

STC Overview

As businesses have moved from multi-divisional organizations and top-down communication toward cross-functional teams and open communications, they have created noisier workplaces. Recent studies have shown these noisier workplaces actually decrease productivity.

Of all the sounds in an office, the most distracting is the human voice. However, the office loudmouth is not the only one to blame. The level of sound is not the only factor that contributes to sound distraction. It's also the content. Most people are distracted from their work if they can understand 60% or more of conversations outside their office.

Walls are rated for their effectiveness in limiting speech and other noises by their Sound Transmission Class (STC). STC is a single number used to quantify the sound-blocking effectiveness of partitions, doors, and windows. The STC rating is heavily weighted in favor of the speech frequency range correlated with human hearing. For example, a wall with an STC of 22 will allow most standard conversational speech to be heard and completely understood. At an STC of 35, medium-loud speech will be audible, with just a little more than half of the content understood. The higher the STC, the better the sound-blocking properties of the specimen. However, the human ear cannot detect the difference between an STC of 47 and 48.

Additionally, the test is conducted in such a way to make it independent of the test environment, and yields a number for the test specimen only. STC is only applicable to air-borne sound, and is a poor guideline for types of construction to contain HVAC or other mechanical noise, music, transportation noise, or any other noise source which is more heavily weighted in the low frequency ranges. In practice, the STC of the laboratory sample represents the optimum condition, and is rarely achieved in actual construction. The difference between actual, or Field STC (FSTC) and the lab STC is a result of leaks and flanking paths. In other words, sounds entering a wall in a common assembly is also entering the floor and ceiling, traveling through those elements and breaking out in the adjoining space, by-passing the wall. The degree to which these flanking paths are disconnected will determine how closely the field test and lab test results compare. Thus, the actual behavior of two partitions with the same lab STC can be dramatically different.

The solution for noisy workplaces is to limit speech transmission to a level where it remains audible, yet is not loud enough to be understood. This can be accomplished by utilizing architectural elements with good sound-blocking characteristics. To meet the growing challenges of acoustic privacy, we have enhanced the sound-blocking characteristics of our moveable walls. By providing the best sound-blocking available with ratings as high as 47 STC, we allow you to create both open areas for collaboration and distraction-free private offices for productive solo work.

Lab STC	Field STC	Subjective description of effectiveness
26-30	20-22	Most sentences clearly understood
30-35	25-27	Many phrases and some sentences understood, without straining to hear
35-40	30-32	Individual words and occasional phrases clearly heard and understood
42-45	35-37	Medium-loud speech clearly audible, occasional words understood
47-50	40-42	Loud speech audible, music easily heard
52-55	45-47	Loud speech audible by straining to hear; music normally can be heard & may be disturbing
62-65	55	Music heard faintly, bass notes "thump"; power woodworking equipment clearly audible
70	60	Music still heard very faintly if played loud
75+	65+	Effectively blocks most air-borne noise sources