



Installation guide

General	3	OWAconstruct/OWAcoustic systems with special performances	35
Basic planning	5	6.1 Suspended ceilings in humid rooms according to EN 13964; table 7 class of exposure C.	36
2.1 Site conditions	6	6.2 Reinforcing spline no. 8040 and no. 8041.	37
2.2 Specifications for suspended ceilings	6	6.3 Affixing partitions	37
2.3 Reaction and resistance to fire	7	6.4 Suspended ceilings in hygiene-sensitive areas.	38
2.4 Acoustics	8	6.5 OWAlux® suspended ceilings for clean rooms	38
2.5 Building physics: framework conditions	8	6.6 Ventilation and air-conditioning ceilings	39
2.6 Planning prior to installation	9	6.7 Installation of integrated climate elements	39
2.7 Building, expansion and movement joints	9	6.8 OWAcoustic Janus – high performance sound reduction tiles.	40
2.8 Pressure and wind loads on suspended ceilings	10	Working with OWAconstruct/OWAcoustic ceiling systems	43
OWAcoustic tiles – general information	11	7.1 Concealed systems	44
3.1 Factory finish, colour, appearance	12	7.2 Construction details for OWAcoustic premium – OWAconstruct system S 1	46
3.2 Properties of OWAcoustic ceiling tiles.	12	7.3 OWAcoustic premium – OWAconstruct system S 9a, concealed, demountable.	50
3.3 Identification marking of OWAcoustic tiles	13	7.4 OWAcoustic premium – OWAconstruct system S 9b, concealed, demountable.	52
3.4 Information shown on the carton label OWAcoustic:	13	7.5 OWAcoustic premium – OWAconstruct system S 19 Teccor, concealed demountable, with shadow gap.	54
3.5 Directional arrows	13	7.6 OWAcoustic premium/smart – OWAconstruct – exposed grid systems, S 3, S 3 cliq, S 3a, S 3a cliq, S 15 cliq, S 15a cliq, demountable.	55
3.6 Packaging and handling	13	7.7 OWAcoustic premium – OWAconstruct system S 15b OWAline, exposed, demountable	61
3.7 OWAcoustic tiles, standard edge details for OWAconstruct ceiling systems	14	7.8 OWAcoustic premium – OWAconstruct clear span systems S 6	63
3.8 Working with OWAcoustic mineral-wool tiles.	15	7.9 OWAcoustic premium – OWAconstruct bandrafter systems S 18	66
3.9 Renovation and redecoration of OWA-ceilings with standard surface patterns	16	7.10 OWAcoustic premium – OWAconstruct other systems	70
Construction of suspended ceilings	19	7.11 Examples of application.	71
4.1 Additional load	20		
4.2 OWAconstruct ceiling hangers.	20		
4.3 Corrosion protection of profiles and hangers	20		
4.4 Wide-span profiles.	21		
4.5 Tools for OWAconstruct profiles	22		
4.6 Colour, visible profiles	22		
4.7 Profiles – renovation and painting.	22		
4.8 Transportation and handling of profiles	23		
4.9 External influences, environmental conditions, masking	23		
OWAconstruct/OWAcoustic standard ceiling systems ..	23		
5.1 Fastenings.	24		
5.2 OWAconstruct hangers.	25		
5.3 Wall trims OWA standard ceiling systems.	27		
5.4 Pitched roofs.	31		
5.5 Integration of recessed or surface-mounted lights, spotlights, ventilation fittings etc.	31		
5.6 Inspection hatches.	34		

General

1

1.0 Introduction

This publication provides basic information for the planning and installation of OWAacoustic/OWAconstruct ceiling systems.

The information contained within this guide is based on our recommendations and those contained within the current European Standards (EN 13964). In line with improving standards and techniques please make sure you are using the current issues of both documents (see contents for publication date).

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.

A warranty declaration up to 30 years is available on request. Ask your local OWA representative for details.

Basic planning

2

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 (g/m^3).

Example:

Room temperature 20 °C, absolute humidity at 12.10 g/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 g/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 g/m^3 Luft									

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.

2.3 Reaction to fire

OWAcoustic tiles as building material

According to EN 13501-1, building materials are divided according to their fire behaviour into the following classes:

Additional requirements		European class according to EN 13501-1
No smoke	No burning droplets falling/dripping	
✓	✓	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

Meaning of additional designations:

s1, s2, s3 [m²/sec²] describes the smoke behaviour

s1 = no or slight smoke development

s3 = heavy smoke development

d0, d1, d2 = burning droplets behaviour

d0 = no droplets within 600 seconds

OWAcoustic premium or smart tiles meet a reaction to fire of **A2-s1,d0**. They can be identified by the following CE labels:

A2-s1,d0 according to EN 13501-1

OWAcoustic premium

OWAcoustic smart

OWAlux® silver

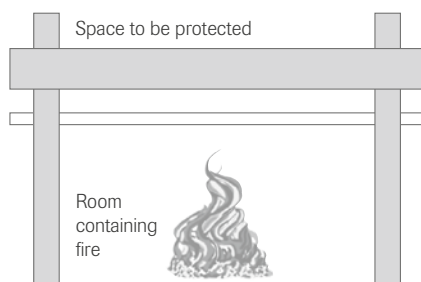
A2-s3,d0 according to EN 13501-1

OWAlux white

OWA ceilings for building components

A building component according to EN 13501-2 is not the suspended ceiling only, but the overall construction - consisting of a load-bearing ceiling and suspended ceiling or a roof and suspended ceiling. This overall construction should prevent the passage of fire as long as possible. It is not only the material of the suspended ceiling, but also the reaction of the suspended construction to fire that is of great importance.

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



Requirements for the suspended ceiling only: self-contained fire protection unit



Further information on reaction to fire (fire resistance) can be found in brochure no. 9500 eu/e and our publications on self-contained fire protection units.

2.4 Acoustics

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 T_{desired} [s]
Noise level reduction ΔL [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 relevant national standards:

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

2.5 Building physics: framework conditions

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 0.055 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 (see also DIN 4108, T 3 + T 7).

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.

Generally, these statements also apply to other types of construction exposed to outside air and weather conditions (e.g. parking decks, basement garages). OWAcoustic mineral tiles must never be exposed to moisture, e.g. resulting from condensation.

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.

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.

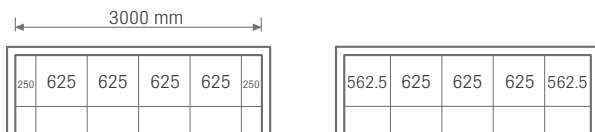
2.6.1 Perimeter tiles

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.

If the aforementioned points do not apply, we recommend laying the wall connection plates as follows: 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 3 metres wide and install 625 x 625 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; it is not only less decorative but also less economical (see example).

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:

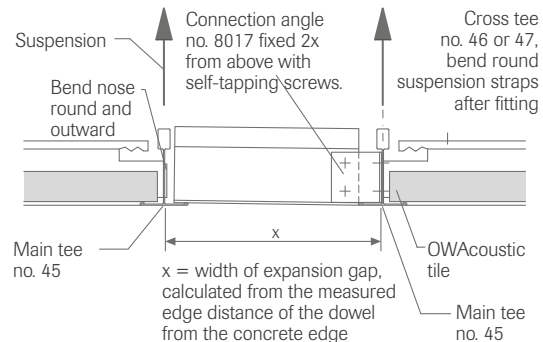
Linear components, together with any elements and carriers, have to be exactly aligned on module. Special care has to be taken of the alignment of modules over the joint between carriers.

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.

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.

Fitted tiles must be worked into the expansion joint width onsite.

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 6.2.5). For standard applications and normal use, these measures are generally not required.

OWAcooustic tiles – general information

3

3.0 OWAcoustic tiles – general information



Criteria: Mineral tiles according to EN 13964 (suspended ceilings – requirements and testing procedure) and DIN 18177 (wet-processed factory produced mineral tiles – characteristics and testing methods).

All OWAcoustic tiles are high quality products, manufactured using the **wet-felt process**. Their components are **firmly bonded**. Depending on the design, they are supplied with a primer coat on both sides or on one side only. The tiles are free from asbestos. No formaldehyde is used in the mineral tiles' production process. 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).

This allows OWAcoustic tiles to be classified for reaction to fire A2-s1,d0 or A2-s3,d0 (OWAlux white) – non-flammable according to EN 13501-1 (see also leaflet no. 9500 eu/e).

This statutory information can be found on both the packaging and normally on the reverse of each individual OWAcoustic tile (see also 3.3 and 3.4).

Note: product data sheet based on the EC safety data sheet

Corresponding product information e.g. composition, handling and storage, physical and chemical properties, details on toxicology and information on disposal and the OWA green circle recycling programme can be viewed here:
<https://www.owa.de/en/media/declaration-of-performance-dop/>

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

premium	premium for humid rooms	smart
Weight		
The weight per unit area of the respective OWAcoustic tile is dependent on function and thickness. Depending on function and design, the tile weight is between approx. 3.3 kg/m ² (for special acoustic cover layers) up to 18.5 kg/m ² (e.g. for independent fire protection units). Each panel-specific weight can be found in our data sheets on www.owa-ceilings.com		
Tile thickness (depending on ceiling system + requirements) nominal		
15 mm, 20 mm, 33 mm, 40 mm, 44 mm	20 mm (Ocean) 15 mm	14 mm
Air humidity reference values (reference temperature 25 °C)		
Up to 95 % RH, short-term (depending on design)	Mavroc 95 % RH, permanent Ocean 100 % RH, short-term	Up to 90 % RH
Additional loading (support) per unit area		
40 N/m ²	40 N/m ²	32 N/m ²
Additional loading – point loading (centre of tile)		
2.5 N	2.5 N	2.5 N
Reaction to fire in accordance with EN 13501-1		
A2-s1,d0 resp. A2-s3,d0 (OWAlux white)	A2-s1,d0	A2-s1,d0
Volatile organic emission class according to (TVOC) according to DIN 18177		
TVOC 1 (x ≤ 50 µg/m ³)	TVOC 1 (x ≤ 50 µg/m ³)	TVOC 1 (x ≤ 50 µg/m ³)
Formaldehyde emission class according to DIN 18177		
FH 1 (x ≤ 60 µg/m ³)	FH 1 (x ≤ 60 µg/m ³)	FH 1 (x ≤ 60 µg/m ³)
Air permeability class according to DIN 18177		
PM 1 (x ≤ 30 m ² /hm ²)	PM 1 (x ≤ 30 m ² /hm ²)	PM 1 (x ≤ 30 m ² /hm ²)
Thermal conductivity λ according to EN 12664		
0.055 W/mK	0.055 W/mK	0.055 W/mK
Designs		
All designs	Mavroc Constellation Mavroc Cosmos Ocean	Constellation, Finetta, NEW Sandila, Harmony, Plain
Edges		
All edges (except edge 7)	Edge 3	Edge 3, Edge 7
Formats		
All OWA formats	600 x 600 mm 625 x 625 mm	600 x 600 mm 625 x 625 mm 1200 x 600 mm 1250 x 625 mm
Cleaning options		
	Cleaning of OWAlux® see also 6.5.1	
Can be dusted, vacuumed or cleaned with a damp OWA-sponge Contamination with aggressive elements such as alkalis, acids, fats etc. is more difficult to clean to a satisfactory standard. For cleaning instructions see brochure no. 9989 e.		

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

Exposure of the tiles to moisture (e.g. resulting from condensation) must be strictly avoided.

3.3 Identification marking of OWAcoustic tiles

Labelling back of tile standard tiles:

- production date
- directional arrows
- manufacturer

Labelling of tiles with special properties:

- Humancare: HC
- Mavroc: MC
- Multi Alpha: MA
- Ocean: Ocean
- OWAplan 70: OP70
- OWAplan 90: OP90
- RAW Clay: RAWCL
- RAW Grey: RAWGR
- Sanitas: SA02
- Sinfonia Balance: BL
- Sinfonia Balance Humancare: BLHC
- Sinfonia Privacy: PR
- Sinfonia Reflecta: RE
- Sinfonia Silencia: SC
- Sinfonia Silencia Humancare: SCHC

3.4 Information shown on the carton label OWAcoustic:

- product designation and manufacturer's address
- storage-, transport- and security-informations
- reaction to fire classification
- CE marking
- statement of the authoritative standards for CE labelling
- performance data
- number of performance declaration (DoP)
- download note on declaration of performance (DoP)
- design
- edge type
- dimensions
- article number
- number of pieces

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, during the installation and later use, 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).

Note:






For more information on handling and storage, refer to the product data sheet based on the EC safety data sheet:
<http://www.owa.de/en/servicedownloads/declarationofperformance/>



OWAcoustic* premium

Sternbild / Constellation

OWA

 <p>600 mm nom.</p> <p>600 mm nom.</p> <p>15 mm nom.</p> <p>scharfkantig square edge</p> <p>12</p>	<p>Unterdecken Suspended Ceilings Plafonds</p> <p>A2-s1,d0</p>  <p>05 OWA-0002:1 (DoP) NB-0672</p> <p><small>EN 12284:2014 Steinplatten EN 12289:2014 Gipsplatten EN 12289 Dichte von Mineralwolle EN 12289-1:2014 (ISO 14255) D1 = 24 kg/m³ D2 = 24 kg/m³ D3 = 24 kg/m³ D4 = 24 kg/m³ D5 = 24 kg/m³</small></p> <p><small>USA: Steinplatten class 1 (ASTM E 84) class A (ASTM E 1363)</small></p> <p><small>Leistungsangaben und Herstellerangaben unter www.owa.de DoP and product's literature download at www.owa.de Tipp: Mineralwolle-A2-s1-d0 Tipp: Mineralwolle-A2-s1-d0 Tipp: Mineralwolle-A2-s1-d0</small></p> <p>DIN 18177: Klasse FH I / TVOC I / PM I</p>  	<div style="border: 1px solid black; padding: 5px; text-align: center; font-size: 2em; font-weight: bold;">3</div> <p>Made in Germany by Odenwald Faserplattenwerk GmbH Dr. F.-A. Freundt-Strasse 3 63914 Amorbach Tel. +49 93 73 2 01-0 info@owa.de www.owa.de</p>  <p>0000011</p>
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3.7 OWAcoustic tiles, standard edge details for OWAcconstruct ceiling systems



Edge 1 (for system S 1, S 2b, S 2p)

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 3
square edged

OWAcoustic premium tiles (S 3, S 3 cliq, S 15 cliq, S 6c, S 18d)
tile thickness approx. 15 or 20 mm

OWAcoustic smart tiles (S 3, S 3 cliq, S 15 cliq)
tile thickness approx. 14 mm nominal

Tile dimension = module size – 6 mm



Edge 4 (for system S 9a/b)
two parallel edges shiplap demountable

OWAcoustic premium tiles
tile thickness approx. 20 mm
two parallel edges bevelled, kerfed and rebated (Edge 10)
tile dimension = module size



Edge 4c / 10c (for system S 19 Teccor)

OWAcoustic premium tiles
tile thickness approx. 20 mm

Tile dimension = module size – 6 mm

Contura-edges

(for system S 3a, S 3a cliq, S 15a cliq, S 15b, S 6b, S 18d)
angled, reveal edge



Edge 6 (for system S 3a, S 3a cliq, S 6b, S 18d)

OWAcoustic premium tiles
tile thickness approx. 15 or 20 mm

Tile dimension = module size – 6 mm



Edge 15 (for system S 15a cliq)

OWAcoustic premium tiles
tile thickness approx. 15 or 20 mm

Tile dimension = module size – 6 mm



Edge 15b (for system S 15b)

OWAcoustic premium tiles
tile thickness approx. 15 or 20 mm

Tile dimension = module size – 6 mm



Edge 15g (for system S 15a cliq)

OWAcoustic premium tiles
tile thickness approx. 15 or 20 mm

Tile dimension = module size – 6 mm



Edge 7 (for system S 3a, S 3a cliq)

OWAcoustic smart tiles
tile thickness approx. 14 mm nominal

Tile dimension = module size – 6 mm

For more details see individual system leaflets.

3.8 Working with OWAcoustic mineral-wool tiles

OWAcoustic tiles can be cut cleanly with a cutter or utility knife. Knives with retractable blades reduce the risk of injury.



OWA-gloves (white)

Order no. 99/20



Contura plane

for re-forming the Contura reveal edge on tiles.

K 6 – 15 mm tiles

Order no. 99/11/6

K 15 – 15 mm tiles

Order no. 99/11/15

K 7 – 14 mm tiles nominal (smart)

Order no. 99/7/21



OWA repair kit

weight: approx. 135 g/container

Normal

(suitable for all patterns except Cosmos)

Order no. 99723

Cosmos (suitable for Cosmos)

Order no. 99724

Replacement blade for Contura plane

Order no. 1808



Edge 1 tool

for re-forming the kerf and rebate on standard concealed tiles (edge 1)

Order no. 99/07



OWA cleaning sponge

suitable for cleaning lightly soiled tile surfaces

Order no. 99/06

3.9 Renovation and redecoration of OWA-ceilings with standard surface patterns

Standard surfaces which can be redecorated:

Regular perforated
Constellation
Plain
Finetta
Cosmos plain
NEW Sandila plain
Harmony
Multi Alpha

The following require special treatment

Cosmos needled
NEW Sandila needled
Bolero
Sinfonia

see point 3.9.12

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.

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.

3.9.3 Cleaning

Dirty or dusty tiles should be cleaned prior to painting. This is lacking in the case of new tiles, which should be colour-treated.

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/m²). 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 renovation or colourful designing of OWAcoustic tiles, dispersion paints with binding agents with an acrylated polyvinylacetate basis have proven to be successful. For instance, the Alpincolor product combined with Alpine White or Amphibolin full tone or tinting colours are suitable (**CapaSilan or CapaTrend, approx. 105 g/m² from the company Caparol**), see also point 3.1.

Additional coatings can have an influence on the emission behaviour in relation to the "Blue Angel" standard.

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.: 0 61 54 / 71-0 · Fax: 0 61 54 / 71-13 91
Internet: 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

**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

**CGI GERMANY GmbH
Danilo Marczinowski**

Graf-Schwerin-Str. 1 · 18069 Rostock
Tel.: +49 381 7 78 86 66 · Fax: +49 381 1 28 28 13
Internet: www.coustic-glo.de
Renovation or colour treatment after "Coustic Coat" possible in all colours.

**3.9.12 Redecoration of OWAcoustic ceiling tiles
with micro-fine needle holes or fleece covered**

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

Cosmos needled
NEW Sandila needled
Bolero
Sinfonia

For architectural and acoustic reasons, the above-mentioned designs are provided with micro-fine needle holes or fleece covered. 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 –
Ahrensburger Str. 77 · 22041 Hamburg
Telefon: +49 40 / 24 46 56 · Telefax: +49 40 / 20 97 08 03
E-Mail: service@akusto.info
Internet: 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
Internet: www.biochem-spezialreinigung.de

CGI GERMANY GmbH

Danilo Marczinowski
Graf-Schwerin-Str. 1 · 18069 Rostock
Telefon: +49 3 81 / 1 28 28-12 · Telefax: +49 3 81 / 1 28 28-13
E-Mail: info@coustic-glo.de
Internet: www.coustic-glo.de

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.

**Please contact your local OWA-representative for further
information.**

OWA profile paints see 4.6 and 4.7

Cleaning recommendations for OWAcoustic tiles: see brochure no. 9989 e.

Construction of suspended ceilings

4

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 OWAlifetime collection 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 (Table 1) (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 profiles, 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.

Table of loads are available on request. Ask your local OWA representative for details.

4.2 OWAconstruct ceiling hangers

See point 5.1.7 and OWAlifetime collection price list.

