

## *Acoustic elements*



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# *Company & product*

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Metawell GmbH, Germany

## Metawell GmbH

*Made in Germany – used worldwide*

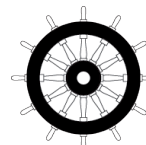
At the company's site in Neuburg in Germany, the company Metawell GmbH produces and develops aluminium sandwich panels and lightweight components - and has been doing so successfully for over 35 years.

The very light but extremely rigid sandwich panels, are used for numerous applications. In addition to lightweight panels, the company also provides extensively pre-fabricated components, customized lightweight solutions and special products.

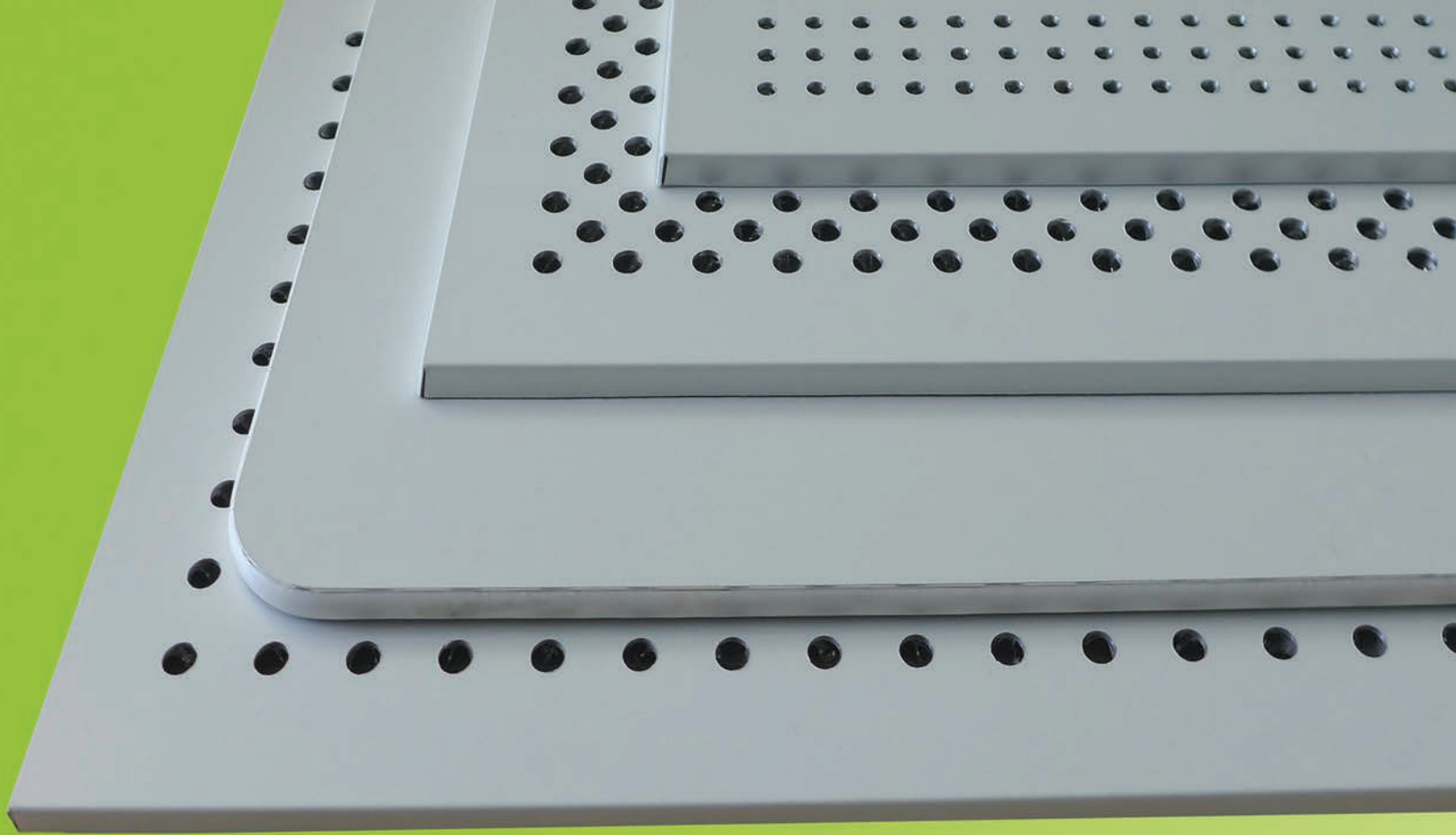
Engineering competence, modern manufacturing technologies and last but not least the passion for the products and their applications, make Metawell a competent and strong partner for customers from various industries around the world.

The company's goal is to use high-quality products to provide technically and economically convincing solutions for all areas where function and design combined with low weight are desired.

