



Schools/Univ.



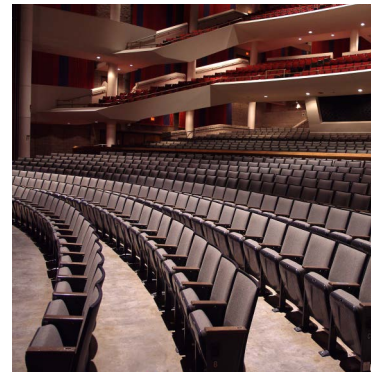
Commercial/Office



Gov./Military



And Much More



Sound-Tech Xpress Systems
The Sound Choice for Acoustical Solutions

 **Ceco Door**

ASSA ABLOY

Experience a safer
and more open world

Sound Facts

The Noise Problem

Noise can have significant affects on people's daily functions. Facilities need to shield common workspaces and office employees from the distractions of resident noise emanating from HVAC units and other heavy equipment rooms. Schools have to significantly reduce the sounds coming from band rooms and hallways. Virtually all types of buildings need rooms equipped for private conversation. Plus, the need for absolute confidentiality is increasing because of expanding national security operations.

The solution to unwanted noise is reducing levels of sound produced. There are two methods of reducing noise levels but they mainly rely on two basic principles:

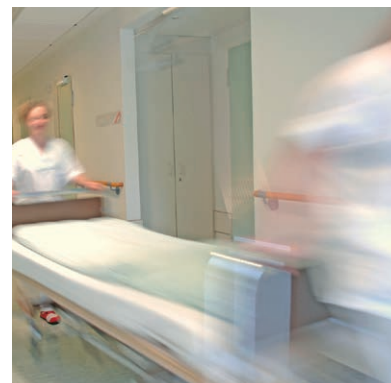
Sound Absorption - The process of removing sound energy from within a room. This is accomplished by using materials to soak up sound.

Sound Insulation - The process of blocking the passage of sound waves through the use of distance and intervening objects in the sound path.

Both sound absorption and sound insulation are used to control the broadcast of noise within and through buildings.

Evaluating Noise

The solution to a noise problem begins with evaluating the noise impact. Sound can be described as vibrations in the air moving in waves. The rate of sound vibrations measured in cycles per second is called frequency (Hertz). Sound pressure levels are measured in decibels (dB). See chart below.



Sound Reduction Ratings

Transmission Loss (TL)

A door's ability to reduce noise is called its transmission loss (TL) effectiveness. TL is a value given in decibels, which is determined by measuring sound pressure levels at a certain frequency in the source and receiving rooms. The adjusted difference between the two levels is the TL of the door. The higher the TL, the better the result.

Sound Transmission Class (STC)

TL measurements for a door are taken across a range of frequencies, which makes it difficult to compare the effectiveness of different doors. Sound transmission class (STC) ratings solve that problem by giving a single value to acoustical performance for a door. STC is determined by a weighted average of 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 the STC value, the better the rating and the better the performance.

Examples of Sound Pressure Levels (Loudness):

Sound Level dB

0	Threshold of hearing	Inaudible
20	Very rural environment	Extremely quiet
30	Quiet home	Faint
40	Quiet office	Distant sounds audible
50	Background conversation	Moderate
60	Radio/Television in home	Moderate
70	Highway noise	Moderately loud
80	Background factory noise	Loud
90	Noisy factory	Very loud
105	Elevated train	Deafening
120	Bass drum at 3'	Physical pain
130	Jet aircraft at 100'	Physical pain

Sound Solutions

Sound-Tech Xpress Systems

Using the latest revolutionary technology, patented designs and utilizing light weight sound absorbing techniques, Ceco Door engineers have developed acoustical assemblies to solve the noise solution for any facility.

High STC ratings are typically needed to create sound resistant rooms for the government/military, offices, school band rooms and to isolate performance halls from exterior noise. Relatively lower STC ratings will usually suffice for less demanding applications, such as solving a noise problem in a hotel or office building. Sound-Tech Xpress Systems covers the low to high STC range allowing them to be the solution for almost any application.