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 to 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. All metal parts protected against corrosion with 275 g zinc/ m^2 /side and given an additional 25 μm coating on both sides.

Use in indoor swimming pools

S 3e – C5 – L

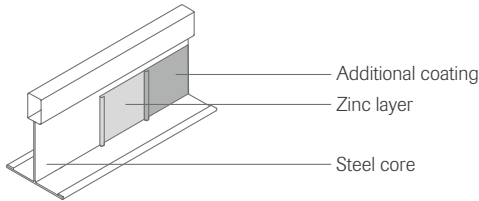
Notes:

S 3e = exposed grid suspension system no. 45KB, no. 46KB, no. 47KB, no. 50KB

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

You can find more details on this in the information sheet "Einsatz in Hallenbädern" and the OWAlifetime collection price list.

When installing suspended ceilings in rooms where a class C classification is required all cut surfaces and edges must be treated with the 2-component touch-up paint no. 99/18KB, zincor or conventional industrial alu-zinc sprays, in order to prevent corrosion.



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

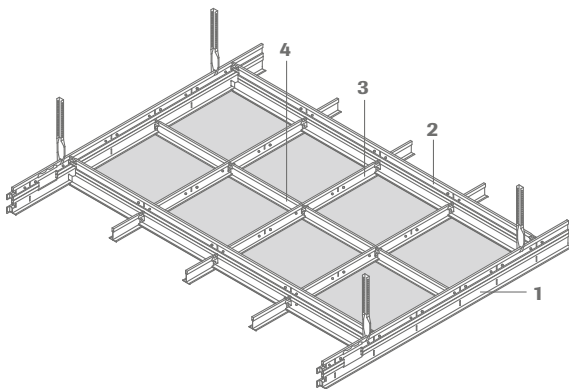
4.4 Wide-span profiles

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.

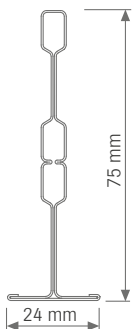
4.4.1 OWAconstruct wide-span suspension system S 8550 is an exposed grid suspension system for span widths up to 2800 mm

OWAconstruct wide-span suspension system S 8550 is an exposed grid.

For further information, see OWA-brochure no. 9608.



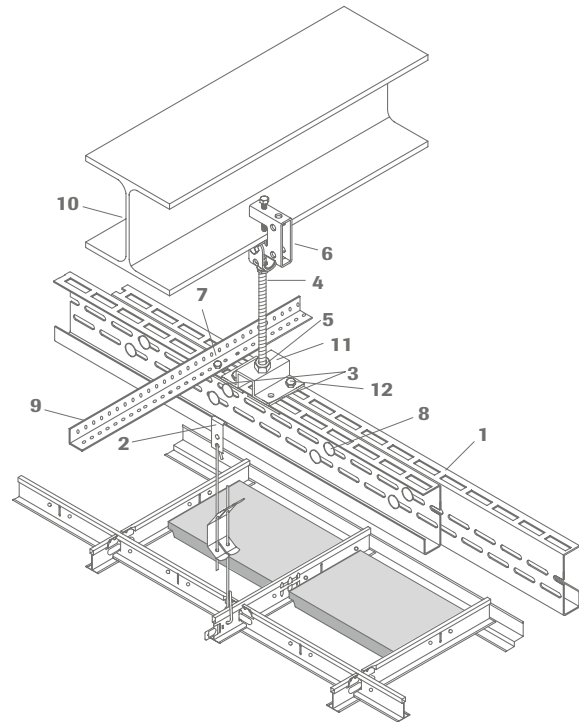
Cross-section:



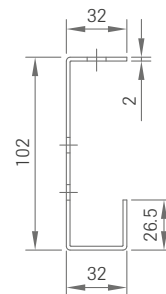
- 1 No. 8550G Wide-span profile
- 2 No. 8558G Wide-span cross tee
- 3 No. 47G/38 Cross tee
- 4 No. 46G/38 Cross tee

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 no. 9607)



Cross-section:



- 1 C wide-span section no. 6500
- 2 Suspension clip
- 3 Washer (2 pieces per suspension)
- 4 Threaded rod M10 (by others)
- 5 Nut M10 and washer M10 (by others)
- 6 Flange hanger
- 7 Self-tapping screw
- 8 Installation set
- 9 Section
- 10 Steel beam
- 11 Adaptor for suspension of double section
- 12 Screw M8 x 30 mm, Nut M8 and washer (by others)

4.5 Tools for OWAconstruct profiles

Recommended on-site cutting tool for OWAconstruct metal profiles up to 1 mm: tin snips, 2 times geared.



4.6 Colour, visible profiles

OWAacoustic 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. See OWAlifetime collection price list.

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. OWA profile paint unsuitable for extensive coating. If considerable damage is present, the grid should be replaced.

Note on cleaning: Application of aggressive media (lyes, acids, fats, etc.) cannot guarantee a high quality appearance in the event of cleaning.

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



OWA profile paint
order no. 99/18

4.8 Transportation and handling of profiles

To avoid transport damage, such as corrugated, bent or twisted T profiles in thin material (e.g. carrier profiles), the following must be borne in mind:

Mechanical handling and transportation of cartons:

- Individual or multiple cartons should only be carried on pallets which are a **minimum of 2 m 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.
- Avoid any warping of the packaging unit during transport.

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 – do not pull the carrier profiles individually from the front out of the carton.

4.9 External influences, environmental conditions, masking

In general, when processing OWAconstruct construction parts (e.g. T profiles, edge trims, etc.) the applicable structural preconditions (point 2. 1) or the environmental conditions described (point 4. 3) must be taken into consideration during mounting. In particular, mounting edge trim on moist substrates must under all circumstances be avoided.

If the visible side of the grid is to be protected by masking or covering against external factors (e.g. painting), care must be taken to ensure that the surface of the construction part is not affected. Compatibility of the masking tape used must first be established by prior testing by the processor. To maintain the quality of the visible surface it generally makes sense to dispense with direct pasting.

OWAconstruct/OWAacoustic standard ceiling systems

5

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. The relevant valid authorisations or building standards test results of the attachment equipment (if applicable, extraction attempts) must be taken into account.

Suitable fastenings are:

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



Anchor nail no. 97/21

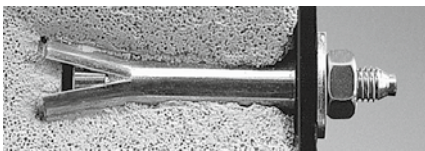
Suitable attachment equipment see OWAlifetime collection price list.

5.1.3 Steel beam construction

OWAconstruct hangers are generally attached to the steel beams with metal clips provided by the customer.

5.1.4 Lightweight/block floors

Injection plugs or metal plugs top fixings approved by the building authorities are used to fix the ceiling suspensions. The installation instructions of the fastener manufacturer must be followed.



Example image: on-site aerated concrete anchor

5.1.5 Trapezoidal roof sheet

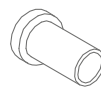
Single layer, non-ventilated roof (warm roof)

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.

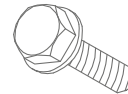
Suspension using wire hooks in holes is not permissible.

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

Authorised self-tapping screws are suitable or e.g. the rivet nut no. 97/30 with a self-locking screw no. 97/32.



No. 97/30



No. 97/32

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 OWAlifetime collection price list.

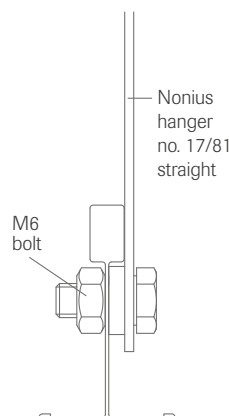
5.1.6 Methods for reducing the effect of vibration and structural borne sound

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.



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.

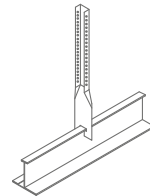
The permissible load of the hangers and their fastenings must be checked in accordance with EN 13964. Where the dimensions, type and characteristics of the material make this possible, a calculation of the load bearing capacity and deformation can be made.

5.2 OWAconstruct hangers

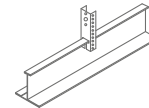
Additional hanger systems and information can be found in the OWAlifetime collection price list.

5.2.1 Nonius hangers – concealed systems such as S 1, S 9a etc.

Lower sections of hanger for primary suspension profile no. 70



No. 17/10



No. 09/10

Upper extensions

Securing pin/nail



No. 16/...



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



No. 78



No. 76

Minimum suspension heights:

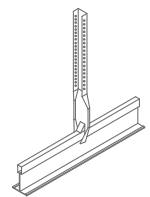
no. 17/10 + no. 16/15 = 240 mm

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

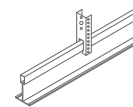
load bearing capacity: 0.25 kN (no. 17/10: 0.40 kN)

5.2.2 Nonius hangers – exposed suspension systems such as S 3, S 3 cliq, S 3a, S 3a cliq, S 15 cliq, S 15a cliq, S 15b etc.

Lower sections for main tees no. 45, cliq-24-MR and cliq-15-MR



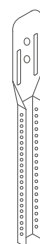
No. 17/45



No. 09/45

Upper Extensions

Securing pin/nail



No. 16/...



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



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 bearing capacity: 0.25 kN

(no. 17/45: 0.40 kN)

For bandrastrer nonius hangers, see points 7.9.6 to 7.9.10

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

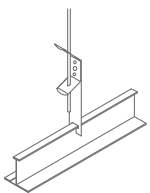
Note:

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 like profile no. 70

Upper extension



No. 12/10



No. 14/.../1
diameter: 4 mm



No. 14/.../2

Minimum suspension heights:

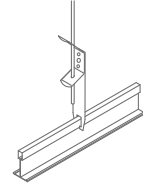
no. 12/10 + no. 14/12 approx. 250 mm

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.

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

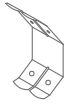
Lower sections for Main tees no. 45, cliq-24-MR, cliq-15-MR and no. 3500



No. 12/45



No. 12/44 inc. retaining tab – fitting instructions in packaging



No. 12

Upper extensions

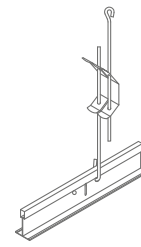
Pre-assembled



No. 14/.../1
diameter 4 mm



No. 14/.../2



No. 12/.../1 – no. 12/.../2
hook/hook – eye/hook

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 bearing 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.

When using suspension hangers, in particular tensioning hangers, please ensure the tension springs are not plastically deformed during assembly (e.g. by squeezing too hard).

5.2.5 Wire suspension

Suspended ceiling systems can also be installed using pre-stressed wire as hanger (see EN 13964).



Example: pre-stressed wire galvanised
Ø ≥ 2.0 mm, tied at least three-fold

Minimum suspension height 100 mm (80 mm*)
* More complex and slower installation

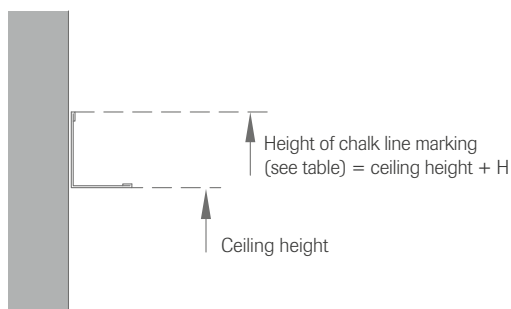
For more hanger units see OWAlifetime collection price list.

5.3 Wall trims OWA standard ceiling systems

The installation of a wall 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.

Wall trim height table

Wall profile no.	Height H
50G, 53	25 mm
50/14	31 mm
57/10	32 mm
50/15G	33 mm
50/19	38 mm
50/22	39 mm
8034	20 mm
57	40 mm
56, 56/20, 56/21, 56/23, 56/35	45 mm
51/20	50 mm
51/1	35 or 50 mm



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

5.3.1 Junctions of wall trim

The use of a true or overlap mitre is an acceptable way to join wall 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.

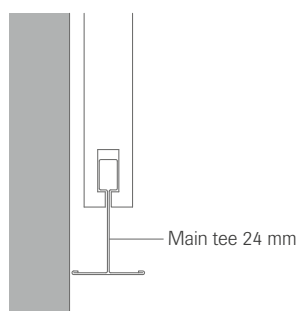
The tender document should give clear information on this point.

5.3.2 Attachment to flexible or vibrating backgrounds surfaces

If wall 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 wall trim can also influence the interaction of the trim and background.

Construction options:

- use wall trim with slotted holes, such as no. 51/20 or no. 53
- form wall connection of sliding design, using no. 45



Sliding connection

The current “state of technology” is represented by butt-joined angle profiles (according to DIN 18340).

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

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

5.3.3 Production of mitred corners using snips



Example image: tin snips

Tools required:

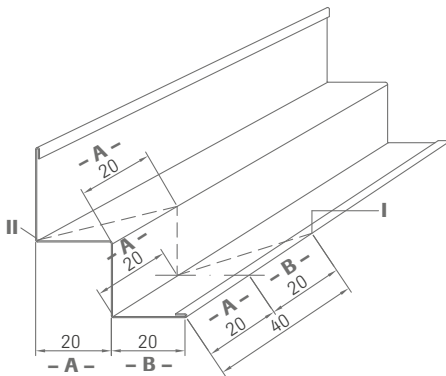
right and left-handed snips

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 wall trim dimensions

Stepped wall trim	Dimensions mm		Material thickness mm	Recommended tool
	A	B		
50/15G	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
56/23	20	20	1.5	Metal circular saw
56/35	20	20	0.6	Snips/metal circular saw

5.3.4 Inner and outer corners

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

Wall trims with flange widths of 19 mm:

inner corners no. 54
outer corners no. 54/50



Wall trims with flange widths of 24 mm:

inner corners no. 54/1
outer corners no. 54/50/1



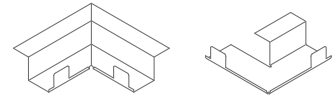
Stepped wall trims no. 50/15G or no. 50/22

inner corners no. 55/1
outer corners no. 55/2



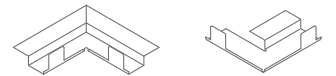
Stepped wall trims no. 56/20 or no. 56/35

inner corners no. 55/3
outer corners no. 55/4



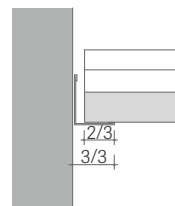
Stepped wall trims no. 50/14

inner corners no. 55/5
outer corners no. 55/6



5.3.5 Support

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



Minimum profile and tile support on the wall trim

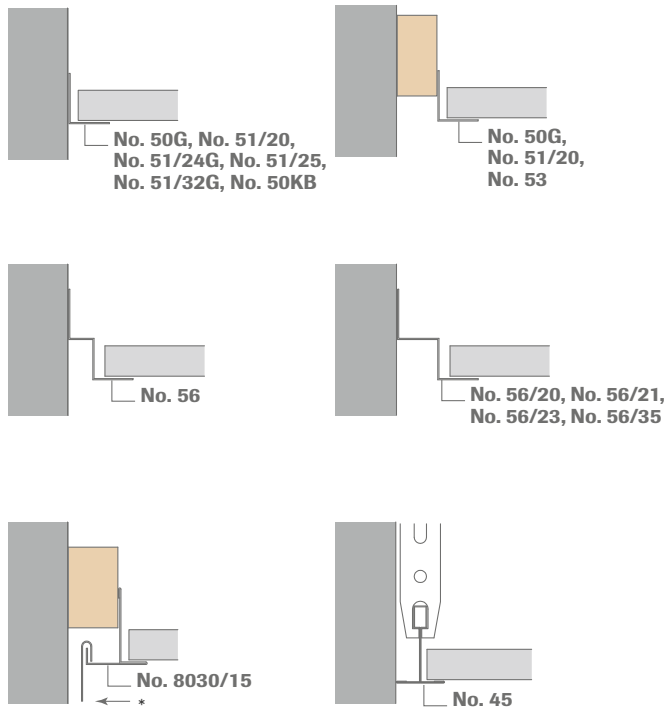
Support for fire-resistant ceilings.

In the case of fire resistant ceilings, the profiles and tile must overlap the wall 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 wall trims where there is no fire resistance required

Installation examples:



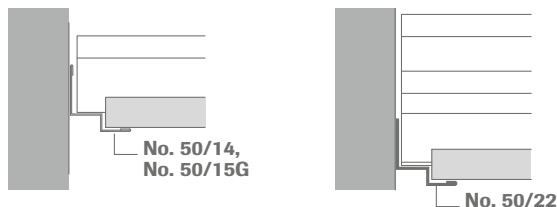
* = Fixing for decoration etc. point loads up to max. 0.07 kN

Fixing to the soffit (sliding connection)



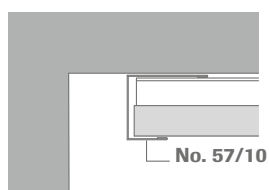
Upstand trims

Bandraster grid ceilings system S 18



Contura ceilings S 3a and system S 15a cliq

Clear span ceiling, corridor ceiling with Contura plank system S 6b

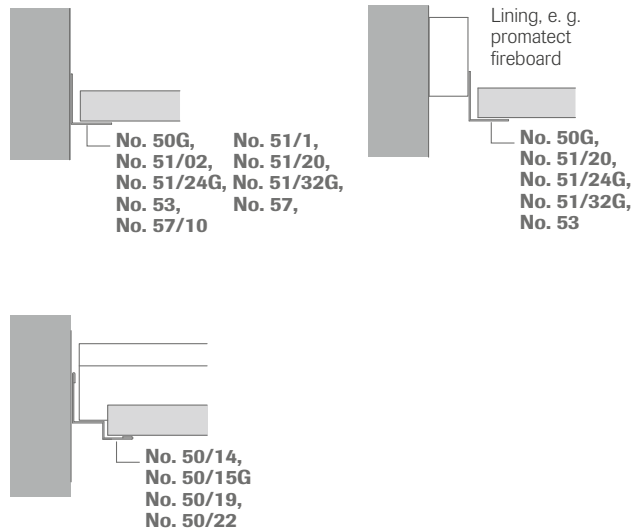


Ceiling island system S 1

5.3.7 Installation of standard wall trims where fire resistance is required

Where the entire load-bearing component requires fire resistance, such as the floor above, soffit or roof in connection with the suspended ceiling, the corresponding publications or test certificates must be followed.

Further information can be obtained from the relevant fire-resistance test reports or from OWA-brochure no. 9500 eu/e (reaction to fire: fire resistance).

