System C - Exposed Systems

System C 1.1 / C 2.1 / C 3.1:
THERMATEX® HERADESIGN® TOPIQ®

System C 1.2:
THERMATEX® SF Acoustic

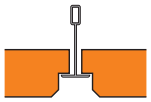
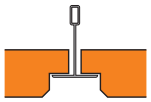
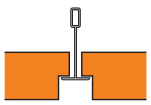
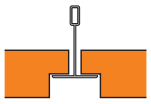
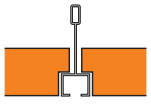
System C 4.1:
MONDENA® lay-in system VT and SK

System C utilises the exposed grid structure as a proactive element in ceiling design. Square edged (SK) ceiling tiles lie flush in the construction, whilst recessed edged (VT) tiles emphasise the ceiling module. This very efficient construction system enables quick and easy installation and removal, easing maintenance work. Numerous international approvals and certificates certify the excellent properties of this ceiling construction, which offers many advantages and creates an exciting ceiling appearance.

Product Range System C 1.1 - THERMATEX®

	Product	Thick-ness [mm]	Weight [kg/m²]	Edge Configurations	Module [mm]
Product programme THERMATEX®	THERMATEX® Plain	15	4.0	SK VT 15/24*	600/600; 625/625; 300/1200; 400/1200-1250* 600/1200; 312.5/1250; 625/1250* * special sizes on request
		19	5.3		
	THERMATEX® Fine Stratos	15	4.0	SK VT 15/24*	600/600; 625/625; 300/1200; 400/1200-1250 600/1200; 312.5/1250; 625/1250* * special sizes on request
		19	5.3		
	THERMATEX® Fine Stratos micro perforated	15	4.0	SK VT 15/24*	600/600; 625/625; 300/1200; 600/1200; 312.5/1250; 625/1250*; * special sizes on request
		19	5.3		
	THERMATEX® Star	15	4.0	SK VT 15/24	600/600; 625/625; 300/1200; 400/1200-1250 600/1200; 312.5/1250; 625/1250
		19	5.3		
	THERMATEX® Laguna	15	4.0	SK VT 15* / VT 24	600/600; 625/625* * special sizes on request
	THERMATEX® Laguna micro perforated	15	4.0	SK VT 15/24	600/600; 625/625
	THERMATEX® Mercure	15	4.0	SK VT 15/24	600/600; 300/1200; 600/1200
		19	5.3		
	THERMATEX® Fine Fresko	15	4.0	SK VT 15/24	600/600; 625/625; 300/1200; 312,5/1250
		19	5.3		
	THERMATEX® Fresko	15	4.0	SK VT 15/24*	600/600; 625/625; 300/1200*; 600/1200; 312,5/1250*; 625/1250*; * special sizes on request
		19	5.3		
	THERMATEX® Alpha	19	3.3	SK VT-S 15/24 VT-S 15F	600/600; 625/625; 600/1200 ; 625/1250
	THERMATEX® Alpha ONE	24	4.0	SK VT-S 15/24 VT-S 15F	600/600; 625/625; 600/1200 ; 625/1250
	THERMATEX® Alpha black /coloured	19	3.0	SK VT-S 15F on request	600/600; 625/625; 600/1200 ; 625/1250
	THERMATEX® Acoustic	19	4.6	SK VT 15/24 VT-S 15 VT-S 15F	600/600; 625/625; 600/1200 ; 625/1250
	THERMATEX® dB Acoustic	24	8.4	SK VT 15/24 VT-S 15F	600/600; 625/625; 600/1200; 625/1250
		30	10.5		
	THERMATEX® Silence	43	10.8	SK	600/600; 625/625
	THERMATEX® Acoustic RL	19	5.4	SK VT-15/24 on request VT-S 15F on request	600/600; 625/625; 600/1200; 625/1250
	THERMATEX® Thermofon	15	2.6	SK VT-S 15/24	600/600; 625/625; 600/1200; 625/1250
	THERMATEX® Aquatec	19	5.2	SK VT-S 15/24	600/600; 625/625
	THERMATEX® Thermaclean S	15	4.0	SK	600/600; 625/625
	THERMATEX® Acoustic Hygena	19	4.6	SK	600/600; 625/625
	THERMATEX® Alpha Hygena	19	3.0	SK VT-S 15/24 VT-S 15F	600/600; 625/625
	THERMATEX® Thermofon Hygena	15	2.6	SK VT-S 15/24	600/600; 625/625
	THERMATEX® Schlicht Hygena	15	4.0	SK VT-S 15/24	600/600; 625/625 600/1200; 625/1250
		19	5.3		
	THERMATEX® Varioline/- Metal /Wood /Motif	19	3.1	SK VT-S 15/24 VT-S 15F	600/600; 625/625; 600/1200; 625/1250
	THERMATEX® Symetra Rg 4-16; Rg 4-10; Rg2,5-10; Rg 4-16/4x4	15	4.0	SK VT 15/24 VT-S 15F	600/600; 625/625
	THERMATEX® Symetra RS 15-20	19	5.3	SK VT 15/24	600/600; 625/625

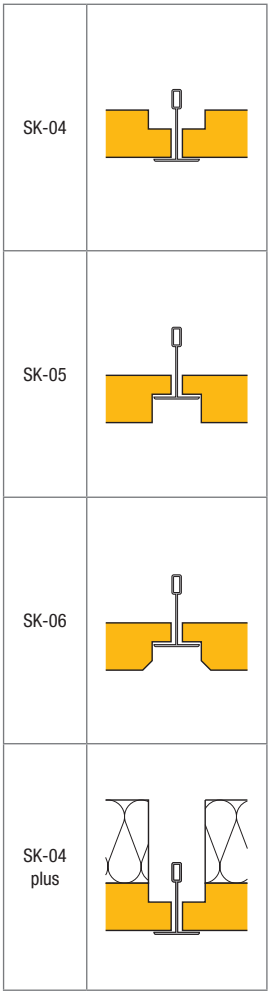
Edge Configurations

SK	
VT 15	
VT 24	
VT-S 15	
VT-S 24	
VT-S 15F	

Product Range System C 2.1 - HERADESIGN®

Product		Thickness [mm]	Weight [kg/m²]	Edge Configurations	Module [mm]
Product programme HERADESIGN®	HERADESIGN® superfine	15	7.8	SK-04	600/600; 625/625
	HERADESIGN® fine	15	8.2		
	HERADESIGN® superfine	25	11.3	SK-04 SK-05 SK-06	600/600; 625/625; 600/1200; 625/1250
		35	15.0		
	HERADESIGN® fine	25	12.4		
		35	16.3		
	HERADESIGN® macro	25	12.4		
	HERADESIGN® micro	25	15.0		
		35	19.0		
	HERADESIGN® plano	25	15.0	SK-04. SK-06	600/600; 600/1200
Product programme A2	HERADESIGN® superfine A2	15	12.0	SK-04	600/600; 625/625
	HERADESIGN® fine A2	15	13.0		
	HERADESIGN® superfine A2	25	18.0	SK-04 SK-05 SK-06	600/600; 600/1200; 625/625; 625/1250
	HERADESIGN® fine A2	25	19.0		
Product programme plus	HERADESIGN® superfine plus	55 (15/40)	11.4	SK-04 plus	600/600
		65 (25/40)	14.9		
	HERADESIGN® fine plus	55 (15/40)	11.8		
		65 (25/40)	16.0		
	HERADESIGN® micro plus	65 (25/40)	18.6		
	HERADESIGN® plano plus	65 (25/40)	18.6		

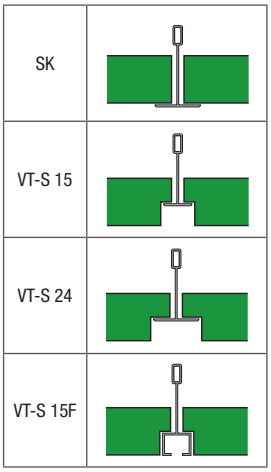
Edge Configurations



Product Range System C 2.1 - TOPIQ®

Product		Thickness [mm]	Weight [kg/m²]	Edge Configurations	Module [mm]
Product programme TOPIQ®	TOPIQ® Efficient	15	2.0	SK VT-S 15/24 VT-S 15F	600/600; 625/625; 600/1200; 625/1250
	TOPIQ® Efficient pro	20	2.6	SK VT-S 15/24 VT-S 15F	600/600; 625/625; 600/1200; 625/1250
	TOPIQ® Efficient pro Hygena	20	2.6	SK VT-S15/24 VT-S 15F	600/600; 625/625; 600/1200; 625/1250

Edge Configurations



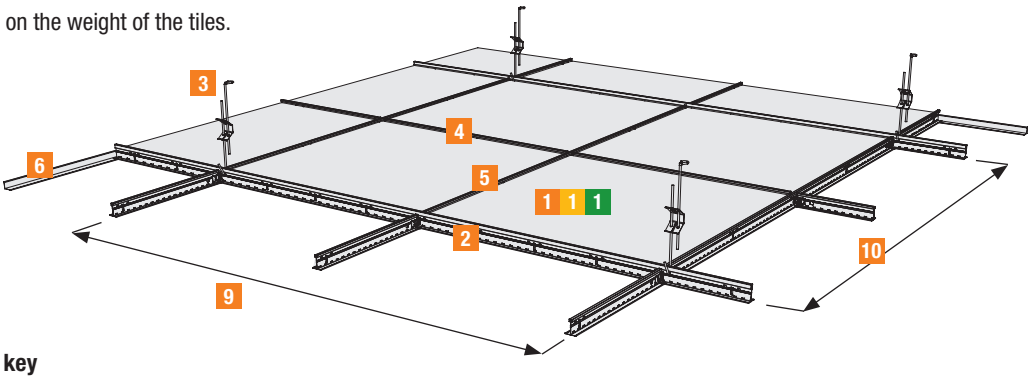
The following installation guidelines for lay-in /system C suspended ceilings do not include fire rated applications. For fire rated applications, appropriate certificates and guidelines should be adhered to. Only approved suspended ceilings can be used for fire rated applications and no changes can be made to the tested construction.

Corrosion protection must be provided to all metal components in external applications and applications with an increased risk of exposure.

System C 1.1 - THERMATEX® / C 2.1 - HERADESIGN® / C 3.1 - TOPIQ®

Main runner centres 1200/1250 mm

The layout used depends on the weight of the tiles.



Material requirements/ key

The quantities and installation times stated are for guideline only.
They do not allow for waste or project specific scenarios.

Product description		Unit	Module mm / requirement for every m² ceiling									
			600 x 600	625 x 625	600 x 1200	625 x 1250	300 x 1200	312.5 x 1250	300 x 1800	300 x 2500	400 x 1200	400 x 2500
AMF THERMATEX® mineral tiles	1	Pcs.	2.78	2.56	1.39	1.28	2.78	2.56	1.86	1.34	2.09	1.00
HERADESIGN® wood wool tiles	1	Pcs.	2.78	2.56	1.39	1.28						
AMF TOPIQ	1	Pcs.	2.78	2.56	1.39	1.28						
T-main runner T24/38 - 3750	2	lin. m		0.80		0.80		0.80		3.34		2.50
T-main runner T24/38 - 3600	2	lin. m	0.84		0.84		0.84		3.34		0.84	
Quick hanger	3	Pcs.	0.67	0.67	0.67	0.67	0.67	0.67	1.85	1.85	0.67	1.67
T-Cross profile 300/312,5		lin. m							0.56	0.40		
T-Cross profile 400		lin. m										0.40
T-Cross profile 600/625	4	lin. m	0.84	0.80								
T-Cross profile 1200/1250	5	lin. m	1.67	1.60	1.67	1.60	3.34	3.20			2.50	
Hold down clip DFK (optional)		Pcs.	5.56	5.12	2.78	2.56	5.56	5.12	3.70	2.67	4.16	2.00
L-wall angle RW/RWU metal	6	lin. m	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Perimeter wedge RF metal		Pcs.	1.20	1.20	1.20	1.20	1.20	1.20				
Hanger centre	9	m	1.25	1.20	1.25	1.20	1.25	1.20	1.80	1.80	1.25	1.50
Main runner centres	10	m	1.20	1.25	1.20	1.25	1.20	1.25	0.30	0.30	1.20	0.40
Perimeter trim fixing centres		m	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Installation time		min	25	25	23	23	33	33	33	33	33	33

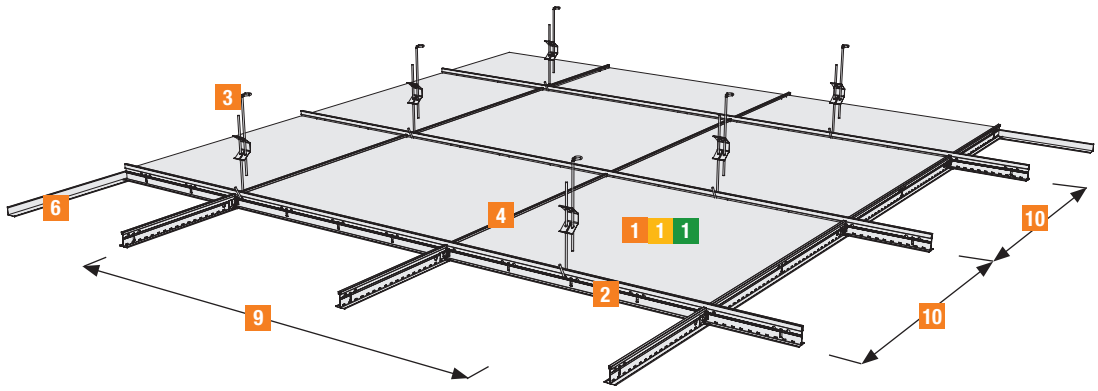
Grid structure T24/38 grid construction, 1.5 kg/m² including hangers.

Note

Not all surface/thickness/edge combinations are possible. Please refer to the price list for the availability of stock items and minimum quantities. To enable easy installation of the THERMATEX® ceiling tiles (thickness 15 mm to 19 mm) a minimum void depth of 150 mm is required. For installation of thicker tiles (THERMATEX® dB Acoustic, THERMATEX® Silence as well as HERADESIGN® in 24 mm to 35 mm) we recommend increasing this correspondingly.

Main runner centres 600/625 mm

The layout used depends on the weight of the tiles.



Material requirements/ key

The quantities and installation times stated are for guideline only.
They do not allow for waste or project specific scenarios.

Product description		Unit	Module mm / requirement for every m² ceiling			
			600 x 600	625 x 625	600 x 1200	625 x 1250
AMF THERMATEX® mineral tiles	1	Pcs.	2.78	2.56	1.39	1.28
HERADESIGN® wood wool tiles	1	Pcs.	2.78	2.56	1.39	1.28
AMF TOPIQ	1	Pcs.	2.78	2.56	1.39	1.28
T-main runner T24/38 - 3750	2	lin. m		1.60		1.60
T-main runner T24/38 - 3600	2	lin. m	1.67		1.67	
Quick hanger	3	Pcs.	1.85	1.78	1.85	1.78
T-Cross profile 600/625	4	lin. m	1.67	1.60	0.84	0.80
Hold down clip DFK (optional)		Pcs.	5.56	5.12	2.78	2.56
L-wall angle RW	6	lin. m	0.60	0.60	0.60	0.60
Hanger centre	9	m	0.90	0.90	0.90	0.90
Main runner centres	10	m	0.60	0.63	0.60	0.63
Perimeter trim fixing centres		m	0.40	0.40	0.40	0.40
Installation time		min	30	30	28	28

Grid structure T24/38 grid construction, 1.5 kg/m² including hangers.

Note

Not all surface/thickness/edge combinations are possible. Please refer to the price list for the availability of stock items and minimum quantities. To enable easy installation of the THERMATEX® ceiling tiles (thickness 15 mm to 19 mm) a minimum void depth of 150 mm is required. For installation of thicker tiles (THERMATEX® dB Acoustic, THERMATEX® Silence as well as HERADESIGN® in 24 mm to 35 mm) we recommend increasing this correspondingly.

