

OWAtecta®

Why metal ceilings

Metal ceilings are different. The density of their surface and the aesthetic restraint of their design offer the architect and builder particular creative options and solutions for many types of building projects. In the OWAtecta® metal ceilings programme we have a wide range of tiles in galvanized sheet steel and aluminium with a powder coated paint finish.

Planning with OWAtecta®

Variety formation of the ceiling

OWAtecta® is a ceiling system range that is designed to provide solutions for all installation situations. With its diverse design concepts it suits not only new building projects but can also be used with confidence in the framework of renovation and refurbishment projects.

The metal tiles provide particularly good acoustics by virtue of the different surface perforations that also contribute to the overall design pattern on the tiles.

The tiles can be installed in several different ways: lay in, clip in, hook-on and bandrastrer hook-on. The necessary suspension sections and components are all available from the OWAconstruct® programme: for example hangers, main runner sections, cross sections, wall trims and wall springs etc.



Perforation Patterns

The geometry of acoustics

OWAtecta® tiles are available with various different surface perforation patterns – from large holes to the very finest micro-perforations. These facilitate the optimization of reverberation times to suit the acoustics and design requirements of areas.



OWAtecta® perfora

Acoustic ceilings control the sound

OWAtecta® perfora metal ceiling tiles were developed in close cooperation with the Fraunhofer-Institute for Building Physics (Stuttgart) and were patented as a metal ceiling with micro-perforations. The optimum acoustic feature of these steel tiles is the 40,000 tiny holes per m² that provide the reduction of sound energy and a balanced relationship of sound absorption and sound reflection.

An interesting visual effect: the micro-perforations are not visually perceptible at a normal distance from the ceiling. The ceiling therefore has the appearance of a plain un-perforated monolithic type surface. Also, because only 0.64% of the ceiling surface is open, the light reflection value is similar to a an un-perforated surface.



Fire protection with OWAtecta®

Gain time - through fire resistance

Our suspension systems used in conjunction with OWAacoustic® tiles and combined with the soffit structure give fire protection for up to F 90.



Clean rooms with OWAtecta®

OWAtecta® ceilings for hygiene-sensitive areas

Chemical resistance of OWAtecta® ceilings

Positive/negative pressure OWAtecta® ceilings

OWA carried out extended tests with its OWAtecta® metal ceilings complying with the standards of the above mentioned areas.

- Ceilings for clean rooms according to EN ISO 14644-1
- Ceilings for hygiene-sensitive areas according to the DGHM method
- Chemical resistant ceilings according to ISO 2812-1 and ISO 4628-1, -6
- Positive/negative pressure ceilings following EN 1026 and EN 12207.

For further information please see OWA brochure No. 398 E.

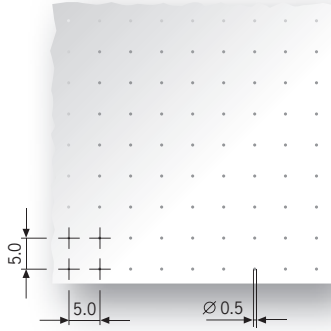


Cooling with OWAtecta®

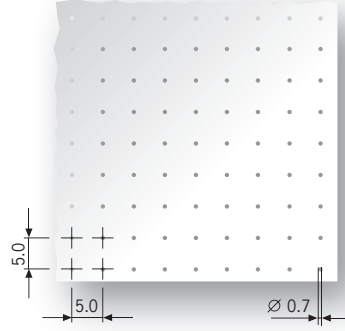
Mild cooling, that comes from above

Air-conditioning increases well-being and efficiency in work areas. In cooperation with manufacturers of technical cooling components, we have developed OWAtecta® Cool ceilings – for mild coolness that sinks quietly into the area.

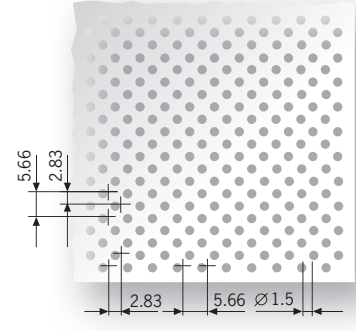
P: Perfora
0.5 mm hole diameter
0.64 % open area



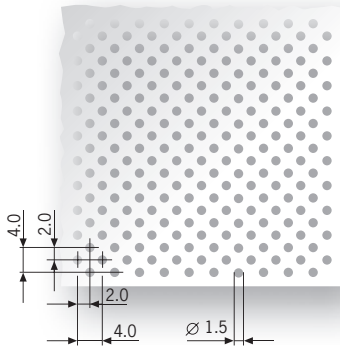
B: Rg0701
0.7 mm hole diameter
1 % open area



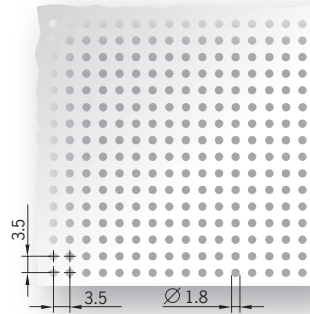
F: Rd1511
1.5 mm hole diameter
11 % open area



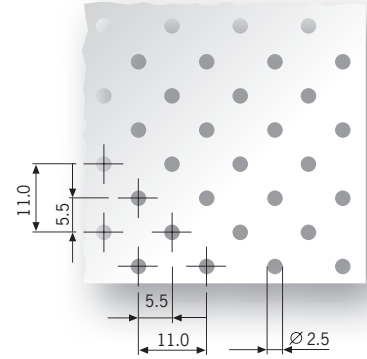
K: Rd1522
1.5 mm hole diameter
22 % open area



