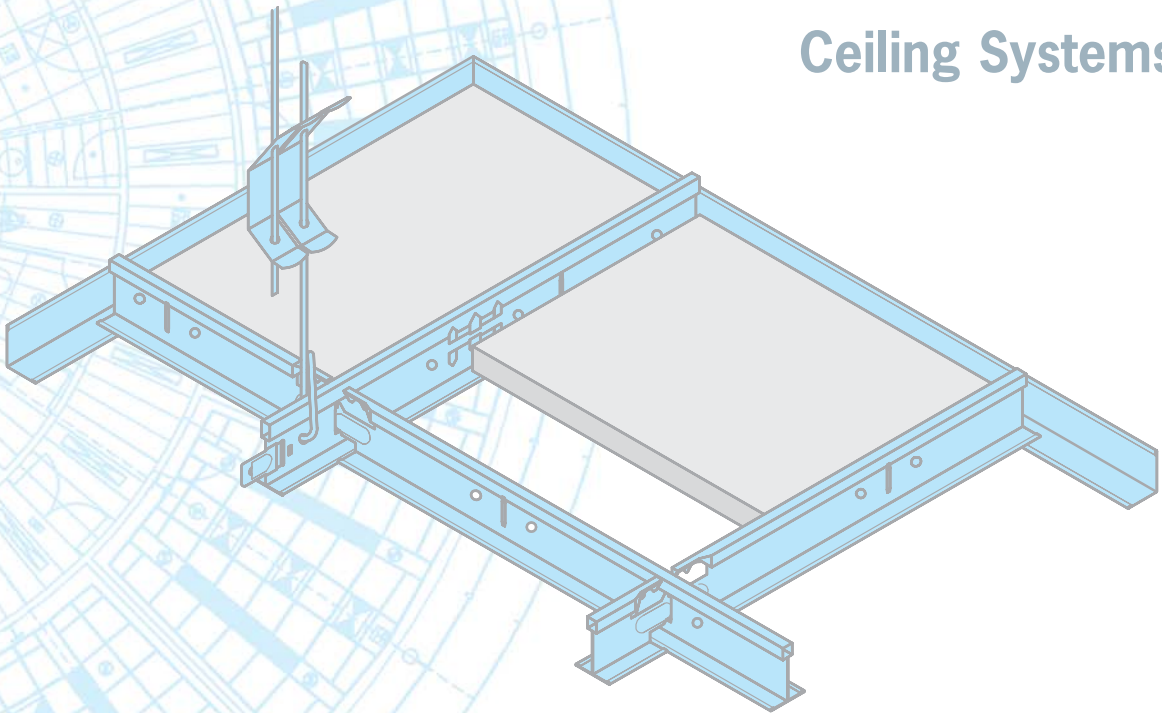


# INSTALLATION GUIDE WORKBOOK

Guidelines for the  
Planning and Installation  
of **OWAcoustic®** -  
**OWAconstruct®**  
Ceiling Systems



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## General

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Working with OWAconstruct®-OWAconstruct® ceiling systems

OWA Installation and Product Training Courses

# General

## 1. Introduction

This publication provides basic information for the planning and installation of OWAcooustic®-OWAconstruct® ceiling systems.

The information contained within this guide is based on our recommendations and those contained within the current European Standards (EN 13964). Inline with improving standards and techniques please make sure you are using the current\* issues of both documents.

As a manufacturer and supplier, we offer complete, tried and tested ceiling systems. OWA ceiling systems can be used to provide a variety of performances as well as aesthetic functions.

In all cases the correct installation of the ceiling is essential to ensure that the ceiling can fulfil any such requirements.

**Where the OWA ceiling is to provide any level of performance it must be installed in accordance with the relevant test report, assessment or those recommendations provided by OWA. Failure to use the specified components or comply with the installation recommendations will invalidate any test report, assessment or warranty.**

*\* See back page for publication date*

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General

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## **Basic planning**

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OWAcoustic® Tiles – General Information

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Construction of suspended ceilings

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OWAconstruct®-OWAcoustic® standard ceiling systems

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Working with OWAconstruct®-OWAconstruct® ceiling systems

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OWA Installation and Product Training Courses

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## Basic planning

### 2.0 Basic Planning

An OWA ceiling is installed using dry construction methods and is generally for interior use only. The basic principles of dry construction should be applied when installing the ceilings. Where additional materials such as timber or gypsum are used, the guidelines on working with those products should also be observed.

#### 2.1 Site conditions

Before installing an OWA ceiling the room/site conditions should be assessed. The area should be weather tight (windows and doors in place) and have a stable, dry environment. The ceiling should only be installed after the wet trades, such as plastering and screeding have been completed and the environment is dry and stable.

##### 2.1.1 Reference values for site environments:

Generally the relative humidity should be < 70 % RH (reference temperature 25 °C). For reference values for OWAacoustic® tiles see 3.2; conditions suitable for tradesmen's work, room temperature > 7 °C.

##### 2.1.2 Relative humidity

Temperature has a direct correlation to relative humidity. Lowering the temperature in an enclosed space will increase the relative humidity of the area. Where an area may have a high level of relative humidity or be subject to a temperature variations it is important to ensure the area is monitored and if necessary ventilated to remove humid air. This is particularly important in areas where wet trades have been used such as new build projects.

The following table shows the effects of lowering a room temperature from 20 °C to 15 °C. The alteration in temperature ( $\Delta T = 5^\circ$ ) in an enclosed space has an effect on the relative humidity. This can be understood by considering the absolute humidity ( $\text{g}/\text{m}^3$ ).

Example:

Room temperature 20 °C, absolute humidity at 12.10  $\text{g}/\text{m}^3$  corresponds to a relative air humidity of 70 %. Lowering the temperature to 15 °C with an associated comparable absolute humidity of 12.23  $\text{g}/\text{m}^3$  means a relative air humidity of 95 %.

Temp. in °C	Relative air humidity in %							
	50	60	70	80	85	90	95	100
10	4.70	5.60	6.50	7.50	8.00	8.50	9.95	9.40
11	5.00	6.00	6.95	8.00	8.53	9.05	9.55	10.05
12	5.30	6.40	7.40	8.50	9.05	9.60	10.15	10.70
13	5.65	6.85	7.95	9.10	9.68	10.25	10.83	11.40
14	6.00	7.30	8.50	9.70	10.30	10.90	11.50	12.10
15	6.40	7.75	9.00	10.30	10.50	11.60	12.23	12.85
16	6.80	8.20	9.50	10.90	11.60	12.30	12.95	13.60
17	7.25	8.70	10.10	11.60	12.33	13.05	13.78	14.50
18	7.70	9.20	10.70	12.30	13.05	13.80	14.60	15.40
19	8.15	9.80	11.40	13.05	13.88	14.70	15.53	16.35
20	8.60	10.40	12.10	13.80	14.70	15.60	16.45	17.30
21	9.15	11.05	12.85	14.65	15.60	16.55	17.45	18.35
22	9.70	11.70	13.60	15.50	16.50	17.50	18.45	19.40
23	10.30	12.40	14.45	16.45	17.50	18.55	19.58	20.60
24	10.90	13.10	15.30	17.40	18.50	19.60	20.70	21.80
25	11.55	13.85	16.20	18.50	19.65	20.80	21.95	23.10
26	12.20	14.60	17.10	19.60	20.80	22.00	23.20	24.40
27	12.90	15.45	18.10	20.70	21.98	23.25	24.55	25.85
28	13.60	16.30	19.10	21.80	23.15	24.50	25.90	27.30
29	14.40	17.25	20.20	23.05	24.50	25.95	27.40	28.85
30	15.20	18.20	21.30	24.30	25.85	27.40	28.90	30.40
Absolute humidity in $\text{g}/\text{m}^3$ air								

#### 2.2 Specifications for suspended ceilings

Since 1st January 2005, a so-called co-existence period has applied for the standard EN 13964 (Requirements and test procedures for suspended ceilings) and the appropriate national standard for suspended ceilings in all EU States. During this phase, both of the EN and the individual National Standards remained valid.

Following the expiry of the co-existence period on 30th June 2007, only EN 13964 will continue to be valid.

# Basic planning

## 2.3 Fire

### Reaction to Fire Classifications – EN 13501-1

When tested to EN 13501-1, building materials are divided into a classification ranging from A1 to F with A providing the best performance. As well as measuring a materials contribution to fire this standard has introduced criteria measuring smoke generation (s) and production of burning droplets (d).

#### Meaning of additional designations:

s1, s2, s3 [m<sup>2</sup>/sec<sup>2</sup>] describes the smoke behaviour

s1 = no or slight smoke development

s3 = heavy smoke development

d0, d1, d2 = burning droplets behaviour

d0 = no burning droplets within 600 seconds

OWAcoustic® premium or smart tiles are classified as **A2-s1,d0**

OWAdeco tiles are classified as **B-s1, d0**

Copies of the associated test reports are available on request.



Further information is available from our Fire Protection leaflet No. 500 EU.

Additional requirements	No burning droplets falling/dripping	European class according to EN 13501-1
✓	✓	A1
✓	✓	A2-s1,d0
✓	✓	B-s1,d0
✓	✓	C-s1,d0
	✓	A2-s2,d0
	✓	A2-s3,d0
	✓	B, C-s2,d0
	✓	B, C-s3,d0
✓		A2-s1,d1
✓		A2-s1,d2
✓		B, C-s1,d1
✓		B, C-s1,d2
		A2-s3,d2
		B-s3,d2
		A2-s3,d2
✓	✓	D-s1,d0
	✓	D-s2,d0
	✓	D-s3,d0
		E
✓		D-s1,d2
		D-s2,d2
		D-s3,d2
		E-d2
		F

The additional designations are:

#### Smoke

s1, s2, s3

s1 = little or no smoke generation

S2 = medium smoke generation

S3 = heavy smoke generation

#### Burning droplets

d0, d1, d2

d0 = no droplets within 600 seconds

d1 = droplet form within 600 seconds but do not burn for more than 10 seconds

d2 = Not as d0 or d1

Country	Test standard	Classification
EC member states	EN 13501-1	A2-s1,d0
Switzerland	Guide to fire regulations, 1976	B-s1,d0
		VI q.3 virtually non-combustible, smoke level low
USA	ASTM E 84-97 a	class I



## Basic planning

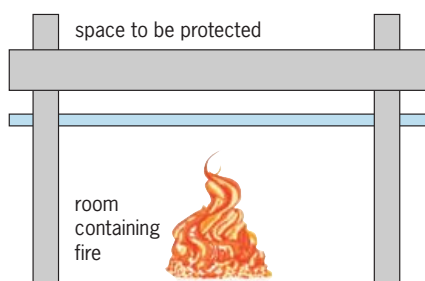
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### OWAcoustic® Ceilings - Structural components

A structural component in the sense of EN 13501-2 is not just the suspended ceiling itself, but the entire construction – consisting of supporting floor or soffit and suspended ceiling or of roof and suspended ceiling. This entire construction should prevent the penetration of fire for as long as possible. In this context not only the material of the ceiling, but also the fire behaviour of the suspending construction is of great significance.

### Requirement on the entire supporting building component: base ceiling + suspended ceiling



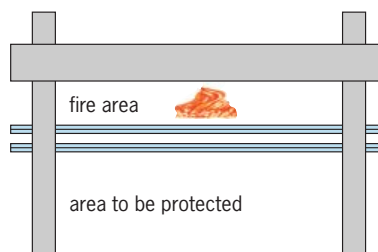
Depending on their fire resistance duration, building components are divided into the following classes:

Fire resistance class DIN 13501-2	Fire resistance duration in minutes
REI 30	30
REI 60	60
REI 90	90
REI 120	120
REI 180	180

The fire resistance of structures in association with suspended ceilings must be proven by fire tests according to European standards. Tests covering most common constructions have been successfully carried out with OWAcoustic® ceilings.

The OWA fire resistance test results are only valid if both OWAcoustic ceiling tiles and OWAconstruct components are used for the installation. Test reports are available on request.

### Structural fire resistance from above and below



We have developed specialist ceilings that can be used to provide fire resistance from above and below achieving class EI 30 (a ↔ b) to EN Standard 1364-2. In addition we are also able to offer up to 90 minutes fire resistance from above and below (F 90) when tested to DIN 4102.

See OWA leaflet No. 500 EU for more information.

For the design of OWAcoustic® fire resistant ceilings, see points 6.1 and 7.8

**OWA**



# Basic planning

## 2.4 Sound

OWAcoustic® ceiling systems can fulfil a wide range of functions relating to the control of sound.

### 2.4.1 Optimising Room Acoustics

In many rooms, the correct reverberation time  $T$  [s] is required for good comprehension of speech or appreciation of music. Similarly in noise-intensive production facilities or workshops, the greatest possible sound level reduction is required to make the environment more comfortable.

Reverberation time required  $D_{\text{desired}}$  [s]

Noise level reduction  $\Delta L$  [dB]

In these examples of use, further details can be obtained from the following standards, guidelines and trade association regulations:

- DIN 18041 "Audibility in small to medium-sized rooms" Edition May 2004
  - VDI 2569 "Noise Reduction and Acoustic Design in the office" - Edition January 1990
  - EU guideline 2003/10/EU "Noise in the Workplace"
  - BGV B3 (Noise) January 1990 (update January 1997)
- This list is not definitive and other standards or regulations may be applicable.

### 2.4.2 Optimising Building Acoustics

OWAcoustic® suspended ceiling systems can be used to:

- Increase airborne sound insulation  $R_w$  [dB] of solid and timber joist ceilings
- Improve the lateral room to room airborne sound insulation  $D_{n,c,w}$  [dB] between two rooms with a common void.
- Reduce sounds emanating from the ceiling void.

As installation conditions vary from site to site each project should be assessed on its own merits. Where the acoustic performance of a room is important it is recommended that a qualified acoustician be consulted.

More guidance can be found in the document shown below or the relevant national standards:

- DIN 4109 "Sound Insulation in Buildings" - November 1989

Further information is also given in leaflet 900.

## 2.5 Installing OWAcoustic® ceilings under roofs and in humid areas

### 2.5.1 Warm roof construction (non-ventilated)

OWAcoustic® ceilings provide a good degree of insulation and when installed may have an influence on the dew point in the ceiling or roof construction.

In order to avoid condensation, it is recommended that a dew-point calculation is carried out. In general there are no significant negative influences are produced by the installation of additional insulation if it includes a vapour barrier. This should be placed so that no more than 20 % of the insulation is on the warm (room) side of the vapour barrier. If this is not possible ventilation should be introduced into the void. The  $\lambda$  value of OWAcoustic® tiles is 0.063 W/mK

### 2.5.2 Cold roof (ventilated)

The structure of a cold roof generally consists of:

- a) Weatherproof outer skin
- b) Ventilation zone
- c) Heat insulating zone
- d) Moisture and airtight barrier
- e) Suspended ceiling  
(fire / Sound / Hygiene provision, etc.)

A ventilated roof or cold roof requires a circulating, through-ventilation zone in contact with the outside air, between the layer of insulation and the external roof.

Where the ceiling is to provide a performance function such as structural fire resistance, it is recommended that the ceiling and insulation are installed as separated layers.

**It is recommended that constructions described in 2.5.1 and 2.5.2 are assessed by a qualified building consultant to ensure the use of insulation, vapour barriers and suspended ceiling have no detrimental effects on the building environment such as adversely altering the dew point.**

### Building Physics - Basic principles:

To ensure the functional design of a building is achieved, performance criteria such as fire protection, acoustics and insulation should be considered at the planning stage of every project. If in any doubt specialist consultants should be involved to ensure compliance with local building control, performance requirements and those of the client. This is outside the responsibility of the manufacturer.

## Basic planning

### 2.6 Planning prior to installation

Essential preliminaries are the inspection of the site to establish local conditions, on-site measurement of the rooms to be fitted and the provision of a ceiling layout drawing. The layout should show the position of light fittings, ventilation grilles etc. and should be agreed with architect/client/main contractor.

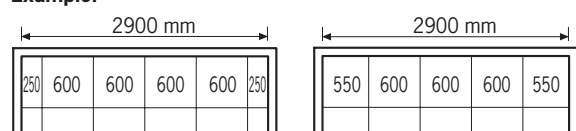
#### 2.6.1 Perimeter tiles

**The size of perimeter tiles will be dependant on the ceiling layout and may be dictated by the position of services, walls, partitions etc. as well as other aesthetic considerations.**

Generally perimeter tiles should be as close to a full module size as possible, and preferably larger than half a tile. In the example shown below we take room 2.9 metres wide and install 600 x 600 mm tiles. The recommended layout uses three full tiles and two cut perimeter tiles of 550 mm.

This is preferable to other example which uses four full tiles and two cut perimeter tiles of 250 mm. The number of tiles is the same but the ceiling would require an additional run of suspension profiles and be less aesthetically balanced.

**Example:**



uneconomical tile distribution

economical tile distribution

#### 2.6.2 Effect of light or illumination on the suspended ceiling

For architectural and optical reasons, light striking the suspended ceiling at a shallow angle should be avoided. This refers both to light fittings and to the full glazing of facades which extends up to the lower edge of the ceiling.

Unfavourable incident light can emphasise and exaggerate any minor difference in levels or pattern even when this lies within the tolerance range.

The installer can contribute significantly to the appearance of the ceiling by observing all of the manufacturer's recommendations.

#### 2.6.3 Tolerances

In the case of mass produced ceilings, the user must expect a certain amount of tolerance.

#### EN 13964

The permissible measurements and deviations are described for the installer in EN 13964.

#### Flatness:

Tolerances of volume membrane components are described in Table 3 of EN 13964.

#### Squareness:

The substructure (main and cross runners) has to be installed accurately and square. The admissible deviation depends on the dimensions of the applied membrane components and their fixing system. A practical method to control the squareness of the grids is by means of a regular control of the diagonals during the installation and/or by means of a correct fit of the membrane components to be applied. Linear components and carriers have to be installed absolutely square. The admissible deviation depends on the linear panel type but in practice, even slight deviations from the square lead to visible deformation of the panels

#### Alignment of liner components:

Linear components, together with any elements and carriers, have to be exactly aligned on module. Special care has to be taken of the alignment of modules over the joint between carriers.

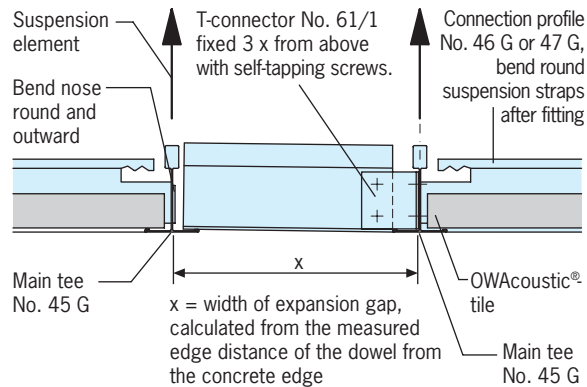
#### Cut to size membrane components:

As a general requirement, membrane components are divided from the middle of the ceiling area, be it from the middle of the component or the middle of a joint between components, in such a way that the perimeter panels have a minimum width of half the width (or length) of the standard panel. Otherwise, the division should be determined with the building designer, taking into account the location of columns, lighting fixtures, etc. Cut to size membrane components, when pushed against the body of the tee, should be supported by the edge profile on the opposite side by at least 10 mm.

## Basic planning

### 2.7 Building, expansion and movement joints

Normally, building expansion and movement joints should be duplicated in the ceiling membrane or suspended ceiling.



**Example:** Expansion joint and movement joint for the OWAconstruct® System S 3 without fire protection.

### 2.8 Pressure and wind loads on suspended ceilings

Additional measures must be taken to protect suspended ceilings against loads due to specific or non-definable pressure and wind loads. In the case of closed rooms or buildings with open facades etc., appropriate measures can be taken to ensure that the membrane and suspension elements are secure (see point 6.2 and point 6.2.4). For standard applications and normal use, these measures are generally not required.



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General

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Basic planning

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## **OWAcoustic® Tiles – General Information**

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3

Construction of suspended ceilings

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OWAconstruct®-OWAcoustic® standard ceiling systems

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OWAconstruct®-OWAcoustic® systems with special performances

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Working with OWAconstruct®-OWAconstruct® ceiling systems

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OWA Installation and Product Training Courses

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## OWAcoustic® Tiles – General Information

### 3.0 OWAcoustic® Tiles – General Information

OWAcoustic® mineral wool tiles are sealed with a primer coat on both sides. The tiles are free from asbestos and formaldehyde.

The mineral wool used to manufacture OWA tiles is bio-soluble and satisfies the criteria for the classification as a non-carcinogenic substance according to the German Chemicals Prohibition Directive (§ 1 Appendix, Section 23, bio-persistent fibres). This classification is confirmed by the "RAL Quality Seal for Mineral Wool". This also satisfies the European Directive 97/69/EEC (Note Q).

These basic qualities allow OWAcoustic® tiles to achieve the reaction to fire classifications A2-s1,d0 - non combustible and limited combustibility B-s1,d0 according to EN 13501-1 (see also leaflet No. 500 EU).

This **statutory information** can be found both on the packaging and normally on the reverse of each individual OWAcoustic® tile (see also 3.2).

### 3.1 Factory finish, colour, appearance

Due to the use of natural products, variations in surface texture and colour can occur as may the formation of surface striations during the sanding process. These are deemed to be acceptable visual variations.

Tiles are supplied in OWA white as standard. The paint used is produced by OWA and does not conform to any specific RAL or NCS colour reference.

### 3.2 Properties of OWAcoustic® ceiling tiles

	OWAcoustic® premium	OWAcoustic® premium for humid rooms	OWAcoustic® smart
<b>Weight</b>	approx. 4.5 kg/m <sup>2</sup> (15 mm) approx. 6.0 kg/m <sup>2</sup> (20 mm)	approx. 4.5 kg/m <sup>2</sup>	approx. 4.2 kg/m <sup>2</sup>
<b>Tile thickness</b> (depending on ceiling system + requirements)	15, 20 mm, 30, 33 mm, 40, 44 mm	15 mm	nominal 14 mm
<b>Air humidity reference values</b> (reference temperature 25 °C)	up to 95 % RH (depending on design)	<b>Mavroc®</b> perm. 95 % RH <b>AquaCosmos®</b> 100 % RH <b>OWAlux®</b> 95 – 100 % RH <i>all values with sealing – see 6.6</i>	up to 90 % RH
<b>Additional loading</b> (support)			
per unit area	40 N/m <sup>2</sup>	40 N/m <sup>2</sup>	32 N/m <sup>2</sup>
point loading (centre of tile)	2.5 N	2.5 N	2.5 N
<b>Reaction to fire</b> EN 13501-1	A2-s1,d0	A2-s1,d0 <b>OWAlux® 64/8</b> A2-s3,d0	A2-s1,d0
<b>Thermal conductivity</b> λ	0.063 W/mK	0.063 W/mK	0.063 W/mK
<b>Designs</b>	all designs	<b>Mavroc®:</b> Constellation 3 Harmony 72 <b>AquaCosmos®</b> <b>OWAlux®:</b> 64/1, 64/2, 64/3, 64/4, 64/8	Constellation 3 Futura 60, Finetta 62, Sandila 70, Harmony 72
<b>Edges</b>	all edges (except Edge 7)	Edge 3	Edge 3, Edge 7
<b>Formats</b> (mm)	all OWA formats	600 x 600 625 x 625 300 x 1200 312,5 x 1250	600 x 600 625 x 625
<b>Cleaning options</b>	can be dusted, vacuumed or cleaned with a damp OWA sponge	<b>Cleaning of OWAlux®</b> see also 6.5.1	

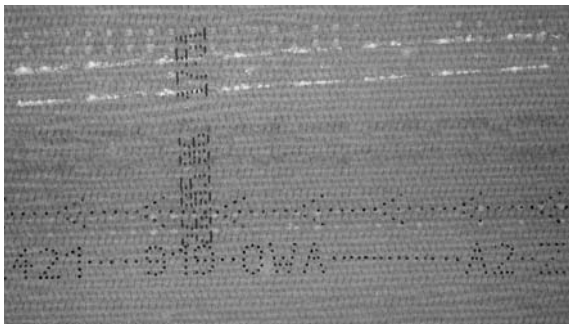
Moisture-resistant design, see also point 6.3 backing spline No. 8040.

**Notes on cleaning:** contamination with aggressive elements such as alkalis, acids, fats etc. is more difficult to clean to a satisfactory standard

# OWAcoustic® Tiles – General Information

## 3.3 Identification marking of tiles OWAcoustic® tiles

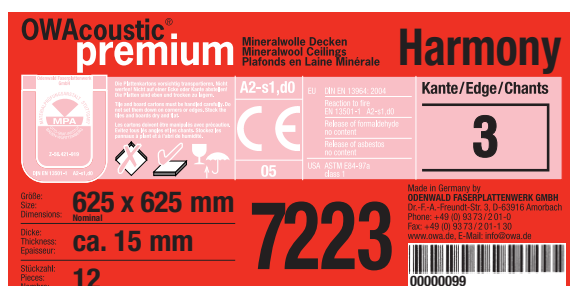
Production date  
Building material class  
Directional arrows  
Manufacturer



**Example:** Picture of the back of an OWAcoustic® tile

## 3.4 Information shown on the carton label

- Product designation and manufacturer's address
- Materials testing institute
- Reaction to Fire classification
- CE marking
- Details of applicable standards
- Design
- Edge type
- Dimensions
- Article Number
- OWA internal Article Number
- Number of pieces
- Storage and handling advice (separate leaflet in carton)



## 3.5 Directional arrows

OWAcoustic® tiles have directional arrows imprinted on the back. All tiles should be installed with the arrows pointing in the same direction unless the installation requires a chequerboard pattern.

## 3.6 Packaging and handling

When handling cartons do not throw, drop or place on edges or corners. When storing cartons place on a clean, flat surface within a dry, controlled environment.

Tiles are packed face to face and it is advisable to remove them in pairs.

To reduce possible damage to face and edges carefully cut away packaging before removing tiles.

Always hold tiles with both hands (use glove to prevent marking the tiles).

Avoid using tiles from different production runs as this may result in "shading" due to colour and/or texture variations.

The production data is printed on the back of tiles (see also point 3.1 and 3.2).



# OWAcoustic® Tiles – General Information

## 3.7 OWAcoustic® tiles, standard edge details for OWAconstruct® ceiling systems



**Edge 1** (for System S 1, S 2b)

**Edge 10** (for System S 9a/b)

Bevelled, kerfed and rebated

**Edge 12** (for System S 2a)

Bevelled, kerfed and rebated

OWAcoustic® premium tiles  
Tile thickness approx. 15 or 20 mm  
Tile dimension = module size



**Edge 3p** (OWAplan S 7)

Square edged, kerfed and rebated

Only for OWAplan premium monolithic ceilings  
Tile thickness approx. 20 mm (see working guidelines, OWAplan)  
Tile dimension = grid module



**Edge 3**

Square edged

OWAcoustic® premium tiles  
(S 3, S 15, S 6c, S 18d)  
Tile thickness approx. 15 or 20 mm  
OWAcoustic® smart tiles (S 3, S 15)  
Tile thickness approx. 14 mm nominal  
OWAdeco tiles (S 3, S 15)  
Tile thickness approx. 12 mm nominal  
Tile dimension = module size – 6 mm



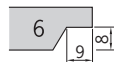
**Edge 4** (for System 9a/b)

Two parallel edges shiplap demountable (Edge 4)

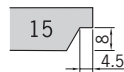
Two parallel edges bevelled, kerfed and rebated (Edge 10)

OWAcoustic® premium tiles  
Tile thickness approx. 20 mm  
Tile dimension = module size

**Contura edges** (for System S 3a, S 15a, S 6b, S 18d),  
Angled, reveal edge

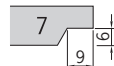


**Edge 6** (for System S 3a, S 6b, S 18d) and



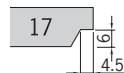
**Edge 15** (for System S 15a)

OWAcoustic® premium tiles  
Tile thickness approx. 15 or 20 mm



**Edge 7** (for System S 3a)

OWAcoustic® smart tiles  
Tile thickness approx. 14 mm nominal



**Edge 17** (for System S 15a)

OWAcoustic® smart tiles  
Tile thickness approx. 14 mm nominal

Tile dimension = module size – 6 mm

**For more details see individual system leaflets.**

## OWAcoustic® Tiles – General Information

### 3.8 Working with OWAcoustic® mineral-wool tiles

OWAcoustic® tiles can be cut using the Odenwald craft knife. Knives with retractable blades reduce the risk of injury.

