	37	36	35	36	37

Heavy Duty	IS6030 + LE1515 + IS8090si	21	29	37	42	43	47	44	43	42	42	43	44	41	40	42	44	45	44	42	42
	IS6030 + IS8090si	20	28	36	43	44	45	43	42	41	40	39	38	39	40	42	40	35	36	39	40
	LE1515 + IS8090si	21	29	35	42	44	48	44	40	38	38	40	41	39	37	38	40	42	40	39	39
	IS7025 + LE1515 + IS8090si	21	29	38	42	44	45	41	40	37	36	38	40	40	38	40	43	43	41	39	39
	IS7025 + IS8090si	21	29	35	42	44	44	40	39	36	36	36	36	36	37	39	42	44	40	38	38
	IS7120 + IS8090si	20	29	38	44	43	44	40	38	36	36	36	37	37	36	37	40	42	40	37	38

4000 Series Threshold Plates

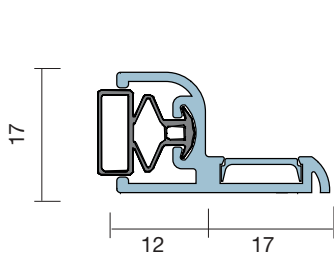


IS4010

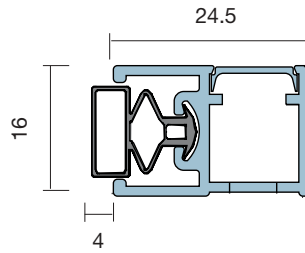


IS4130

6000 Series Magnetic Seals

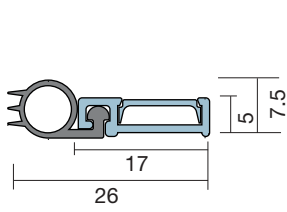


IS6015

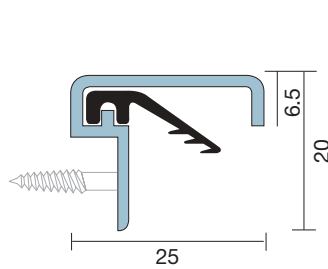


IS6030

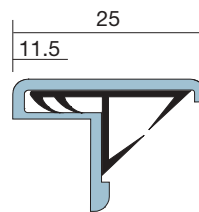
7000 Series Perimeter Seals



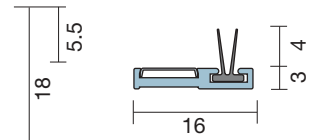
IS7025



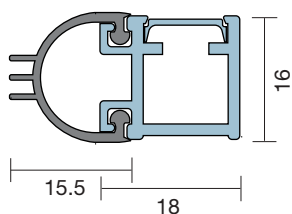
