

SHORT VERSION



SYSTEM SOLUTIONS

SHORT VERSION

Please note, this document is not capable with all kinds of installation or the thereof resulting product variants.

If there is further technical information required, whether it is about the installation or applicaton itself, make sure you get in contact with our technical sales team accordingly.

In case of further norms or registrations being requested by the site or installer, please get in contact upront further progress.

Contents

I. System A - Concealed Systems	05	VI. Baffles	65
System A 2.1 - HERADESIGN® non-accessible	06	HERADESIGN® Baffle Line / Element Profile	66
System A 2.2 - HERADESIGN® demountable	09		
II. System B - Screw-fix Systems	11	VII. Wall Absorbers	69
System B 2.1 - HERADESIGN® screw fixed onto wooden battens	12	FABRIC Wallcoustic Line	70
System B 2.2 - HERADESIGN® screw fixed onto CD-profiles	18	HERADESIGN® Wallcoustic Element	71
III. System C - Exposed Systems	24	VIII. Application, Handling and Accessories	90
System C 2.1 - HERADESIGN®	26	HERADESIGN®	91
IV. Special Systems	44		
System S 2.1 - HERADESIGN® installation with holding profiles	47		
V. Ceiling Rafts	51		
MINERAL Sky Line	52		
HERADESIGN® Sky Element	58		
HERADESIGN® Sonic Element Plus	60		

The systems and applications described are installation types for indoor use and should only be carried out under controlled humidity and temperature conditions.

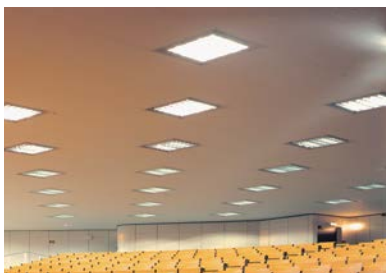
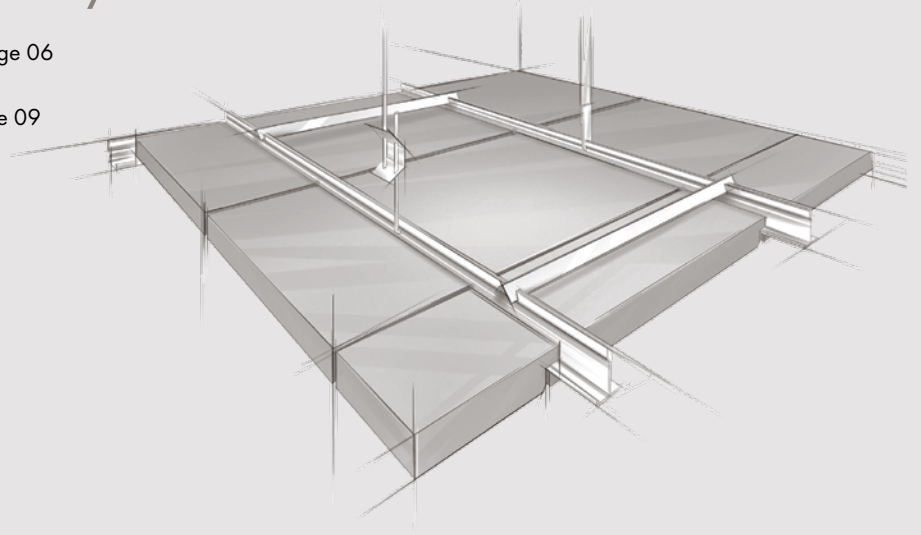
More detailed information can be found in the chapters Installation and system conditions.

Installations for external areas are not covered in this document.

System A - Concealed Systems

System A 2.1: HERADESIGN® non-accessible – Page 06

System A 2.2: HERADESIGN® demountable – Page 09



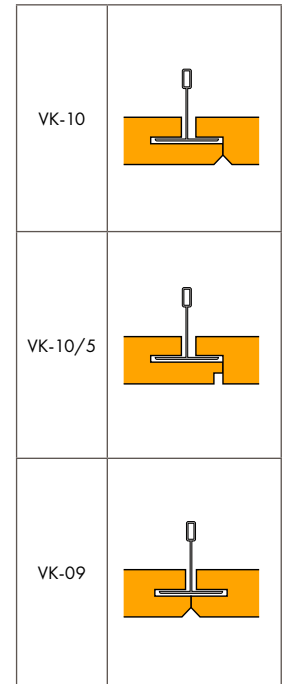
System A utilises concealed suspension profiles. The ceiling tiles can be demountable or non-accessible, according to the construction variation used. Dependent on individual requirements the ceiling void can either be accessible or non-accessible. The concealed profiles create a smooth, monolithic appearance.

System A 2 - HERADESIGN®

Product Range

	Product	Thickness [mm]	Weight [kg/m ²]	Edge configuration	Module [mm]	
Product programme HERADESIGN®	HERADESIGN® superfine	35	15.0	VK-10 VK-10/5	600/600; 600/1200	
	HERADESIGN® fine	35	16.3			
	HERADESIGN® micro	35	19.0			
	Product programme A2	HERADESIGN® superfine A2	25 35	11.3 15.0	VK-09	600/600; 600/1200
		HERADESIGN® fine A2	25 35	12.4 16.3		
		HERADESIGN® micro	25 35	15.0 19.0		
		HERADESIGN® macro	25	15.0		
	HERADESIGN® plano	25	15.0			

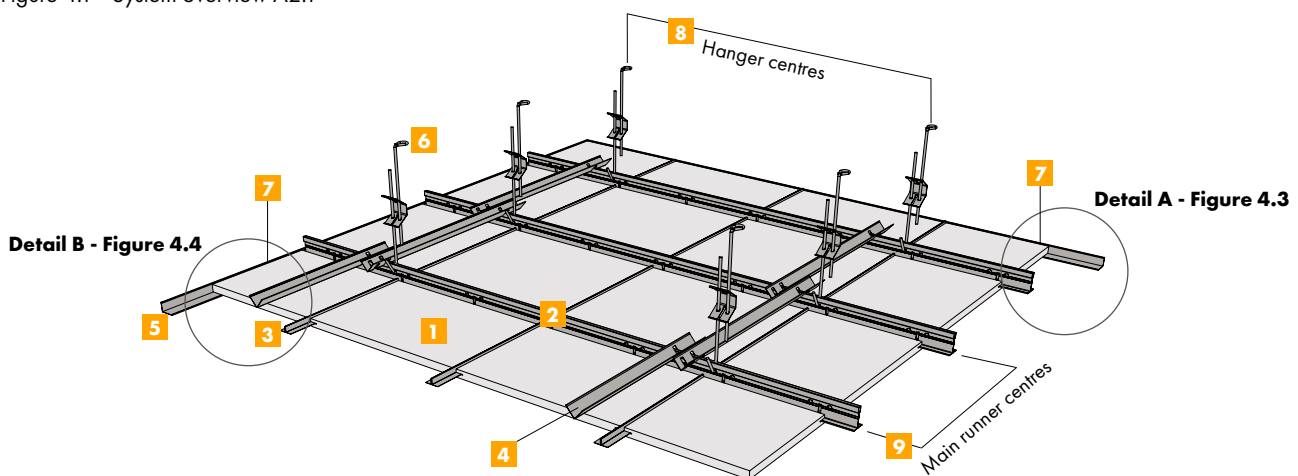
Edge configurations



System A 2.1 - HERADESIGN® non-accessible

System A 2.1 is a HERADESIGN® suspended ceiling with concealed T-profiles. The push-in installation and the use of tiles with a VK 09 edge configuration mean the tiles are non-accessible. Using suitable hangers, the T35/38 main runners (DONN® DX35) are installed as main profiles (see system overview Figure 4.1).

Figure 4.1 - System overview A2.1

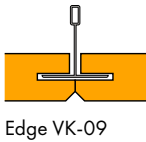


VK tiles (Figure 4.2)

The tiles have the following edge configuration:

VK-09: grooved and beveled on all sides, 5 mm bevel

Figure 4.2



Edge VK-09

Material requirements/ key

The quantities and installation times stated in Table 4.1 are for guideline only. They do not allow for waste or project specific scenarios.

Note

Cross bracing: If the cross profiles are not anchored in the main runners (butt cut T-profiles pushed together), the system must be cross braced with spacer bars (see system overview, No. 4). The spacer bars are lay out so that over every second tile a spacer bar is present at maximum 1250 mm centres.

Access to the ceiling void: Access to the ceiling void is via integrated maintenance openings. For every maintenance opening, the two main runners each require an additional hanger around the middle of the tile.

For the implementation requirements see DIN 18168 part 1 "Light-weight ceiling linings and suspended ceilings", or DIN-EN13964 "Suspended ceilings – requirements and test methods".

Table 4.1 – Requirements for every m² ceiling

	Product description	Article number	Module [mm]	
			600 x 600	600 x 1200
1	HERADESIGN® Wood wool tile		2.78 Pcs.	1.39 Pcs.
2	Main runner	DX35 XH 370 W	1.70 lin. m	1.70 lin. m
3	Cross profile	DCT 60	2.78 Pcs.	1.39 Pcs.
4	Spacer bar	DMK 60/62.5	1.39 Pcs.	1.39 Pcs.
5	Perimeter trim		0.40 lin. m	0.40 lin. m
6	Hanger		1.38 Pcs.	1.38 Pcs.
7	Perimeter wedges	DCC 8	0.80 Pcs.	0.80 Pcs.

All figures are estimates and do not include waste.

Table 4.2 – maximum permitted weight for every m² ceiling when using Nonius hangers

8 Hanger centres	Module [mm]	
	600 x 600	600 x 1200
	9 Main runner centres	
	600 mm	600 mm
800 mm	30.0 kg	30.0 kg
1000 mm	30.0 kg	30.0 kg
1200 mm	20.0 kg	20.0 kg
Note: The load per m ² must be distributed evenly (no extra point loads permitted). Deflection after loading is in accordance with class 1 (L/500) of EN 13964 when the grid structure is installed as shown.		
For other constructions, loads or hanger centres, please contact Knauf Ceiling Solutions.		

Installation

Install the perimeter trim **5** at the required height.
Lay out the modules with equal perimeter fields.

Install the hangers **6** or stagger sliders with slotted metal strips and hang and align the main runners **2**.

Stagger the profile joints and an additional hanger must be installed next to each joint. Starting in the middle of the room, insert the HERADESIGN® acoustic tiles in fields. The tiles in the first row and the first tile of each further row should be cut to fit exactly. This prevents the tiles shifting when the following tiles are inserted. The last tile should be cut and installed with a perimeter wedge. In order to slide the tiles in, the profiles must be pushed apart.

Install spacer bars **4** and cross profiles **3** as cross bracing. Install perimeter tiles with a 10 mm gap on the perimeter trim **5** and fix with perimeter wedges **7**.

If a mineral wool overlay is required, it must be in tile format and installed step by step with the tiles.

Note

For suspended ceilings that are subject to vibrations and for large suspension heights, or where the hangers are fixed to steel or wood substructures, an adequate number of hangers must be set diagonally in both directions in order to minimise the swaying of the ceiling. Ceiling statics are necessary.

Mineral wool or film overlays are installed step by step with the acoustic tiles. Film joints and connections must be taped. PE films up to 30 µm thick do not impair acoustic absorption of the absorber and serve as trickle protection.

The corrosion protection of all metal parts must be in accordance with the prevailing conditions in the room. Tiles which are damaged, soiled or have colour deviations may not be installed.

Figure 4.3 - Perimeter connection Detail A

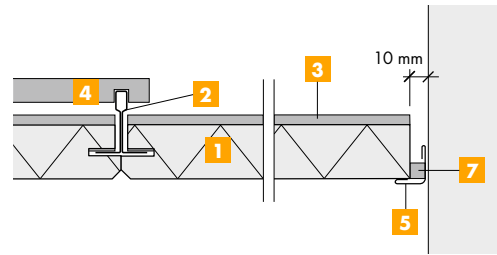
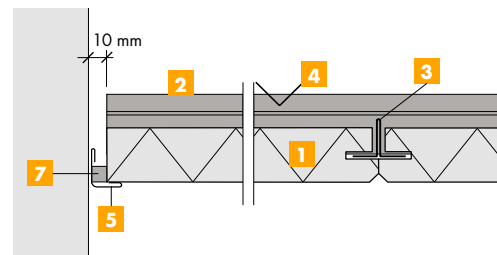


Figure 4.4 - Perimeter connection Detail B

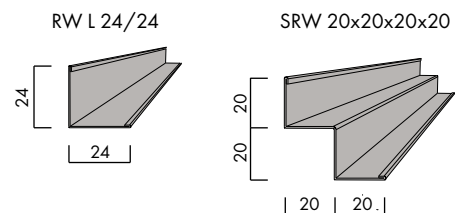


Perimeter profiles

Formats

For the perimeter of ceilings, various wall connection profiles are available, including:

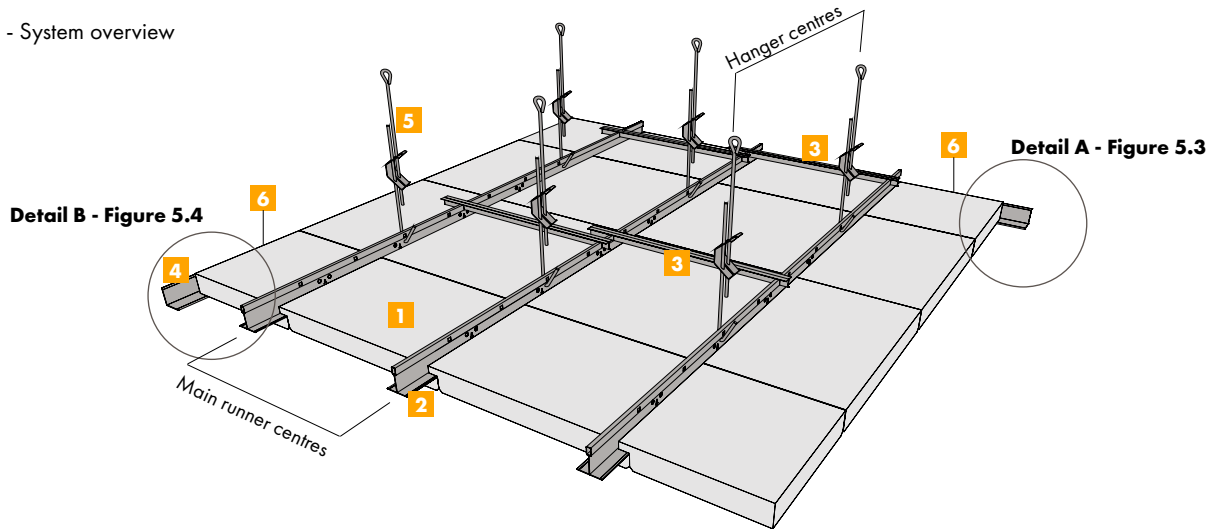
	Thickness	Length	Article number
Wall angle 24/24	0.5 mm	3.00 m	RW L24/24
Shadow trim 20/20/20/20 20x20x20x20	0.7 mm	3.00 m	SRW



System A 2.2 - HERADESIGN® demountable

System A 2.2 is similarly constructed to system A 2.1, but is demountable. The VK-10 and VK-10/5 edge configurations of the ceiling tiles make the system demountable (Minimum suspension height = 150 mm). Using suitable hangers, the T35/38 main runners (DONN® DX35) are installed as main profiles (see system overview Figure 5.1).

Figure 5.1 - System overview

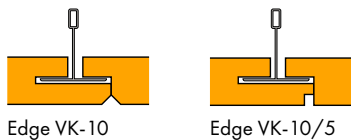


VK tiles (Figure 5.2)

The tiles have different edge configurations

- VK-10:** long side grooved and all-round bevel, 5 mm bevel
- VK-10/5:** long side grooved and all-round square edge with 5 mm gap

Figure 5.2



Material requirements / key

The quantities and installation times stated in Table 5.1 are for guideline only. They do not allow for waste or project specific scenarios.

Note

Cross bracing: As there are no cross profiles between the main runners, spacer bars must be used to cross brace the system. The spacer bars are lay out so that over every second tile a spacer bar is present at maximum 1250 mm centres. Every second tile is then immediately demountable.

Access to the ceiling void: Every second tile is demountable. Determine the movable end of the tile and then push the tile upwards and diagonally remove from the grid. For larger access openings, remove the spacer bars from surrounding tiles and demount the tiles. When reinstalling the tiles, ensure the spacer bars are also reinstalled.

For the implementation requirements see DIN 18168 part 1 "Lightweight ceiling linings and suspended ceilings", or DIN-EN 13964 "Suspended ceilings – requirements and test methods"

Table 5.1 - Requirements for every m² ceiling

Product description	Article number	Module	
		600 x 600	600 x 1200
1 HERADESIGN® Wood wool tile		2.78 Pcs.	1.39 Pcs.
2 Main runner	DX35 XH 370 W	1.70 lin. m	1.70 lin. m
3 Spacer bar	DMK 60/62.5	1.39 Pcs.	1.39 Pcs.
4 Perimeter trim		0.40 lin. m	0.40 lin. m
5 Hanger		1.38 Pcs.	1.38 Pcs.
6 Perimeter wedge	DCC 8	0.80 Pcs.	0.80 Pcs.

All figures are estimates and do not include waste.

Table 5.2 - maximum permitted weight for every m² ceiling when using Nonius hangers

Hanger centres	Module [mm]	
	600 x 600	600 x 1200
	Main runner centres	
	600 mm	600 mm
800 mm	30.0 kg	30.0 kg
1000 mm	30.0 kg	30.0 kg
1200 mm	20.0 kg	20.0 kg
Note: The load per m ² must be distributed evenly (no extra point loads permitted). Deflection after loading is in accordance with class 1 (L/500) of EN 13964 when the grid structure is installed as shown.		
For other constructions, loads or hanger centres, please contact Knauf Ceiling Solutions.		

Installation

Install the perimeter trim **4** at the required height.
Lay out the modules with equal perimeter fields.

Install the hangers **5** or stagger sliders with slotted metal strips and hang and align the main runners **2**.

Stagger the hanger and grid joints and install an additional hanger at every joint. Starting in the middle of the room, insert the HERADESIGN® acoustic tiles in fields.

The tiles in the first row and the first tile of each further row should be cut to fit exactly. This prevents the tiles shifting when the following tiles are inserted. The last tile should be cut and installed with a perimeter wedge.

Install spacer bars **3** and cross profiles as cross bracing. Install perimeter tiles with a 10 mm gap on the perimeter trim **4**, and fix with perimeter wedges **6**.

If a mineral wool overlay is required, it must be in tile format and installed step by step with the tiles so that the acoustic tiles can be pushed upwards for access to the ceiling void.

Note

For suspended ceilings that are subject to vibrations and for large suspension heights, or where the hangers are fixed to steel or wood substructures, an adequate number of hangers must be set diagonally in both directions in order to minimise the swaying of the ceiling. Ceiling statics are necessary.

The corrosion protection of all metal parts must be in accordance with the prevailing conditions in the room. Tiles which are damaged, soiled or have colour deviations may not be installed.

Minimum suspension height: To install the tiles without any problem, a minimum suspension height of 14 cm is required with wire hangers or flat hangers or 19 cm for suspensions with sliders or Nonius hangers.

Suspension height: Distance between under edge of T-profile to the under edge of soffit. For mineral wool overlays, the minimum suspension height must be increased by the thickness of the mineral wool.