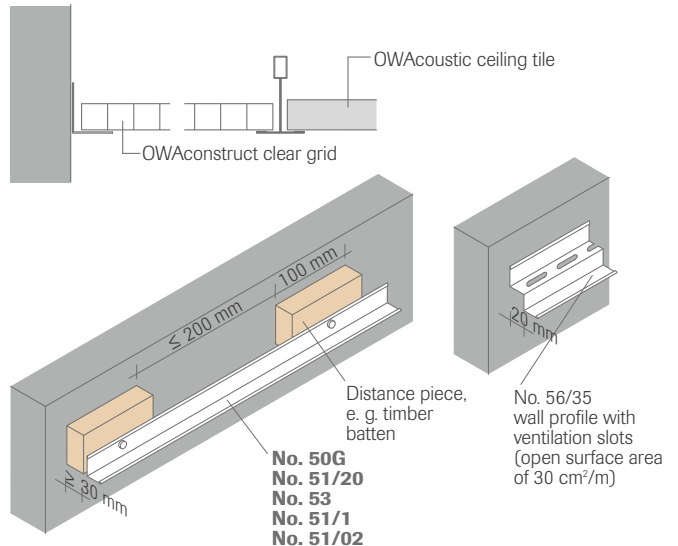


5.3.8 Installation of wall trims for self-contained fire resistance units

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

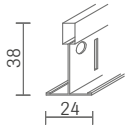
5.3.9 Ventilated wall trims (no fire resistance requirements)

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

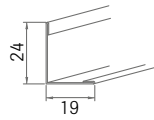


5.3.10 Wall trims

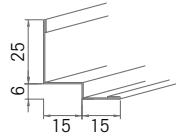
OWA white, galvanised steel wall trims, dimensions in mm



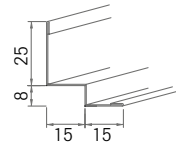
No. 45 visible side white or **cliq-MR** visible side white



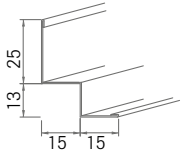
No. 50G 0.5 mm thick



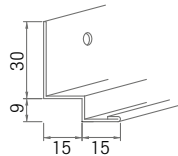
No. 50/14 0.5 mm thick



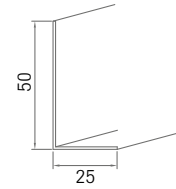
No. 50/15G 0.5 mm thick



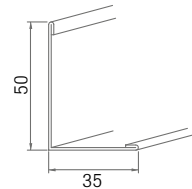
No. 50/19 0.5 mm thick



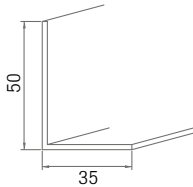
No. 50/22 1.0 mm thick, slotted



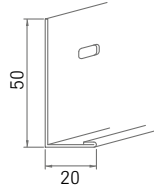
No. 50/25 1.0 mm thick



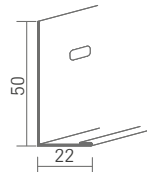
No. 51/1 1.0 mm thick



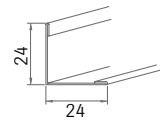
No. 51/02 2.0 mm thick



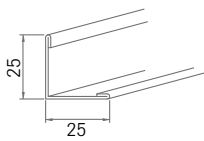
No. 51/20 1.0 mm thick, slotted



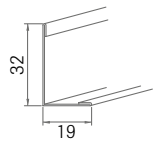
No. 51/22 0.7 mm thick



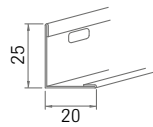
No. 51/24G 0.5 mm thick



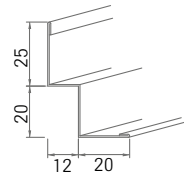
No. 51/25 1.0 mm thick



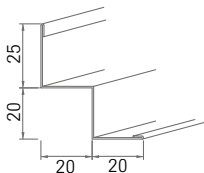
No. 51/32G 0.5 mm thick



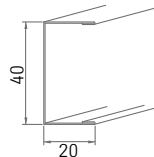
No. 53 0.6 mm thick, slotted



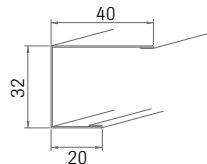
No. 56 0.6 mm thick



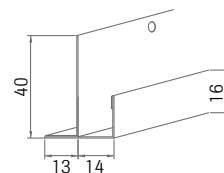
No. 56/20 0.6 mm thick



No. 57 0.5 mm thick



No. 57/10 0.6 mm thick



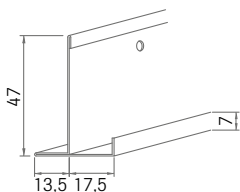
No. 8030/13 for 13 mm tiles
0.5 mm thick

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. 8030/15 for 15 mm tiles
0.6 mm thick



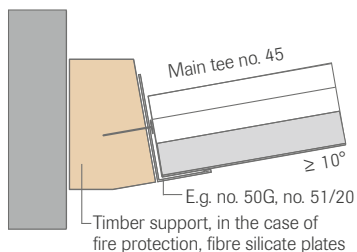
No. 8034

column ring, two part
natural aluminium, other colours on request;
Ø 300 - 1000 mm in 50 mm steps;
height 20 mm, width 20 mm, thickness 1.5 mm
Note: max. tolerance column diameter +- 3 mm; adaptation necessary

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.

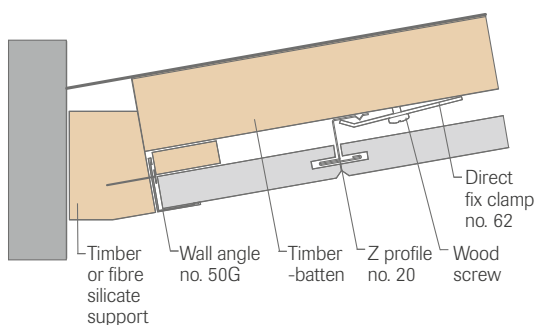


Example for visible systems

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.

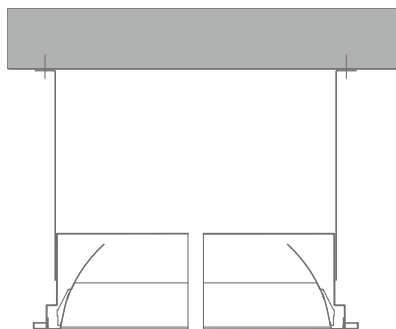
Important basic principles:

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

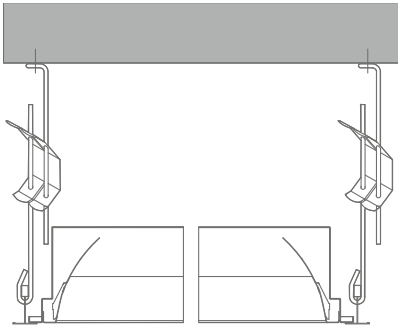
Each additional load which is transferred to a suspended ceiling is to be supported separately. This can be achieved in various ways:

a) Suspend the built-in component directly

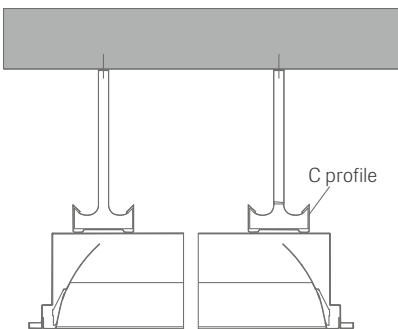


b) The construction of the suspended ceiling is to be provided with additional suspension elements, the minimum being two hangers per built-in component. The additional suspension elements are to be selected according to point 5.2. The load capacity is to be taken into consideration. Also to be considered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

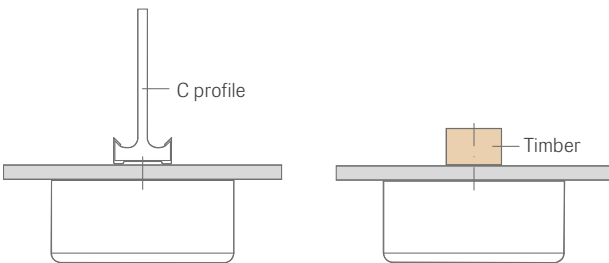
Alternatively, additional loads can be taken up via a reduction of the spacing centres of main tee profiles on the ceiling. Calculations should be made in advance for this method, taking into account the anticipated loads.



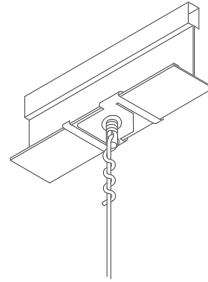
c) A further possibility is the fitting of an ancillary construction in the form of suspended C profiles or timber constructions. Where the ceiling is providing fire resistance please refer to our test reports (see also point 6.1).



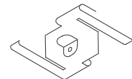
d) In the case of surface-mounted lights, it is advisable to arrange an ancillary construction, similar to that shown under point c).



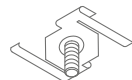
e) To suspend lights under exposed grid, use one of our clamps as below, e.g. no. 95/15, no. 95/30 or no. 95/35 are suitable.



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.



Screw clamp with eye and thread order no. 95/35, white
Load: 0.1 kN with appropriate additionally supported bearer construction



Screw clamp no. 95/15 (for profiles of 15 mm width), white, M 6 x 16 and no. 95/30 (for profiles of 24 mm width), white, M 6 x 16
Load: 0.1 kN with appropriate additionally supported bearer construction

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.

Exceptions to the standard laying can only be released as part of precise specifications (profile type, carrier profile distances, hanger distances, load type) by the manufacturer. In this case contact the service department OWAconsult. Depending on the profile type, the manufacturer provides load tables and load arrangements.

Fire protection: integration of additional components

Where additional components are integrated, the relevant fire protection test certificate should also be consulted. Additional constructions for transferring the loads of integrated- or surfacemounted lighting etc have to be consist of non-flammable materials. Please contact OWAconsult regarding these issues.

5.5.2 Spotlamps, loudspeakers and other fittings

Loads with a weight ≤ 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) pattern no. 8069 should be used to support the load (see OWA-brochure no. 9605). 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.

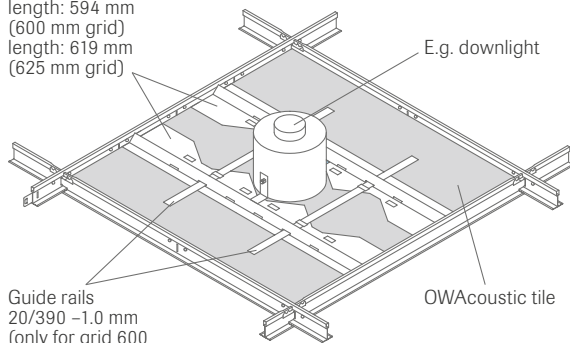
For aperture sizes from 30 mm to 240 mm; load 0.035 kN (approx. 3.5 kg);
The mounting frame for the modules 600 mm and 625 mm has 4 elements: 2 guide rails and 2 tie bars. The mounting frame for the modules 300 mm, 312, 5 mm and 400 mm only has 2 tie bars.

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

Module 600:	Length 594 mm	Order no. 8069/0
Module 625:	Length 619 mm	Order no. 8069/1
Module 300:	Length 294 mm	Order no. 8069/2
Module 312.5:	Length 306 mm	Order no. 8069/3
Module 400:	Length 394 mm	Order no. 8069/4

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

Guide rails 20/390 -1.0 mm (only for grid 600 and 625 mm)



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.
- In the case of covered systems the mounting frame must conduct the load into the existing Z profile or stepped Z profile. In this case the mounting frame must be correspondingly modified by cutting and pressing together the frame profile in the area of the Z profile.
- Finally the ceiling tile, complete with frame is simply laid into the ceiling grid.
- The built-in lamps can now be easily fitted.

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

OWA can supply compatible recessed light fittings to match the ceilings.



OWA-brochure no. 9630 e flush-mounted lamps and OWAlifetime collection price list

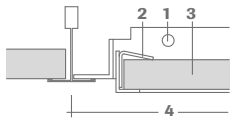
5.6 Inspection hatches

OWAconstruct inspection hatches no. 8032

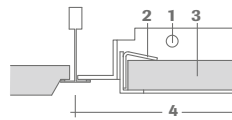
Technical details

Order no.: 8032
 Module size: 625 x 625 mm | 600 x 600 mm
 other sizes on request
 Material: Steel sheet, galvanised
 Visible side: White
 Weight: 2.0 kg

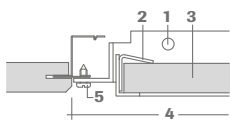
5.6.1 Fitting examples



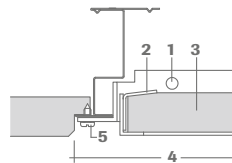
Installation in exposed system S 3, S 3 cliq



Installation in exposed system S 15a cliq



Installation in concealed system S 1



Installation in concealed system S 9a

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

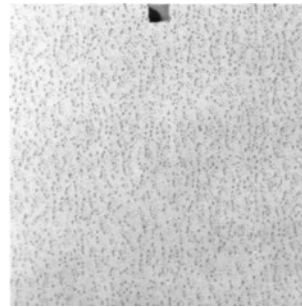
To prevent damage to ceiling tiles at key inspection points, it is advisable to provide inspection hatches in the suspended ceiling. These will allow frequent access without collateral damage. OWA provide compatible hatches developed for such situations.

They are suitable for concealed systems S 1 and S 9a/b and exposed systems S 3 / S 3a, S 3 cliq / S 3a cliq and S 15 cliq / S 15a cliq. 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.

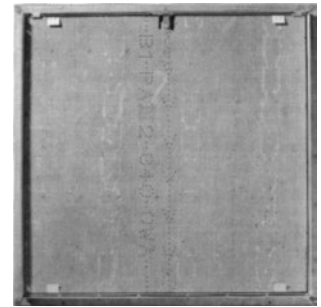
5.6.2 Fitting

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.

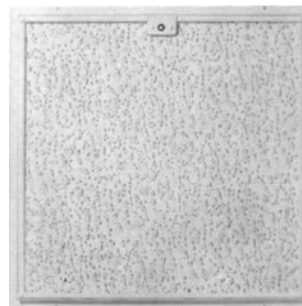
Similarly when installing in exposed systems, the hatch should be independently supported at each corner. In both cases rigid hangers should be used. An access key is supplied with each inspection hatch.



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 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 brochure 'Fire protection box', no. 9905 e).

OWAconstruct/OWAacoustic systems with special performances

6

6.0 OWAconstruct/OWAcoustic systems with special performances

6.1 Suspended ceilings in humid rooms according to EN 13964; table 7 class of exposure C

For humid internal rooms and for ceilings in partially open areas (according to EN 13964), the OWAconstruct System S 3e can be used. It is essential that the basic principles of corrosion protection described in point 4.3 of EN 13964 and the air humidity reference values of OWAcoustic tiles, as under point 3.2, 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.

6.1.1 Tile material

See point 3.2 Properties of OWAcoustic ceiling tiles. As an alternative to using 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 (see point 6.3).

Generally, direct contact with water must be avoided. Direct spray or wetting of the surface, e.g. from condensation, has to be avoided.

Exceptions to this are OWAcoustic OWAlux® tiles, which can be sealed into the grid during installation, also withstand high pressure washing from below (see point 6.5 and 6.6 or OWA-brochure no. 9898 e).

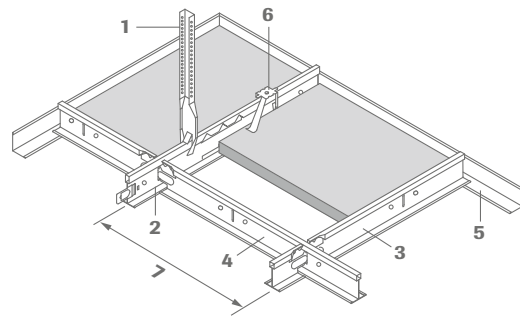
6.1.2 Construction

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 system leaflet and OWAlifetime collection price list.

Example S 3e:



- 1 Nonius hanger no. 17/45KB
- 2 Main tee no. 45KB, L = 3600 mm / 3750 mm
- 3 Cross tee no. 46KB, L = 600 mm / 625 mm
- 4 Cross tee no. 47KB, L = 1200 mm / 1250 mm
- 5 Wall angle no. 50KB
- 6 Hold down clip no. 819
- 7 Module size

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

Similarly if the grid components, no. 45KB, no. 46KB, no. 47KB and no. 50KB are damaged they must be treated with zincor or alu zinc sprays.

6.1.3 Use in indoor swimming pools

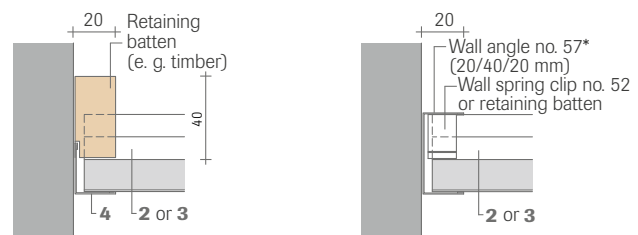
Please contact the OWAconsult team for further details.

6.1.4 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).

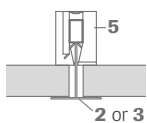
6.1.5 Wall trims for ceilings in open rooms

All perimeter tiles should be installed to resist upward pressure.



* EN 13964 class B

Example of construction (cross-section)

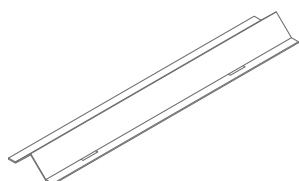
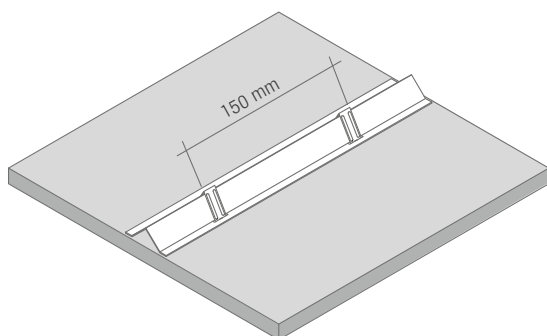


Notes:

When constructing suspended ceilings in open areas, 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 circumstance 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.

6.2 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 (order no. 8040 and 8041) to the back of the OWAcoustic tiles can be used to overcome the problem.



Backing reinforcement no. 8040



Retaining clip no. 8041
material requirement
approx. 7 clips per lineal metre

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 to 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 1250 x 625 mm should be fitted with a reinforcing spline applied to the back of the tile prior to installation.

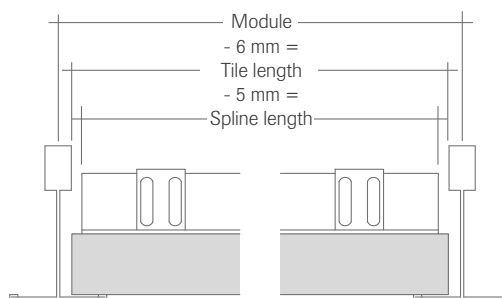
Reinforcing spline profile no. 8040

Length 1240 mm, 25 pcs. per box

Examples of use:

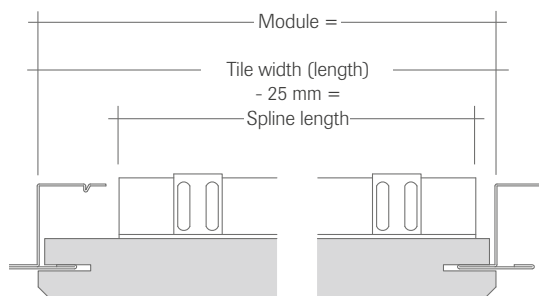
The rear stiffeners must be cut to the required length on site, as shown in the examples below.

Exposed systems S 3, S 3 cliq, S 3a, S 3a cliq, S 15 cliq, S 15a cliq:
 module size 1250 mm x 625 mm
 tile length = module - 6 mm
 = 1250 mm - 6 mm = 1244 mm
 spline length = tile length - 5 mm
 = 1244 mm - 5 mm = 1239 mm



Concealed system S 1:

module size 625 mm x 625 mm
 spline length = 625 mm - 25 mm = 600 mm



6.3 Affixing partitions

Affixing the suspended ceiling S 18 to a self-contained light partition is only possible taking into account DIN 4103 and the partition manufacturer's details regarding the loads to be transferred. The maximum loads of the bandrastrer profile per suspension or angle brace are illustrated in 7.9.6.1. The load values for pressure and shearing force for nonius suspensions on bandrastrer systems may not be exceeded. The basics of the S 18 system sheet, EN 13964 and our DS 9801 manufacturer's specifications must be strictly adhered to in this context.

6.4 Suspended ceilings in hygiene-sensitive areas

6.4.1 OWAlux® aluminium foil faced mineral 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 areas with high hygiene requirements. The OWAlux® tiles are designed for use in system S 3 only.