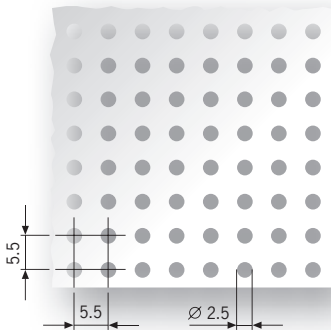
E: Rg1821
1.8 mm hole diameter
20.8 % open area



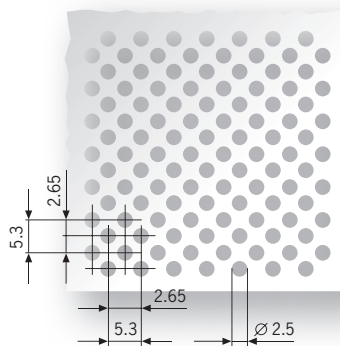
L: Rd2508
2.5 mm hole diameter
8 % open area



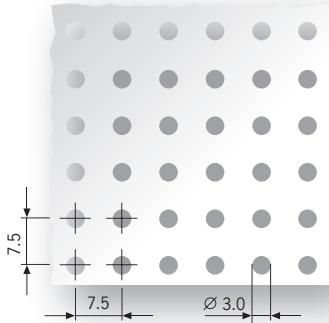
D: Rg2516
2.5 mm hole diameter
16 % open area



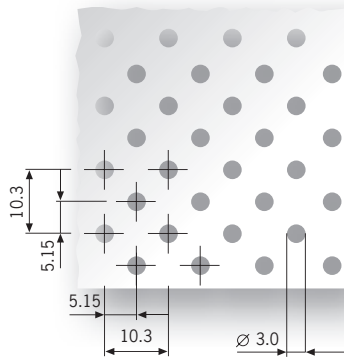
G: Rd2535 (diagonal)
2.5 mm hole diameter
35 % open area



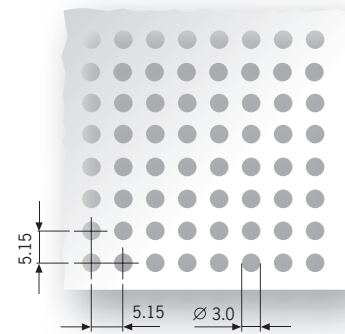
L: Rg3013
3.0 mm hole diameter
12 % open area



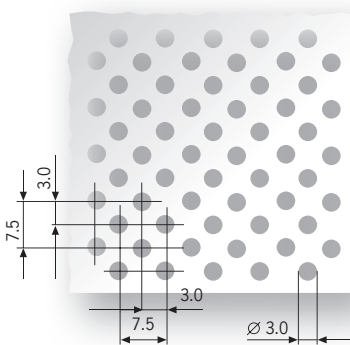
M: Rd3013 (diagonal)
3.0 mm hole diameter
13 % open area



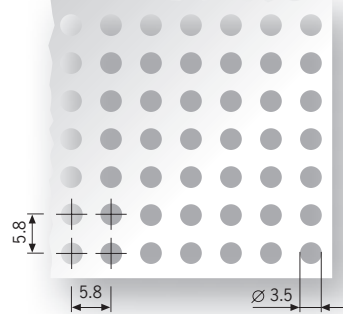
N: Rg3027
3.0 mm hole diameter
26.5 % open area



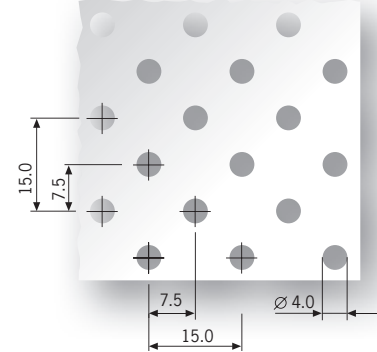
H: Rd3025 (diagonal)
3.0 mm hole diameter
25.1 % open area



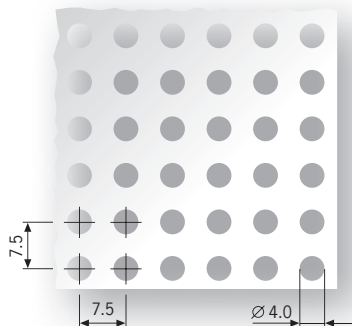
W: Rg3529
3.5 mm hole diameter
28.6 % open area



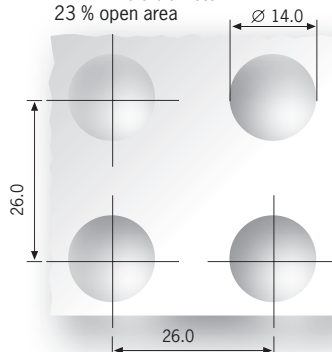
T: Rd4011
4.0 mm hole diameter
11 % open area