Sound Transmission Class Table

Door Type	STC	Performance	Description
Typical Hollow Metal Door	20-25	Minimal	Speech clearly audible
	25-30	Average	Normal speech understood
Sound-Tech Xpress System	30-35	Fair	Loud speech understood fairly well
	35-40	Good	Loud speech heard but hardly intelligible
	40-50	Very Good	Loud speech just detectable
	50-66	Excellent	Loud speech barely audible



Quiet Noise Advantages

Sound-Tech Xpress Systems have many advantages over other sound door products in the market.

- Wide range of operable STC ratings from 32 to 66
- 5 to 6 week standard leadtimes with CExpress quick ship available in as little as 5 day leadtimes.
- Competitive pricing including door, frame and all sealing hardware
- STC 50-66 door assemblies are 30% lighter than most sound doors in the market allowing standard weight hinges to be used
- All door cores are lead and asbestos free
- Most doors are 1-3/4" thick instead of 2-1/4" or larger like other sound doors in the market
- Door assemblies can be pre-wired with Electrolynx snap-together connectors to make adding or upgrading electrified openings easy
- Most door assemblies are UL or WH fire rated
- Doors can help achieve LEED requirements for sound and recycled content
- Thresholds are ADA compliant

Product Features

Door Configurations

- Single flush doors available from STC 32 to STC 66
- Single factory glazed doors available from STC 33 to STC 48
- Flush pairs available up to STC 49
- Pairs with glazing available from STC 33 to STC 44
- All doors tested in fully operable conditions
- Seals, thresholds and door bottoms (as required) will be drop shipped to designated address
- UL or WH fire labeling up to 3 hours (varies per STC rating)

Frame Configurations

- 16 or 14 gauge cold rolled or galvaneal steel
- 4-1/8" through 14" depths
- Continuously welded corners

Hardware Preps

Locks:

- 161 cylindrical locks (backset min. varies per STC rating)
- 86 edge mortise locks with escutcheon or sectional trims
- Spin Dial/Government locks
- Rim panic and surface mounted vertical rod exit devices
- Surface and flush bolts on inactive leaves

Hinges:

- Standard 4.5 x .134
- Heavyweight and 5" optional
- Continuous hinges for STC 55 assemblies
- Cam lift hinges for STC 66 assemblies

Sound Product Charts

Single Hollow Metal Doors Flush

STC Rating Operable	Max. Fire Rating	Hinges	Locks
56-66 - Communicating	No	Cam Lift	Cylindrical
55 (2-1/2" thick)	No	Continuous	Cylindrical
54	No	Butt	Cylindrical
53	No	Butt	Cylindrical, Mortise
52	3 Hour	Butt	Cylindrical, Mortise
51	3 Hour	Butt	Cylindrical, Mortise, Rim Exit
50	3 Hour	Butt	Cylindrical, Mortise, Spin Dial, Rim Exit
49	3 Hour	Butt	Cylindrical, Mortise, Spin Dial, Rim Exit
48	3 Hour	Butt	Cylindrical, Mortise, Spin Dial, Rim Exit
47	3 Hour	Butt	Cylindrical, Mortise, Spin Dial, Rim Exit
46	3 Hour	Butt	Cylindrical, Mortise, Spin Dial, Rim Exit
45	3 Hour	Butt	Cylindrical, Mortise, Spin Dial, Rim Exit
44	3 Hour	Butt	Cylindrical, Mortise, Spin Dial, Rim Exit
43	3 Hour	Butt	Cylindrical, Mortise, Spin Dial, Rim Exit
42	3 Hour	Butt	Cylindrical, Mortise, Spin Dial, Rim Exit
41	90 Minute	Butt	Cylindrical, Mortise
41	3 Hour	Butt	Cylindrical
40	90 Minute	Butt	Cylindrical, Mortise
40	3 Hour	Butt	Mortise
39	90 Minute	Butt	Cylindrical, Mortise, Rim Exit
38	3 Hour	Butt	Cylindrical, Mortise, Rim Exit
37	3 Hour	Butt	Cylindrical, Mortise, Rim Exit
36	3 Hour	Butt	Cylindrical, Mortise, Rim Exit
35	3 Hour	Butt	Cylindrical, Mortise, Rim Exit
34	3 Hour	Butt	Cylindrical, Mortise, Rim Exit
33	3 Hour	Butt	Cylindrical, Mortise, Rim Exit
32	3 Hour	Butt	Cylindrical, Mortise