Cleaning: The cleaning processes for the ceilings vary, depending on design. All OWAlux® surfaces can be vacuumed or dusted. Design OWAlux® | white can also be wiped with a damp OWA sponge.

High-pressure cleaning: Only the non needle-perforated OWAlux® | white and the OWAlux® | silver 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 OWA-brochure no. 9898 e.

6.4.2 OWAcoustic Sanitas® 02 tiles for sterile areas

Sterile areas, such as hospitals, laboratories, etc., have specific requirements. A suspended ceiling must have good fungistatic and bacteriostatic properties on the exposed side. OWAcoustic Sanitas® 02 tiles are equipped with bacteriostatic and fungistatic agents. When using plain surfaces (surface design Plain) the requirement for sterile ceiling areas in hospitals is fulfilled

Note:

Sanitas® 02 (SA02) tiles must be provided with a corresponding print identification on the reverse.

For more details see OWA-brochure no. 9898 e.

6.4.3 OWAcoustic Humancare | Sinfonia

On the front fleece-backed hygiene tiles with high sound absorption and tested microbiocidal equipment (additional information see OWA-brochure no. 9898 e)

Cleaning and disinfection recommendations see brochure no. 9989 e.

6.5 OWAlux® suspended ceilings for clean rooms

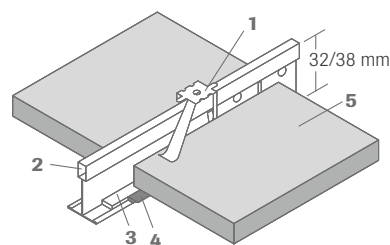
Clean rooms are areas where there are special requirements, such as minimal levels of particle emissions in the air. The US Federal Standard 209 E can be used as a guide. Different clean room classes are categorized here. OWAlux® tiles have clean room class ISO 4 (ISO 14644-1:2015) and can be used in areas from class 10 to class 100,000 in ceiling system S 3. VDI guideline 8023 "Cleanroom technology" recommends, in the case of surface areas of suspended ceilings in clean rooms, that these have an even, flat, abrasion-resistant and low-maintenance design. OWAlux® tiles which have a laminate surface on the front of the tile, fulfill these requirements. Cleanability is along the same lines as point 6.5.1. For more information, see publication no. 9898 e.

- To ensure a good air seal, all grid sections, including the wall 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 no. 8900). The constant over or under pressure may not exceed a maximum of 40 Pa. (see details of point 3.2).

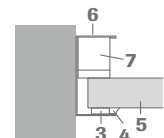
- To improve the seal, the tiles should be positively clipped using retaining clip no. 819 and then be sealed into the suspension system using an acrylic or similar sealant. Any gaps in the construction or between services should be filled or sealed.

Construction details system S 3

(not possible in S 3 cliq)



Perimeter detail



- 1 Hold down clip no. 819
- 2 Main tee or cross tee
- 3 Sealing tape*
- 4 Acrylic sealant (or equivalent)*
- 5 OWAlux®
- 6 Wall angle no. 57 (20/40/20 mm)
- 7 Wall spring clip no. 5210 or lining

* The type of sealant used is dependant on the use of the area. Sealing with acrylic is not always necessary

Comment:

The use of sealing materials may lead to a change in the building material classification in accordance with EN 13501-1.

6.6 Ventilation and air-conditioning ceilings

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

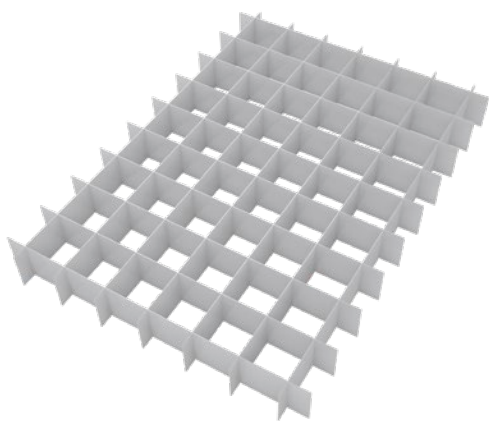
Exposed grid ceilings

- To ensure a good air seal all grid members, including the wall trim, should have a compressible tapes stuck onto the upper, tile bearing surface. This includes any services integrated into the ceiling – Order no. 8900 – (see point 6.6).
- The OWAcoustic tiles should be clipped into the grid using retaining clip no. 819 – approx. 10 clips per m². 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.
- With the exception of the wall 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).

Note:

possible rear ventilation with OWAconstruct light grids

For example, aluminium light grids no. 8063/7 or no. 8063/8



Colour: white or anodized
 grid module: 625 x 625 mm
 comb size (L x W x H): 13 x 13 x 13 mm
 cut-off angle: approx. 45°
 light opening of grid: approx. 85 %

Also refer to point 5.3.9. for other ventilation options for suspended ceilings.

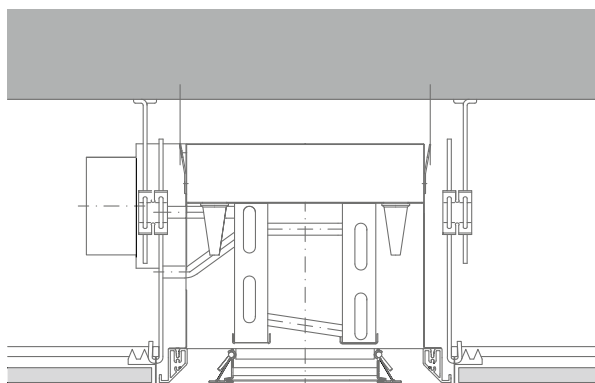
6.7 Installation of integrated climate elements

When integrating climate 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.

Ssection ceiling induction through-flow



Climate elements integrated into OWAcoustic bandrastrer ceiling

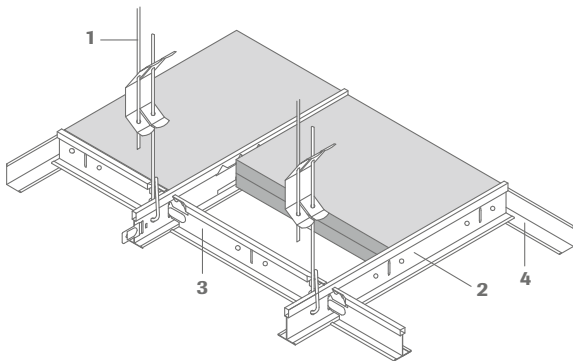


6.8 OWAcoustic Janus – high performance sound reduction tiles

Developed for sound protection, Janus can be installed in the OWA ceiling systems listed below. Two layers of mineral are bonded together with a special adhesive. With a thickness of 33 mm, Janus tiles offer high sound reduction with simultaneous sound absorption.

The weight per unit area is approx. 10.4 kg/m²

OWAcoustic Janus S 3 and S 3 cliq

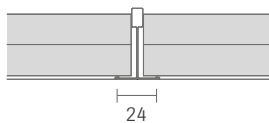


- 1 Suspension hanger
- 2 Main tee
- 3 Cross tee
- 4 Wall angle

Edges continuous:



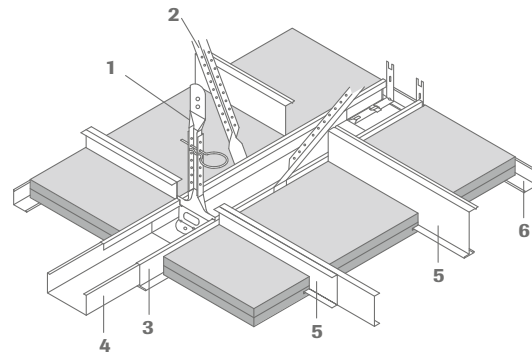
Edge 3 section through main tee profile



Note:

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

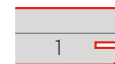


- 1 Rigid hanger
- 2 Cross-bracing
- 3 Bandrastrer profile
- 4 Connector
- 5 Supporting profile
- 6 Wall angle

Front edge:



Longitudinal edge:



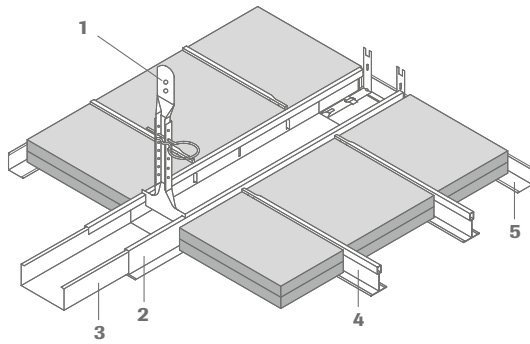
Section through bandrastrer profile



Note:

span widths of profiles.

OWAcoustic Janus S 18d



- 1 Rigid hanger
- 2 Bandraster profile
- 3 Connector
- 4 Supporting profile
- 5 Wall angle

Edges continuous:



Section through bandraster profile



For further information, also see OWA-brochure no. 9558.

Working with OWAconstruct/OWAcoustic ceiling systems

7

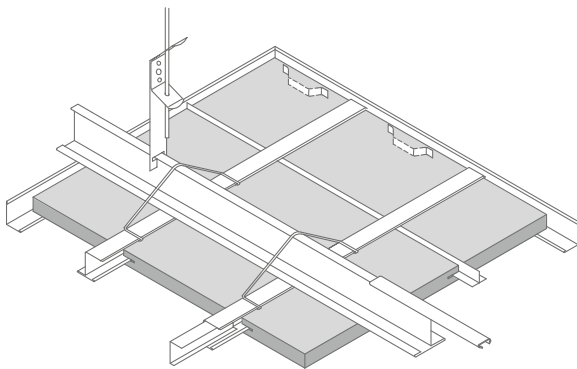
7.0 Working with OWAconstruct/OWAcoustic ceiling systems

7.1 Concealed systems

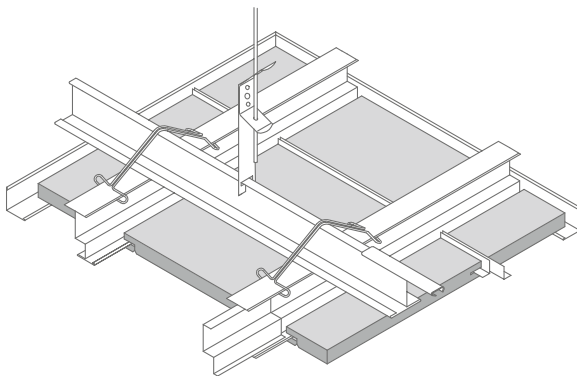
Special features:

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

System S 1, concealed



System S 9a, concealed, demountable



7.1.2 Integrated services

Because of the specific construction details of System S 9a 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.

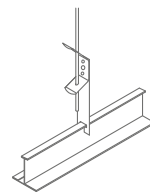
OWA can provide compatible lights for all systems.

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 5.2.1.



No. 12/10

7.1.5 Hanger spacing

The first hanger should be between 400 mm and 1250 mm from a 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.

7.1.6 Additional loads:

see point 3.1 and 5.1.7

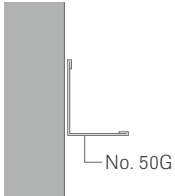
For construction details, also see OWA system leaflets.

7.1.1 Installation note

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

7.1.7 Wall trim (see point 5.3)

The wall 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 wall trim no. 50G (25/20 – 0.5 mm) is fixed to the wall at ≤ 300 mm depending on the load.

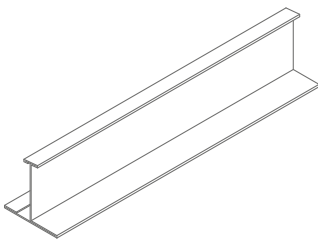


Fire resistant ceilings:

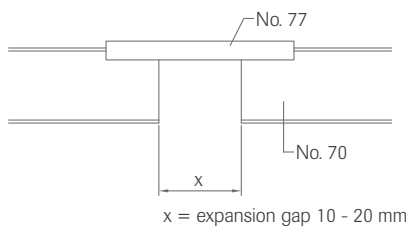
Wall trim fixing should be at ≤ 250 mm or in accordance with the relevant test report. For further technical details see point 5.3.

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 OWAcoustic ceiling.

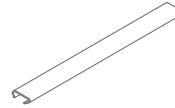


No. 70



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.

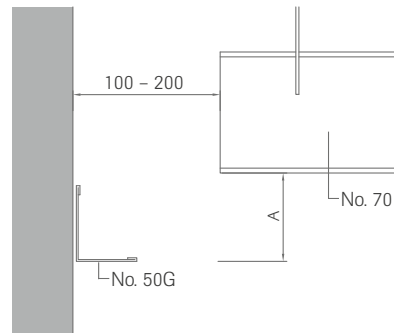


No. 77

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 wall trim and the lower face of the suspension profile no. 70 to allow the installation of the supporting Z profile and OWAcoustic 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 leaflet S 1: 28 mm
- system leaflet S 9a: 65 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

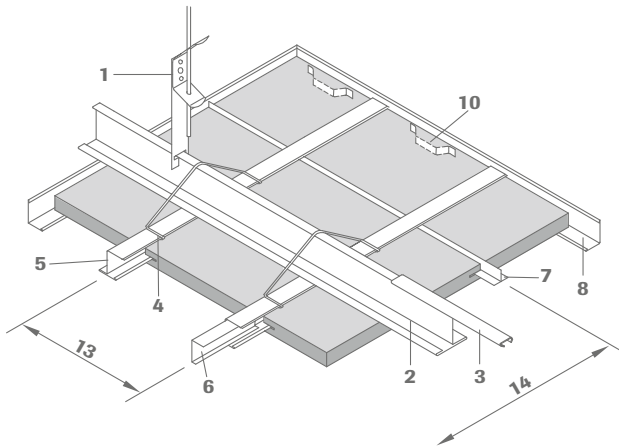
This rule of thumb formula can be used for continuous profile lengths up to approx. 15 m.

7.2 Construction details for OWAcoustic premium – OWAconstruct system S 1

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

For the OWAcoustic 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 m² can be found in system leaflet S 1.

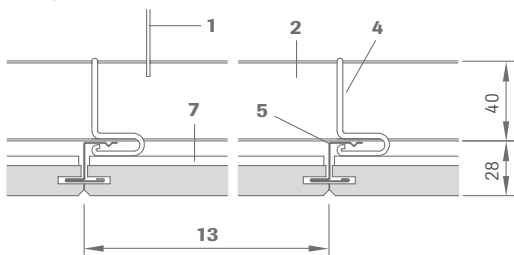


- 1 Hanger no. 12/10
- 2 Primary suspension profile no. 70, distance ≤ 1250 mm
- 3 Connector no. 77
- 4 Spring clip no. 60
- 5 Z profile no. 20, distance ≤ 625 mm
- 6 Connector no. 25
- 7 T profile no. 23
- 8 Wall angle no. 50G
- 10 Wall spring clip no. 52
- 11 Direct fix clamp no. 62
- 12 Timber support, e.g. timber batten, distance ≤ 1250 mm
- 13 Tile width
- 14 Tile length

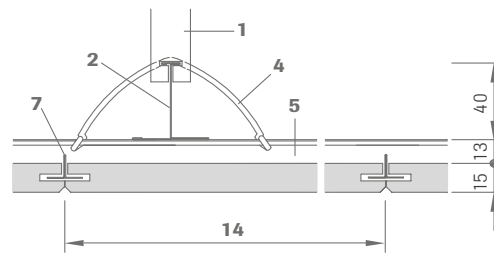
Edge detail:



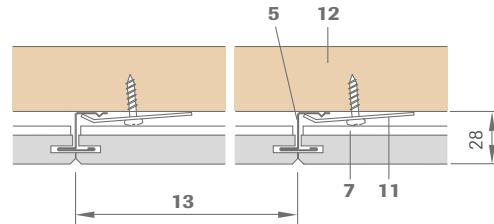
Longitudinal section:



Cross-section:



Direct fixing:



Direct fixing see also point 7.2.3

Minimum suspension height:

minimum suspension height using the standard suspension is between 115 – 140 mm
 direct fixing approx. 28 mm + supporting timber batten

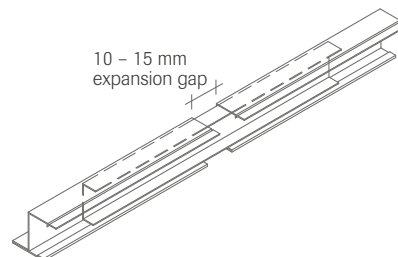
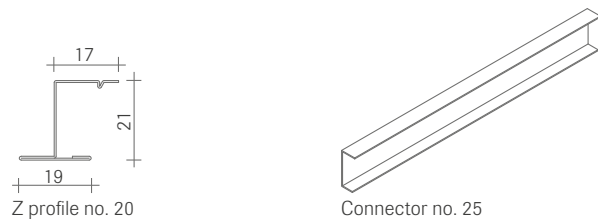
7.2.1 Installation of suspension system and OWAcoustic tiles

7.2.1.1 Galvanised Z profile no. 20

The Z profiles are used to support the grooved OWAcoustic tiles.

The Z profiles are installed parallel and at 90° to the direction of to 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

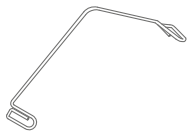


Fire resistant ceilings:

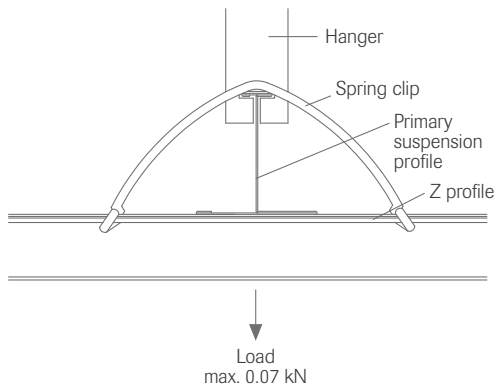
The Z profiles must not be pushed up tight against each other. To allow for expansion in the case of fire a 10 – 15 mm expansion gap must be created at the junction of every Z profile.

7.2.1.2 Spring clip no. 60

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

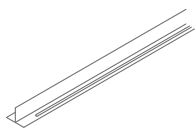


Spring clip no. 60

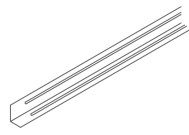


7.2.1.3 T profile no. 23 and L profile no. 24

The edge of the OWAcoustic 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

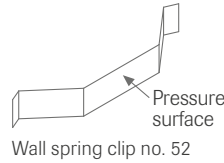
Wall spring clips are installed between the wall trim and cut edge of the perimeter tiles to prevent the tiles joints from opening.

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.

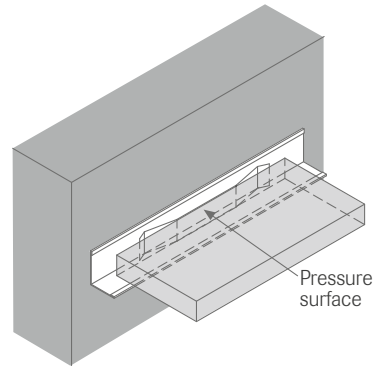
For tile widths of ≥ 600 mm, approx. 1.6 wall spring clips per lineal metre of wall trim. Narrower tiles require 1 wall spring clip per tile.

Note:

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



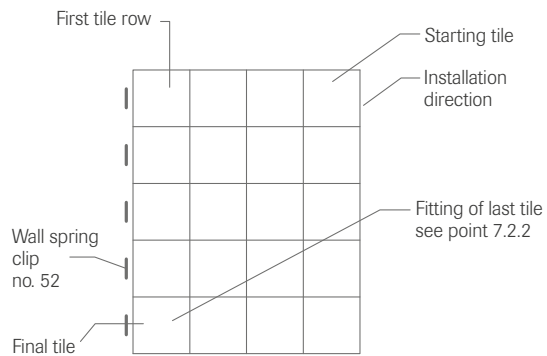
Wall spring clip no. 52



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.