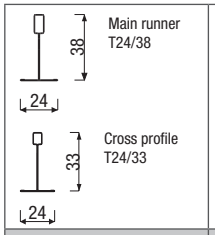
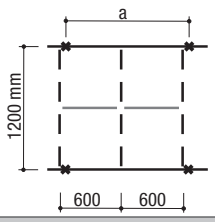
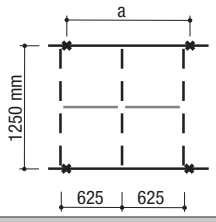
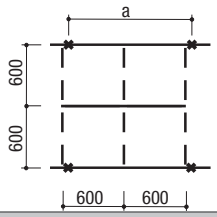
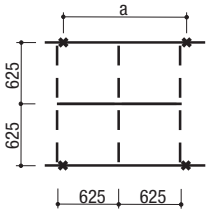
Grid system

An exposed grid system is created using a combination of main runners and cross profiles from high quality, electro galvanised steel with a steel capping in VENTATEC® white 10. As standard, the grid structure fulfils exposure class B.

VENTATEC® Performance

The Performance grid structure consists of a high main runner (H = 38 mm) and a low cross profile (H = 33 mm) and offer optimal cross-section values/ stability for all popular acoustic or light suspended ceilings.

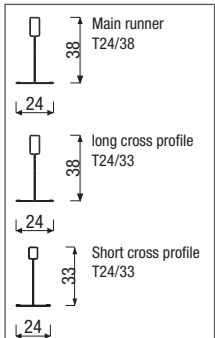
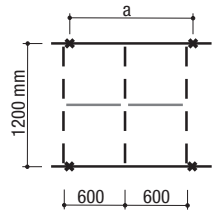
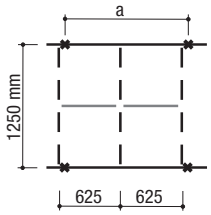
Load Table

				
Hanger centres a	Main runner centres 1200 mm Format 600 x 600 mm Format 600 x 1200 mm	Main runner centres 1250 mm Format 625 x 625 mm Format 625 x 1250 mm	Main runner centres 600 mm Format 600 x 600 mm Format 600 x 1200 mm	Main runner centres 625 mm Format 625 x 625 Format 625 x 1250 mm
mm	kg/m²	kg/m²	kg/m²	kg/m²
900	9.2	7.8	25.0	25.0
1000	8.7	7.3	20.0	20.0
1200	7.3	6.4	18.0	18.0
1500	4.8	4.4	-	-

VENTATEC® Performance HIGH

The Performance High grid structure consists of a high main runner (H = 38 mm), a high long cross profile (H = 38 mm) and a low short cross profile (H = 33 mm), suitable for supporting high loads.

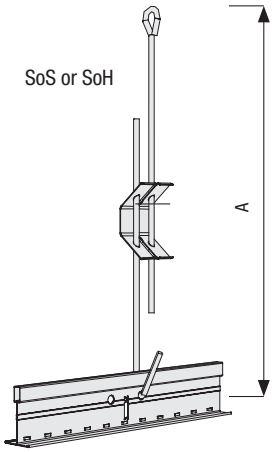
Load Table

		
Hanger centres a	Main runner centres 1200 mm	Main runner centres 1250 mm
	Format 600 x 600 mm / Format 600 x 1200 mm	Format 625 x 625 mm / Format 625 x 1250 mm
mm	kg/m²	kg/m²
900	13.0 / 13.0	11.0 / 11.0
1000	11.8 / 11.8	10.2 / 10.2
1200	9.5 / 9.5	8.4 / 8.4
1500	5.8 / 5.8	5.2 / 5.2

The table shows the maximum allowable uniformly distributed load for the grid system in kg/m² with various hanger spacings. The weight of the grid has already been accounted for in the calculation. Point loads such as lighting and signs must be considered separately. Additional loads (insulation) should not load the ceiling elements. The load table is based on a maximum deflection of the grid system of 2.5 mm and complies with deflection class 1 with f≤ l/500 ≤ 4 mm in accordance with EN 13964.

Hangers

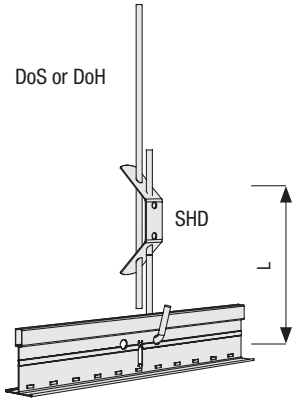
Quick hanger with hook/eye



Article:	A: Range
SoS 100 - 300	100 - 330 mm
SoS 300 - 600	320 - 590 mm
SoS 600 - 1000	520 - 990 mm
SoS 1000 - 1250	650 - 1260 mm
SoS 1250 - 1500	760 - 1480 mm
SoS 1050 - 1750	900 - 1760 mm

Maximum load 25 kg

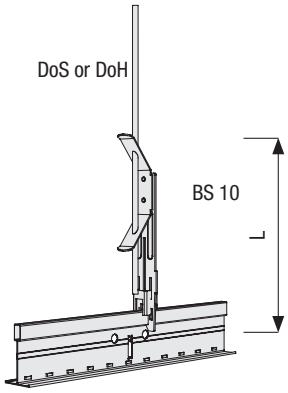
Butterfly hanger, rod with hook



Article:	L: Length
SHD 125	125 mm
SHD 250	250 mm

Maximum load 25 kg

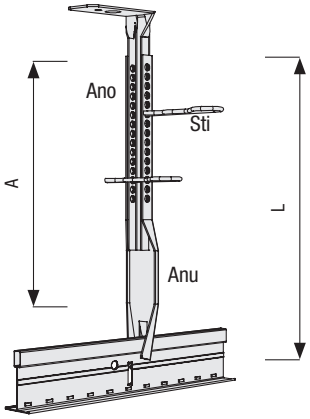
Clickfix II hanger with butterfly



Article:	L: Length
BS 10	110 mm

Maximum load 25 kg

Nonius hanger

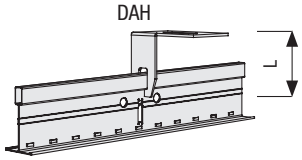


Upper part

Article:	A: Range
Ano 115	85 mm
Ano 120	135 mm
Ano 130	235 mm
Ano 140	340 mm
Lower	L: Length
L: Length 190 mm	190 mm

Maximum load 25 kg

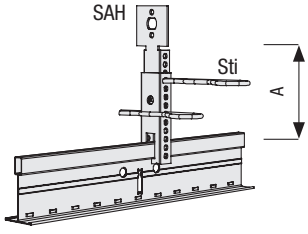
Direct hanger



Article:	L: Length
BS 10	40 mm

Maximum load 15 kg

Nonius hanger upper and lower parts



Article:	A: Range
SAH 5 (40/80)	45 - 75 mm
SAH 5 (60/100)	55 - 100 mm
SAH 5 (80/120)	85 - 130 mm

Maximum load 25 kg

Hanger / installation

Installation
Hangers should be installed vertically. It is recommended to provide at least one hanger for every 1.5 m² ceiling area, whereby maximum hanger centres may not exceed 1.25 m (module 625 mm).

In addition, a hanger is required at every main runner join and additional loads such as lighting require a minimum of two hangers (see chapter Light fittings). It must be ensured that the first and last hangers are no more than 150 mm from the perimeter, otherwise additional hangers are required.

Angled hangers can significantly reduce the load bearing capacity and not all hangers are suitable for this. In most cases, additional measures (cross bracing, additional hangers etc.) are required.

Suspension depths of up to 3.00 m can be carried out with quick hangers or wire hangers.
For suspension depths over 3.00 m Nonius hangers are recommended.

A combination of multiple butterflies or extensions is not permitted.

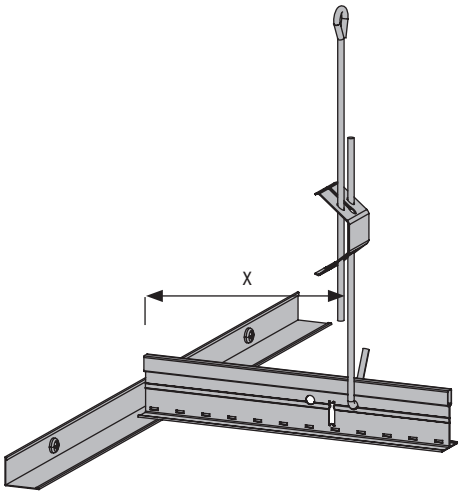
Hangers subject to compression
In normal situations the hangers are subjected to tension (ceiling tiles, grid structure, lighting etc.). Certain applications may subject the hangers to compression forces. These applications can only be carried out with Nonius hangers (Ano + Anu with double security pins).

Fire rated applications
For fire rated applications, the relevant test certificates apply. Separate documents are available.

Perimeter hangers

Perimeter distances
To avoid overloading the perimeter trim, the first hanger must be positioned at a maximum distance from the perimeter.
For AMF THERMATEX® mineral tiles with a thickness d=15 mm, the distance is 45 cm, 19 mm thick tiles up to 30 cm, otherwise a maximum of 15 cm from the perimeter.

Material	Material thickness	Distance X
THERMATEX®	d = 15 mm	45 cm
THERMATEX®	d = 19 mm	30 cm
THERMATEX®	d ≥ 19 mm	15 cm
HERADESIGN®	d ≥ 19 mm	15 cm



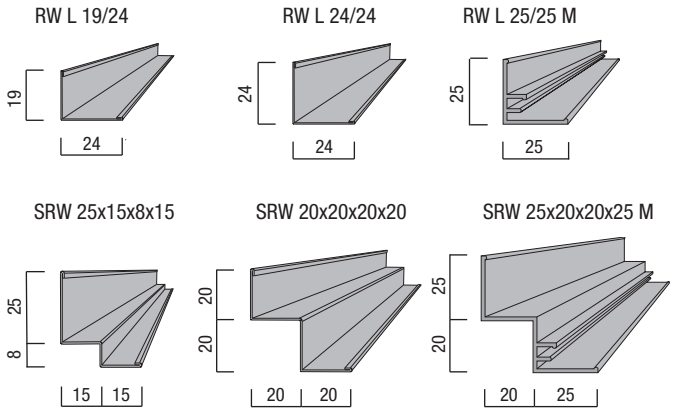
Perimeter trims

The standard perimeter trim is a white wall angle 19 x 24 x0.5 mm (24 x 24 x 0.5 mm), mitred at the corners. For the shadow edge detail, a shadow trim 25 x 15 x 8 x 15 mm can be used. The perimeter tiles are square cut and lay in.

Formats

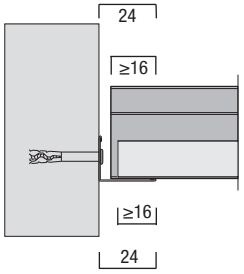
Various perimeter trims are available:

	Thickness	Length	Article
Wall angle 19/24	0.5 mm	3.00 m	RW L19/24
Wall angle 24/24	0.5 mm	3.00 m	RW L24/24
Shadow trim 25/15/8/15	0.5 mm	3.05 m	SRW 25x15x8x15
Shadow trim 20/20/20/20	0.7 mm	3.05 m	SRW 20x20x20x20
Wall angle 25/25 M	1.5 mm	3.00 m	RWL 25/25 M
Shadow trim 25/20/20/25 M	1.5 mm	3.00 m	SRW 25/20/20/25 M

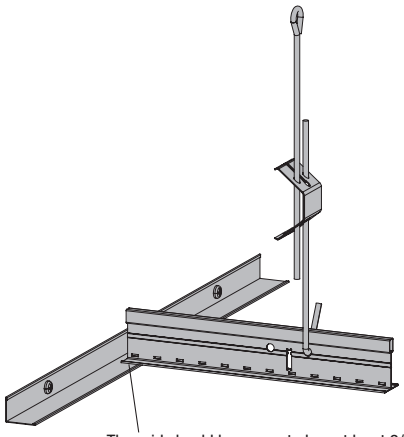


Support

All profiles are cut so that the profile lies on at least 2/3 of the horizontal leg of the perimeter trim. This applies to both main runners and cross profiles.



This applies both to tiles and cut tiles that lie on the perimeter trim.



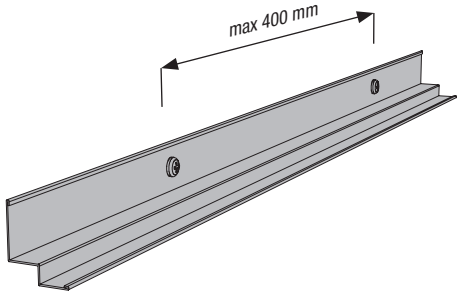
The grid should be supported on at least 2/3 of the horizontal leg of the perimeter trim.

For metal cassettes at perimeters, we recommend either an RW L 25/25 M or an SRW 25/20/20/25 angle.

Fixing

Generally, installation has to be carried out with approved fixings suitable for the type of wall being fixed to. The maximum fixing centres for solid walls is 400 mm.
Connection to light-weight partition walls can be carried out to the partition framework (max. centres 625 mm) with at least one screw and inbetween with a threaded bolt.

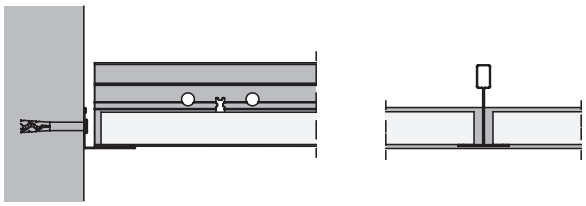
Flat headed screws are recommended to prevent deformation of the trim.



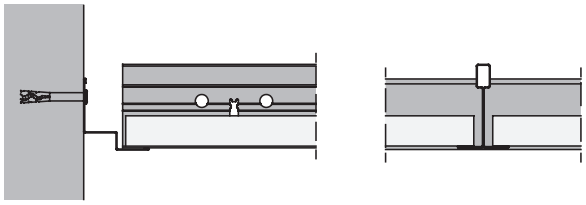
Corners

The trims should be mitred at corners. An alternative is to use preformed mouldings to suit the trim (see Accessories).

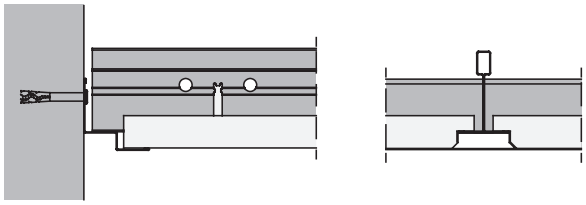
L-wall angle with SK edge configuration
The L-wall angle is the most common construction. The grid and tiles are supported directly on the horizontal leg of the perimeter trim (min. 2/3 and 3-5 mm gap).



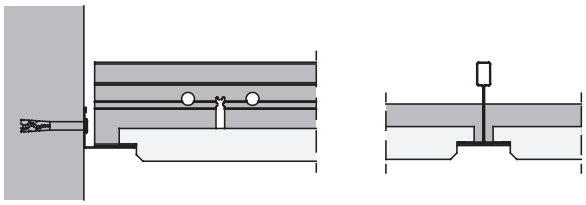
Shadow trim with SK edge configuration
The use of a shadow trim offers an alternative construction (shadow gap). The tile and grid are both supported on the lower leg of the trim on 2/3 of the perimeter trims lower horizontal leg. (min. 2/3 and 3-5 mm gap).



Shadow trim with VT edge configuration
The grid construction is supported on the upper leg of the 25x15x8x15mm trim. The tiles are supported on the lower leg (min. 2/3 and 3-5 mm gap). The height of the lower horizontal leg is the height of the underside of the ceiling tile. The perimeter tiles / cut tiles are simply square cut. The recessed edge configuration and the different height level create a gap which can be closed using filler pieces (see accessories).



Alternative with VT edge configuration
An alternative to the above construction is to cut a VT edge into the cut tiles. It is possible to reform the edges using an appropriate rotary cutter and then repaint the edges. The grid and tile lie at the same level and filler pieces are not necessary.