Single Hollow Metal Glazed

STC Rating Operable	Max. Fire Rating	Hinges	Locks	Max. Visible Area
48	90 Minute	Butt	Cylindrical	100 Sq In
47	90 Minute	Butt	Cylindrical, Mortise	100 Sq In
46	90 Minute	Butt	Cylindrical, Mortise, Rim Exit	100 Sq In
45	3 Hour	Butt	Cylindrical, Mortise, Rim Exit	100 Sq In
45	90 Minute	Butt	Cylindrical	288 Sq In
44	3 Hour	Butt	Cylindrical, Mortise, Rim Exit	100 Sq In
44	90 Minute	Butt	Cylindrical, Mortise	288 Sq In
43	3 Hour	Butt	Cylindrical, Mortise, Rim Exit	100 Sq In
43	90 Minute	Butt	Cylindrical, Mortise, Rim Exit	288 Sq In
42	3 Hour	Butt	Cylindrical, Mortise, Rim Exit	100 Sq In
42	90 Minute	Butt	Cylindrical, Mortise, Rim Exit	288 Sq In
41	3 Hour	Butt	Cylindrical, Mortise, Rim Exit	100 Sq In
41	90 Minute	Butt	Cylindrical, Mortise, Rim Exit	288 Sq In
41	90 Minute	Butt	Cylindrical	720 Sq In
40	3 Hour	Butt	Cylindrical, Mortise, Rim Exit	100 Sq In
40	90 Minute	Butt	Cylindrical, Mortise, Rim Exit	288 Sq In
40	90 Minute	Butt	Cylindrical, Mortise	720 Sq In
39	3 Hour	Butt	Cylindrical, Mortise, Rim Exit	100 Sq In
39	90 Minute	Butt	Cylindrical, Mortise, Rim Exit	288 Sq In
39	90 Minute	Butt	Cylindrical, Mortise, Rim Exit	720 Sq In

Sound Product Charts

Single Hollow Metal Doors Cont.

STC Rating Operable	Max. Fire Rating	Hinges	Locks	Max. Visible Area
38	3 Hour	Butt	Cylindrical, Mortise, Rim Exit	100 Sq In
38	90 Minute	Butt	Cylindrical, Mortise, Rim Exit	288 Sq In
38	90 Minute	Butt	Cylindrical, Mortise, Rim Exit	720 Sq In
37	3 Hour	Butt	Cylindrical, Mortise, Rim Exit	100 Sq In
37	90 Minute	Butt	Cylindrical, Mortise, Rim Exit	288 Sq In
37	90 Minute	Butt	Cylindrical, Mortise, Rim Exit	720 Sq In
36	3 Hour	Butt	Cylindrical, Mortise, Rim Exit	100 Sq In
36	90 Minute	Butt	Cylindrical, Mortise, Rim Exit	288 Sq In
36	90 Minute	Butt	Cylindrical, Mortise, Rim Exit	720 Sq In
35	3 Hour	Butt	Cylindrical, Mortise, Rim Exit	100 Sq In
35	90 Minute	Butt	Cylindrical, Mortise, Rim Exit	288 Sq In
35	90 Minute	Butt	Cylindrical, Mortise, Rim Exit	720 Sq In
34	3 Hour	Butt	Cylindrical, Mortise, Rim Exit	100 Sq In
34	90 Minute	Butt	Cylindrical, Mortise, Rim Exit	288 Sq In
34	90 Minute	Butt	Cylindrical, Mortise, Rim Exit	720 Sq In
33	3 Hour	Butt	Cylindrical, Mortise, Rim Exit	100 Sq In
33	90 Minute	Butt	Cylindrical, Mortise, Rim Exit	288 Sq In
33	90 Minute	Butt	Cylindrical, Mortise, Rim Exit	720 Sq In
32	3 Hour	Butt	Cylindrical, Mortise, Rim Exit	100 Sq In
32	90 Minute	Butt	Cylindrical, Mortise, Rim Exit	288 Sq In
32	90 Minute	Butt	Cylindrical, Mortise, Rim Exit	720 Sq In

