



quiet and
personal
space
at every
workplace

Sound and Vision



VOORTMAN



Sound waves cause the air to vibrate, reverberate, and are amplified or absorbed. The behaviour of the sound waves determines the acoustic quality of a room, the result of the combined effect of the sound waves, reverberation, and sound absorption.

Structural acoustics
design
construction
later alterations

Acoustics according to Sabine
physicist
research
sound waves

Acoustic principles
reverberation
speech understandability
acoustic privacy

Acoustics do not immediately spring to mind when designing and constructing buildings – which is a mistake, since good acoustics are of great importance to agreeable work conditions. Consequently interior architects and designers increasingly take account of the acoustics at an early stage of the plans to avoid annoying – and costly – later alterations.

Structural acoustics were first studied by the physicist Wallace Clement Sabine (1868 -1919), a pioneer in the field. Sabine demonstrated that reverberation determines the acoustics of large rooms and that, depending on the dimensions and use of the room, a variety of factors are of importance to the creation of good acoustics. We now know that the design of work environments such as offices equipped with workplaces for a number of staff must ensure that the reverberation time is short, speech can readily be understood, and that the staff are offered a high degree of acoustic privacy.

Large amounts of noise are produced in open-plan offices, and these are continually reflected by walls and objects until the sound is absorbed, a phenomenon referred to as 'reverberation'. A long reverberation time is detrimental to the degree to which people can make themselves understood – 'speech understandability'. As a result they are inclined to raise their voices, which further increases the noise level. In addition, conversations should not be overheard by others: staff require 'acoustic privacy'. A great deal can be achieved with the use of the correct acoustic elements in open-plan offices.





The architecture of modern office complexes often includes several large open-plan offices with many workplaces. This results in the generation of a lot of noise that reverberates and is detrimental to the staff's concentration, speech understandability and productivity.

The new office

out of the cell
flexible open

large spaces

reverberation
noise
speech understandability

Acoustic design

absorption
acoustics
visible space

The office is changing. Technological progress and social developments are increasingly resulting in the replacement of traditional cellular offices by large open-plan offices with many workplaces. This new form of office offers transparency, space, freedom, and flexibility. The choice of materials is also changing: large windows, high ceilings, and hard floors create today's transparent offices.

However, this is also accompanied by problems with the acoustics of modern offices: the combination of colleagues on the telephone, clattering printers, humming computers and staff typing generates large amounts of noise – and the reverberation time increases with the size of the room. All this noise has to be captured: it needs to be absorbed to reduce the reverberation time to an acceptable level, and to guarantee the speech understandability and acoustic privacy of the staff.

Consequently architects and designers can no longer ignore the acoustics problem. The most effective means of eliminating noise – and in particular, reverberation – is achieved by absorbing the noise, whereby sound-absorbent materials are introduced into the room to improve the acoustics. Voortman offers an opportunity to achieve excellent acoustics with Sound and Vision, by installing sound absorption close to the source that is integrated in the office furnishings.





Openness, space and transparency - but without hindrance. Acoustics can no longer be ignored when designing and furnishing **modern** open-plan offices. Achieving really good acoustic properties needs more than just carpet and a sound-absorbent ceiling, it requires **Sound and Vision.**