The company is certified according to (e.g.):







Metawell® - different variants (perforation and piping)

## Metawell®

Metawell® is a patented lightweight aluminium panel which is very light thanks to its sandwich structure and is characterized by an extremely high rigidity. Especially in large-scale applications a high weight saving can be achieved by using Metawell®.

In a continuous manufacturing process, two aluminium cover sheets are joined with a corrugated aluminium core material by means of a hot melt adhesive.

The specific structure of Metawell® ensures a high static and dynamic load capacity. Selected alloys and anti-corrosion coatings, also on the surfaces inside the sandwich, allow a high chemical and physical resistance.

### *Advantages at a glance:*

- low weight and high rigidity (same statical performance as solid aluminium but up to 80% lighter)
- high corrosion protection because all aluminium sheets are pre-treated with a primer
- 100% recyclable without prior material separation
- excellent flatness even with larger elements
- production in a continuous manufacturing process
- easy processing of the material with standard tools

# *Room acoustics*

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# Room acoustic with Metawell®

## *Improve your room acoustics with Metawell® acoustic sails*

In our hectic and steadily louder world, the desire for silence is only too easily comprehensible. This applies to the private sphere, but in particular to the workplace. Whether it is in office buildings, kindergartens, schools, sports halls, public administration and public buildings or in certain areas in hospitals – excessive noise is perceived as disturbing and can, in the long run, lead to a reduced performance. Designing rooms acoustically pleasant is a great challenge, especially when considering building physics and design trends, such as concrete core tempering. The optimization of the audibility in the room, increased speech intelligibility and a low reverberation time are of great importance here. Compared to many sound absorbers on the market Metawell® ideally covers the speech frequencies (300-600 Hz) and is therefore perfectly suitable for rooms where people speak at the same time (e.g. open-plan offices).

## *Advantages at a glance*

- Metawell® acoustic elements are suitable for all rooms where the reverberation time impairs speech intelligibility
- the aluminium sandwich structure warrants high rigidity with an elegant and filigree appearance. With only 6 mm of visible edge, the element is very thin, but at the same time so rigid that the suspension ropes can be arranged far in the centre of the panel and are therefore barely visible
- with the included suspension ropes, the sail can be mounted in no time
- material properties help the sail to be extremely light weight with high stability
- easy and fast installation
- can also be mounted under sloping ceilings
- cutouts and additional attachments are possible
- different geometries
- *the sail is delivered with a high-quality coil-coated surface in the colour RAL 9010 (pure white). If renovation is required after years, the element can be easily covered, the acoustic values are still preserved. Even repeated overcoating is possible without loss of performance.*





Metawell® sail Perfect Rectangular © Fapinex LLC



Metawell® sail Basic Rounded with additional cutouts





Metawell® sail Basic Square



Metawell® sail Perfect Rectangular with LED workplace lighting





Diagonally mounted Metawell® sail Perfect Rectangular



Metawell® sail Perfect Rectangular



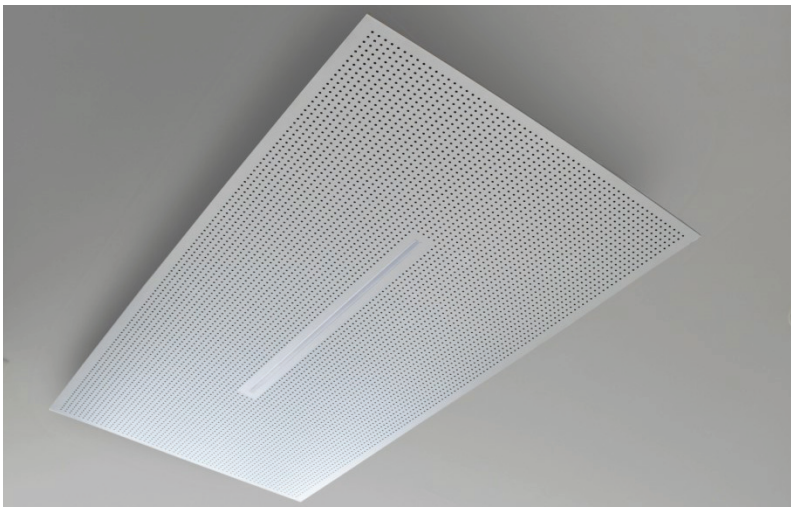
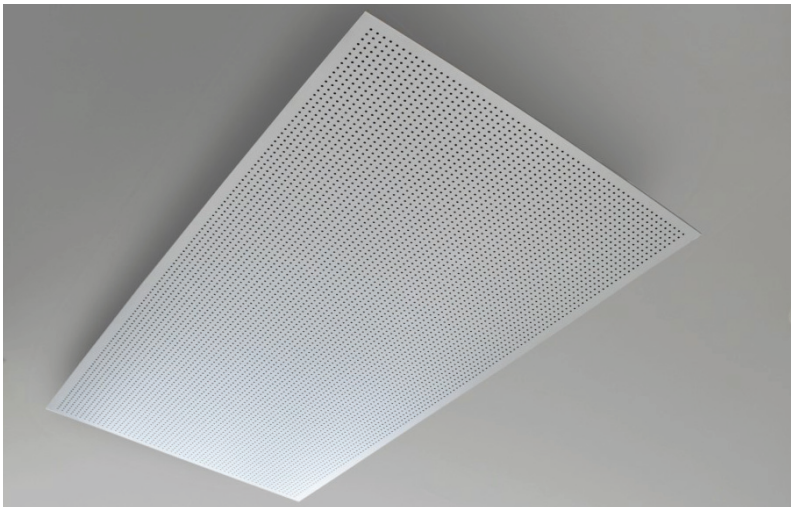
## *Ceiling sail variants*