Pairs of Hollow Metal Doors Flush

STC Rating Operable	Max. Fire Rating	Hinges	Locks
49	3 Hour	Butt	Cylindrical
48	3 Hour	Butt	Cylindrical, Mortise
47	3 Hour	Butt	Cylindrical, Mortise
47	3 Hour	Butt	Mortise Panic
46	3 Hour	Butt	Cylindrical, Mortise
46	3 Hour	Butt	Mortise Panic
45	3 Hour	Butt	Cylindrical, Mortise
45	3 Hour	Butt	Mortise Panic
44	3 Hour	Butt	Cylindrical, Mortise
44	3 Hour	Butt	Mortise Panic
43	3 Hour	Butt	Cylindrical, Mortise
43	3 Hour	Butt	Mortise Panic
42	3 Hour	Butt	Cylindrical, Mortise
42	3 Hour	Butt	Mortise Panic
41	3 Hour	Butt	Cylindrical
40	3 Hour	Butt	Cylindrical
39	3 Hour	Butt	Cylindrical
38	3 Hour	Butt	Cylindrical
37	3 Hour	Butt	Cylindrical
36	3 Hour	Butt	Cylindrical
35	3 Hour	Butt	Cylindrical
34	3 Hour	Butt	Cylindrical
33	3 Hour	Butt	Cylindrical
32	3 Hour	Butt	Cylindrical

Sound Product Charts

Pairs of Hollow Metal Doors Glazed

STC Rating Operable	Max. Fire Rating	Hinges	Locks	Max. Visible Area
44	3 Hour	Butt	Cylindrical	100 Sq In
43	3 Hour	Butt	Cylindrical, Mortise	100 Sq In
42	3 Hour	Butt	Cylindrical, Mortise, Mortise Panic	100 Sq In
41	3 Hour	Butt	Cylindrical, Mortise, Mortise Panic	100 Sq In
41	90 Minute	Butt	Cylindrical	288 Sq In
40	3 Hour	Butt	Cylindrical, Mortise, Mortise Panic	100 Sq In
40	90 Minute	Butt	Cylindrical, Mortise	288 Sq In
39	3 Hour	Butt	Cylindrical, Mortise, Mortise Panic	100 Sq In
39	90 Minute	Butt	Cylindrical, Mortise, Mortise Panic	288 Sq In
38	3 Hour	Butt	Cylindrical, Mortise, Mortise Panic	100 Sq In
38	90 Minute	Butt	Cylindrical, Mortise, Mortise Panic	288 Sq In
37	3 Hour	Butt	Cylindrical, Mortise, Mortise Panic	100 Sq In
37	90 Minute	Butt	Cylindrical, Mortise, Mortise Panic	288 Sq In
37	90 Minute	Butt	Cylindrical	720 Sq In
36	3 Hour	Butt	Cylindrical, Mortise, Mortise Panic	100 Sq In
36	90 Minute	Butt	Cylindrical, Mortise, Mortise Panic	288 Sq In
36	90 Minute	Butt	Cylindrical, Mortise	720 Sq In
35	3 Hour	Butt	Cylindrical, Mortise, Mortise Panic	100 Sq In
35	90 Minute	Butt	Cylindrical, Mortise, Mortise Panic	288 Sq In
35	90 Minute	Butt	Cylindrical, Mortise, Mortise Panic	720 Sq In
34	3 Hour	Butt	Cylindrical, Mortise, Mortise Panic	100 Sq In
34	90 Minute	Butt	Cylindrical, Mortise, Mortise Panic	288 Sq In
34	90 Minute	Butt	Cylindrical, Mortise, Mortise Panic	720 Sq In
33	3 Hour	Butt	Cylindrical, Mortise, Mortise Panic	100 Sq In
33	90 Minute	Butt	Cylindrical, Mortise, Mortise Panic	288 Sq In
33	90 Minute	Butt	Cylindrical, Mortise, Mortise Panic	720 Sq In
32	3 Hour	Butt	Cylindrical, Mortise, Mortise Panic	100 Sq In
32	90 Minute	Butt	Cylindrical, Mortise, Mortise Panic	288 Sq In
32	90 Minute	Butt	Cylindrical, Mortise, Mortise Panic	720 Sq In