Figure 5.3 - Perimeter connection Detail A

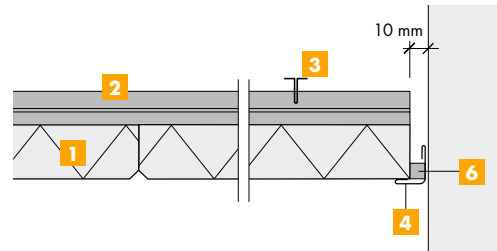
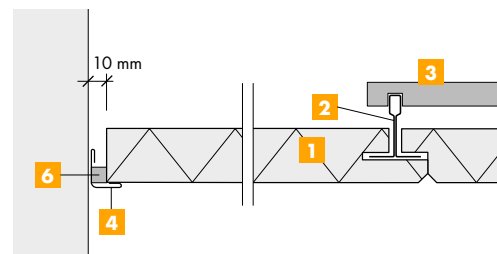


Figure 5.4 - Perimeter connection Detail B

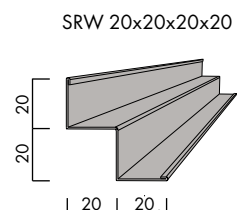
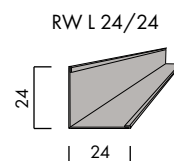


Perimeter profiles

Formats

A variety of profiles are available for the perimeter connection of the suspended ceiling:

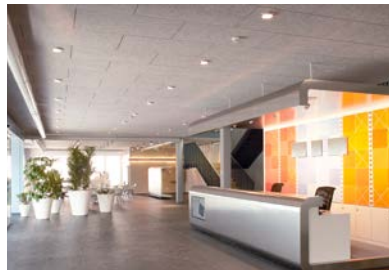
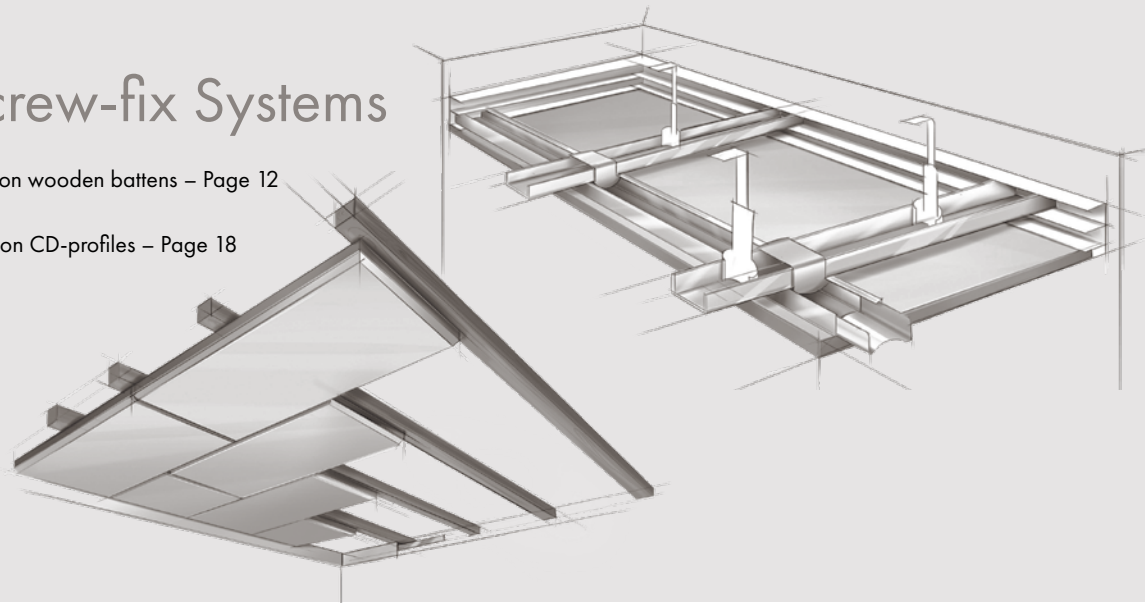
	Thickness	Length	Article number
Wall angle 24/24	0.5 mm	3.00 m	RW L24/24
Shadow trim 20/20/20/20 20x20x20x20	0.7 mm	3.05 m	SRW



System B - Screw-fix Systems

System B 2.1: HERADESIGN® on wooden battens – Page 12

System B 2.2: HERADESIGN® on CD-profiles – Page 18



Product Range

	Product	Thickness [mm]	Weight [kg/m ²]	Edge configuration ²⁾	Main profile centres [mm]	Tile size ¹⁾ [mm]
Product programme	HERADESIGN® superfine	15	7.8	GK AK-00 AK-01	300; 312,5 400; 416,6 ¹⁾	600/600 600/1200 625/625 625/1250
	HERADESIGN® fine	15	8.2			
	HERADESIGN® superfine	25 / 35	11.3 / 15.0	GK AK-00 AK-01 AK-02 AK-03	600; 625 600; 625	
	HERADESIGN® fine	25 / 35	12.4 / 16.3			
	HERADESIGN® macro	25	12.4			
	HERADESIGN® micro	25 / 35	15.0 / 19.0			
	HERADESIGN® plano	25	15.0	AK-00, AK-01, AK-02, AK-03 AK-01, SK-04, SK-06, VK-09		
Product programme A2	HERADESIGN® superfine A2	15	12.0	GK AK-00 AK-01	300; 312,5 400; 416,6 ¹⁾	
	HERADESIGN® fine A2	15	13.0			
	HERADESIGN® superfine A2	25	18.0	GK AK-00 AK-01 AK-02 AK-03	600; 625	
	HERADESIGN® fine A2	25	19.0			
Product programme plus ³⁾	HERADESIGN® superfine plus	40 (15/25) 50 (25/25)	10.1 13.6	AK-01 plus	600 ³⁾	600/1200
	HERADESIGN® fine plus	40 (15/25) 50 (25/25)	10.5 14.7			
	HERADESIGN® micro plus	50 (25/25)	17.3			
	HERADESIGN® plano plus	50 (25/25)	17.3			

Edge Configurations

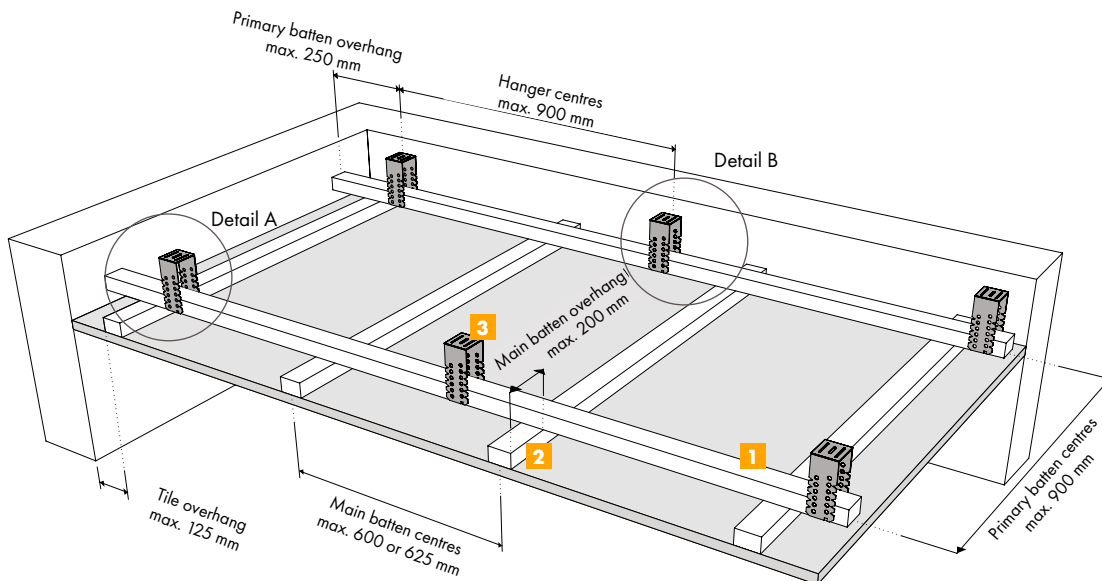
GK ²⁾	
AK-00 ²⁾	
AK-01	
AK-02/5	
AK-02/10	
AK-02/20	
AK-03	

- 1) Alternatively, for tile sizes 600/1200 and 625/1250, batten centres can be 1/3 of the tile length. 15 mm tile thickness: Not suitable for external applications or swimming pools.
- 2) Note: GK edge configuration – square edge, no bevel. Increased care required by installation. Due to the permissible tolerances of the tile thickness of ± 1 mm and no bevel, height differences between the tiles may be visible. Additional painting of the tile edges is recommended. Note: Knauf Ceiling Solutions is not a kit provider in terms of EN 13964.
- 3) Note: Observe the screw pattern for HERADESIGN® plus.

System B 2.1 - HERADESIGN® tiles on wooden battens

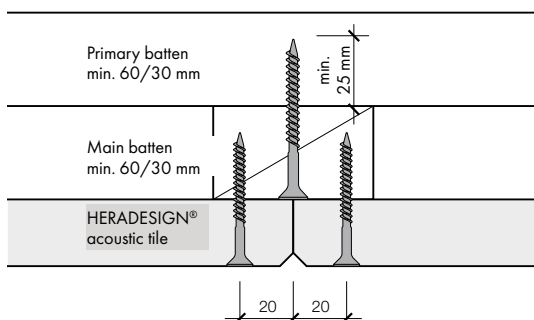
Sizes and dimensions

The HERADESIGN® acoustic tiles are screw-fixed with HERADESIGN® screws onto wooden battens with a cross-section of minimum 30/60 mm. Batten centres maximum 600 or 625 mm. The primary battens should be at maximum 900 mm centres (ball impact resistant version). The hangers are fixed to the soffit in 900/900 modules.

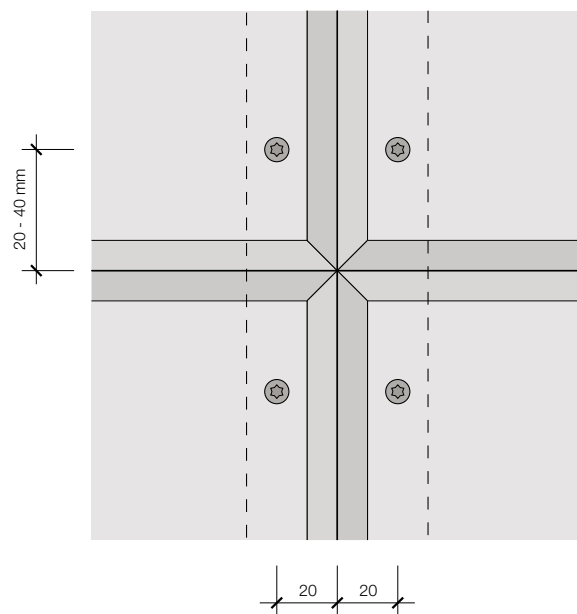


Connecting the primary battens / main battens

The main battens are fixed to the primary battens 60/30 or 60/40 with $\geq 4.5 \times 55$ mm screws according to DIN 7997. Screw depth minimum 25 mm. Number of screws according to static requirements. Recommended: Two per connection point. However, according to DIN 18168/T1 one single screw is permitted ($\geq 5 \times 55$ mm)



Screws



The minimum cross-section of the primary batten is 60/40 mm or 60/30 mm according to DIN 18168 or EN 13964, if the primary and main battens have the same cross-section.

Maximum centres of the substructure for deflection class 1 according to EN 13964 (max. deflection L/500)

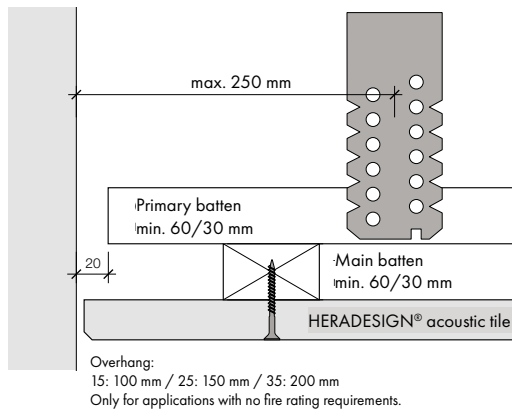
Primary battens cross-section (w/h) 60/30, 60/40 mm	Main battens max. 600 or 625 mm centres	Maximum load (incl. own weight of the ceiling in kN/m ²)		
		Maximum hanger centres		
		750 mm	900 mm	1150 mm
Centres	Cross-section w/h			
max. 600 mm	60/30, 60/40	0.55 kN/m ²	0.45 kN/m ²	0.35 kN/m ²
max. 900 mm	60/30, 60/40	0.35 kN/m ²	0.25 kN/m ²	

Max. hanger load: 0.40 kN. With a permissible hanger load of 0.25 kN, the additional loads must be multiplied by 0.6, i.e. reduced. Wood quality class S 10 as per EN 1912. For F 30, EI 30 ceilings, or ceilings that are ball impact resistant the centres and cross sections must be according to the test certificate.

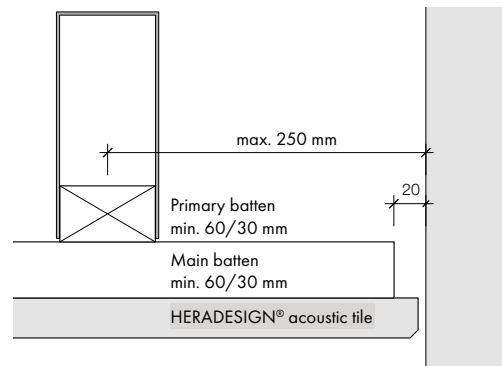
Material requirements

Component	Centres	Unit	Approx. material requirements for every m ² ceiling *)	Comments
1 Primary batten 60/30 mm	C = 600 mm	lin. m	1.7	For 4000 mm lengths
	C = 900 mm		1.1	
2 Main batten 60/30 mm	600 mm	lin. m	1.7	
	625 mm		1.6	
3 Hanger	C = 600 mm	pcs.	2.4	Permitted hanger load max. 0.4 kN
	C = 900 mm		2.0	

Perimeter connection Detail A

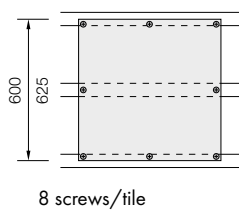


Perimeter connection Detail B



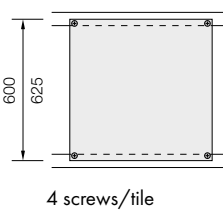
Screw pattern

for 15 mm tiles



Screw pattern

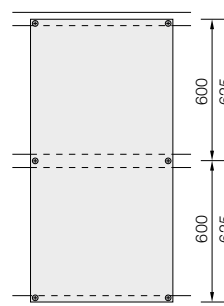
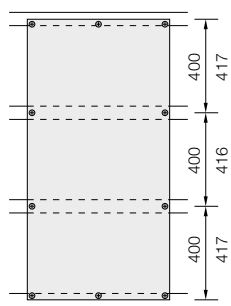
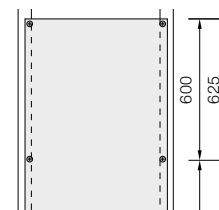
for 25 mm and 35 mm tiles



Screw pattern

Product programme plus

for 40 mm and 50 mm tiles



10 screws/tile

6 screws/tile

6 screws/tile

Ball impact resistant fixing as per EN 13964, Annex D or DIN 18032 / part 3

Installation type	Thickness [mm]	Edge configuration	Main batten centres [mm]	Primary and main batten cross section	Primary batten and Nonius hanger centres ^{6*)} [mm]
Ceiling	35/25	AK-01	600; 625	≥ 60/30	900
Wall	35	AK-01	600; 625	≥ 60/30	900
Wall ^{7*)}	25	AK-01	300; 312.5	≥ 60/30	900

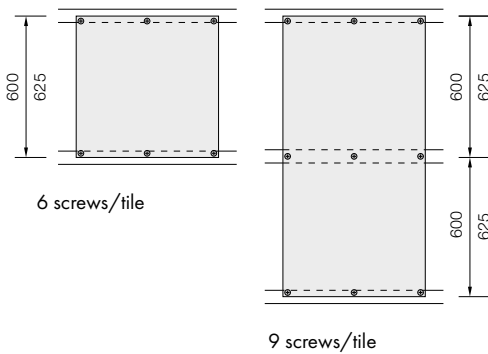
^{6*)} without additional loads. For additional loads, as per Table "Maximum centres of the substructure" for screw-fixing onto wooden battens.
^{7*)} For HERADESIGN® superfine A2 and HERADESIGN® fine A2

Note: pieces cut to size with a length of less than 500 mm must be supported on all four sides.

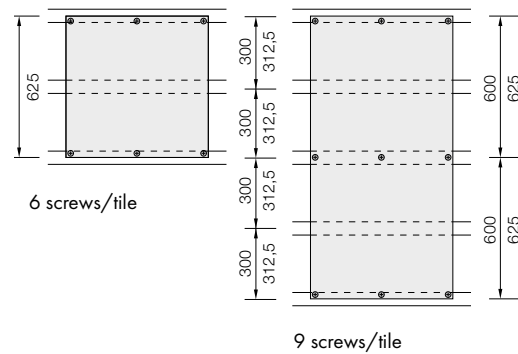
Screw patterns

For ball impact resistant fixing of HERADESIGN® acoustic tiles, at least three screws must be used per tile width and support.
 Max. screw centres ≤ 315 mm. This also applies to covered external applications, for EI30 suspended ceilings and vibrating constructions.

Ceiling installation: 25 mm and 35 mm tiles
 Wall installation: 35 mm tiles



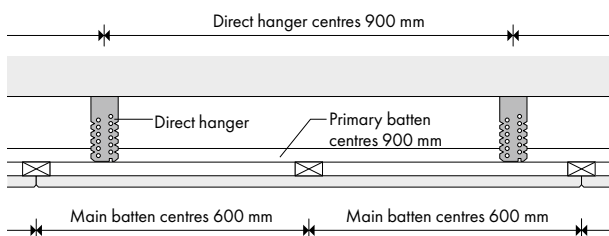
Wall installation: 25 mm tiles ^{*)}



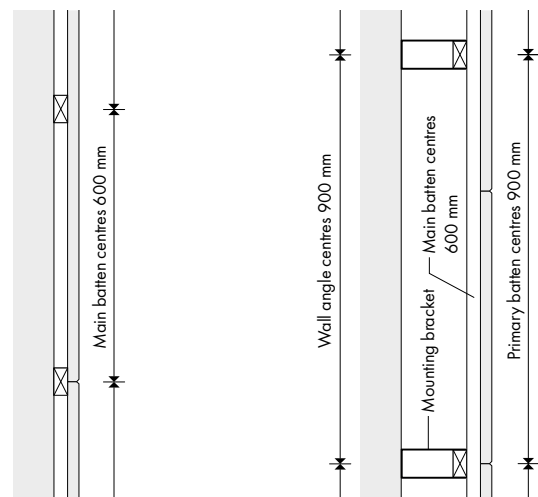
^{*)} For wall installation of 25 mm HERADESIGN® tiles, the main batten centres are reduced to 300 or 312.5 mm. The position and number of the screws remains the same.

Construction diagrams

Ceiling installation - cross grid
 (vertical section)



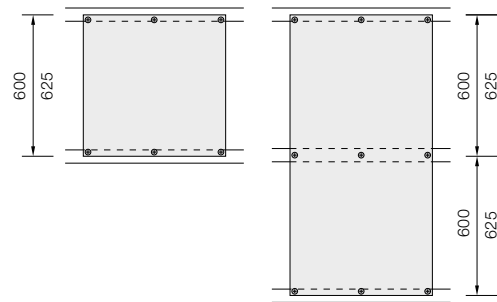
Wall installation – parallel grid **Wall installation – cross grid**
 (horizontal section) (horizontal section)



Construction requires structural support in the footing, limited wall height.

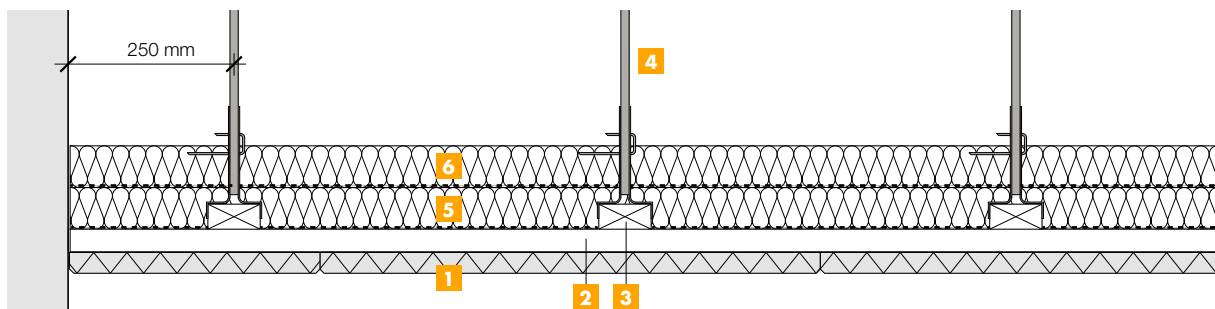
Fire resistance as per EN 1364-2, or EN 1363-1

HERADESIGN® suspended ceilings have been tested as an independent ceiling element for fire exposure from below. The test reports describe the installation procedure, test conditions and the test results of the tested construction. Any significant deviation in terms of size, construction, loading and spanning are not covered in the test report and have to be clarified with a fire expert. The fixing of the tiles and the substructure centres are as per the test certificate. For EI-30 constructions, the two mineral wool overlays must be lay cross-wise, i.e. at 90°. The mineral wool must be installed with butted and staggered joints.