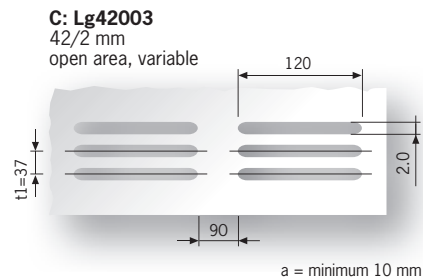
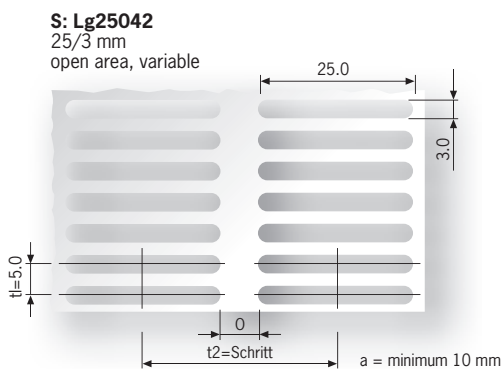
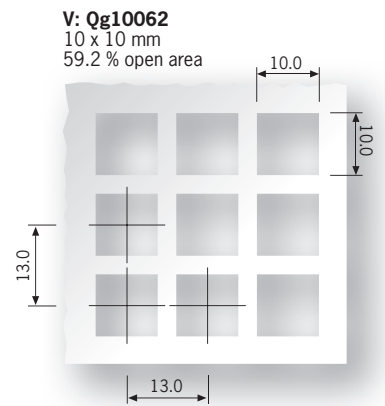
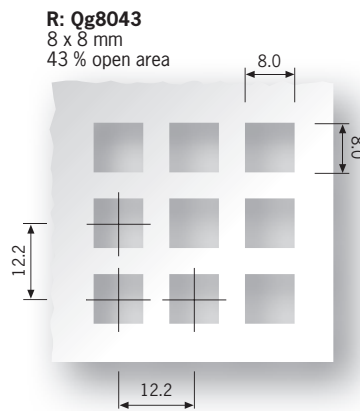
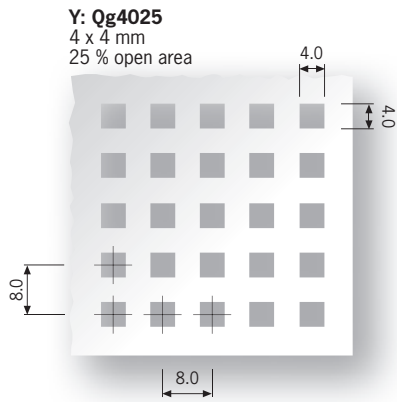


U: Rg4022
4.0 mm hole diameter
22 % open area



Q: Rg4023
14 mm hole diameter
23 % open area





Technical Data



Material	galvanized sheet steel
	(according to use)
Building material class	A1, A2-s1,d0, A2-s2,d0 to EN 13501-1
Thickness	from 0.5 to 1.0 mm (according to perforation)
Colour	powder coated white
Light reflection	from 60 to 90 (ISO 7724-2, ISO 7724-3)
Sound reduction*	from 12 dB to 44 dB
Sound absorption	from $\alpha_w = 0.50$ / NRC = 0.50 to $\alpha_w = 0.95$ / NRC = 0.95 (with perforations)
Fire protection*	from F 90 (DIN 4102)

*Dependent an system, soffit and other factors



Magnified cut out

Technical Data

Material	galvanized sheet steel
Building material class	A1 to EN 13501-1
Thickness	0.5 mm
Colour	similar RAL 9010
Light reflection	approx. 86 (ISO 7724-2, ISO 7724-3)
Sound reduction*	from 15 dB to 44 dB
Sound absorption	 $\alpha_w = 0.40$ / NRC = 0.50
Fire protection*	 up to F 90 (DIN 4102)

* Dependent on system, soffit
and other factors

The idea of increasing the sound absorption of a tile with micro holes came from China. OWAtecta® perfora metal ceilings with micro perforations was developed as a result of a joint German-Chinese programme led by the Fraunhofer-Institute for Building Physics (Stuttgart).

The optical effect

The perforated metal ceiling has the same aesthetic effect as an un-perforated ceiling. The micro perforations are barely perceptible at a normal distance from the ceiling height.

High light reflection

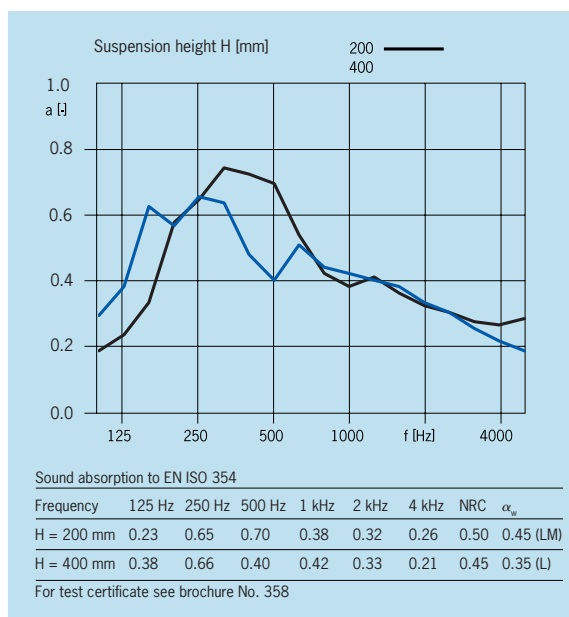
Despite having a perforated surface, the light reflection of the ceiling hardly differs from that of a plain closed ceiling surface. The reason: only 0.64% of the surface is open – leaving over 99% as a reflective surface.

The acoustic principle

The sound path through millions of micro-perforations, with a diameter of <0.5 mm, causes viscous friction at the hole edges to occur and therefore a reduction of sound energy. Reverberation time measurements clearly show that an optimum reverberation time can be achieved.