Sound Product Charts

Single Flush Temperature Rise Doors

STC Rating Operable	Max. Fire Rating	Hinges	Locks
41	90 Minute	Butt	Cylindrical, Mortise
40	90 Minute	Butt	Cylindrical, Mortise
39	90 Minute	Butt	Cylindrical, Mortise
38	90 Minute	Butt	Cylindrical, Mortise
37	90 Minute	Butt	Cylindrical, Mortise
36	90 Minute	Butt	Cylindrical, Mortise
35	90 Minute	Butt	Cylindrical, Mortise
34	90 Minute	Butt	Cylindrical, Mortise
33	90 Minute	Butt	Cylindrical, Mortise
32	90 Minute	Butt	Cylindrical, Mortise

Single Embossed Panel Doors Glazed

STC Rating Operable	Max. Fire Rating	Hinges	Locks	Design
48	45 Minute	Butt	Cylindrical	6 Panel
47	45 Minute	Butt	Cylindrical	6 Panel
47	45 Minute	Butt	Cylindrical	2 Panel HD
46	45 Minute	Butt	Cylindrical, Mortise	6 Panel
46	45 Minute	Butt	Cylindrical	2 Panel HD
45	45 Minute	Butt	Cylindrical, Mortise, Rim Exit	6 Panel
45	45 Minute	Butt	Cylindrical, Mortise	2 Panel HD
44	45 Minute	Butt	Cylindrical, Mortise, Rim Exit	6 & 2 panel HD
43	45 Minute	Butt	Cylindrical, Mortise, Rim Exit	6 & 2 panel HD
42	45 Minute	Butt	Cylindrical, Mortise, Rim Exit	6 & 2 panel HD
41	45 Minute	Butt	Cylindrical, Mortise, Rim Exit	6 & 2 panel HD
40	45 Minute	Butt	Cylindrical, Mortise, Rim Exit	6 & 2 panel HD
39	45 Minute	Butt	Cylindrical, Mortise, Rim Exit	6 & 2 panel HD
38	45 Minute	Butt	Cylindrical, Mortise, Rim Exit	6 & 2 panel HD
37	45 Minute	Butt	Cylindrical, Mortise, Rim Exit	6 & 2 panel HD
36	45 Minute	Butt	Cylindrical, Mortise, Rim Exit	6 & 2 panel HD
35	45 Minute	Butt	Cylindrical, Mortise, Rim Exit	6 & 2 panel HD
34	45 Minute	Butt	Cylindrical, Mortise, Rim Exit	6 & 2 panel HD
33	45 Minute	Butt	Cylindrical, Mortise, Rim Exit	6 & 2 panel HD
32	45 Minute	Butt	Cylindrical, Mortise, Rim Exit	6 & 2 panel HD

Testing and Certification

- Sound-Tech Xpress Systems are tested in accordance with:
- ASTM E90-04 and E90-09, Standard test method for laboratory measurement of airborne sound transmission loss of building partitions
- ASTM E413-04, Classification for rating sound insulation
- ASTM E1332-90, (Re-approved 2003) Standard classification for determination of outdoor-indoor transmission class
- ASTM E2235-04, Standard test method for determination of decay rates for use in sound insulation test methods



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ASSA ABLOY Opening Solutions leads the development within door openings and products for access solutions in homes, businesses and institutions. Our offering includes doors, frames, door and window hardware, locks, perimeter fencing, access control and service.