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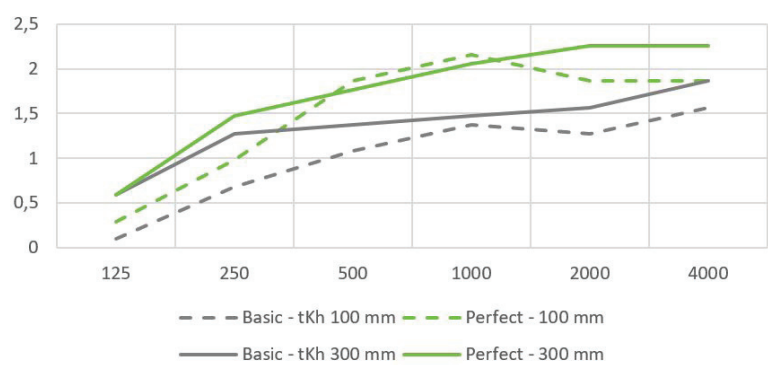
# Basic Rectangular

## Details

- panel edge - visible side turned up 6 mm
- panel height 6.0 mm
- structure height 30 mm (incl. C-profile, without suspension)
- suspension height 200 - 1200 mm (with rope hanger)
- colour RAL 9010 (pure white)
- perforation Q6x16
- acoustic fleece black
- hole proportion 11%
- light reflection 76%
- noise absorption  $\alpha_w$  80%
- absorption class B



Dimension	Weight	Absorption surface	SAP number	LED workplace lighting
980 x 2000 mm	9.7 kg	1.57 m²	350 001 91	no
980 x 2000 mm	10.8 kg	1.57 m²	350 001 83	yes



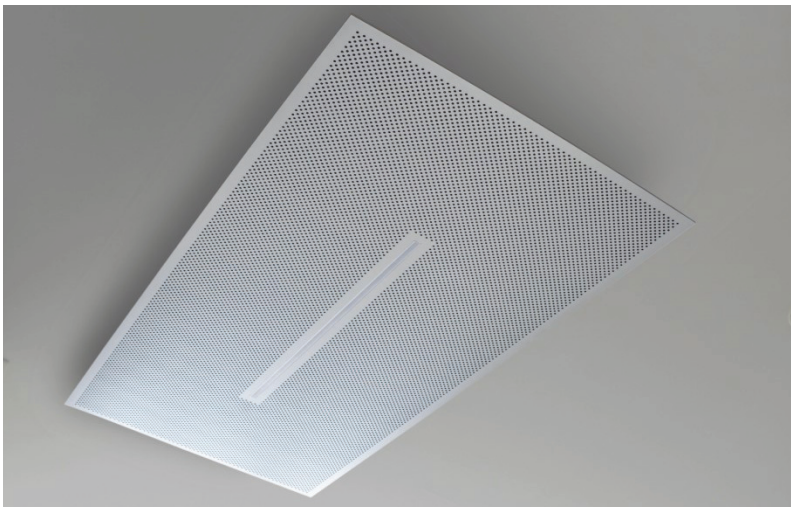
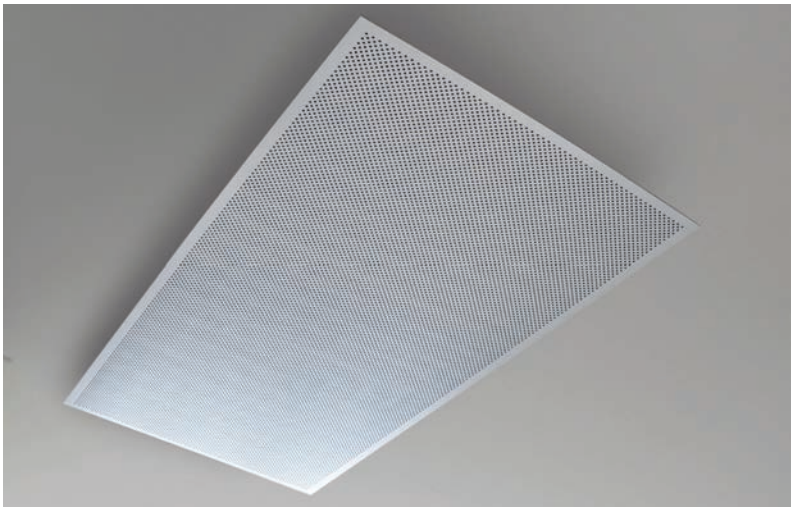
Equivalent absorption area per ceiling sail - Rectangular Basic and Perfect (m²)



