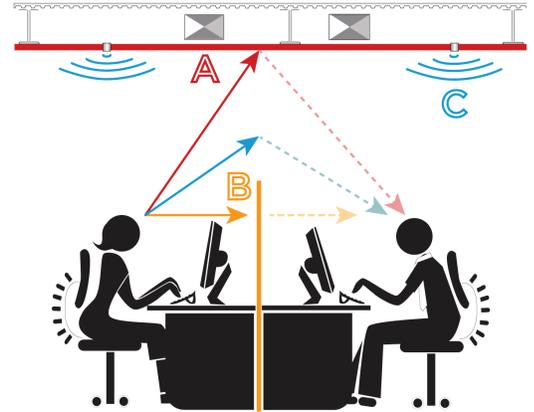


QtPRO Quiet Technology Sound Masking Summary

What is sound masking?

Sound masking is the addition of an unobtrusive background sound, similar to airflow, to reduce the intelligibility of human speech and reduce distractions. The resulting environment leads to greater productivity and increased privacy and comfort.

When designing an optimal acoustic environment, consultants typically consider a variety of elements referred to as the ABC's of acoustic design. In an ideal environment, the design elements would **Absorb**, **Block** and **Cover** sound. Consultants often have to balance these elements to maintain an open, aesthetically pleasing office while decreasing conversational distractions.



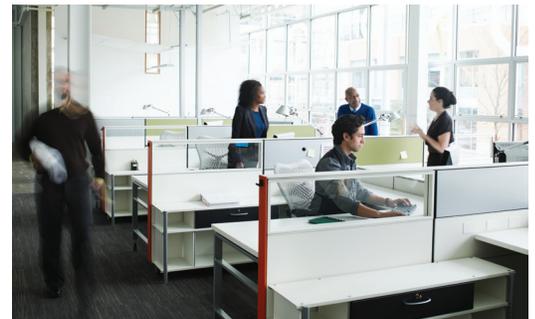
A) Ceiling Tiles **Absorb** Sound
B) Furniture Partitions **Block** Sound
C) Sound Masking **Covers** Sound

Why is sound masking important to my organization?

Contemporary work environments feature more reflective surfaces like glass and brick and encourage worker collaboration with small workstations and open office layouts. This challenging environment demands that attention be paid to the acoustic design of the space and the implementation of sound masking, specifically the Qt Quiet Technology™ direct field system, to provide an optimal acoustic environment.

In 2008, Drs. Valterri Hongisto and Annu Haapakangas presented the results from their acoustic environment and work performance survey during the IC BEN conference. The survey included 689 employees from 11 companies ranging from customer service call centers to general open offices. 48% of respondents reported speech as the most disturbing source of noise.¹ In addition, the survey found that employees on average wasted 21.5 minutes per day due to conversational distractions, making speech the number one cause of reduced productivity.¹ Sound masking systems reduce the intelligibility of speech, making it less of a distraction while increasing speech privacy.

Additionally, Quiet Technology meets the ASTM E1130-08 standard for Speech Privacy in Open Plan Spaces and thereby ensures a higher level of privacy. This increase in speech privacy can help Financial (GLBA), Healthcare (HIPAA) and Educational (FERPA) organizations meet their legal obligations. Qt can also help hospitals raise HCAHPS metrics and increase Medicare funding.



How effective is sound masking?

Consultants use the Privacy Index (PI) to measure the effectiveness of various forms of sound treatment. The range for PI scores is 0% (No Privacy) to 100% (Confidential Privacy). A score of 70% offers a minimal level of speech privacy to improve worker performance.

In a series of laboratory experiments conducted between 2006 and 2008, researchers examined the effect of speech intelligibility on task performance.² This two-year study measured participants' short-term memory recall in a typical open office environment (PI: 35%) versus the same environment with sound masking deployed (PI: 90%). The researchers found an 8.7% increase in the participants' ability to recall a series of numbers and a 7.8% increase in recollection of words.²

The table below shows the effectiveness of common types of acoustical treatments. The office environment in this example features 8' ceilings and 10'x10' cubicles. After implementation, direct-field sound masking is the most effective and budget friendly solution for delivering increased privacy while reducing conversational distractions.



Acoustic Environment	Sound Masking	Partition Height	Ceiling Tiles (NRC* Rating)	Average PI	Average Cost
Typical Office	No	48"	.50	58.83	-
Increased Absorption	No	48"	.95	73.79	\$\$
Increased Blocking	No	80"	.50	81.50	\$\$\$
Increased Coverage	Yes	48"	.50	87.25	\$

Data from the Speech Privacy Calculator, available at: www.Steelcase.com

*Noise Reduction Coefficient

References:

1. "Perceived Acoustic Environment, Work Performance And Well-being - Survey Results From Finnish Offices," A. Haapakangas, R. Helenius, E. Keskinen, Valtteri Hongisto. Performance: 9th International Congress on Noise as a Public Health Problem (ICBEN) 2008 Foxwoods, CT
2. "Effect of Speech Intelligibility on Task Performance- An Experimental Laboratory Study," A. Haapakangas, M. Haka, E. Keskinen, V. Hongisto. Performance: 9th International Congress on Noise as a Public Health Problem (ICBEN) 2008 Foxwoods, CT