HARMONY OF SPACE AND SOUND

ACOUSTICAL MATERIALS IN GLASS AND METAL

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ACOUSTICS – DIMENSIONS OF ARCHITECTURAL DESIGN

Harmony of eye and ear

The way we perceive sound is more direct and immediate compared to any of our other senses. Differing frequencies of sound waves penetrate the inner ear (cochlea) and are deciphered in the nerve cords of the brain. In the context of evolutionary process, it represents one of the most complex instances of learning that the human species has ever undergone.

While the ear is able to perceive 10 octaves, the eye is only capable of comprehending the components of one. Unlike the ear, the eye has the possibility of scanning a piece of information many times over, and it can afford a greater degree of inexactness.

However, the spoken word is a rapid, one-off event. Articulation of the same word twice in exactly the same way is practically impossible. The ear must operate in such a way that it is able it to decipher sound in an instant, both reliably and precisely.

Hearing something once must be enough, since one second later the person speaking has already added a few more words. This happens every time we have a conversation. Every fluctuation in tone can contain important information about the person speaking. This is lost when it is not perceived precisely in the instant it is emitted.

These insights provide the basis for our close cooperation with scientists, building engineers and contractors to develop and produce high performance acoustic building products, manufactured from high-grade materials to facilitate optimal speech comprehension in our built-up world. The effective combination of scientific knowledge with so many diverse designs, in respect to material, surface, colour and form, creates a people friendly architectural environment that meets all our demands.

PREVENTIVE FIRE PROTECTION

The devastating fires of the Middle Ages, which often erased entire towns, has provided us with an ever growing understanding of preventive passive fire protection.

Buildings must be constructed to preclude a fire from breaking out. The construction must also prevent the spread of fires and smoke, which enables people, animals and valuables to be saved, and for the flames to be extinguished.

Building regulations and the associated implementation of rules are mandatory, as are the materials or classes of materials that may be used in particular buildings or parts of buildings. On the basis of standard fire tests, building materials are classified into approved classes, by the building authority, of: non-combustible, limited combustibility or flammable.

For each specific material classification the areas of application are determined according to the following philosophy:
The higher or bigger the building and the higher the number of people in the building, the more stringent the requirements are on the building materials used.

This includes, in particular, high-rise buildings, hospitals, residential care homes, schools, nurseries, sports stadiums, and other public buildings where you would expect to find a large number of people present.

Inside the building emergency routes and exits have the greatest significance since they enable people to get out of the building safely, and they also facilitate the access of rescue services and fire fighters to the building, even after fire has broken out.

As a result, only building materials of the material classification A are used for escape routes.
In case of a fire, these materials must meet the requirements, not only of low combustibility but also those relating to the generation of smoke and toxic gasses.

Our building materials made in metal and, particularly, the expanded glass granulate panel with inorganic binding agents MIKROPOR® G, meet these most stringent requirements. Corresponding building authority certificates provide attestation to this fact in many different countries in the world.

In general, certification procedure takes the form of a so called general building authority's approval, or a general building authority's test certificate for the material classification A.

Of course, for any case in which there is a special requirement for a composite material to an A quality, corresponding A substrate panels and coverings are available and carry the respective A-test certificates for composite materials.

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Effective 04/2017
Images of surfaces, colors and structures can partly differ from the original.