Sound Transmission Class (STC) - 101

Sound transmission can cause noise control, confidentiality, and privacy issues. Sound from a noisy environment such as a mechanical equipment room or an area with loud activities, traffic or music can transmit through into a quieter space. This will cause unwanted noise within the quieter space. This is not only an annoyance; in several cases it can cause the quieter space to become unusable for its intended purpose.

Transmission Loss is a measurement of a partition's ability to block sound at a given frequency, or the number of decibels that sound of a given frequency is reduced in passing through a partition. Measuring Transmission Loss over a range of 16 different frequencies between 125-4000 Hz, is the basis for determining a partitions Sound Transmission Class.

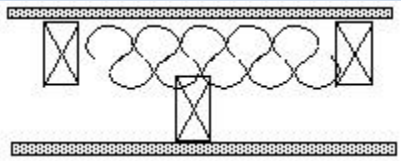
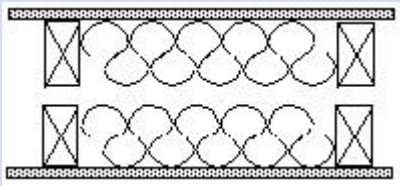
Changes in STC Rating	Changes in Apparent Loudness
+/- 1	Almost imperceptible
+/- 3	Just perceptible
+/- 5	Clearly noticeable
+/- 10	Twice (or half) as loud

The Sound Transmission Class is a single-number rating of a material's or an assembly's ability to resist airborne sound transfer at the frequencies of 125 to 4000 Hz.

In general, a higher STC rating blocks more noise from transmitting through a partition.

STC	What Can Be Heard
25	Normal speech can be understood quite easily and distinctly through wall
30	Loud speech can be understood fairly well, normal speech heard but not understood
35	Loud speech audible but not intelligible
40	Onset of "privacy"
42	Loud speech audible as a murmur
45	Loud speech not audible; 90% of statistical population not annoyed
50	Very loud sounds such as musical instruments or a stereo can be faintly heard; 99% of population not annoyed.
60+	Superior soundproofing; most sounds inaudible

STC is roughly the decibel reduction in noise that a partition can provide.

Description	STC Rating	Wall Assembly
2x4 stud, 5/8" gyp (2 layers total), Batt insulation	34 - 39	
Staggered studs, 5/8" gyp (2 layers total), Batt insulation	46 - 47	
2x4 studs, 5/8" gyp (2 layers total), Batt insulation	56 - 59	

Euro + 3mm annealed LoE2 provides an STC Value of **28**

Euro + Protection 6mm laminated glass and 3mm LoE2 provides an STC Value of **36**

Euro + Premium Protection 6mm laminated glass and 6mm laminate LoE2 provides an STC Value of **42**