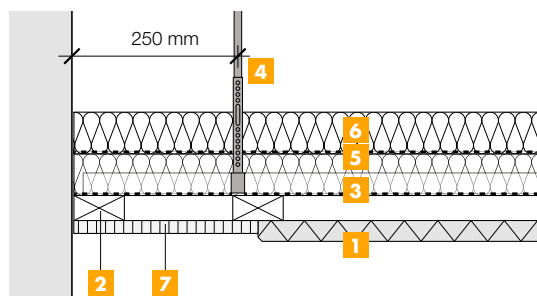
EI 30 HERADESIGN® suspended ceiling as independent fire protection

Wall connection without shadow gap



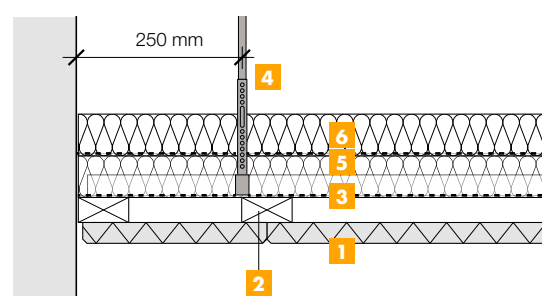
- 1 HERADESIGN® acoustic tile
- 2 Wooden batten 60 x 30 mm, main batten
- 3 Wooden batten 60 x 30 mm, primary batten
- 4 Nonius hanger
- 5 1st layer CNF board D9 glass fleece faced, mineral wool, 50 mm, fleece underneath
- 6 2nd layer CNF board D9 glass fleece faced, mineral wool, 50 mm (lay across), fleece underneath

Wall connection with plasterboard margin with or without shadow gap



- 1 HERADESIGN® acoustic tile
- 2 Wooden batten 60 x 30 mm, main batten
- 3 Wooden batten 60 x 30 mm, primary batten
- 4 Nonius hanger
- 5 1st layer CNF board D9 glass fleece faced, mineral wool, 50 mm, fleece underneath
- 6 2nd layer CNF board D9 glass fleece faced, mineral wool, 50 mm (lay across), fleece underneath
- 7 Plasterboard margin Knauf GKF, 15 mm

Wall connection with shadow gap



- 1 HERADESIGN® acoustic tile
- 2 Wooden batten 60 x 30 mm, main batten
- 3 Wooden batten 60 x 30 mm, primary batten
- 4 Nonius hanger
- 5 1st layer CNF board D9 glass fleece faced, mineral wool, 50 mm, fleece underneath
- 6 2nd layer CNF board D9 glass fleece faced, mineral wool, 50 mm (lay across), fleece underneath

Note: The classifications are only valid for the tested components. Changes to the ceiling construction are not permitted. For the exact tested construction please refer to the test certificate and data sheet for this construction.

Installation guidelines and advice

For the installation requirements see DIN 18168 "Lightweight ceiling linings and suspended ceilings", as well as EN 13964 "Suspended ceilings – requirements and test methods".

- Before starting installation, check the underlying structure for sufficient load-bearing capacity.
- Fix the wooden battens to the soffit or pre-installed hangers at the required centres with corrosion protected screws.
- The batten joints should be doubled and staggered.
- Distribute the battens symmetrically (equal edge fields).
- For large ceilings, begin installation from the centre of the room.
- HERADESIGN® tiles are pushed together, aligned and fixed according to the screw pattern with HERADESIGN® screws (DIN 7997) (head diameter ≥ 9 mm) to the battens. For each tile width and centre distance, two screws are required. For covered external areas, ceilings and walls in indoor swimming pools, vibrating constructions and for ball impact resistant systems, three HERADESIGN® screws are required.
- Note: Observe the necessary corrosion protection requirements.
- Square tiles: Observe the installation direction marked on the back when installing the tiles.
- Cross joints: four tile corners meet at one point, which means increased accuracy is required when installing!
- Screws: HERADESIGN® screw heads can be covered with standard colours. Screws in special colours on request.
- The screw heads must be set flush with the tile surface. This can be made easier by using screw couplings with adjustable depth stops or a depth stop as a prefix to screws (e.g.: FESTOOL depth stop DC UNI FF).
- After installation, unpainted screw heads must be covered with a paint supplied by the manufacturer or an equivalent as in chapter Application and Handling. Corrosion protection must be determined by the prevailing room conditions.
- Acoustic overlays or films are installed step by step with the installation of the acoustic tiles. Film joints and connections must be taped.
- A PE film with a thickness of up to 30 µm does not affect the sound absorption of the underlying absorber and is recommended as trickle protection for mineral wool overlays.
- Damaged or soiled tiles or tiles with colour deviations may not be installed. The full impression of the ceiling should continually be checked from below during installation.
- Tiles with edge configurations for T-profile installations are not suitable for screw fixing, as the tile size is smaller than the module.

HERADESIGN® screws

Stainless steel, universal drywall screws for attaching HERADESIGN® acoustic tiles to battens or CD-profiles 60/27/06 mm. Partial thread, screw head with Torx T20.

Maximum centres: 600 or 300 mm / 625 or 312 mm

Note: Not suitable for swimming pools and external applications.

Tile format	Screw requirement approx. pcs. for every m ² ceiling			
	600/600 mm	625/625 mm	600/1200 mm	625/1250 mm
Standard screw pattern - 25 and 35 mm tiles	12	11	9	8
Standard screw pattern - 15 mm tiles	23	21	14	13
Ball impact resistant version	17	16	13	12

Dimension [mm]		Screw head colour	For tile thicknesses [mm]	Packaging unit pcs./carton
Length	Ø			
35	4.5	unpainted / white / natural special colours on request	15	200
50	4.5		25	200
60	4.5		35	200

Corrosion protection:

For suitable corrosion protection of screws for applications in indoor swimming pools, underground car parks, covered external applications or other special applications, please contact your screw supplier or screw manufacturer. (Screw head diameter ≥ 9 mm).

* Only when using CD-profiles 27/60/0.6 mm



Mark out the ceiling module from the centre of the room, for example using a chalk line. Ensure the margins at the sides of the room are identical.



Align the battens using a spirit level or laser level and fix the battens to the hangers, e.g. quick hangers, using 2 screws per side.



Install the primary and main battens. Maximum centres according to the "Maximum centres of the substructure" table for screw-fixing onto wooden battens and the primary/main batten connection detail.



Install the acoustic tiles with the aid of a support. When fixing, press the tile onto the batten using the heel of your hand. There must be no gap between the tile and the wooden batten. For large ceiling areas, begin tile installation from the centre of the room. Observe the installation direction of square tiles!



Align the rows of tiles with an installation batten. Tile joints must be positioned centrally under the battens. No free tile joints are allowed.



Close possible gaps between the tiles using a wooden block and hammer. Only handle the acoustic tiles with clean hands (clean gloves are recommended) and clean tools.



Insert HERADESIGN® acoustic overlays or other acoustic overlays, step-by-step when installing the HERADESIGN® acoustic tiles. Absorber tiles that are pushed between the wooden battens are cut to size.

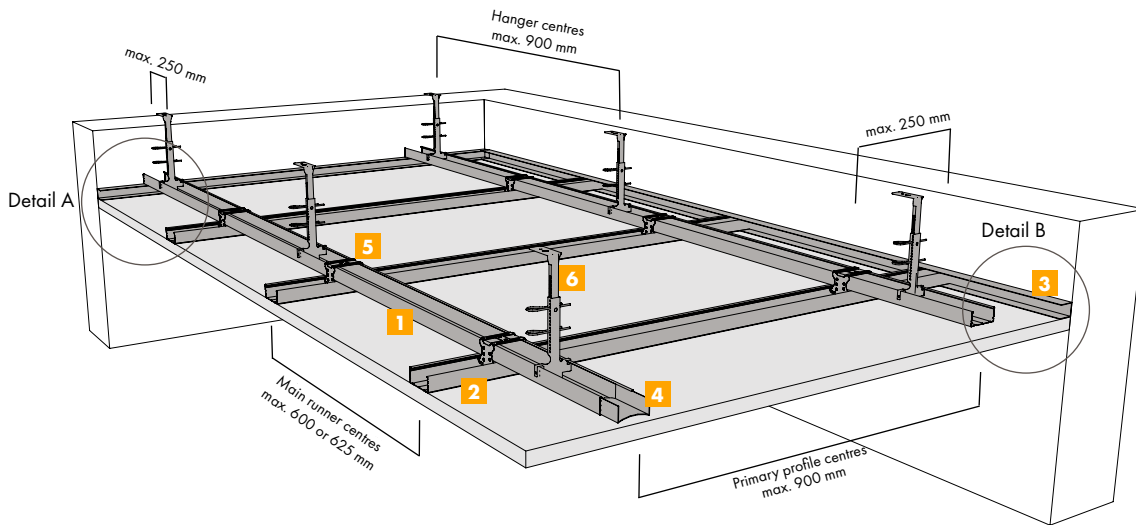


If coloured screws are not used, paint over the screw heads with the paint supplied or a suitable equivalent using a fine brush and suitable amount of paint. Screw heads must be flush with the tile surface.

System B 2.2 - HERADESIGN® tiles fixed to CD-profiles

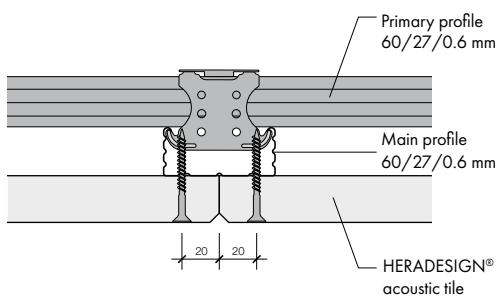
Size and dimensions

The HERADESIGN® acoustic tiles are screw-fixed with HERADESIGN® screws onto CD-profiles with a cross-section of 60/27/0.6 mm. CD-profile centres according to the table. The hangers are fixed to the soffit in 900/900 modules.



Connecting primary / main profiles

The CD-primary profile is connected to the CD-main profile using a cross connector. The tile joints, in the main profile direction, should always be below a CD-profile.



Overhang of the tile (fixing):

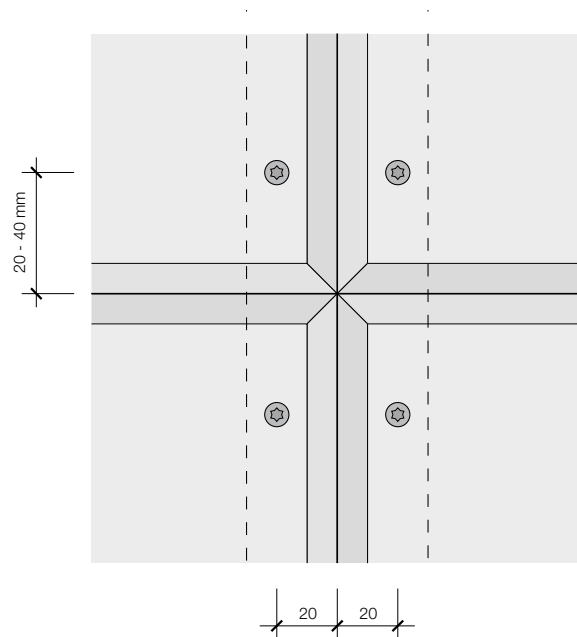
15: 100 mm

25: 150 mm

35: 200 mm

only for applications with no fire rating requirements

Screws



Maximum centres of the substructure for deflection class 1 according to EN 13964 (max. deflection L/500)

Primary profile 60/27/0,6 mm	Main profile 60/27/0,6 mm	Maximum load (incl. own weight of the ceiling in kN/m ²)		
		Maximum hanger centres		
centres	centres	750 mm	900 mm	1150 mm
600 mm	max. 625 mm	0.45 kN/m ²	0.35 kN/m ²	0.25 kN/m ²
900 mm	max. 625 mm	0.35 kN/m ²	0.25 kN/m ²	

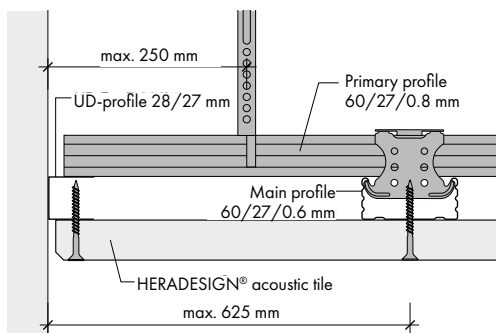
Max. hanger load: 0.40 kN. With a permissible hanger load of 0.25 kN, the additional loads must be multiplied by 0.6, i.e. reduced.
Wood quality class S 10 as per EN 1912. For F 30, EI 30 ceilings, or ceilings that are ball impact resistant the centres and cross sections must be according to the test certificate.

Material requirements

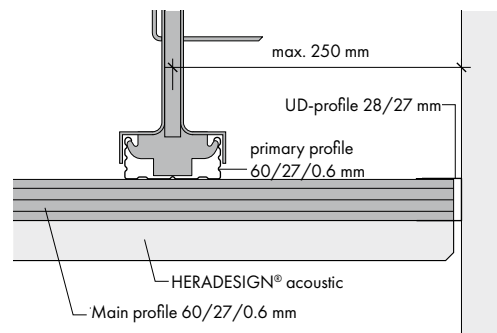
Component	Centres mm	Unit	Approx. material requirements/ m ² ceiling area ⁵⁾	Comments
1 CD-primary profile 60/27/0.6 mm	C = 600	lin. m	1.7	For 3600 mm profile lengths
	C = 900		1.3	
2 CD-main profile 60/27/0.6 mm	600 mm	lin. m	1.7	Centres the same as the tile width
	625 mm		1.6	
3 E-wall connection profile		lin. m	0.4 - 0.8	Dependent on plan/layout
4 CD-splice connector	C = 600	Pcs.	0.8	For 3600 mm profile lengths
	C = 900		0.7	
5 CD-cross connector	C = 600	Pcs.	3.0	
	C = 900		2.2	
6 CD-Nonius hanger	C = 600	Pcs.	2.4	Permitted hanger load: 0.4 kN
	C = 900		2.0	

Follow the manufacturer's guidelines! The stated figures are guideline only and do not allow for waste or project specific scenarios.

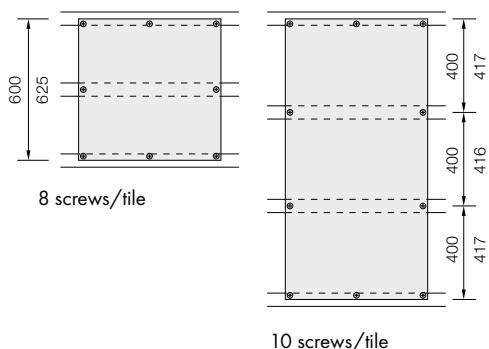
Perimeter connection Detail A



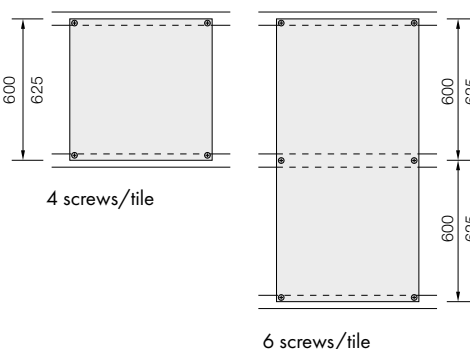
Perimeter connection Detail B



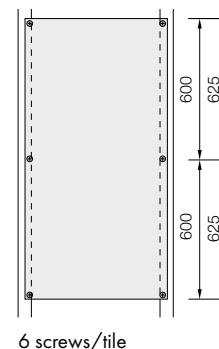
Screw pattern for 15 mm tiles



Screw pattern for 25 mm and 35 mm tiles



Screw pattern Product programme plus for 40 mm and 50 mm tiles



Ball impact resistant fixing as per EN 13964, Annex D or DIN 18032 / part 3

Installation	Thickness [mm]	Edge configuration	Main profile centres [mm]	Primary profile centres [mm]	Nonius hanger centres ^{6*)} [mm]
Ceiling	35/25	AK-01	600; 625	900	900
Wall	35	AK-01	600; 625	900	900
Wall ^{7*)}	25	AK-01	300; 312,5	900	750

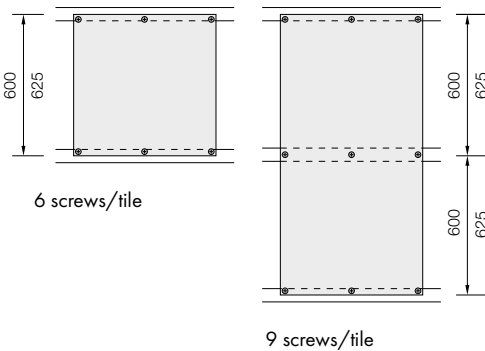
^{6*)} without additional loads. For additional loads, as per Table "Maximum centres of the substructure" for screw-fixing onto CD-profiles.
^{7*)} For HERADESIGN® superfine A2 and HERADESIGN® fine A2

Note: pieces cut to size with a length of less than 500 mm must be supported on all four sides.

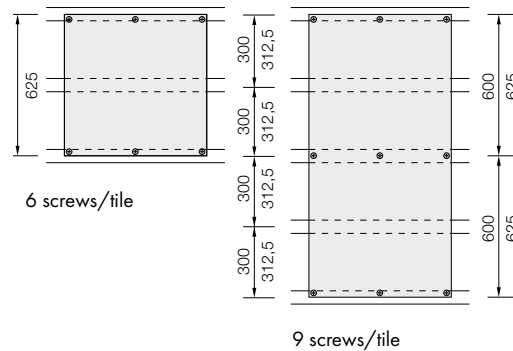
Screw patterns

For ball impact resistant fixing of HERADESIGN® acoustic tiles, at least three screws must be used per tile width and support.
 Max. screw centres ≤ 315 mm. This also applies to covered external applications, for EI30 suspended ceilings and vibrating constructions

Ceiling installation: 25 mm and 35 mm tiles
Wall installation: 35 mm tiles



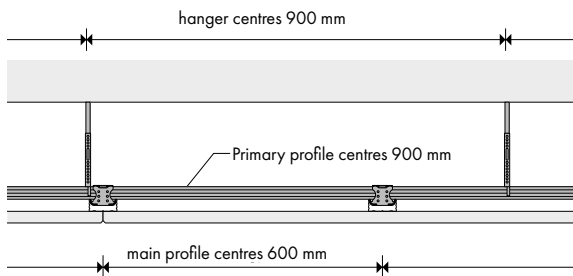
Wall installation: 25 mm tiles*)



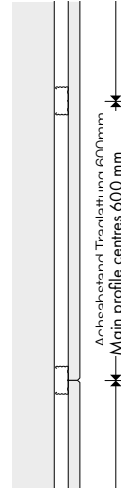
*) For wall installation of 25 mm HERADESIGN® tiles, the main batten centres are reduced to 300 or 312.5 mm. The position and number of the screws remains the same.

Construction diagrams

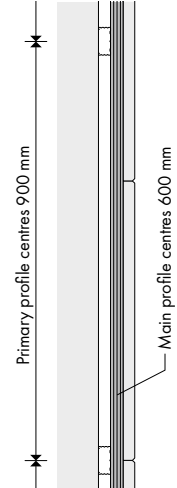
Ceiling installation cross grid
 (vertical section)



Wall installation parallel grid
 (horizontal section)



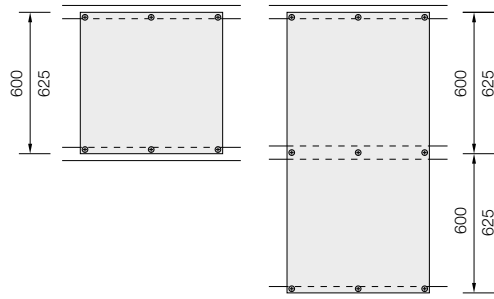
Wall installation parallel grid
 (horizontal section)



Cross connectors are to be screw fixed from the side. Construction requires structural support in the footing, limited wall height.

Fire resistance as per EN 1364-2, or EN 1363-1

HERADESIGN® suspended ceilings have been tested as an independent ceiling element for fire exposure from below. The test reports describe the installation procedure, test conditions and the test results of the tested construction. Any significant deviation in terms of size, construction, loading and spanning are not covered in the test report and have to be clarified with a fire expert. The fixing of the tiles and the substructure centres are as per the test certificate. For EI-30 constructions, the two mineral wool overlays must be lay cross-wise, i.e. at 90°. The mineral wool must be installed with butted and staggered joints.