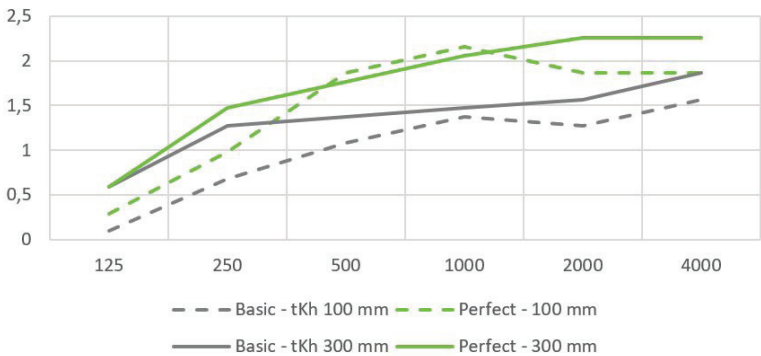
# Perfect Rectangular

## Details

- panel edge - visible side turned up 6 mm
- panel height 6.0 mm
- structure height 30 mm (incl. C-profile, without suspension)
- suspension height 200 - 1200 mm (with rope hanger)
- colour RAL 9010 (pure white)
- perforation X6x8
- acoustic fleece and melamine foam
- hole proportion 22.1 %
- light reflection 66%
- noise absorption  $\alpha_w$  95%
- absorption class A



Dimension	Weight	Absorption surface	SAP number	LED workplace lighting
980 x 2000 mm	8.9 kg	1.86 m²	350 001 93	no
980 x 2000 mm	10.0 kg	1.86 m²	350 001 95	yes

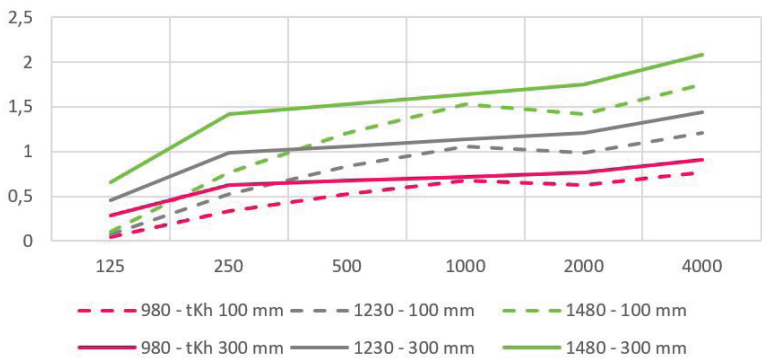


Equivalent absorption area per ceiling sail - Rectangular Basic and Perfect (m²)

# Basic Square

## Details

- panel edge - visible side turned up 6 mm
- panel height 6.0 mm
- structure height 30 mm (incl. C-profile, without suspension)
- suspension height 200 - 1200 mm (with rope hanger)
- colour RAL 9010 (pure white)
- perforation Q6x16
- acoustic fleece schwarz
- hole proportion 11 %
- light reflection 76%
- noise absorption  $\alpha_w$  80%
- absorption class B



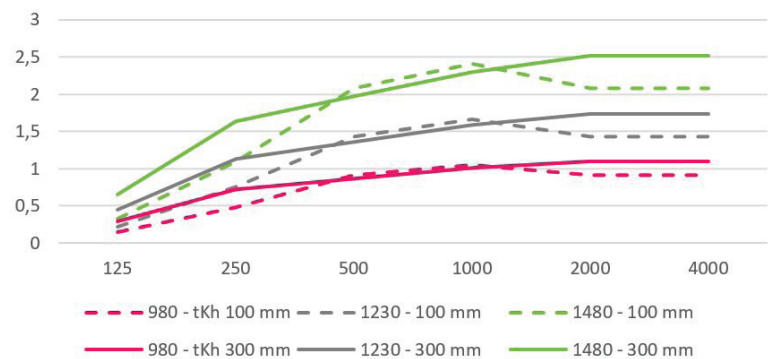
Equivalent absorption area per ceiling sail - Basic Square (m²)

Dimension	Weight	Absorption surface	SAP number
1480 x 1480 mm	10.2 kg	1.75 m²	350 000 77
1230 x 1230 mm	7.2 kg	1.21 m²	350 000 76
980 x 980 mm	4.8 kg	0.77 m²	350 000 75