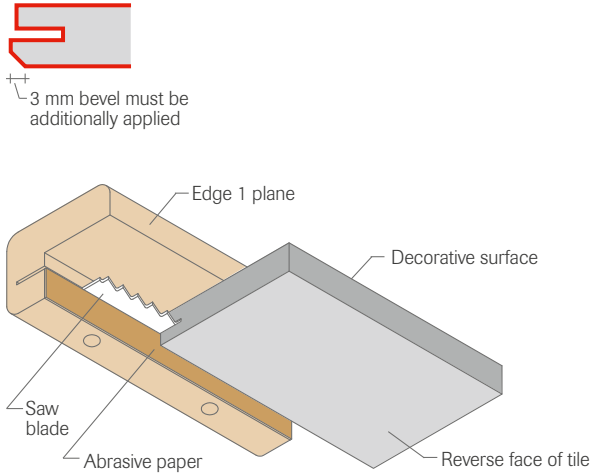
Please note:

One wall spring clip will be installed between the final perimeter tile in the first row and the wall 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 wall trim and the cut edge of all remaining perimeter tiles.



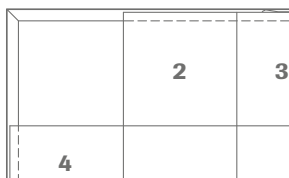
7.2.1.5 Edge 1 plane no. 99/07

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.



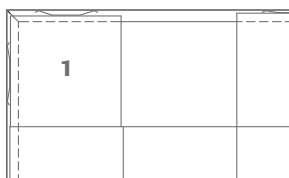
7.2.2 Installation of final tile

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.



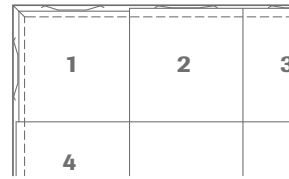
Cut **tile 1** (corner tile) to size. To do this, measure the size of the opening in both directions measuring from the edge of **tile 2** to the wall and the same again from **tile 4**. Cut the tile 10 mm shorter in both directions (Do not assume the opening is square!)

Now take **tile 2** out again and insert **tile 1** with wall spring clips no. 52 placed between the wall 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.

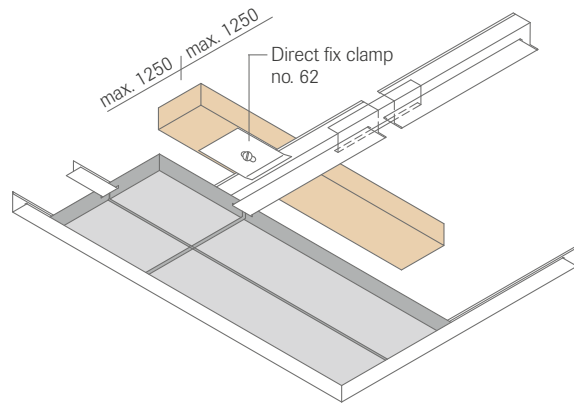
In summary 2 L profiles are fitted between the abutment of **tile 3** and **tile 2** and between **tile 2** and **tile 1**.



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.

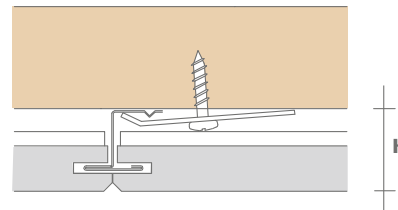
7.2.3 OWAcoustic premium / OWAconstruct system S 1 – direct fixing

In order to reduce suspension height, the OWAcoustic 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.



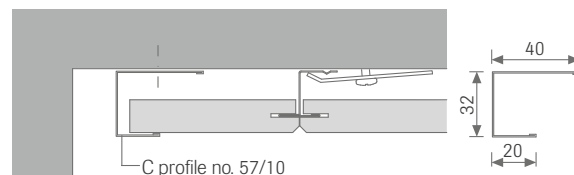
Construction height for direct fixing of Z profiles

Z profile no. 20: H = 28 mm
Z profile no. 22: H = 40 mm



Floating perimeter detail:

no. 57/10 – suitable for system S 1



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 figures 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, OWAcoustic 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).

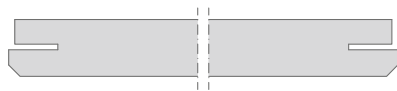


Fig. 1

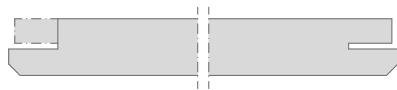


Fig. 2

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

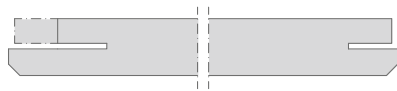


Fig. 3

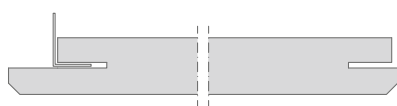


Fig. 4

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 (Fig. 4).

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

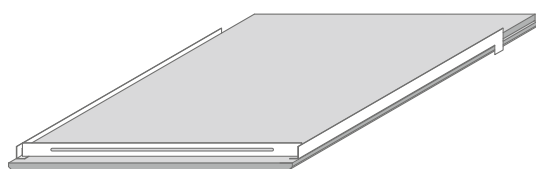


Fig.5

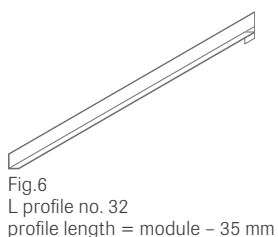


Fig.6

L profile no. 32
profile length = module - 35 mm

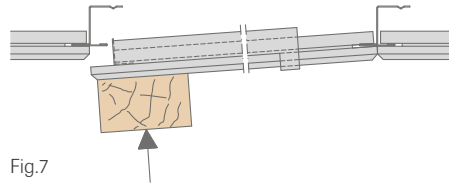


Fig.7

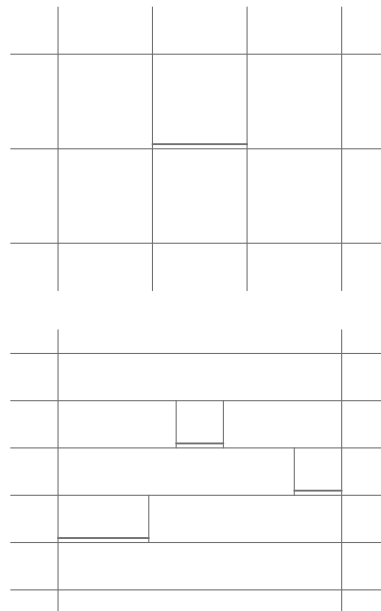
Once prepared the tile is offered up into the suspension system (Fig. 7) and using the tip of the OWA knife, push both L profiles across until they are located onto the Z profile.

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

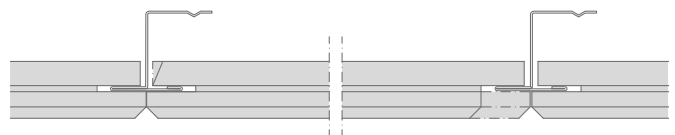
The following elements will be required to create an access hatch / replace a damaged tile:

- 3 pcs. L profile no. 24
- 2 pcs. L profile no. 32
- 1 pcs. OWAcoustic tile

7.2.5 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.

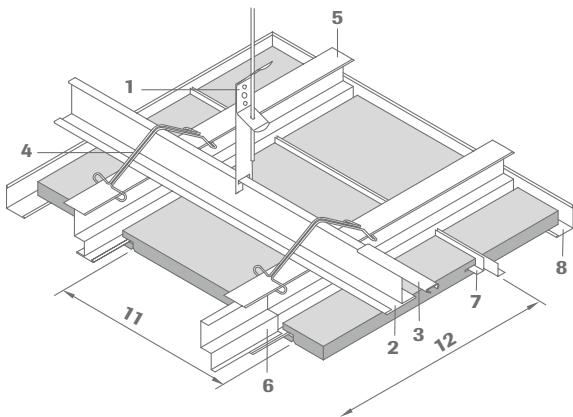
Cut tile edges or visible metal parts are to be redecorated with an identifying colour. Removal of tiles is by gently pushing the tile up in the rebated area and then pulling the tile out from the opposite groove. Below the suspension profiles, the tile is not demountable.



7.3 OWAcoustic 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 m² can be found in system leaflet S 9a/S 9b.

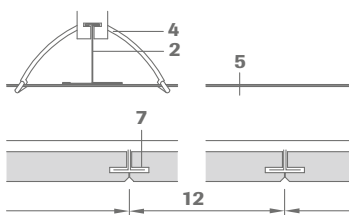


- 1 Hanger no. 12/10, distance ≤ 1250 mm
- 2 Primary suspension profile no. 70, distance ≤ 1250 mm
- 3 Connector no. 77
- 4 Spring clip no. 60 (2 per intersection)
- 5 Stepped Z profile no. 63, distance ≤ 625 mm
- 6 Connector no. 64
- 7 L profile no. 24 (2 per tile)
- 8 Wall trim no. 50G
- 9 Direct fix clamp no. 62 (2 per fixing point)
- 10 Supporting timber, e.g. timber batten, distance ≤ 1250 mm
- 11 Tile width
- 12 Tile length

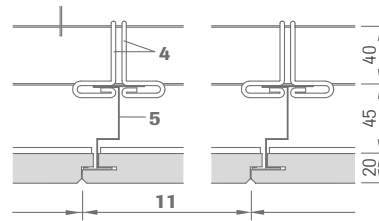
Edge detail:



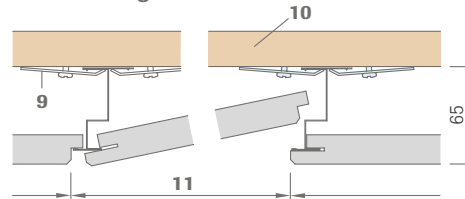
Suspended fitting longitudinal section:



Cross-section:



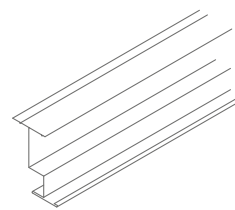
Direct fixing:



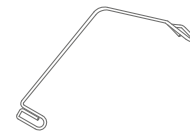
Minimum suspension height:

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

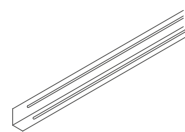
7.3.1 Installation of suspension system and OWAcoustic tiles



Stepped Z profile no. 63



Spring 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 OWAcoustic 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.

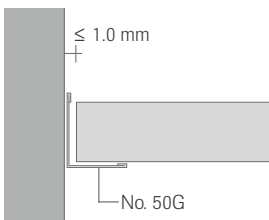
The first continuous row of tiles to be installed is critical to both the appearance and quality of the OWAcoustic ceiling installation. This row of tiles will form the starting point for the ceiling and must be perfectly aligned and cut tight into the wall trim. Similarly when tiling generally it is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

The OWAcoustic 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 Wall trim see point 5.3 and 7.1.10

The standard S 9 installation uses wall trim no. 50G (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.

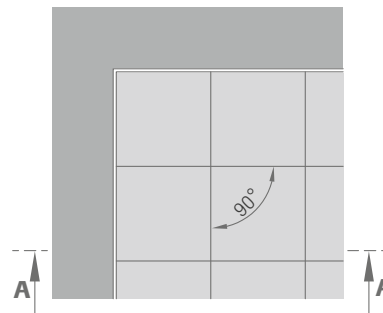
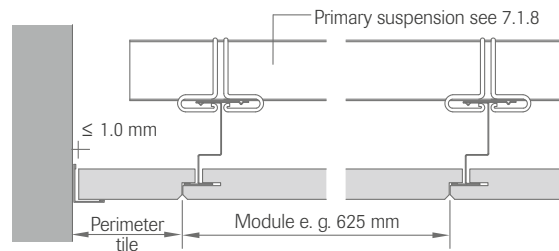


7.3.3 OWAcoustic premium / OWAconstruct system S 9a – in direct fitting

In order to reduce suspension height, the OWAcoustic 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.

7.3.4 System S 9a installation recommendations

Section A-A



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.

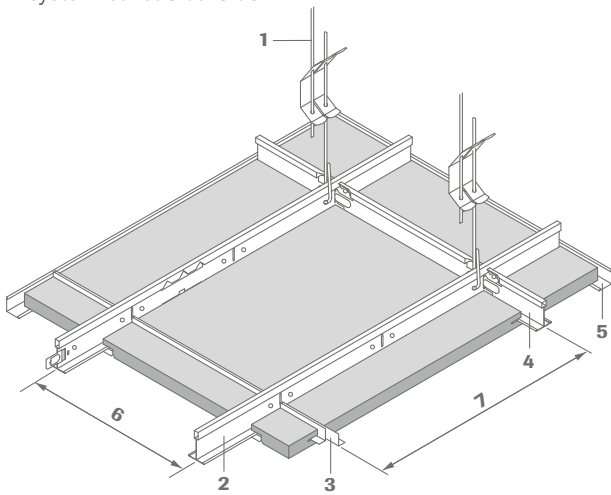
7.4 OWAcoustic premium – OWAconstruct system S 9b, concealed, demountable

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 in-stalled 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. 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 m² can be found in system leaflet S 9a/S 9b.

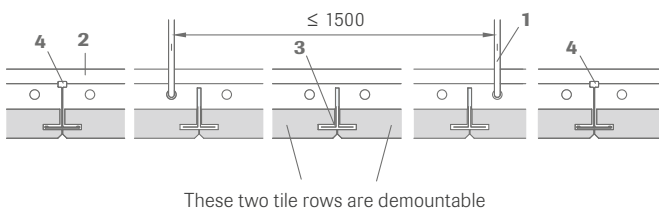


- 1 Hanger no. 12/.../2, distance ≤ 1500 mm
- 2 Main tee no. 45, distance ≤ 625 mm
- 3 L profile no. 24 (two per tile/plank)
- 4 Cross tee no. 46, distance ≤ 2500 mm
- 5 Wall trim no. 50G
- 6 Tile width
- 7 Tile length

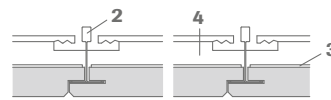
Edge detail:



Longitudinal section:



Cross-section:



Minimum suspension height:

minimum suspension height approx. 130 mm

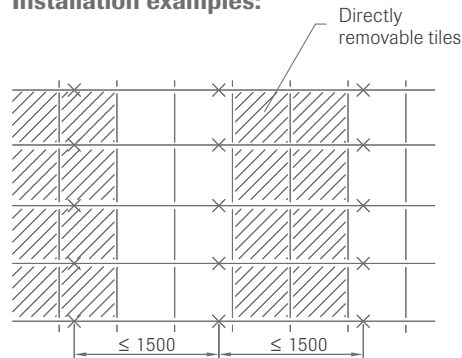
7.4.1 Installation note

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

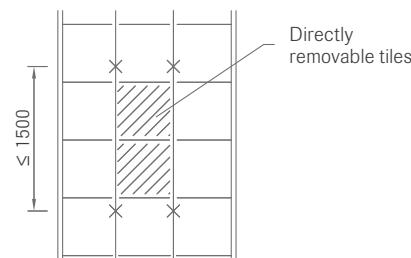
7.4.2 Demountability

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:



Common rooms/installation with standard tiles



Small/narrow rooms/
main tees must be installed lengthwise

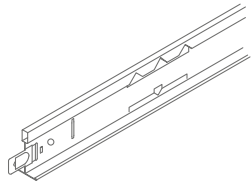
7.4.3 Suspension

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.

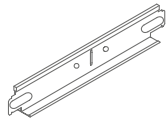
7.4.4 Hanger centres

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.

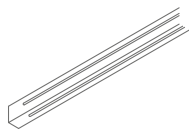
7.4.5 Installation of suspension system and OWAcoustic tiles



Main tee no. 45



Cross tee no. 46



L profile no. 24

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 ≤ 2500 mm) to maintain the correct centres. The tiles next to the cross tees are not demountable (see 7.4.2). The OWAcoustic 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.

The first continuous row of tiles to be installed is critical to both the appearance and quality of the OWAcoustic ceiling installation. This row of tiles will form the starting point for the ceiling and must be perfectly aligned and cut tight into the wall 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.

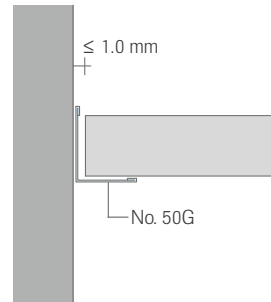
Remark:

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

7.4.6 Wall perimeter

see point 5.3 and 7.1.10

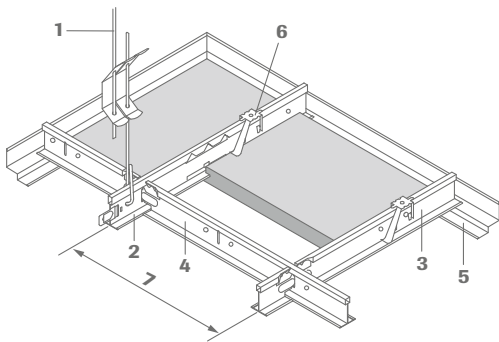
The standard S 9 installation uses wall trim no. 50G (24/19 - 0.5 mm). Perimeter tiles are to be cut to the exact size minus 1.0 mm and do not require wall spring clips.



7.5 OWAcoustic premium –OWAconstruct system S 19 Teccor, concealed demountable, with shadow gap

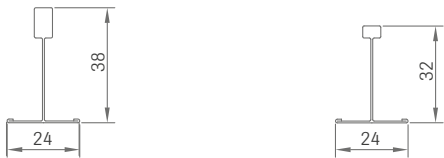
S 19 Teccor combines the design structure of a visible ceiling system with the appearance of a suspended ceiling with shadow gap. Due to the special nature of the ceiling tiles and their special edge configuration, sensible changes to the cover layers are possible (see point 7.5.2). The greatest attention must be paid during mounting to vertical suspension and tension-free and right angular supporting structure.

More information such as dimensions, laying examples or the material requirement per m² can be found in the OWA system leaflet S 19 Teccor.



- 1 Hanger no. 12/.../2
- 2 Main tee no. 45, slotted every 100 or 156.25 mm
- 3 Cross tee no. 46
- 4 Cross tee no. 47
- 5 Stepped wall trim no. 50/19
- 6 Hold down clip no. 819 (to fix the tile in the area of the edge 10c)
- 7 Module size

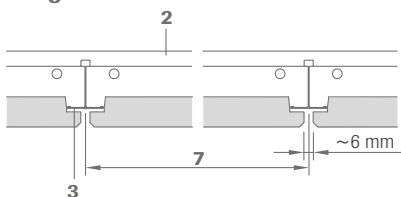
Profile dimensions:



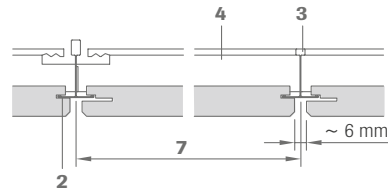
Edge detail:



Longitudinal section:



Cross-section:



Minimum suspension height:

75 – 100 mm (depending on existing base ceiling)

Class of exposure:

class A according to table 7 of EN 13964

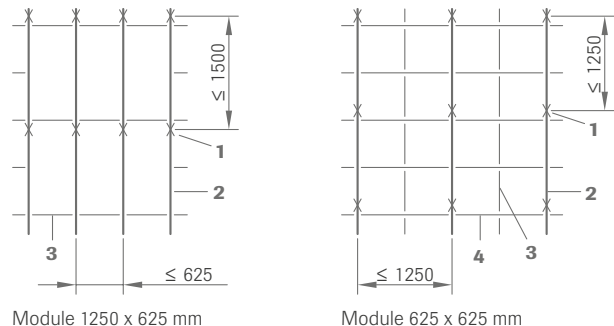
7.5.1 Installation notes

When installing this type of concealed, demountable, ceiling system care must be taken to ensure that main tees are installed level and parallel using vertical hangers and cross tees are installed square. To prevent movement, perimeter tiles should be accurately cut to size and held in place using hold down clips no 819. This type of ceiling can also be susceptible to the effects of sudden changes in air pressure. In areas where this may be a problem tiles should be secured with clip no. 819 to prevent lift or movement. Failure to observe these recommendations may result in difficulty installing/removing tiles, unequal gaps between tiles, a poor visual finish and possible displacement of tiles. To ensure that a high standard of finish is achieved it is important that sufficient time should be allowed in your installation costings.