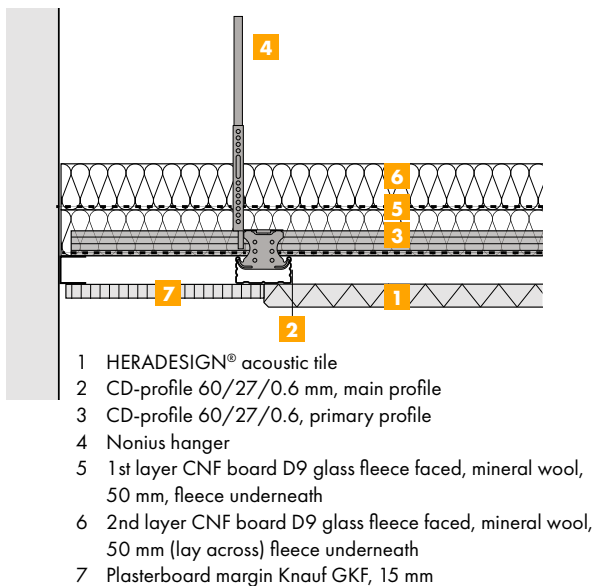


EI 30 HERADESIGN® suspended ceiling as independent fire protection

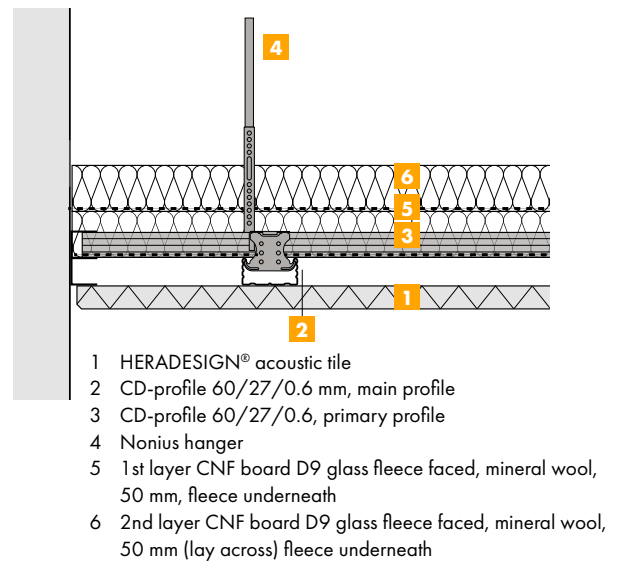
Wall connection without shadow gap



Wall connection with plasterboard margin with or without shadow gap



Wall connection with shadow gap



Note: The classifications are only valid for the tested components. Changes to the ceiling construction are not permitted. For the exact tested construction please refer to the test certificate and data sheet for this construction.

Installation guidelines and advice

For the installation requirements see DIN 18168 "Lightweight ceiling linings and suspended ceilings", as well as EN 13964 "Suspended ceilings – requirements and test methods".

- Before starting installation, check the underlying structure for sufficient load-bearing capacity.
- Install perimeter trims all around (with plugs at approx. 500 mm centres).
- Push the CD-profiles into the wall connection profiles and fix them to the preassembled hangers. Stagger the joints and place an additional hanger at each joint.
- Begin installation from the centre of the room.
- Distribute the cross profiles symmetrically (equal edge fields).
- Acoustic tiles are pushed together, aligned and fixed cross-wise to the profiles with HERADESIGN® screws. For each tile width and centre distance, two screws are required. For covered external areas, ceilings and walls in indoor swimming pools, vibrating constructions and for ball impact resistant systems, three HERADESIGN® screws are required.
- Note: Observe the necessary corrosion protection requirements.
- Square tiles: Observe the installation direction marked on the back when installing the tiles.
- Cross joints: four tile corners meet at one point, which means increased accuracy is required when installing!
- Screws: HERADESIGN® screw heads can be covered with standard colours. Screws in special colours on request.
- Screw heads should sit flush with the tile surface. The use of a screw holder with adjustable depth stop (e.g.: HERADESIGN® Bitholder easy) or a depth stop as attachment for screws (e.g.: FESTOOL depth stop DC UNI FF) can facilitate this.
- After installation, unpainted screw heads must be covered with a paint supplied by the manufacturer or an equivalent as in chapter Application and Handling. Corrosion protection must be determined by the prevailing room conditions.
- Acoustic overlays or films are installed step by step with the installation of the acoustic tiles. Film joints and connections must be taped.
- A PE film with a thickness of up to 30 µm does not affect the sound absorption of the underlying absorber and is recommended as trickle protection for mineral wool overlays.
- Damaged or soiled tiles or tiles with colour deviations may not be installed. The full impression of the ceiling should continually be checked from below during installation.
- Tiles with edge configurations for T-profile installations are not suitable for screw fixing, as the tile size is smaller than the module.

HERADESIGN® screws

Stainless steel, universal drywall screws for attaching HERADESIGN® acoustic tiles to battens or CD-profiles 60/27/06 mm. Partial thread, screw head with Torx T20.

Maximum centres: 600 or 300 mm / 625 or 312 mm

Note: Not suitable for swimming pools and external applications.

Tile format	Screw requirement approx. pcs for every m ² ceiling			
	600/600 mm	625/625 mm	600/1200 mm	625/1250 mm
Standard screw pattern - 25 and 35 mm tiles	12	11	9	8
Standard screw pattern - 15 mm tiles	23	21	14	13
Ball impact resistant version	17	16	13	12

Dimension [mm]		Screw head colour	For tile thickness [mm]	Packaging unit pcs./carton
Length	Ø			
35	4.5	unpainted / white / natural special colours on request	15	200
50	4.5		25	200
50	4.5		35 *	200
60	4.5		35	200

* Only when using CD-profiles 27/60/0.6 mm

Corrosion protection:

For suitable corrosion protection of screws for applications in indoor swimming pools, underground car parks, covered external applications or other special applications, please contact your screw supplier or screw manufacturer (screw head diameter ≥ 9 mm).



Mark out the ceiling module from the centre of the room, for example using a chalk line. Ensure the margins at the sides of the room are identical.



The CD-profile joints should be staggered. An additional hanger at every profile joint.



Align the CD-profiles using a spirit level or laser level.



Finished ceiling grid.



Install the acoustic tiles with the aid of a support. When fixing, press the tile onto the profile using the heel of your hand. There must be no gap between the tile and the profile. Begin tile installation from the centre of the room. Only handle the acoustic tiles with clean hands (clean gloves are recommended) and clean tools.



Align the rows of tiles with an installation batten. Tile joints must be positioned centrally under the profiles. No free tile joints are allowed! When installing square tiles, observe the installation direction marked on the back of the tiles.



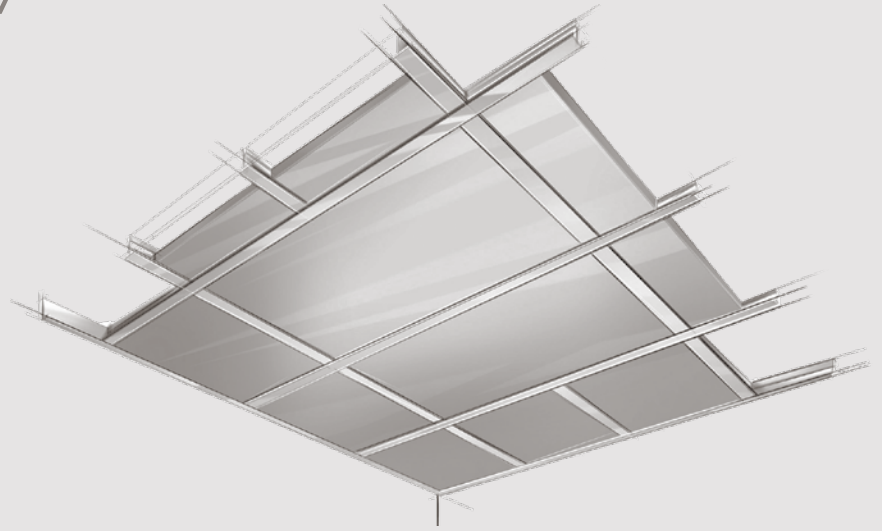
Insert HERADESIGN® acoustic overlays or other acoustic overlays, step-by-step when installing the HERADESIGN® acoustic tiles. Absorber tiles that are pushed between the CD-profiles are cut to size.



If coloured screws are not used, paint over the screw heads with the paint supplied or a suitable equivalent using a fine brush and suitable amount of paint. Screw heads must be flush with the tile surface.

System C - Exposed Systems

System C 2.1: HERADESIGN® – Page 26

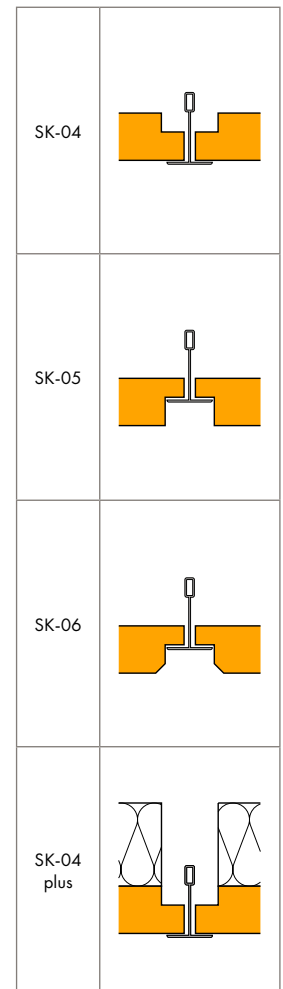


System C utilises the exposed grid structure as a proactive element in ceiling design. Square edged (Board) ceiling tiles lie flush in the construction, whilst recessed edged (Tegular) tiles emphasise the ceiling module. This very efficient construction system enables quick and easy installation and 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 2.1 - HERADESIGN®

Product	Thickness [mm]	Weight [kg/m ²]	Edge Configurations	Module [mm]	
Product programme HERADESIGN®	HERADESIGN® superfine	15	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	SK-04	600/600; 625/625	
	HERADESIGN® fine A2	15			13.0
	HERADESIGN® superfine A2	25	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)	SK-04 plus	600/600; 600/1200	
		65 (25/40)			11.4
	HERADESIGN® fine plus	55 (15/40)			14.9
		65 (25/40)			11.8
HERADESIGN® micro plus	65 (25/40)	16.0			
HERADESIGN® plano plus	65 (25/40)	18.6			

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.

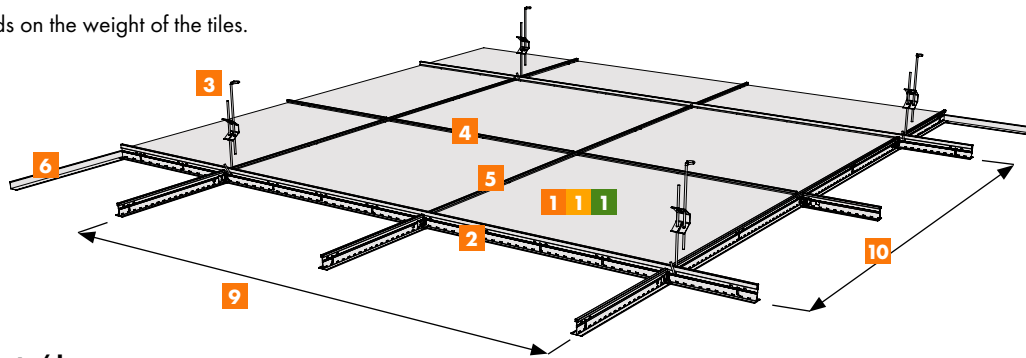
For applications with increased risk of corrosion (e.g. humidity, condensation or chemical contamination), metal components with special corrosion protection are required.

The edge dimensions of the different product brands (e.g.: THERMATEX® Tegular 24 and HERADESIGN® SK-06) may differ.

System C 2.1 - HERADESIGN®

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 m ² 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
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

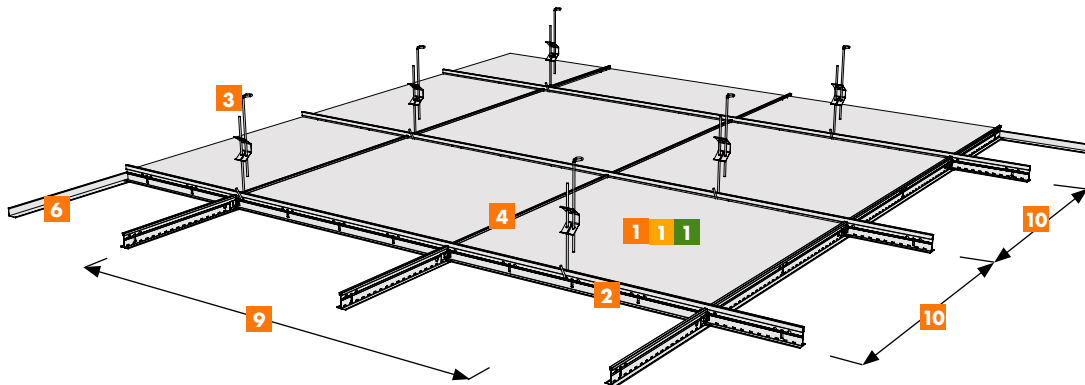
Grid structure T24/38 grid construction, 1.5 kg/m² including hangers.

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 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	Key	Unit	Module mm / requirement for every m ² ceiling			
			600 x 600	625 x 625	600 x 1200	625 x 1250
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 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		Main runner centres 1250 mm		Main runner centres 600 mm		Main runner centres 625 mm	
	Format 600 x 600 mm Format 600 x 1200 mm		Format 625 x 625 mm Format 625 x 1250 mm		Format 600 x 600 mm Format 600 x 1200 mm		Format 625 x 625 Format 625 x 1250 mm	
mm	kg/m ²		kg/m ²		kg/m ²		kg/m ²	
800	0.1		9.6		25.0		25.0	
1000	9.7		7.3		-		-	
1200	7.3		6.4		17.5		16.6	
1500	4.8		4.4		9.6		9.2	

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.

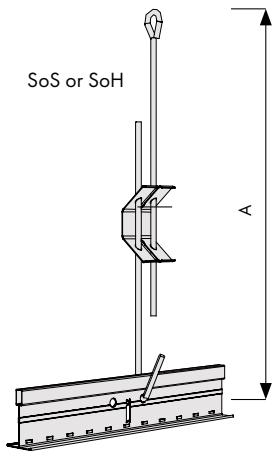
Load Table

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/m ²		kg/m ²	
900	14.0	-	12.2	2.2
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 $f \leq l/500 \leq 4$ mm in accordance with EN 13964.

Hangers

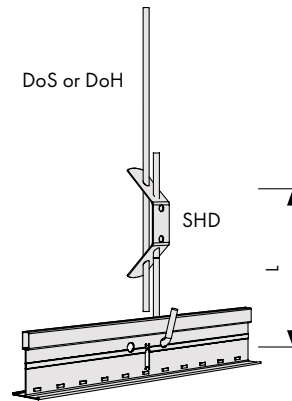
Quick hanger with hook/eye



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

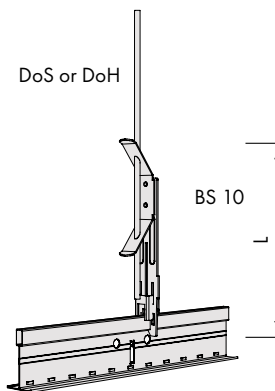
Butterfly hanger, rod with hook



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

Maximum load 25 kg

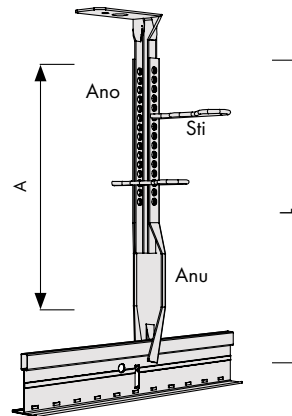
Clickfix II hanger with butterfly



Article:	L: Length
BS 10	110 mm

Maximum load 25 kg

Nonius hanger



Upper part

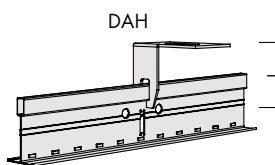
Article:	A: Range
Ano 115	85 mm
Ano 120	135 mm
Ano 130	235 mm
Ano 140	340 mm

Lower

L: Length	L: Length
190 mm	190 mm

Maximum load 25 kg

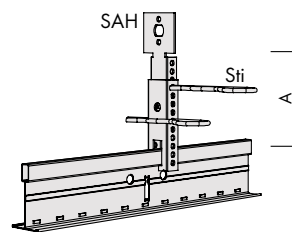
Direct hanger



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 should be ensured, that the distance from the perimeter to the first and last hanger does not exceed the maximum dimension (see chapter: Perimeter hangers) and additional hangers should be installed where 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.



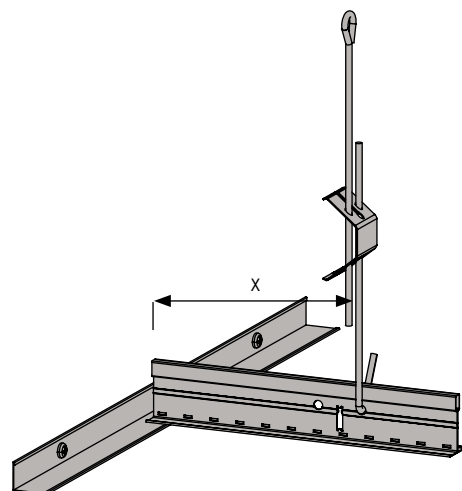
Perimeter hangers

Perimeter distances

To avoid overloading the perimeter trim, the first hanger must be positioned at a maximum distance from the perimeter.

For 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
THERMAT [®]	$d = 15$ mm	45 cm
THERMAT [®]	$d = 19$ mm	30 cm
THERMAT [®]	$d \geq 19$ mm	15 cm
HERADESIGN [®]	$d \geq 19$ mm	15 cm



Perimeter trims

The standard perimeter trim is a white L-angle profile 19 x 24 x 0.5 mm (24 x 24 x 0.5 mm).

For right-angled corners, L angles are butt cut. Mitred cuts require increased precision and time.

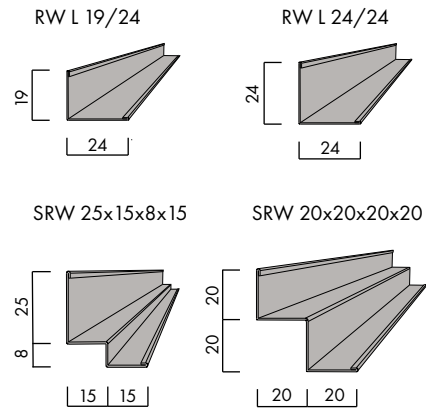
Shadow trims are mitred as standard.

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

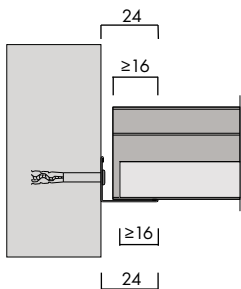
Various perimeter trims are available:

	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	3.00 m	SRW 25x15x8x15
Shadow trim 20/20/20/20	0.7 mm	3.00 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			

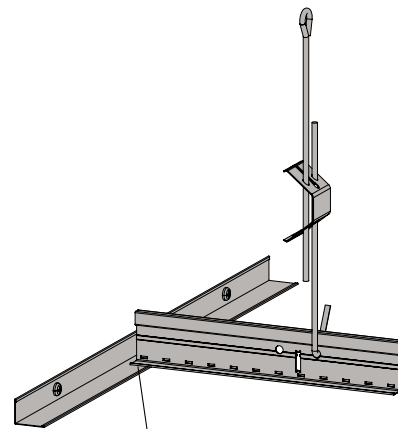


Support

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.



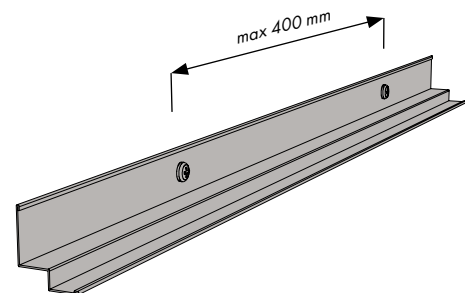
The grid should be supported on at least 2/3 of the horizontal leg of the perimeter trim.