#### Fitting tools for OWAcoustic® tile

##### Odenwald craft knife

Order No. 99/01

(includes replacement blades)

##### Replacement blades, Odenwald knife

Order No. 99/21



##### Contura plane

For re-forming the Contura reveal edge on tiles.



<b>K 6</b> – 15 mm tiles	Order No. 99/11/6
<b>K 15</b> – 15 mm tiles	Order No. 99/11/15
<b>K 6</b> – 20 mm tiles	Order No. 99/11/20
<b>K 15</b> – 20 mm tiles	Order No. 99/11/21
<b>K 7</b> – 14 mm nominal tiles (smart)	Order No. 99/7/21

##### Replacement blade for Contura plane

Order No. 1808

##### Edge 1 tool

Order No. 99/07

For re-forming the kerf and rebate on standard concealed tiles (Edge 1)



##### Radius cutter (manual)

Order No. 99/15

For cutting circular openings in OWAcoustic® tiles (max. diameter 400 mm), Complete with replacement blade.



##### OWA cleaning sponge

Order No. 99/06

Suitable for cleaning lightly soiled tile surfaces



##### Hole cutting set

Order No. 99/31

Can be used to cut holes from 20 – 163 mm in diameter.

##### Blades for metal tiles

Order No. 99/32

##### Blades for mineral-wool tiles

Order No. 99/34



##### OWA gloves (white)

Order No. 99/20



##### OWA repair kit

**Normal** (suitable for all patterns except Cosmos)

Order No. 99723

**Cosmos** (suitable for Cosmos)

Order No. 99724

Weight: approx. 135 g/container



##### Adhesive for OWA fire protection box

Order No. 99/24

310 ml tube

Application:

465 – 620 ml/m<sup>2</sup>

Do not store adhesive surface below 5 °C or above 30 °C, use quickly after opening



##### OWA toolbox (without contents)

Dimensions:

580 x 290 x H 300

Material: plastic

With small parts compartment

Order No. 99/02



##### OWA toolbox with contents

1 x Odenwald craft knife with spare blades, 1 x spare blades for craft knife, 1 x profile snips left-hand, 1 x profile snips right-hand, 1 x retractable chalk line approx. 30 m, 1 x replacement chalk, red, 1 x OWA sponge, 1 x OWA measuring rule, 1 x fitter's cap, 1 pair fitter's gloves.

Order No. 99/30

For additional tools, see point 4.5 (tools for OWAconstruct® profiles and accessories) and the OWAconstruct® component and accessories list.

## OWAcoustic® Tiles – General Information

### 3.9 Renovation and redecoration of OWAcoustic® ceilings with standard surface patterns

#### Standard surfaces which can be redecorated:

- 1 Regular perforated
- 2 Random perforated
- 3 Constellation
- 5 Structura
- 6/0 Combed plain
- 9 Plain
- 12 Irregular perforated
- 30 Excell 1
- 31 Excell 2
- 33 Variation
- 35 Variation
- 40 Moderato
- 41 Andante 1
- 42 Andante 2
- 43 Quartett
- 44 Forte
- 47 Largo
- 60 Futura
- 62 Finetta
- 66/0 Luna plain
- 67 Rilled
- 68/0 Cosmos plain
- 70/0 Sandila plain
- 72 Harmony

#### The following require special treatment

(see point 3.9.12):

- 6/N Combed needled
- 65 Universal
- 66/N Luna needled
- 68/N Cosmos needled
- 70/N Sandila needled

#### 3.9.1 General

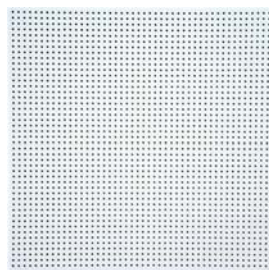
OWAcoustic® ceiling systems consist of OWAcoustic® mineral-wool tiles and metal profiles. The tiles and the exposed surfaces of the profiles are supplied with a finished matt white surface.

OWAcoustic® ceilings can simply be painted on site, using normal paints and hand tools. Any painter and decorator can do this provided they follow some basic guidance.

OWAcoustic® ceiling systems can be painted in-situ, however the limitations and economic benefit of such actions should be considered. In the case of exposed systems, normally changing the tiles is a more cost-effective solution especially when the difficulties of painting tiles in-situ and the cleaning and /or painting of the exposed grid profiles has to be taken into account (see also 4.7 Profiles - renovation and painting).

#### Noise absorption following redecoration of OWAcoustic® ceiling tiles

Redecoration of OWAcoustic® tiles is possible without any serious loss of acoustic performance as long as any surface perforations remain open after painting. Allowing the holes to become blocked with paint can result in a loss of at least 30 – 40 % of the tiles effective sound absorption qualities.



Regular perforated 1



Constellation 3



Plain 9



Futura 60



Finetta 62



Harmony 72

# OWAcoustic® Tiles – General Information

## Reaction to Fire Classification

The application of additional paint coats to our products can result in a change to the Reaction to Fire classification (EN 13501-1). This also applies to the addition of other materials (e.g. sealing tapes).

## 3.9.2 Dampness

To prevent tiles deflecting due to excessive moisture ensure the minimum paint is used and that the points below are adhered to. (see also point 3.1!)

## 3.9.3 Cleaning

Dirty or dusty tiles should be cleaned prior to painting.

## 3.9.4 Sealing

Whether new or existing the surface of tiles should be sealed prior to painting (use Capaplex or similar, mixing ratio 1:3, approx. 40 g/m<sup>2</sup>). This will prevent the board absorbing excessive moisture from the paint. The sealant should be thinned in accordance with the manufacturer's instructions and left to dry for approx. 12 - 24 hours, depending on temperature and humidity.

## 3.9.5 Tools

For application of the sealing coat and any additional coats, short-pile mohair rollers should be used (**not lambs wool rollers**). This is to ensure that the paint is not applied too thickly and so that the acoustically important surface perforations **remain open**.

## 3.9.6 Paint application

After the sealant coat has dried, the tile can be painted with the desired colour. Depending on the colour, more than one coat may be necessary. In the case of tiles with a bevelled or exposed edge, it is recommended that the edges are painted first using a paintbrush. The surface can then be painted using a short pile mohair roller.

## 3.9.7 Spraying equipment

Where the use of spraying equipment is considered worthwhile (coverage of large areas) airless or air-mix processes should be used.

## 3.9.8 Paints

For the redecoration or painting of OWAcoustic® tiles, emulsion paints with binders based on acrylate or polyvinyl-acetate have proved to be effective. The following products have been found to be suitable Alpincolor in combination with Alpina White, or Amphilbolin full colour and tinted paints (Europa-quality Alpina White, approx. 105 g/m<sup>2</sup>, from the Caparol company).

## 3.9.9 Exposed white metal profiles

See 4.6 – 4.7

## 3.9.10 Treatment of stains

Water, oil, grease or rust spots must be given special treatment prior to painting. Information, treatment and product guidelines can be obtained from the corresponding specialist firms.

## 3.9.11 Manufacturers

The manufacturers instructions should be followed when painting and redecorating OWAcoustic® standard ceilings.

### CAPAROL Vertriebs KG GmbH & Co. KG Farben Lacke Bautenschutz

Roßdörfer Straße 50 · 64372 Ober-Ramstadt  
Tel.: +49 61 54 / 71-0 · Fax: +49 61 54 / 71-13 91  
Internet: [www.caparol.de](http://www.caparol.de)

### BRILLUX GmbH & Co.

Weseler Straße 401 · 48163 Münster  
Tel.: +49 2 51 / 71 88-0 · Fax: +49 2 51 / 71 88-1 05  
Internet: [www.brillux.de](http://www.brillux.de)

### ALLIGATOR FARBWERKE

#### Rolf Mießner GmbH & Co. KG

Markstraße 203 · 32130 Enger  
Tel.: +49 52 24 / 9 30-0 · Fax: +49 52 24 / 78 81  
Internet: [www.alligator.de](http://www.alligator.de)

## OWAcoustic® Tiles – General Information

### 3.9.12 Redecoration of OWAcoustic® ceiling tiles with micro-fine needle holes

Surfaces with micro-fine needle holes from the point of view of renovation are:

- 6/N Combed needled
- 65 Universal
- 66/N Luna with needled
- 68/N Cosmos with needled
- 70/N Sandila with needled

For architectural and acoustic reasons, the above-mentioned designs are provided with micro-fine needle holes. If the sound absorption qualities are to be retained these surfaces can only be cleaned using a chemical cleaning process.

All standard surfaces may also be treated using this cleaning process.

In the course of a renovation project, the economic viability of such a measure should be considered. In the case of exposed suspension systems, a change of tiles is usually a more cost-effective alternative.

#### Information can be obtained from the following specialist firms:

##### AKUSTO CLEAN

– Specialist technical cleaners since 1986 –  
Gladowstraße 9 · D-22041 Hamburg  
Tel.: +49 40 / 72 69 99 88 · Fax: +49 40 / 73 92 38 38  
E-Mail: [service@akusto.info](mailto:service@akusto.info)  
Internet: [www.akusto.info](http://www.akusto.info)

##### BIO-CHEM

– Special cleaning systems –  
Volker Zehfuß  
Waldseer Straße 35 · 67105 Schifferstadt  
Tel.: +49 62 35 / 9 21 78 · Fax: +49 62 35 / 9 21 79  
E-Mail: [Volker.Zehfuss@t-online.de](mailto:Volker.Zehfuss@t-online.de)

##### Robin Pique

Otto-Raupp-Straße 24 · 79312 Emmendingen  
Tel.: +49 76 41 / 4 14 19 · Fax: +49 76 41 / 5 14 97  
E-Mail: [rotkehlchn@aol.com](mailto:rotkehlchn@aol.com)

These recommendations are based on practical experience. If in doubt, first treat a test area and make your own assessment of the effectiveness of the process.

**OWA profile paints** see point 4.6



Combed needled 6/N



Universal 65



Cosmos needled 68/N



Luna needled 66/N



Sandila needled 70/N

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OWAcoustic® Tiles – General Information

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## **Construction of suspended ceilings**

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**4**

OWAconstruct®-OWAcoustic® standard ceiling systems

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OWAconstruct®-OWAcoustic® systems with special performances

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Working with OWAconstruct®-OWAconstruct® ceiling systems

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OWA Installation and Product Training Courses

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# Construction of suspended ceilings

## 4.0 Construction of suspended ceilings

Individual System Guides for each system show construction details, dimensions and components for all OWAconstruct® suspension systems. Detailed information on OWAconstruct® components and accessories can be found in the OWAconstruct price list. Before planning or installing an OWAacoustic® ceiling, the user should satisfy themselves that the leaflet reflects the most up to date information on the system and any standards that may relate to its use.

OWAconstruct® profiles fall into deflection Class 1 according to EN 13964 (maximum deflection =  $L/500 \leq 4$  mm).

To achieve this classification the profiles should not be notched, drilled or altered in any other way that may affect its structural characteristics.

### 4.1 Additional Load

OWAconstruct® systems are designed to support the tiles and suspensions system. Additional loads, such as recessed and surface-mounted lighting, air outlets, insulation overlays, curtain rails, partition walls etc. must be taken into account separately in each individual case. Additional measures may be required to support the additional loads as well as provide increased stability where necessary (see point 5.5). Hangers should not be used to support loads such as electrical cables etc.

According to EN 13964, the sub structure is to be classified according to the maximum deflection as shown in Table 6.

Class	Maximum deflection
1	$L/500 \leq 4$ mm
2	$L/300$
3	No Limit
L is the span in mm between the suspension components or the suspension points	

#### Note:

For visual reasons, the maximum recommended deflection for OWA clear span system S 6 and bandrastrer system S 18 is 2.5 mm.

Should the Class 1 deflection (max. 4.0 mm or  $L/500$ ) be applicable, please contact our OWAconsult® team.

The OWAconstruct® substructure may only be loaded in accordance with the approved tables. If the ceiling is being used to provide any form of fire resistance additional or independent hangers should be provided.

### 4.2 OWAconstruct® ceiling hangers

See point 5.1.7 and the OWAconstruct® component and accessories list.



# Construction of suspended ceilings

## 4.3 Corrosion protection of profiles and hangers

The humidity level within a room not only affects the membrane material but may also have an effect on the suspension system and associated components. These are generally manufactured from cold rolled steel and should have the correct level of corrosion resistance to match the proposed installation environment.

### Extract from EN 13964:

The environmental conditions as defined in Table 7 of EN 13964 are:

**Table 7 – Classes of exposure**

Class	Conditions
A	Building components generally exposed to varying relative air humidity up to 70 % and a varying temperature up to 25 °C, but without corrosive pollutants.
B	Building components frequently exposed to varying relative air humidity up to 90 % and varying temperature up to 30 °C, but without corrosive pollutants.
C	Building components exposed to an atmosphere with a level of humidity higher than 90% and accompanied by a risk of condensation.
D	More severe than the above.

Table 8 in the standard shows acceptable methods of providing corrosion resistance according the classes of exposure shown in Table 7.

**Classes of corrosion protection of metal substructure components and membrane components are defined in table 8 of EN 13964.**

### 4.3.1 Corrosion protection of Classes A and B according to EN 13964 (Table 8)

OWAconstruct® standard ceiling construction components have a zinc coating of between 7 and 10 µm and fall into Class A or Class B of the above-mentioned table.

### Corrosion protection of Class C according to EN 13964 (Table 8)

OWAconstruct® systems S 3e satisfies the corrosion resistance requirements of Class C.

### Use in indoor swimming pools

S 3e - C5 - L

Note:

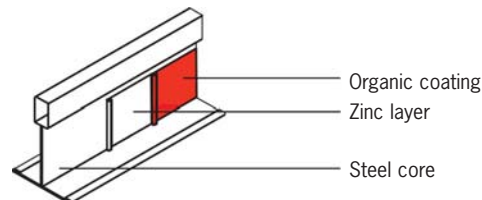
Exposed grid suspension system S 3e =

45 G-KB, 46 G-KB, 47 G-KB, 50 G-KB

C 5 L = Nonius suspension hangers (upper part, lower part, securing pin)

For further information please contact our OWAconsult® team.

When installing suspended ceilings in rooms where a Class C classification is required all cut surfaces and edges must be treated with Zincor or conventional industrial alu-zinc sprays, in order to prevent corrosion.



**For design of suspended ceilings in humid rooms, see point 6.2**

# Construction of suspended ceilings

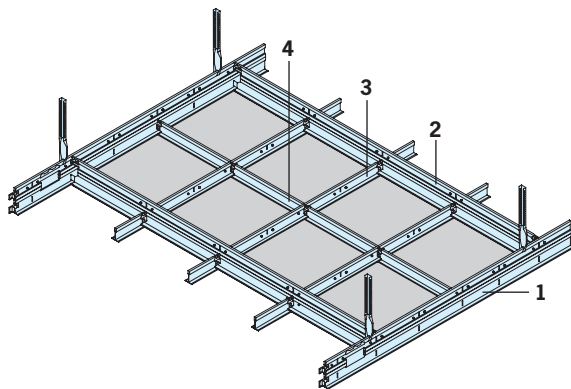
## 4.4 Wide-span profiles

Often for either construction or commercial reasons the use of special profiles is required, to bridge larger span widths. For this purpose, the following OWAconstruct® wide-span profiles can be used.

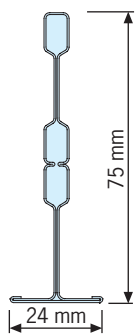
### 4.4.1 OWAconstruct® wide-span suspension System S 8550 G is an exposed grid suspension system for span widths up to 2800 mm

OWAconstruct® wide-span suspension System S 8550 G is an exposed grid.

For further information, see OWAconstruct® Suspension Systems and Accessories list.



Cross-section:



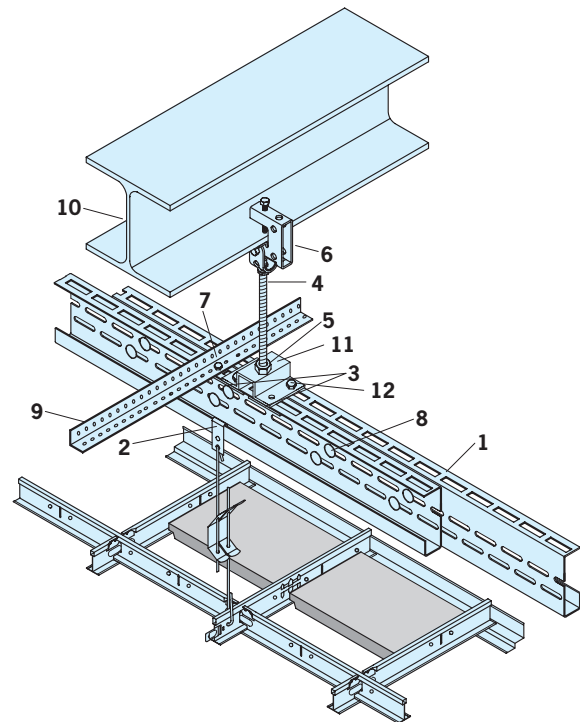
- 1 No. 8550 G Wide-span profile
- 2 No. 8558 G Wide-span cross tee profile
- 3 No. 47 G Cross tee profile
- 4 No. 46 G Cross tee profile

For further information please contact our OWAconsult® team.

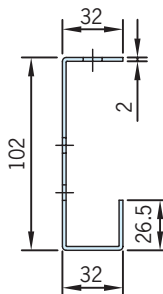
### 4.4.2 OWAconstruct® wide-span suspension System Type 6500 for OWAacoustic® ceiling systems

To bridge larger spans width up to 7700 mm to carry OWAacoustic® ceiling systems.

For further information and details see product data sheet OWAconstruct® wide-span suspension System Type 6500 (Brochure 607)



Cross section:



- 1 C wide-span section No. 6500
- 2 Suspension clip No. 6582
- 3 Washer No. 6589 (2 pieces per suspension – fixed diagonal)
- 4 Threaded rod M10 (by others)
- 5 Nut M10 and Washer M10 (by others)
- 6 Flange hanger No. 6586
- 7 Self-tapping screw No. 6234
- 8 Installation set No. 6203
- 9 Section No. 5178
- 10 Steel beam
- 11 Adaptor No. 6186 for suspension of double section
- 12 Screw M8 x 30 mm, Nut M8 und Washer (by others)

## Construction of suspended ceilings

### 4.5 Tools for OWAconstruct® profiles

#### Snips

For cutting  
OWAconstruct® metal  
profiles up to 1 mm thick.



Order No.    Right    = 90/02 (green)  
                  Left     = 90/03 (red)  
                  Straight = 90/04 (yellow)

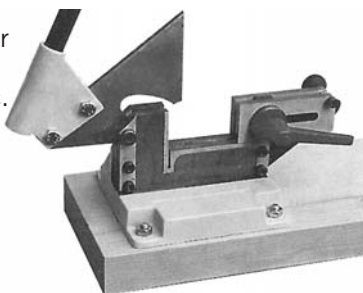
#### Slot cutter No 45 G

Suitable for putting additional cross  
tee slots into main tee profiles  
no. 45 G, 45/15 G and  
cross tee profiles  
No. 46 G and No. 47 G  
Order No. 99/29



#### Profile TrennFix

For cutting perimeter  
wall angles,  
Main tee profiles etc.  
Order No. 99/08



#### Retractable chalk line

This retractable chalk line  
comes with a chalk storage  
compartment (for dry chalk)  
and approx. 30 m of line  
(includes chalk).  
Order No. 99/03



#### Replacement chalk for retractable chalk line

Approx. 115 g  
Order No. 99/14 (red)

#### OWA tool box

See point 3.7



For additional tools see point 3.8 (Installation tools) and  
the OWAconstruct® component and accessories list.

## Construction of suspended ceilings

### 4.6 Colour, visible profiles

OWAcoustic tiles and OWAconstruct products are supplied in "OWA" white. This is our own factory produced colour and has no direct colour reference in RAL, BS or NCS colours.

See also point 3.9 Renovation and painting.

Special colours can also be supplied on request.

### 4.7 Profiles – renovation and painting

Visible white metal profiles can be cleaned with conventional non abrasive cleaning materials. Minimal damage to visible surfaces can be touched in using OWA profile paint No. 99/18. If considerable damage is present, the grid should be replaced.

For details of renovation and painting of OWAcoustic® ceiling tiles, see point 3.9



OWA profile paint  
Order No. 99/18

### 4.8 Transportation and handling of profiles

All OWAconstruct® components should be handled with care. They should be kept on clean, flat surfaces in a dry environment. They should not be dropped, twisted or thrown.

Extra care should be used when handling profiles in excess of 2000 mm in length. Incorrect handling can result in rippling of the visible surface and deformation of the profile making it unusable. To reduce the possibility of sustaining such damage the following points should be observed.

#### Mechanical handling and transportation of cartons

- Individual or multiple cartons should only be carried on pallets which are a **minimum of 2000 mm** long
- Avoid travelling on uneven surfaces when materials are in transit.
- If travelling on uneven surfaces is unavoidable adapt the speed of travel to the conditions.

#### Carrying cartons

- Cartons should be carried by two persons.
- Cartons should not be dropped, twisted or jarred.

#### Carrying individual profiles

- Remove profiles carefully from the carton.
- do not jar or knock
- when removing from the carton take the profile out from the centre outward and hold and stabilise it right and left as much as possible, using both hands

### 4.9 Surface protection work

In case of protection of the exposed side of the grid system (e. g. painting works) take care that the protection material doesn't affect the surface of the grid system. The compatibility of the protection tape must be checked in advance by the installer. In general\*, we recommend to avoid a direct application of tapes.

\* to preserve the quality of the exposed surface of the grid.

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**OWAconstruct®-OWAcoustic® standard ceiling systems**

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OWAconstruct®-OWAcoustic® systems with special performances

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Working with OWAconstruct®-OWAconstruct® ceiling systems

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OWA Installation and Product Training Courses

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# OWAconstruct®-OWAcoustic® standard ceiling systems

## 5.0 OWAconstruct®-OWAcoustic® standard ceiling systems

### 5.1 Fastenings

#### 5.1.1 Load bearing structures and roofs

##### Top Fixings

In order to form a solid connection between the soffit/ roof and the OWAconstruct® suspension system an approved fixing suitable for the substrate should be used.

Where appropriate this fixing should have European Technical Approval (ETA) or be approved to the relevant local standard.

##### 5.1.2 Steel Beam and solid soffits

The connection between the hangers of the suspended ceiling and the concrete soffit is to be made using approved fasteners (ETA or National approvals). The installation instructions of the fastener manufacturer must be followed.

Suitable fastenings are:

Anchor nails No. 97/21 or all other approved metal fasteners.



Anchor nail No. 97/21

##### 5.1.3 Steel beam construction

The hangers are normally attached to the steel beams using metal clamps.

OWAconstruct® hanger clamp No. 13 or  
OWAconstruct® flange hanger No. 8013-4,  
No. 8013-24, No. 8013-58



Hanger clamp No. 13



Flange hanger No. 8013

##### 5.1.4 Lightweight/block floors

The connection between the suspended ceiling hangers and the soffit is to be made using approved fasteners such as OWA hanger No. 97/9 (ETA or National approvals). The installation instructions of the fastener manufacturer must be followed.



Aerated concrete dowel No. 97/9

##### 5.1.5 Trapezoidal Roof sheet

###### Single layer, non-ventilated roof (warm roof)

If direct fastening of the ceiling hangers to the trapezoidal sheets cannot be avoided, only the vertical sides of the trapezoidal sheets should be used for fixing. In all cases, the hanger should be connected using a mechanical fix such as a screw.

**Suspension using wire hooks in holes is not permissible.**

The main tees should be installed transverse to the profile direction of the trapezoidal sheets, in order to achieve an even distribution of load.

Suitable fasteners are approved self-tapping screws or approved cavity anchors.

## OWAconstruct®-OWAcoustic® standard ceiling systems

### Note:

Trapezoidal sheet roofs quite often have large spans. Under adverse conditions, wind pressure or suction effects can transfer roof vibration to the suspended ceiling, via the ceiling suspension.

This can cause the opening of joints in the ceiling and/or produce movement noise in the vicinity.

A solution for this is the use of an ancillary sub construction which is independent of the roof sheets.

See point 4.4 and the OWAconstruct® component and accessories list.

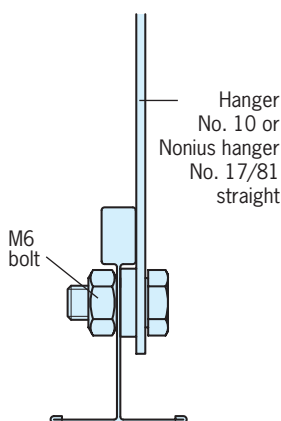
### 5.1.6 Methods for reducing the effect of vibration and structural borne sound

Where there is a strong source of vibration or noise in vertically adjacent areas particular care should be given to the suspended ceiling hangers.

**In industrial units and similar types of building which are subject to intensive vibration** it is recommended that only threaded and secured hangers should be used.

Suitable for this purpose are slotted or holed strip hangers, which can be mechanically fixed to the main tee profile.

**Slide on hangers are not suitable (e. g. No. 12/44).**



### 5.1.7 Hangers and suspension of OWAcoustic® Ceiling Systems

Hangers form the connection between the soffit and suspended ceiling.

These should be appropriate for the installation and CE marked. This shows that the hanger has been tested by an accredited laboratory and provides proof of the load-bearing capacity of the component.

Hangers should be installed vertically. Splayed or angled hangers should only be used in exceptional cases. These must comply with basic static load principles.

Wire hangers are to be secured in such a way that subsequent uncoupling is not possible.

In the case of adjustable hangers, the wire ends must always overlap the spring by at least 15 mm.

The permissible load of the hangers and their fastenings must be checked in accordance with EN 13964. Where the dimensions, type and characteristics of the material make this possible, a calculation of the load bearing capacity and deformation can be made.

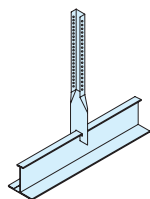


# OWAconstruct®-OWAcoustic® standard ceiling systems

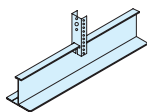
## 5.2 OWAconstruct® hangers

### 5.2.1 Nonius hangers - concealed systems such as S1, S 9a, etc.

Lower sections of hanger for primary suspension profiles such as No. 70 and No. 70/10

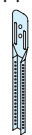


No. 17/10



No. 09/10

Upper Extensions



No. 16/...