7.5.2 Demountability

Thanks to the special edge formation and special rigidity of the ceiling tile (unilateral back cut on edge 4c, or special tile edge 10c, without additional rigidity profiles), it is possible to mount and demount by inserting into the back cut and gentle twisting under each "free" tile. Mounting or demounting and later usage must occur with the greatest care.

Installation examples:



7.5.3 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.

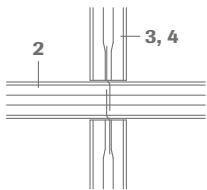


7.5.4 Hanger centres

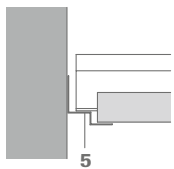
Generally hanger centres should not exceed 1500 mm. They should be installed between 400 mm and 1000 mm from any perimeter depending on the ceiling function. In profile connection areas, additional hangers may be required.

7.5.5 Installation

The cross tees are equipped at both ends with hook connectors. Two solid to glass profiles are hooked into each slot. It must be ensured that the offset tabs are fitted flush and not on the wrong side. The ends of the main tee have click couplings.



7.5.6 Wall perimeter



See also note point 7.5.1

7.6 OWAcoustic premium/smart – OWAconstruct – exposed grid systems, S 3, S 3 cliq, S 3a, S 3a cliq, S 15 cliq, S 15a cliq, 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.

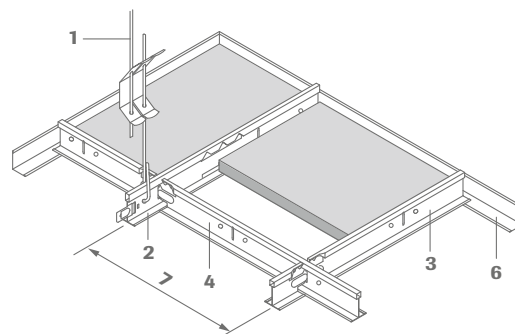
Systems S 3/S 3 cliq and S 15 cliq are similar and use square edge (K 3) tiles. Systems S 3a/S 3a cliq and S 15a cliq are distinguished by a special Contura edge (K 6, K 7, K 15, K 17). All systems utilise the same suspension methods and differ only in the width of the exposed decorative surface. Due to the different tile edge detail used in Systems S 3a/S 3a cliq and S 15a cliq, a stepped wall 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 leaflets.

System S 3	Exposed
System S 3 cliq	Exposed
System S 15 cliq	Exposed
System S 3a	Exposed Contura
System S 3a cliq	Exposed Contura
System S 15a cliq	Exposed Contura

General construction detail of exposed systems

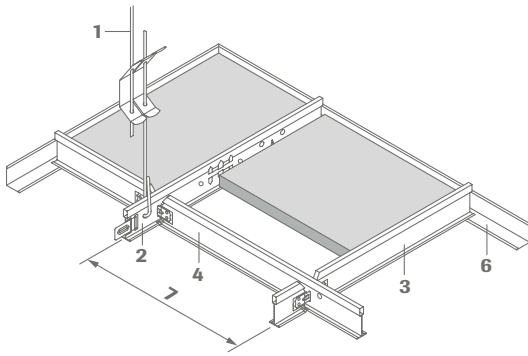
Fig. S 3:



- 1** Hanger no. 12/.../...
- 2** Main tee no. 45, slotted every 100 or 156.25 mm
- 3** Cross tee no. 46
- 4** Cross tee no. 47
- 5** Cross tee no. 48
- 6** Wall trim no. 50G
- 7** Module size

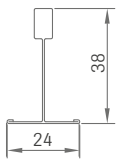


Fig. S 15 cliq:

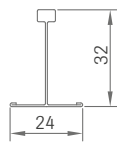


- 1 Hanger no. 12/.../...
- 2 Main tee cliq-15-MR, slotted every 100 or 156.25 mm
- 3 Cross tee cliq-15-CT short
- 4 Cross tee cliq-15-CT long
- 5 Cross tee cliq-15-CT short
- 6 Wall trim no. 50G
- 7 Module size

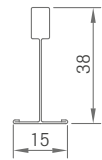
S 3 / S 3a main tee



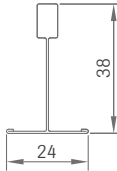
Cross tee



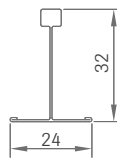
S 15 cliq / S 15a cliq main tee and cross tee



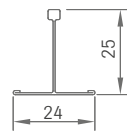
S 3 cliq / S 3a cliq main tee



Cross tee



Cross tee



Edge detail:



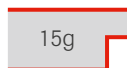
Edge detail OWAcoustic premium Contura



System S 3a / S 3a cliq



System S 15a cliq



System S 15a cliq

Edge detail OWAcoustic smart Contura

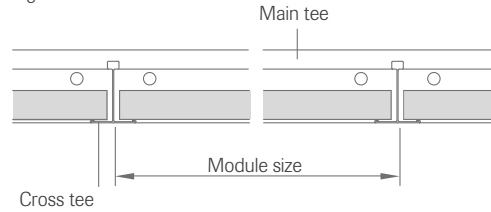


System S 3a / S 3a cliq

System S 3, S 3 cliq and S 15 cliq

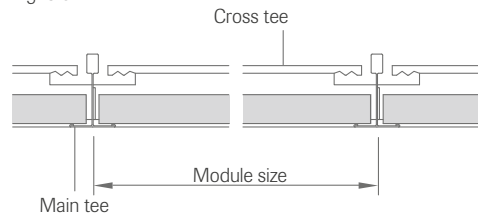
Longitudinal section:

Fig. S 3



Cross-section:

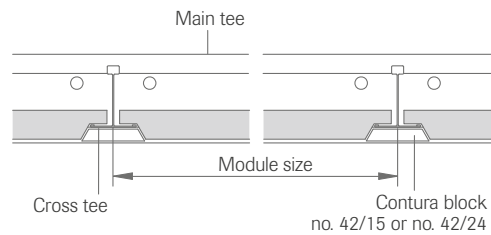
Fig. S 3



System S 3a, S 3a cliq und S 15a cliq

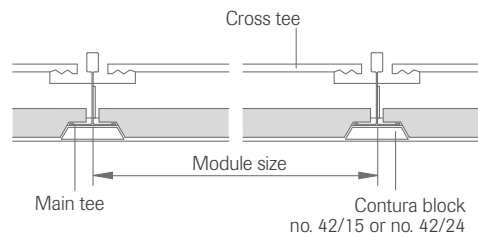
Longitudinal section:

Fig. S 3a



Cross-section:

Fig. S 3a



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.

7

7.6.2 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 OWAlifetime collection price list.

7.6.3 Fixings

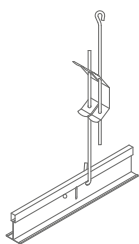
The type of fixing selected should suit the construction of the soffit (or wall). Please see point 5.0. for more details.

7.6.4 Suspension

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 1250 mm from any perimeter depending on the ceiling function. In profile connection areas, additional hangers may be required.



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.

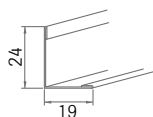
7.6.7 Wall perimeter

see point 5.3

The wall 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 wall trim no. 50G is fixed to the wall at ≤ 300 mm depending on the load.

7.6.7.1 Wall trim for system S 3, S 3 cliq and S 15 cliq

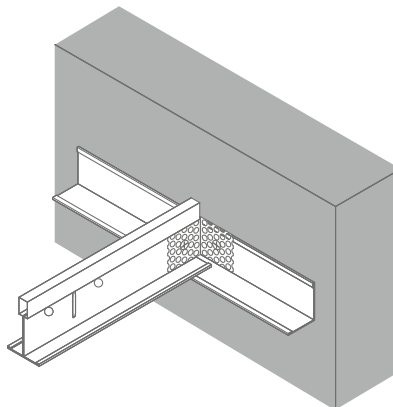
The standard wall trim for these systems is profile no. 50G (24 x 19 x 0.5 mm).



No. 50G 0.5 mm thick

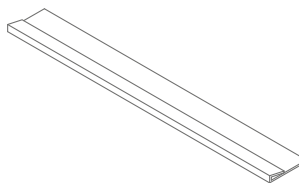
7.6.7.2 Perimeter bracket no. 8017

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



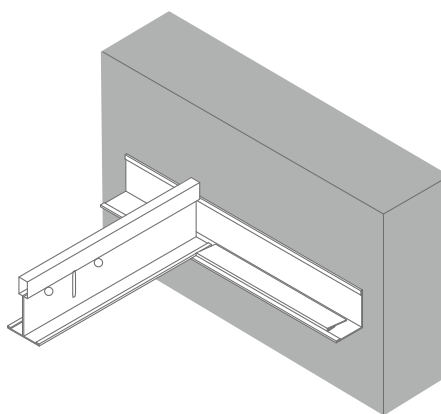
7.6.7.3 Filler strips no. 8060

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



Technical data

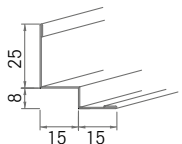
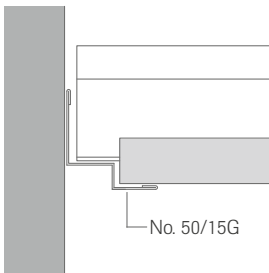
exposed surface: white
 order no.: 8060 for module 625 mm (Length 597 mm)
 order no.: 8060/1 for module 600 mm (Length 572 mm)
 packaging: 200 pcs. per carton



7.6.8 Wall trim for system S 3a, S 3a cliq and S 15a cliq for product line premium – edge 6, edge 15 and edge 15g

The shape of the wall trim no. 50/15G is designed to compliment the standard tiles from the OWAconstruct system S 3a, S 3a cliq and S 15a cliq range.

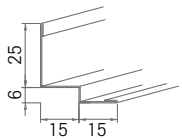
The perimeter tiles are cut square and sit on the bottom flange of the wall trim with the grid section sitting 8 mm higher on the top, 15 mm wide flange of the trim. The stepped trim should be mitred at corner junctions. The tee sections can be secured against lateral movement using perimeter bracket no. 8017 (see point 7.6.7.2).



No. 50/15G 0.5 mm thick

7.6.8.1 Wall trim for system S 3a / S 3a cliq for product line smart – edge 7

Stepped wall trim no. 50/14 is designed to accommodate the OWAcoustic smart contura edge K 7 used in System S 3a / S 15a cliq. 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

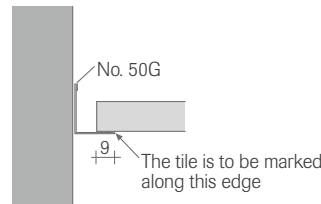
7.6.8.2 Wall perimeter – reforming the Contura edge with the OWA hand tool

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

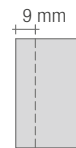


Contura plane no. 99/11

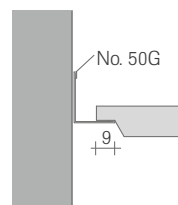
First the perimeter tile is laid onto the wall connection angle.



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



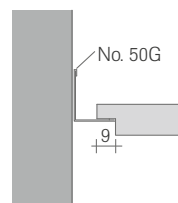
Then, starting from the far cut corner, pull the Contura plane (no. 99/11) along the edge of the board in one single controlled movement, taking care not to break the corner of the board as you finish. Then redecorate the edge by running a piece of OWA-chalk along the reformed rebate. Chalk in one direction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



Wall trim no. 50G

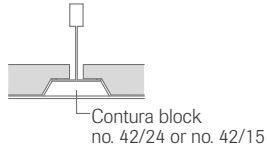
(alternative edge treatment)

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



7.6.8.3 Contura blocks

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



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

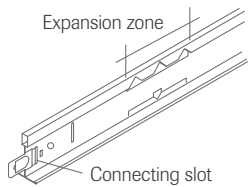
Contura blocks

- no. 42/24 for edge 6
- no. 42/15 for edge 15
- no. 42/7 for edge 7
- no. 42/15K8 for edge 15g



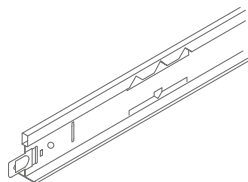
7.6.9 Profiles for exposed systems S 3 and S 3a

The Main tees and cross tees are designed to create a number of standard module sizes e.g. 625 mm and 600 mm. The Main tees are produced with slots at predetermined centres for hanging the butt-jointed cross tees.



Main tee (exposed width 24 mm)

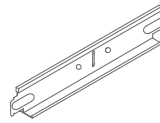
No. 45



For module 625 mm – length 3750 mm: slot spacing 156.25 mm
for module 600 mm – length 3700 mm: slot spacing 100 mm - height 38 mm

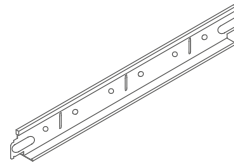
Cross tee profiles S 3 and S 3a
(exposed width 24 mm)

No. 46



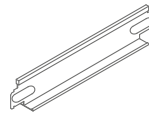
Module size 600 mm or 625 mm – height 32 mm

No. 47



Module size 1200 mm or 1250 mm – height 32 mm

No. 48

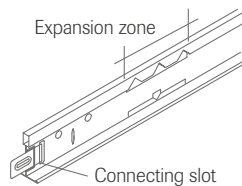


Module size 185 mm, 300 mm, 312.5 mm or 400 mm – height 32 mm

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 7.5.5).

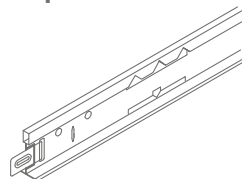
7.6.10 Profiles for exposed systems S 3 cliq and S 3a cliq

The Main tees and cross tees are designed to create a number of standard module sizes e.g. 625 mm and 600 mm. The Main tees are produced with slots at predetermined centres for click-on of the off-set cross tees.



Main tee (exposed width 24 mm)

cliq-24-MR

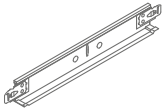


For module 625 mm – length 3750 mm: slot spacing 156.25 mm
for module 600 mm – length 3700 mm: slot spacing 100 mm - height 38 mm



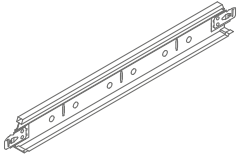
Cross tee profiles S 3 cliq and S 3a cliq
(exposed width 24 mm)

cliq-24-CT short



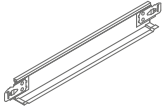
Module size 600 mm or 625 mm – height 25 mm

cliq-24-CT long



Module size 1200 mm or 1250 mm – height 32 mm

cliq-24-CT short

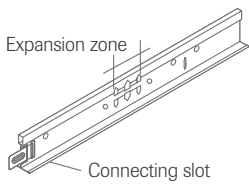


Module size 300 mm, 312.5 mm or 400 mm – height 25 mm

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 7.6.12).

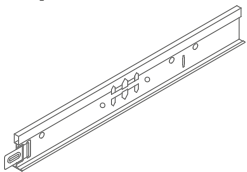
7.6.11 Profiles for exposed systems
S 15 cliq and S 15a cliq

The Main tees and cross tees are designed to create a number of standard module sizes e.g. 625 mm and 600 mm. The Main tees are produced with slots at predetermined centres for click-on of the off-set cross tees.



Main tee (exposed width 15 mm)

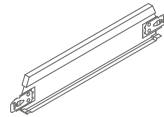
cliq-15-MR



For module 625 mm – Length 3125 mm: slot spacing 156.25 mm
for module 600 mm – Length 3000 mm: slot spacing 100 mm – height 38 mm

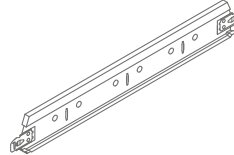
Cross tee profiles S 15 cliq and S 15a cliq
(exposed width 15 mm)

cliq-15-CT short



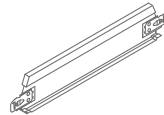
Module size 600 mm or 625 mm – height 38 mm

cliq-15-CT long



Module size 1200 mm or 1250 mm – height 38 mm

cliq-15-CT short



Module size 300 mm, 312.5 mm or 400 mm – height 38 mm

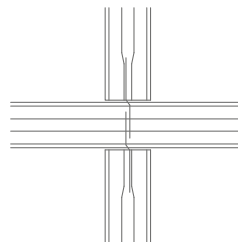
The cross tees form an integral part of the suspension system and interconnect with both the main tees and other cross tees to form the desired module. They are supplied with connecting tabs either end which hook or lock into the main tee/cross tee slot. To maintain the correct alignment when the next cross tee is installed in the slot ensure the tabs are placed on the correct side of the slot (see point 7.6.12).

7.6.12 Intersection carrier profiles – cross tee

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:



7.6.13 Installation example for module size 625 x 625 mm

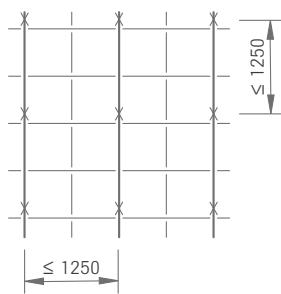
The cost-effective construction shown in Example 1 should not be used where the ceiling is providing any form of structural fire resistance. Where fire resistance is required the ceiling should be installed in accordance with the relevant test report.

This is particularly important where the ceiling includes integrated fittings (also see 5.5).

Hanger distribution:

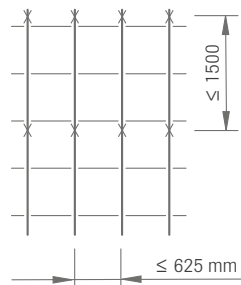
- example 1 approx. 0.7 pc./m²
- example 2 approx. 1.1 pc./m²

Example 1



Carrier profile distance 1250 mm

Example 2



Carrier profile distance 625 mm

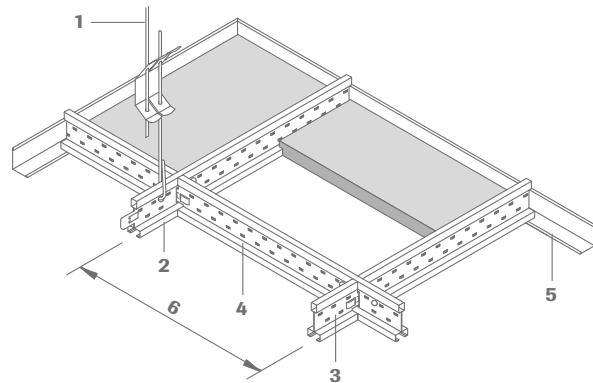
7.7 OWAcoustic premium – OWAconstruct system S 15b OWAline, exposed, demountable

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 7.6. See point 7.7.7 for perimeter detail options.

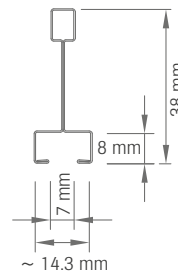
Further information such as dimensions, installation examples, general specification and material requirement per m² can be found in OWAconstruct system leaflet S 15b OWAline.