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.

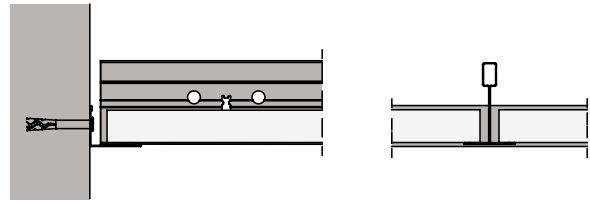


Corners

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

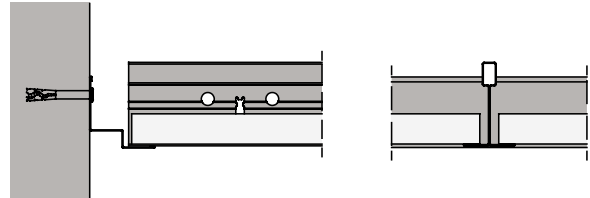
L-wall angle with Board edge configuration

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).



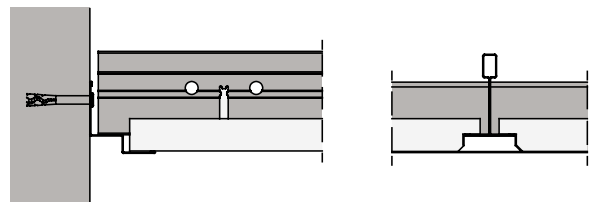
Shadow trim with Board edge configuration

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).



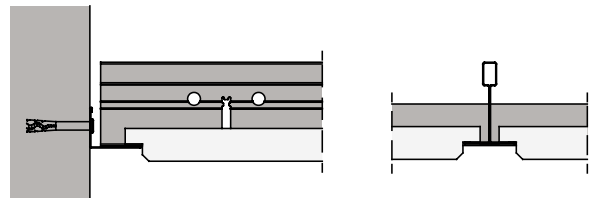
Shadow trim with Tegular edge configuration

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 Tegular edge configuration

An alternative to the above construction is to cut a Tegular 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 m² is significant. Regardless of version, rear ventilation of fire rated ceilings is not permitted.

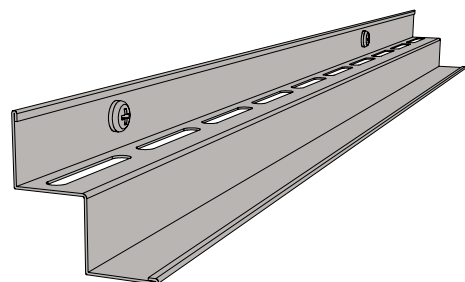
Shadow trim with ventilation slots

Open ventilation area: approx. 44 cm²/lin. m

Available in the following options:

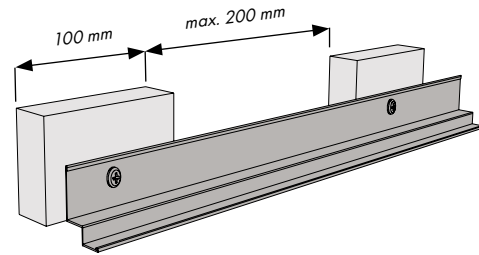
Shadow trim 20/20/12/20 d= 0.6 mm L= 3.00 m

Shadow trim 20/20/20/20 d= 0.75 mm L= 4.00 m



Perimeter trims fixed to blocks

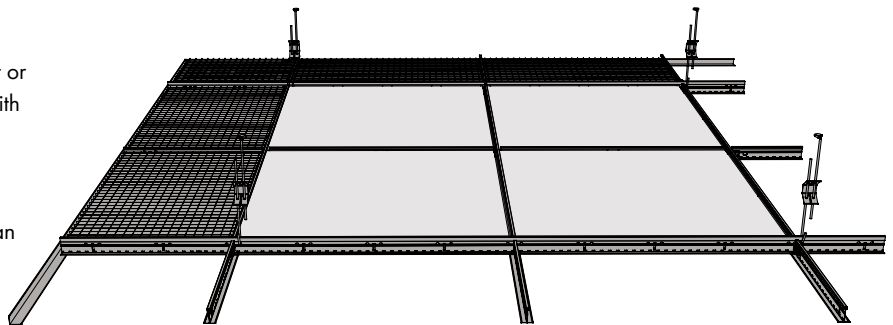
Possible with wall angles or shadow trims. The blocks can be formed from wood or other material (length min. 100 mm), individually fixed to the wall and the perimeter trim screwed onto them. The fixing centres must be reduced to 300 mm. Average open ventilation area: approx. 200 cm²/lin. m (based on 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 Knauf Ceiling Solutions 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 are only available for Mineral Tegalur.

The recessed edge details of HERADESIGN® (e.g. SK-05, SK-06) have different geometries.

Internal and external corners

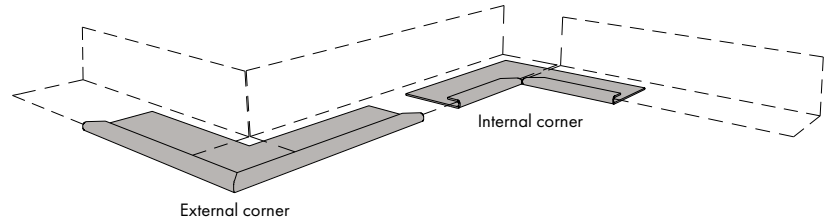
As an alternative to mitring the corner joints, preformed mouldings are available. The typical mitred corner requires an exact 45° cut which is very time consuming. Preformed mouldings are simpler and require less time, as angled cuts are not required.

Internal and external corners for RW L19/24 or L24/24

The mouldings are simply pushed on to form the corner.

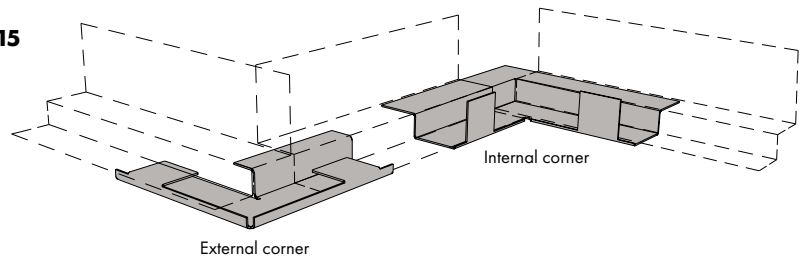
Note

Not suitable for metal ceilings.



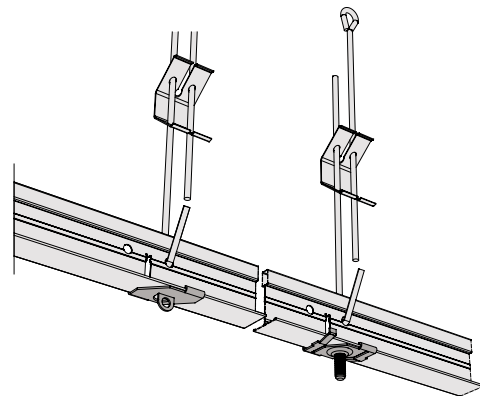
Internal and external corners for SRW 25x15x8x15

Install on pre-installed shadow trims by bending the metal lugs over.



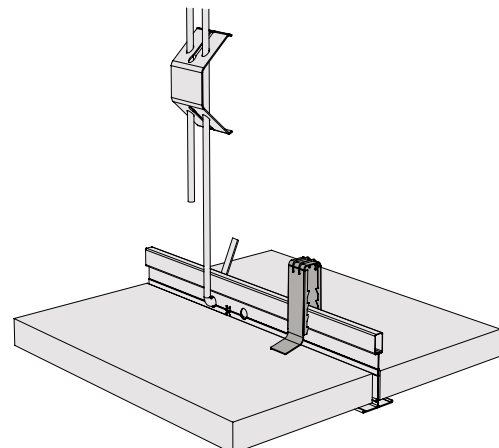
Fixing clips

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

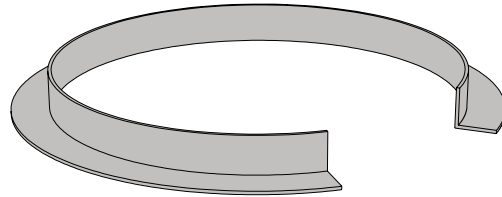
In areas with open windows, doors or atriums where there is the possibility of substantial pressure differentials, the ceiling tiles should be held in place with hold down clips (approx. 6 pcs./m²). After the ceiling tiles have been installed, the clips are pressed onto the T-profile until the clip sits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



Column rings

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

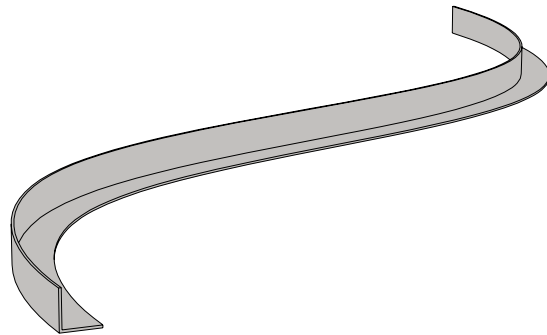
Diameter \varnothing = 200 - 1000 mm (50 mm gradation).
Surface white coated similar to RAL 9010



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 (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.

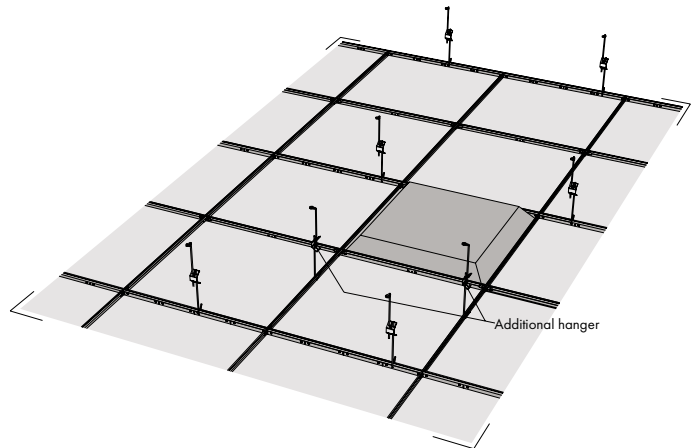
Lighting/ additional loads

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 6 kg.

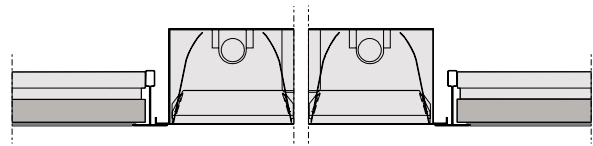
Detail

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.



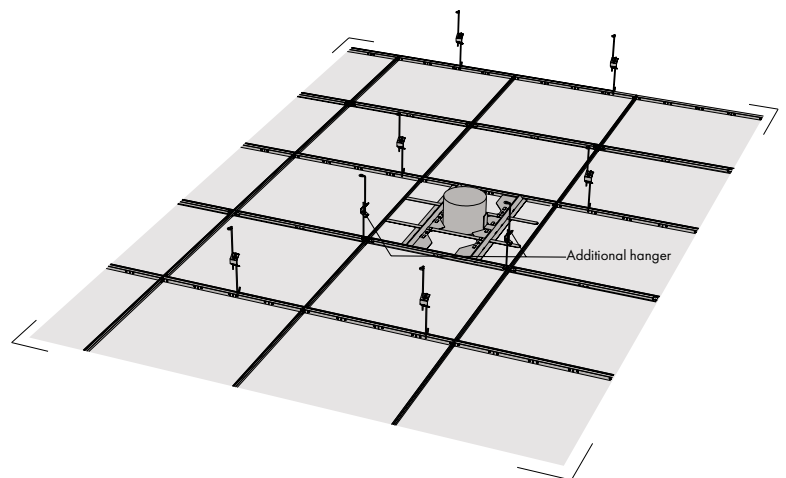
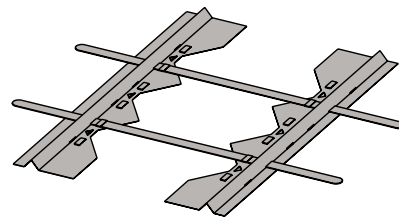
Additional loads

Generally additional loads need to be supported with additional hangers from the soffit. Loading the tiles is not permitted. Fixtures such as spot lights and loud speakers etc. should be installed with reinforcement behind (sufficiently load-bearing, non-combustible board/pattress or element width profiles) which transfer the weight to the grid system. Loads less than 0.3 kg 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.



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.

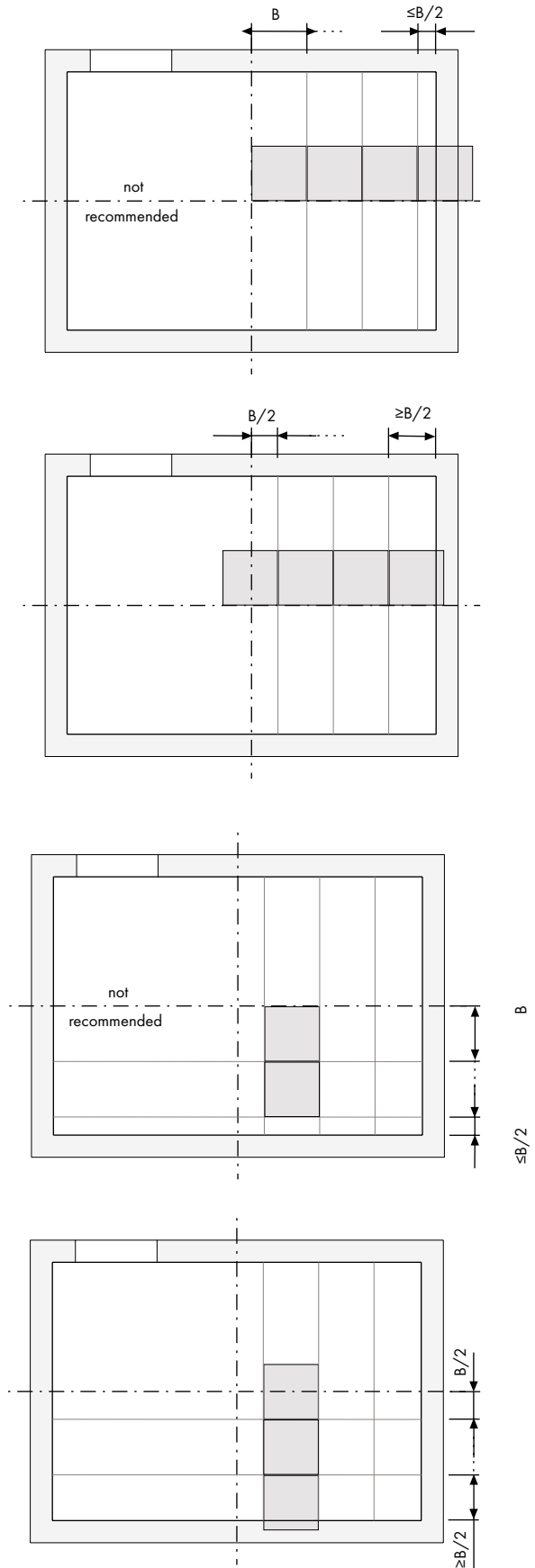
Note

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.



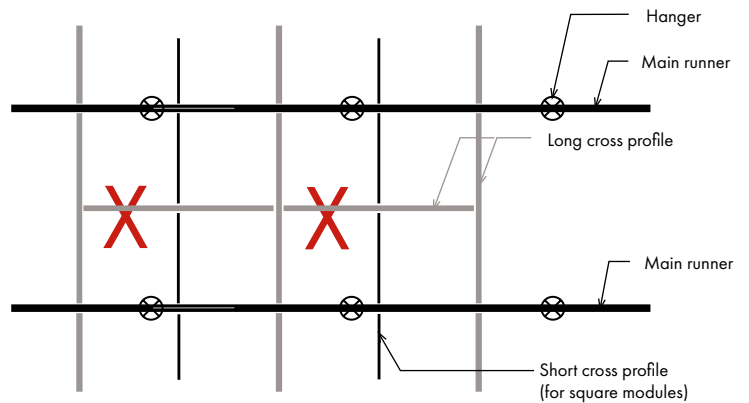
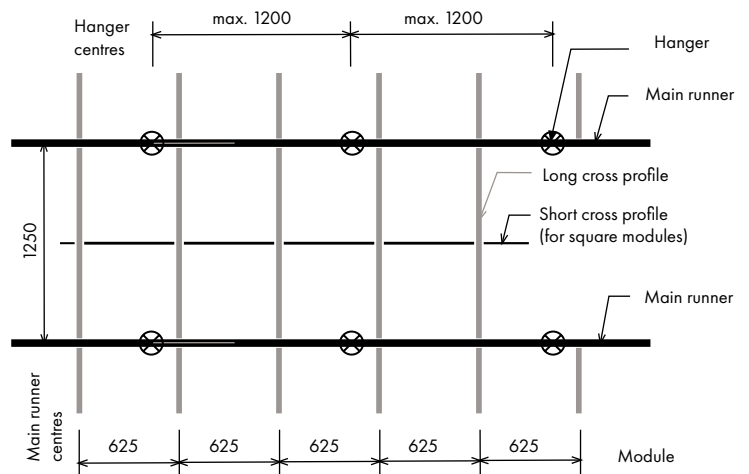
Construction

**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.

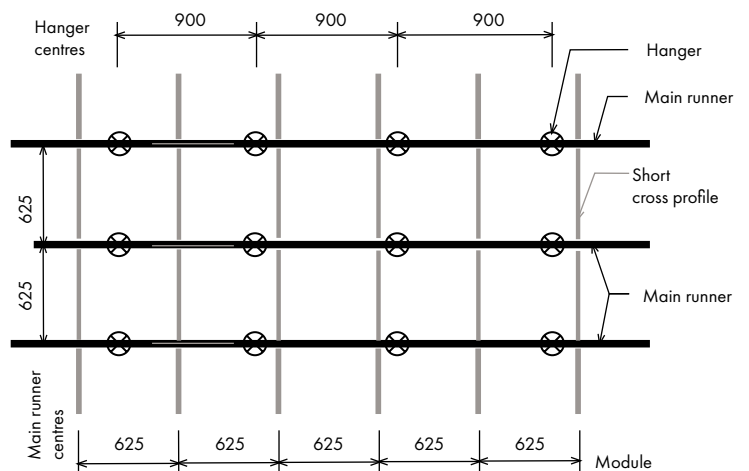
The following construction is not permitted:

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 (Figure 1), 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

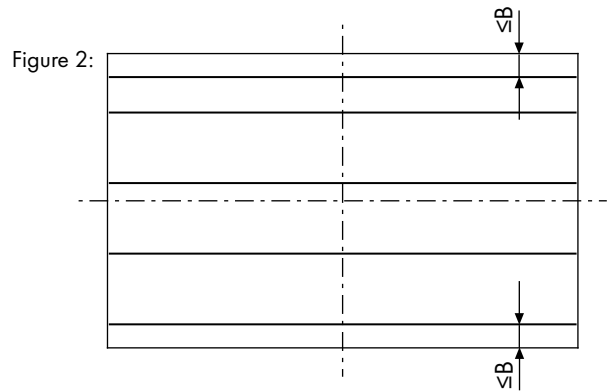
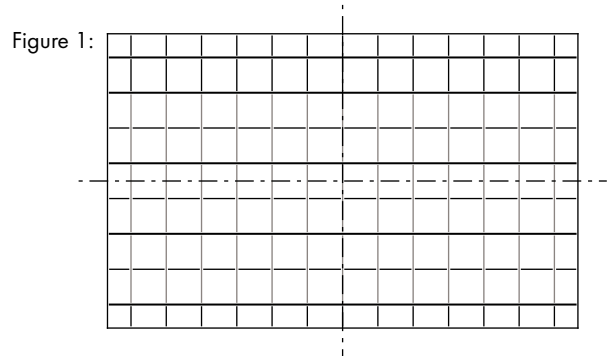
The fixing points of the hangers are determined by the layout of the main runners. The distance of the first and last main runners from the wall should be smaller than module B (Figure 2), so that laying long cross profiles on the perimeter trim is avoided. The fixing points are marked on the soffit 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.).



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 X₁ or X₂ 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.