# Perfect Square

## Details

- mitred edges
- panel edge - visible side turned up 6 mm
- panel height 6.0 mm
- structure height 30 mm (incl. C-profile, without suspension)
- suspension height 200 - 1200 mm (with rope hanger)
- colour RAL 9010 (pure white)
- perforation X6x8
- acoustic fleece and melamine foam
- hole proportion 22.1 %
- light reflection 66%
- noise absorption  $\alpha_w$  95%
- absorption class A



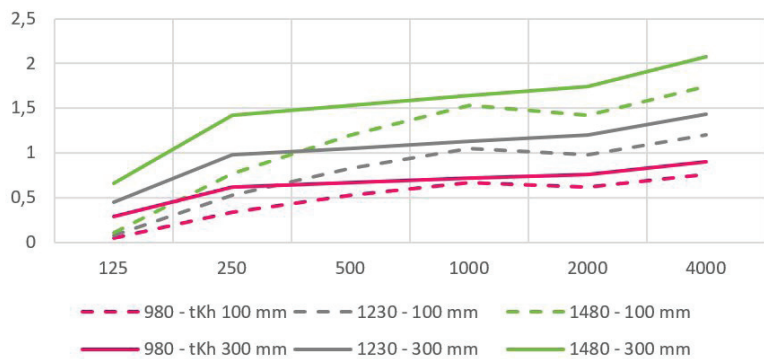
Equivalent absorption area per ceiling sail - Perfect Square (m²)

Dimension	Weight	Absorption surface	SAP number
1480 x 1480 mm	9.3 kg	2.08 m²	350 000 80
1230 x 1230 mm	6.6 kg	1.44 m²	350 000 79
980 x 980 mm	4.4 kg	0.91 m²	350 000 78

# Basic Rounded

## Details

- corners radiused by 100 mm
- panel edge - all-round white piping
- panel height 6.0 mm
- structure height 30 mm (incl. C-profile, without suspension)
- suspension height 200 - 1200 mm (with rope hanger)
- colour RAL 9010 (pure white)
- perforation Q6x16
- acoustic fleece
- hole proportion 11 %
- light reflection 76 %
- noise absorption  $\alpha_w$  80 %
- absorption class B



Equivalent absorption area per ceiling sail - Basic Rounded (m²)

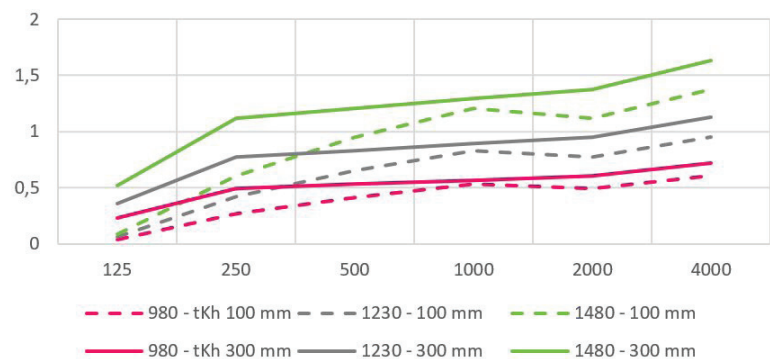
Dimension	Weight	Absorption surface	SAP number
1480 x 1480 mm	10.1 kg	1.75 m²	350 000 83
1230 x 1230 mm	7.2 kg	1.20 m²	350 000 82
980 x 980 mm	4.8 kg	0.76 m²	350 000 81



# Basic Circle

## Details

- panel edge - all-round white piping
- panel height 6.0 mm
- structure height 30 mm (incl. C-profile, without suspension)
- suspension height 200 - 1200 mm (with rope hanger)
- colour RAL 9010 (pure white)
- perforation Q6x16
- acoustic fleece
- hole proportion 11%
- light reflection 76%
- noise absorption  $\alpha_w$  80%
- absorption class B



Equivalent absorption area per ceiling sail - Basic Circle (m²)

Dimension	Weight	Absorption surface	SAP number
Ø 1480 mm	8.3 kg	1.38 m²	350 000 91
Ø 1230 mm	5.9 kg	0.95 m²	350 000 90
Ø 980 mm	3.9 kg	0.60 m²	350 000 89

## *Installation & further details*

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# Installation

## Location

- Metawell® acoustic sail shall not be or used outside of buildings
- Metawell® acoustic sail shall not be exposed to chlorine vapours or other aggressive environment