Fig. S 15b OWAline



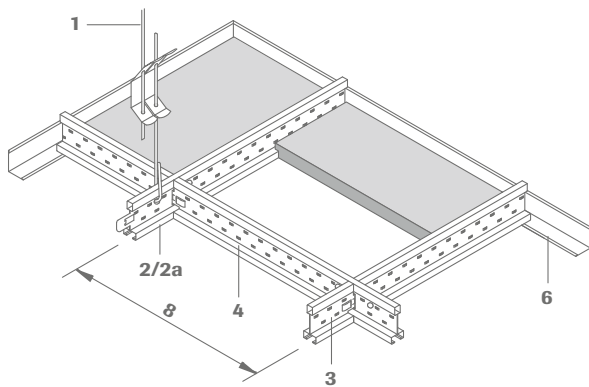
- 1 Hanger no. 12/.../...
- 2 Main tee no. 3500, slotted every 600 or 625 mm
- 3 Cross tee no. 3512, 600 or 625 mm
- 4 Cross tee no. 3514, 1200 or 1250 mm
- 5 Wall trim no. 50G
- 6 Module size

Profile dimensions: no. 3500, 3512 and 3514



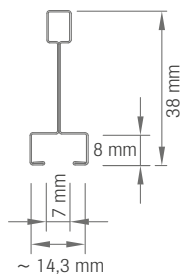
For other information, see OWAconstruct system leaflet S 15b OWAline.

Fig. S 15b OWAline for OWAconsult collection



- 1** Hanger no. 12/.../...
- 2** Main tee no. 3500, slotted every 600 mm
- 2a** Main tee no. 3501, slotted every 1200 mm
- 3** Cross tee no. 3512, 600 mm
- 4** Cross tee no. 3514, 1200 mm
- 5** Cross tee no. 3524, 1200 mm, without central slot
- 6** Wall trim no. 50G
- 7** Wall trim no. 1456 (for GK moulding connector)
- 8** Module size

Profile dimensions:

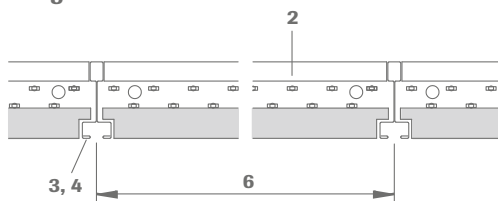


No. 3500, no. 3512, no. 3514, no. 3524
 For other information see OWAconstruct system leaflet S 15b OWAline.

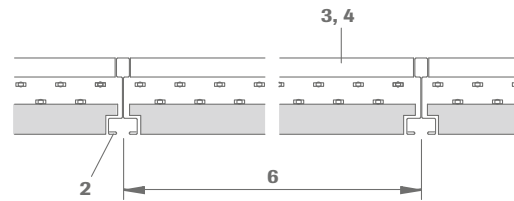
Edge detail OWAacoustic premium

15b

Longitudinal section:



Cross-section:



7.7.1 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.

7.7.2 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 OWAlifetime collection price list. Because of the special profile dimensions, please ensure any integrated are compatibility with System S 15b.

7.7.3 Fixings

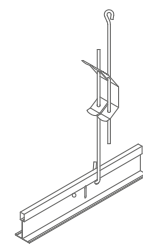
The type of fixings used in all cases should suit the substrate loading and system being used. See point 5.0

7.7.4 Suspension

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

7.7.5 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.



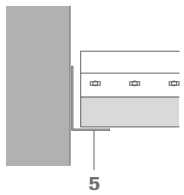
Adjustable hanger with double tension spring no. 12/.../2

7.7.6 Minimum suspension height

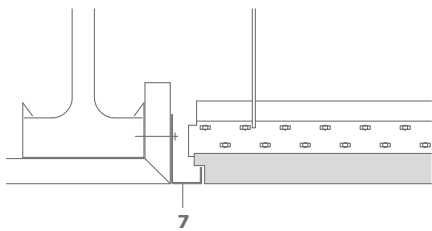
Depending on the existing soffit the minimum practical suspension height is 80 – 100 mm with 120 mm being the minimum recommended suspension height where ease of installation and removal of tiles is important.

7.7.7 Wall perimeter

The wall 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 5.3.1 and 5.3.3) or overlap should be agreed with the client/architect prior to installation. The standard wall trim no. 50G is fixed to the wall at ≤ 300 mm depending on the load.



System S 15b OWAline for OWAconsult collection



7.8 OWAcoustic premium – OWAconstruct clear span systems S 6

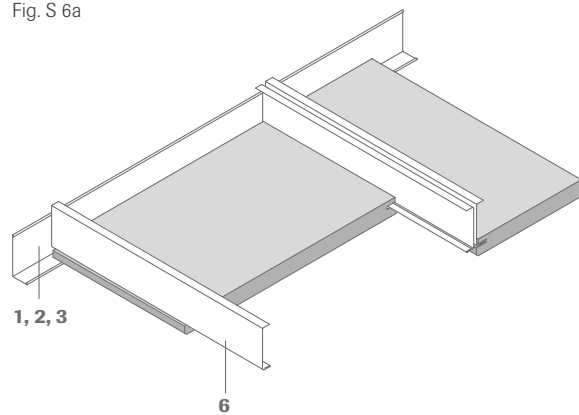
Special features:

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 m² can be found in OWAconstruct system leaflet S 6.

System S 6a	Concealed
System S 6b	Visible Contura
System S 6c	Visible

Fig. S 6a



- 1 Wall trim no. 51/20, 20/50 mm, ~ 1.0 mm thick, pre-drilled
- 2 Wall trim no. 51/1, 35/50 mm, ~ 1.0 mm thick
- 3 Stepped wall trim no. 56/21, 20/20/20/25 mm, ~ 1.0 mm thick
- 4 Stepped wall 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 (double)
- 7 T profile no. 40

(for other profiles, see OWAconstruct system leaflet S 6)

Edges:

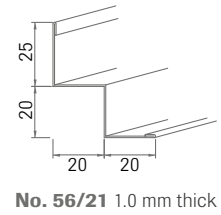
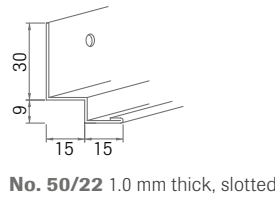
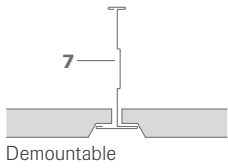
S 6a front edge		S 6b front edge		S 6c front edge	
long edge		long edge		long edge	

Cross-section:

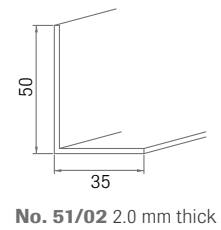
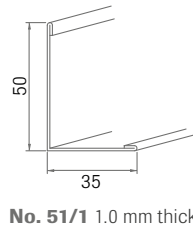
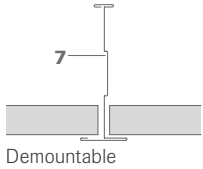
System S 6a – concealed



System S 6b – Contura, exposed tee

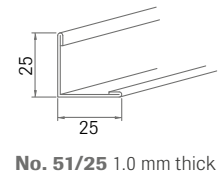
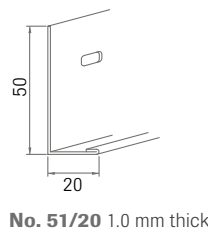


System S 6c – exposed tee



7.8.1 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.



7.8.2 Integrated service elements

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

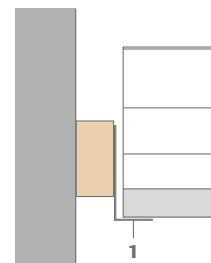
Details of OWAconstruct Modular lights and downlighters can be found in the OWAlifetime collection price list.

Wall perimeter

System S 6a and system S 6c

7.8.3 Wall perimeter – see point 5.3.1

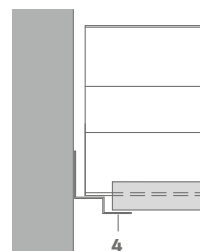
For clear spanning systems wall trims with a thickness of 1.0 mm should be used. The actual thickness will be dependant on the system and anticipated ceiling load: see Table 7.8.5.



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

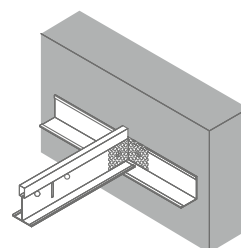
System S 6b

The wall 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 wall trim (see point 7.6.7.3).

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



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 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.

7.8.3.1 Fixings

The type of fixings used in all cases should suit the substrate, loading and system being used. See point 5.1.

7.8.4 Minimum suspension height

for S 6a: 180 – 200 mm
for S 6b and S 6c: 100 – 120 mm

7.8.5 Wall trims – span widths of ceiling tiles

Material thickness of wall profiles:

t = 0.5 mm up to span width 1250 mm
t = 1.0 mm up to span width 2500 mm

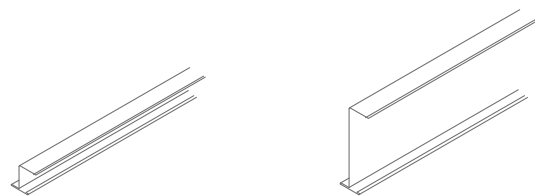
N. B.:

Load bearing capacity is based on the use of 20 mm OWAcoustic premium ceiling tiles.

7.8.6 Clear span profiles

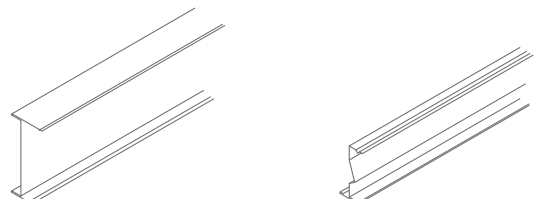
7.8.6.1 Systems S 6a – non demountable

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

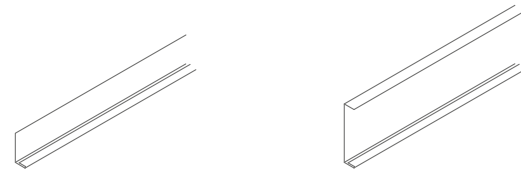


No. 19/10
height 70 mm

No. 19/45
height 45 mm

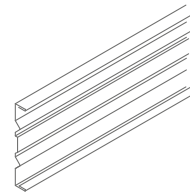
7.8.6.2 System S 6a demountable tiles

Profile width in each case = 10 mm



L profile no. 37
height 25 mm

C profile no. 36
height 50 mm



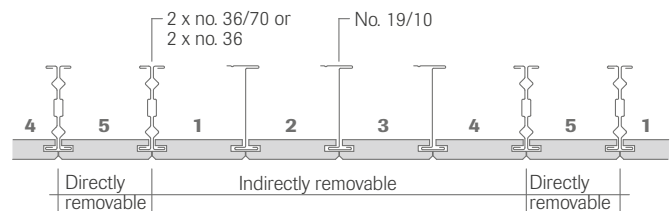
C profile no. 36/70
height 70 mm

Note:

Only the 10 mm wide, double-folded leg of reinforcement profiles no. 36, no. 36/70 and no. 37 are to be inserted into the grooves of the OWAcoustic tiles.

7.8.6.3 System S 6a

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



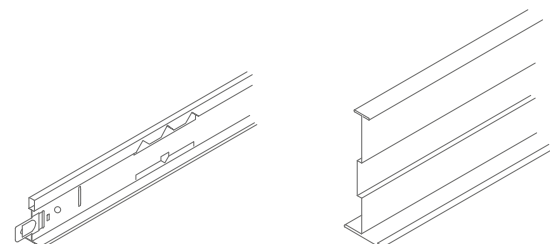
If only C profiles no. 36, no. 36/70 or L profiles no. 37 are used, each tile is removable.

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

7.8.6.4 System S 6b and S 6c – tiles demountable

Profile width in each case is 24 mm



Main tee no. 45 or cliq 24-MR
height 38 mm

Main tee no. 40
height 70 mm

7.8.7 Profile span widths

Maximum span widths OWAcoustic 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
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+ cliq	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	0.6	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.

7.9 OWAcoustic premium -OWAconstruct bandraaster systems S 18

Special features:

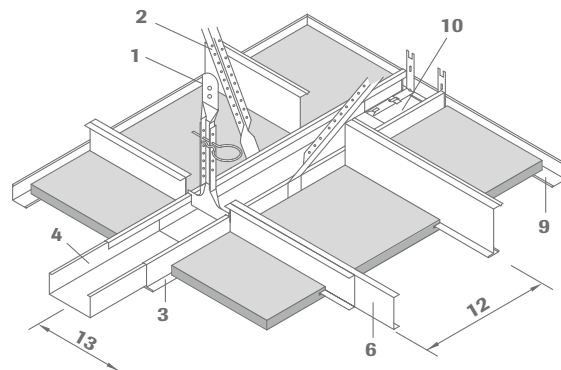
The S 18 bandraaster systems offer a high degree of flexibility and can be installed as modules to suit the building or anticipated use. Partitions can be fixed to the bandraaster profiles, and services, ranging from light fittings through to climate control units, can be integrated into the ceiling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

- System S 18p** Parallel bandraaster ceiling
- System S 18k** Square bandraaster ceiling
- System S 18d** Bandura ceiling

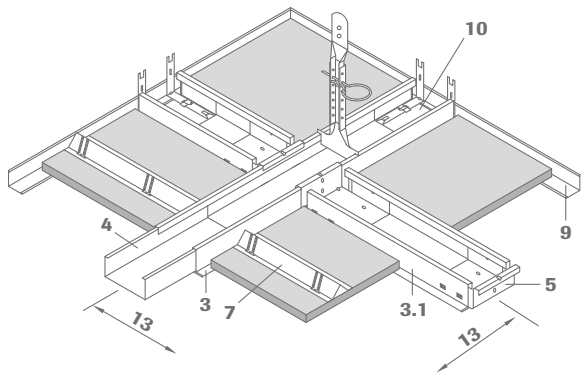
Further information such as dimensions, installation examples and material requirement per m² can be found in system leaflet S 18p/k and S 18d.

7.9.1 System S 18 bandraaster systems

S 18p – parallel bandraaster

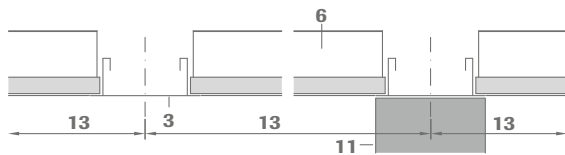


S 18k – square band grid

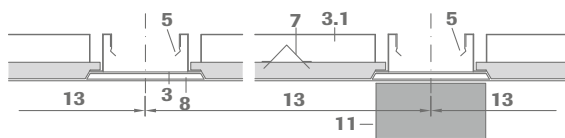


- 1 Nonius hanger no. 79/..., nonius extension no. 16/... and safety pin no. 76
- 2 Lateral reinforcement no. 17/80
- 3 Bandraster profile no. 80/...G
- 3.1 Bandraster profile no. 80/...G cut into sections to fit module onsite
- 4 Connector no. 82/...G
- 5 Cross-connector no. 81/...G
- 6 Tile reinforcement profiles, depending on span width
- 7 Reinforcing spline no. 8040 and securing clips no. 8041
- 8 Contura block no. 42/... (only for edge 6)
- 9 Wall angle no. 51/25 or stepped wall angle no. 50/15G
- 10 Wall anchor no. 75/...G
- 11 Connection option for partition walls
- 12 Reinforcement profile axial spacing
- 13 Bandraster module centres

Longitudinal section:

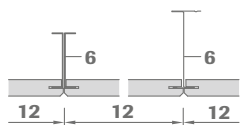


Parallel bandraster

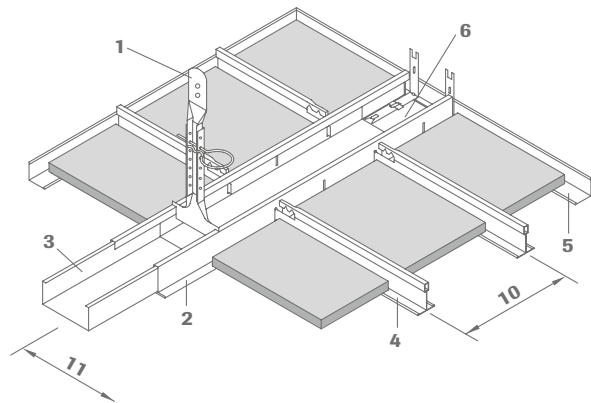


Cross bandraster

Cross-section:

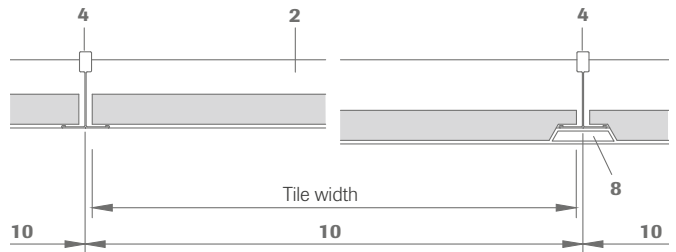


18d – bandura

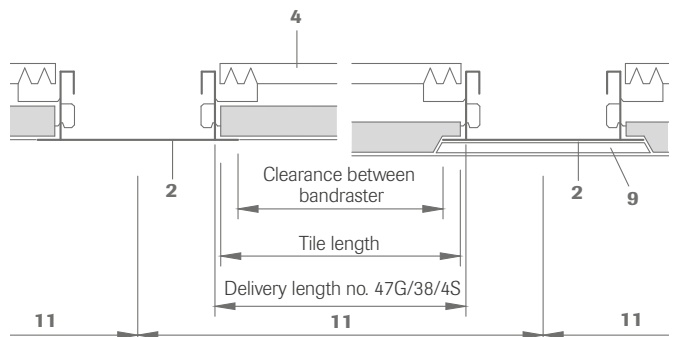


- 1 Nonius hanger no. 79/..., nonius extension no. 16/... and safety pin no. 76
- 2 Bandraster profile no. 80/...G, slotted on both sides
- 3 Connector no. 82/...G
- 4 Cross tee no. 47G/38/4S
- 5 Wall angle no. 51/25 (edge 3)
- 6 Wall anchor no. 75/...G
- 7 Stepped wall angle no. 50/15G (edge 6)
- 8 Contura block no. 42/24 (edge 6)
- 9 Contura block no. 42/100 or no. 42/125 (edge 6)
- 10 Cross tee centres
- 11 Bandraster module centres

Cross-section:



Longitudinal section:



Available edge details for systems S 18p/k and S 18d parallel bandraster

Long edges:



Short edges:



7.9.2 Installation note

Bandraster 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.

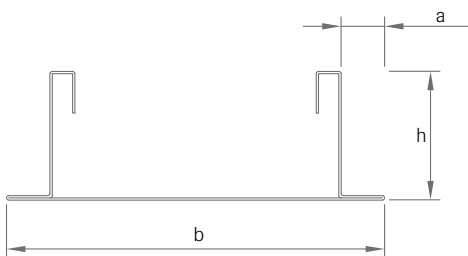
7.9.3 Built-in components – integrated service elements

During the planning and the installation of the ceiling the information shown in point 5.5.1 should be taken into consideration.