No. 09/5  
No. 09/7  
No. 09/11

Securing pin/nail



No. 78



No. 76

Minimum suspension heights:

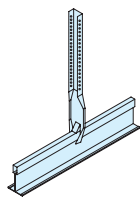
No. 17/10 + No. 16/15 = 240 mm

No. 09/10 + No. 09/5 = 115 mm

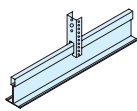
Load bearing capacity: 0.25 kN (No. 17/10: 0.40kN)

### 5.2.2 Nonius hangers – exposed suspension systems S 3, S 15, S 3a, S 15a etc.

Lower sections for main tees No. 45 G

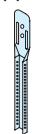


No. 17/45



No. 09/45

Upper Extensions



No. 16/...



No. 09/5  
No. 09/7  
No. 09/11

Securing pin/nail



No. 78



No. 76

Minimum suspension heights:

No. 17/45 + No. 16/15 approx. 240 mm

No. 09/45 + No. 09/5 approx. 80 mm\*

\*More complex and slower installation where cavity > 80 mm

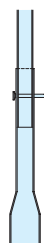
Load capacity: 0.25 kN

(No. 17/45: 0.40 kN)

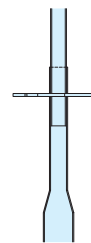
For bandrastr Nonius hangers, see point 7.8.6

#### Advice:

If the Nonius hangers are only in tension, a single connection nail No. 78 or securing pin No. 76 is sufficient. In the case of pressure / tension loads, two connection components should always be used.



Nail No. 78  
(bend after levelling)



Securing pin No. 76

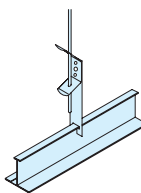


#### Note:

In the case of self-contained fire protection units, the relevant leaflets and test reports should be consulted.

### 5.2.3 Adjustable hangers - concealed systems such as S 1, S 9a etc.

Lower sections of hanger for primary suspension profiles such profile No. 70



No. 12/10



No. 14/.../1  
Diameter 4 mm



No. 14/.../2

Minimum suspension heights:

No. 12/10 + No. 14/12 approx. 250 mm

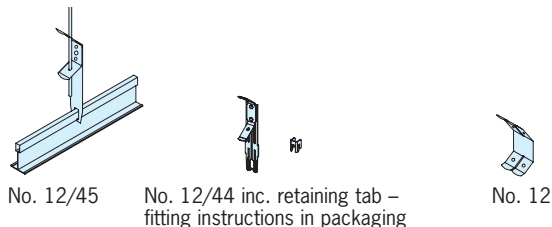
Load bearing capacity: 0.25 kN

In the case of adjustable hangers, the wire ends must always overlap the spring by at least 15 mm.

## OWAconstruct®-OWAcoustic® standard ceiling systems

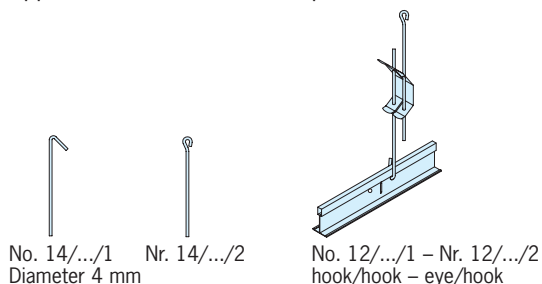
### 5.2.4 Adjustable hangers – Exposed suspension systems such as S 3, S 15, S 3a, S 15a, S 15b etc.

Lower sections for Main tees No. 45



Upper Extensions

pre-assembled



Minimum suspension heights:

No. 12/45 or No. 12/44 + No. 14/12 = 155 mm  
No. 12/30/... = 120 mm (80 mm\*)

\*More complex and slower installation where cavity > 80 mm

Load capacity: 0.25 kN

In the case of adjustable hangers, the wire ends must always overlap the spring by at least 15 mm.

To prevent displacement and possible tile damage the hook should be securely closed after insertion through the profile.



This is a requirement where the ceiling is providing any form of fire resistance

### 5.2.5 Wire Suspension

Suspended ceiling systems can also be installed using pre-stressed wire as hanger.



Example: pre-stressed wire  $\varnothing \geq 2.0$  mm

Minimum Suspension height  
= 100mm (80 mm\*)

\*More complex and slower installation  
where cavity > 80 mm

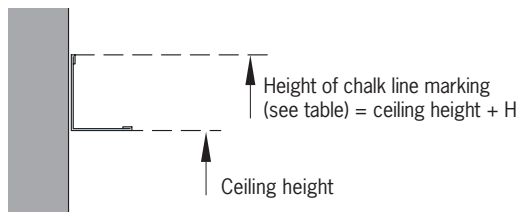
## 5.3 Perimeter trims OWAcoustic® Standard Ceiling Systems

The installation of a perimeter trim is normally the first work to be carried out when installing a suspended ceiling.

A levelled coloured chalk line is snapped along the wall at the required height. It is recommended that this line is set at the upper level of the trim to prevent marking the visible area of the walls. This also prevents the marking of any completed wall finishes.

### Perimeter trim height table

Wall profile No.	Height H	Wall profile No.	Height H
50 G, 53	25 mm	57	40 mm
50/14	31 mm	56, 56/20, 56/21, 56/23, 56/35	45 mm
57/10	32 mm	51/08, 51/20	50 mm
50/15 G, 50/22	33 mm	51/1	35 o. 50 mm
8034	20 mm		



**Perimeter trims should be fixed to the wall at maximum centres of 300 mm. Fixing centres are dependent on load.**



Where the ceiling is providing any degree of fire resistance the fixing centres should not exceed 250 mm (see relevant test report). Use only approved fixings which are suitable for the substrate and required performance.

### 5.3.1 Junctions of perimeter trim.

The use of a true or overlap mitre is an acceptable way to join perimeter trims where that meet at the intersection of walls.

**Wall irregularities** can be filled using suitable filler material or spray etc. If the unevenness of the wall to which the angle profile is attached exceeds the tolerance specifications (e.g. DIN 18 202 or other local standards), the sealing of the gaps may constitute an additional service.

**The tender document should give clear information on this point.**

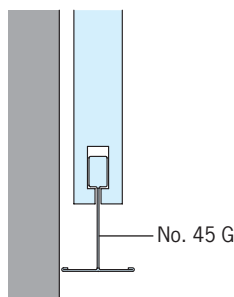
## OWAconstruct®-OWAcoustic® standard ceiling systems

### 5.3.2 Attachment to flexible or vibrating backgrounds surfaces

If perimeter trims are attached to timbers/wood-based materials, decorative concrete elements or other **flexible or vibrating backgrounds**, measures must be taken at the point of attachment which will allow the background to "move" **without producing deformation of the wall profile**, e.g. the use of trims with slotted fixing holes. The thickness of the perimeter trim can also influence the interaction of the trim and background.

#### Construction options:

- Use perimeter trim with slotted holes, such as No. 51/20 or No. 53
- Form wall connection of sliding design, using No. 45 G



sliding connection

The current "state of technology" is represented by butt-joined angle profiles.

Should mitre joints be required, this should be specified in the specification/tender documents.

Stepped perimeter trims, however, should be mitred. As a simpler alternative, inner and outer preformed corner pieces for stepped perimeter trims may be used.

### 5.3.3 Production of mitred corners using snips

#### Tools required:

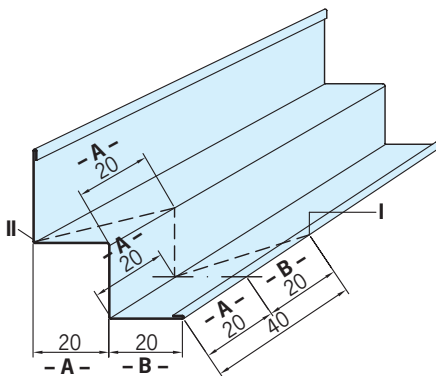
Right and left-handed snips

#### Method:

The desired mitre cut is to be drawn onto the visible side of the profile. The pencil outline is drawn according to the dimensions – **A** – and – **B** – shown in the drawing (see table). Using the right-handed snips, starting from point one make the first 45° cut followed by the first vertical cut.

Using the left-handed snips, make the second 45° cut beginning at point II. The mitred, stepped wall profile is fastened to the wall.

The adjacent profile is laid out, marked, cut and fixed. However a simpler method is to make the mitre cuts using a circular saw with a metal cutting blade.



Example No. 56/20

#### Table:

Mitre cuts - stepped perimeter trim dimensions

Stepped perimeter trim	Dimensions mm A	Dimensions mm B	Material thickness, mm	Recommended tool
50/15 G	15	15	0.5	Snips/ metal circular saw
50/17	15	15	0.5	Snips/ metal circular saw
50/22	15	15	1.0	metal circular saw
56	12	20	0.6	Snips/ metal circular saw
56/20	20	20	0.6	Snips/ metal circular saw
56/21	20	20	1.0	metal circular saw
56/22	20	20	2.0	metal circular saw
56/23	20	20	1.5	metal circular saw
56/35	20	20	0.6	Snips/ metal circular saw

#### Snips

Right-handed – Order No. 90/02

Left-handed – Order No. 90/03

Straight – Order No. 90/04



**OWA**

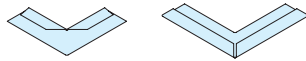
# OWAconstruct®-OWAcoustic® standard ceiling systems

## 5.3.4 Inner and outer corners

Pre-formed inner and outer corners can be supplied for various perimeter trims:

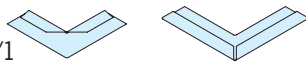
### Perimeter trims with flange widths of 19 mm:

Inner corners No. 54  
Outer corners No. 54/50



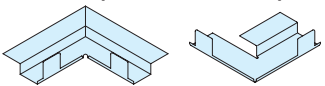
### Perimeter trims with flange widths of 24 mm:

Inner corners No. 54/1  
Outer corners No. 54/50/1



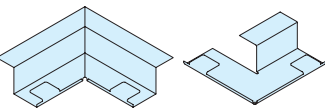
### Stepped perimeter trims No. 50/15 G or No. 50/22

Inner corners No. 55/1  
Outer corners No. 55/2



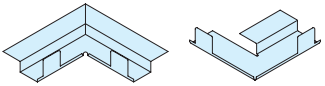
### Stepped perimeter trims No. 56/20 or No. 56/35

Inner corners No. 55/3  
Outer corners No. 55/4



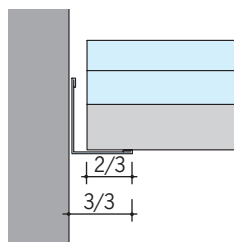
### Stepped perimeter trims No. 50/14

Inner corners No. 55/5  
Outer corners No. 55/6



## 5.3.5 Support

All profiles and tiles must overlap the perimeter trim by at least 2/3rds of the width of the trim.



Minimum profile and tile support on the perimeter trim



### Support for fire-resistant ceilings.

In the case of fire resistant ceilings, the profiles and tile must overlap the perimeter trim by at least 4/5ths of the width of the trim (see relevant test report).

### Note:

Wall connections in open areas are to be constructed in such a way that lifting of the tiles due to wind pressure or suction cannot occur.

## 5.3.6 Installation of standard perimeter trims where there is no fire resistance required

### Installation examples:

Fig. 1



Fig. 2

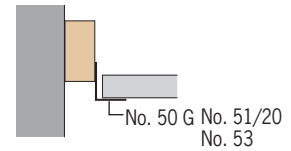


Fig. 3

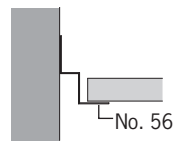


Fig. 4

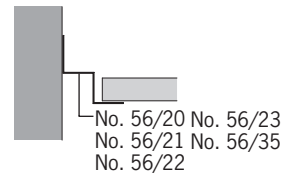
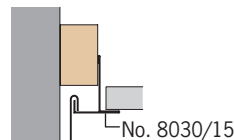
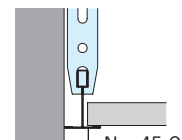


Fig. 5



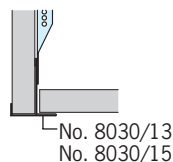
Fixing for decoration etc.  
point loads up to max.  
0.07 kN

Fig. 6



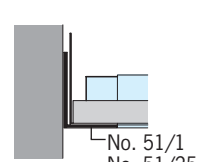
Fixing to the soffit  
(Sliding connection)

Fig. 7



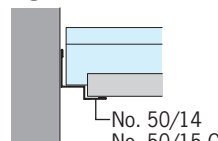
Uprand trims

Fig. 8



Bandrastrer grid ceilings  
System S 18

Fig. 9



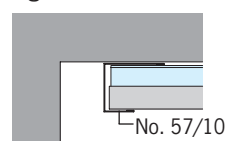
Contura ceilings S 3a and  
System S 15a

Fig. 10



Clear span ceiling  
Corridor ceiling with  
contura plank System S 6b

Fig. 11



Ceiling Island  
System S 1

## OWAconstruct®-OWAcoustic® standard ceiling systems



### 5.3.7 Installation of standard perimeter trims where fire resistance is required

Where the entire supporting construction, such as the structural soffit or roof in combination with the suspended ceiling in accordance with EN 13501 REI 30 to REI 120, the following application examples apply:

#### Application examples from REI 30 ... REI 120:

Fixings: Metal Nail plugs, metal wall plugs

Fixing Centres: max. 250 mm

System S 6a: Perimeter trim thickness  $t = 1$  mm

Further information can be obtained from the relevant fire-resistance test reports or from Leaflet 500EU (Reaction to Fire: Fire resistance).



No. 50 G  
No. 51/20  
No. 53  
No. 51/1  
No. 51/02  
No. 51/32 G  
No. 51/24 G



Lining, e. g.  
Promatect Fireboard

No. 50 G  
No. 51/20  
No. 53  
No. 51/32 G  
No. 51/24 G



No. 50/15 G  
No. 50/14  
No. 50/22



### 5.3.8 Installation of perimeter trims for self-contained fire resistance units

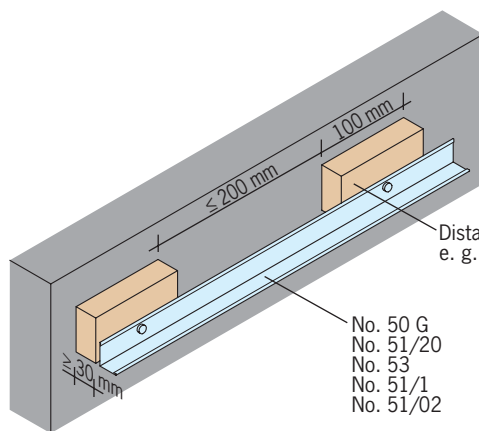
Where a requirement exists for self-contained fire resistance from the ceiling, the relevant test reports and literature should be consulted.

### 5.3.9 Ventilated perimeter trims (No fire resistance requirements)

Examples showing the use of the perimeter to provide ventilation in humid areas or constructions with a non ventilated roof (warm roof construction).

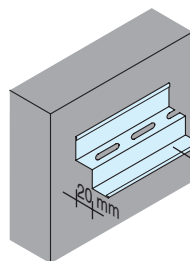


OWAcoustic® ceiling tile  
OWAconstruct® clear grid



Distance piece,  
e. g. timber batten

No. 50 G  
No. 51/20  
No. 53  
No. 51/1  
No. 51/02

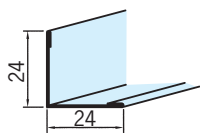


No. 56/35  
Wall profile with ventilation slots  
(Open surface area of 30 cm²/m)

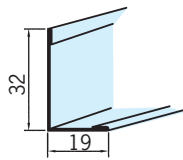
# OWAconstruct®-OWAcoustic® standard ceiling systems

## 5.3.10 Perimeter trims

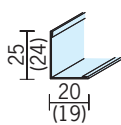
OWA white, galvanised steel perimeter trims, dimensions in mm



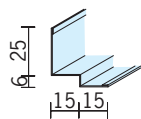
**No. 51/24 G** 0.65 mm thick



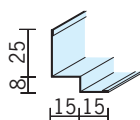
**No. 51/32** 0.5 mm thick



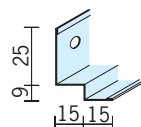
**No. 50 G** 0.5 mm thick



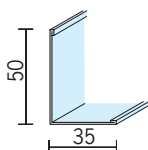
**No. 50/14** 0.5 mm thick



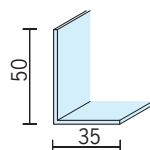
**No. 50/15 G** 0.5 mm thick



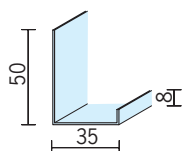
**No. 50/22** 1.0 mm thick perforated



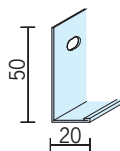
**No. 51/1** 1.0 mm thick



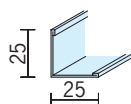
**No. 51/02** 2.0 mm thick



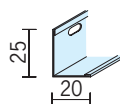
**No. 51/08** 1.0 mm thick



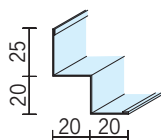
**No. 51/20** 1.0 mm thick Slotted



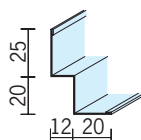
**No. 51/25** 1.0 mm thick



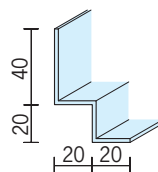
**No. 53** 0.6 mm thick Slotted



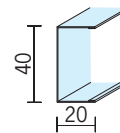
**No. 56/20** 0.6 mm thick  
**No. 56/21** 1.0 mm thick  
**No. 56/23** 1.5 mm thick  
**No. 56/35** 0.6 mm thick (with ventilation slots)



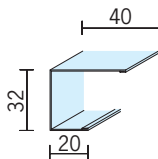
**No. 56** 0.6 mm thick



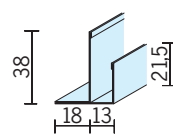
**No. 56/22** 2.0 mm thick



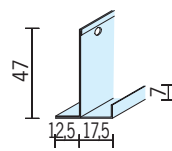
**No. 57** 0.5 mm thick



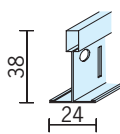
**No. 57/10** 0.6 mm thick



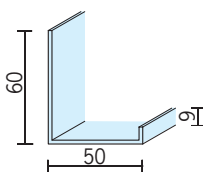
**No. 8030/13** 0.6 mm thick for 13 mm tiles



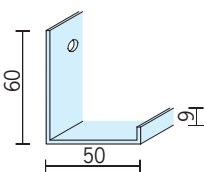
**No. 8030/15** 0.6 mm thick for 15mm tiles



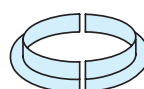
**No. 45 G** visible side white



**No. 25125** 2.0 mm thick



**No. 25127** 2.0 mm thick Pre-drilled



**No. 8034**

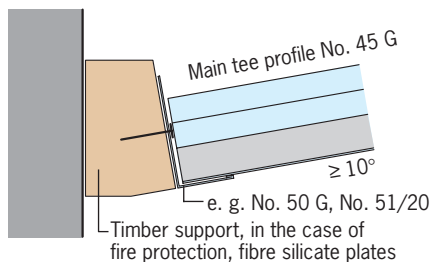
Column ring, two part natural aluminium, other colours on request; ø 200 - 1000 mm in 50 mm steps; height 20 mm, width 20 mm, thickness 1.5 mm  
Note: max. tolerance column diameter  $\pm 3$  mm; adaptation necessary

# OWAconstruct®-OWAcoustic® standard ceiling systems

## 5.4 Pitched Roofs

### 5.4.1 Perimeter detail

In order to ensure equal distribution of any loads at the perimeter the trim should be fixed to allow the suspension system to sit flat onto the trim. This can be achieved by using the construction shown below.

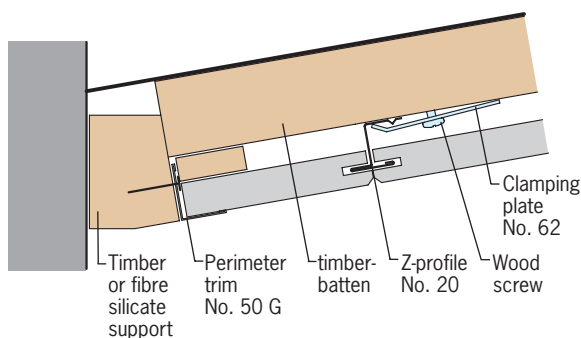


Example for visible systems

This method should be used in the case of ceilings with an inclination of  $\geq 10^\circ$ .

### 5.4.2 Construction and Installation

The perimeter construction must be capable of accepting the forces present. The main tees should be installed along the pitch of the roof. The hangers must be securely fixed to ensure to prevent excessive movement (e.g. where adjustable hangers are used, ensure hook is passed through hanger hole and then folded back). See 5.2 for more details. Where necessary tiles can be secured using retaining clip No. 819.



Example of a concealed System S 1 in direct fitting

## 5.5 Integration of recessed or surface-mounted lights, spotlights, ventilation fittings etc.

In general, it is the task of the electrical or the ventilation contractor to install the fittings either after or during the ceiling installation process. In all cases, this should be agreed between the trades concerned.

When fitting lights etc. it has been shown to be advantageous for the ceiling fitter to be entrusted with the incorporation of the recessed and surface-mounted fittings. These can be made available on site. It is essential that where recessed lights are used that they must be compatible with the suspension system, e. g. OWAconstruct® lights. Connection of the fitted items should subsequently be carried out by the appropriate tradesman.

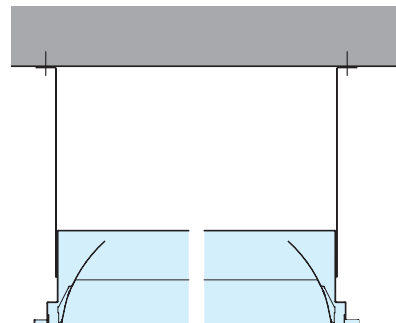
### Important basic principles:

No electric leads may be attached to the hangers of suspended ceilings. Similarly, the laying of leads of any kind on the ceiling must be avoided. Individual cables used for the connection of lamps or spotlights can be fixed to suspension media by agreement with the drywall contractor. The relevant regulations and where applicable, fire protection regulations must be observed. Fitting of built-in components must be commissioned by the client.

### 5.5.1 Additional Loads

Each additional load which is transferred to a suspended ceiling is to be supported separately. This can be achieved in various ways:

#### a) Suspend the built-in component directly

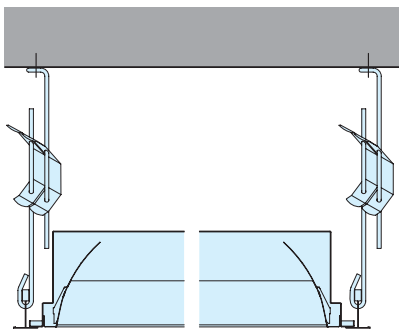




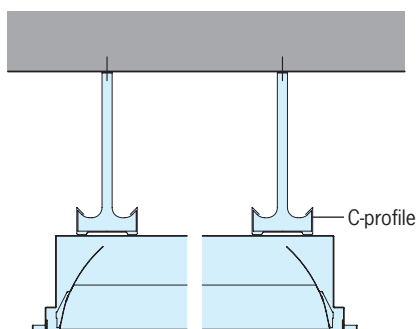
## OWAconstruct®-OWAcoustic® standard ceiling systems

**b)** The construction of the suspended ceiling is to be provided with additional suspension elements, the minimum being two hangers per built-in component. The additional suspension elements are to be selected according to point 5.2. The load capacity is to be taken into consideration. Also to be considered is the possibility of overloading of profiles.

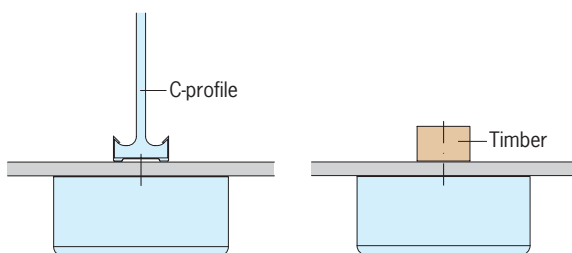
Alternatively, additional loads can be taken up via a reduction of the spacing centres of main tee profiles on the ceiling. Calculations should be made in advance for this method, taking into account the anticipated loads.



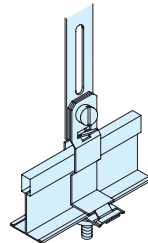
**c)** A further possibility is the fitting of an ancillary construction in the form of suspended C-profiles or timber constructions. Where the ceiling is providing fire resistance please refer to our test reports (see also point 6.1).



**d)** In the case of surface-mounted lights, it is advisable to arrange an ancillary construction, similar to that shown under point c).

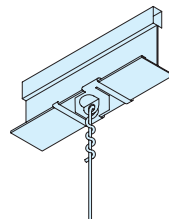


**e)** For surface-mounted lights with system S 3, the double hanger with M 6 x 16 bolt and wing-nut is suitable, Order No. 8095. Load: 0.25 kN. Each hanger is to be suspended from the base ceiling or roof using the appropriate fixing clamps. Surface mounted lights must be fixed by a M 6 nut.

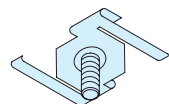


In this context it is important that the specified loads for the fixing clamps are only applicable when the profile is additionally suspended. Loads can only be supported by connecting profiles if they are provided with additional suspension.

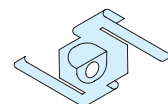
For surface-mounted lights: with bolt M 6 x 16 or M 6 x 30 and wing nut Order No. 95.



Screw clamp with eye Order No. 95/10  
Load: 0.1 kN with appropriate additionally supported bearer construction.



Screw clamp No. 95  
hardened and tempered



Screw clamp No. 95/10  
hardened and tempered

**Note:** Neither the profile constructions nor the hangers or supports may be overloaded.

In the case of special constructions which vary from the manufacturer's guidelines, the installer must ensure that the proposed construction is capable of carrying the additional loads.



### Fire protection:

#### Integration of additional components

Where additional components are integrated, the relevant fire protection test certificate should also be consulted (see also point 6.1).

## OWAconstruct®-OWAcoustic® standard ceiling systems

### 5.5.2 Spotlamps, loudspeakers and other fittings

Loads with a weight  $\leq 0.0025$  kN (~ 0.250 kg) can be supported by OWAcoustic® premium tiles without special measures. For loads such as spotlights, speakers etc that do not exceed 0.035 kN each ( 3.5 kg per unit) pattress No. 8069 should be used to support the load (see leaflet 605).

Where additional loads are applied to a ceiling it is important to ensure that each component in the construction is capable of supporting the increased load. This includes hangers; fixing points as well as any mechanical fixings (see also point 5.1.7).

Care should also be taken to ensure the ceiling stays within the permissible deflection limits.

It should be verified by the installer that the measures used to support additional loads are suitable for their use.

### 5.5.3 OWAconstruct® fitting frames

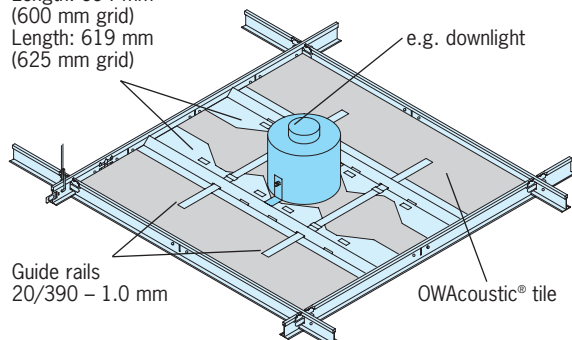
For built-in spotlights, downlights, loudspeakers etc.

