

## ACOUSTIC DOOR

Acoustic Door is an assembly consisting of Door, Frame, Ironmongery, Threshold and gasketing, capable of reducing the transmission of Sound. These Doors reduce noise to the desired levels using advanced materials and construction. The performance of these Doors are measured by the STC Rating.

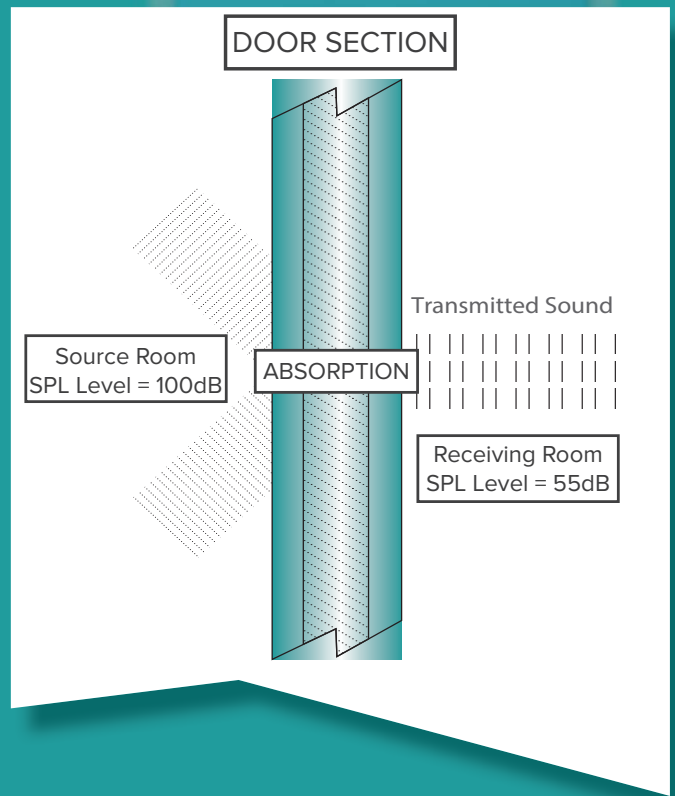
STC stands for "Sound Transmission Class", a measure of the extent to which sound is prevented from being transferred from one area to another. The higher the STC value, the less sound transferred from one area to another. The unit for STC Rating is decibel (dB).

### APPLICATION

- At Areas where Noisy Environment has to be isolated
- At Areas where privacy is required and elimination of noisy distractions is required

### AREAS OF APPLICATION

- Cinemas and Theatres
- Broadcasting and Recording Studios
- Auditoriums and Stadiums
- Lounge / Language Labs / Meeting Rooms / Conference Rooms
- Plant / Motor / Pump / AHU / Machine Rooms



## Sound Transmission Class (STC)

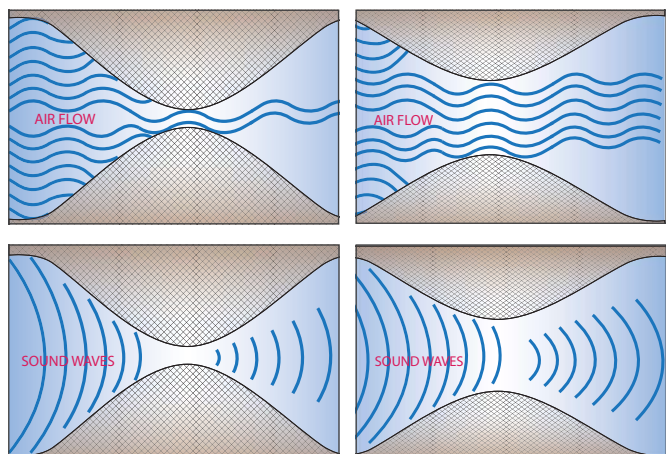
Sound transmission class (STC) ratings solve the problem by giving a single value to acoustical performance for a door. STC is determined by a weighted average of Transmission Loss (TL) values taken over 16 frequencies, which are fitted to a curve in a method defined by the ASTM E413 Classification Standard for Rating Sound Insulation. The higher STC value, the better the rating and the better performance. (See table below)

The Following chart illustrates the General Sound Retardant performance associated with a range of STC Values.

STC Value	Rating	Noise / Sound Level
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	Average	Normal Speech Understood Fairly well
20-25	Under Average	Loud Speech Audible

## Why Gasketing for Acoustic Doors?

While the amount of air flowing through a gap increases in proportion to the Size of the gap, the Size of the gap in Sound Barrier does not matter. A tiny hole transmits almost as much as sound as a larger gap. (See Airflow Illustration below)



Because of this phenomenon, any unsealed gaps and clearances in door assemblies effectively cancel out the noise reduction benefits of sound doors. Hence, these unsealed gaps and clearances are required to be sealed with tested/certified Acoustical Gasketing.

For Acoustical Gasketing to be effective at blocking sound, the seals around the head, jamb and sill must be complete, uninterrupted and air-tight throughout the service life of the Door. Performance also depends on good surface contact between the gasket and door edge or frame.

Ultimately, the quality of the Acoustical Gasketing is the biggest factor in overcoming any on-site deficiencies and determining how close the actual sound performances of the assembly at site will come close to the published rating of the door. Improving the Quality of the Gasketing brings the STC Value of the functioning door to its theoretical maximum.

## STC Door Performance Chart\*

Door Model	Max. STC Rating in dB	Fire Rating in Hours	STC Test Standard	Door Core
HALCYON-28	28	2	ASTM E90-09	Kraft Honeycomb
HALCYON-32	32	2	ASTM E90-09	Kraft Honeycomb
HALCYON-38	38	2	ASTM E90-09	Rockwool
HALCYON-41	41	2	ASTM E90-09	Rockwool
HALCYON-45	45	n/a	ASTM E90-09	Proprietary Core
HALCYON-47	47	n/a	ASTM E90-09	Proprietary Core

\* The above mentioned STC Rating is for Flush Doors only; Maximum calculated STC Rating that can be achieved for Doors with Vision Panel is 35 dB where the Size of Vision Panel will be limited to (200 x 300) mm.