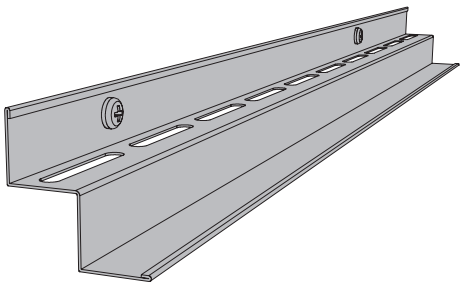
Accessories

There are many solutions available to enable ventilation of the ceiling construction or control the air exchange (compensate for possible pressure differences) between the room and the ceiling void. The open area per linear metre or m^2 is significant. Regardless of version, rear ventilation of fire rated ceilings is **not** permitted.

Shadow trim with ventilation slots

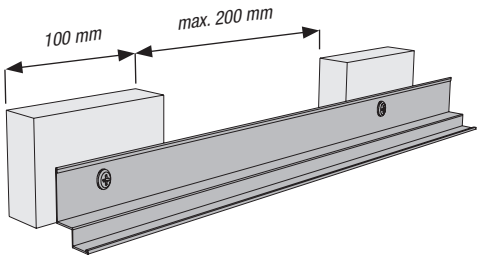
Open ventilation area: approx. 44 cm^2/lin. m
Available in the following options:

Shadow trim 20/20/12/20	d= 0.6 mm	L= 3.00 m
Shadow trim 20/20/20/20	d= 0.75 mm	L= 4.00 m



Perimeter trims fixed to blocks

Possible with wall angles or shadow trims. The blocks can be formed from wood or other material (length min. 100 mm), individually fixed to the wall and the perimeter trim screwed onto them. The fixing centres must be reduced to 300 mm. Average open ventilation area: approx. 200 cm²/lin. m (based on a max. block depth of 30 mm and an opening of 200 mm).

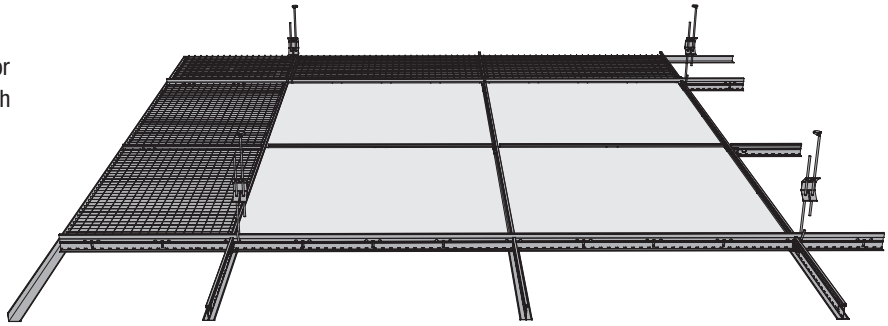


Light/ventilation grilles

A simpler and more flexible solution is to install light or ventilation grilles. These are lay in the grid system with the AMF tiles.

Dependent on the width of the perimeter tiles and by adding further grilles, the open area for ventilation can be varied. Various products are available from metal parabolic to aluminium and plastic grilles in a wide range of designs.

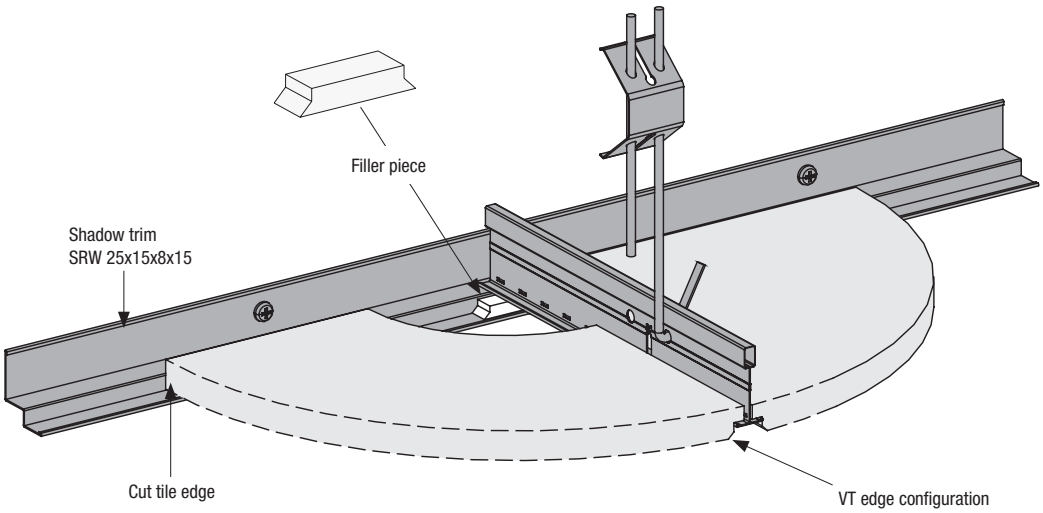
Grille opening dimensions: 13 x 13 mm up to 30 x 30 mm dependent on type.



Filler pieces

Filler pieces can be installed to close the small gap at the perimeter trim produced when using VT edge tiles. Filler pieces are available for the following edge details (mineral):

- VT 24
- VT 15

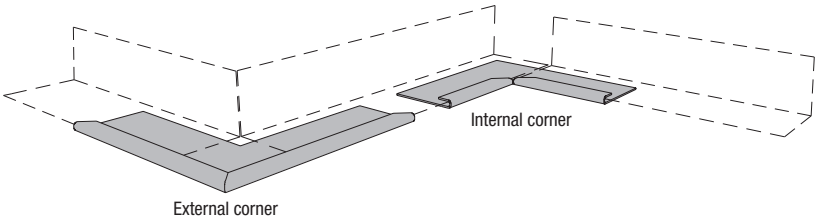


Internal and external corners

As an alternative to mitring the corner joints, preformed mouldings are available. The typical mitred corner requires an exact 45° cut which is very time consuming. Preformed mouldings are simpler and require less time, as angled cuts are not required.

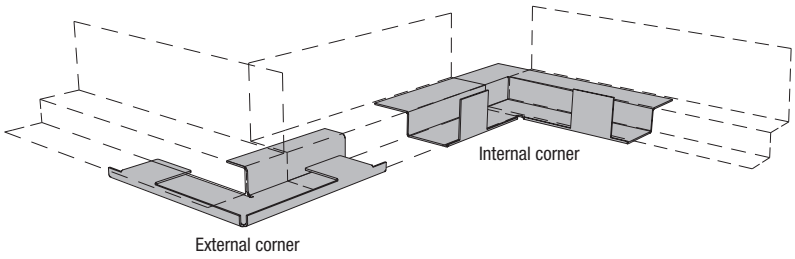
Internal and external corners for RW L19/24 or L24/24
The mouldings are simply pushed on to form the corner.

Note
Not suitable for metal ceilings.



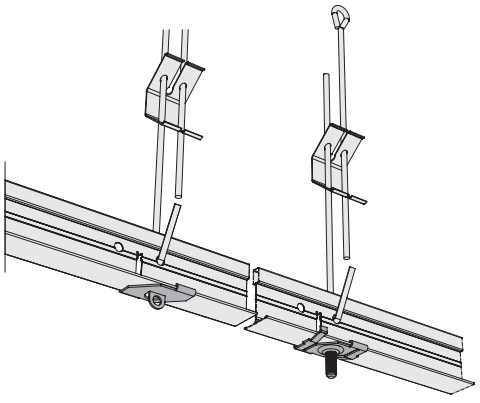
Internal and external corners for SRW 25x15x8x15
Install on pre-installed shadow trims by bending the metal lugs over.

Note
Not suitable for metal ceilings.



Fixing clips

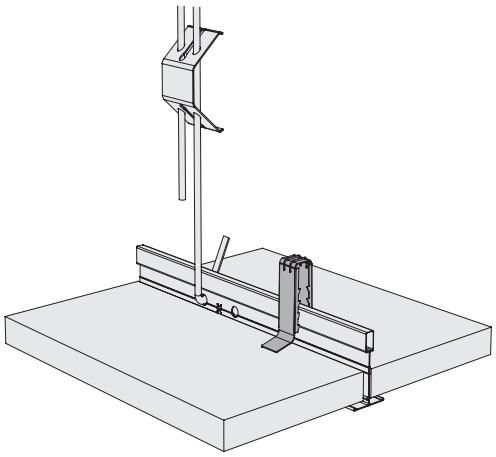
To hang objects below the grid system, several different screw and decoration clips are available for both 15 mm and 24 mm grid systems. Each clip should have an additional hanger from the soffit and can be loaded with up to 5 kg.



Hold down clips

In areas with open windows, doors or atriums where there is the possibility of substantial pressure differentials, the ceiling tiles should be held in place with hold down clips (approx. 6 pcs./m²). After the ceiling tiles have been installed, the clips are pressed onto the T-profile until the clip sits firmly against the tile.

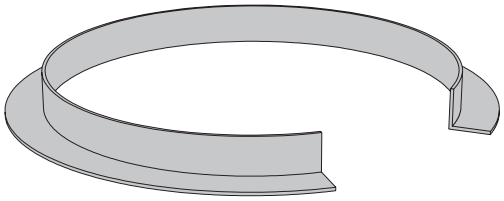
Other applications: AMF Soundmosaic



Column rings

When finishing suspended ceilings to columns, the use of prefabricated column rings is recommended. The aluminium rings are available in different diameters:

Diameter Ø = 200 - 1000 mm (50 mm gradation).
Surface white coated similar to RAL 9010

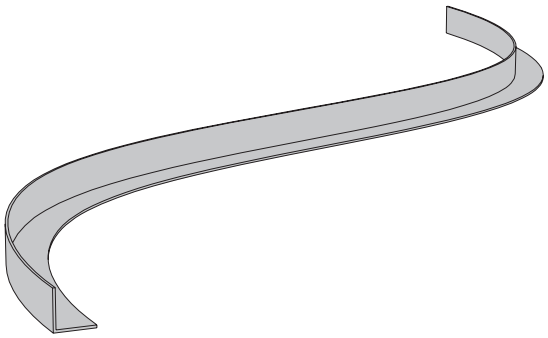


Flexible perimeter trim

When finishing ceilings to curved walls, the use of a flexible wall angle is recommended. Where the radius exceeds 1.00 m they can be adjusted by hand to fit the convex or concave shape:

RWL Flex: Material PVC
Dimensions 28/22.5 mm
Length 2.5 m

RWL Flex (30/20): Material Aluminium
Dimensions 30/20 mm
Length 3.0 m
For radiuses smaller than 4.0 m on site painting after bending is recommended.



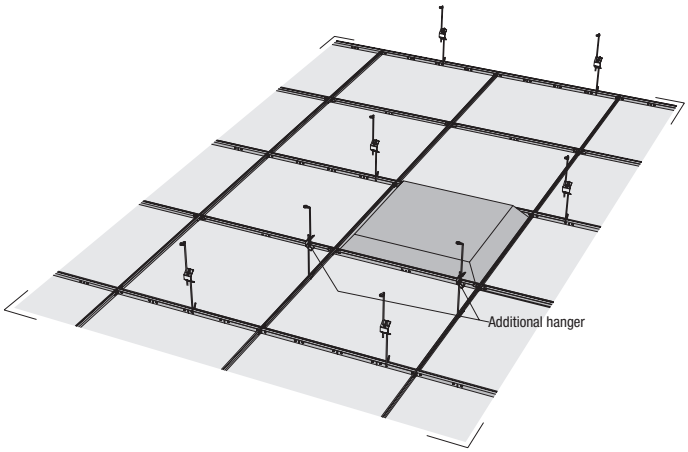
Note
Very small radiuses can be difficult to form. In some cases a plasterboard margin detail should be considered.

Lighting/ additional loads

Modular lighting

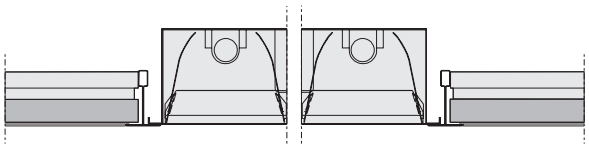
When the main runners are at 1200/1250 mm centres, two additional hangers are required per light on the long cross profile. For main profiles at 600/625 mm centres, no additional hangers are required providing the lights weigh no more than 6kg.

Detail
Light fittings, ventilation grilles and sprinkler systems etc. should not have more than a 5mm upstand adjacent to the grid. Otherwise, this can lead to problems with side engaging connectors.



Additional loads

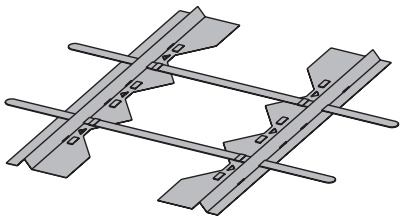
Generally additional loads need to be supported with additional hangers from the soffit. Loading the tiles is not permitted. Services such as downlighters and speakers etc. require a pattress or frame to distribute the load on to the grid system. Loads less than 0.3kg require no additional support.

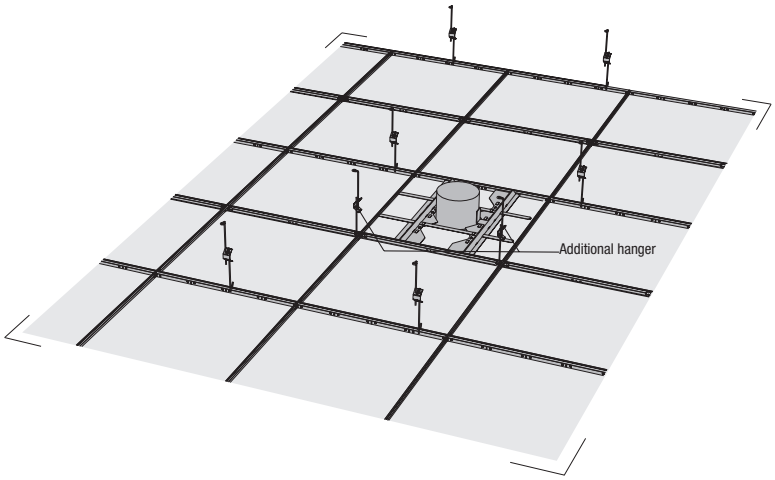


Installation frames

A versatile installation frame is available and can be used for all common fixtures and fittings. The frame ensures that the additional load is carried by the grid system and is not supported on the tiles. Two additional hangers are required.

Note
For applications using installation frames with MONDENA® metal cassettes, please consult the technical department.





Room layout / ceiling symmetry module 600/625 mm

Lay out

The ceiling is set out from the middle of the room in modules (module width = B). In the example shown, the cut tile at the perimeter is very small.

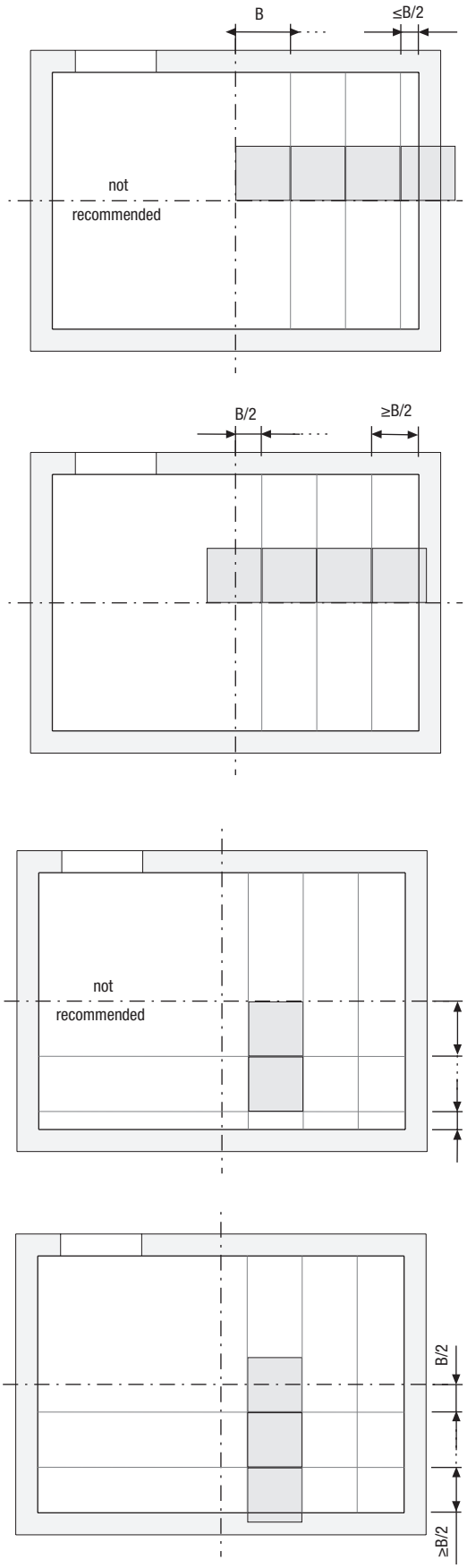
Note

If the cut tile is less than half the tile width (<B/2) the layout is not recommended and should be avoided. In addition to requiring more profiles, small cuts appear aesthetically poor.