IS7060



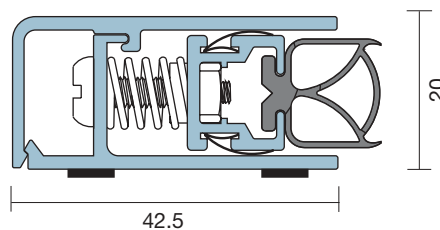
IS7061



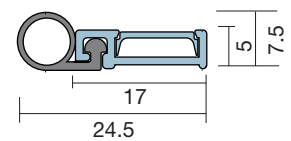
IS7070si



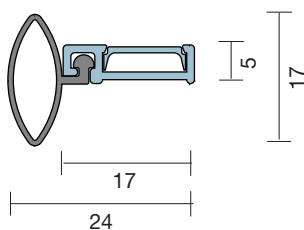
IS7080



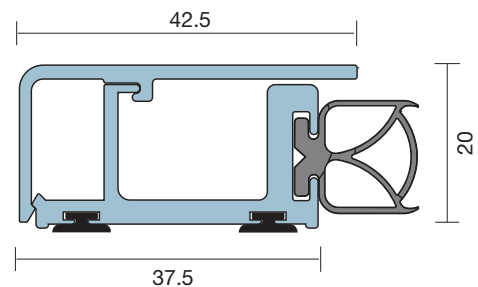
IS7090si



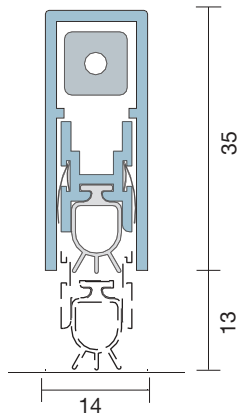
IS7110



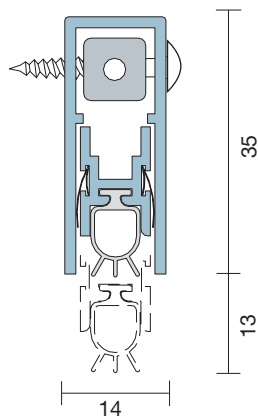
IS7120



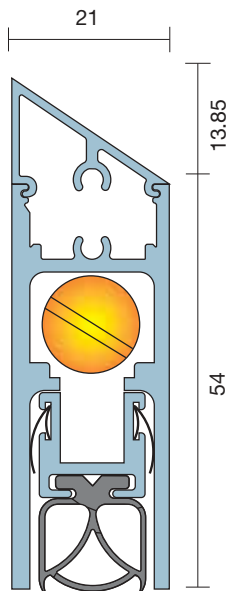
IS7190si

8000 Series Automatic Door Bottom Seals


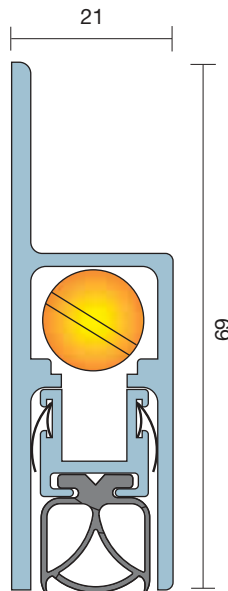
IS8010si



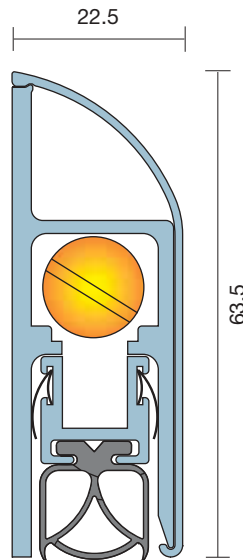
IS8011si



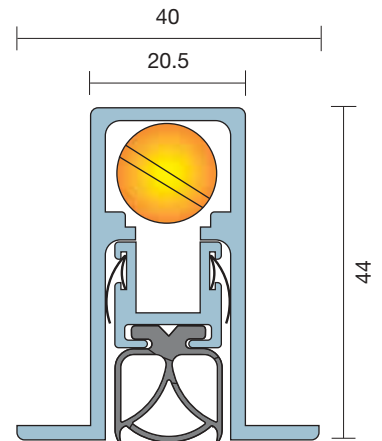
IS8020si



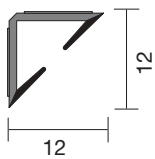
IS8090si



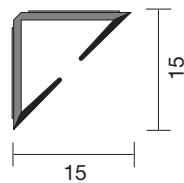
IS8091si



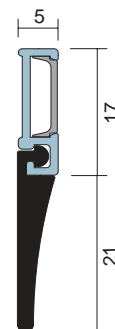
IS8100si

Specialty Seals


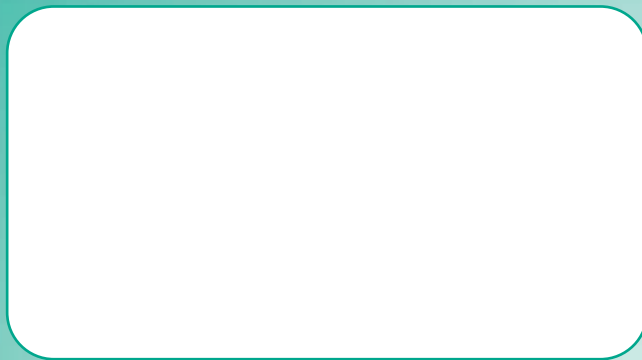
LE1212 Batwing



LE1515 Batwing

3000 Series Door Bottom Seals


IS3080



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