Sound absorption

Despite the relatively low sound absorption, an optimal reverberation time submits to the area. The lack of absorption at high frequencies has little noticeable effect due to the positive effect of high absorption at low and middle frequencies.



A test:

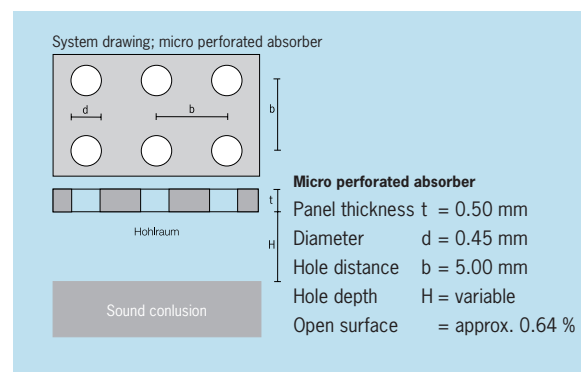
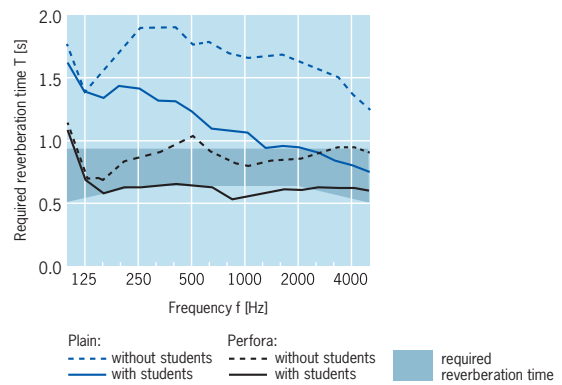
The test was made in a classroom measuring 10 x 7 x 3 m. Firstly, using a plain metal ceiling tile, the reverberation was measured in each case with and without the presence of students.

Test result:

Two curve paths clearly show that the yielded values are above the required optimal reverberation times. The ceiling was then dismantled and, under identical area conditions, an OWAtecta® perfora ceiling with 40,000 tiny holes per sqm was installed. Again, it was measured with and without students.

Test result:

Here, both curves lie in the area of the required reverberation time that represents optimal acoustic conditions regardless of how many occupants there were in the area in each case.





Example design H: Rd3024

System S 22 – Clip-in system

System S 31/S 32 – Clip in tile

System S 31/S 32 L – Clip in Linear planks

System S 36 L – Linear planks

System S 33 – Lay in tiles for 24 mm grid

System S 45 – Lay in tiles for 15 mm grid

System S 36 – Corridor System

System S 39 – Hook-on Linear tiles with Z-Section

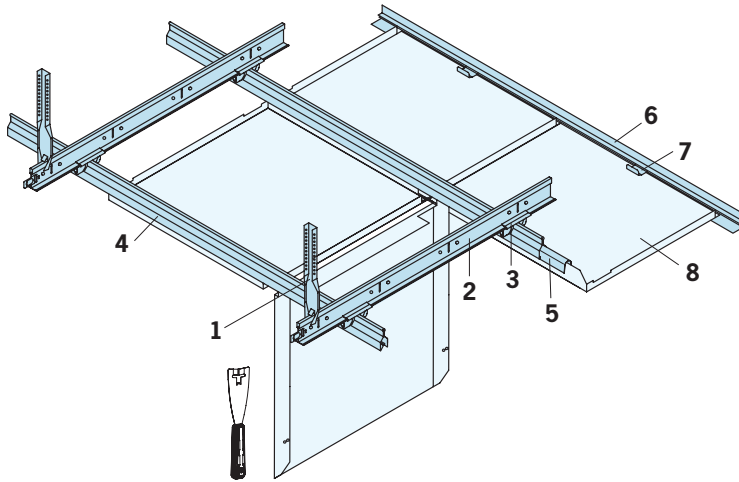
System S 42 – Baffles

System S 48 – Bandraster (C-Section)

System S 50 – Bandraster with lock point

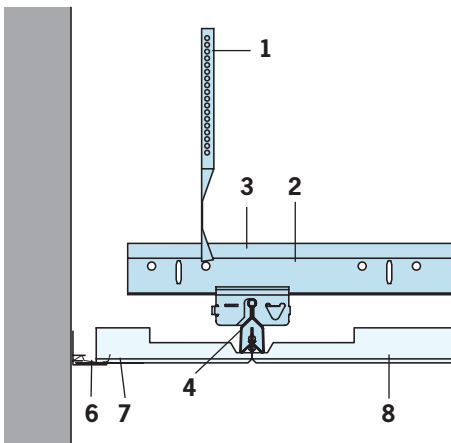
System S 55 – Sport panel (Impact resisting)

System S 60 – Magnetic Pin board wall absorber



- 1 Nonius lower section
- 2 Main tee
- 3 Cross connectors
- 4 Clip-in profile
- 5 Clip-in profile splice
- 6 Wall trim
- 7 Wall spring
- 8 Metal tile

Cross section:



Technical Data

Product line:
OWAtecta®

Dimensions:
600 x 600 mm ■
625 x 625 mm

Thickness:
Galvanized steel approx. 0.6 mm

Building material class:
According to use
A1
A2-s2,d0
to EN 13501-1

Edges:
Clip-in system 01

Suspension system:
All metal parts galvanized as well as
white painted.