For aperture sizes from 30 mm to 240 mm;  
Load 0.035 kN (approx. 3.5 kg);  
the pattress generally consists of 4 components:  
2 guide rails and 2 fitting parts.

The length of the fitting parts fits the following ceiling grids:

Grid 600:	Length 594 mm	Order No. 8069/0
Grid 625:	Length 619 mm	Order No. 8069/1
Grid 300:	Length 294 mm	Order No. 8069/2
Grid 312,5:	Length 306 mm	Order No. 8069/3
Grid 400:	Length 394 mm	Order No. 8069/4

Fitting parts:  
Length: 594 mm  
(600 mm grid)  
Length: 619 mm  
(625 mm grid)

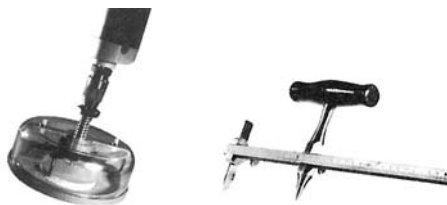


### Installation:

Make the cut-out opening in the OWAcoustic® ceiling tile:

- Fit together support profiles and tie bars
- Adjust support bars to suit size of aperture.
- On the reverse side of the tile align the frame to the aperture and attach frame to the tile by pushing "barbs" into the surface of the tile.
- Finally the ceiling tile, complete with frame is simply laid into the ceiling grid
- The built-in lamps can now be easily fitted

This pattress has been designed for exposed grid systems but can be adapted on site to suit concealed systems S 1, S 1a, S 6 and S 9. The supporting profiles should run between the main supporting profiles (No. 20.....No. 63 etc.).



Hand tools for OWAcoustic® tiles, see point 3.8

### Remark:

The load transfer for the additional built-in items described under point 5.5.1 must be taken into consideration.

### 5.5.4 OWAconstruct® recessed light fittings and downlights

OWA can supply compatible recessed light fittings and downlights to match the ceilings



Leaflet No. 630 Flush-mounted lamps, standard  
No. 632 Downlights  
No. 633 Inlights - direct and indirect lighting

# OWAconstruct®-OWAcoustic® standard ceiling systems

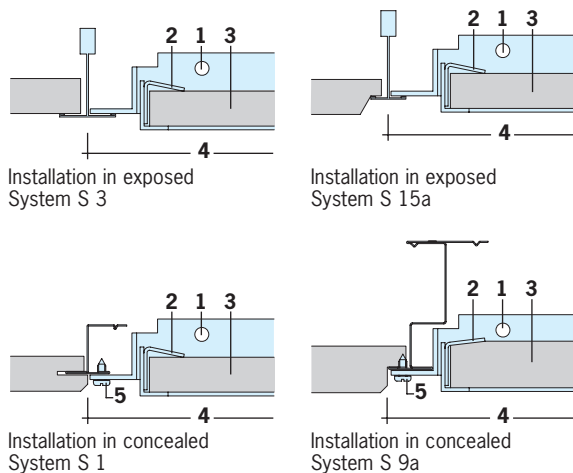
## 5.6 Inspection hatches

OWAconstruct® inspection hatch No. 8032

### Technical details

Order No.: 8032  
Grid size: 625 x 625 mm / 600 x 600 mm  
other sizes on request  
Material: steel sheet, galvanised  
Weight: 2.0 kg

### 5.6.1 Fitting examples



- 1 Suspension point
- 2 Tile clamping tab
- 3 OWAcoustic® tile
- 4 Module size
- 5 Screw fitting point for concealed systems

To prevent damage to ceiling tiles at key inspection points, it is advisable to provide inspection hatches in the suspended ceiling. These will allow frequent access without collateral damage. OWA provide compatible hatches developed for such situations.

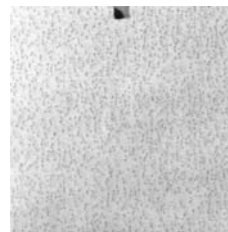
They are suitable for concealed Systems S 1 and S 9a/b and exposed Systems S 3/S 3a and S 15/S 15a. All visible parts are white. The special feature of this hatch is the ability to fit it on site with the same tile surface as the normal ceiling, so that when it is closed it can only be recognised by its narrow metal perimeter frame.

### 5.6.2 Fitting

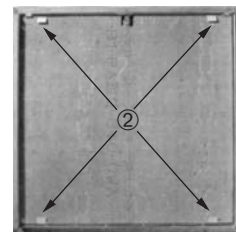
The same principle applies as that used for built-in lighting. When fitting into concealed systems, the inspection hatches are to be independently suspended at all four corners using the fixing points provided in the frame of the hatch. Once installed the frames are also screwed to the Z-profiles.

Similarly when installing in exposed systems, the hatch should be independently supported at each corner. In both cases rigid hangers should be used.

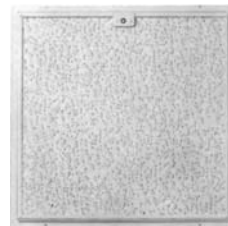
An access key is supplied with each inspection hatch.



Matching tile



Inspection hatch without matching tile



Finished inspection hatch

Cut tile to fit accurately and make a cut-out in the region of the lock, bend open the 4 tabs ② of the hatch, insert the matching tile from the rear, bend the tabs back into position.



### Fire protection:

In the case of fire resistance requirements, a closed fire box is to be fitted above the inspection hatch (see point 6.1.5).



General

Basic planning

OWAcoustic® Tiles – General Information

Construction of suspended ceilings

OWAconstruct®-OWAcoustic® standard ceiling systems

**OWAconstruct®-OWAcoustic® systems with special performances**

6

Working with OWAconstruct®-OWAconstruct® ceiling systems

OWA Installation and Product Training Courses

# OWAconstruct®-OWAcoustic® systems with special performances

## 6.0 OWAconstruct®-OWAcoustic® systems with special performances

### 6.1 Installation of OWAcoustic® fire resistant ceilings

In addition to the basic principles of fire resistance, as described under point 2.3, there are special construction details to be considered when installing a fire resistant ceiling. These are dealt with in leaflet 500 EU - Fire EN 13501 Reaction to Fire and Fire Resistance.

OWA has tested most conventional structural elements and roof constructions in accordance with EN 13501 Part 2 and/or DIN 4102. The results can be seen in the tables shown in leaflet 500 EU. They show that OWAcoustic® ceilings can be used to provide fire resistant performance levels of up to REI 180.

**It should be remembered that OWA fire resistance fire test reports and the performance levels attained are only valid when both OWAcoustic® mineral-wool tiles and also the OWAconstruct® suspension systems and components are used.**

**A CE Kit Declaration can only be issued if the appropriate OWA products have been used for the installation.**



#### 6.1.1 Suspension of fire resistant ceilings

Tested hangers and suspension fittings:

##### Concealed systems

- No. 10 Hanger
- No. 12/10 Adjustable hanger
- No. 13 Adjustable clamp steel beams
- No. 15 Slotted strap
- No. 17/10 Nonius hanger
- No. 09/10 Short Nonius hanger
- No. 62 Clamping plate for direct fitting of
- No. 79/... Nonius hangers for bandraster grid systems (with two security pins)
- No. 8013 Steel beam hangers for galvanised wire, galvanised for  $\varnothing$  2.20 mm. After passing through the fixing the wire should be wound around itself at least three times.

##### Exposed systems

- No. 11 Hanger
- No. 12/45 Adjustable hanger
- No. 12/.../... Adjustable hanger
- No. 17/45 Nonius hanger
- No. 09/45 Nonius hanger

##### Other suspension methods:

##### Hangers with fire resistant limitations

**Adjustable hangers MUST NOT** be used for ceilings that provide REI 90 fire resistance to Timber floors

For further information on the above suspension methods, see point 5.2 and the OWAconstruct® component and accessories list.

#### 6.1.2 Anchor fixings

If anchors are used as a top fixing their use should be approved. This is normally achieved by using products that have European Technical Approval (ETA). The use of plastic plugs and screws is not allowed.



#### 6.1.3 Perimeter trims and fire resistance

Where the ceiling is being used to provide fire resistance the perimeter trim should be installed in accordance with the relevant test report. Generally this will entail using either an approved metal anchors or other approved fixings. Fixing centres are generally 250mm and will be dependant on the performance required and the substrate (see point 5.3).

The use of plastic plugs and screws is not allowed.

# OWA

## OWAconstruct®-OWAcoustic® systems with special performances



### 6.1.4 Resistance to Fire: Integrated services

The installation of services such as recessed lighting, spotlights, speakers etc., into a fire resistant ceiling can seriously compromise its performance.

It is therefore necessary to provide fire resistant enclosures to those services as well making sure the additional weight does not in itself compromise the fire resistance.

To do this it is necessary to:

- Provide additional or independent suspension for the service element and enclosure. (see notes under point 5.5.1)
- Build a fire resistant box around the service element using an OWAcoustic fire box made from Minowa mineral wool boards. This can be ventilated or closed.

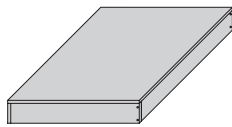
Minowa mineral-wool boards available in:

Length: 2500 mm  
Width: 1250 mm  
Thickness: approx. 16 or 21 mm  
Material class: A2-s1,d0

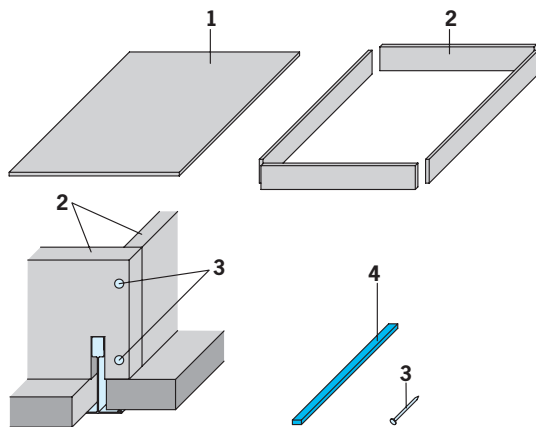


### 6.1.5 OWAcoustic® fire boxes and OWAcoustic® premium tiles ≥ 15 mm (REI 90):

Prefabricated fire box kits are available for a number of standard module sizes.



Closed fire box

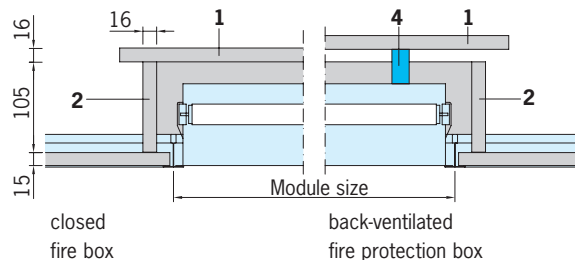


OWAcoustic® fire box:

- Lid
- Side strips 680 x 105 x 16 mm (4 off)
- Nail 4.2 x 50 mm (8 off)
- Styrodur strips (supplied by others)

**Installation:** The fire box is supplied as a kit and must be assembled on site. The sides are to be notched out to fit snugly over the ceiling profiles and then pinned together using two nails per junction. Where ventilation is required two strips of Styrodur boards are laid onto the back of the light fitting. Finally, the cover is placed in position.

Construction, materials requirements, dimensions etc. can be obtained from the Fire box information leaflet.



### 6.1.6 Closed fire box

These are suitable for lights and built-in components which do not produce excessive amounts of heat. They are also recommended as sound reduction boxes.

The selection of the box - whether closed or back-ventilated - should be agreed with the electrical contractor.

The size of the fire box depends on the dimensions of the light. In general, the box should be about 30 - 50 mm larger than the light.

### 6.1.7 Back-ventilated fire protection coffer

The use of the back-ventilated fire boxes is necessary and recommended when the dissipation of heat is only possible through the cavity and when there is no requirement for sound insulation.

Strips of foam (e. g. Styrodur) approx. 20 x 20 mm, length according to light dimensions, should be laid on top of the light. A frame should be constructed of Minowa mineral wool board, with dimensions depending on the size of the light. The frame described is to be kept approx. 10 mm lower than the upper edge of the foam strips. Onto the foam strips, a cover of Minowa mineral wool board should be placed, overlapping the frame all round by approx. 50 mm. In the case of a fire, the foam strips will melt and the lid sink down onto the frame and thus hinder the penetration of the fire.



## OWAconstruct®-OWAcoustic® systems with special performances

### 6.1.8 Cables

**Individual electrical cable** may be put through fire resistant ceilings, provided that the remaining cross-section of the hole is completely filled with plaster or a similar fire resistant material.



### 6.1.9 Fire boxes for self-contained fire protection units (EI)

The construction of these fire protection boxes for built-in components is very specific and should be installed in accordance with the relevant test report. Construction details can be found in our leaflet 915 – EI 30 Barriere Self-contained fire protection units.

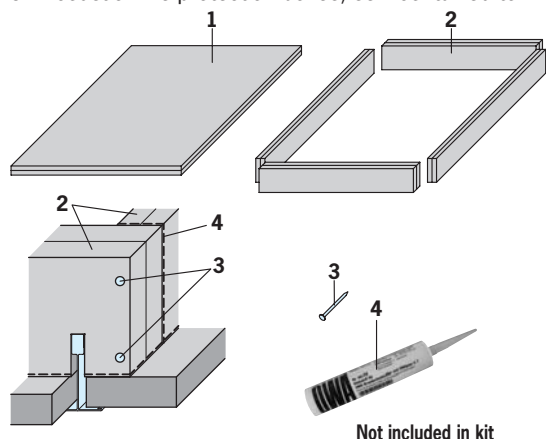


### 6.1.10 OWAcoustic® boxes, self-contained up to EI 30, OWAcoustic® premium tiles ≥ 40 mm:

For standard light dimensions, prefabricated OWAcoustic® standard fire protection boxes can be supplied.

#### Example:

OWAcoustic® fire protection boxes, self-contained to EI 30



- 1 Cover
- 2 Side strips (4 off)
- 3 Nail 3 x 80 mm (8 off)
- 4 Adhesive (not included in fire box kit)

**Fitting:** The fire protection box is supplied as prefabricated components and constructed on site. To assemble the side are notched out to accommodate the ceiling profiles then glued and pinned together to form a frame. The frame is then glued to the OWAcoustic ceiling and then the top is glued to the frame.

For further information, see the Fire Box leaflet.

## 6.2 Suspended ceilings in humid rooms and outdoor areas

For humid internal rooms and for ceilings in outdoor areas, the OWAconstruct® System S 3e can be used. It is essential that the basic principles of corrosion protection described in point 4.4 of EN 13964 and the air humidity reference values of OWAcoustic® tiles, as under **point 4.3**, are taken into consideration.

Suspended ceilings made from OWAcoustic® tiles can, under certain conditions, be installed into open rooms which are exposed to the outside air.

In addition to the effects of moisture, wind pressure and suction effects must be considered. The basis for this is given in EN 1991 (Eurocode 1 - Actions on structures) or other national building codes.

### 6.2.1 Tile material

See point 3.2 Properties of OWAcoustic® ceiling tiles. As an alternative to using a high humidity tiles, planks in size 1200 x 300 mm / 1250 x 312.5 mm can be used or standard tiles 600 x 600 mm / 625 x 625 mm can be used with reinforcing spline can be used (see point 6.3).

Direct contact with water must be avoided. Water sprayed onto tiles can also cause surface blemishes.

Exceptions to this are OWAcoustic® OWAlux tiles (without needle perforations) and OWAcoustic® clean, which can be sealed into the grid during installation, also withstand high pressure washing from below (see point 6.5 and leaflets 895 E / 898 E).

### 6.2.2 Construction

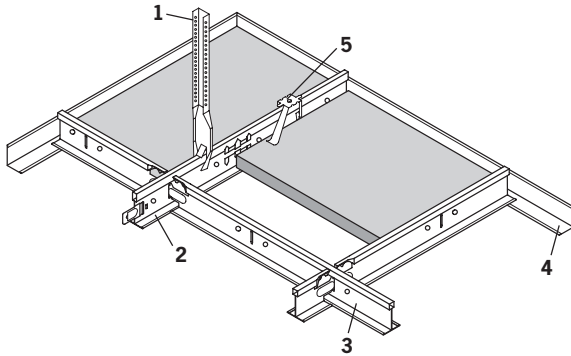
**System S 3e\*** – Exposed system – 24 mm wide, similar construction to System S 3

\* fulfils the requirement of Class C according to EN 13964 (see point 4.3)

For further information on the above-mentioned ceiling systems, see OWAconstruct® construction parts and accessories price list.

# OWAconstruct®-OWAcoustic® systems with special performances

## Example S 3e:



- 1 Nonius Hanger No. 17/45 KB
- 2 Main tee No. 45 G-KB, L = 3700 mm / 3750 mm
- 3 Cross tee  
No. 46 G-KB, L = 600 mm / 625 mm  
No. 47 G-KB, L = 1200 mm / 1250 mm
- 4 Perimeter trim No. 50 G-KB
- 5 Retaining clip No. 819

Care should be taken not to damage the grid or suspension during installation or when in use. Cut edges or damaged grid should be treated to prevent corrosion.

If suspension components No. 09/45 KB, No. 17/45 KB, No. 16/.. KB, No. 76 KB are damaged they must be treated with a two part paint (No. 99/18 KB) to prevent subsequent corrosion.

Similarly if the grid components, No. 45 G-KB, No. 46 G-KB, No. 47 G-KB and No. 50 G-KB are damaged they must be treated with Zincor or Alu Zinc sprays.

### 6.2.3 Use in indoor swimming pools

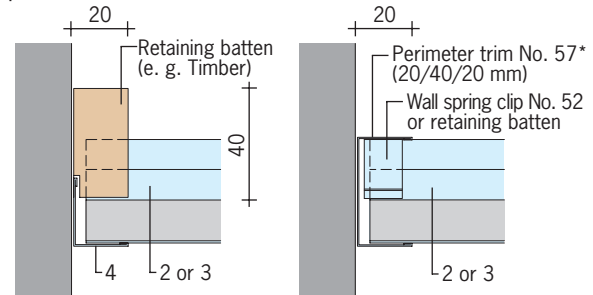
Please contact the OWAconsult® team for further details.

### 6.2.4 Ceilings which are close to refrigerators and deep freezes, etc.

Moisture-resistant tiles should be used above equipment which gives off moisture - such as refrigerators, deep-freezes etc. Alternatively, the ceiling tiles can be provided with backing reinforcement (see point 6.3).

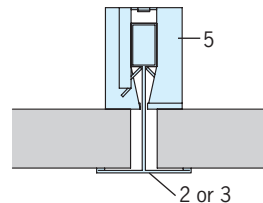
### 6.2.5 Perimeter trims for ceilings in open rooms

All perimeter tiles should be installed to resist upward pressure.



\* EN 13964 Class B

### Example of construction (cross-section)

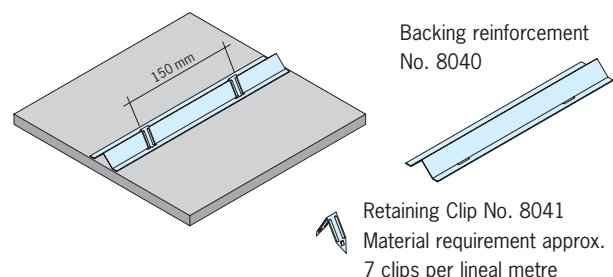


### Notes:

When constructing suspended ceilings "in open room" situations special care is required. The above-mentioned construction recommendations are to be adapted to suit the area of use and, if necessary, additional measures taken. Thus in certain circumstances such as excessive upward pressure, it may be necessary to use a top hat profile instead of a retaining clip (see sketch). Where used the retaining clips are to be fitted to all profiles at a maximum spacing of 200 mm.

## 6.3 Reinforcing spline No. 8040 and No. 8041

Under certain circumstances, such as increased levels of humidity (see also point 6.2), additional loads or large format tiles, it is necessary to provide additional support to the tile. In many cases the application of the OWAconstruct reinforcing spline to the back of the OWAcoustic tiles can be used to overcome the problem.



## OWAconstruct®-OWAcoustic® systems with special performances

### Important:

Generally the triangular shaped reinforcing spline should be fitted to the centre of the tile. However in some cases the position and number of splines may be varied to suit the size of the tile.

The spline is fixed the board using retaining clips pushed through precut slots at 150 mm centres. It is important to use a clip (No. 8041) in every available slot. The reinforcing spline is an on-site procedure.

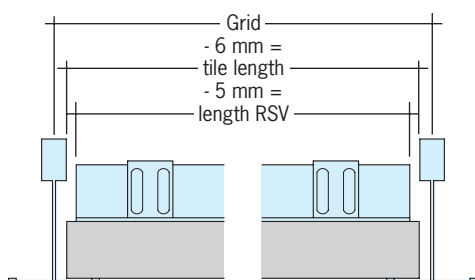
### Large format tiles with backing reinforcement

OWAcoustic® tiles which are supplied in larger dimensions than 625 x 1250 mm should be fitted with a reinforcing spline applied to the back of the tile prior to installation.

### Exposed Systems S 3, S 3a, S 15, S 15a

S 3 module size 625 mm x 1250 mm

Tile length = grid - 6 mm  
= 1250 mm - 6 mm = 1244 mm  
Spline length = tile length - 5 mm  
= 1244 mm - 5 mm = 1239 mm



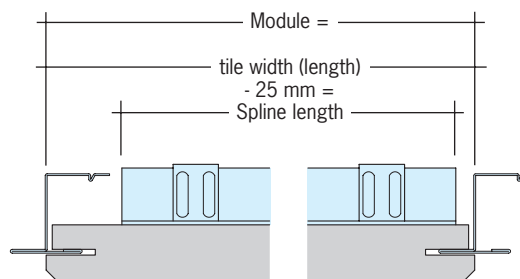
### Concealed System S 1

S 1 module size 625 mm x 625 mm

Spline length = 625 mm - 25 mm = 600 mm

### Reinforcing spline profile No. 8040

Order lengths with application examples:



## 6.4 Fixing of partition walls

In general, OWAconstruct® bandraster systems S 18 can be used for the fixing of light weight partition walls. During planning and construction the specifications of EN 13964 and the recommended load values (see point 7.8.6.1 Pressure and horizontal forces for Nonius hangers for bandraster systems) should be taken into consideration. The manufacturer's instructions for adjacent components (e. g. partition wall) should also be taken into consideration.

## 6.5 Suspended ceilings in hygiene-sensitive areas

### 6.5.1 OWAlux® aluminium foil faced mineral wool ceiling tiles.

These tiles can be used in areas where hygiene and the ability to clean or disinfect are important. They are suitable in applications such as hospitals, laboratories, kitchens, food preparation areas, retail, and sterile and high hygiene areas. In addition to being easy to clean they offer a smooth robust surface and have shown under independent tests that they can be easily disinfected and are suitable for area with high hygiene requirements.

The OWAlux® tiles are designed for use in system S 3 only.

**Cleaning:** Methods used to clean OWAcoustic ceilings will vary depending on the surface design and finish. All OWAlux surfaces can be vacuumed, dusted or wiped down with a damp OWA sponge.

**High-pressure cleaning:** Only the non needle-perforated OWAlux white (64/8) and the OWAlux silver (64/4) can be cleaned using high-pressure cleaners with a maximum water temperature of up to 38 °C and a maximum operating pressure 40 bar. The cleaning jet should be a flat spray applied at an angle 30° and no closer to the ceiling than 40 cm. If the ceiling requires this type of cleaning regime it is also important to ensure that the tiles are sealed into the grid (sealing process is described under point 6.6 Clean rooms).

**Important Note:** Where the ceiling is contaminated with aggressive media (alkalis, acids, fats etc.) the ceiling may remain marked even after cleaning. For further information see leaflet No. 898 E.

## OWAconstruct®-OWAcoustic® systems with special performances

### 6.5.2 OWAcoustic® sanitas 02 tiles for sterile areas

Areas such as hospitals, clinics and laboratories sometime require ceilings that have fungistatic and bacteriostatic properties. These properties can be found in OWAcoustic® sanitas Plain 9 and sanitas Cosmos 68/0 (without needling).

For more details see our Hygiene leaflet No. 898 E.

### 6.5.3 OWAcoustic® pura tiles that can be disinfected

OWAcoustic® pura tiles have been independently assessed and shown to be easily cleaned and disinfected. Most common disinfectants can be used without detrimental effect.

For more details see our Hygiene leaflet No. 898 E.

## 6.6 OWAcoustic® Clean – Suspended ceilings for clean rooms

Clean rooms are areas which have special requirements for the emission of particles into the air. Building materials for clean rooms are therefore subject to special air purity requirements that are expressed in a minimum emission of airborne particles. The highest permissible limits are defined in EN ISO 14644-1, which we comply with in six of nine classes (ISO classes 4 – 9) with OWAcoustic® clean ceilings. This qualifies these ceilings for many clean room areas. OWAcoustic® clean is a mineral wool ceiling panel in the OWAcoustic® range which is faced with a high grade aluminium foil. This provides a high performance panel with an easily cleaned surface that inhibits the adhesion of airborne particles, which is precisely one of the requirements to be met in clean rooms.

For cleaning recommendations see point 6.5.1.

For more details see our Hygiene leaflet No. 898 E and No. 895 E.

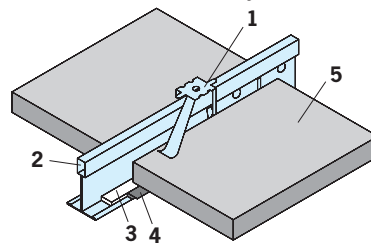
- To ensure a good air seal all grid members, including the perimeter trim, should have a compressible tapes stuck onto the upper, tile bearing surface. This includes any services integrated into the ceiling.
- The recommended tape is a white, closed-cell, interlinked polyethylene foam tape in size 3 x 9 mm which is self-adhesive on one side (order Part No. 8900).

To improve the seal, the tiles should be positively clipped using retaining clip No 819 and then be sealed into the suspension system using an acrylic or similar sealant.

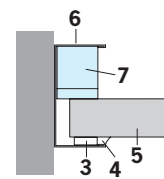
Any gaps in the construction or between services should be filled or sealed.

The constant over or under pressure may not exceed a maximum of 40 Pa. (see details of point 3.2).

Construction details, System S 3



Perimeter detail



- 1 Retaining clip No. 819
- 2 Main tee or cross tee
- 3 Sealing tape No. 8900\*
- 4 Acrylic sealant (or equivalent)\*
- 5 Design without needle perforations
- 6 Perimeter Channel No. 57 (20/40/20 mm)
- 7 Wall spring clip No. 5210

\* The type of sealant used is dependant on the use of the area. Sealing with acrylic is not always necessary. See leaflet No. 895 E.

#### Comment:

The use of sealing materials may lead to a change in the building material classification in accordance with EN 13501-1. The sealing type must be adapted to the application demands of the respective clean room.

EN ISO 14644-1 deals exclusively with the particle purity of the air. It is part of standard 14644, which in turn is part of a number of standards and sets or rules (e.g. the EG-GMP rule group) that deal with contamination control of clean rooms. Furthermore, there are other requirements on temperature, pressure and humidity conditions in clean rooms, as well as in connection with the planning, operation and monitoring of clean rooms.