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

7.9.4 Bandraster profiles

Profile dimensions:



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

Other lengths are available on request

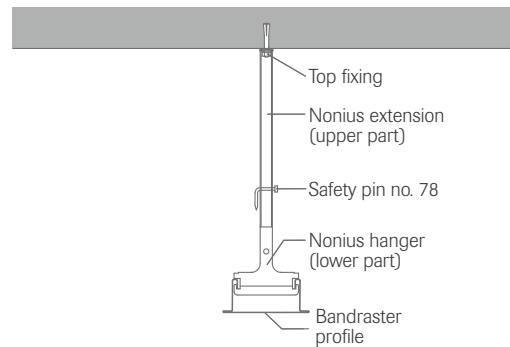
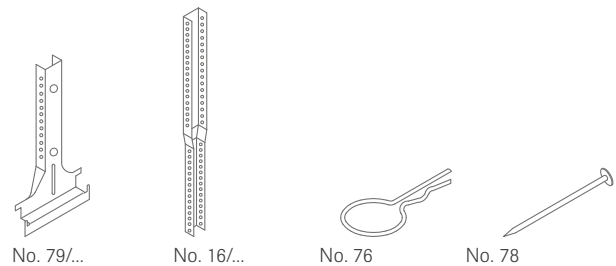
7.9.5 Fixings

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

7.9.6 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.



Fire resistance requirements

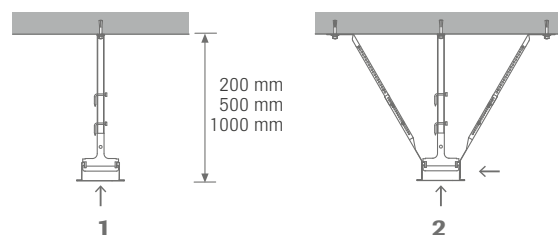
Where there is a fire resistance requirement or a where the hangers may be subject to compression and tension two securing clips or connection nails are required. The ability of the system to resist compression will also be dependant on suspension height.

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

7.9.6.1 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 shear 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

7.9.6.2 Attaching the suspended ceiling to partitions

If suspended ceilings are to be affixed to a partition, the basics of the S 18 system sheet, the EN 13964 or DIN 4103, our brochure no. 9801 e manufacturer's specification and the specifications of manufacturers of adjoining parts (e.g. partition) must be strictly adhered to (see also point 6.4).

7.9.7 Minimum suspension height

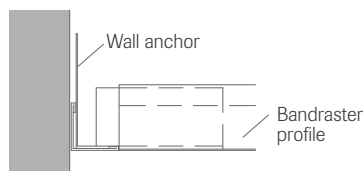
The minimum recommended suspension height is 100 mm (depending on the existing soffit), however for easy removal of tiles, 130 mm is more practical. Where a nonius hanger is used in conjunction with lower section no. 79/... the recommended minimum suspension height is 150 mm.

7.9.8 Wall perimeter

see also point 5.3

The junction with perimeter is formed using one of the wall trims recommended for bandrafter systems that can be found in the systems leaflets or the OWAlifetime collection price list.

The wall 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 ≤ 300 mm using fire resistant fixings suitable for the substrate.



Where the bandrafter profiles butt up to the wall 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 bandrafter profile. To allow for lineal expansion of the bandrafter profiles an expansion gap of 0.5 – 1.0 mm should be allowed.

The bandrafter profiles can also be laid directly on to the wall trim. If installed in this way filler strip no. 8060 (see also point 7.6.7.3) or single-sided self-adhesive sealing tape no. 8900 should be used. When installed the bandrafter profiles should be resistant to displacement.

7.9.9 Support profiles for clear spanning planks spanning installed between parallel bandrafter System S 18p

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

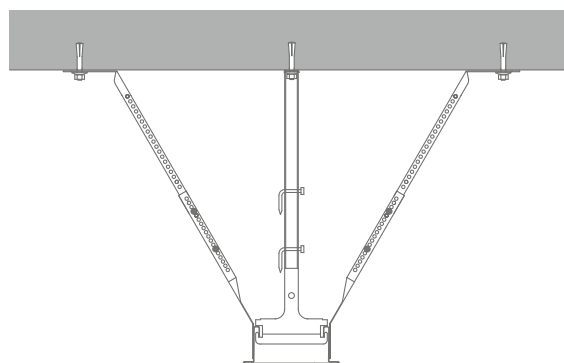
Selection of the appropriate profile dimension can be found in the table shown in 7.8.7.

7.9.10 Horizontal bracing

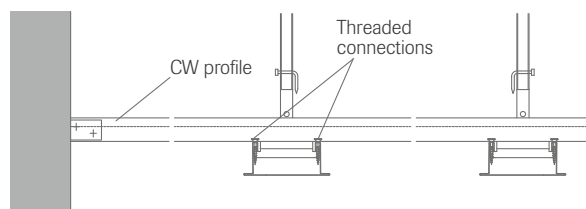
In System S 18p the bandrafter profiles are installed parallel and have no direct connection between them to stabilise the system or prevent lateral movement. It is therefore important to provide angled or horizontal bracing to prevent lateral movement of the bandrafter profiles.

Possible options for bracing:

1. Angled suspension using nonius hangers no. 17/80,



2. Horizontal bracing with conventional CW profiles



7.9.11 Tile dimensions – clear span planks S 18p

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

7.10 OWAcoustic premium – OWAconstruct other systems

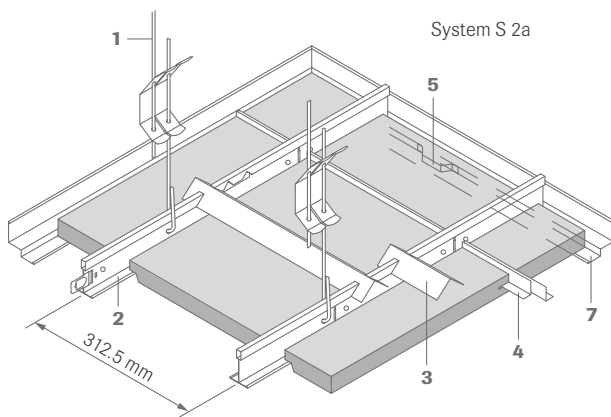
There are many other OWAcoustic ceilings that are based on the existing systems and use the same or similar installation techniques shown in point 7.0 – 7.5

More detailed information on each of the following systems can be found in the individual installation guides.

7.10.1 Semi-concealed systems

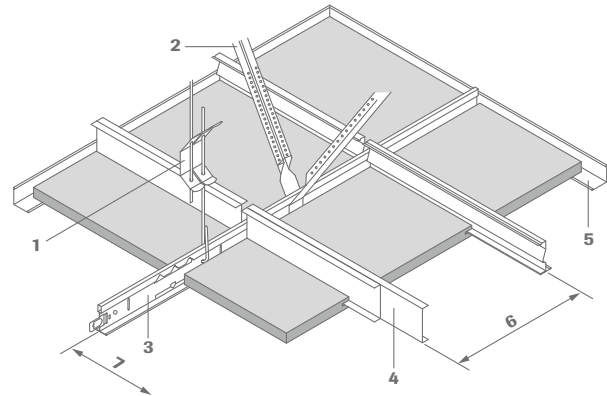
System S 2a semi-concealed, demountable

System S 2b semi-concealed, demountable



- 1 Hanger no. 12/.../...
- 2 Main tee no. 45
- 3 Stabiliser bar no. 43, centres 312.5 mm
- 4 L profile no. 24
- 5 Wall spring clip no. 52
- 6 Contura block no. 42/24
- 7 Stepped wall angle no. 50/15G

System S 2p semi-concealed, demountable



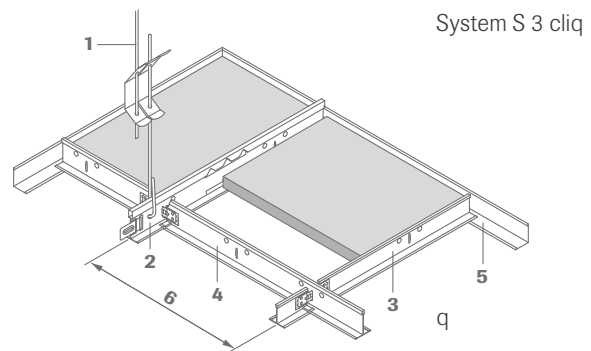
- 1 Hanger no. 12/.../...
- 2 Angle brace no. 17/80; nonius hanger extension no. 16/... and safety pin no. 76 (double) compulsory
- 3 Main tee no. 45
- 4 Tile reinforcement profiles, depending on span width, every 5th profile has to be fixed by a perimeter bracket!
- 5 Wall angle no. 51/25
- 6 Tile support section centres
- 7 Main tee spacing centres, depending on tile length

If the suspension depth is less than 190 mm, the angle brace no. 17/80 has to be shortened on site.

7.10.2 Exposed system

System S 3 cliq, exposed, demountable

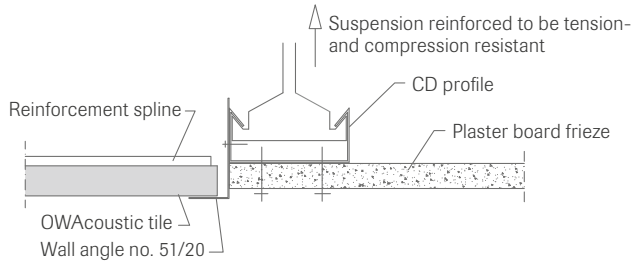
System S 3a cliq, exposed, demountable



- 1 Hanger no. 12/.../...
- 2 OWAconstruct cliq-24-MR main tee, slotted every 100 mm or 156.25 mm
- 3 OWAconstruct cliq-24-CT cross tee, length 600 mm or 625 mm
- 4 OWAconstruct cliq-24-CT cross tee, length 1200 mm or 1250 mm
- 5 Wall angle no. 50G
- 6 Module size

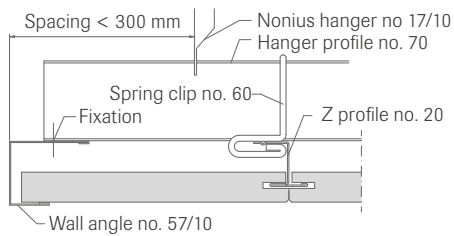
7.11 Examples of application

7.11.1 Connecting OWA ceiling to plaster board frieze:

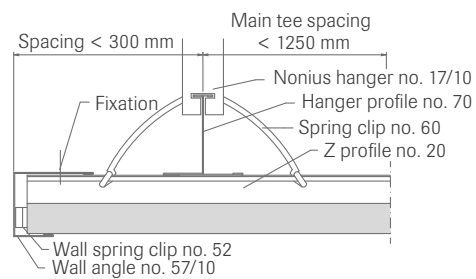


7.11.2 Ceiling mirror with system S 1:

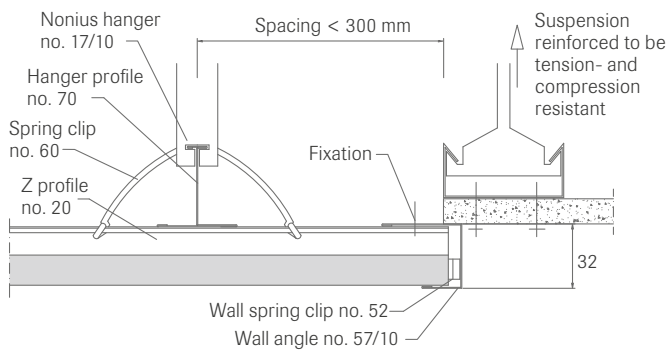
Section:



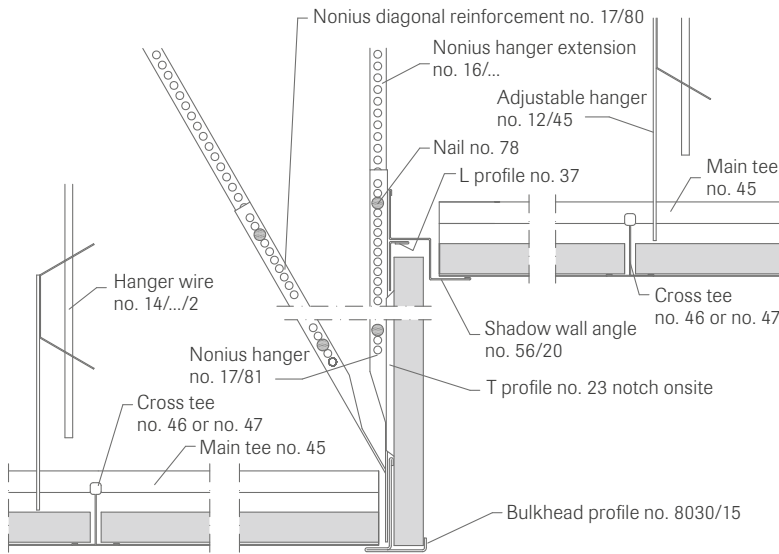
Cross-section:



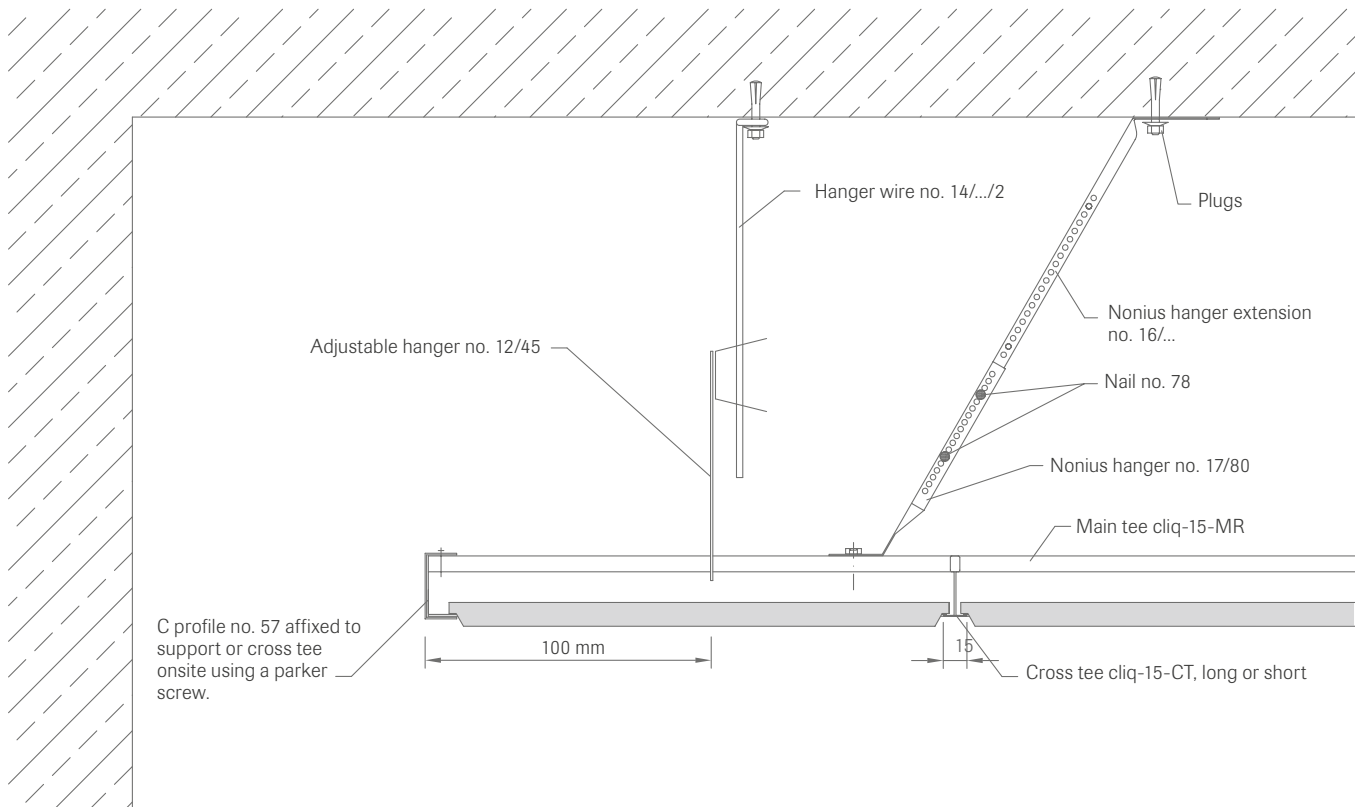
7.11.3 System S 1 with staggered height plaster board frieze:



7.11.4 Height offset with system S 3:

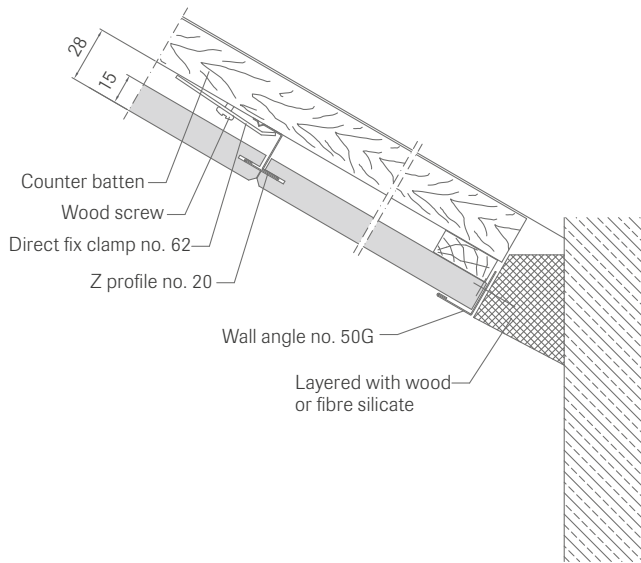


7.11.5 Ceiling mirror with system S 15a cliq:

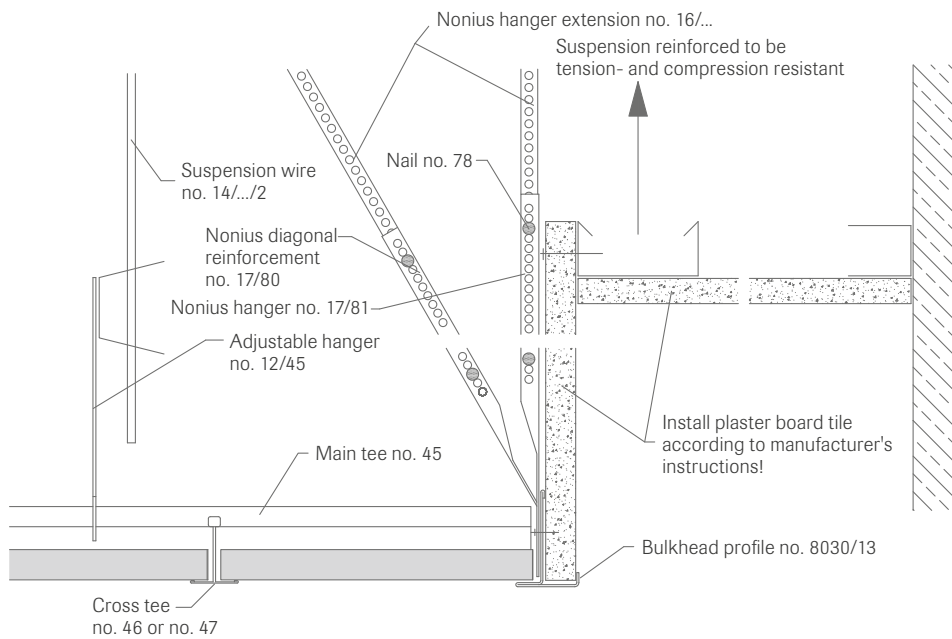


7

7.11.6 System S 1, direct installation into roof pitch:



7.11.7 Offset height with system S 3 with adjoining plaster board frieze



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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:

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The information in this brochure is up-to-date at the time of publication. Errors and mistakes excepted. Please contact our competence team OWAconsult for specific advice. Our experts will be happy to answer your questions under the following contact details: tel: +49 9373 201-444 or e-mail: info@owaconsult.de

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