Minimum suspension depth:
Suspended installation approx. 135 mm
Direct fixing installations approx. 54 - 60 mm

Fire protection:
on request



System S 36 L

concealed, demountable

OWAtecta®

Technical Data

Product line:

OWAtecta®

Dimensions:

1500 x 312.5 mm

1500 x 400 mm

2000 x 312.5 mm

2000 x 400 mm

2500 x 312.5 mm

2500 x 400 mm

Thickness:

Galvanized steel approx. 0.6 mm

Building material class:

According to use

A1

A2-s2,d0

to EN 13501-1

Edges:

Long edges: K 10



Short edges: K 02



Suspension system:

All metal parts galvanized as well as white painted.

Minimum suspension depth:

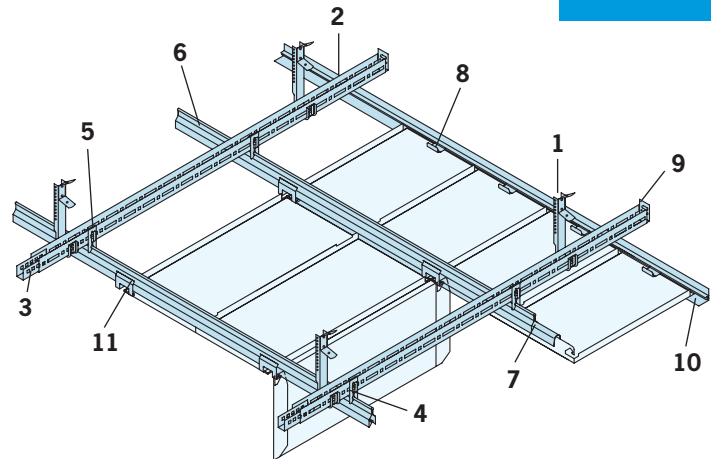
Suspended installation approx. 135 mm

Direct fixing installations approx.

54 - 60 mm

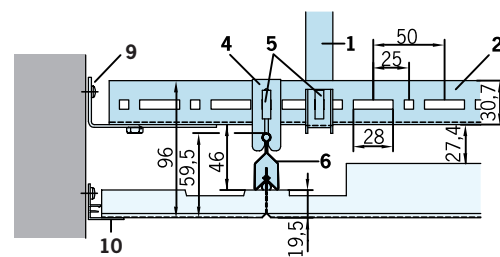
Fire protection:

on request



- 1 Hanger
- 2 Main runner
- 3 Coupling
- 4 Cross connector
- 5 Security clip
- 6 Clip in section
- 7 Connector
- 8 Wall spring clip
- 9 Wall anchor
- 10 Wall trim
- 11 Swing down spring clip

Cross section:



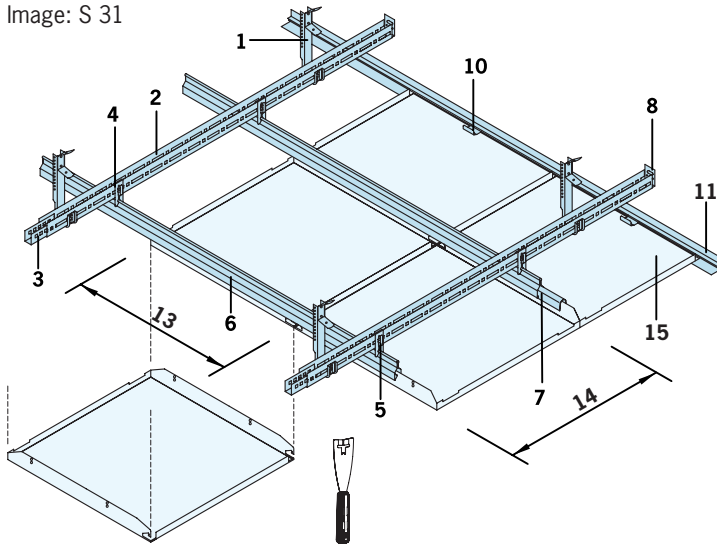
System S 31/S 32

S 31 Clip system
Concealed, demountable

S 32 Clip system
Concealed, swing down

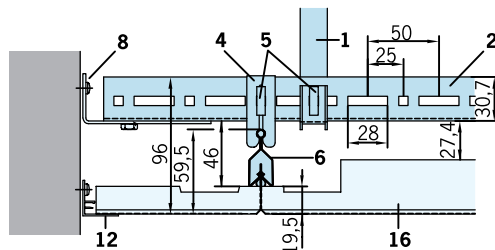


Image: S 31

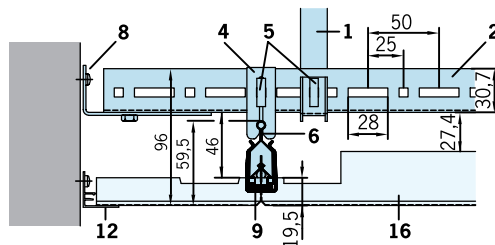


- | | |
|-------------------|--|
| 1 Hanger | 9 Swing down spring clip
(only with S 32) |
| 2 Main runner | 10 Wall spring clip |
| 3 Coupling | 11 F-Wall trim |
| 4 Cross connector | 12 Direct fixing hanger |
| 5 Security clip | 13 Tile width |
| 6 Clip in Section | 14 Tile length |
| 7 Connector | 15 Metal tile |
| 8 Wall anchor | |

S 31 Cross section:



S 32 Cross section:



For further information please see Brochure No. 331

Technical Data

Product line:
OWAtecta®

Dimensions:

600 x 600 mm ■
625 x 625 mm

1200 x 600 mm ■

1200 x 300 mm ■
1800 x 400 mm

Other sizes available on request.