## Mechanical load capability

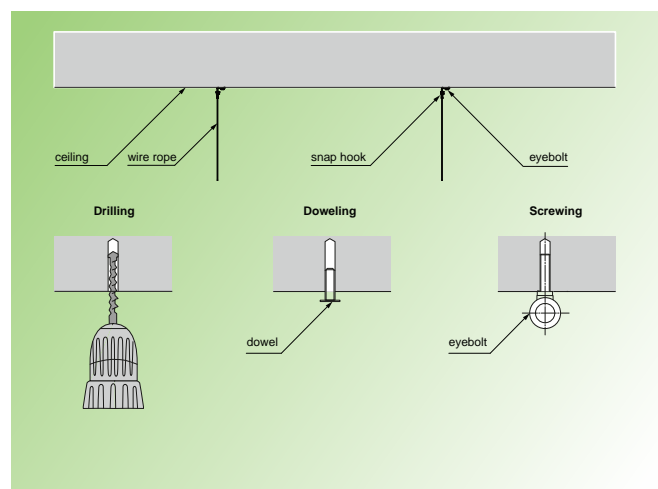
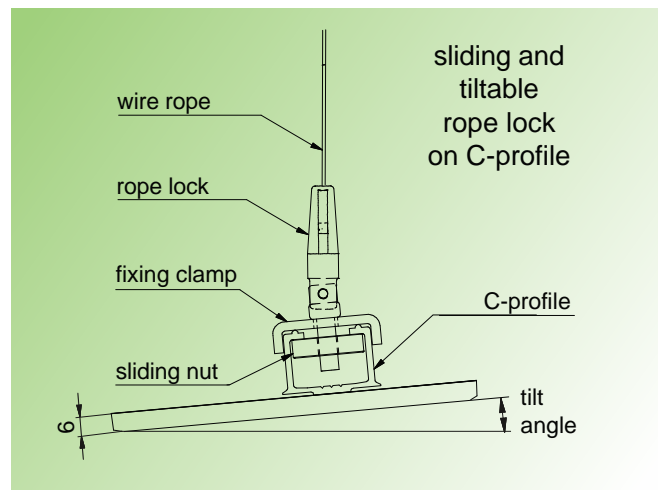
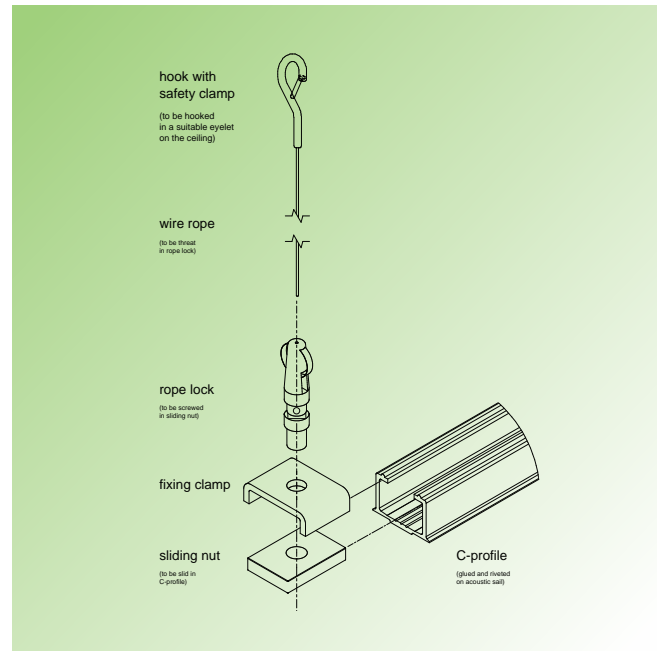
- working load limit of the wire rope and the rope lock is 15 kg
- apply all four suspensions of the acoustic sail
- sections shall not affect the stability of the acoustic sails
- fixtures and extensions shall not exceed the working load limit of the wire ropes and the rope locks. Please keep in mind that the acoustic sail may be hinged sideways temporarily

