



Quiet, Please

Achieving optimal sound mitigation from glazed office partition systems

By Ron Wooten

Office interiors must meet an array of aesthetic and functional requirements to accommodate the changing landscape of business environments. One such requirement is the demand for greater acoustic privacy—which is particularly prevalent in applications such as government buildings, law firms, human resource departments and executive offices.

Glazed office partition systems are growing in popularity because they add visual appeal and improve daylighting. The problem? Glass on its own does not possess good sound mitigation properties. Understanding sound transmission ratings, the impact of glass types and the effects of air-spaces will allow glaziers to select the best office partition system for the job.

OITC vs. STC

Although there are several methods for rating sound transmission through various materials, the most commonly

used are the Outdoor Indoor Transmission Class and the Sound Transmission Class.

The OITC rating method was created to provide a single rating for building façades and fenestration. These exterior elements are typically subjected to low- and mid-frequency noises such as aircraft, trains and automobiles. With the OITC rating system, a higher number indicates more effective sound mitigation properties.

As with the OITC rating system, the STC rating system also uses a single number to indicate the sound mitigation properties of a product. A higher rating means increased sound attenuation capabilities. Although one might occasionally see the STC rating method used for exterior glazing systems, by design, its intent is to measure and rate interior walls, windows and office partitions. The STC rating is appropriate for mid- to

high-frequency sounds such as speech, office equipment and audio equipment. STC testing is conducted in a laboratory environment using specialized equipment.

Interpreting an STC rating

The STC rating system was developed over 50 years ago as a way to compare and contrast the sound transmission qualities of various interior building systems. Laboratory test measurements are compared and matched to standard reference curves to assign an STC value.

The following is a standard STC ratings scale:

- 25: Normal speech can be heard and understood clearly
- 30: Normal speech can be heard but is difficult to understand
- 35: Loud speech can be heard but normal speech cannot
- 40: Loud speech is barely audible and difficult to understand

- 45: Loud speech is inaudible
- 50: Very loud music is barely audible
- 60: Nearly complete soundproofing.

A glazed office partition system with an STC rating of 40 will typically provide sufficient acoustic privacy in office interiors. Keep in mind that an office partition system's STC rating does not take into account the sound attenuation properties of surrounding walls. Sound may still be transmitted through walls that are not properly insulated despite having an office partition with a high STC rating. It's very important to consider this when bidding a job.

Additionally, be aware that STC values are logarithmic and can't be added together. For example, combining a 30 STC rating glass lite with a 35 STC rating glass lite doesn't create a 65 STC unit. In reality, it would probably achieve an STC rating in the neighborhood of 38.


Sound mitigation of glass

Glass itself does not generally have good sound attenuation properties; however, adding an interlayer between glass lites offers great improvements. As such, laminated glass is typically chosen for projects that call for greater sound mitigation from glazing systems. Monolithic glass can still be used, but it should be paired with laminated glass in a double-glazed unit.

A properly designed double-glazed office partition with a 3 1/2-inch space between glass lites can offer, and even outperform, the soundproofing capabilities of a concrete wall of equal thickness. The larger the airspace between the glass lites, the better the sound attenuation properties. A double-glazed unit with a 6-inch airspace will achieve an STC rating of approximately 15 points greater than a double-glazed unit with a 1/4-inch airspace.

Supplier STC ratings

Glass manufacturers and suppliers provide STC data for the glass alone. They do not take other considerations into account such as framing, gasketing, etc. Reputable manufacturers of glazed office partition systems will be able to provide STC reports for the entire system using various glazing configurations.

These reports should come from an approved third-party testing facility. STC reports should be included in the bid package. They certify that the office partition will meet the sound mitigation requirements and will also free you from liability. 



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