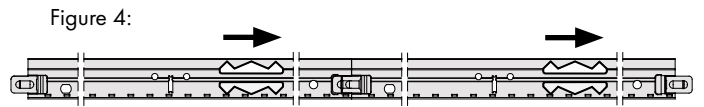


Figure 5:

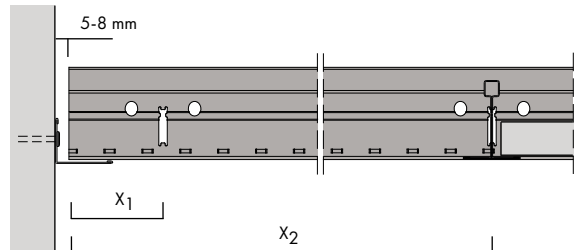
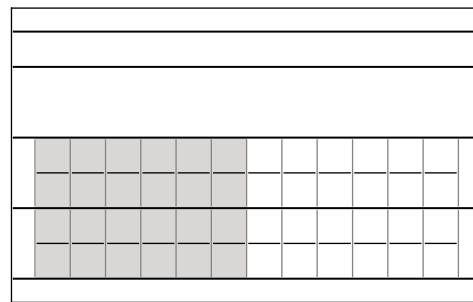
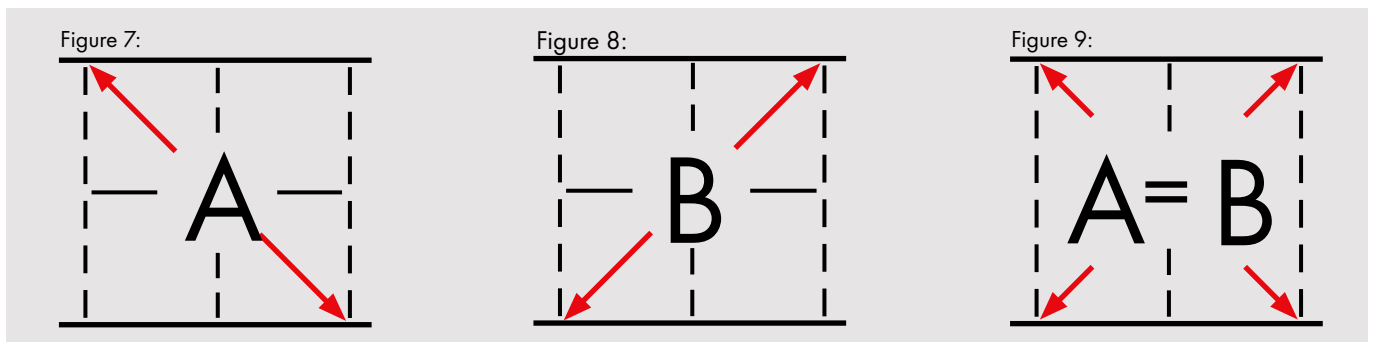


Figure 6:



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.



Failure to do so can lead to major problems when installing the tiles, especially tiles with a recessed Tegular 15/24, Tegular 15/24 90, 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

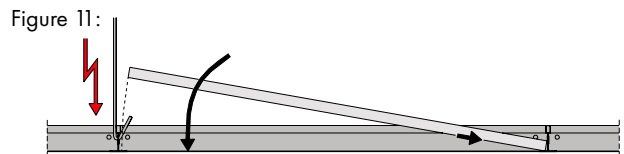
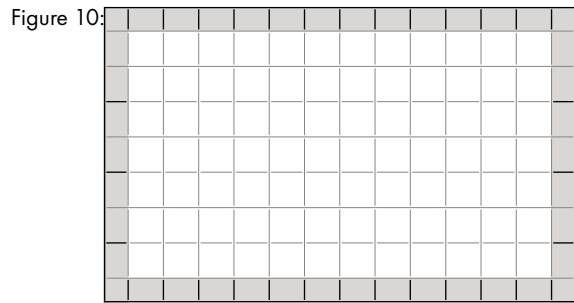
Tile thickness d= 43 mm: 200 mm

For low suspension heights, e.g. direct hangers, the profiles and tiles must be installed alternately.

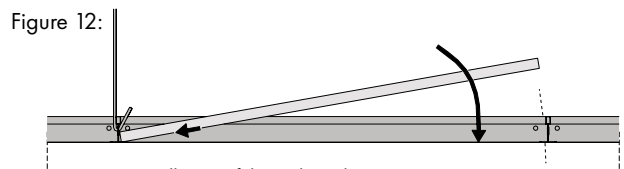
Note:

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).



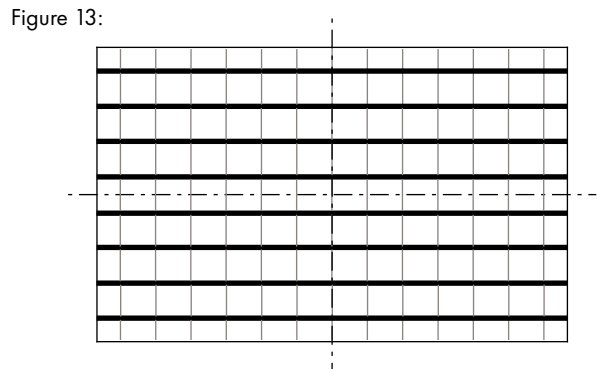
Attention: possible damage to tile



Correct installation of the ceiling tile

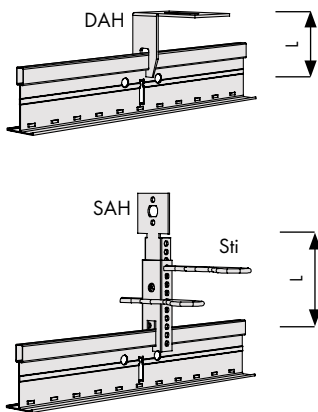
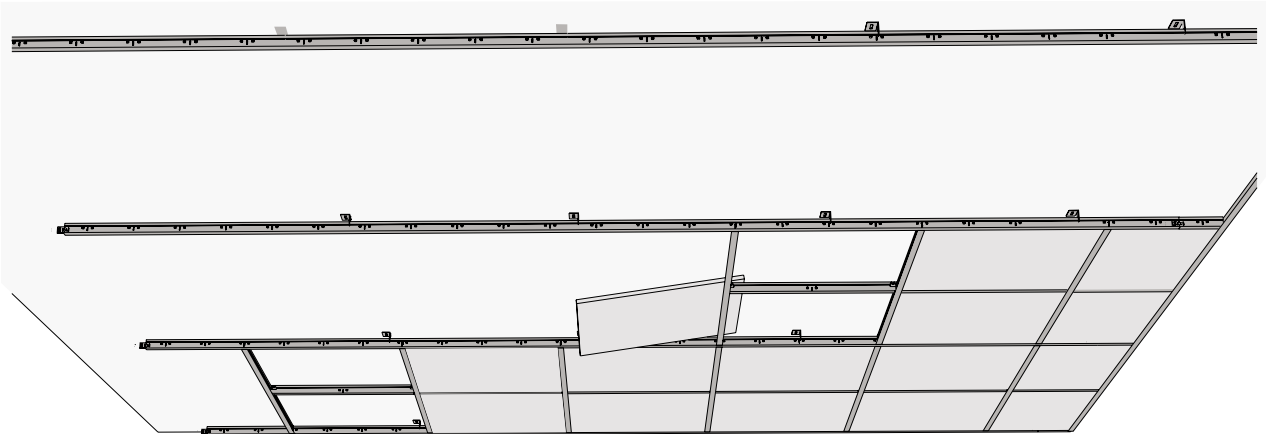
Main runner centres 600/625 mm

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.



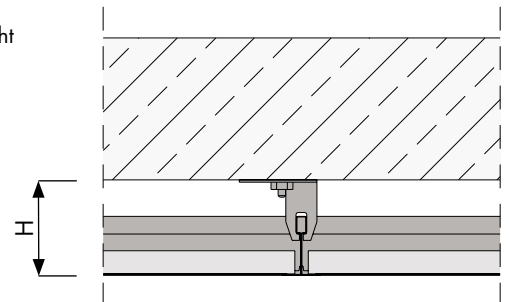
Special constructions - direct suspension

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



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:

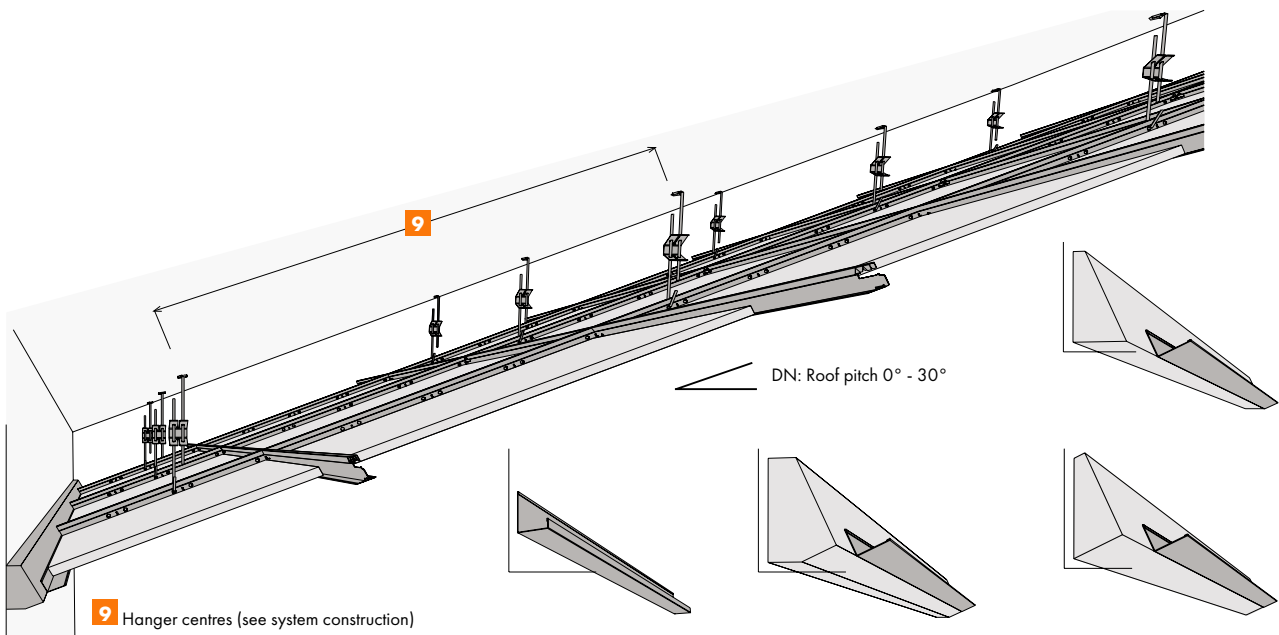
DN ≤ 10°: Main runners at 1200/1250 mm centres are possible

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.



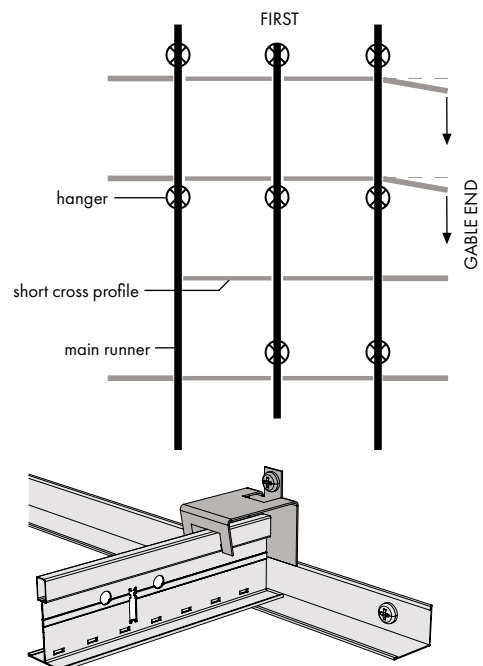
Wall connection at eaves

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.

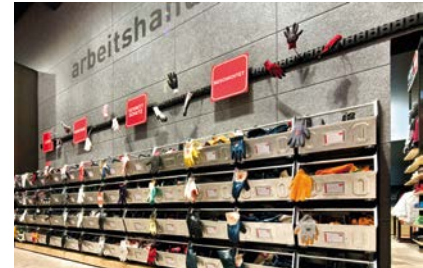
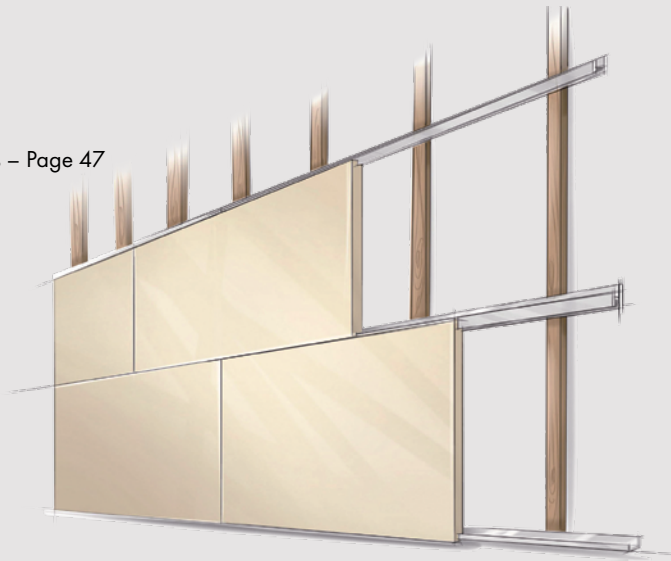
Wall connection at gable end

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.).



Special Systems

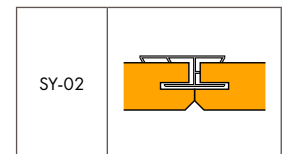
System S 2.1: HERADESIGN® installation with holding profiles – Page 47



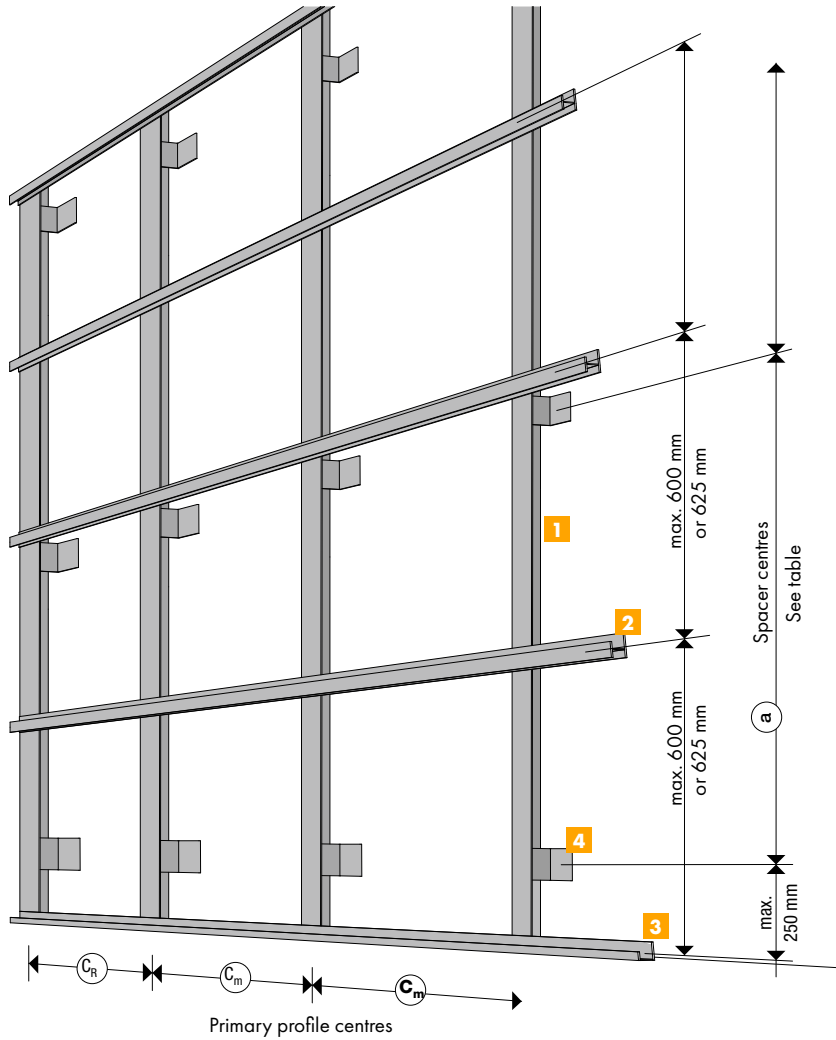
Product Range

	Product	Thickness [mm]	Weight [kg/m ²]	Edge Configuration	Profile centres [mm]	Tile size [mm]	Module [mm]
Product programme HERADESIGN®	HERADESIGN® superfine	25 / 35	11.3 / 15.0	SY-02	600; 625	600/600 625/625 600/1200 625/1250	600; 625
	HERADESIGN® fine	25 / 35	12.4 / 16.3				
	HERADESIGN® macro	25	12.4				
	HERADESIGN® micro	25 / 35	15.0 / 19.0				
	HERADESIGN® plano	25	15.0				
Product programme A2	HERADESIGN® superfine A2	25	18.0	SY-02	600	600/600 600/1200	600
	HERADESIGN® fine A2	25	19.0				

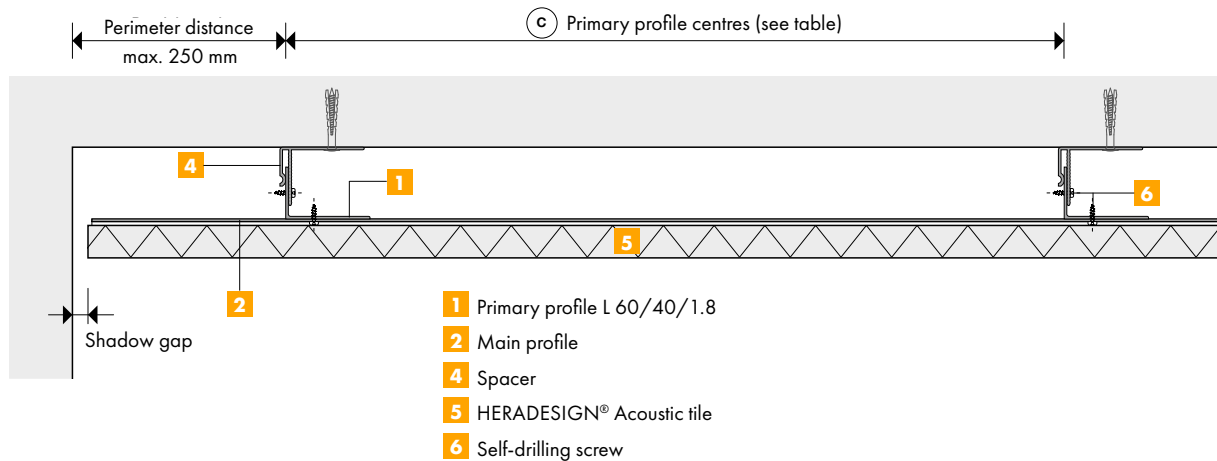
Edge Configurations



Sizes and dimensions



- 1** Primary profile L 60/40/1,8
- 2** Main profile
- 3** Perimeter profile
- 4** Spacer
- 5** HERADESIGN® acoustic tile



- 1** Primary profile L 60/40/1.8
- 2** Main profile
- 4** Spacer
- 5** HERADESIGN® Acoustic tile
- 6** Self-drilling screw

Maximum centres of the grid structure for cross construction and deflection class 1 according to EN 13964 (max. deflection L/500)

Primary profile angle 60/40/1.8 mm Max. centres (c) in mm ¹⁾	Max. spacer centres (a) for 0.25 kN/m ² loads ¹⁾ Max. additional horizontal loads (AL) in kN/m ²		
	a = 800 mm	a = 1000 mm	a = 1200 mm
c _m = 600 mm (middle field) c _r = 600 mm (perimeter field)	AL = 0.70 kN/m ²	AL = 0.65 kN/m ²	AL = 0.50 kN/m ²
c _m = 800 mm (middle field) c _r = 600 mm (perimeter field)	AL = 0.60 kN/m ²	AL = 0.50 kN/m ²	AL = 0.30 kN/m ²
c _m = 1000 mm (middle field) c _r = 800 mm (perimeter field)	AL = 0.30 kN/m ²	AL = 0.25 kN/m ²	AL = 0.20 kN/m ² ²⁾

Required load bearing capacity F_{zul} of the plugs:
 Up to 800 mm centres: plug min. 10 x 60 mm, with screw 7 x 69; with F_{zul} = 0.80 kN
 Up to 1000 mm centres: plug min. 10 x 80 mm, with screw 7 x 89; with F_{zul} = 1.00 kN
 Up to 1200 mm centres: plug min. 10 x 80 mm, with screw 7 x 89; with F_{zul} = 1.20 kN
 Only use approved plugs for anchoring the structure to the load-bearing base.