## Folding

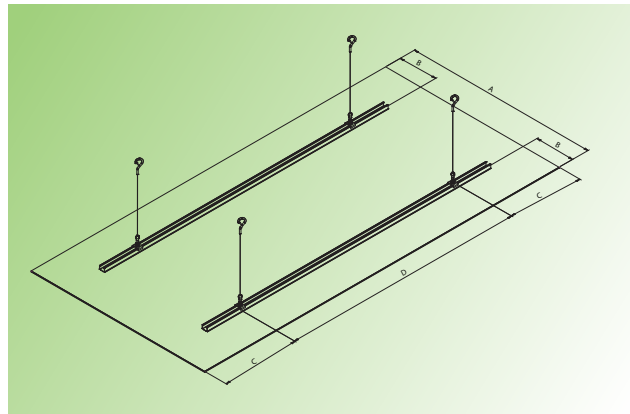
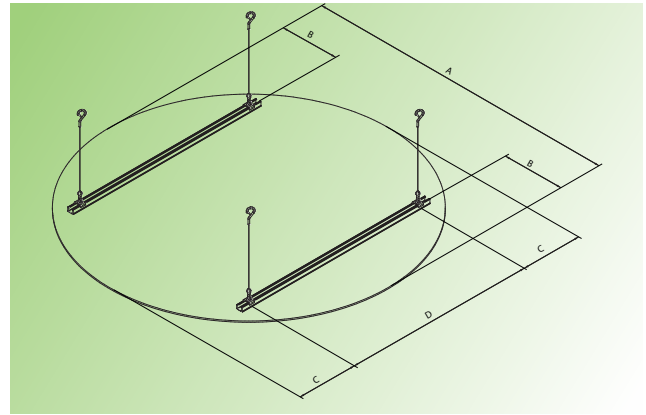
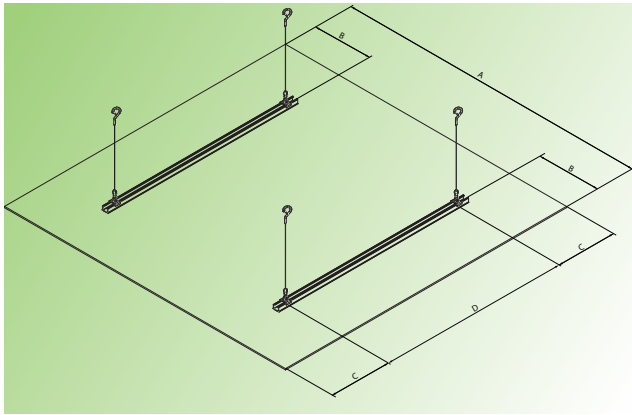
- folding of the Metawell® acoustic sail is not allowed with inflexible rope locks. Use hinged rope locks that avoid a bending or deflecting of the ropes
- Metawell® acoustic sails that are used to be folded have to be equipped with additional safety wires

## Assembly

- check before assembly that the wire ropes have no visible damages and are free of oil or other lubricants.
- Metawell® acoustic sails have to be assembled by qualified personnel only
- use enclosed parts for mounting
- Metawell® acoustic sails are not suitable for lifting loads



## Placement rope locks



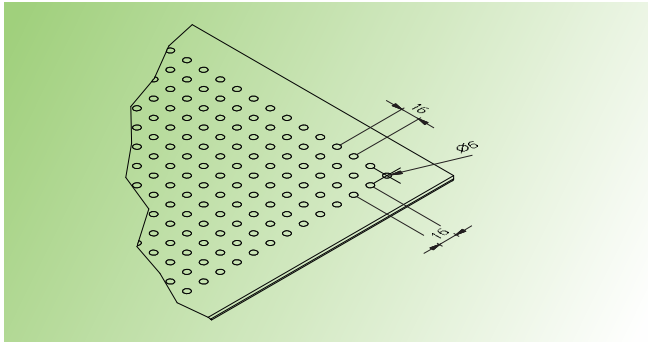
	<i>Dimensions</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
<i>Square / Rounded</i>	1480 x 1480 mm	1480 mm	290 mm	220-400 mm	680-1040 mm
	1230 x 1230 mm	1230 mm	265 mm	220-350 mm	530-790 mm
	980 x 2000 mm	980 mm	190 mm	200-300 mm	380-580 mm
<i>Circle</i>	Ø 1480 mm	1480 mm	290 mm	290 mm	900 mm
	Ø 1230 mm	1230 mm	265 mm	265 mm	700 mm
	Ø 980 mm	980 mm	190 mm	190 mm	525 mm
<i>Rectangular</i>	980 x 2000 mm	980 mm	200 mm	388 mm	1224 mm

### Wire rope assembly

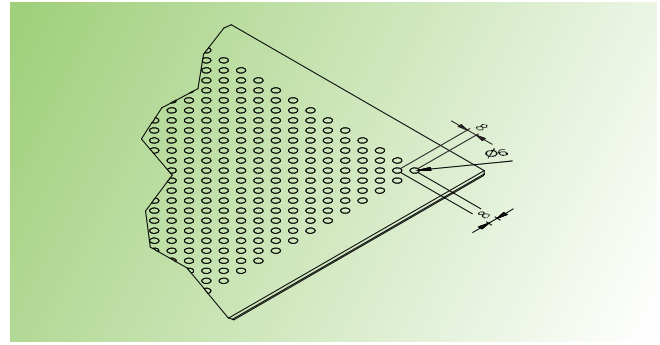
- specify the drilling hole positions by measurement or drill template
- drill the holes in the ceiling with respect to the mounting system (dowel, wooden screw etc.)
- align the eyelets to the drilling holes
- fix the wire eyelet with a suitable screw at the chosen mounting system (dowel, wooden screw etc.)
- do not bend or deflect wire ropes
- fix additional safety wires (if necessary)