Correction

Ceilings with larger cut tiles are aesthetically more pleasing and are more efficient to install. When setting out the ceiling, start from the middle. The first tile should be directly on the centre line (half the tile each side of the centre). This will always result in a perimeter cut tile greater than half the tile width.

The layout then continues in the other direction.



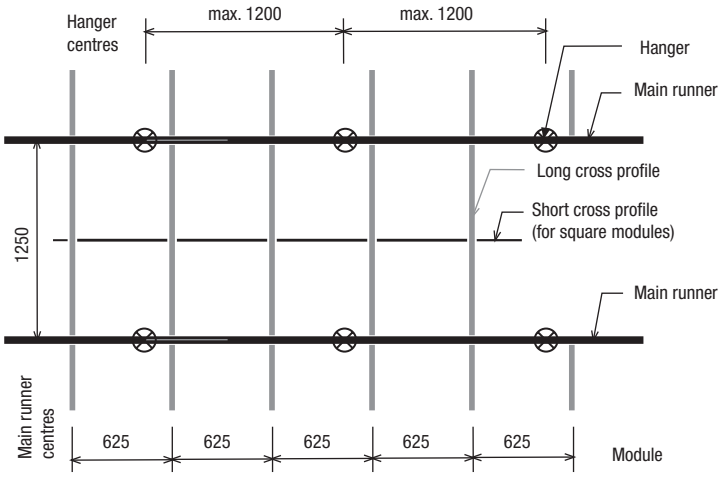
Construction

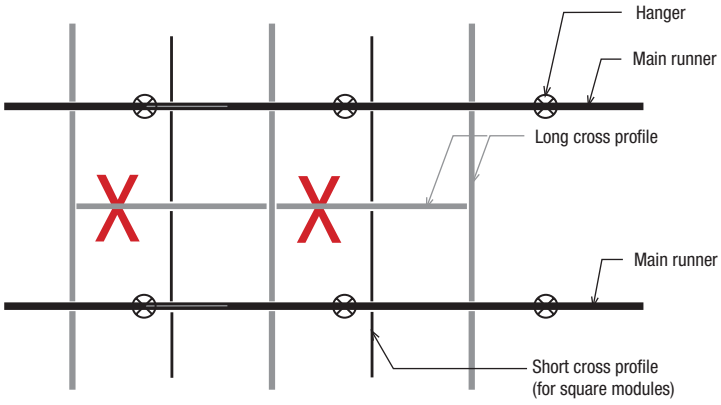
Main runner centres 1200/1250 mm, module 625 x 625 mm

Between the main runners at 1250 mm centres, a 1250 mm long cross profile is fitted at 625 mm centres. These cross profiles are then subdivided by short cross profiles to form the 625 mm x 625 mm module layout. If the tile size is 625 mm x 1250 mm then the short cross profiles are not required. The layout for a 600 mm x 600 mm is carried out correspondingly.

The following construction is not permitted:

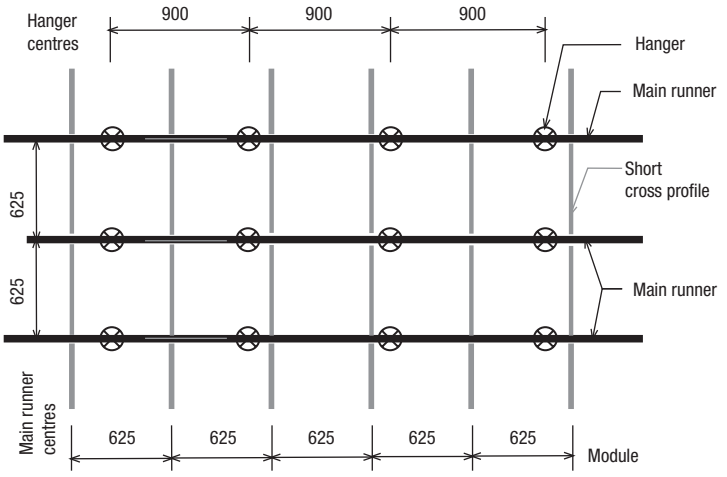
A combination/ladder format of long cross profiles parallel to the main runners due to increased deflection of the system.





Main runner centres 600/625 mm, module 625 x 625 mm

Due to the small main runner centres and the use of short cross profiles, this construction can support heavier loads. Lights up to 6 kg can be supported without any additional hangers. Loads over 6 kg require two additional hangers.



Installation guidelines

Main runner centres 1200/1250 mm

After determining the ceiling symmetry/layout (**Figure1**), the direction of the main runners is determined. The long side of the room is normally chosen, but sometimes due to fixtures and fittings etc., the short direction may be more favourable.

Perimeter trims

As preparation before the installation, all perimeter features (walls, columns etc.) should be marked with the ceiling height (the height of the top edge of the perimeter trim). Perimeter trims should be fixed as per chapter **Perimeter trims** (approved fixings, centres etc.).

Hangers

The fixing points of the hangers are determined by the layout of the main runners. The distance of the first and last main runners from the wall should be smaller than module B (**Figure 2**), so that laying long cross profiles on the perimeter trim is avoided. The fixing points are marked on the soffit using a chalk line, for example (**Figure 3**).
In addition to the relevant system hanger centres (load capacity of the grid system + tile weight), additional hangers may be required for:

- Main runner joints
- Maximum perimeter distances (first and last hangers)
- Fixtures and fittings

It is recommended that the hangers are adjusted to the required length before installation.
Fixing is carried out with approved fixings as per the screw/plug manufacturer's recommendations. All hangers are to be installed in the same direction (e.g. direction of butterflies or hooks etc.).

Figure 1:

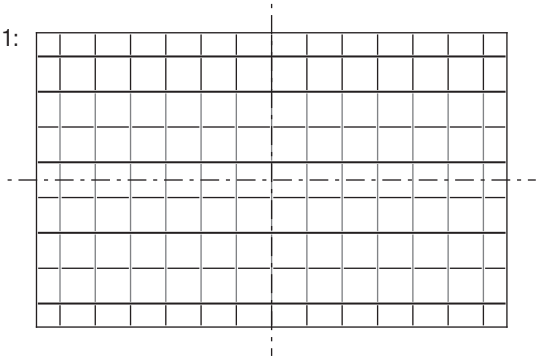


Figure 2:

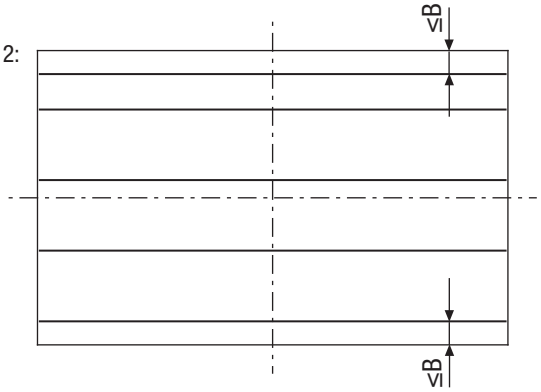
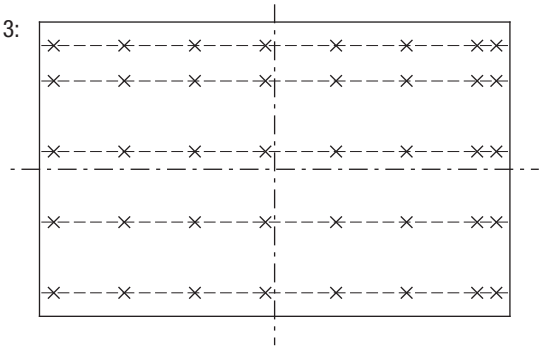


Figure 3:



Main runners

The main runners should always be installed in the same direction (**Figure 4**); two fire expansion notches can not be installed directly next to each other.

Main runner cuts result depending on the ceiling symmetry as well as the cut tile width.
The profiles should be cut to length so that the punching and therefore the layout of the cross profiles is aligned. For every new row, the dimension X_1 or. X_2 should be checked (**Figure 5**).
To enable system alignment (squareness), all profile cuts should be carried out with a 5-10 mm allowance.

Cross profiles

To complete the system, long and short cross tees are installed.
Unfavourable combinations are not permitted To align the system, it is recommended to insert a few tiles (**Figure 6**) and where necessary align the system before the entire grid system installation is complete.

Figure 4:

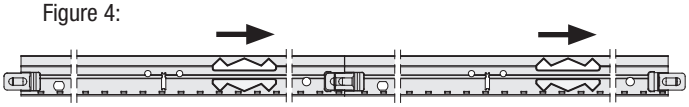


Figure 5:

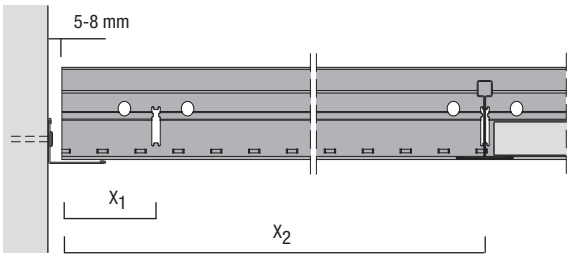
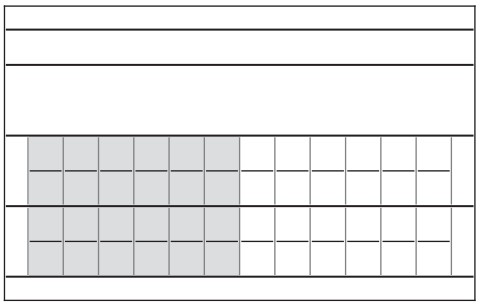


Figure 6:



Check:

Please ensure that the system and the profiles are installed at right angles to each other (**Figures 7-9**) or correct this where necessary. This should be done as early as possible in the installation to reduce realignment work to a minimum.

Figure 7:

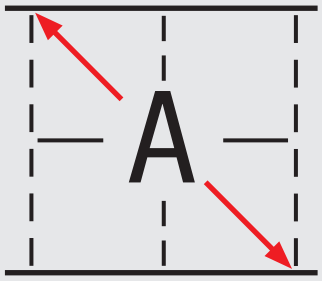


Figure 8:

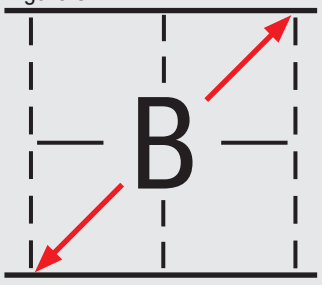
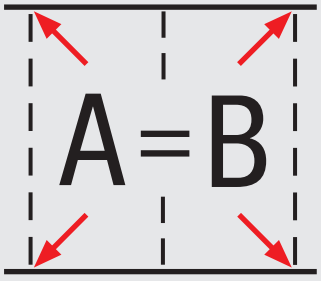


Figure 9:



Failure to do so can lead to major problems when installing the tiles, especially tiles with a recessed VT 15/24, VT-S, SK-03 or SK-06 edge configuration.
Furthermore, there is an increased risk of damage to tiles during subsequent demounting or maintenance.

Short cross profiles / cut profiles
Finally, all profile and tile cuts are completed (**Figure 10**). The minimum support on perimeter trims should be adhered to.

Suspension heights
The following suspension heights enable simple installation of the tiles from below.

Minimum suspension height:
Tile thickness d= 15 mm: 120 mm
Tile thickness d= 43 mm: 200 mm
For low suspension heights, e.g. direct hangers, the profiles and tiles must be installed alternately.

Note:
Particularly when using wire hooks, there is risk of damaging the tiles during installation.
Please note the installation diagram opposite. Demounting should be carried out accordingly (lifting the tiles on the side with no hanger).

Figure 10:

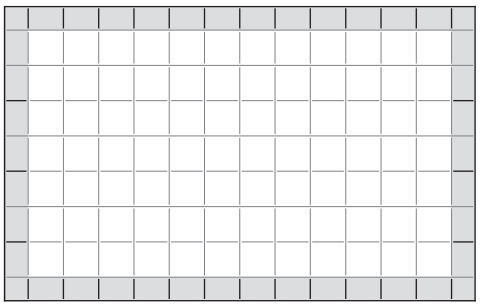
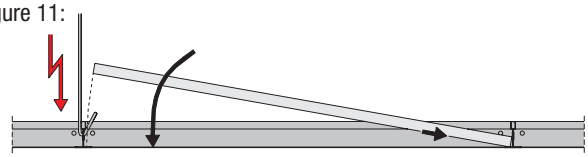
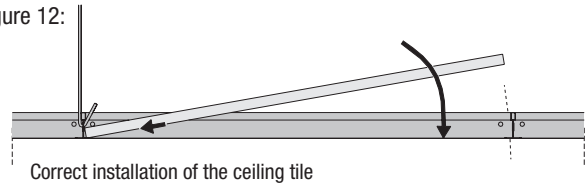


Figure 11:



Attention: possible damage to tile

Figure 12:

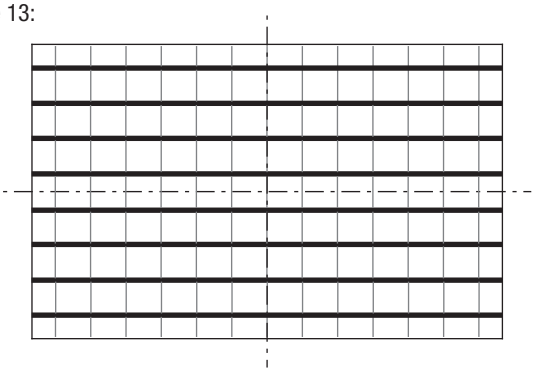


Correct installation of the ceiling tile

Main runner centres 600/625 mm

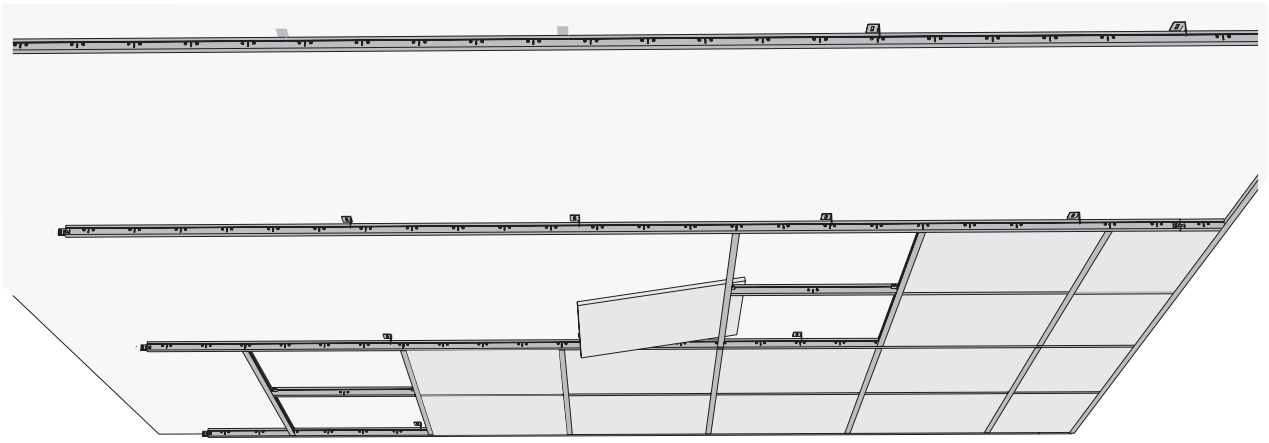
Usually, main runner centres at 600 / 625 mm (**Figure 13**) are only necessary for heavy tiles or for special constructions. The individual installation steps are identical to those previously described. Long cross profiles are omitted and therefore the material requirements of main runners and short cross profiles is increased.

