

Room acoustics





Sound-absorbing ceiling islands (Heuchelheim)

Metawell in Room Acoustics

ACOUSTIC CEILINGS

Frequently sound absorption in modern office buildings causes problems because big windows and core-tempered building structures have acoustically 'hard', that is sound-reflecting, surfaces. Absorbers which are subsequently installed to improve the reverberation time normally have a thermally insulating effect which would considerably reduce the performance of already integrated radiant ceiling surfaces.

Metawell offers architects and planners a multitude of possibilities to make for good room acoustics with the given conditions. Principally, there are three types of acoustic ceilings: ceiling islands (canopies), modular ceilings and jointless ceilings.

The good sound reduction, which due to their structure all variants provide, goes with an excellent heat transmission perform-

ance owing to the use of aluminium as material. These characteristics allow for the use of Metawell ceiling panels both for core-tempered buildings and as radiant cooling and heating ceilings.

SURFACES

With Metawell the architect has in principle four surface possibilities with distinctly different optical appearances:

- visible perforation with different patterns
- sound-control plaster with different grains
- textured paint
- plain coating

Perforation	visible		concealed	
	Coil coating	Plain coating	Textured paint	Sound-control plaster
Ceiling island	✓	✓	✓	—
Modular ceiling	✓	✓	✓	—
Jointless ceiling	—	✓	—	✓



Choice of sound-absorbent Metawell surfaces

At a glance

Advantages of Metawell acoustic ceilings

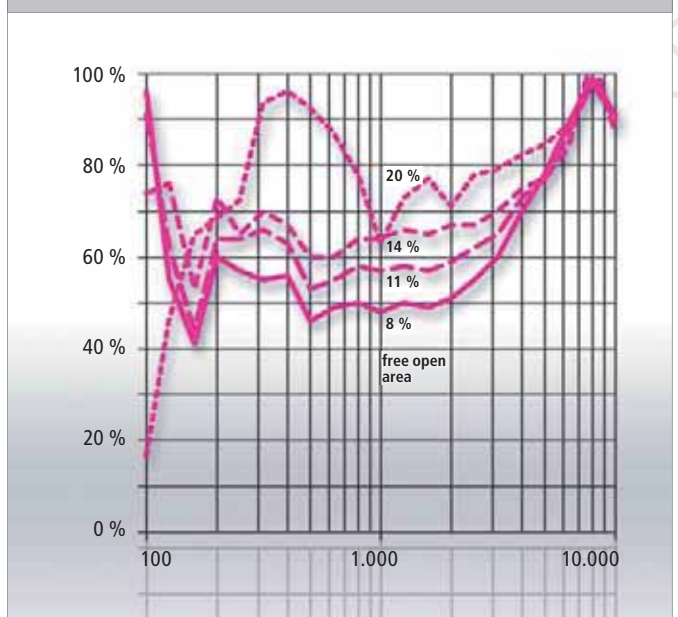
General characteristics:

- high rigidity
- low weight
- extraordinary evenness
- small overall thickness
- free choice of sizes
- numerous possibilities for surfaces and coatings
- easy processing at site
- approvals and certificates for the said use

Acoustic ceiling islands additionally offer:

- better sound-absorption
- easier accessibility
- more freedom of design
- lower investment and mounting cost
- no measurable influence on the cooling and heating performance of core-temperated buildings when installed at a sufficient distance

Sound-absorbing values of jointless Metawell acoustic ceilings



Note: Modular ceilings and canopies have better sound-absorption values than jointless ceilings because the panel edges and reverse sides contribute to the sound-absorption.



Jointless acoustic ceiling (Düsseldorf)

JOINTLESS CEILING

Jointless ceilings consist out of several panels which, at site, are screwed to a suitable substructure, smoothed and polished. For acoustic ceilings perforated panels are covered with suitable tissues and then coated with sound-control plaster. The high inherent stiffness of Metawell in combination with vis-à-vis plaster-board small hole diameters allows extremely even and plain coatings.



Acoustic ceiling islands in a cafeteria (Munich)

MODULAR CEILING

Modular ceilings are made with single ceiling panels that together make for a ceiling with visible joints. Thanks to freely chosen geometries the Metawell panels can have polygonal, elliptical or fancy shapes.