Thickness:

Galvanized steel 0.5 mm nom.
Aluminium 0.6 mm nom. (only System S 31)

Building material class:

According to use
A1
A2-s1,d0
A2-s2,d0
to EN 13501-1

Edges:

Long edges 01
Short edges 01

Suspension system:

All metal parts galvanized as well as white painted.

Minimum suspension depth:

Suspended installation 200 mm nom.
Direct fixing installation 64 - 135 mm nom.

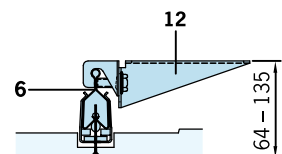
Fire protection:

On request

Swing down tiles:

Linear tiles swing down
from the short side

Direct fixing:





System S 33/S 45

S 33 Exposed, demountable = 24 mm grid
 S 45 Exposed, demountable = 15 mm grid

Technical Data

Product line:

OWAtecta®

Dimensions:

600 x 600 mm
 625 x 625 mm

Only K 07

1200 x 600 mm

Other sizes available on request.

Thickness:

Galvanized steel 0.5 mm nom.
 Aluminium 0.6 mm nom.

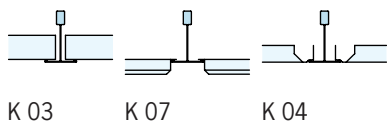
Building material class:

According to use

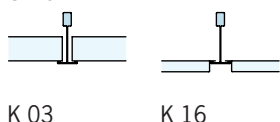
A1
 A2-s1,d0
 A2-s2,d0
 to EN 13501-1

Edges:

S 33



S 45



Suspension system:

All metal parts galvanized as well as white painted.

Minimum suspension depth:

75 – 100 mm (depending on the soffit).
 For ease of removal 120 mm

Fire protection:

On request

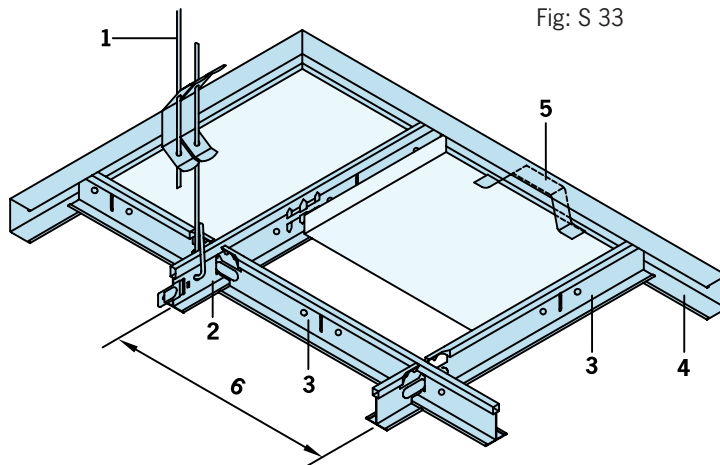
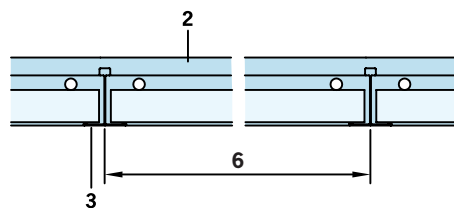


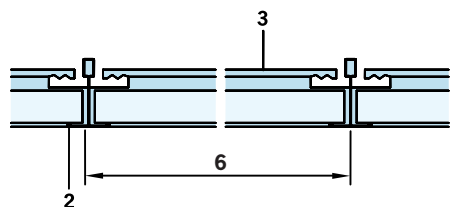
Fig: S 33

- 1 Hanger
- 2 Main T-Section
- 3 Cross T-Section
- 4 Wall channel
- 5 Wall Spring clip
- 6 Module distance

Section:



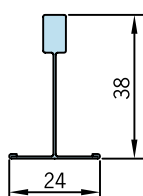
Cross section:



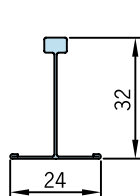
Section dimensions:

S 33

Main T-Section

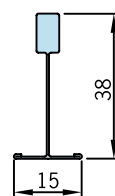


Cross T-Section



S 45

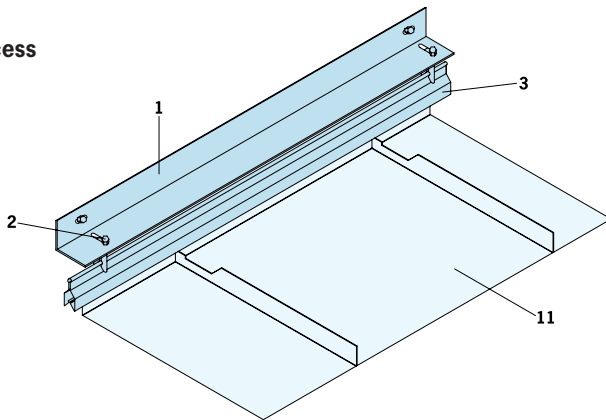
Main T-Section/Cross T-Section



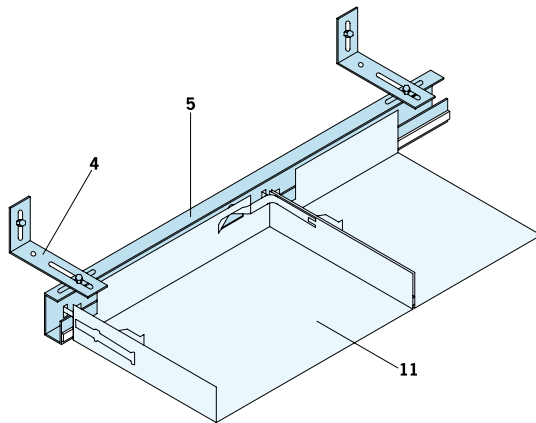
For further information please see Brochure No. 333.