# Perforations



Basic - Q6x16



Perfect - X6x8

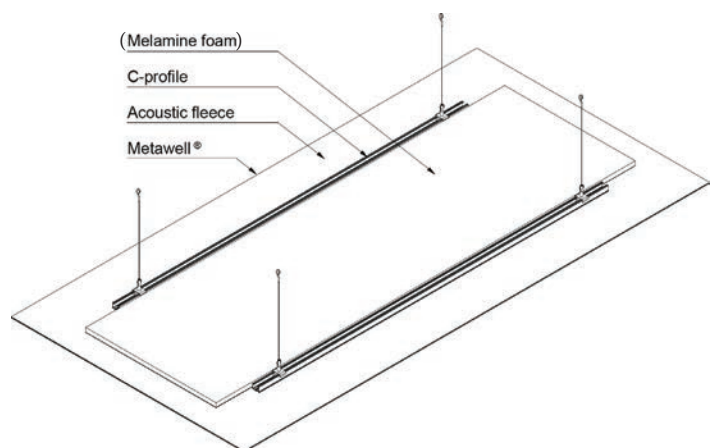
## LED workplace lighting

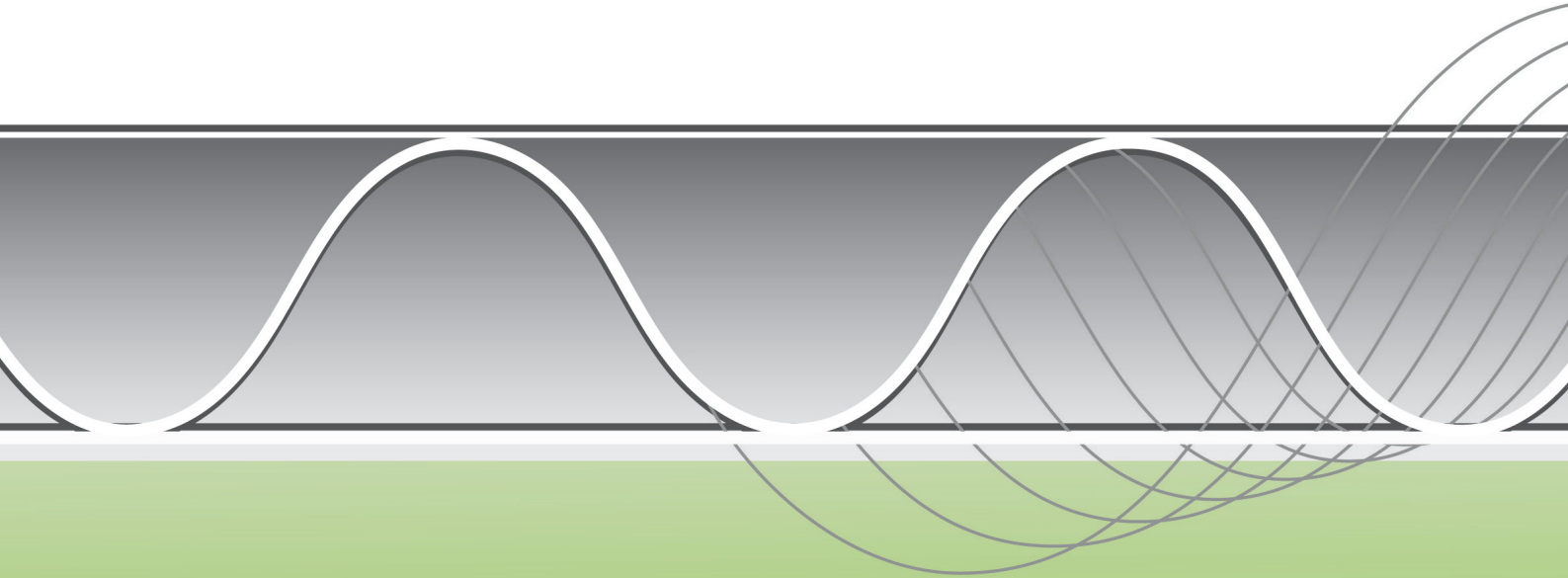
The cover of the LED light is flush with the Metawell® acoustic sail and the sides of the light cover are opaque to prevent light scattering. The dimmable LED light is provided including power supply (230 V AC / 24 V DC, 30 W) with connector cable with 2 m open strands for an easy connection to the existing power supply.

- luminaire length 985 mm
- voltage LED light: 24 VDC
- power: 25 W (26/Wm)
- colour temperature: 3000 K
- luminous flux: 3500 lm
- efficiency: 136 lm / W
- color rendering value: CRI: 84
- lifetime LED L80 >60.000h
- homogeneous light pattern

## Scope of supply

- panel with perforation
- acoustic fleece (optional for Perfect variants with melamine foam)
- 2 C-profiles
- 4 wire suspension with mit rope sockets, sliding blocks and eyelets





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*metal sandwich technology*

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