Unlike conventional modular ceilings Metawell does not require visible support profiles. On the contrary, single panels in sizes of up to 6 mtr length and 1.5 mtr width can be suspended directly from the room ceiling.

Placeholders for eventual partition walls are laid on and between the single acoustic panels and can easily be removed if need be.



Perforated ceiling panels in a cruise liner (Aida)



Sound-absorbent modular ceiling (Munich)



Large modular ceiling with downlights (Munich)

SOUND-ABSORBING CEILING ISLAND

Ceiling islands or canopies are pre-finished single-piece ceiling areas that are installed at a greater distance to the walls and between each other. These islands have a particularly high sound-absorbing effect because the back of the islands provides an additional surface for the laterally entering sound waves, which helps to considerably improve acoustics.

Freedom of design and creativity with regard to form, surface and colouring make Metawell a perfect material when it comes to architectural styling of a very special kind. What is more, since only a smaller part of the total area has to be covered, investment cost can be clearly reduced.

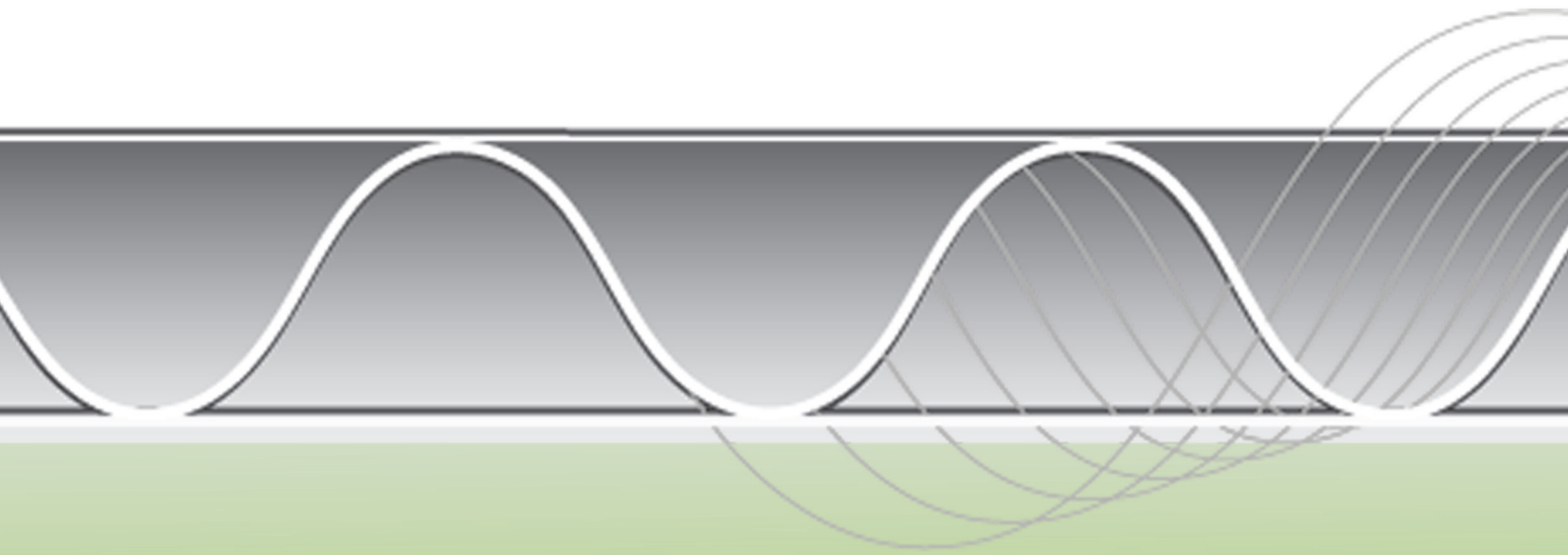
CERTIFICATES AND APPROVALS

The company's quality management system has been certified foll. DIN EN 9001.

Metawell ceiling elements are rated B1 building class and the acoustical properties of the individual types have been tested by independent institutions.



Bubble ceiling (Vohenstrauss)



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metal sandwich technology

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