## OWAconstruct®-OWAcoustic® systems with special performances

### 6.7 Ventilation and air-conditioning ceilings

Where the ceiling cavity is used as a supply or return air plenum the following measures should be taken:

#### Exposed grid ceilings

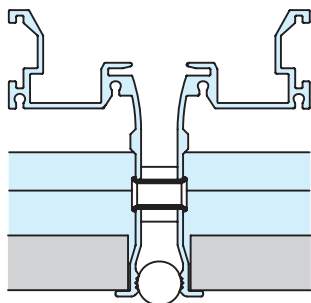
- To ensure a good air seal all grid members, including the perimeter trim, should have a compressible tapes stuck onto the upper, tile bearing surface. This includes any services integrated into the ceiling. (Tape - order part No. 8900 see point 6.6)
- The OWAcoustic® tiles should be clipped into the grid using retaining clip No. 819 or No. 935 - approx. 6.0 clips per m<sup>2</sup>. The constant under- or overpressure in the cavity may not exceed a maximum of 40 Pa. (see details of point 3.2). If this limit is exceeded, deformation of the tile material may occur.

#### Concealed grid Ceilings

- With the exception of the perimeter trim, OWAcoustic® concealed ceiling systems do not require any additional sealing.
- In order to avoid turbulence at the back of the ceiling the air velocity within the plenum should not exceed 1.5 m/s.
- The relative air humidity in the plenum and room below should not exceed those recommended for the module size; suspension system and type of tile (see point 3.2 and 6.2).

#### Ventilation example:

OWAconstruct® ventilation profile No. 16516 and 16517



Note:  
For ventilation options see point 5.3.9.

### 6.8 Incorporation of integrated cooling elements Chilled beam/DID Units

When integrating cooling elements into an OWA ceiling, it may be beneficial to ask the ceiling installer to integrate the climate control equipment into the ceiling.

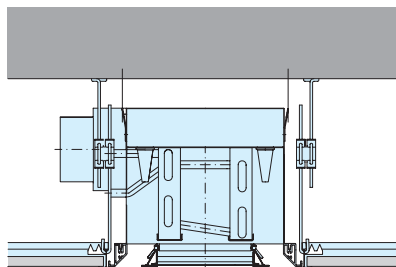
The connection must be carried out by the specialist contractor / technician.

It is essential that the basic principles of point 5.4 are observed.

It is important that the climate control units used are compatible with the proposed ceiling system

Air-conditioning units which are compatible with OWA ceilings are supplied by the Hesco company.

For further information, see leaflet 641 E  
Ceiling induction through-flow DID.



Chilled beam unit integrated into  
OWAcoustic® bandraaster ceiling.



## OWAconstruct®-OWAcoustic® systems with special performances

### 6.9 OWAcoustic® janus – high performance sound reduction tiles

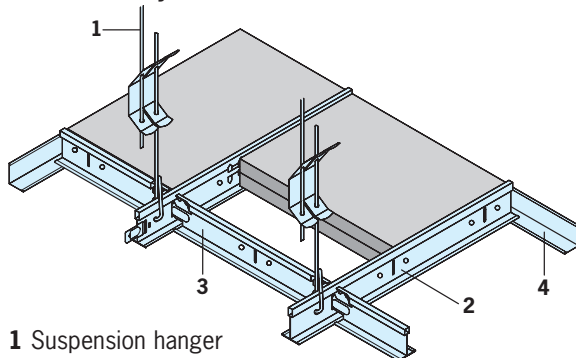
Developed for high performance sound reduction, janus ceiling tiles and planks can be used in systems S 3, S 3a and S 18p. Janus tiles are manufactured by bonding two high performance OWAcoustic® tiles together. The upper surface has a sound absorbing fissured pattern while the lower decorative surfaces can be supplied in a range of sound absorbing surface designs. Janus tiles are supplied in 33 mm thickness for exposed systems S 3 and S 3a and 30 mm for the semi-concealed plank system S 18p.

Weight

33 mm Approximately 11 kg/m<sup>2</sup>

30 mm Approximately 10 kg/m<sup>2</sup>

#### OWAcoustic® janus S 3 and S 3a

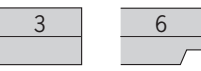


1 Suspension hanger

2 Main tee

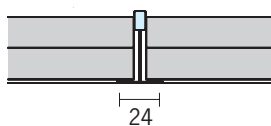
3 Cross tee

4 Perimeter trim

Edges: 

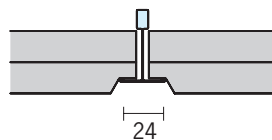
#### S 3

Section through Main tee profile



#### S 3a

Section through Main tee profile



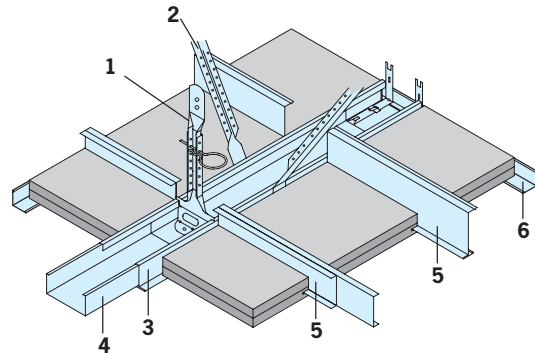
#### Special features of janus System S 3 and S 3a

Main tee profile spacing 625 (600) mm

Centres of hangers max. 1250 mm

Press hooks of hangers No. 12/.../1 and No. 12/.../2 together, in order to facilitate inspection of the tiles.

#### OWAcoustic® janus S 18p



1 Nonius hangers

2 Nonius stabiliser hangers

3 Bandraster profile

4 Bandraster connector

5 Supporting profile

6 Perimeter trim

Edge:



Section through bandraster profile



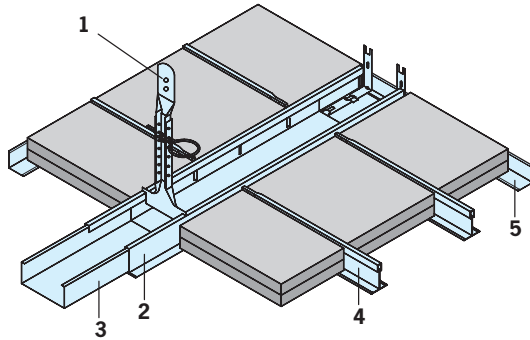
#### Special features of OWAcoustic® janus S 18p

Span widths of profiles.

For further information, also see leaflet 570 E.

## OWAconstruct®-OWAcoustic® systems with special performances

### OWAcoustic® janus S 18d

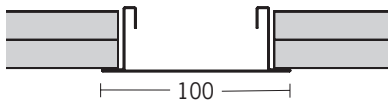


- 1 Nonius hanger
- 2 Bandraster profile
- 3 Bandraster connector
- 4 Supporting profile
- 5 Perimeter trim

Edge:



Section through bandraster



For more information please see Leaflet 570 E.



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General

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Basic planning

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OWAcoustic® Tiles – General Information

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Construction of suspended ceilings

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OWAconstruct®-OWAcoustic® standard ceiling systems

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OWAconstruct®-OWAcoustic® systems with special performances

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**Working with OWAconstruct®-OWAconstruct® ceiling systems**

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7

OWA Installation and Product Training Courses

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# Working with OWAconstruct®-OWAconstruct® ceiling systems

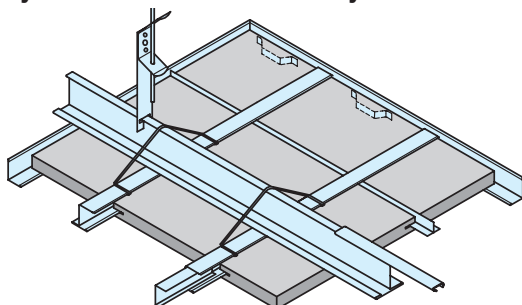
## 7.0 Working with OWAconstruct®-OWAcoustic® ceiling systems

### 7.1 Concealed systems

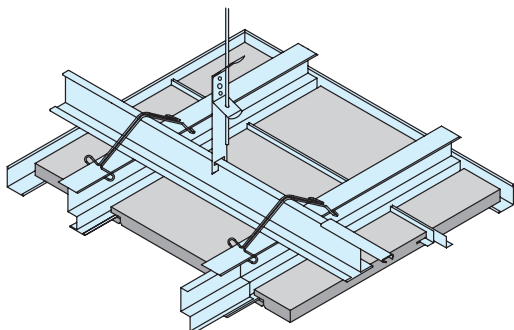
#### Special features:

The systems described all share the primary suspension system. In the case of Systems S 1 and S 14a the tiles are **not demountable**.

#### System S 1 concealed metal system



#### System S 9a concealed, demountable



#### System S 14 a Rilled, concealed planks

For construction details, also see OWAcoustic® System leaflet S 14

#### Edge detail:



System S 1  
Edge 1



System S 9a/b  
Edge 4 combined with  
Edge 10

#### 7.1.1 Installation note

Concealed systems are labour intensive ceiling systems. This should always be taken into account when preparing tenders or quotations.

#### 7.1.2 Integrated Services

Because of the specific construction details of System S 9 it is important to ensure that any service elements such as light fittings, air grilles, etc. are compatible, especially if they are designed to fit the full module dimension.

Compatibility of service elements should be checked at the planning stage for all systems.

During construction and planning, the principles of shown in point 5.5 should be adhered to.

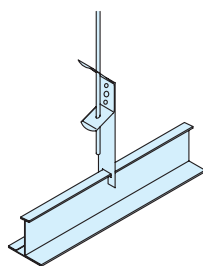
OWA can provide compatible lights for all systems.

#### 7.1.3 Fixings

The type of fixings used in all cases should suit the substrate, loading and system being used. See point 5.0

#### 7.1.4 Suspension

OWAconstruct® standard hangers for concealed systems, see point 5.2.



No. 12/10

#### 7.1.5 Hanger spacing

The first hanger should be between 400 mm and 1250 mm from any perimeter and generally at maximum 1250 mm centres. Distance from the perimeter and hanger centres are dependant on the performance required from the ceiling.

There should always be a hanger in the immediate vicinity of the main tee splice.



#### Hangers for fire resistant ceilings:

See point 5.2.2 and 6.1 - hanger spacing according to the relevant test report.

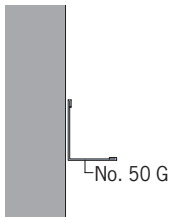
# Working with OWAconstruct®-OWAconstruct® ceiling systems

## 7.1.6 Additional loads:

See point 3.1 and 5.1.7

## 7.1.7 Perimeter trim (see point 5.3)

The perimeter trim defines the lower level of a suspended ceiling. It must be installed horizontally (unless otherwise instructed) and at the correct level. Junction details such as a mitre (see point 5.3.3) or overlap should be agreed with the client/architect prior to installation. The standard perimeter trim No. 50 G is fixed to the wall at  $\leq 300$  mm depending on the load.



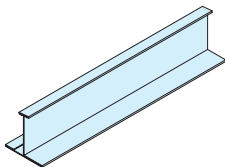
## Fire Resistant ceilings:

Perimeter trim fixing should be at  $\leq 250$  mm or in accordance with the relevant test report. For further technical details see point 5.3.

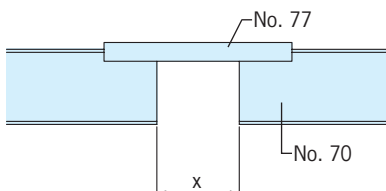
## 7.1.8 Primary Suspension profile No. 70

The load-bearing suspension profile No. 70 should be installed at no more than 1250 mm centres. Supplied/stock lengths are 3000 mm and 5000 mm.

Depending on the type of ceiling, the primary suspension profile No. 70 should be installed between 300 mm (for a floating ceiling) and 1000 mm from the perimeter of the OWAacoustic® ceiling.



No. 70



x = expansion gap 10 - 20 mm



## Fire resistant ceilings: Linear expansion

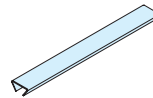
The length of the suspension profile No. 70 is calculated as follows: clear room dimension minus 2.0 % (for linear expansion).

**Example:** Room length = 5000 mm - 2 % gives profile length = 4900 mm.

This rule of thumb formula can be used for continuous profile lengths up to approx. 15 m.

## 7.1.9 Connector No. 77

The suspension profiles No. 70 are joined together using connector No. 77. After sliding into position, these are to be firmly clamped by squeezing with pliers. Hangers should be installed both sides of the connector.

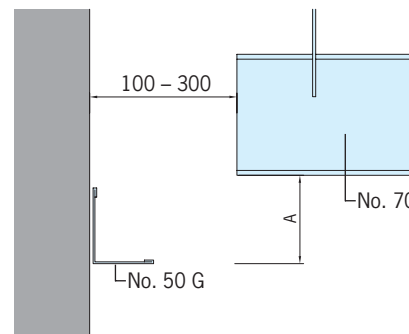


No. 77

## 7.1.10 Alignment of the primary suspension profile

The suspension profile No. 70 should be installed horizontally and aligned with the aid of levelling equipment (ceiling construction laser or water level) and locked in place at the hangers.

There must be sufficient space between the upper support surface of the perimeter trim and the lower face of the suspension profile No. 70 to allow the installation of the supporting Z-profile and OWAacoustic® tiles. Depending on the profile and system being installed, this dimension (A) will generally be between 28 - 65 mm.



## Installation heights (A) for Z-profiles:

System sheet No..	S 1	S 9a
- A - mm	28	65

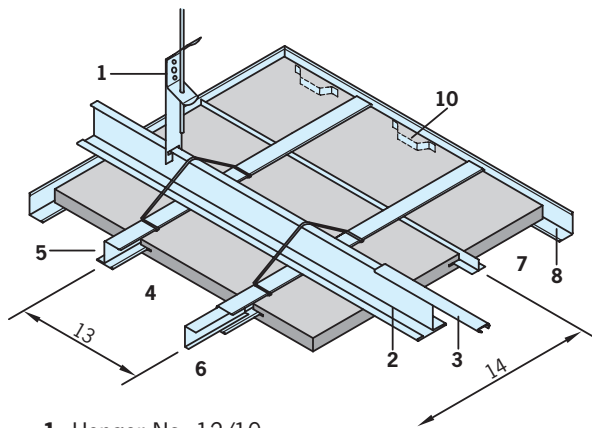
## Working with OWAconstruct®-OWAconstruct® ceiling systems

### 7.2 Construction details for OWAacoustic® premium and OWAconstruct® System S 1

The suspension system should be installed in accordance with the details shown in point 7.1.

For the OWAacoustic® ceiling systems specified, the individual tiles are not demountable. However, suitable access hatches are available, as more fully described under point 5.6.

Further information such as dimensions, installation examples and material requirement per m<sup>2</sup> can be found in system leaflet S 1.



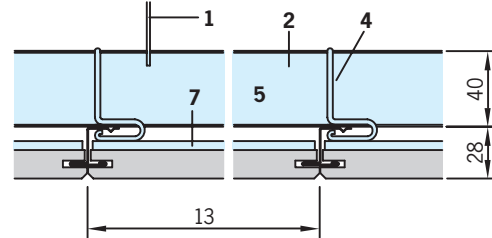
- 1 Hanger No. 12/10
- 2 Primary suspension profile No. 70, spacing ≤ 1250 mm
- 3 Connector No. 77
- 4 Wire clip No. 60
- 5 Z-profile No. 20, spacing ≤ 625 mm
- 6 Z-Connector No. 25
- 7 T-profile No. 23
- 8 Perimeter trim No. 50 G
- 10 Wall spring clip No. 52
- 11 direct fixing clamp No. 62
- 12 Timber support, e.g. timber batten, spacing ≤ 1250 mm
- 13 Tile width
- 14 Tile length

#### Edge detail:

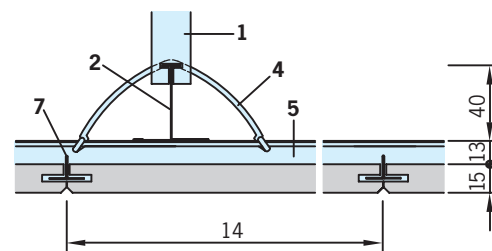


System S 1

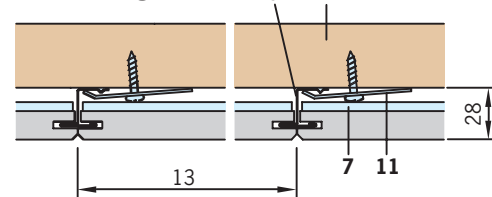
#### Longitudinal section:



#### Cross-section:



#### Direct fixing:



Direct fixing see also point 7.2.3

#### Suspension heights:

Minimum suspension height using the standard suspension is between 115 - 140 mm.

Direct fixing approx. 28 mm + supporting timber batten.

#### 7.2.1 Installation of suspension system and OWAacoustic® tiles

##### 7.2.1.1 Galvanised Z-profile No. 20 (S 1)

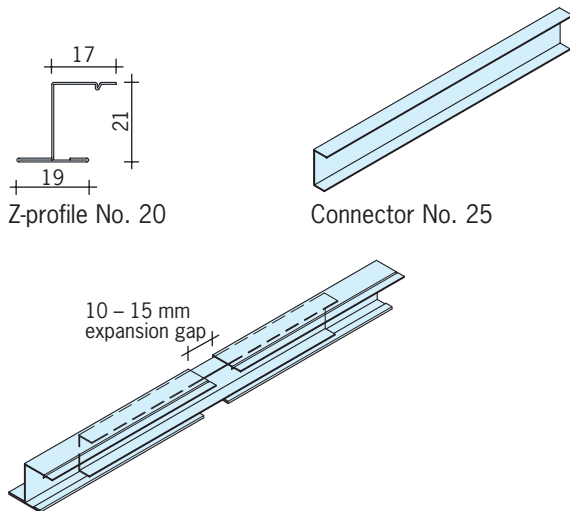
The Z-profiles are used to support the grooved OWAacoustic® tiles.

The Z-profiles are installed parallel and at 90° to the direction of the primary suspension profile. Z-profiles No. 20 are connected to primary suspension profile No. 70 using wire clip No. 60 (1 per intersection). Available in 3000 mm length the Z-profiles are joined using connector No. 25.

NB. The Z-profile joints should be staggered



## Working with OWAconstruct®-OWAconstruct® ceiling systems

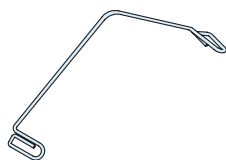


### Fire Resistant Ceilings:

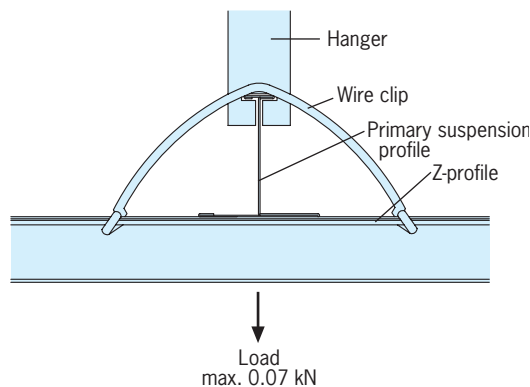
The Z-profiles must not be pushed up tight against each other. To allow for expansion in the case of fire a 10 – 15 mm expansion gap must be created at the junction of every Z profile.

#### 7.2.1.2 Wire clip No. 60:

The Z-shaped profiles are fixed to the primary suspension profiles No. 70 using wire clip No. 60. The maximum load for a 3.0 mm thick wire clip is 0.07 kN (~ 7 kg).

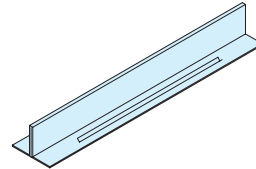


Wire clip No. 60

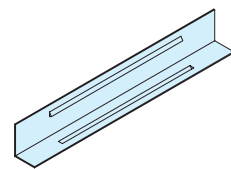


#### 7.2.1.3 T-profile No. 23 and L-profile No. 24:

The edge of the OWAacoustic® tiles spanning between the Z-profiles must be reinforced by inserting the relevant length T-profile No. 23. Where the tiles are made demountable the tee profile must be replaced by two (2) L-profiles No. 24 per tile intersection.



No. 23



No. 24

#### 7.2.1.4 Wall spring clip No. 52

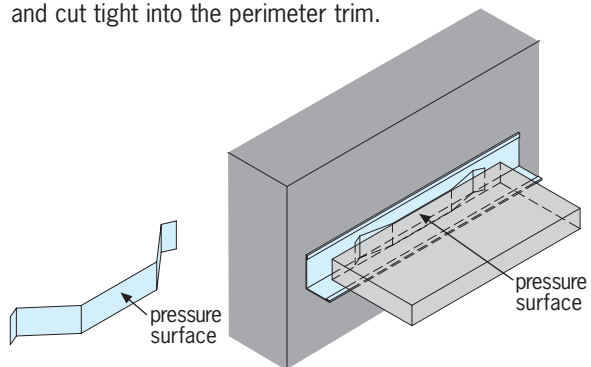
Wall spring clips are installed between the perimeter trim and cut edge of the perimeter tiles to prevent the tiles joints from opening.

It is important that the wall springs are fitted **only** to two adjacent walls, **not** to two opposite sides and under no circumstances to all sides.

For tile widths of  $\geq 600$  mm, approx. 1.6 wall spring clips per lineal metre of perimeter trim. Narrower tiles require 1 wall spring clip per tile.

#### Note:

The first continuous row of tiles to be installed is critical to both the appearance and quality of the OWAacoustic® ceiling installation. This row of tiles will form the starting point for the ceiling and must aligned using a string line and cut tight into the perimeter trim.



Wall spring clip No. 52

The wall spring clip is only fitted to the perimeter tile at the end of each row, however in the case of the final row wall spring clips must be fitted to every tile.

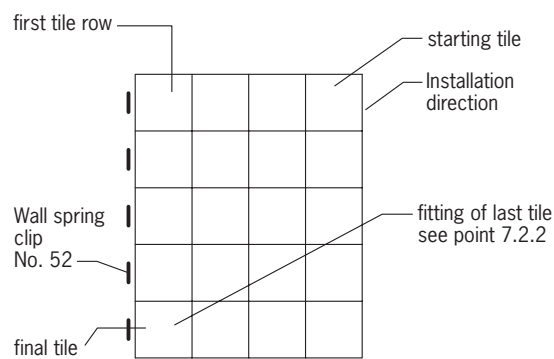
# Working with OWAconstruct®-OWAconstruct® ceiling systems

## Please note:

One wall spring clip will be installed between the final perimeter tile in the first row and the perimeter trim.

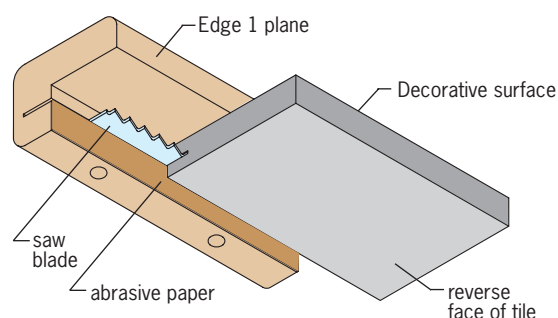
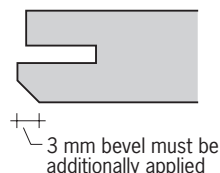
The wall spring clip is installed in a similar manner in all subsequent rows until the last row is reached.

On the last row a spring clip is used between the perimeter trim and the cut edge of all remaining perimeter tiles.



## 7.2.1.5 Edge 1 Plane No. 99/07

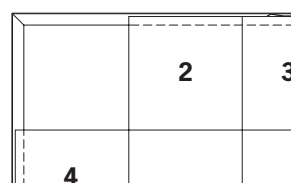
Where a special size tile is required the kerfed and rebated edge detail can be re-formed manually on site using OWA plane No. 99/07, and the bevel created using the back of a tile and OWA chalk to re-decorate it.



## 7.2.2 Installation of final tile

The installation of the final tile is carried in the following order: Perimeter **tile 3** is cut to size and fitted into the ceiling with a wall spring clip No. 52 placed between the perimeter tile and the cut edge. L-profile No. 24 must be inserted into the groove of the open edge.

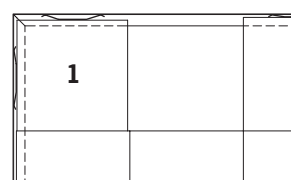
**Tile 2** is cut to size and installed into the ceiling ensuring that L profiles No. 24 (2 pieces required) are inserted into the grooves of the parallel edges.



Cut **tile 1** (corner tile) to size. To do this, measure the size of the opening in both directions measuring from the edge of **tile 2** to the wall and the same again from **tile 4**. Cut the tile 10mm shorter in both directions (Do not assume the opening is square!)

Now take **tile 2** out again and insert **tile 1** with wall spring clips No. 52 placed between the perimeter trim and the cut edges on both adjacent sides.

On the remaining open side of **tile 1** insert 1 L-profile No. 24 into the exposed groove.



To obtain sufficient room to insert **tile 2**, **tile 1** is pushed in the direction of the wall, so that the wall spring clip is compressed as flat as possible. Now finally **tile 2** can be laid together with wall spring clip No. 52. The position of **tile 1** can be corrected slightly by gentle sliding.

In summary 2 L-profiles are fitted between the abutment of **tile 3** and **tile 2** and between **tile 2** and **tile 1**.



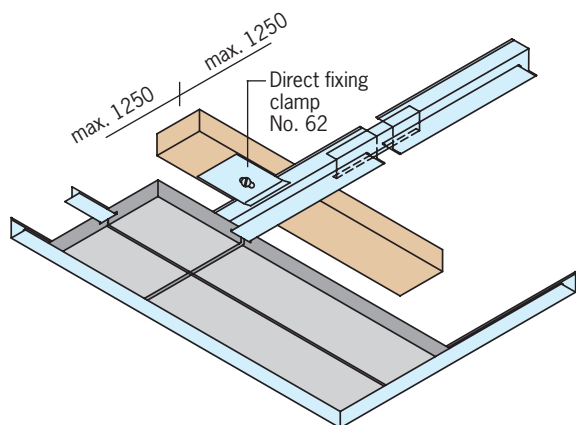
**Note:** For each suspended ceiling the following additional elements will be required for the final tiles: 1 off wall spring clip No. 52 and 4 L-profiles No. 24.

## Working with OWAconstruct®-OWAconstruct® ceiling systems

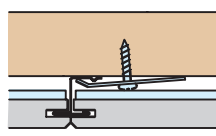
### 7.2.3 OWAacoustic® premium-OWAconstruct® System S 1 - direct fixing

In order to reduce suspension height, the OWAacoustic® ceiling systems described under point 7.1 can be fitted using a direct fixing method. In this case the OWAconstruct® Z-profiles are fixed with direct fixing clamps No. 62 screwed to a suitable background such as timber battens. Where the existing background maybe uneven the use of counter battens may be required.

The maximum axial spacing of the direct fixing clamps should not exceed 1250 mm. See also recommendations shown in point 7.1.5.