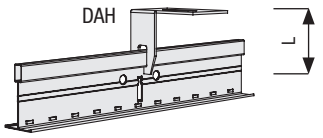
Figure 13:

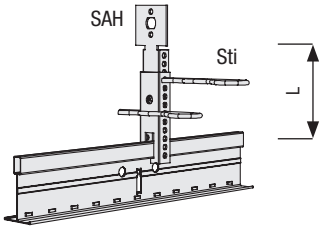


Special constructions - direct suspension

For ceiling installations where a conventional installation is not possible, a direct suspension can offer a reduced suspension height. This, however, can make removing or changing SK or VT edge tiles at a later time, difficult.



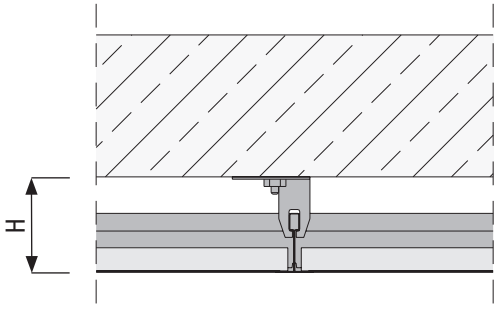




Direct hanger

Article	L: Length	H: Suspension height
DAH	40 mm	Approx. 60 mm
SAH	45 mm	Approx. 80 mm

Note: Currently not recommended for MONDENA® metal ceilings.



Step by step installation

Due to the low suspension height, the installation of the tiles from below is no longer possible. Instead the tiles are inserted from above during grid construction, after the cross profiles have been installed. However, this means that the tiles can not be exchanged at a later date without destructive measures (removal of a cross profile using tin snips – exchanging the tile – insertion of a new cross profile).
Any unevenness of the ceiling can not be compensated with the system (hanger DAH). As an alternative, but requiring a little more suspension height, the adjustable SAH hangers can be used.

Installation

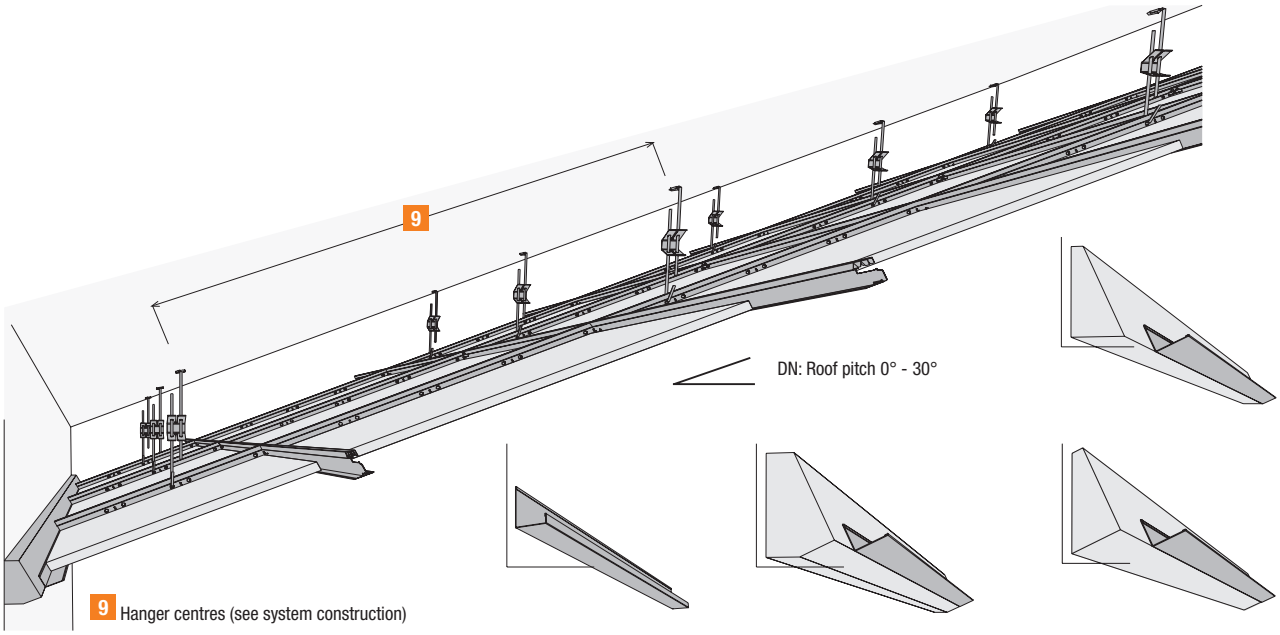
The grid is set out according to the ceiling layout. The correct number of hangers needs to be pushed onto the grid profile and fixed to the soffit. The cross profiles and tiles are then installed alternately, step by step.

Special constructions – pitched ceilings

For a suspended ceiling under roofs and pitched roofs the following points, dependent on the roof pitch (RP) are to be considered:
DN ≤ 10°: Main runners at 1200/1250 mm centres are possible
10° < DN ≤ 30°: Main runners at 600/625 mm centres (deformation of long cross profiles)
DN > 30°: additional measures in conjunction with the manufacturer

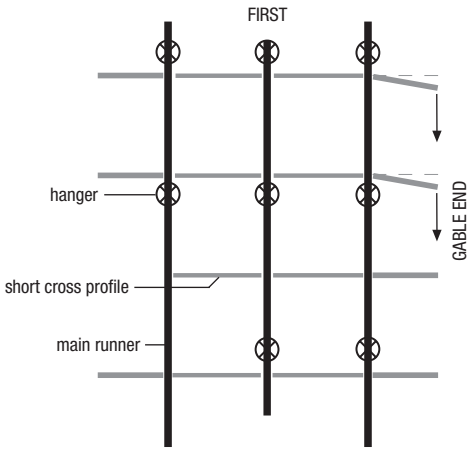
Quick hangers with hooks are suitable hangers. Hangers that must be pushed on are not suitable and can not be used. The hanger centres are according to the system data (= ceiling pitch).

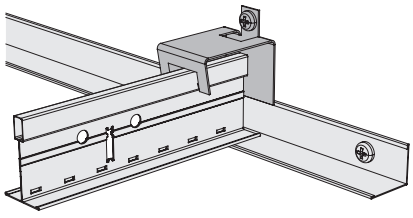
Please also refer to the general installation guidelines, in particular the points on hangers, grid system and additional loads.



Wall connection at eaves
The use of an additional batten adjusted to the relevant slope is recommended.
Displayed are several alternatives. Without the batten even a slight pitch will leave a visible gap between the tiles and the perimeter trim. The main runners and grid system have to be butt jointed tightly against the perimeter trim in order to accommodate possible forces.

Wall connection at gable end
As the cut short cross profiles are only fixed on one side to the main runners, sliding on the perimeter trim can occur by pitches over 10°. To prevent this, suitable measures need to be taken to fix the free end (wall bracket, angle etc.).



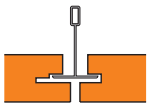
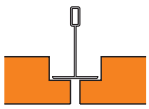


System C 1.2 - THERMATEX® SF Acoustic

Product Range

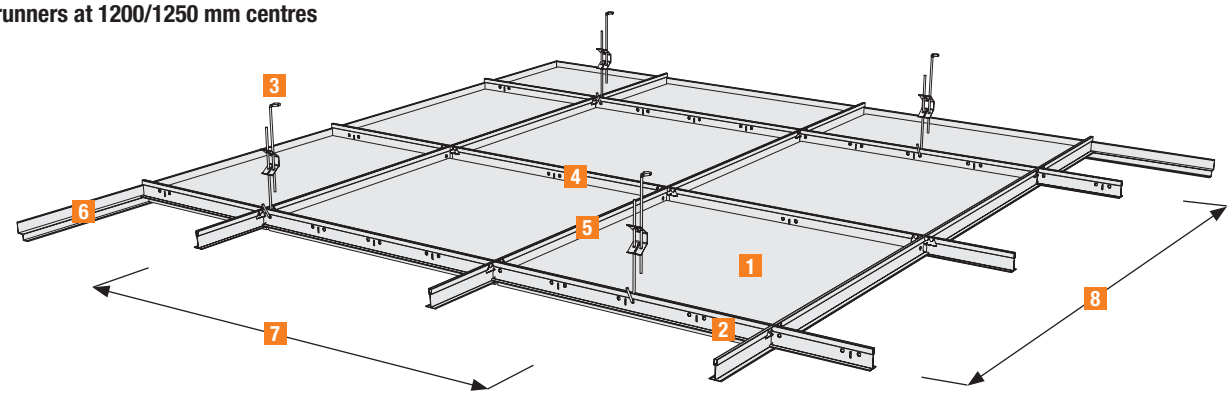
	Product	Thickness [mm]	Weight [kg/m²]	Edge configuration	Module [mm]
Product programme THERMATEX®	THERMATEX® Varioline SF Metal / SF Wood / SF Motif	24	8.4	SF (long side) SF (short side)	600/600; 625/625
	THERMATEX® SF Acoustic	24	8.4	SF (long side) SF (short side)	600/600; 625/625

Edge Configurations

SF edge (long side)	
SF edge (short side)	

System overview

Main runners at 1200/1250 mm centres



Material requirements/ key

The quantities and installation times stated are for guideline only.
They do not allow for waste or project specific scenarios.

Product description		Unit	Module mm / requirement for every m² ceiling			
			600 x 600	625 x 625	1200 x 600	1250 x 625
AMF THERMATEX® - mineral tiles	1	Pcs.	2.78	2.56	1.39	1.28
Main runner PH 3750	2	lin. m	-	0.80	-	0.80
Main runner PH 3600	2	lin. m	0.84	-	0.84	-
Quick hanger	3	Pcs.	0.84	0.80	0.67	0.67
Cross profile PH 600/625	4	lin. m	0.84	0.80		
Cross profile PH 1200/1250	5	lin. m	1.67	1.60		
Shadow trim 20/20/12/20	6	lin. m	0.60	0.60	1.67	1.60
Perimeter wedge		Pcs.	0.60	0.60	1.20	1.20
Hanger centres	7	m	1.00	1.00	1.25	1.20
Main runner centres	8	m	1.20	1.25	1.20	1.25
Perimeter trim fixing centres		m	0.40	0.40	0.40	0.40

Note

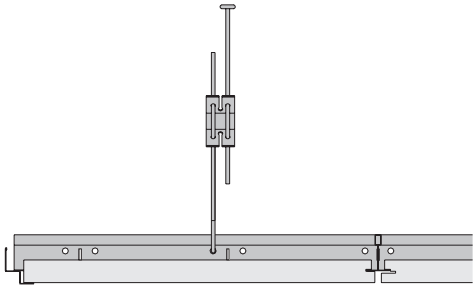
As the tiles are installed completely from below, no minimum suspension height is required for correct and easy installation.

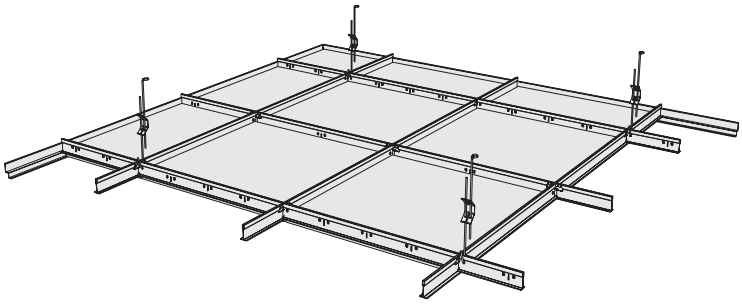
Configuration versions

Version 1

In the standard configuration, the perimeter detail uses a shadow edge perimeter trim 20/20/12/20. The SF tiles rest on the lower edge of the trim and the grid system is supported on the upper leg. The fine-tuning of the perimeter trim and ceiling system means installation is significantly simplified. Particularly with both cut grid and tiles which can be easily installed.

Should other wall angles or trims be used, installation is as per version 2 (see below).

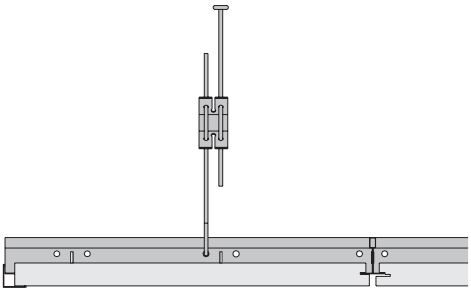


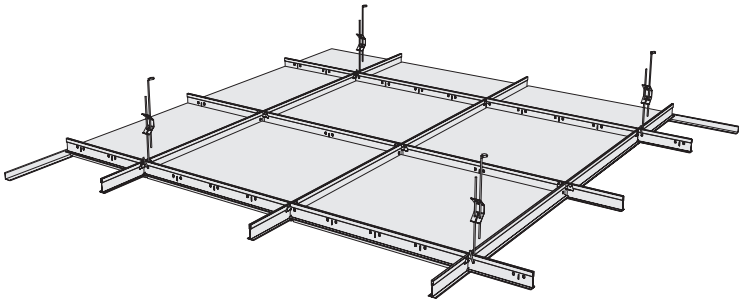


Version 2

As an alternative to the standard configuration, the system can be connected to the wall by means of normal L-wall angles or other shadow trims. Ensure that only the ceiling tiles lie on the perimeter trim, as the grid system must be installed higher in this construction.

Other details must also be considered, as described in the chapter, Perimeter trims.





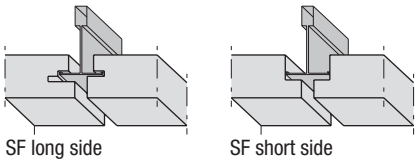
Tiles and grid structure

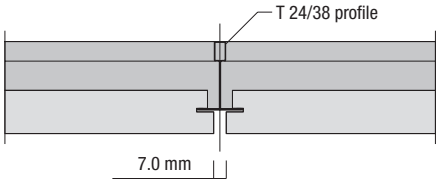
Properties / edge configuration

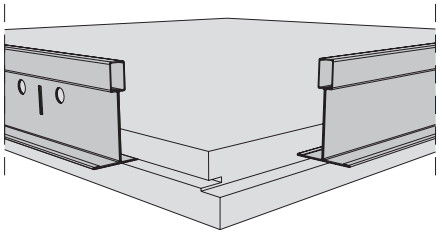
Tiles THERMATEX® SF Acoustic
d=24 mm 8.4 kg/m²

Grid construction T24/38
2.5 kg/m² incl. hanger

Edge configuration SF= Shadow edge



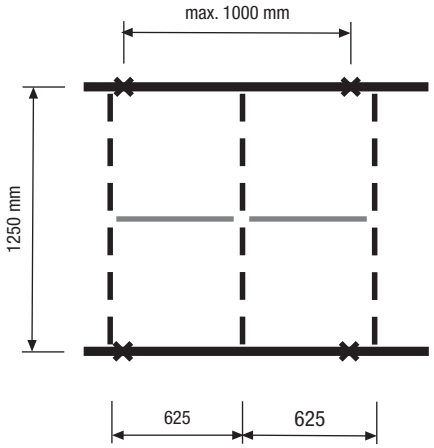




Grid system

For System C, a VENTATEC® grid system is used. This uses 24 mm main runners. All VENTATEC® profiles are produced using high quality, galvanised steel with a white steel cap in white similar to RAL 9010. As standard, the grid structure fulfils the requirements of exposure class B.

Click / hook-in
Both hook-in and click-in systems can be used, as long as the loading capacity of the system is sufficient.