Note
 1) Higher loads or spacing of the profiles and spacers are to be confirmed through structural analysis before installation begins.
 2) Dead load:
 • c_r: max. permissible spacing for perimeter fields with multi-span profiles
 • Main profile L 60/40/1.8 mm with 40 mm statically effective height taken into consideration
 • Max. free overhang of primary and main profiles: 250 mm
 • Max. spacing for single-span beams on request
 • Per joint at least two self-drilling screws 4.8 x 20 mm

Material requirements

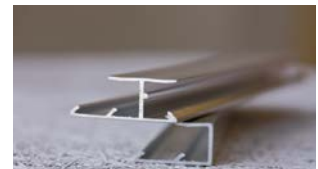
Component	Centres	Material requirement for every m ² ceiling ¹⁾		
		600/600		
1 Primary profile [lin. m]	c = 600 mm	1.7		
	c = 800 mm	1.25		
	c = 1000 mm	1		
2 Main profile [lin. m]	600 mm	1.7		
	625 mm	1.6		
3 Perimeter profile** [lin. m]	1200 mm	0.84		
	2400 mm			
	3000 mm	0.70		
	6000 mm	0.35		
	9000 mm	0.25		
	larger	As required		
4 Spacer *** [pcs.]	Centres	c = 600 mm	c = 800 mm	c = 1000 mm
	a = 800 mm	2.80	2.00	1.70
	a = 1000 mm	2.20	1.60	1.30
	a = 1200 mm	1.70	1.25	1.00
6 Self-drilling screws [pcs.]	a = 800 mm	7.50	6.50	6.00
	a = 1000 mm	7.00	6.00	5.00
	a = 1200 mm	6.50	5.50	5.00

*) The quantities are guideline only and do not include waste or other site specific scenarios
 **) For acoustic area widths of 1200, 2400, 3000, 6000, 9000 mm and taking into consideration the permissible spacing (a) of the spacer.
 ***) For primary profile lengths of 3000 mm.

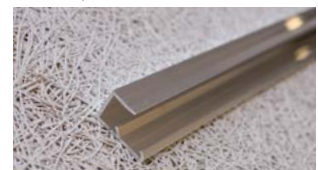
System components



1 - Primary profile L 60/40/1,



2 - Main profile



3 - Perimeter profile



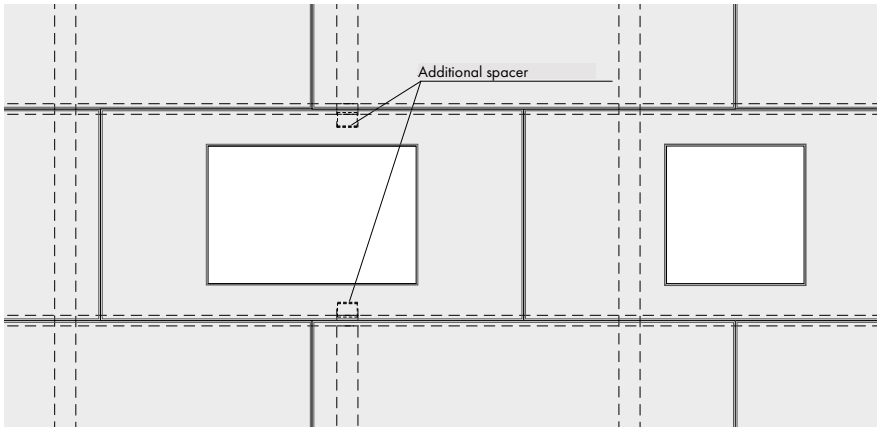
4 - Spacer



6 - Self-drilling screws

Installation of maintenance openings

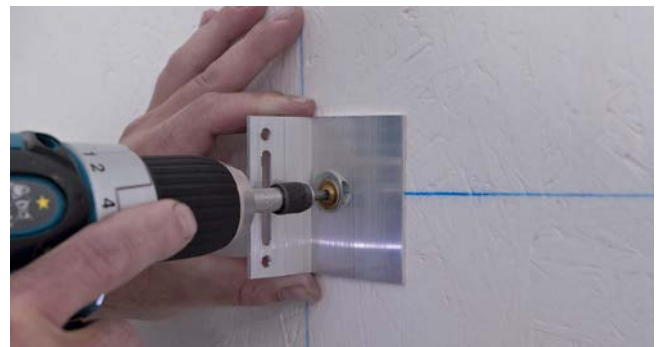
When installing maintenance openings with dimensions of 400 x 400 mm or 400 x 600 mm in 1200 x 600 mm or 1250 x 625 mm tile sizes, the middle profile must be left out over a length of 500 mm so that access to the ceiling void is possible.



Installation photos



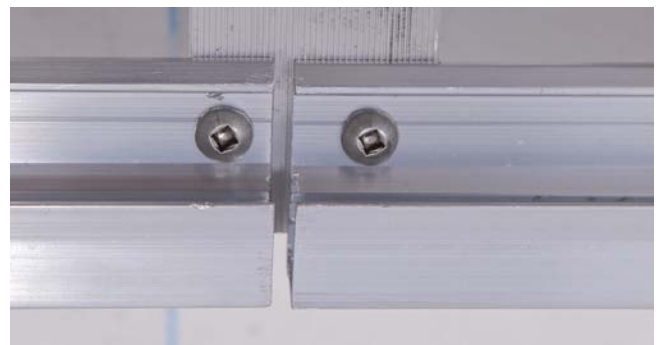
Lay out the profile centres from the middle of the room taking into account equally sized perimeter margins and the maximum permissible centres.



Installation of spacers with approved plugs (10 mm diameter) and screws with washers.



Fix the primary profile L 60/40/1.8 mm with two self-drilling screws, 4.8 x 20 mm, each. The second spacer from the top of each primary profile is designated as a fixed bearing. The self-drilling screws are set into the two round holes. All other spacers are designated as slide bearings. Height adjustment of up to 15 mm is possible by moving the primary profile in the spacer.



Install the perimeter profile with two self-drilling screws, 4.8 x 20 mm, per primary profile. Then insert the HERADESIGN® acoustic tiles. For longitudinal expansion of lengths > 6 m, install profiles with a 5mm gap.



Push the tiles together and align each row horizontally and vertically. Only handle tiles with clean hands.



Fix the main profile at the end with only one screw so that the other end remains adjustable. This makes inserting further tiles easier.



Align the tiles and the main profile before fixing it with the self-drilling screws.



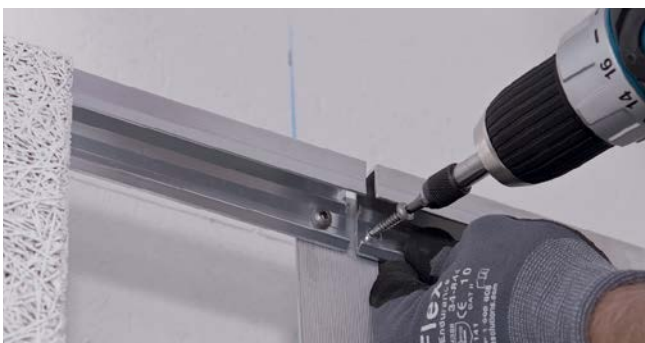
Fix the main profile with two self-drilling screws, 4.8 x 20 mm, per primary profile. Set the first self-drilling screw near the corner of the primary profile.



Installation of the upper edge profile. Space required from the ceiling approx. 40 mm. The first tile is moved approx. 10 cm towards the middle, the screws are fixed and then the tile is finally aligned in the grid.



Slide in the tiles from the side. The edge profile of the last field is installed after tile installation.



Align the tiles before fixing the perimeter profile with self-drilling screws.



If there is no space to move the tile across, fix the last tile by means of a screw. Cover unpainted screw heads with paint in the colour of the tile using a fine brush.

For the installation requirements see DIN 18168 "Lightweight ceiling linings and suspended ceilings", as well as EN 13964 "Suspended ceilings – requirements and test methods".

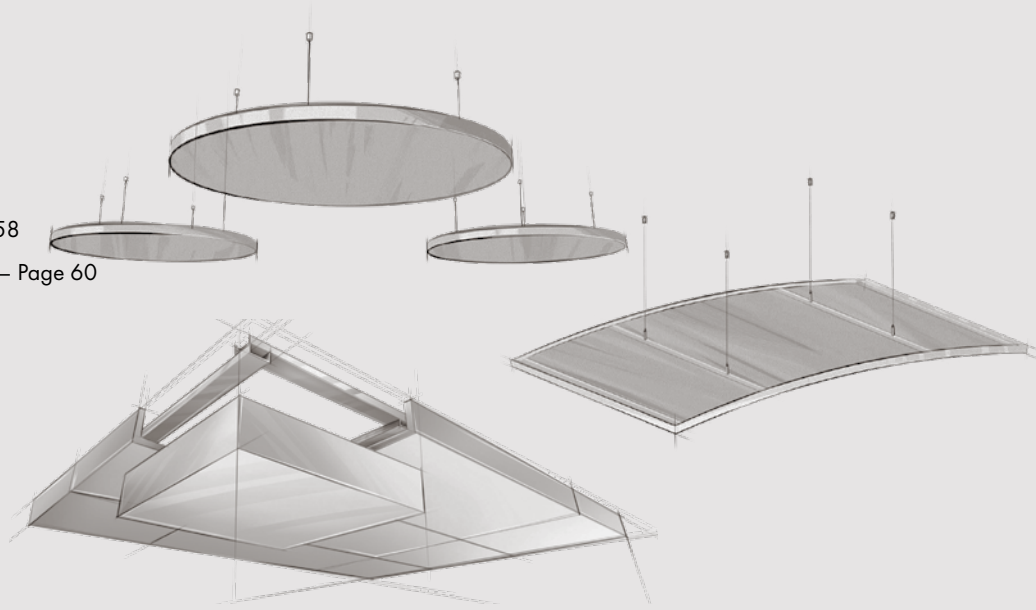
- **Installation of the spacers 4:** Before beginning installation, check the base for sufficient load bearing capacity.
- **Layout the spacers** from the centre of the room, taking into account equally sized end fields and the maximum permissible centres. For maximum centres, see table. Fix the spacers to the underlying surface with approved screws with washers and plugs according to static requirements. The plugs have to be appropriate for the load-bearing capacity of the underlying surface.
- **Installation of primary profiles 1:** Depending on the required perimeter distances of the HERADESIGN® acoustic tiles, insert the primary profile (angle 60/40/1.8 mm) into the spacer with either the 40 mm leg or the 60 mm leg and align it. Screw the primary profile to the spacers with two stainless steel self-drilling screws, 4.8 x 20 mm and make sure that the second spacer from the top of each primary profile is designated as a fixed bearing, i.e. the two screws are set into the round holes. All other screws are set into the slots in order to enable length adjustment of the profiles. Height adjustment of up to 15 mm is possible. See detail vertical section. For the maximum span of the primary profiles, see table.
- **Note:** At least three spacers have to be set per primary profile of 3000 mm length. If the primary profile is fixed with only two spacers, the maximum distance between these must not exceed 800 mm.
- **Installation of perimeter profile 3:** Fix the perimeter profiles 3 at the specified height, align them and fix each with two stainless steel self-drilling screws 4.8 x 20 mm to the primary profiles. Set the self-drilling screws in the groove which can be seen on the section. The upper edge is also formed with an edge profile; only push the tiles together after fixing the self-drilling screws. If the last tile is not movable, secure the outer corner of the tile with a screw. The screw head must be flush and covered using a fine brush and the supplied paint.
- **Installation of HERADESIGN® acoustic tiles and main profiles 2:**
The HERADESIGN® acoustic tiles with edge design SY-02 and the main profiles are installed step by step whilst considering the grid dimension 2 and equally sized end fields. Start inserting the HERADESIGN® acoustic tiles at the edge of the wall in smaller areas; in the centre of the wall in large areas. Insert the first HERADESIGN® acoustic tile into the perimeter profile, then slide in the main profile and finally fix it with a self-drilling screw so that the structure still remains movable in height. Then insert the other HERADESIGN® acoustic tiles, align the tiles and main profile and fix the main profile with two stainless steel self-drilling screws, 4.8 x 20 mm, to the primary profile. The screws are set into the pre-cut groove in the main profile.
- **Damaged or soiled tiles** may not be installed. Small mechanical damage may be improved by means of the supplied paint.
- **Mineral wool overlays:** Acoustic overlays or films are installed step by step with the installation of the acoustic tiles. If necessary, the lowest layer should be secured against downward movement. When trickle protection is required, we recommended wrapping the mineral wool in PE film. A PE film with a thickness of up to 30 µm does not affect the sound absorption of the underlying absorber and is recommended as trickle protection for mineral wool overlays.
- **Linear expansion with temperature changes of up to 30°C:** To compensate for this, there has to be a free distance of at least 5 mm at the longitudinal joints of primary or main profiles for lengths over 6 m. With temperature changes of over 30°C, position the expansion joints according to static requirements.
- **Corrosion protection requirements:** The plugs and screws have to be chosen according to the existing corrosion exposure. In order to avoid contact corrosion, stainless steel screws have to be used to connect the aluminium profiles with each other.
- **Installation of lighting:** The installation of modular lighting is not possible. Other recessed or surface lighting etc. requires separate suspension.

Ceiling Rafts

MINERAL Sky Line – Page 52

HERADESIGN® Sky Element – Page 58

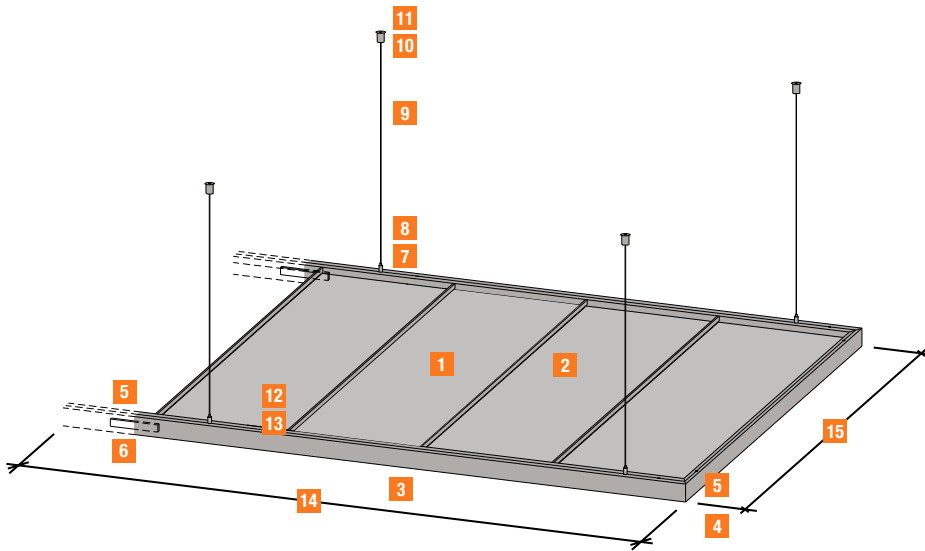
HERADESIGN® Sonic Element Plus – Page 60



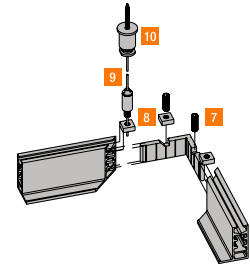
Once buildings of all types are completed and occupied, subsequent acoustic optimisation often seems very difficult. Installation of a suspended ceiling isn't always an option to ensure a comfortable acoustic climate and less reverberation. Ceiling rafts from Knauf Ceiling Solutions can be quickly and simply retrofitted, efficiently avoiding unwanted sound configurations in rooms and at the same time are true objects of design.

MINERAL Sky Line

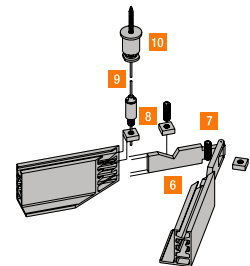
Sizes and dimensions



Frame construction with corner connectors



Frame construction with corner connectors



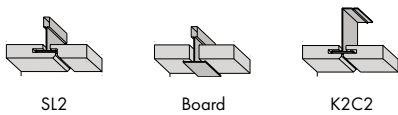
- Tiles:
- 1 AMF THERMATEX® Acoustic alternative, elements as per System F
 - 2 Main profile according to span table System F
- Frame:
- 3 Aluminium L-Profile 40 x 30 mm
 - 4 Corner connector
 - 5 Adjustment screws
 - 6 Splice

- Hanger:
- 7 Slot nut
 - 8 Lower cable holder
 - 9 Cable
 - 10 Upper cable holder
 - 11 Ceiling mount

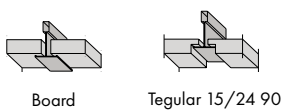
- Cross bracing (for lengths over 3.00 m)
- 12 Angle bracket 50 x 50 x 1.75 mm
 - 13 Screws 3.5 mm x 13.5 mm



- Dimensions:
- 14 Length as per client requirements
 - 15 Width dependent on tile size, max. 2500 mm

Edge configuration (plank tiles)



Edge configuration (square tiles)



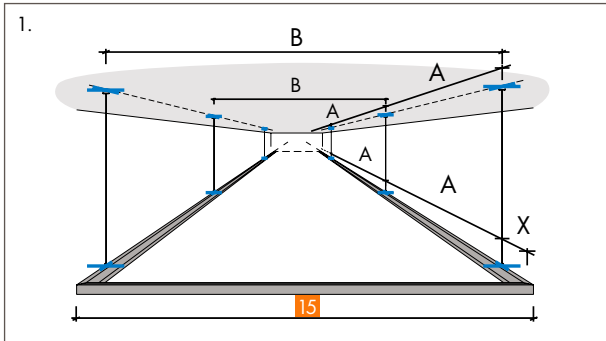
Profile	Height [mm]	Thickness [mm]	Tile size [mm]
PQZ 19/40 	50	0.5	300 x 1800
T 24/38 	38	0.4	300 x 1500

Profile dependent on selected tile type and tile size

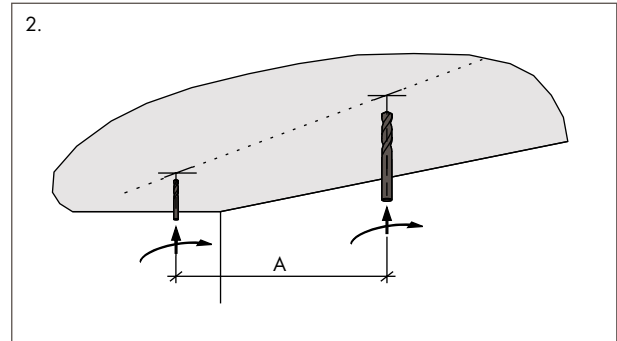
Properties

- Building material class: A2-s1,d0 as per EN 13501-1
- Sound absorption: EN ISO 354
- Humidity resistance: up to 90% relative humidity
- Frame colours: Alu anodised E6-EV1, white similar to RAL 9016, other colours on request
- Surface: THERMATEX® Alpha (black, white, creme, silver)
THERMATEX® Alpha HD fleece laminated (white)
- Edges: Tegular, SL2, K2C2

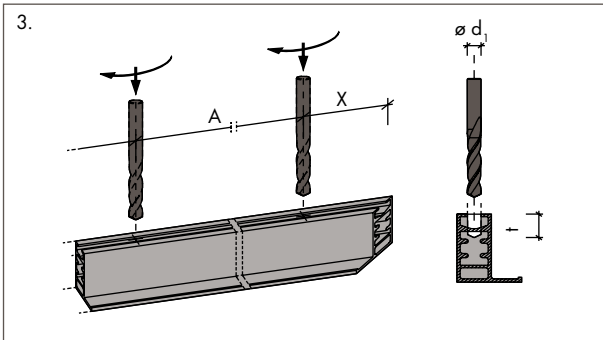
Installation guidelines and advice



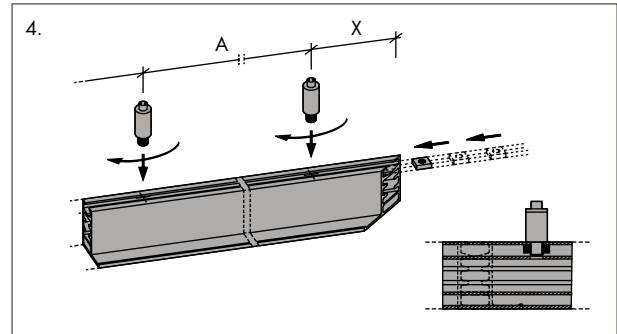
Fixing centres:
 $B = 15 - 16 \text{ mm}$
 $A \leq 1500 \text{ mm}$
 $X \leq 150 \text{ mm}$ (max. distance from perimeter)



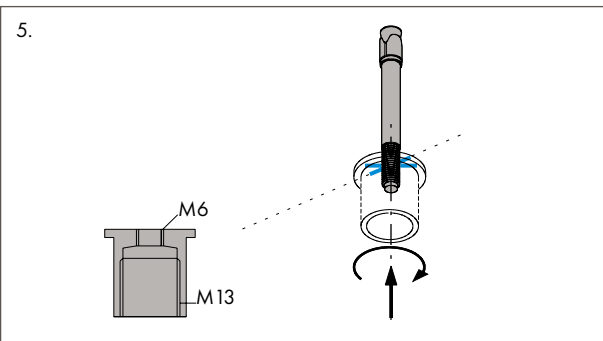
Depending on the soffit material and type of fixing, drilling may be necessary.