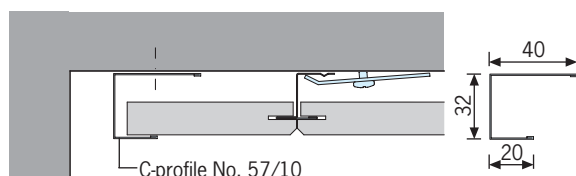


#### Construction height for direct fixing of Z-profiles

	Z-profile No.	
	20	22
H (mm)	28	40

#### Floating perimeter detail:

No. 57/10 or No. 21 - suitable for System S 1 and S 14a



### 7.2.4 Concealed access hatch / replacement of damaged tiles

Concealed System S 1 is generally considered to be a non accessible system however damaged tiles can be replaced and access points for infrequent access created using the following steps shown in diagrams 1 - 7 (this method is only suitable for tiles up 625 x 625 mm):

Remove the damaged tile by cutting out using an OWA knife.

A new tile is to be made ready and prepared for insertion (see Basic Principles, OWAacoustic® tiles from point 3.0). Ensure that the tiles are prepared with the surface design in the correct direction (see point 3.5).

The T-profiles No. 23 used for reinforcement are to be replaced by 2 L-profiles No. 24 (one for each exposed groove in the existing adjacent tiles).

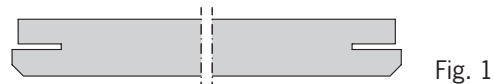


Fig. 1

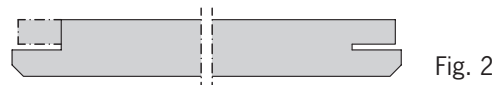


Fig. 2

The back edge of the replacement tile is cut back to the groove on one edge parallel to the Z-profile (Diagram 2). This produces a rebate (Diagram 2).



Fig. 3



Fig. 4

To allow the insertion of a reinforcing profile in this edge a new groove must be created using a panel saw. Once cut profile No. 24 is pushed into the groove (Diagram 4).

L-profiles No. 32 are then inserted into the factory prepared grooves on the two adjacent edges as shown in diagrams 5 and 6. These profiles are cut to size on site (approximately 40 mm shorter).

## Working with OWAconstruct®-OWAconstruct® ceiling systems

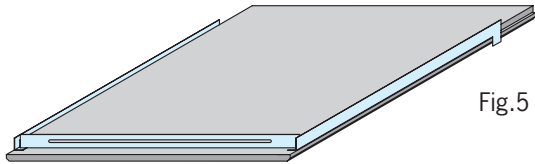


Fig. 5

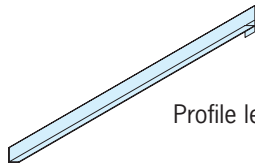


Fig. 6  
L-profile No. 32  
Profile length = module - 40 mm

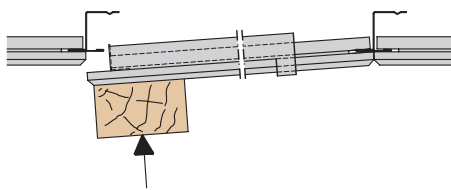


Fig. 7

Once prepared the tile is offered up into the suspension system (diagram 7) and using the tip of the OWA knife, push both L-profiles across until they are located onto the Z-profile.

Removal of this tile is carried out in the reverse sequence.

The following elements will be required to create an access hatch / replace a damaged tile:

- 3 pcs. L-profile No. 24
- 2 pcs. L-profile No. 32
- 1 pcs. OWAacoustic® tile

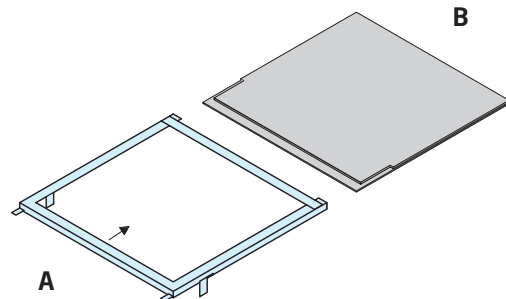
### 7.2.5 Retrofit No. 8033 for concealed metal System S 1

#### Fitting:

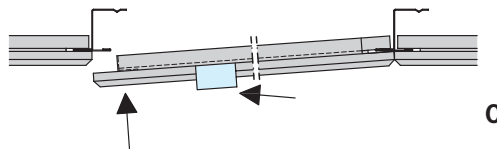
The changing of individual tiles, or an alternative access option, can be created by using retrofit No. 8033.

Changing of existing tiles is carried out as described under point 7.2.4. diagram 1 - 4

To accommodate the location tabs the back rebate of the tile should be partially removed (see drawing B).



The replacement frame is pushed onto the prepared tile, starting from the rebated edge (see drawing A).



The tile is slotted onto the Z-profile using the free groove and then gently pushed into the open space. Once level with the existing ceiling the tabs are pushed across until located onto the other Z-profile (see drawing C).

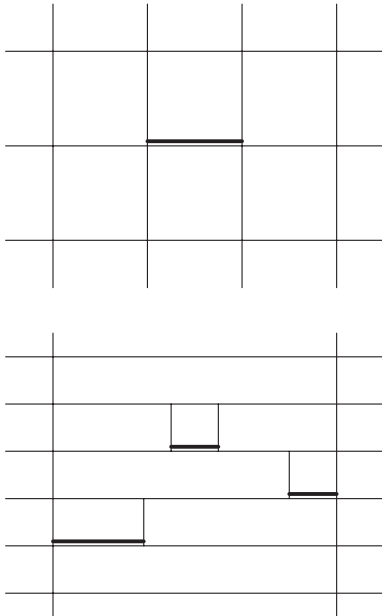
#### Sizes:

Frames are available for module sizes 600 x 600 mm and 625 x 625 mm.

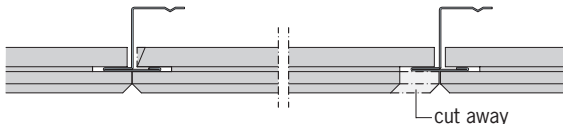


## Working with OWAconstruct®-OWAconstruct® ceiling systems

### 7.2.6 Inspection openings with visible identification marking



The desired tile or part of tile is rebated or undercut at an angle, parallel to the direction of the Z-profile (see drawing).



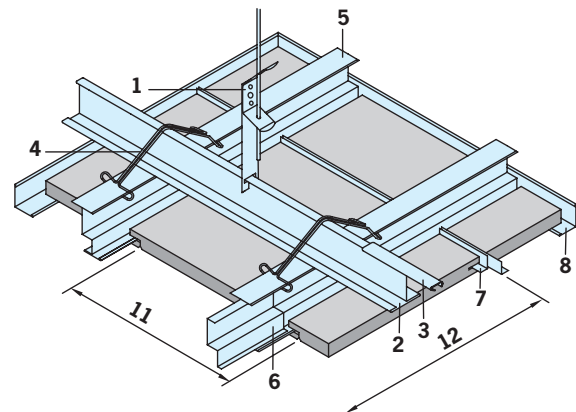
The tile edges running transverse to the Z-profile are to be provided with reinforcing L-profiles (No. 24). In the case of panel tiles, additional grooving may be necessary on site.

Cut tile edges or visible metal parts are to be redecorated with an identifying colour. Removal of tiles is by gently pushing the tile up in the rebated area and then pulling the tile out from the opposite groove. Below the suspension profiles, the tile is not demountable.

### 7.3 OWAacoustic® premium-OWAconstruct® System S 9a, concealed, demountable

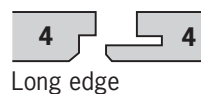
The suspension system is to be constructed in accordance with the method shown in point 7.1. With this system, tiles can be fitted and de-mounted by lifting them slightly and sliding them sideways. Important note on built-in components: only special fittings can be integrated. See point 7.1.2.

Further information such as dimensions, installation examples and material requirement per m<sup>2</sup> can be found in system leaflet S 9a/S 9b.

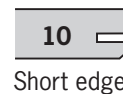


- 1 Hanger No. 12/10, centres  $\leq 1250$  mm
- 2 Primary Suspension profile No. 70, centres  $\leq 1250$  mm
- 3 Connector No. 77
- 4 Wire clip No. 60 (2 per intersection)
- 5 Stepped Z-profile No. 63, centres  $\leq 625$  mm
- 6 Connector No. 64
- 7 L-profile No. 24 (2 per tile)
- 8 Perimeter trim No. 50 G
- 9 Direct fixing clip No. 62 (2 per fixing point)
- 10 Supporting timber, e.g. timber batten, centres  $\leq 1250$  mm
- 11 Tile width
- 12 Tile length

#### Edge detail:



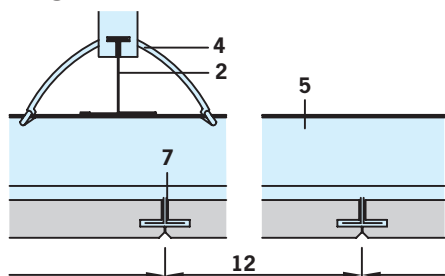
Long edge



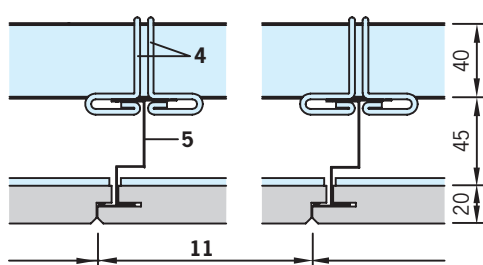
Short edge

## Working with OWAconstruct®-OWAconstruct® ceiling systems

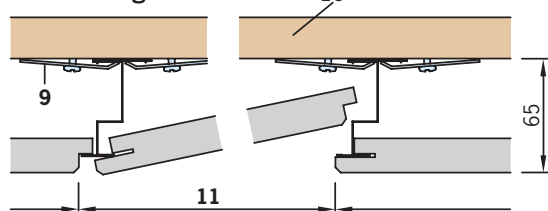
### Suspended fitting Longitudinal section:



### Cross-section:



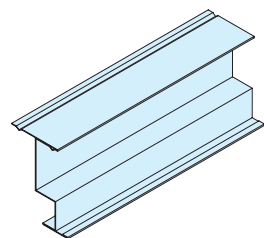
### Direct fixing:



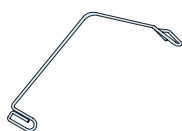
### Minimum suspension height:

suspended fitting approx. 165 mm (depending on existing base ceiling). Direct fitting approx. 65 mm + supporting timber.

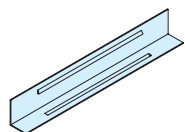
### 7.3.1 Installation of suspension system and OWAacoustic® tiles



Stepped Z-profile No. 63



Wire clip No. 60



L-profile No. 24

Generally the method of construction is very similar to that of the concealed System S 1 (as described from point 7.2). However, the use of the stepped Z-profile No. 63 allows the removal of most tiles within the profile height of 65 mm. The stepped Z-profiles are attached to the primary tee profile No. 70 using two wire clips No. 60 at each intersection (see point 7.2.1.2). It is recommended that the 2nd wire clip is only fitted after alignment of the stepped Z-profile.

The OWAacoustic® tiles are supplied with edge 4 on two parallel long edges and edge 10 on the other two edges - see also point 3.7. During installation it should be ensured that the tiles are only lightly abutted against each other.

During installation it is imperative that the ceiling is not tiled too tightly. Accessibility must be checked regularly to ensure easy removal of tiles on completion. Failure to achieve this may result in tiles being "locked in" and/or being damaged when removed. The tile edges (K 10) running between the stepped Z-profiles are reinforced using L-profiles No. 24.

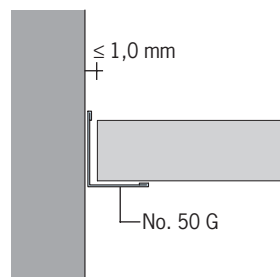
The first continuous row of tiles to be installed is critical to both the appearance and quality of the OWAacoustic® ceiling installation. This row of tiles will form the starting point for the ceiling and must be perfectly aligned and cut tight into the perimeter trim. Similarly when tiling generally it is vitally important to maintain lines and ensure tiles are installed square.

The OWAacoustic® tiles are supplied with edge 4 on two parallel long edges and edge 10 on the other two edges - see also point 3.7.

Minor cosmetic repairs can be carried out using OWA repair kit No. 99723 for standard surface designs and No. 99274 for Cosmos.

### 7.3.2 Perimeter trim see point 5.3 and 7.1.10

The standard S 9 installation uses perimeter trim No. 50 G (24 x 19 x 0.5 mm). Perimeter tiles are to be cut to the exact size minus 1.0 mm and do not require wall spring clips.



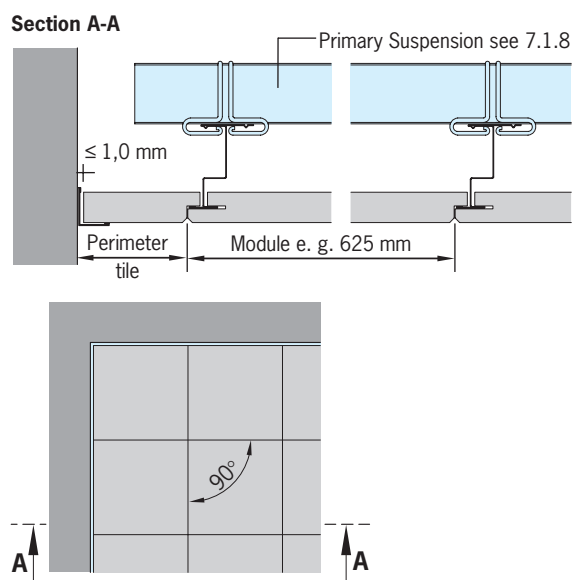
## Working with OWAconstruct®-OWAconstruct® ceiling systems

### 7.3.3 OWAacoustic® premium-OWAconstruct® System S 9a - in direct fitting

In order to reduce suspension height, the OWAacoustic® ceiling system S 9a can be installed in a similar manner to the direct fixing method shown under point 7.2.3. In this case however the OWAconstruct® stepped Z-profiles No. 63 must be fixed using two direct fixing clamps No. 62 screwed to a suitable background such as timber battens. Where the existing background maybe uneven the use of counter battens may be required.

The maximum axial spacing of the direct fixing clamps should not exceed 1250 mm. See also recommendations shown in point 7.1.5.

### 7.3.4 System S 9a installation recommendations



The stepped Z-profiles (No. 63) in this area should be screw fixed to the primary profile (No. 70). The individual tiles must be fitted accurately both in position and alignment.

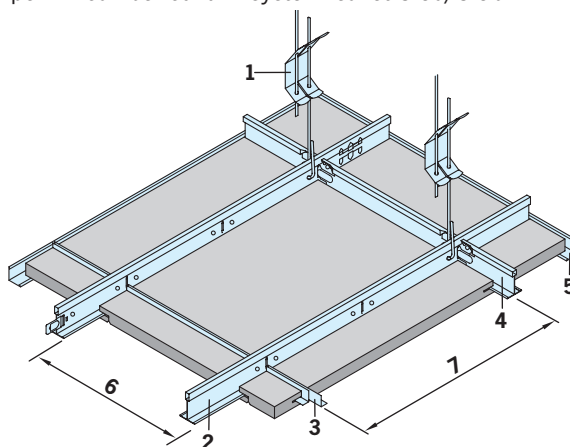
## 7.4 OWAacoustic® premium-OWAconstruct® System S 9b, concealed, demountable

System S 9b is the alternative suspension system for suspending concealed demountable tiles/planks. Hangers must be installed vertically to ensure the whole system remains in balance.

With this concealed system, each "free" tile can be installed and subsequently removed by lifting the free side of the tile and moving it sideways until the opposite edge of the tile has cleared the main tee. The tile can then be lowered carefully through the ceiling membrane and placed in a safe place (see point 7.4.2).

N.B. Ensure any service elements such as light fittings, air diffusers, etc. that are to be integrated into the ceiling are compatible with the ceiling system. See point 7.1.2.

Further information such as dimensions, installation examples, general specification and material requirement per m<sup>2</sup> can be found in system leaflet S 9a/S 9b.



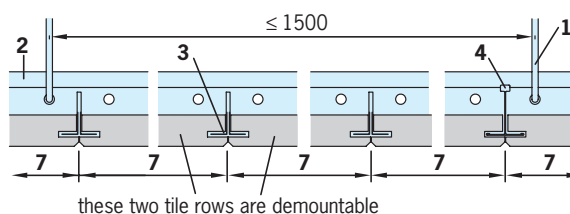
- 1 Hanger No. 12/.../2, centres ≤ 1500 mm
- 2 Main tee No. 45 module centres ≤ 625 mm
- 3 L-profile No. 24 (two per tile/plank)
- 4 Cross tee No. 46, centres ≤ 2500 mm
- 5 Perimeter trim No. 50
- 6 Tile width
- 7 Tile length

#### Edge detail:



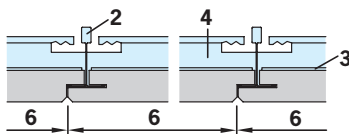
#### Suspension system

##### Longitudinal section:



# Working with OWAconstruct®-OWAconstruct® ceiling systems

## Cross-section:



## Minimum suspension height:

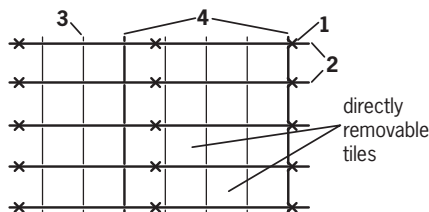
Minimum suspension height approx. 130 mm

### 7.4.1 Installation note

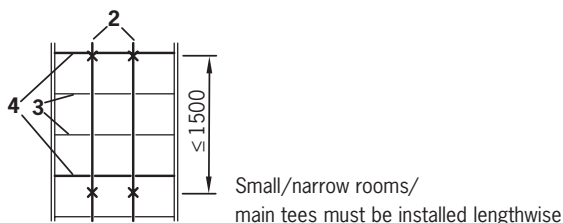
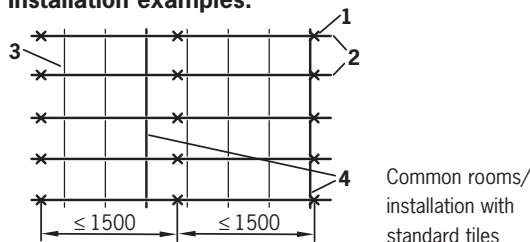
Concealed demountable ceilings systems are labour intensive. This should be taken into account during tender calculations. When installing the ceiling particularly attention should be paid to the vertical installation of hangers and careful assembly and alignment of the suspension system and tiles/planks.

### 7.4.2 Demountability

Tiles can be demounted by lifting the free side of the tile and moving it sideways until the opposite edge of the tile has cleared the stepped Zed. The tile can then be lowered carefully through the ceiling membrane and placed in a safe place. When re-installing the tile ensure all supporting L-profiles are in place before carefully re-inserting the tile. Where the tiles may be prevented from being pushed up they can be removed by taking out the closest "free" tile and sliding the other tile to a position where it can be removed.



### Installation examples:



### 7.4.3 Suspension

OWAconstruct® adjustable hangers should be used to suspend the ceiling. Information can be found in point 5.2.4. As previously mentioned it is very important that the hanger are installed vertically to ensure the ceiling system remains in balance

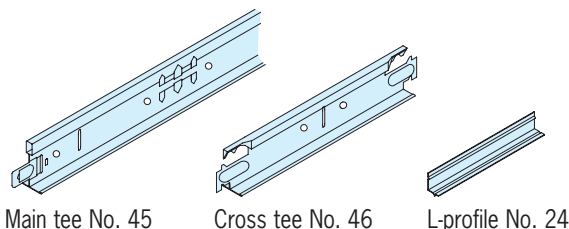
### 7.4.4 Hanger centres

Generally hanger centres should not exceed 1500 mm. They should be installed between 400 mm and 1000 mm from any perimeter depending on the ceiling function. In profile connection areas, additional hangers may be required.



### 7.4.5 Fire protection on request

### 7.4.6 Installation of suspension system and OWAacoustic® tiles



The special edge detail used for this system allows the simple removal and replacement of the tiles (see also point 3.7 and 7.3).

The main tee No. 45 provides the support for the tiles, long edge detail (edge 4). This profile is suspended using adjustable hangers with double tension springs. Performance of the system can only be guaranteed when using original OWAconstruct® components e. g. Main tee profile No. 45, adjustable hangers, etc. To prevent any undue stress (especially torsion) on the ceiling system, hangers must be installed vertically. Main tees are installed parallel to each other using cross tee No. 46 (centres  $\leq 2500$  mm) to maintain the correct centres. The tiles next to the cross tees are not demountable (see 7.4.2). The OWAacoustic® tiles are supplied with edge 4 on two parallel long edges and edge 10 on the other two edges - see also point 3.7.

During installation it is imperative that the ceiling is not tiled too tightly. Accessibility must be checked regularly to ensure easy removal of tiles on completion. Failure to achieve this may result in tiles being "locked in" and/or being damaged when removed. The tile edges (K 10) running between the main tee profiles are reinforced using L-profiles No. 24.



## Working with OWAconstruct®-OWAconstruct® ceiling systems

The first continuous row of tiles to be installed is critical to both the appearance and quality of the OWAacoustic® ceiling installation. This row of tiles will form the starting point for the ceiling and must be perfectly aligned and cut tight into the perimeter trim. Similarly when tiling generally it is vitally important to maintain lines and ensure tiles are installed square.

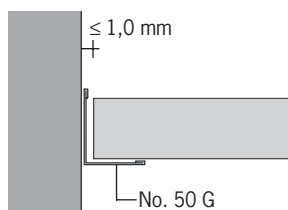
To accommodate the splice junction of the main tees it will be necessary to notch out the back of the tile edge. Minor cosmetic repairs can be carried out using OWA repair kit No. 99723 for standard surface designs and No. 99274 for Cosmos.

### Remark:

The basic installation principles described under point 7.3.4 for System S 9a should also be observed when installing System S 9b.

### 7.4.7 Perimeter Trim (See point 5.3 and 7.1.10)

The standard S 9 installation uses perimeter trim No. 50 (24 x 19 x 0.5 mm). Perimeter tiles are to be cut to the exact size minus 1.0mm and do not require wall spring clips



## 7.5 OWAacoustic® premium/ smart-OWAconstruct® Exposed grid systems, S 3, S 15, S 3a, S 15a, demountable

### Special features:

Exposed grid systems are extremely cost-effective and permit the simple removal of ceiling tiles. The listed systems all use the same suspension system.

The following systems offer a number of module size choices which can be achieved by the simple use of cross tee profiles. The constructions shown provide details of the basic systems. These may vary on site due to specific project requirements.

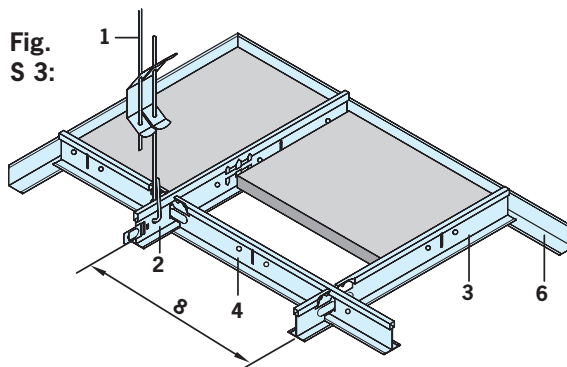
Systems S 3 and S 15 are similar and use square edge (K 3) tiles. Systems S 3a and S 15a are distinguished by a special Contura edge (K 6, K 7, K 15, K 17). All systems utilise the same suspension methods and differ only in the width of the exposed decorative surface.

Due to the different tile edge detail used in Systems S 3a and S 15a, a stepped perimeter trim is normally used - see point 7.5.8. Generally, the tile dimensions are ~ 6 mm smaller than the module size.

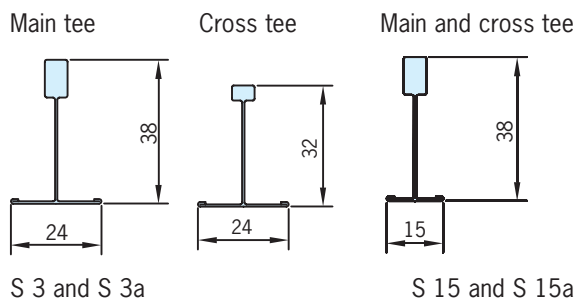
Further information such as dimensions, installation examples, general specification and material requirement per m² can be found in OWAconstruct system leaflet S 3, S 15, S 3a and S 15a.

<b>System S 3</b>	<b>Exposed</b>
<b>System S 15</b>	<b>Exposed</b>
<b>System S 3a</b>	<b>Exposed Contura</b>
<b>System S 15a</b>	<b>Exposed Contura</b>

### General construction detail of exposed grid suspension systems



- 1 Hanger No. 12/.../...
- 2 Main tee profile No. 45 G or No. 45/15 G, slotted every 100 or 156.25 mm
- 3 Cross tee No. 46 G or No. 46/15 G
- 4 Cross tee No. 47 G or No. 47/15 G
- 5 Cross tee No. 48 G or No. 48/15 G
- 6 Perimeter trim No. 50 G or No. 50/15 G or No. 50/14
- 7 Contura block No. 42/24 or No. 42/15 (No. 42/7 and No. 42/17 for OWAacoustic smart, see next page)
- 8 Module size



### Edge detail:

System S 3 and S 15



# Working with OWAconstruct®-OWAconstruct® ceiling systems

## Edge detail OWAacoustic® premium Contura



System S 3a System S 15a

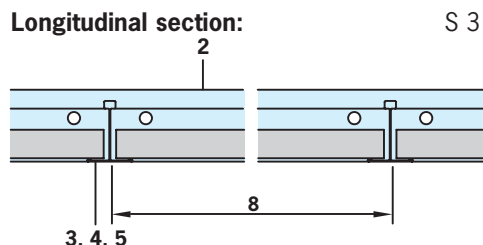
## Edge detail OWAacoustic® smart Contura



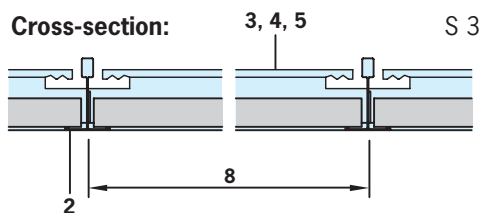
System S 3a System S 15a

## System S 3 and S 15

### Longitudinal section:

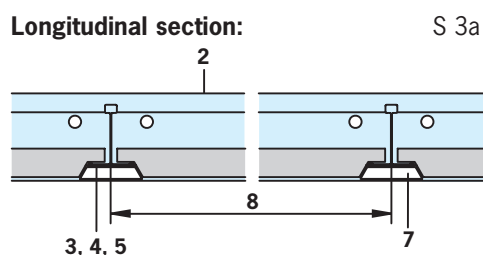


### Cross-section:

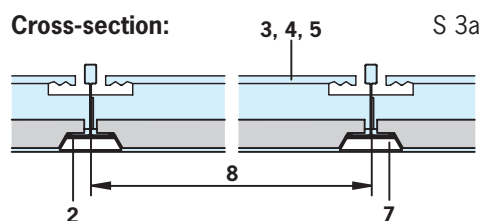


## System S 3a and S 15a

### Longitudinal section:



### Cross-section:



### 7.5.1 Installation note

Exposed grid systems combine many of the advantages of dry construction methods. These systems are distinguished by their simple construction; high performance levels and in most cases the ability to gain access to the void without difficulty.