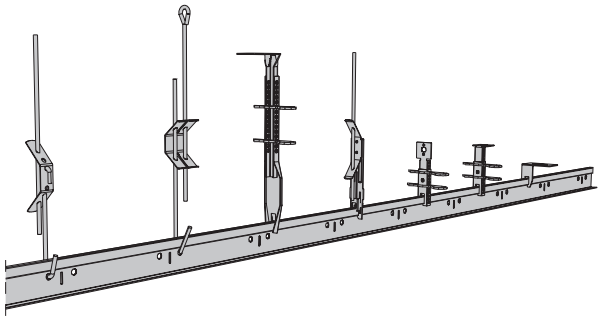


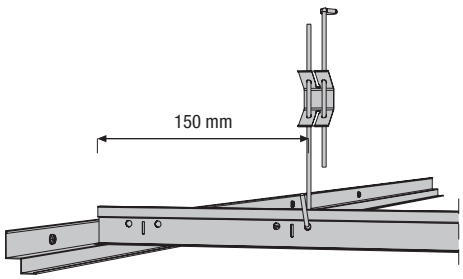
Hangers

There are a range of suspension hangers available for the System C grid system. Depending on the suspension height, availability or preference, all types can be used. It is important to ensure however, that the maximum load bearing capacity is not exceeded.

In the case of push-on hangers, care is needed to ensure that installation and removal of the tiles does not displace the hangers. When using push-on hangers, the direction of installation should be at 90º to the main runners.

Perimeter distances
To avoid excessive deflection of the perimeter trims, the first hanger should be positioned at a distance of no more than 150 mm from the perimeter.

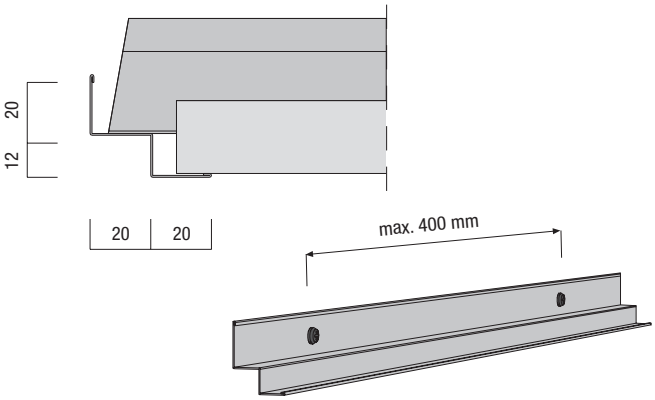




Perimeter trims

Fixing
Installation of the 20x20x12x20 mm shadow trim has to be carried out with approved fixings suitable for the type of wall being fixed to. The maximum fixing centres for solid walls is 400 mm. Connection to lightweight partition walls can be carried out to the partition framework (max. centres 625 mm) with at least one screw and inbetween with a threaded bolt. Flat headed screws are recommended to prevent deformation of the trim.

Corners
The trims should be mitred at corners.

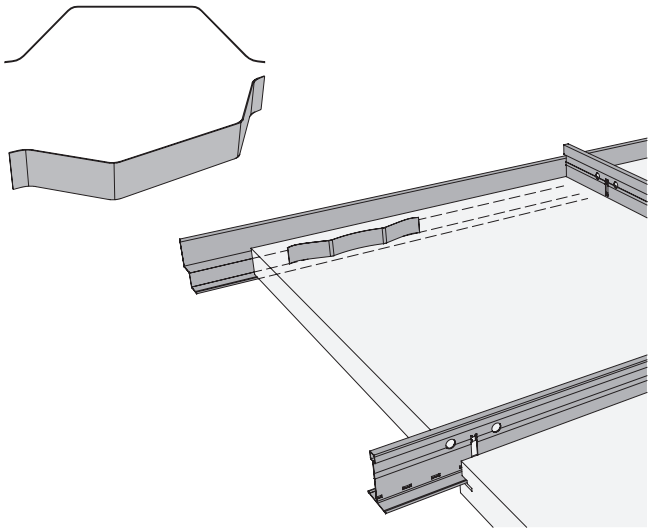


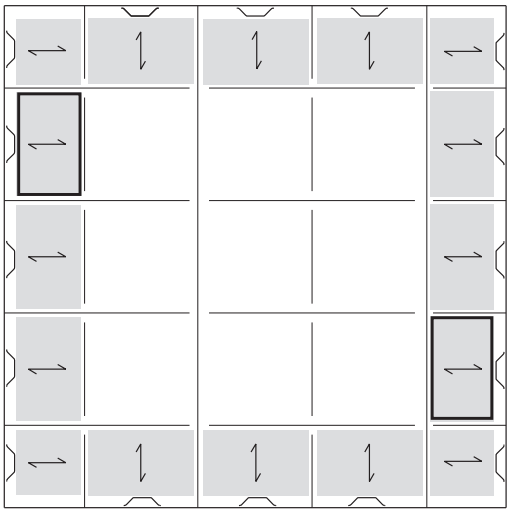
Perimeter wedges

The perimeter cut tiles are installed and held in place using a perimeter wedge to ensure that they do not move. The wedge presses the opposite edge of the tile tightly against the grid system ensuring no tile movement at the perimeter. Suitable pliers can be used to “loosen” the wedge to ease installation, reducing effort and time.

Layout
A perimeter wedge is required for every cut tile (see diagram opposite). This also applies to tiles in corners. The wedge is required irrespective of whether L-angle or shadow trim is used. Cut tiles without wedges can move as a result of building movement or maintenance.

Handling
The simplest method of installing the wedge is immediately after the installation of each tile from the adjacent field. This can be carried out for all tiles, including corner tiles, except the last tiles in a row (=penultimate tile, marked in the diagram opposite with a border).For the last tile, the wedge should be installed before the tile and is then pressed on to the perimeter trim as the tile is pushed into position.

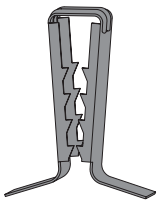




Hold down clips

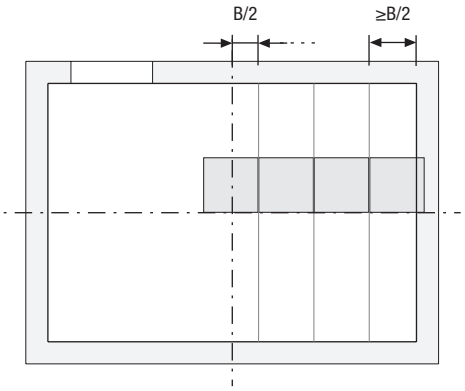
The use of hold-down clips is normally not necessary. Only in areas of wind pressure or to restrict access/prevent tile removal (e.g. schools) can hold down clips be used.

Note:
For the MONDENA® system, a filler piece is required between the clip and metal tile.



General - preparation
Room layout / ceiling symmetry

A correct layout always avoids tile widths smaller than half the module (e.g. 600/2 = 300 mm).



Installation guidelines System C

Please refer to the detailed description of the grid system including the mineral tiles and in particular the general handling instructions including individual points such as:

- Ceiling symmetry
- Lighting/additional loads
- System construction
- Installation

as outlined in the **System C** installation guidelines.

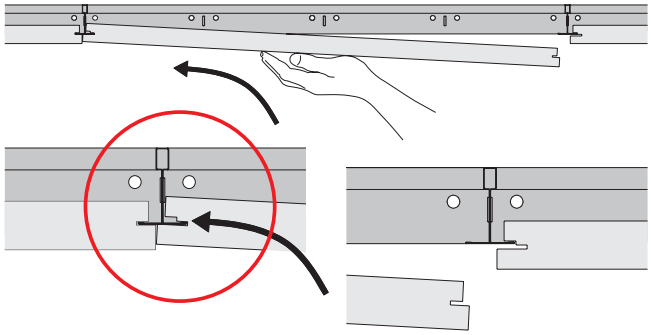
Installation

Handling

As contact with the face side of the tiles is unavoidable during assembly, you should always wear clean, white cotton gloves.

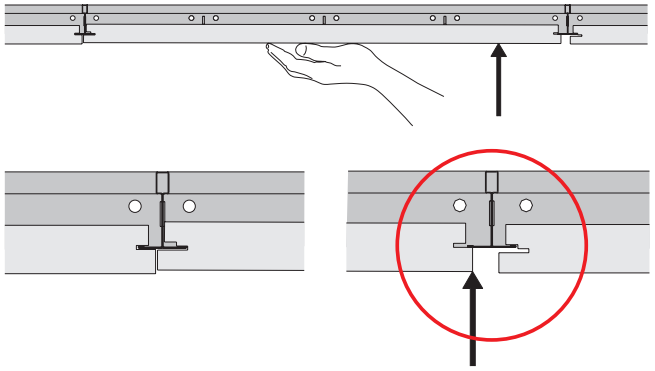
Step 1

Insert the edge with the double groove onto the grid profile. Ensure that the horizontal leg of the T-profile sits in the groove; otherwise the following steps can not be carried out.



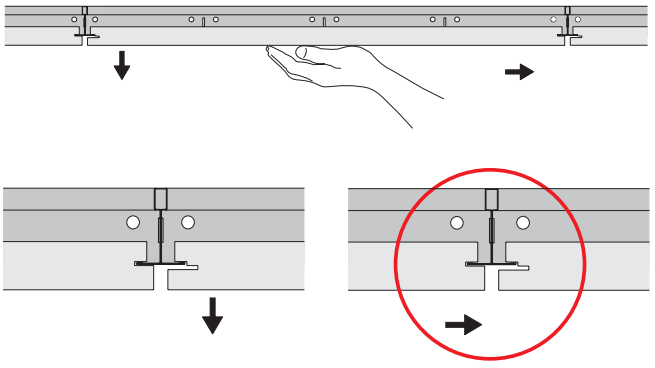
Step 2

Gently lift up the opposite side against the grid. This should be done with little effort as the tiles only have to be raised to the profile level.



Step 3

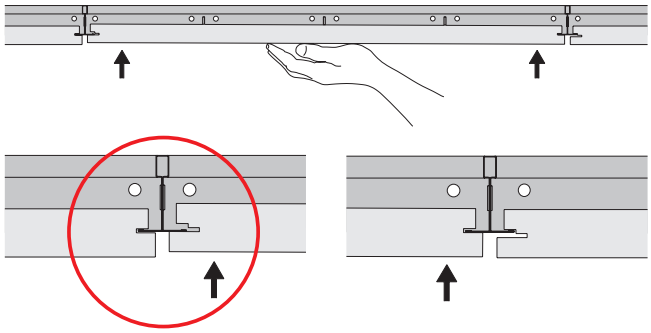
The tile only needs to be lightly pulled back. Ensure that the tile remains pushed up so that the profile goes into the groove. At the same time the other side slides over on the lower level and lies flush in the system.



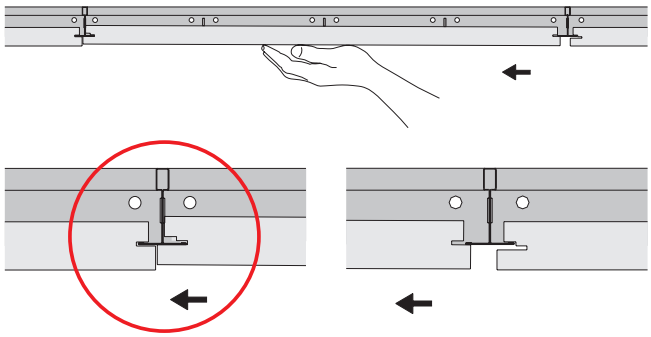
Removal

Handling
As for assembly, you should always wear clean, white cotton gloves.

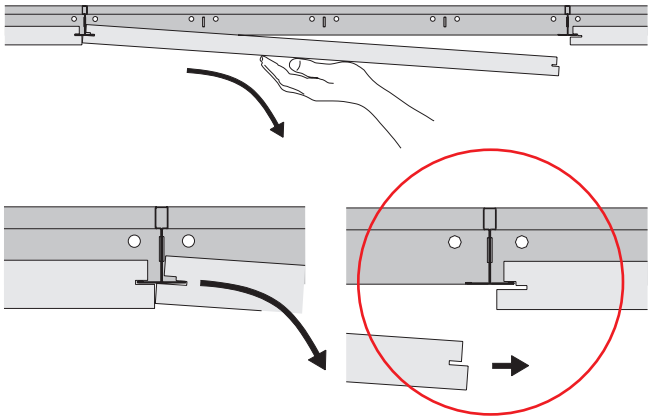
Step 1
Removal occurs in the opposite sequence to installation. First check which side of the tile has the edge with the double groove. This side can be pushed up against the grid system easily and with little effort.



Step 2
The tile is slid in the direction of the double-groove while maintaining gentle upward pressure. Please note that the opposite side of the tile will slide off the profile and that the tile could fall down if you are not careful.

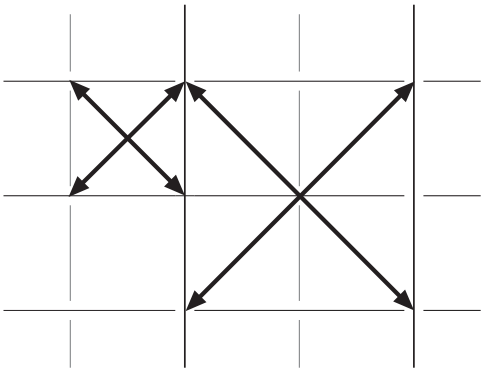


Step 3
Finally, the tile is tilted downwards a little (up to 10 cm), then removed from the grid system at a flat angle in the direction of the free edge of the tile. Please note that excessive tilting of the tile could potentially cause damage to the tile edge.



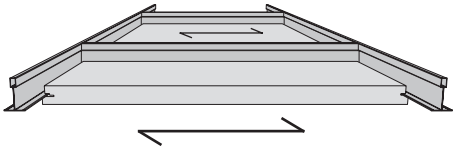
General advice

Squareness
For correct installation of the SF tiles it is very important to ensure that the grid structure is square. Please check the squareness of the grid system before installing the tiles, for example by comparing the diagonal measurements of one or more grid modules and adjusting if necessary.

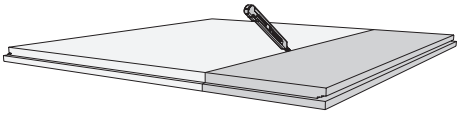


Note:
If the installed grid system is not square, substantial problems can arise when installing the tiles, or later when removing the tiles (for maintenance work).

Direction of installation
For the purposes of clarity, the direction of assembly of the tiles will be indicated by an arrow. Due to the design of the tile, support only occurs on two sides of the tile as represented by the direction of the arrow.

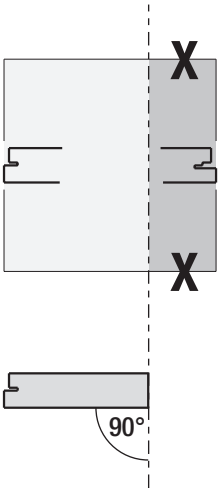


Cut tiles
For most installations it will be necessary to use cut tiles at the perimeter of the ceiling. The side with the double groove should always be discarded when cutting the tile. When the cut tile is installed, the cut edge is rested on the perimeter trim and the single-grooved side is inserted into the grid system.



Note:
When cutting tiles, always use the single-grooved side and discard the double-grooved side.

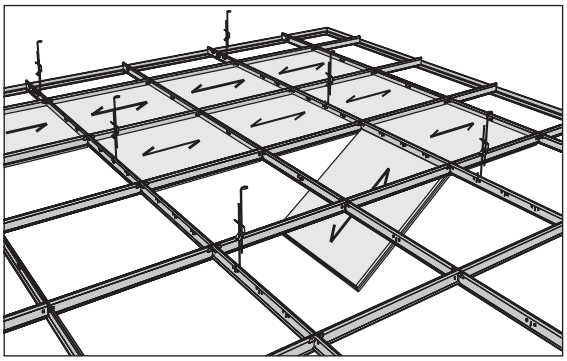
Renovation/refurbishment
Before reusing an existing grid system, please ensure that it is constructed with 24 mm profiles and that the load bearing capacity is sufficient (install additional hangers if necessary).