The acoustic office

broad range
Vision Sound

Sound and Vision

sound absorption
close to the SOURCE

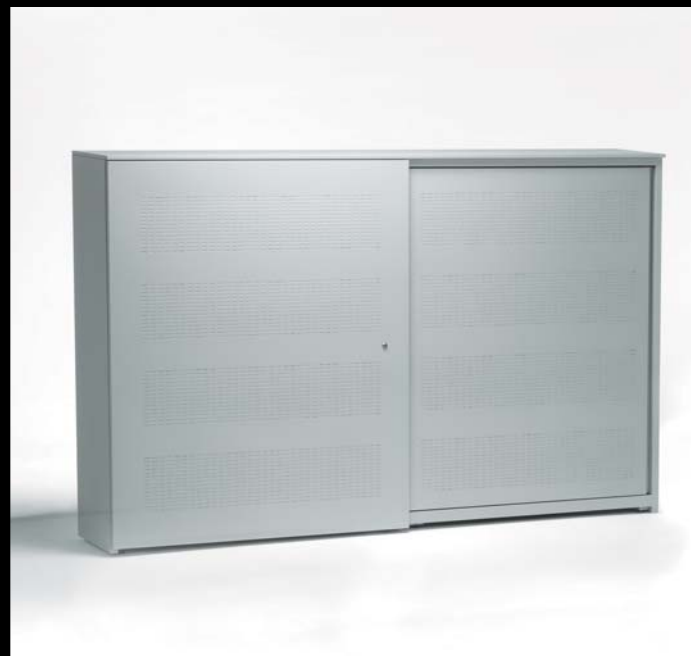
Flexible and versatile

quality
sustainability freedom

Sound and Vision is synonymous with a complete range of attractively-designed office furniture with excellent acoustic properties. The acoustic sliding-door cabinets, desktop screens, partitions and ceiling elements reduce noise hindrance in modern offices, and create a feeling of personal space in large open-plan offices. The range is also characterized by its pure design and wide variety of harmonized colours, finishes, and textures.

The vertical surfaces of all Sound and Vision products are finished with a pattern of perforations, and are lined with acoustic polyester foam sealed by a fire-resistant and dirt-repellent non-woven fabric. This combination absorbs the majority of the sound waves. The independent Peutz consultancy examined the acoustical properties of Sound and Vision, and concluded that the Sound and Vision acoustic cabinet absorbs 3.5 times more sound in the voice frequency range than "standard" cabinets.

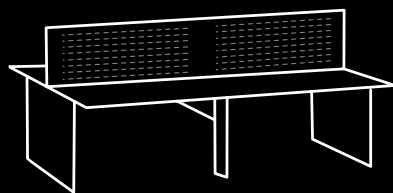
Voortman, a Dutch manufacturer, uses solely the best raw materials and semi-finished products to manufacture its products. Sound and Vision, in analogy with all other Voortman products, are made from sustainable products such as steel and wood. The quality, functionality and flexibility of the Sound and Vision furnishings line offers architects and designers unparalleled opportunities for design of offices with excellent acoustics.





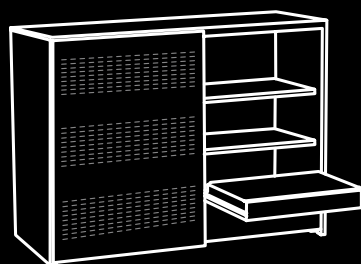
A furniture line with a pure design and excellent acoustic properties. Voortman's Sound and Vision offers a wide range of cabinets, desktop screens, partitions and ceiling elements that give the staff the privacy they need, and which provide a simple solution for the noise problem.

Acoustic partitions and desktop screens



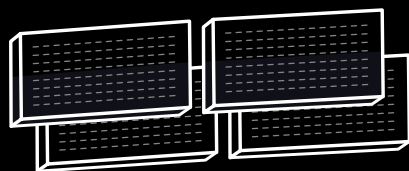
The acoustics of the room improve when sound-absorbent furniture and elements are placed as close to the source as possible. Consequently sound-absorbent materials such as partitions and desktop screens integrated in the workplace are extremely effective means of controlling reverberation. Voortman offers a variety of furniture lines which in combination with Sound and Vision acoustic partitions and desktop screens achieve a high degree of acoustic privacy.

Acoustic cabinets



In addition to their beneficial effect on office acoustics, Sound and Vision sliding-door cabinets also play an important role as partitions. They create personal space without making people feel confined. The interior of the cabinets can be configured to suit every form of storage.

Acoustic baffles



Sound and Vision range includes acoustic baffles designed for ceiling suspension, where they absorb sound waves and take over the role of the original suspended ceiling – in an extremely stylish manner. The baffles offer great flexibility, and are available in a variety of sizes, shapes and colours. In addition, the wiring and lighting can be integrated in the baffles to obtain a really clean design.





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