

Whether you're designing a new facility or solving speech privacy and noise issues in an existing space, the **ABC Rule** is your recipe for success:



A

IS FOR **ABSORB**

By adding absorptive ceiling tiles, wall materials and flooring, you'll reduce the energy and, therefore, the volume of sounds reflected off their surfaces back into your space.

Invest in a good acoustic tile and ensure consistent coverage throughout your facility. Limit the lighting system's impact on the ceiling's performance by selecting an indirect system that incorporates a minimum number of fixtures while still meeting your lighting requirements. Minimize the use of hard materials, such as glass and metal, because these reflect noise and conversation, causing them to be heard over greater distances. Use absorptive workstation partitions, at least inside and above the work surface. Install soft flooring in high-traffic areas.

B

IS FOR **BLOCK**

Closed plan designs use walls and doors to block sound, but blocking is also a relevant technique for open plans.

Locate noisy office machines and high-activity areas, such as call centers, in remote or isolated areas. Maximize the distance between employees and minimize direct paths of sound transmission from one person to another by seating employees facing away from each other on either side of partitions. Partitions that are 60 to 65 inches (1.5 to 1.65 meters) are effective because they extend beyond seated head height, though using taller partitions in high traffic areas can be beneficial.

C

IS FOR **COVER**

Ensure that your space has an appropriate ambient – or background – sound level, which will cover unwanted noises. This requirement is met by installing a sound masking system.

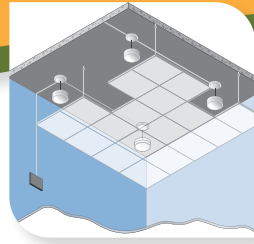
Sound masking technology consists of a series of loudspeakers installed in a grid-like pattern in the ceiling, as well as a method of controlling their zoning and output. The loudspeakers distribute a comfortable background sound. Though most often compared to softly blowing air, this sound is designed to mask the frequencies in speech and also covers up other unwanted noises.

The ABC Rule

Because all three of these strategies are required to achieve the best possible results, they're collectively referred to as the 'ABC Rule.' If you encounter problems in an existing facility, their root usually lies in the omission of one or more of these methods or their imbalanced application in the space.

Often, the missing element is 'Cover,' because a lot of people believe that noise is only truly under control when a space is as silent as possible. However, just as with light and temperature, there's actually a comfort zone for the volume of sound – and it's not zero. If the ambient level is too low, conversations that are meant to be private can easily be heard from a distance and occupants are disturbed by even low-volume noises.

That's why omitting 'C' often prevents facilities from achieving the desired outcome, even if 'A' and 'B' are successfully applied. Sound masking plays a unique role in the end result.



Here's why sound masking is essential:

Noise control

Sound masking reduces *dynamic range* (i.e. the difference between the background sound level and peak volumes). Our senses are attuned to changes in our environment, making it very difficult to disregard them. By raising the background sound level in a controlled manner, this technology dramatically reduces the number and magnitude of these changes. Noises beneath the masking are imperceptible. The impact of those above it is lessened.

Speech privacy

Similarly, our level of speech privacy depends on the *signal-to-noise ratio* or the volume of the speaker's voice relative to the background sound level. The greater the voice's volume relative to the background sound, the more noticeable and intelligible the conversation. While sounds decay in volume over distance, low background levels mean that they can be clearly heard from afar. Sound masking dramatically reduces this distance.

Acoustic consistency

Masking also addresses the acoustic variations found within all facilities, which can be due to the type of ceiling, open air return grilles, HVAC equipment, proximity to walls and office machinery. Variations in lighting and temperature are kept within comfortable parameters and, similarly, sound masking minimizes variations in both sound volume and frequency by introducing a specific background sound at controlled levels across the space.

Sustainable design

Using sound masking can also help support sustainable endeavours, especially when included in the project's design stage. For instance, masking increases noise isolation in open areas. Natural ventilation can be employed without affecting speech privacy and the amount of disruptions occupants experience due to noise. It can also support using demountable wall systems. Adding it is comparable to increasing their Sound Transmission Class (STC).

Project savings

Sound masking is easy to retrofit. However, planned incorporation during design can eliminate the need for extra insulation or layers of drywall, plenum barriers, and high-spec or permanent walls around private offices, reducing costs and maintaining the flexibility of the space for future renovations. In open plans, it helps maintain acoustic control as density increases or workstation partitions are lowered. This technology also reduces the requirements for other treatments, though a balanced approach to acoustic design is always needed. It provides paging and music functions, eliminating the need for a second system to be installed.

For a more detailed description of the ABCs, ask your LogiSon Representative for our *Achieving Effective Office Acoustics* white paper.