Installation

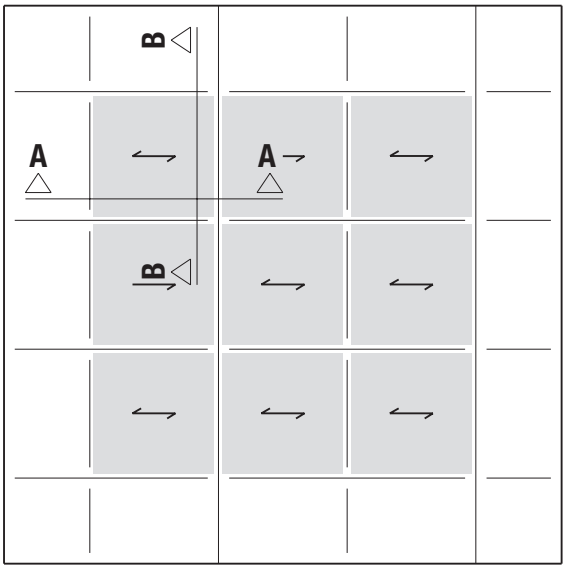
Complete tiles

Installation begins with full tiles. If these are difficult to install, then the grid system should be checked for squareness. The direction of installation should always be perpendicular to the main runners, as shown in the diagram. To ensure correct handling of the tiles, please refer to the notes in the chapter, Installation.



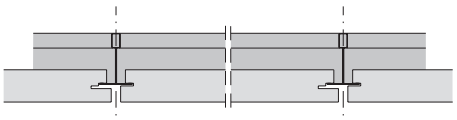
Plan

The tiles are fitted between the main runner and the short cross profiles. The sequence of installation is not important - they can be installed in rows or in sections.



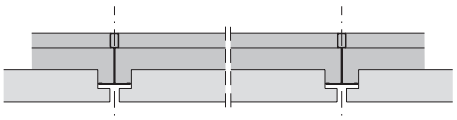
Section A-A

As can be seen in the sectional drawing, when the tiles are installed, the special grooved edges rest on the grid system.



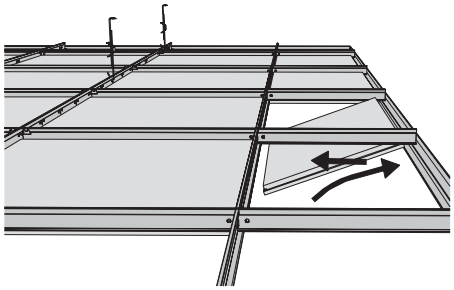
Section B-B

The ceiling tiles are not supported on the grid system. The grid structure is partially concealed by the rebated edge.



Cut Tiles

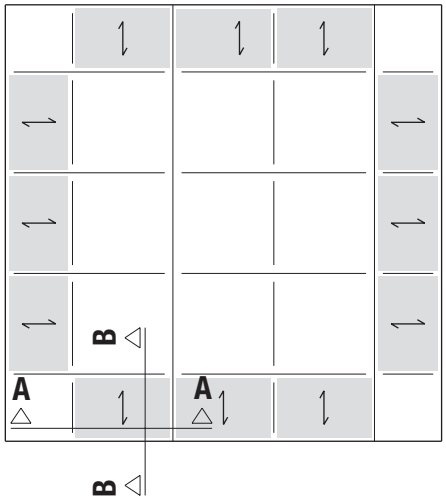
The next step is to fit the cut tiles at the perimeter. Please note that if the walls are irregular, the width of the cut tiles may need to vary along the edge of the wall. The direction of installation should always be in the direction of the wall, as shown. The cut edges of the tiles are pushed onto the shadow trim and then pulled in the opposite direction until the profile slots into the groove.



The cut tiles can be fixed using perimeter wedges from an open, adjacent field.

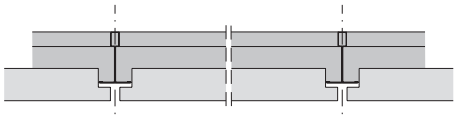
Plan

All cut edges should be installed in the direction of the wall. If necessary, the installation direction of the tiles can be rotated at the perimeter.



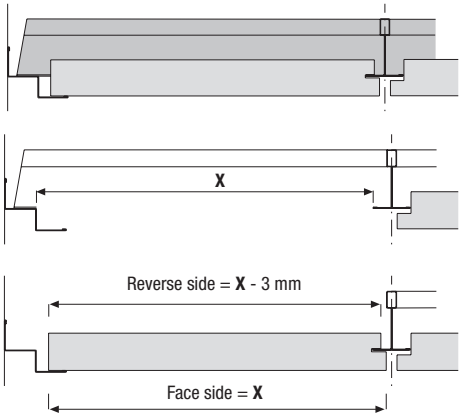
Section A-A

The ceiling tiles are not supported on the grid system. The grid structure is concealed by the rebated edge.



Section B-B

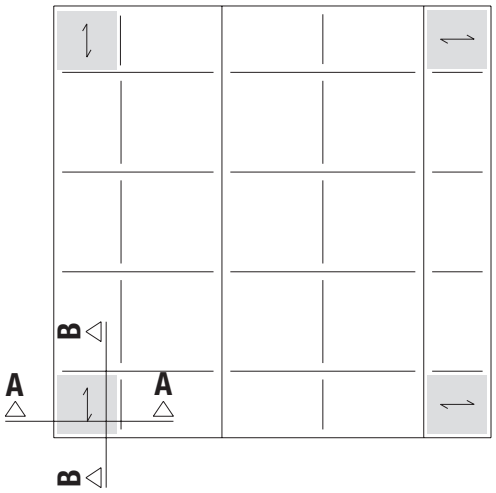
The cut tiles lie on the shadow trim and the grid system. The exact width is determined by:
Dimension **X** between the vertical edge of the perimeter shadow trim and the T-profile (see diagram).
Reverse side = **X** - 3 mm
Face side = **X**



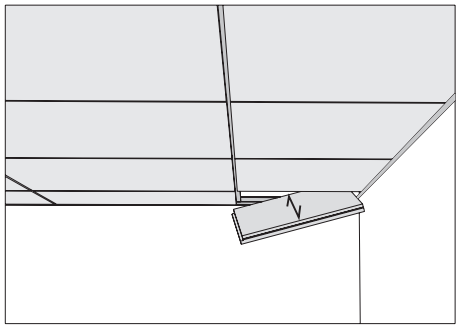
Corner tiles

The corner tiles need to be cut to different dimensions due to the different edge configurations.
They should be installed as the penultimate tile (simpler option).

Plan
The orientation of the tile is not so important in this case. It should however be ensured that the edge with double groove is removed.



Version 1
The corner tiles are installed last, which requires a certain amount of finesse. There is an increased risk of the edges being damaged.

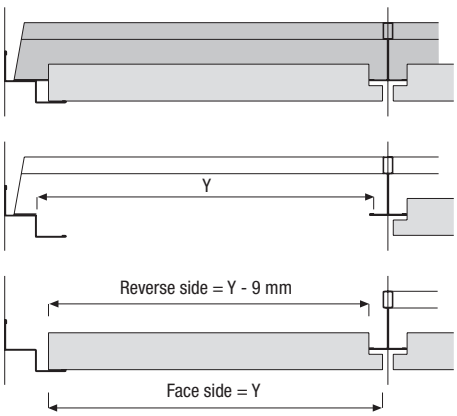


Version 2
As shown, we recommend installing the corner tile as the penultimate tile in a row.
The amount of work required is virtually identical. The sequence of steps however is slightly different.

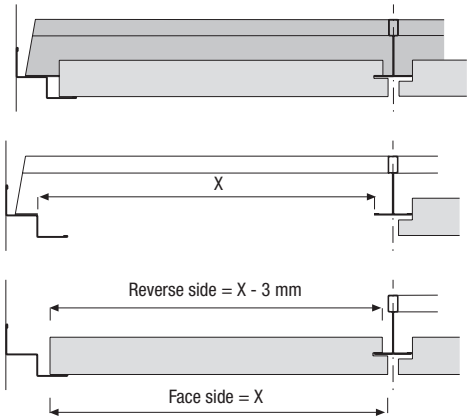
Section A-A and Section B-B
The required width of the tile will vary depending on the edge type.

X/Y: dimension between the vertical leg of the shadow trim and the grid profile (see diagram).

Section A-A



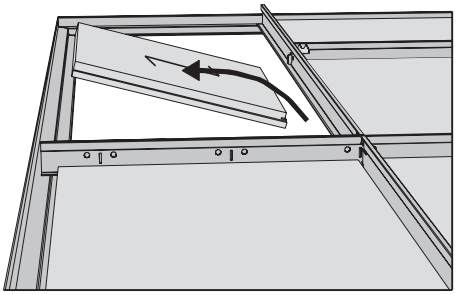
Section B-B



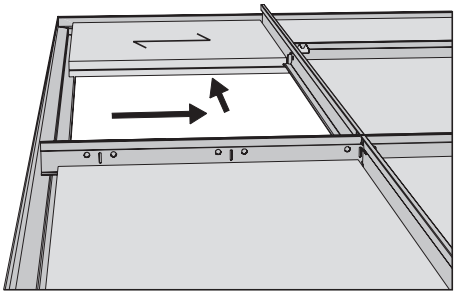
Version 2
This option is the simplest and most convenient method to install the ceiling tiles.
There are no additional steps necessary, just the order of the steps changes.

Initial situation:
The complete suspended ceiling is already installed except for the last two cut tiles (including cross profiles).
Ensure to leave an open area without main runners.

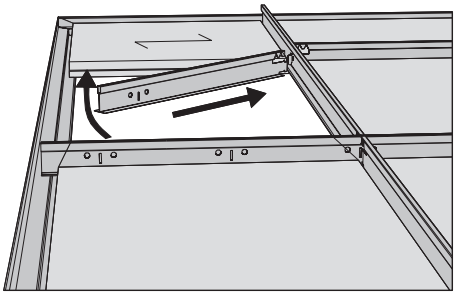
Step 1
After cutting the corner tile to size, one edge is slid onto the perimeter trim.



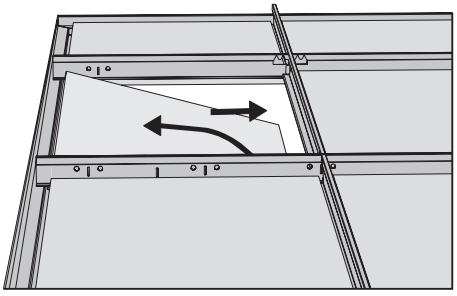
Step 2
The tile is pushed fully onto the profile (full groove depth) and lay on the second perimeter trim.



Step 3
After cutting the cross profile to size it is then installed.
Perimeter wedges for the corner tile are installed, when used.



Step 4
The pen-(ultimate) tile is pushed onto the perimeter trim (including hold down clips) and pulled back on to the profile.



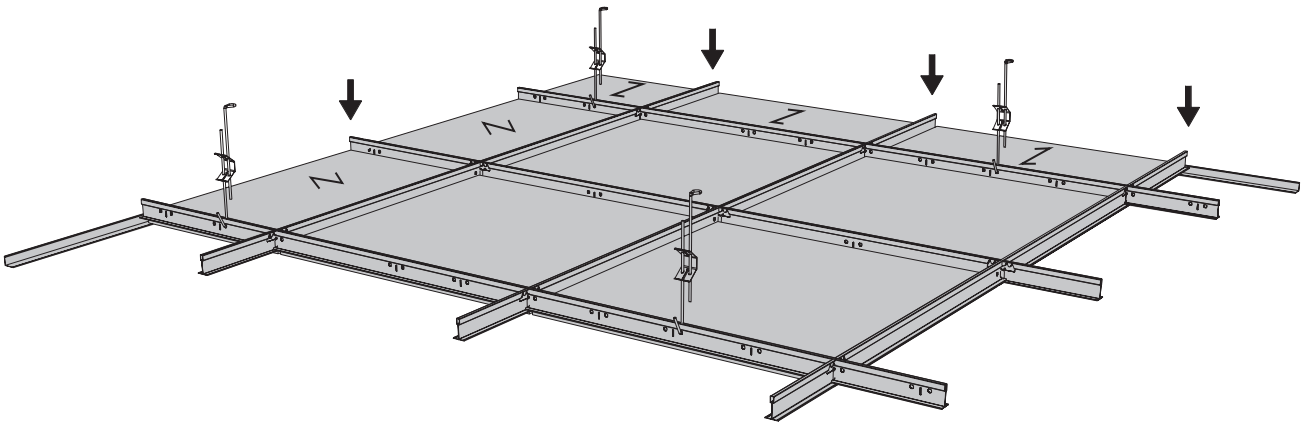
Special configurations

L-wall angle and other trims

When using other trim types, e.g. L24/24 or SRW 25/15/8/15, the perimeter trim must be installed so that the lower edge is 12 mm below the grid system.

The following points should be noted:

- The cut tiles must be installed in the correct direction between perimeter trim and profile (see diagram).
- The version may only be used for short cross profiles cut at the perimeter, not for long cross profiles.
- Additional hangers are not required for the cut profiles as they are not load bearing. The slightly inclined position of the cut profiles is barely visible form the underside and has almost no effect on the visual appearance of the joints.



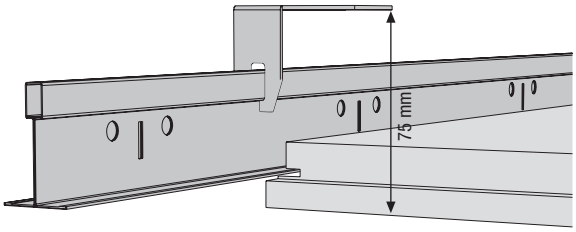
Direct installation

Installation from below is very advantageous for low suspension heights. As the installation can be fully carried out from below, with direct hangers, a minimum installation height of 74 mm (lower edge of the soffit to lower edge of the suspended ceiling) can be achieved.

Note

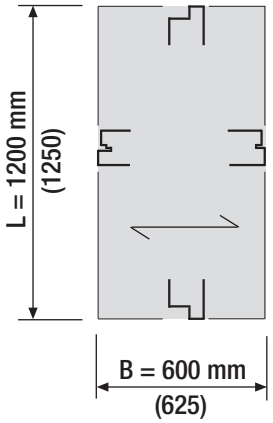
Depending on the hanger used, it may be difficult to compensate for any unevenness in the soffit. This requirement should always be established in advance.

It is recommended to install the tiles perpendicular to the main runners, so that no shifting can occur during installation.



Rectangular format 1200x600 mm or 1250x625 mm

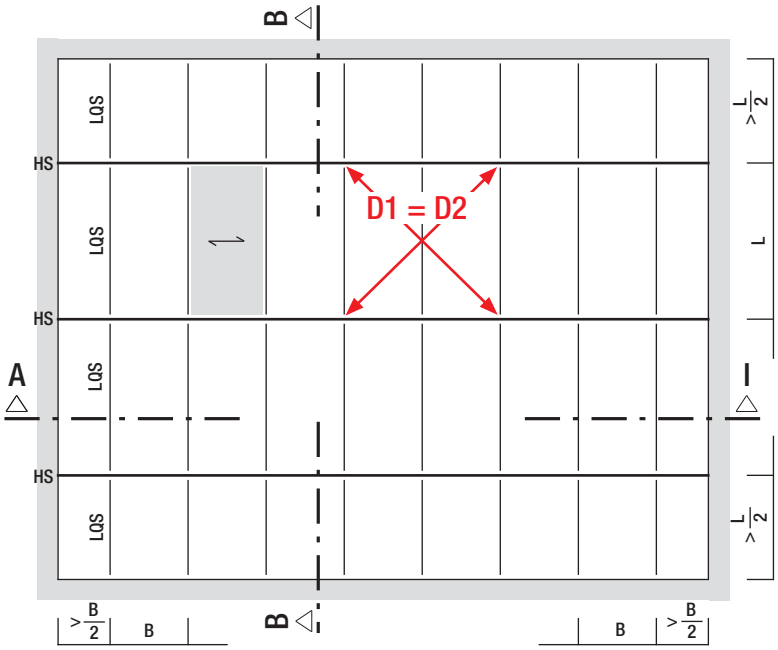
The stipulations set out in the previous chapters are to be observed.
The grid structure consists of T24/38 main runners and T24/33 or T24/38 long cross profiles.