### 7.5.2 Integrated Service Elements

The use of OWAconstruct® exposed grid suspension systems make the integration of compatible service elements much simpler. During planning and the installation of the ceiling the information shown in point 5.5 should be taken into consideration. Details of OWAconstruct® Modular lights and downlighters can be found in the OWAconstruct® price list.

### 7.5.3 Fixings

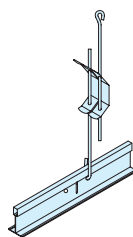
The type of fixing selected should suit the construction of the soffit (or wall). Please see point 5.0. for more details.

### 7.5.4 Hangers

For details of standard OWAconstruct® hangers suitable for OWAconstruct® exposed grid suspension systems please see point 5.2.

### 7.5.5 Hanger centres

Generally hanger centres should not exceed 1250 mm. They should be installed between 400 mm and 1250 mm from any perimeter depending on the ceiling function. In profile connection areas, additional hangers may be required. See point 7.1.5.



Adjustable hanger with double tension spring  
No. 12/.../2



### Suspension of fire-resistant ceiling

See point 2.3 and 6.1 - hangers should be installed in accordance with the relevant test report and/or leaflet 500 EU.

### 7.5.6 Minimum suspension height

Depending on the existing soffit the minimum practical suspension height is 80 - 100 mm with 120 mm being the minimum recommended suspension height where ease of installation and removal of tiles is important.

### 7.5.7 Perimeter trim (see point 5.3)

The perimeter trim defines the lower level of a suspended ceiling. It must be installed horizontally (unless otherwise instructed) and at the correct level. Junction details such as a mitre (see point 5.3.3) or overlap should be agreed with the client/architect prior to installation. The standard perimeter trim No. 50 G is fixed to the wall at  $\leq 300$  mm depending on the load.

## Working with OWAconstruct®-OWAconstruct® ceiling systems

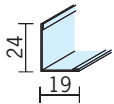


### Fire Resistant ceilings:

Perimeter trim fixing should be at  $\leq 250$  mm or in accordance with the relevant test report. For further technical details see point 5.3.

#### 7.5.7.1 Perimeter trim for System S 3 and S 15

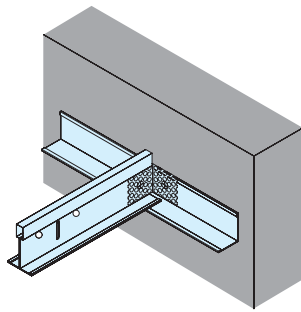
The standard perimeter trim for these systems is profile No. 50 G. (24 x 19 x 0.5mm).



**No. 50 G** 0.5 mm thick

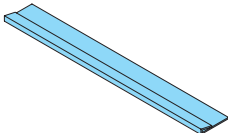
#### 7.5.7.2 Perimeter bracket No. 8017

Bracket used to secure the profile to the wall and prevent excessive lateral movement.



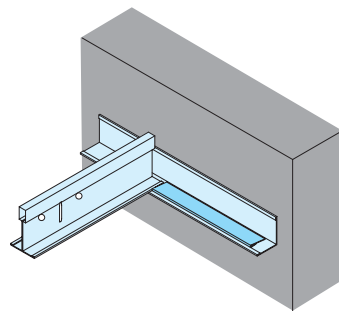
#### 7.5.7.3 Filler strips No. 8060

Used to ensure perimeter tiles lay flat on the perimeter trim.



#### Product data:

Exposed surface: white  
 Order No.: 8060 for grid 625 mm  
 (Length 597 mm)  
 Order No.: 8060/1 for grid 600 mm  
 (Length 572mm)  
 Packaging: 200 pcs. per carton

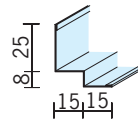
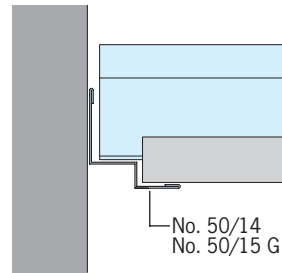


#### 7.5.8 Perimeter trim for System S 3a and S 15a OWAacoustic®-OWAconstruct® premium – Edge 6 and Edge 15

The shape of the perimeter trim No. 50/15 G is designed to compliment the standard tiles from the OWAconstruct® premium System S 3a and S 15a range.

The perimeter tiles are cut square and sit on the bottom flange of the perimeter trim with the grid section sitting 8 mm higher on the top, 15 mm wide flange of the trim.

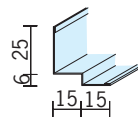
The stepped trim should be mitred at corner junctions. The tee sections can be secured against lateral movement using perimeter bracket No. 8017 (see point 7.5.7.2).



**No. 50/15 G** 0.5 mm thick

#### 7.5.8.1 Perimeter trim for System S 3a and S 15a for OWAacoustic® smart

Stepped perimeter trim No. 50/14 is designed to accommodate the OWAacoustic® smart contoura edge K 7/ K 17 used in System S 3a/S 15a. The top flange on this trim sits 6 mm higher again allowing the section to sit on the top flange and the perimeter tile on the lower flange.



**No. 50/14** 0.5 mm thick



# Working with OWAconstruct®-OWAconstruct® ceiling systems

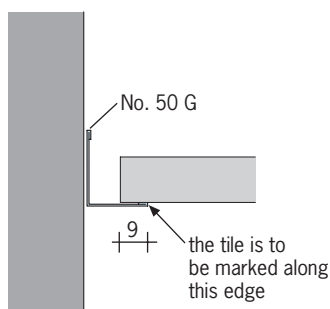
## 7.5.8.2 Perimeter trim – reforming the Contura edge with the OWA hand tool

The Contura edge can be reformed on perimeter or cut tiles using OWA Contura plane (No. 99/11)

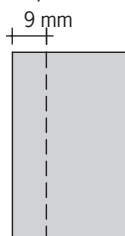


Contura plane No. 99/11

First the perimeter tile is laid onto the wall connection angle.

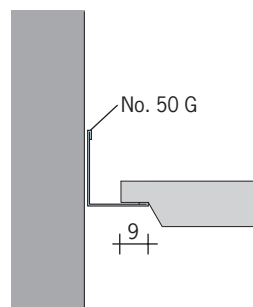


Draw a line 9mm from the mark (towards the cut edge) and then neatly cut along the line using an OWA knife No. 99/01.



Then, starting from the far cut corner, pull the Contura plane (No. 99/11) along the edge of the board in one single controlled movement, taking care not to break the corner of the board as you finish. Then redecorate the edge by running a piece of OWA chalk along the reformed rebate. Chalk in one direction using long controlled strokes, until the edge is covered.

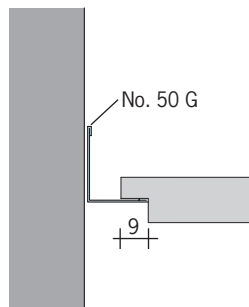
NB: To ensure a clean cut use only sharp blades.



## Perimeter trim No. 50 G

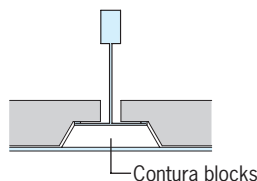
Alternative edge treatment

Instead of the Contura edges, simple rebating with the OWA knife can provide an equally neat finish.



## 7.5.8.3 Contura blocks

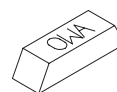
When using perimeter trim No. 50/15 G a trapezoidal opening is formed at the intersection of the OWAacoustic® perimeter tiles/OWAconstruct® tee section and perimeter trim. This can be filled using OWAconstruct® Contura blocks which are compatible with the OWAconstruct® perimeter trims No. 50/15 G and No. 50/14 and the OWAacoustic® range of tiles



**These parts are only to be used for the closure of trapezoidal openings and are not suitable for load bearing.**

## Contura blocks

No. 42/24 for Edge 6  
No. 42/15 for Edge 15  
No. 42/7 for Edge 7  
No. 42/17 for Edge 17



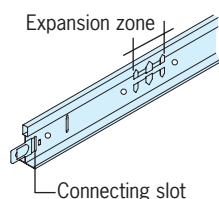


## Working with OWAconstruct®-OWAconstruct® ceiling systems

### 7.5.9 Main tees for exposed grid systems

The Main tee and cross tees are designed to create a number of standard module sizes e. g. 625 mm and 600 mm. The Main tee profiles are produced with slots at predetermined centres to allow connection of the cross tees.

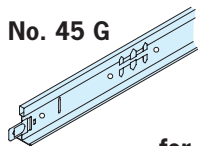
**OWAconstruct® exposed grid system are not compatible with other manufacturers systems!**



Example of Main tee profile No. 45 G

#### Main tee profiles S 3 and S 3a (exposed width 24 mm)

##### No. 45 G



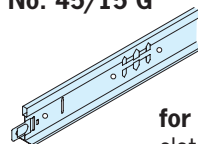
**for grid 625 mm** - length 3750 mm,  
slot spacing 156.25 mm  
**for grid 600 mm** - length 3700 mm,  
slot spacing 100 mm - height 38 mm

#### Please note:

**Main tee No. 45 G is compatible with both G and GS cross tees.**

#### Main tee profiles S 15 and S 15a (exposed width 15 mm)

##### No. 45/15 G



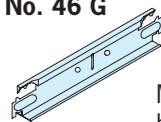
**for grid 625 mm** - length 3125 mm,  
slot spacing 156.25 mm  
**for grid 600 mm** - length 3000 mm,  
slot spacing 100 mm - height 38 mm

### 7.5.10 Cross tees for exposed grid systems.

The cross tees form an integral part of the suspension system and interconnect with both the main tees and other cross tees to form the desired module. They are supplied with connecting tabs either end which hook into the main tee/cross tee slot. To maintain the correct alignment when the next cross tee is installed in the slot ensure the tabs are placed on the correct side of the slot (see point 7.5.11).

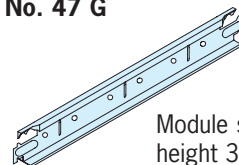
#### Cross tees for system S 3 and S 3a (exposed width 24 mm)

##### No. 46 G



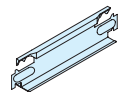
Module size 600 mm or 625 mm –  
height 32 mm – square cut

##### No. 47 G



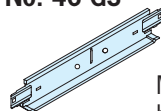
Module sizes 1200 mm or 1250 mm –  
height 32 mm – square cut

##### No. 48 G



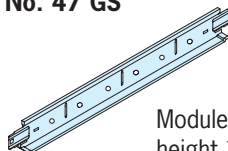
Module sizes 185 mm, 300 mm ,  
312.5 mm or 400 mm – height 32 mm  
– square cut

##### No. 46 GS



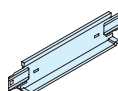
Module size 600 mm or 625 mm –  
height 32 mm – joggled

##### No. 47 GS



Module sizes 1200 mm or 1250 mm –  
height 32 mm – joggled

##### No. 48 GS

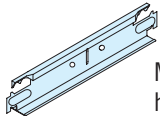


Module sizes 185 mm, 300 mm,  
312.5 mm or 400 mm – height 32 mm  
– joggled

## Working with OWAconstruct®-OWAconstruct® ceiling systems

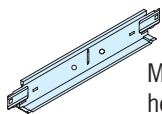
**Cross tees for systems S 15 and S 15a  
(exposed width 15 mm)**

### **No. 46/15 G**



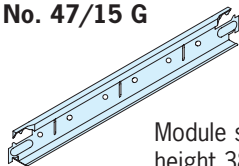
Module sizes 600 mm or 625 mm –  
height 38 mm – square cut

### **No. 46/15 GS**



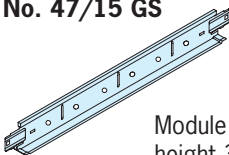
Module sizes 600 mm or 625 mm –  
height 38 mm – joggled

### **No. 47/15 G**



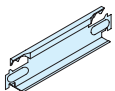
Module sizes 1200 mm or 1250 mm –  
height 38 mm – square cut

### **No. 47/15 GS**



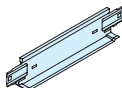
Module sizes 1200 mm or 1250 mm –  
height 38 mm – joggled

### **No. 48/15 G**



Module sizes 300 mm or 312.5 mm –  
height 38 mm – square cut

### **No. 48/15 GS**



Module sizes 300 mm or 312.5 mm –  
height 38 mm – joggled

#### **Please note:**

**Main tee No. 45 G is compatible with both G and GS cross tees.**

The cross tee profiles No. 47 G and 47/15 G are also slotted in the centre to allow the connection of additional cross tees. g of extra connection profiles.

#### **Attention:**

Where additional loads other than the recommended OWAacoustic® tiles are placed on the ceiling additional hangers or independent suspension may be required. Please contact the OWAconsult® team for further information.

## Working with OWAconstruct®-OWAconstruct® ceiling systems

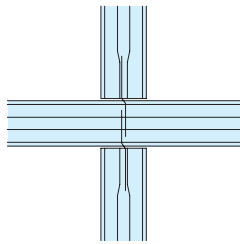
### 7.5.11 Intersection of cross tees and main tees and cross tees

Cross tees are supplied with connecting tabs either end which hook or lock into the main tee/cross tee slot. To maintain the correct alignment when the next cross tee is installed in the slot ensure the tabs are placed on the correct side of the slot.

The ends of the Main tee profiles are provided with a splice connection slot and splice plate. The splice plate is inserted into the splice connection slot and pushed together until it locks.

#### Example:

Main tee No. 45 G and 45/15 G with cross tee No. 46 G, No. 47 G or No. 46/15 G, No. 47/15 G (also applies to GS cross tees).



### 7.5.12 Installation example for module size 625 x 625 mm

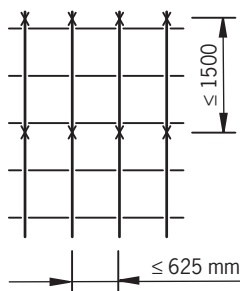
The cost-effective construction shown in Example 1 should not be used where the ceiling is providing any form of structural fire resistance. Where fire resistance is required the ceiling should be installed in accordance with the relevant test report. This is particularly important where the ceiling includes integrated fittings (also see 5.5).

#### Hanger distribution:

Example 1: approx. 1.1 pc./m<sup>2</sup>

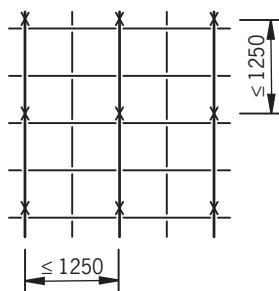
Example 2: approx. 0.7 pc./m<sup>2</sup>

#### Example 1



Module size 625 x 625 mm

#### Example 2



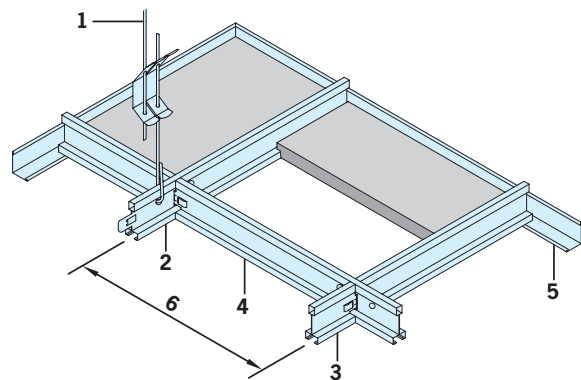
Module size 625 x 625 mm

## 7.6 OWAacoustic® premium-OWAconstruct® System S 15b – OWAline, exposed system, demountable

#### Special features:

System S 15b is a high-grade exposed grid system. Essentially, its construction is comparable with that of the systems described under point 7.5. See point 7.6.7 for perimeter detail options.

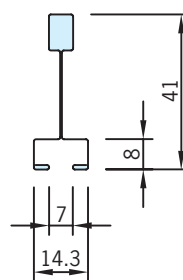
Further information such as dimensions, installation examples, general specification and material requirement per m<sup>2</sup> can be found in OWAconstruct® system leaflet System Sheet S 15b OWAline.



- 1 Hanger No. 12/.../...
- 2 Main tee profile No. 3500 G, slotted every 600 or 625 mm
- 3 Cross tee profile No. 3512 G, 600 or 625 mm
- 4 Cross tee profile No. 3514 G, 1200 or 1250 mm
- 5 Perimeter trim No. 50 G
- 6 Module

#### Profile dimensions:

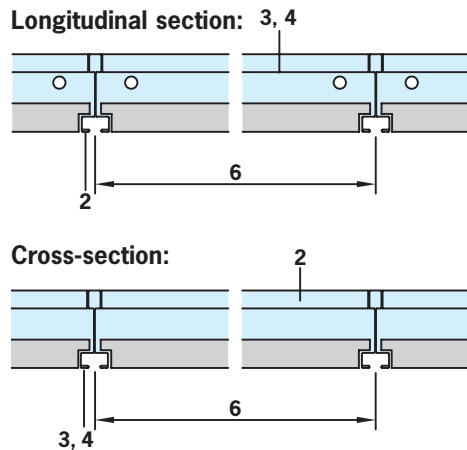
No. 3500 G, 3512 G and 3514 G



# Working with OWAconstruct®-OWAconstruct® ceiling systems

## Edge detail OWAacoustic® premium

15b



### 7.6.1 Installation note

Exposed grid systems combine many of the advantages of dry construction methods. These systems are distinguished by their simple construction; high performance levels and in most cases the ability to gain access to the void without difficulty.

In contrast to conventional OWAconstruct® exposed grid systems, the OWAline exposed grid system does not include any visible capping material. OWAline tees are prevented from opening by an integrated mechanical restraint on the vertical stalk of the tee. When the profiles are cut to length (e.g. at the perimeter) the two vertical layers forming the stalk of the tee must be fixed together to prevent them separating. This can be done using a screw, rivet or similar mechanical fixing method.

### 7.6.2 Integrated Service Elements

The use of OWAconstruct exposed grid suspension systems make the integration of compatible service elements much simpler. During planning and the installation of the ceiling the information shown in point 5.5 should be taken into consideration.

Details of OWAconstruct Modular lights and downlighters can be found in the OWAconstruct® price list. Because of the special profile dimensions, please ensure any integrated are compatibility with System S 15b.

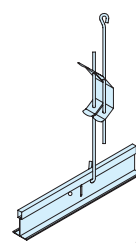
### 7.6.3 Fixings

The type of fixings used in all cases should suit the substrate loading and system being used. See point 5.0

### 7.6.4 Hangers

For details of standard OWAconstruct® hangers suitable for OWAconstruct® exposed grid suspension systems please see point 5.2.

### 7.6.5 Hanger centres



Generally hanger centres should not exceed 1250 mm. They should be installed between 400 mm and 1000 mm from any perimeter depending on the ceiling function. In profile connection areas, additional hangers may be required. See point 7.1.5

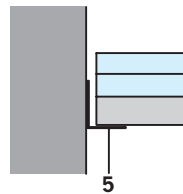
Adjustable hanger with double tension spring  
No. 12/.../2

### 7.6.6 Minimum suspension height

Depending on the existing soffit the minimum practical suspension height is 80 - 100 mm with 120 mm being the minimum recommended suspension height where ease of installation and removal of tiles is important.

### 7.6.7 Perimeter trim (see point 5.3)

The perimeter trim defines the lower level of a suspended ceiling. It must be installed horizontally (unless otherwise instructed) and at the correct level. Junction details such as a mitre (see point 5.3.3) or overlap should be agreed with the client/architect prior to installation. The standard perimeter trim No. 50 G is fixed to the wall at ≤ 300 mm depending on the load.



### Fire Resistance

No test data available

# Working with OWAconstruct®-OWAconstruct® ceiling systems

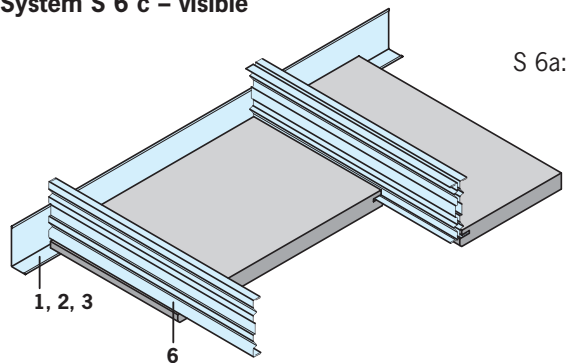
## 7.7 OWAacoustic® premium-OWAconstruct® Clear span Systems S 6

### Special features:

Clear span ceiling systems are particularly suitable for rooms or corridors with widths of up to a maximum of 2500 mm. There are no hangers required as the entire ceiling load is supported by the perimeter.

Further information such as dimensions, installation examples, general specification and material requirement per m<sup>2</sup> can be found in OWAconstruct® system leaflet S 6.

**System S 6 a – concealed**  
**System S 6 b – visible Contura**  
**System S 6 c – visible**

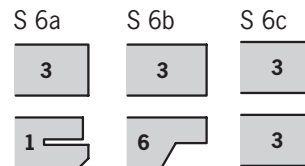


S 6a:

- 1 Perimeter trim No. 51/20, 20/50 mm, ~ 1.0 mm thick, pre-drilled
- 2 Perimeter trim No. 51/1, 35/50 mm, ~ 1.0 mm thick
- 3 Stepped perimeter trim No. 56/21, 20/20/20/25 mm, ~ 1.0 mm thick
- 4 Stepped perimeter trim No. 50/22, 15/9/15/30 mm, ~ 1.0 mm thick, pre-drilled
- 5 Z-profile No. 19/10
- 6 C-profile No. 36/70 (double)
- 7 T-profile No. 40

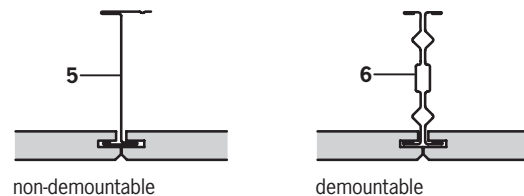
For other profiles, see OWAconstruct® System Sheet S 6

### Edges:

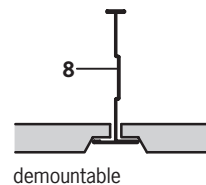


### Cross section:

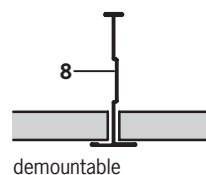
#### System S 6a – concealed



#### System S 6b – Contura, exposed tee



#### System S 6c – Exposed tee



## Working with OWAconstruct®-OWAconstruct® ceiling systems

### 7.7.1 Installation note

The clear span systems combine many of the advantages of dry construction methods. These systems are distinguished by their simple construction; high performance levels and in most cases the ability to gain access to the void without difficulty.

### 7.7.2 Integrated Service Elements

During planning and the installation of the ceiling the information shown in point 5.5 should be taken into consideration. Details of OWAconstruct® Modular lights and downlighters can be found in the OWAconstruct® price list.

### 7.7.3 Perimeter trim – see point 5.3.1

For clear spanning systems perimeter trims with a thickness of 1.0 mm should be used. The actual thickness will be dependant on the system and anticipated ceiling load: see Table 7.7.5.

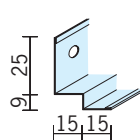
Dependant on the load the fixing centres of the perimeter should be  $\leq 300$  mm and be with non-combustible fixings. The fixings are loaded in the direction of shear.

The perimeter trim defines the lower level of a suspended ceiling. It must be installed horizontally and at the correct level. Junction details such as a mitre or overlap (see point 5.3.3) should be agreed with the client/architect prior to installation.

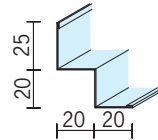
Where an exposed tee is used, filler strips No. 8060 can be used to fill the gap along the perimeter trim (See point 7.5.7.3).

In the case of clear-span ceilings, the OWAacoustic® tiles and reinforcing profiles must rest on the perimeter by at least 2/3rds of the width of the perimeter trim or 12 mm whichever is greater. This applies to all sides resting on the perimeter trim.

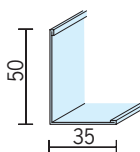
The tile reinforcement profiles should be secured against accidental displacement. Profiles which have been modified in cross-section, e.g. expansion gaps or subsequently added cutouts, may not be used without load bearing approval.



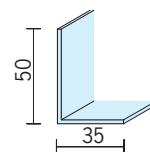
**No. 50/22** 1.0 mm thick  
punched



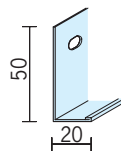
**No. 56/21** 1.0 mm thick



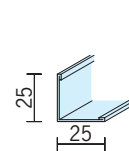
**No. 51/1** 1.0 mm thick



**No. 51/02** 2.0 mm thick



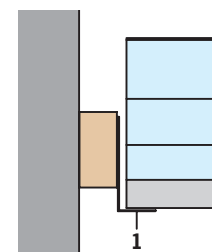
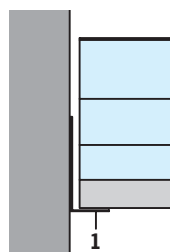
**No. 51/20** 1.0 mm thick



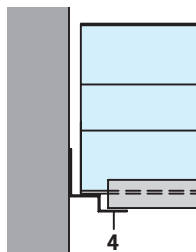
**No. 51/25** 1.0 mm thick

### Perimeter trim

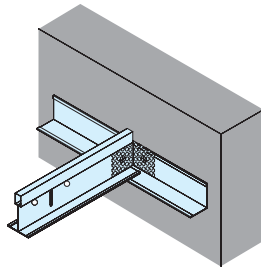
#### System S 6a and System S 6c



#### System S 6b



## Working with OWAconstruct®-OWAconstruct® ceiling systems



Wall bracket No. 8017

As System S 6b and S 6c use loose laid tees profiles to support the ceiling planks it is recommend that at least every 5th profile is secured to the wall (or soffit) to prevent unwanted movement. When using profile No. 45 G this can be achieved by fixing a wall bracket No. 8017 secured to each end of the profile and then to the wall or in the case of the soffit by use of Nonius hanger (No. 17/45, No. 09/45). For profile No. 40 use Nonius hanger No. 17/10 or No. 09/10

### 7.7.3.1 Fixings

The type of fixings used in all cases should suit the substrate, loading and system being used. See point 5.0.



### Fire resistance

Only System S 6a can be used where structural fire resistance is required. The perimeter trim must be  $\geq 1.0$  mm thick and must be fixed at  $\leq 250$  mm (see point 5.3). Reinforcement profiles No. 19/10 or No. 36/70 must be used irrespective of the span. For more details see relevant fire test report.

### 7.7.4 Minimum suspension height

For S 6a: 180 – 200 mm

For S 6b and S 6c: 100 – 120 mm

### 7.7.5 Perimeter trims - span widths of ceiling tiles

#### Material thickness of wall profiles:

**t = 0.7 mm up to span width 1250 mm**

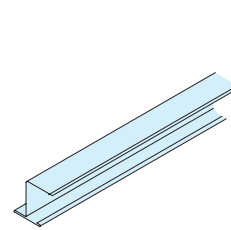
**t = 1.0 mm up to span width 2500 mm**

N.B. Load bearing capacity is based on the use of 20 mm OWAacoustic® premium ceiling tiles.