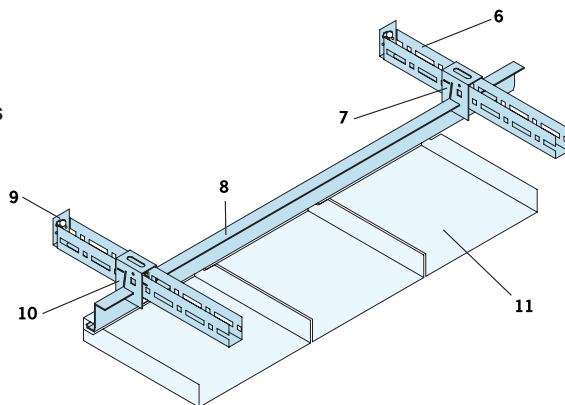
S 36 Success



S 36 Swing



S 36 Progress



- | | |
|-------------------|----------------------|
| 1 Carrying angle | 7 Security clip |
| 2 Hanger | 8 Z-Section |
| 3 Clip-in section | 9 Wall anchor |
| 4 Angle brackets | 10 Z-Hanger clip |
| 5 G-Section | 11 Metal-Linear tile |
| 6 Primary Section | |

Technical Data


Product line:
OWAtecta®

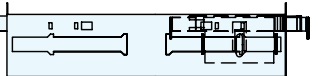
Dimensions:
Widths: from 247 - 600 mm
Lengths: from 600 to 3300 mm

Up to 1200 x 1200 mm
According to use

Thickness:
0.5 – 0.7 mm nom.
depending on static requirement


Building material class:
According to use
A1
A2-s1,d0
A2-s2,d0
to EN 13501-1

Edges:
Long edges: K 10 

Short edges: K 32 

K 03 

K 02 

K 11s 

Suspension system:
All metal parts galvanized as well as white painted.

Minimum suspension depth:
200 – 250 mm (dependent on soffit type)
For ease of tile removal 300 mm

Fire protection:
on request



System S 39

Hook-on linear panels with Z-Section

OWAtecta®

Technical Data

Product line:

OWAtecta®

Dimensions:

Widths: from 247 - 600 mm

Lengths: from 600 to 3300 mm

Up to 1200 x 1200 mm

Thickness:

0.5 – 0.7 mm nom.

depending on static requirement

Building material class:

According to use

A1

A2-s1,d0

A2-s2,d0

to EN 13501-1

Edges:

Long edges: K 10



Short edges: K 11



Suspension system:

All metal parts galvanized as well as white painted.

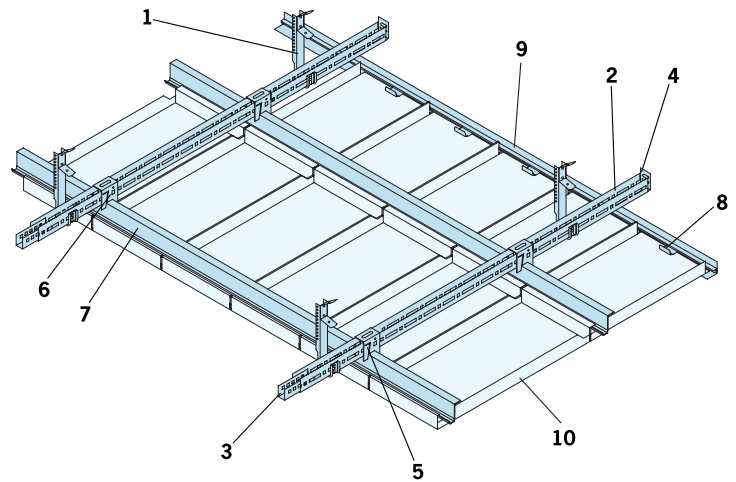
Minimum suspension depth:

200 – 250 mm (dependent on soffit type)

For ease of tile removal 300 mm

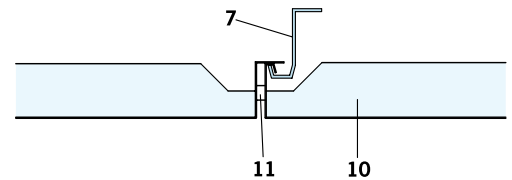
Fire protection:

on request



- | | |
|-------------------|----------------------|
| 1 Hanger | 7 Z-Section |
| 2 Primary Section | 8 Wall spring clip |
| 3 Connector | 9 Wall channel |
| 4 Wall anchor | 10 Metal-Linear tile |
| 5 Cross connector | 11 Joint band |
| 6 Security clip | |

Section:

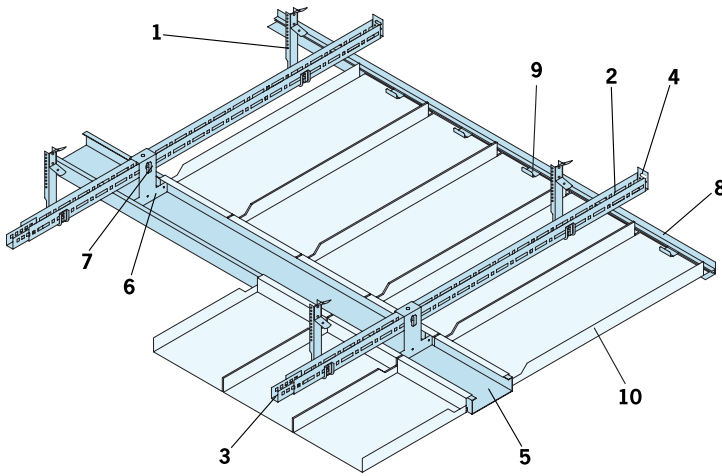


Cross section:



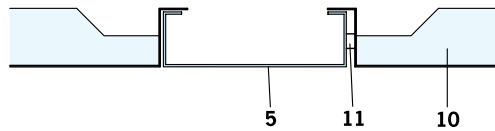
System S 48

Bandraaster (C-Section)

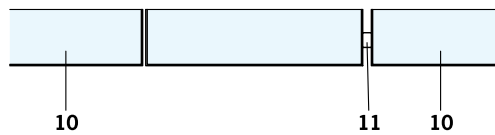


- | | |
|-------------------|----------------------|
| 1 Hanger | 7 Security clip |
| 2 Primary Section | 8 Wall channel |
| 3 Connector | 9 Wall spring clip |
| 4 Wall anchor | 10 Metal-Linear tile |
| 5 C-section | 11 Joint band |
| 6 Hanger | |

Section:



Cross section:



Technical Data

Product line:
OWAtecta®

Dimensions:
Widths: from 247 - 600 mm
Lengths: from 600 to 3300 mm

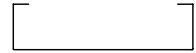
Up to 1200 x 1200 mm

Thickness:
0.5 – 0.7 mm nom.
depending on static requirement

Building material class:
According to use
A1
A2-s1,d0
A2-s2,d0
to EN 13501-1

Edges:

Long edges: K 10



Short edges: K 13



Suspension system:

All metal parts galvanized as well as white painted.

Minimum suspension depth:

200 – 250 mm (dependent on soffit type)
For ease of tile removal 300 mm

Fire protection:

on request

System S 60

Magnetic Pin-board absorber

Technical Data

Product line:

OWAtecta®

Dimensions:

1500 x 400 mm

Larger sizes on request

Thickness:

Metal Tile 0.6 mm nom. Sheet steel

Mineral wool tile 15 mm nom.

Building material class:

Metal tile A1

Mineral wool tile A2-s1,d0

to EN 13501-1

Edges:

Long edges: K 10

Short edges: open

Suspension system:

All metal parts galvanized as well as white painted.

Minimum installation depth:

approx. 50 mm from wall surface

Perforations:

Rd2516 with fleece

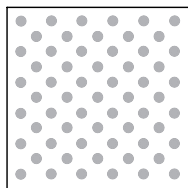
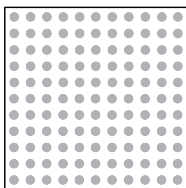
Rd3012 diagonal
with fleece

Ø 2.5 mm

Ø 3.0 mm

Open area 16%

Open area 12%



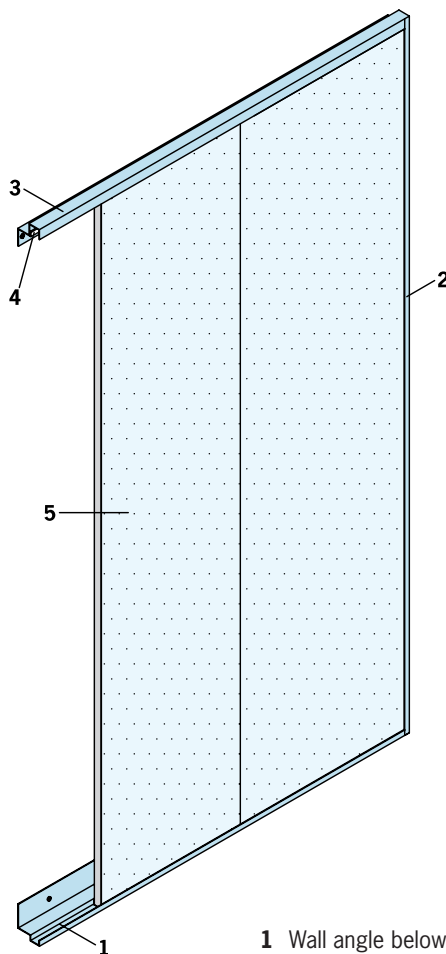
Sound absorption gradient:

Rg2516 with fleece and OWAcoustic® tile

$\alpha_w = 0.70$

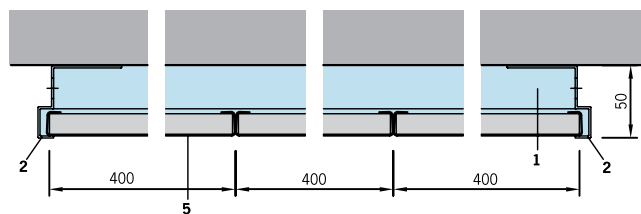
Rd3012 with fleece and OWAcoustic® tile

$\alpha_w = 0.75$



- 1 Wall angle below
- 2 Wall angle lateral
- 3 Wall angle above
- 4 Filler band
- 5 OWAtecta® Magnetic Pin-board absorber

Cross section:



An installation of at least 3 elements is necessary in order to make a perfect assembly.