Key

HS: Main runner T24/38
LQS: Long cross profiles T24/38 or T24/33

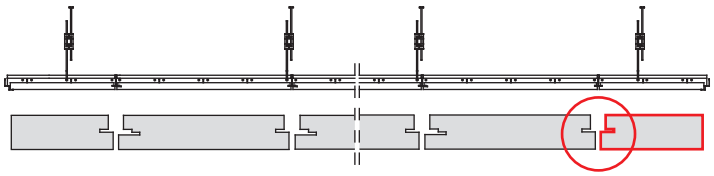
L: 1200 / 1250 mm (module)
B: 600 / 625 mm (module)



Note

Before installing the tiles and cutting (grid and tiles), the squareness of the grid should be checked. D1 = D2.

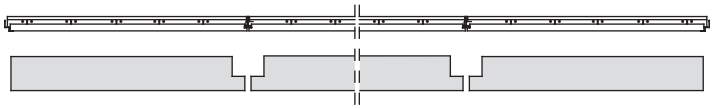
Section A-A



Note

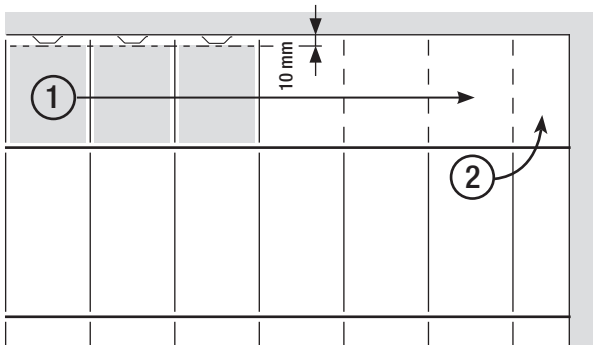
The last tile of a row should be turned, the double groove is omitted, see general guidelines – cut tiles.

Section B-B



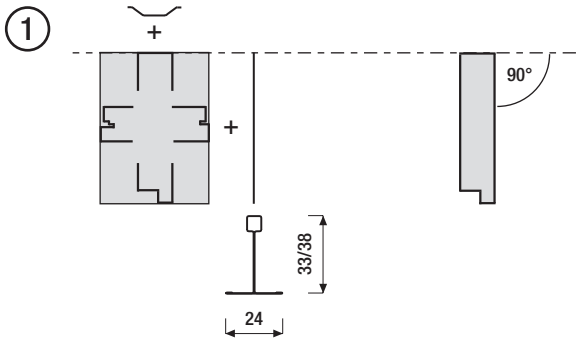
Installing the cut tiles

For the correct installation, a 10mm cut back is required. Ensure that the tiles, including grid and perimeter wedges are installed consecutively.

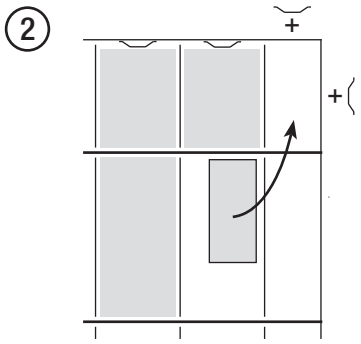


The cut tiles and the long cross profiles should always be installed alternately.

Before installing the next tile, a cut cross profile T24/38 or T24/33 should be installed. Every tile at the perimeter should be secured with a perimeter wedge. Due to this, tiles should be cut at right angles, back cut by 10 mm.



Ensure that the corner tiles are cut 10 mm smaller on two sides and secured with two perimeter wedges.



Note

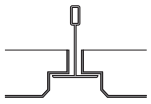
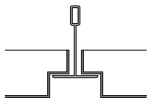
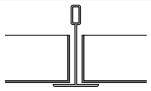
Cut tiles are only partly accessible.
The entire row, beginning in the corner, must be dismantled, back to the required opening.

System C 4.1 - MONDENA® lay-in system VT and SK

Product Range

Product		Thickness [mm]	Edge Configurations	Module [mm]
Product programme MONDENA®	Lay-in cassette - square	0.6	VT 24	625/625
		0.6	VT-S 15	600/600; 625/625
		0.6	VT-S 24	600/600, 675/675
		0.6	SK 24/15	600/600; 625/625
	Lay-in cassette - plank	0.6	SK 15	312.5/1250; 625/1250
		0.6	SK 24	300/1200; 600/1200

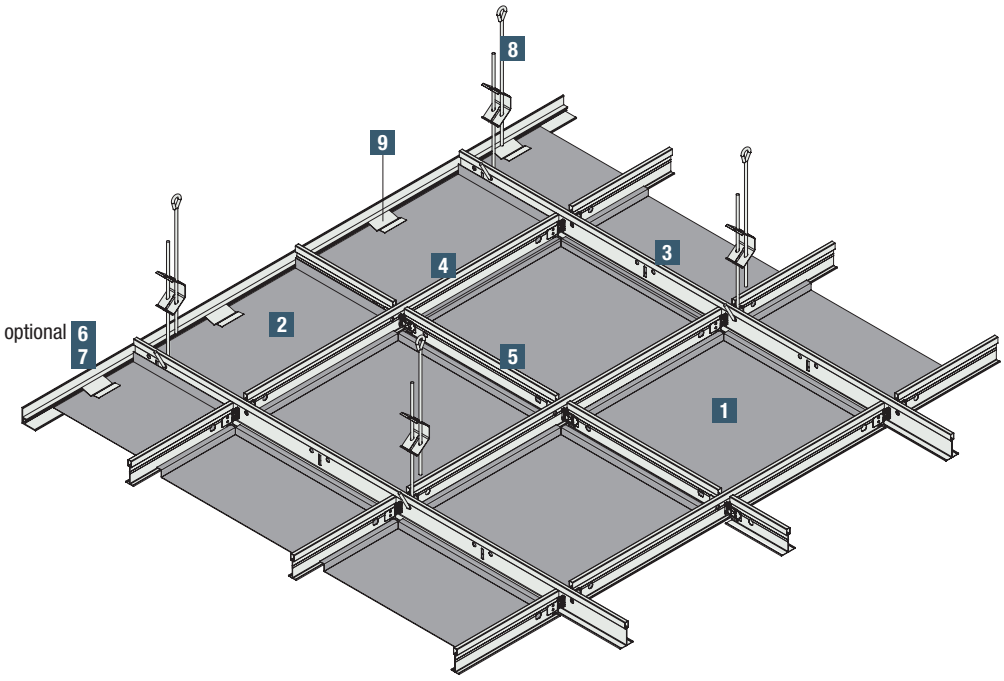
Edge Configurations

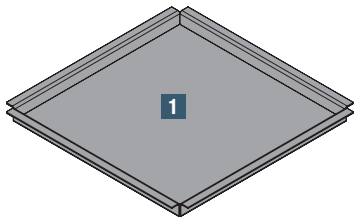
VT 24	 All 4 edges Z-formed
VT-S 15/24	 No bevel
SK 15/24	 2 edges L-formed 2 edges C-formed

- Affordable and economical ceiling solution
- Tiles can simply be removed by hand and offer convenient access to the ceiling void
- Simple installation and demounting of the cassettes (no tools required)
- The system is suitable for administration and industrial buildings, sales rooms, hotels, department stores, schools, exhibition rooms and commercial kitchens (in accordance with trade control)

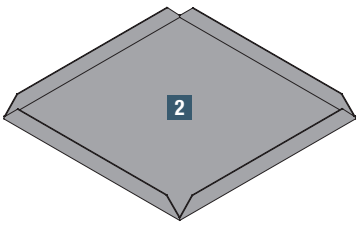
System overview – lay-in cassette VT and lay in cassette SK

The lay-in system C 4.1 is a quick and efficient system both in installation and maintenance as the ceiling void can be easily accessed without tools. The MONDENA® metal cassettes lie flush in the grid construction in the square edge (SK) version and the recessed edge (VT) version highlights the grid and the modular construction.





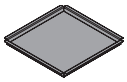
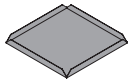
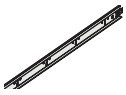
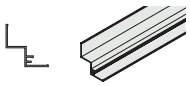
Lay-in cassette, VT edge
(sharp edge VT-S version displayed)



Lay-in cassette, SK edge

Material requirements/ key

The quantities and installation times stated are for guideline only.
They do not allow for waste or project specific scenarios.

	Product		Description	kg / packaging unit	Requirement per m² ceiling	
					Module [mm] 600	625
1	Lay-in cassette (VT edge)		Galvanised steel 0.6 mm	approx. 33.00	2.8 Pcs.	2.60 Pcs.
2	Lay-in cassette (SK edge)		Galvanised steel 0.6 mm	approx. 33.00	2.8 Pcs.	2.60 Pcs.
3	Main runner T24		Main runner T24 Galvanised steel Length: 3750 mm (3600 mm)	24.00 (23.00)	0.84 lin. m	0.80 lin. m
4	Cross profile T24 (butt cut)		Long cross profile, T24 Length: 1250 mm (1200 mm)	22.50 (21.60)	0.84 lin. m	0.80 lin. m
5			Short cross profile, T24 Length: 625 mm (600 mm)	11.30 (10.80)	1.67 lin. m	1.60 lin. m
6	Perimeter trim		Aluminium 1.5 mm RWL 25/25 with groove for spring clip Length: 4000 mm	8.40	As required in lin. m	
7	Shadow trim		Aluminium 1.5 mm SRW 25/20/20/25 with groove for spring clip Length: 4000 mm	13.60	As required in lin. m	
8	Hanger SoS		Length according to client requirements	approx. 3.00	0.67 Pcs.	
	Hanger SoH (optional)		Length according to client requirements	approx. 3.00	0.67 Pcs.	
9	Spring clip		Aluminium 0.5 mm 38 x 40 mm	0.22	3 - 4 Pcs.	

The illustrated hangers and profiles are examples.
Please observe country specific restrictions for use. Additional fixtures (such as loud speakers, downlights etc.) and loads must be separately suspended.

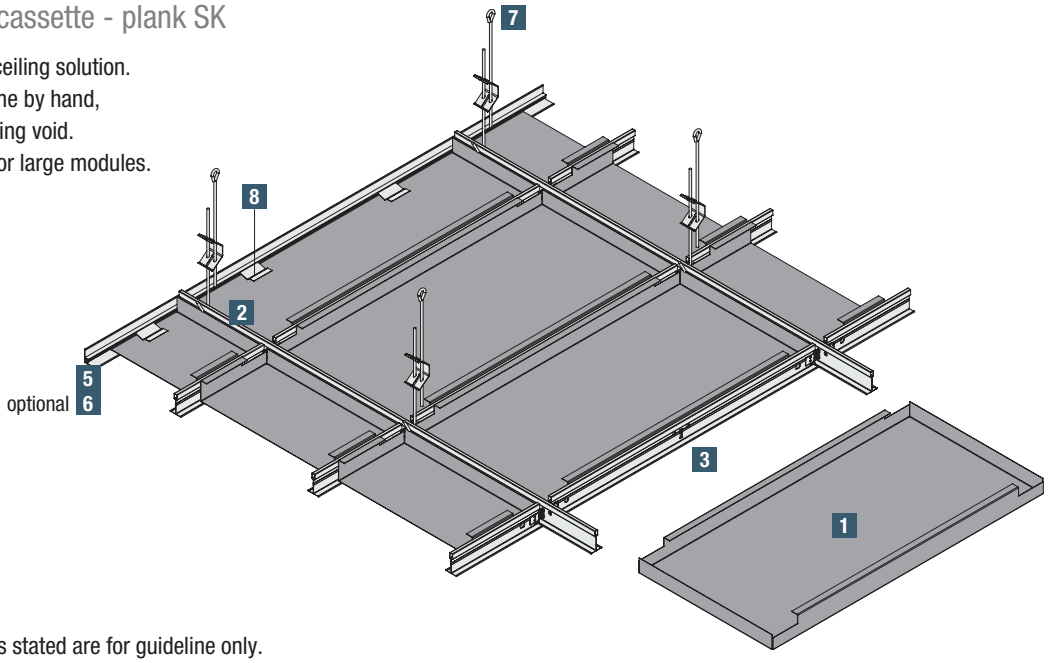
We recommend selecting a butt cut grid system to avoid corner shadows with the inserted cassettes.

Note

Please observe the dimensions and availability of edge configurations in the individual tables in the MONDENA® catalogue.

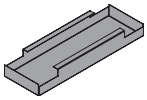
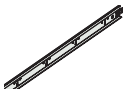
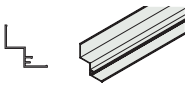
System overview – lay-in cassette - plank SK

The lay-in system is an economic ceiling solution.
The tiles can be removed at any time by hand,
offering practical access to the ceiling void.
Plank cassettes are ideally suited for large modules.



Material requirements/ key

The quantities and installation times stated are for guideline only.
They do not allow for waste or project specific scenarios.

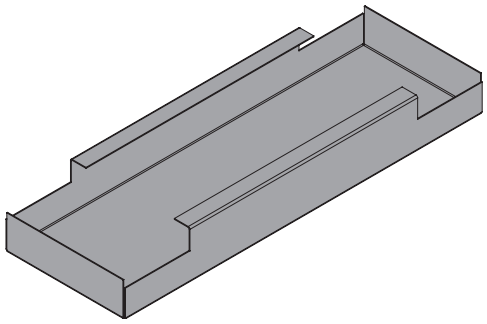
Product			Description	kg / packaging unit	Requirement per m² ceiling
					Module 600/1200 mm
1	Lay-in plank cassette (SK edge)		Galvanised steel 0.6 mm	--	1.40 pcs.
2	Main runner T24		Main runner T24 Galvanised steel Length: 3750 mm (3600 mm)	24.00 (23.00)	0.84 lin. m
3	Cross profile T24 (butt cut)		Cross profile T24 Length: 1250 mm (1200 mm)	22.50 (21.60)	1.67 lin. m
5	Perimeter trim		Aluminium 1.5 mm RWL 25/25 with groove for spring clip Length: 4000 mm	8.40	As required in lin. m
6	Shadow trim		Aluminium 1.5 mm SRW 25/20/20/25 with groove for spring clip Length: 4000 mm	13.60	As required in lin. m
7	Hanger SoS		Length according to client requirements	approx. 3.00	As required in pcs.
	Hanger SoH (optional)		Length according to client requirements	approx. 3.00	As required in pcs.
8	Spring clip		Aluminium 0.5 mm 38 x 40 mm	0.22	4 - 5 pcs.

The illustrated hangers and profiles are examples. Please observe country specific restrictions for use.
Additional fixtures (such as loud speakers, downlights etc.) and loads must be separately suspended.

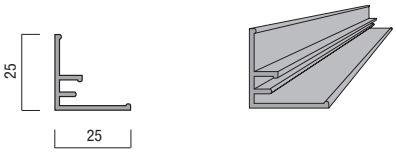
Note

Bespoke dimensions on request.

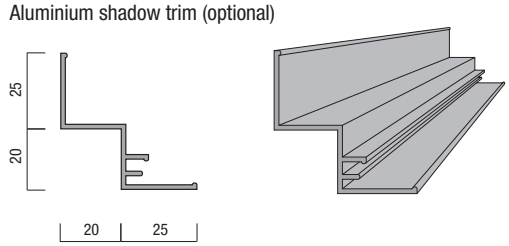
Cassettes
Lay-in plank cassette, SK edge



Aluminium wall angle



Aluminium shadow trim (optional)



Technical Properties

System	Lay-in plank tile SK (plain or perforated)
Material	Galvanised steel 0.6 mm
Edge configuration SK	2 sides L-shaped; 2 sides C-shaped (square edge)
Perforation	Perforation patterns Rg 1613, Rd 1625, Rg 2516, Rd 3022 (other perforation patterns on request)
Coating	Powder coated pure white similar to RAL 9010, matt, gloss level 20% , HYGIENE coating on request
Building material class	A2-s1,d0 as per EN 13501-1
Light reflection according to EN 5036	approx. 90 % pure white similar to RAL 9010 matt, gloss level 20%, unperforated (standard)

The metal cassettes / tiles are produced in accordance with TAIM and EN 13964

Installation guidelines

The installation of system C 4.1 MONDENA® follows the same guidelines as system C 1.1.
Cutting of the metal cassettes at perimeters is carried out with electric shears, nibblers or a circular table saw.