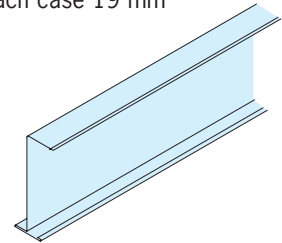
### 7.7.6 Clear span profiles

#### 7.7.6.1 Systems S 6a – non demountable

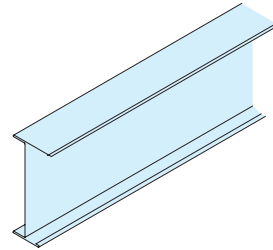
**Z-profiles** Flange width in each case 19 mm



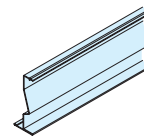
**No. 20, No. 22, No. 69**  
Height 21 mm, 33 mm, 45 mm



**No. 19**  
Height 70 mm



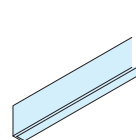
**No. 19/10**  
Height 70mm



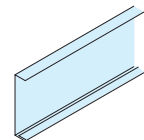
**No. 19/45**  
Height 45 mm

#### 7.7.6.2 System S 6a demountable tiles

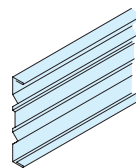
Profile width in each case = 10 mm



**L-profile No. 37**  
Height 25 mm



**C-profile No. 36**  
Height 50 mm



**C-profile No. 36/70**  
Height 70 mm

#### Note:

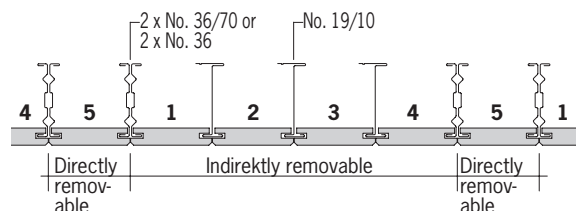
Only the 10 mm wide, double-folded leg of reinforcement profiles No. 36 and No. 36/70 are to be inserted into the grooves of the OWAacoustic® tiles.



## Working with OWAconstruct®-OWAconstruct® ceiling systems

### 7.7.6.3 System S 6a

**Example of construction cross-section:  
(every 5th tile directly removable)**



If only C-profiles No. 36, No. 36/70 or L-profiles No. 37 are used, each tile is removable.

#### **Note:**

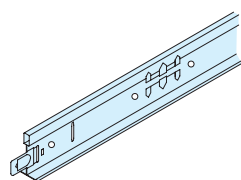
Individual tiles may appear at marginally different levels due to the additional loading applied by the use of different profiles or the additional loading of services integrated into the system. However the ceiling will still comply with requirements EN 13964.

Only the double folded leg of the C-profiles should be inserted into the tile grooves

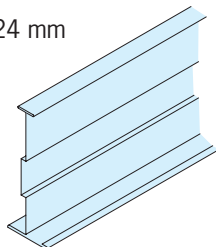
### 7.7.6.4 System S 6b and S 6c

#### **Tiles demountable**

Profile width in each case is 24 mm



**Main tee profile No. 45 G**  
Height 38 mm



**Main tee profile No. 40**  
Height 70 mm

### 7.7.7 Profile span widths

#### **Maximum span widths, OWAacoustic® tiles**

Order No.	Profile type (Exposed)	Stalk height [mm]	Material thickn. [mm]	up to 312.5 mm		up to 400 mm	
				15 mm	20 mm	15 mm	20 mm
20	Z-profile (galv.)	21	0.5	1490	1400	1410	1330
22	Z-profile (galv.)	33	0.5	1910	1800	1810	1700
69	Z-profile (galv.)	45	0.5	2290	2160	2170	2040
19	Z-profile (galv.)	70	0.5	2500	2500	2500	2500
19/10	Z-profile (galv.)	70	0.6	2500	2500	2500	2500
19/45	Z-profile (galv.)	45	0.6	2310	2180	2190	2070
45 G	Main tee (white)	38	0.4	1940	1820	1840	1730
40	Main tee (white)	70	0.6	2500	2500	2500	2500
37	L-profile (galv.)	25	0.6	1600	1510	1520	1430
36	C-profile (galv.)	50	0.5	2500	2500	2500	2500
36/70	C-profile (galv.)	70	0.6	2500	2500	2500	2500

#### **Note:**

The above-mentioned OWA span width recommendations for clear span systems limits the maximum deflection of the profiles, for aesthetic reasons, to 2.5 mm. Should the allowable deflection according to Class 1 of EN 13964 be applicable (maximum deflection 4.0 mm or L/500), please contact our OWAconsult® team. In the case of additional loads such as mineral wool insulation, the above-mentioned clear span widths are to be reduced accordingly. Flush or surface-mounted service elements, such as lights, sprinklers or ventilators, should always be independently suspended (see point 5.5). Only reinforcement profiles of full cross-section are to be used. The profiles must be loaded symmetrically.

## 7.8 OWAacoustic® premium-OWAconstruct® – bandrastrer systems S 18

#### **Special features:**

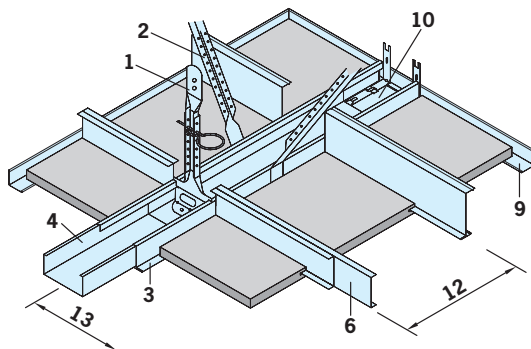
The S 18 bandrastrer systems offer a high degree of flexibility and can be installed at modules to suit the building or anticipated use. Partitions can be fixed to the bandrastrer profiles and services ranging from light fittings through to climate control units can be integrated in to the ceiling plane. Where required these systems can also be used to provide a high level of room-to-room airborne sound reduction (see point 6.9) as well as providing the potential to contribute to structural fire resistance of the structure. The possibilities offered by the bandrastrer systems makes them suitable for a wide range of uses such as offices, schools, hospitals care homes, etc.

# Working with OWAconstruct®-OWAconstruct® ceiling systems

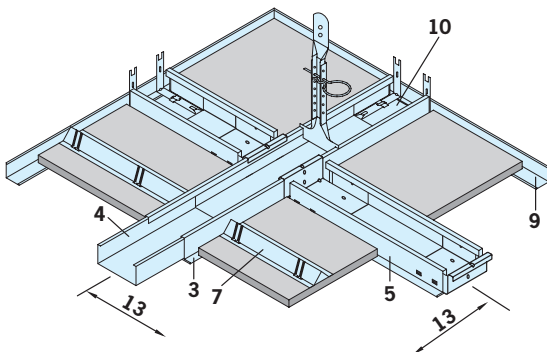
## System S 18p Parallel bandraster ceiling System S 18k Square bandraster ceiling System S 18d Bandura ceiling

Further information such as dimensions, installation examples and material requirement per m<sup>2</sup> can be found in system OWAconstruct® leaflet S 18p/k and S 18d.

### 7.8.1 System S 18 bandraster systems



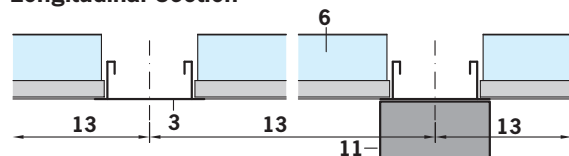
S 18p - parallel bandraster



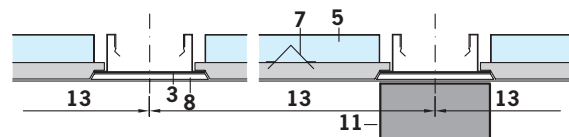
S 18k - square band grid

- 1 Nonius hanger No. 79/..., Nonius extension No. 16/... and securing pin No. 76
- 2 Lateral reinforcement No. 17/80
- 3 Bandraster profile No. 80/... G
- 4 Connector No. 82/... G
- 5 Bandraster cross profile No. 84/... G in fixed lengths with end connectors (S 18k)
- 6 C- or Z-profiles for OWAacoustic® planks/tiles. Profile used will depend on span and access required.
- 7 Reinforcing spline No. 8040 and securing clips No. 8041
- 8 Contura block No. 42/... (only for Edge 6)
- 9 Perimeter trim No. 51/25 or stepped perimeter trim No. 50/15 G
- 10 Wall anchor No. 75/... G
- 11 Connection option for partition walls
- 12 Reinforcement profile axial spacing
- 13 Bandraster module centres

#### Longitudinal Section

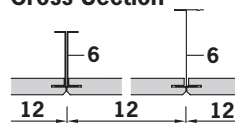


Parallel bandraster

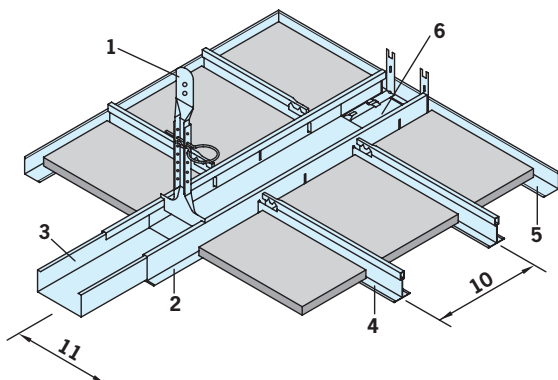


Cross bandraster

#### Cross Section



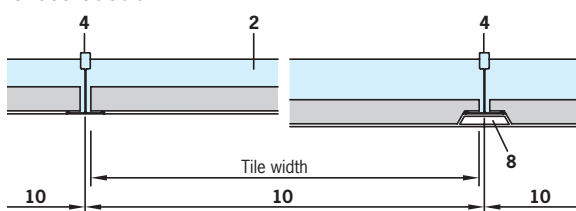
## Working with OWAconstruct®-OWAconstruct® ceiling systems



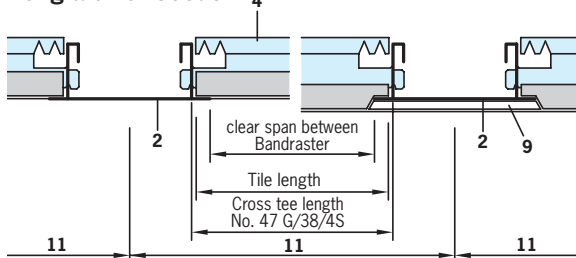
### S 18d – Bandura

- 1 Nonius hanger No. 79/..., Nonius extension No. 16/... and securing pin No. 76
- 2 Bandrastrer profile No. 80/... G, slotted on both sides
- 3 Connector No. 82/... G
- 4 Cross tee No. 47 G/38/4S
- 5 Perimeter trim No. 51/25 (Edge 3)
- 6 Wall anchor No. 75/... G
- 7 Stepped perimeter trim No. 50/15 G (edge 6)
- 8 Contura block No. 42/24 (edge 6)
- 9 Contura block No. 42/100; No. 42/125 (edge 6)
- 10 Cross-section centres
- 11 Bandrastrer module centres

### Cross section:



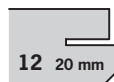
### Longitudinal Section:



### Available edge details:

#### System S 18p:

Long edges: Short edges:

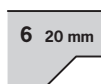


#### System S 18k:

large format  
tile edge



or

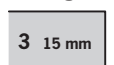


Long edges: Short edges:



#### System S 18d:

all edges



or



### 7.8.2 Installation Note:

Bandrastrer systems combine many of the advantages of dry construction methods. These systems provide a simple flexible construction that can be adapted to suit the environment as well as provide accessibility to the ceiling void.

### 7.8.3 Built-in components

#### Integrated Service Elements

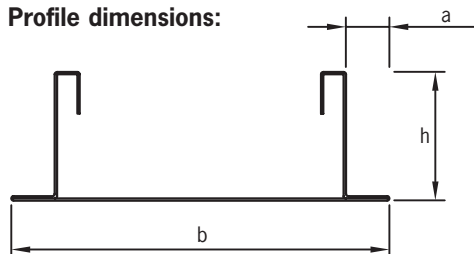
During the planning and the installation of the ceiling the information shown in point 5.5 should be taken into consideration.

Details of OWAconstruct® Modular lights and downlighters can be found in the OWAconstruct® price list.

# Working with OWAconstruct®-OWAconstruct® ceiling systems

## 7.8.4 Bandraster profiles

### Profile dimensions:



Order-No.	Length	b	h	a	d
All dimensions in mm					
80/50 G	3750	50	35	11.5	0.6
80/75 G	3750	75	35	11.5	0.6
80/100 G	3750	100	35	11.5	0.6
80/125 G	3750	125	35	11.5	0.7
80/150 G	3750	150	35	11.5	0.7
8025/100	3750	100	35	25	0.6

Other lengths are available on request

For dimensions of bandraster see OWAconstruct® components and accessories price list



### Fire Resistance

Where fire resistance is required bandraster profiles are to be filled in with Minowa strips or plaster (see relevant test report).

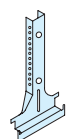
## 7.8.5 Fixings

The type of fixings used in all cases should suit the substrate, loading and system being used. See point 5.0.

## 7.8.6 Hangers

The hangers are supplied in three parts. The lower part forms the connection to the profile, and the upper part provides the connection to the soffit or ancillary construction e. g. purlins, steel beams etc.

The lower and upper parts are connected using securing clip No. 76 or connection nail No. 78 ensuring the latter is bent once the ceiling has been levelled. Prior to securing with the clip or nail the hangers can be adjusted by sliding the two parts together until the correct level is reached. The clip or nail is then inserted in the holes that coincide within the overlap of the two parts. When using one securing pin or connection nail per hanger, the maximum permissible static load is 0.25 kN per hanger.



No. 79/...



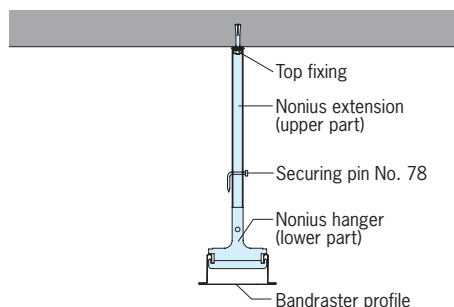
No. 16/...



No. 76



No. 78



### Fire resistance requirements

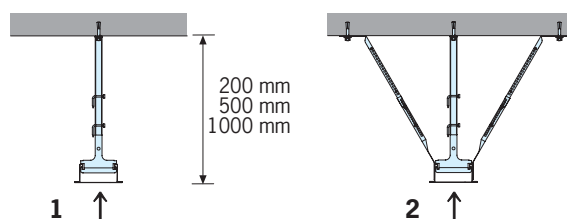
Where there is a fire resistance requirement or a where the hangers may be subject to compression and tension two securing clips or connection nails are required. The ability of the system to resist compression will also be dependant on suspension height.

The number of suspension points is governed by:

- The requirements of EN 13964
- The maximum recommended load for the hangers
- The maximum recommended load for the suspension system

### 7.8.6.1 Pressure and shear forces for Nonius hangers

Pressure and shear values include a safety factor of x 2.5 (EN 13964). The table below shows the maximum recommend compression and sheer forces (kN) per OWAconstruct® Nonius hanger:



Suspension height mm	Profile width mm	Maximum force		
		kN 1 ↑	kN 2 ↑	kN 2 ←
200	100	0.22	0.55	0.13
500	100	0.14	0.26	0.095
1000	100	0.06	0.12	0.05

### 7.8.6.2 Connection of partition walls

Where partition walls are to be fixed to the OWAconstruct® bandraster grid the recommendation shown in EN 13964 and the values shown in the table above must be followed. Similarly where there is an interaction between the ceiling and any other structure or component the other manufacturer's installation instructions must also be followed.



## Working with OWAconstruct®-OWAconstruct® ceiling systems

### 7.8.7 Minimum suspension height

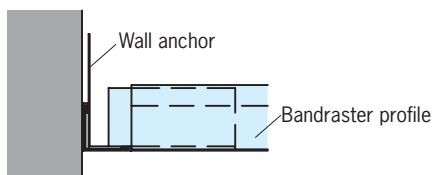
The minimum recommended suspension height is 100 mm (depending on the existing soffit), however for easy removal of tiles, 130 mm is more practical. Where a Nonius hanger is used in conjunction with lower section No. 79/... the recommended minimum suspension height is 150 mm.

### 7.8.8 Perimeter trims for bandraster systems

See also point 5.3

The junction with perimeter is formed using one of the perimeter trims recommended for bandraster systems that can be found in the Systems leaflets or the OWAconstruct® components and accessories price list.

The perimeter trim defines the lower level of a suspended ceiling. It must be installed horizontally (unless otherwise instructed) and at the correct level. Trims should be mitred at horizontal corner intersections and butted together where installed in a continuous run. They should be fixed to the perimeter walls at  $\leq 300$  mm using fire resistant fixings suitable for the substrate.



Where the bandraster profiles butt up to the perimeter trim they should be secured to the wall/perimeter using wall anchors No. 75/... . The anchors should be screw fixed to the perimeter and the bandraster profile. To allow for lineal expansion of the bandraster profiles an expansion gap of 0.5 – 1.0 mm should be allowed.

The bandraster profiles can also be laid directly on to the perimeter trim. If installed in this way filler strip No. 8060 (see also point 7.5.7.3) or single-sided self-adhesive sealing tape No. 8900 should be used.

When installed the bandraster profiles should be resistant to displacement.



### Fire resistance

Where fire resistance is required the perimeter trim should be fixed at  $\leq 250$  mm using a suitable fixing (see relevant test report).

### 7.8.9 Support profiles for clear spanning planks spanning installed between parallel bandraster System S 18p

In this system free-span panel tiles, analogous to our System S 6a, are used.

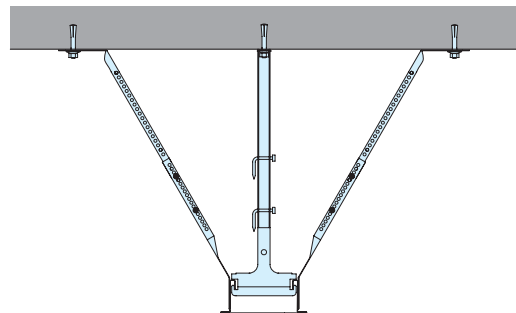
Selection of the appropriate profile dimension can be found in the table shown in 7.7.7.

### 7.8.10 Horizontal bracing

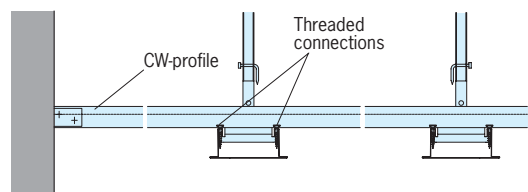
In System S 18p the bandraster profiles are installed parallel and have no direct connection between them to stabilise the system or prevent lateral movement. It is therefore important to provide angled or horizontal bracing to prevent lateral movement of the bandraster profiles.

Possible options for bracing:

1. Angled suspension using Nonius hangers No. 17/80,



2. Horizontal bracing with conventional CW-profiles



### 7.8.11 Tile dimensions - clear span planks S 18p

The length of the plank and supporting profile is calculated by taking: **Clear distance between bandraster profiles + 20 mm.**

For Contura (edge 6) planks see System leaflet Sheet S 18d.

## Working with OWAconstruct®-OWAconstruct® ceiling systems

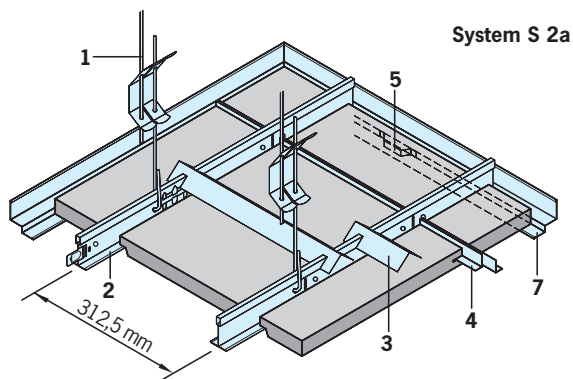
### 7.9 OWAacoustic® premium-OWAconstruct® – Other systems

There are many other OWAacoustic® ceilings that are based on the existing systems and use the same or similar installation techniques shown in point 7.0 – 7.5

More detailed information on each of the following systems can be found in the individual Installation Guides.

#### 7.9.1 Semi-concealed systems

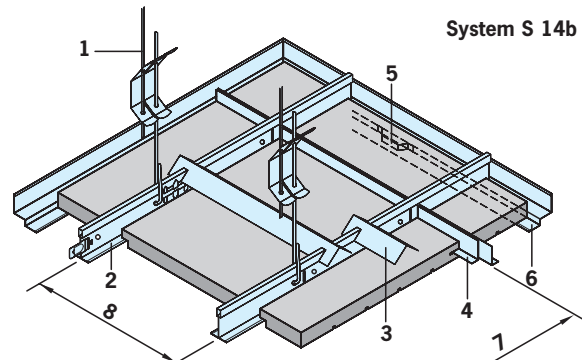
**System S 2a, semi-concealed, demountable**  
**System S 2b, semi-concealed, demountable**



- 1 Hanger No. 12/.../...
- 2 Main tee profile No. 45 G
- 3 Stabiliser bar No. 43, centres 312,5 mm
- 4 L-profile No. 24
- 5 Wall spring clip No. 52
- 6 Stepped perimeter trim No. 50/15 G

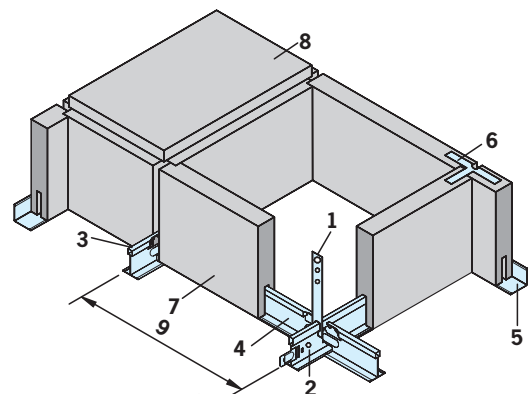
#### 7.9.2 Systems with linear effect

**System S 14a Fully concealed rilled planks**  
**System S 14b Semi concealed rilled planks**



- 1 Hanger No. 12/.../...
- 2 Main tee profile No. 45 G, spacing  $\leq 1250$  mm
- 3 Stabiliser bar No. 43, spacing  $\leq 1500$  mm for main tee centres 1200 mm, 1250 mm
- 4 L-profile No. 37 (removable) or Z-profile No. 20 (non-removable)
- 5 Wall spring clip No. 52
- 6 Stepped perimeter trim No. 50/15 G
- 7 Tile width
- 8 Tile length

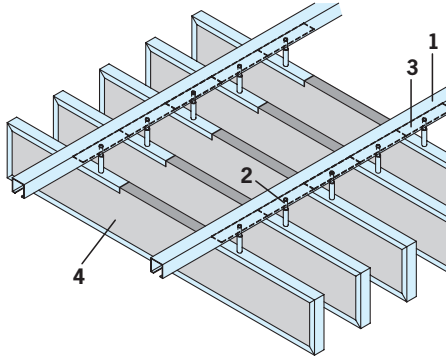
**7.9.3 Honeycomb system S 8, square and rectangular formats**



- 1 Hanger No. 49
- 2 Main tee No. 45 G, slotted every 100/156,25 mm
- 3 Cross tee No. 46 G
- 4 Cross tee No. 47 G
- 5 Perimeter trim No. 50 G
- 6 Grid clamp No. 96
- 7 Honeycomb tile
- 8 Cover tile
- 9 Axial spacing

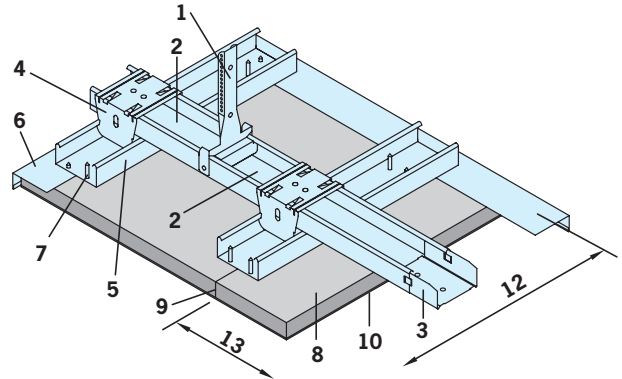
## Working with OWAconstruct®-OWAconstruct® ceiling systems

### 7.9.4 Vertical Baffle System S 12d



- 1** C-section No. 7001, 26/26 mm, white
- 2** Screw No. 7002, M 6x40 mm, galvanised
- 3** Fixing No. 7003, 22/100 – 2,0 mm thickness, galvanised
- 4** Baffle with white metal frame on 3 sides including a concealed rod and pod

### 7.9.5 System S 7 OWAplan, monolithic (jointless)



- 1** Nonius hanger No. 2001, spacing  $\leq 1000$  mm
- 2** Suspension grid system CD-section 60/27 No. 2003, first layer, spacing  $\leq 1000$  mm
- 3** Connector No. 2005
- 4** Saddle bracket No. 2004
- 5** Suspension grid system for tiles CD-section 60/27 No. 2003, second layer, spacing  $\leq 400$  mm
- 6** Perimeter trim No. 51/22
- 7** Screw No. 2007, spacing  $\leq 150$  mm
- 8** OWAplan raw board
- 9** Glue No. 99/24
- 10** Glas fibre textile + textured acoustic plaster
- 11** Permanently elastic sealing
- 12** Tile width
- 13** Tile length

#### Note

Please observe installation guide S 7 OWAplan.



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General

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Basic planning

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OWAcoustic® Tiles – General Information

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Construction of suspended ceilings

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OWAconstruct®-OWAcoustic® standard ceiling systems

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OWAconstruct®-OWAcoustic® systems with special performances

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Working with OWAconstruct®-OWAconstruct® ceiling systems

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**OWA Installation and Product Training Courses**

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8

# OWA Installation and Product Training Courses

## 8.0 Training

The competent use and installation of OWA ceilings requires a corresponding level of knowledge and training.

To ensure that this skill base is available, OWA regularly run training courses for installers, as well as distributors and specifiers.

OWA offer practical instruction courses for exposed and concealed OWA ceiling systems as well as the more specialised OWAplan system.

The OWA training courses are aimed at providing different levels of expertise ranging from practical installation techniques through to the more theoretical principles of use and installation. All offer "hands on" experience.

The courses are held at our dedicated training centre in Amorbach and can be specially tailored to suit your requirements.

**Please contact your local OWA office for more details.**





**OWAcoustic®**

**OWAconstruct®**

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The information contained within this publication is offered without prejudice and has been derived from existing standards test data and practical experience.

Because of intervals between revised publications you should ensure that the information contained within this publication is current and up to date.

This publication ceases to be valid when a new edition is issued.

Should you have any questions,  
our **OWAconsult® experts**  
will be pleased to be of assistance:

Tel.: +49 9373 201-444  
Fax: +49 9373 201-111  
Internet: [www.owaconsult.com](http://www.owaconsult.com)  
E-Mail: [info@owaconsult.de](mailto:info@owaconsult.de)



**Odenwald  
Faserplattenwerk GmbH**  
Dr.-F.-A.-Freundt-Straße 3  
63916 Amorbach  
Tel.: +49 9373 201-0  
Fax: +49 9373 201-130  
[www.owa.de](http://www.owa.de) · E-Mail: [info@owa.de](mailto:info@owa.de)

**OWA (UK) Ltd.**  
Unit 10, Perth Trading Estate  
Perth Avenue, Slough SL1 4XX  
Tel.: +44 1753 55 24 89  
Fax: +44 1753 52 60 60  
[www.owa-ceilings.co.uk](http://www.owa-ceilings.co.uk)  
E-Mail: [sales@owa-ceilings.co.uk](mailto:sales@owa-ceilings.co.uk)