Profile holes:
 $\varnothing d_1 = 6,0 \text{ mm}$
 $t \geq 12 \text{ mm}$

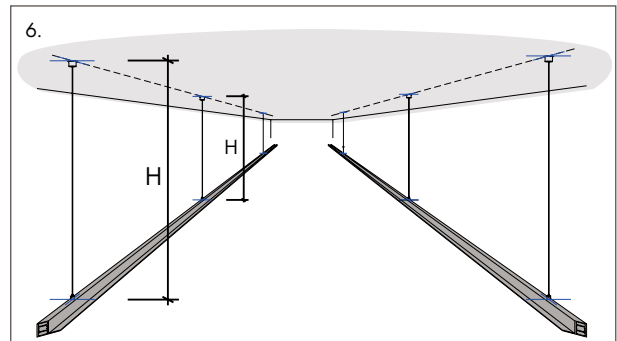


All suspension screw connections have to be secured with a chemical screw-lock.



The included ceiling mounts feature an M6 internal thread for installation to the ceiling (soffit). Suitable fixings should be chosen for the specific installation and the type of soffit in consultation with the screw/plug manufacturer.

Possible fixings: M6 bolt or appropriate screw and plug combination.

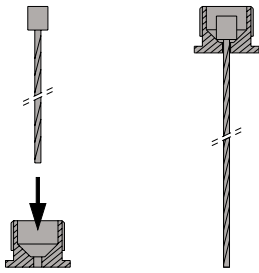


Lower edge of soffit – lower edge of ceiling raft = $H + 40 \text{ mm}$

The rafts must be suspended from the soffit by using approved fixings (plugs, screws, wires, etc.). Each fixing (plug, screw) needs to be mechanically pretested to a loading of 750N using appropriate testing equipment and this testing should be documented. Additional loads such as light fittings, signs, etc. have to be separately supported from the soffit using additional means. Note that the requirements of EN 13964 section 5.3 (testing of metal suspension and connecting components) should be observed.

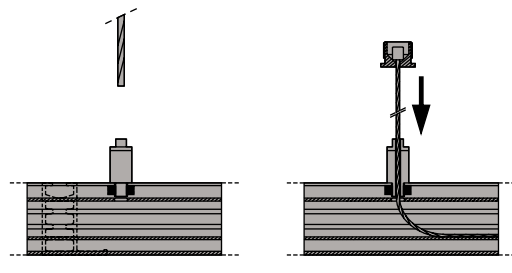
Installation guidelines and advice

7.



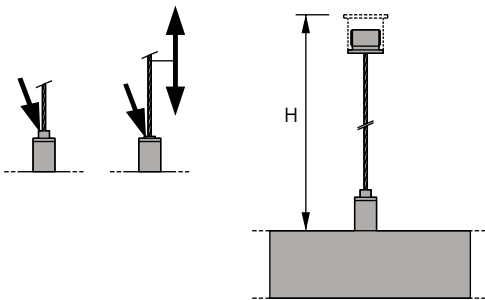
Thread the cables with the unpressed end through the mounting cap.

8.



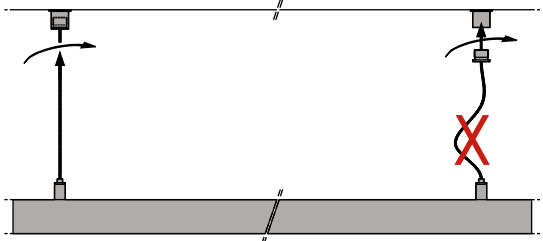
Subsequently, the cables are threaded through the adjustable, preinstalled cable holders.

9.



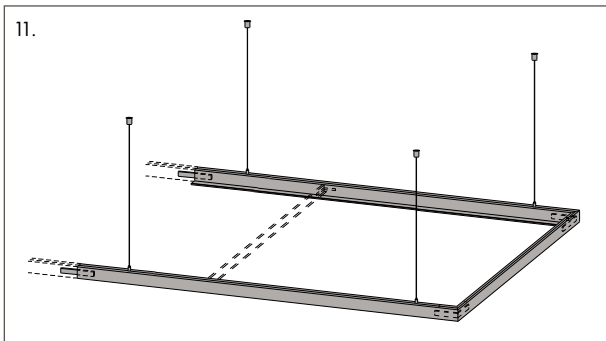
By releasing the clamping mechanism, the required suspension height can be set exactly before installation.

10.



The rafts should be supported equally through all four cables, no loose cables are permitted.

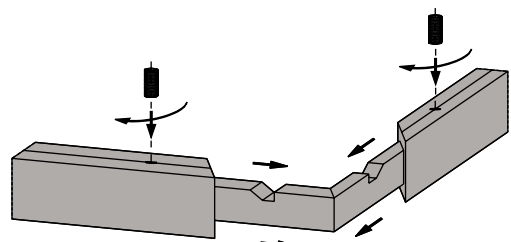
11.



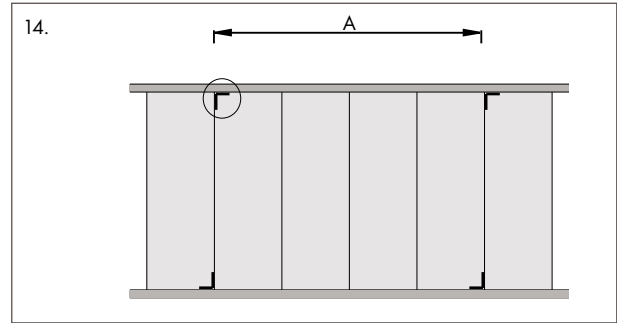
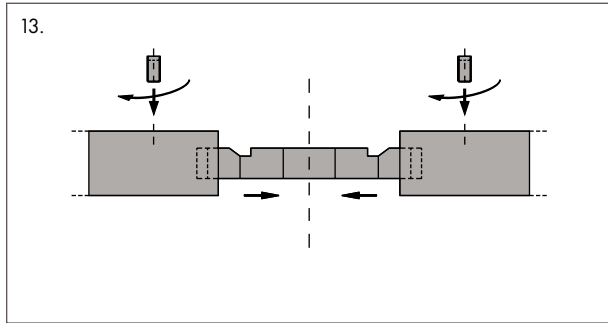
Corner and splice cross bracing:

- Installation takes place after each element is installed.
- The cross braces are to be fixed across the full raft (same raft width across the entire length)
- Exact lay out is required for a flawless joint pattern.

12.

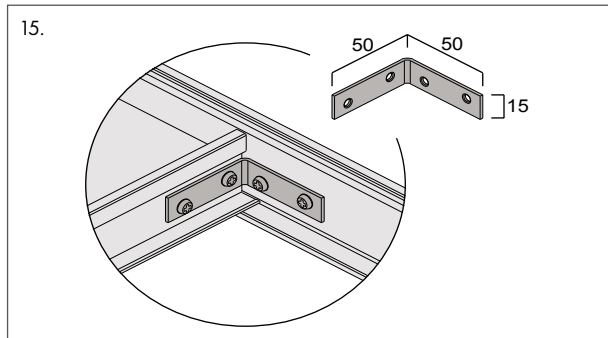


Installation guidelines and advice

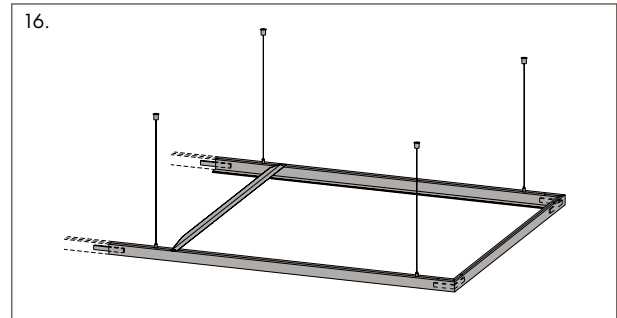


Cross bracing:
 $A \leq 2000$ mm

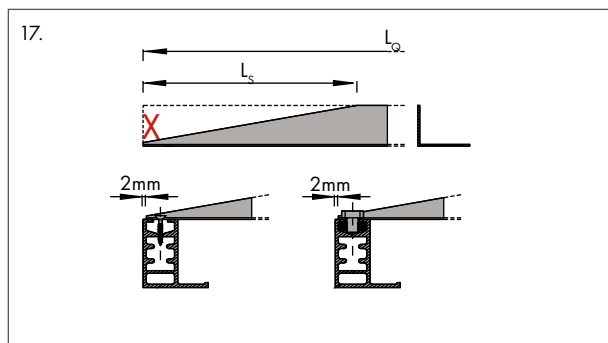
For rafts with a complete length of over 3.0 m, screw the reinforcement profiles to the frame profile at regular intervals ≤ 2000 mm.



The necessary 50 x 50 x 15 x 1.75 mm angle brackets as well as the 3.5 x 13.5 mm screws are included in the delivery.

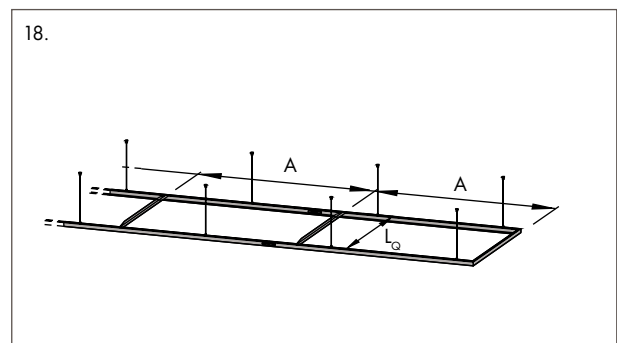


The cross profiles shown, including fixings, are not included in the standard delivery.

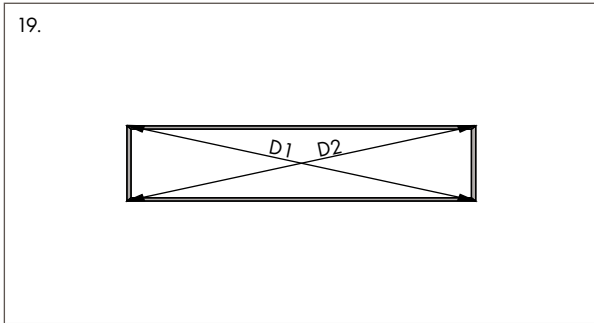


Cross bracing:
 $L_Q = 15 - 4$ mm
 $A \leq 2000$ mm

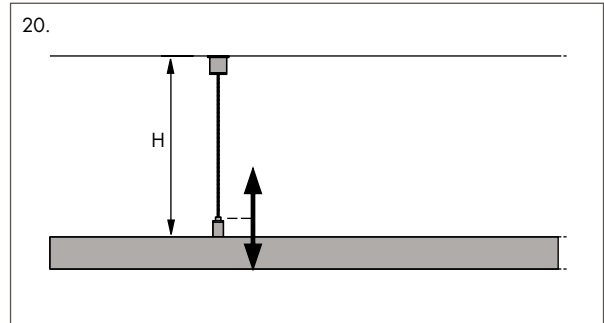
Angle of cross bracing:
 $L_s \sim 100$ mm



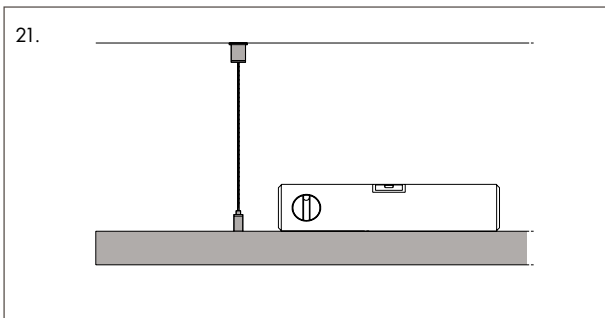
Installation guidelines and advice



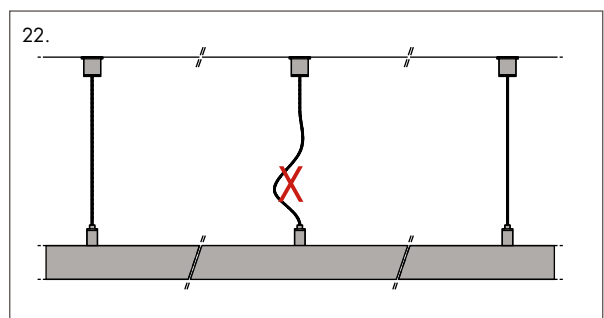
D1 = D2



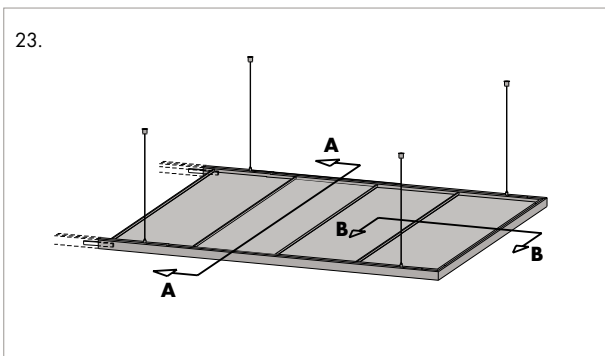
After installing the suspension (cable hanger to raft and ceiling mount including cable), the suspension height can be checked and when necessary corrected. The raft is then fixed on all hangers by two people.



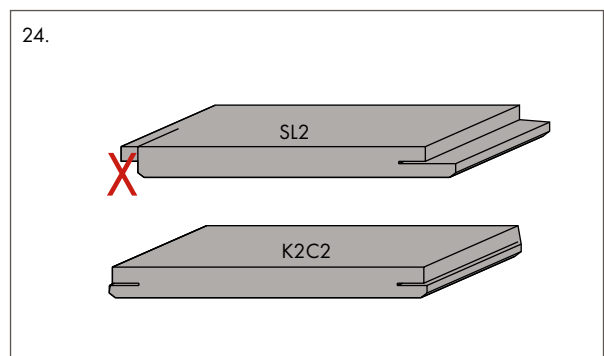
The entire ceiling raft is then aligned.



The raft should be supported equally through all four cables, no loose cables are permitted.



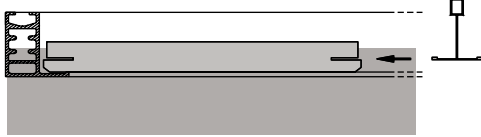
The ceiling tiles are inserted.



First tile

Installation guidelines and advice

25.



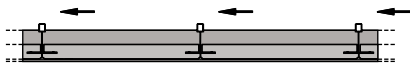
B - B

26.



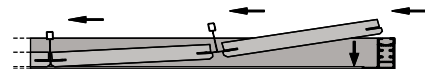
A - A

27.



B - B

28.



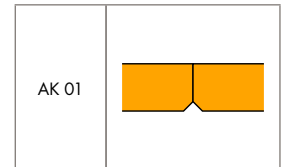
B - B

HERADESIGN® Sonic / Sky

Product Range

Product	Thickness [mm]	Weight [kg/pcs.]		Edge configuration	System component	Size L x W x H [mm]	
Product programme HERADESIGN® Sky Element HERADESIGN® superfine / HERADESIGN® superfine A2	25	superfine	superfine A2	5.8	8.8	1) Corner component	600 x 600 x 125
				4.9	7.8	2) Side component 600	600 x 600 x 125
				9.8	15.5	3) Side component 1200	1200 x 600 x 125
				4.1	6.5	4) Standard 600	600 x 600
				8.1	13.0	5) Standard 1200	1200 x 600
HERADESIGN® fine / HERADESIGN® fine A2	25	fine	fine A2	6.3	9.3	1) Corner component	600 x 600 x 125
				5.4	8.2	2) Side component 600	600 x 600 x 125
				10.8	16.2	3) Side component 1200	1200 x 600 x 125
				4.5	6.8	4) Standard 600	600 x 600
				8.9	13.7	5) Standard 1200	1200 x 600

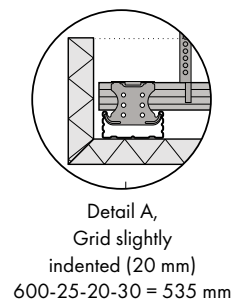
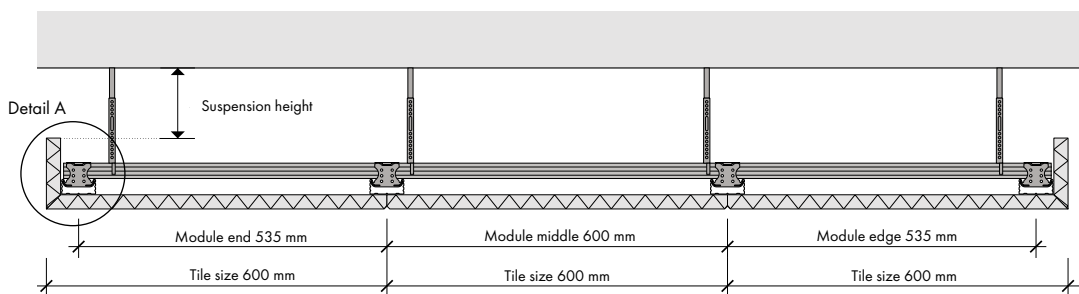
Edge Configurations



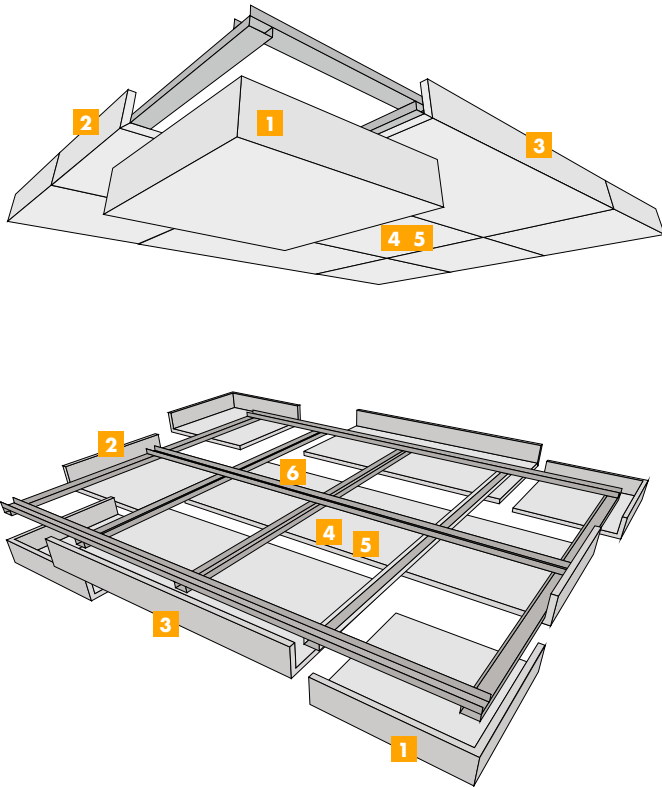
Product	Thickness [mm]	Weight [kg/ceiling raft]	Edge configuration	Size L x W x H [mm]
HERADESIGN® Sonic Element Plus HERADESIGN® superfine	25	53.70	AK-01	2400 x 1200 x 125
		27.10		1200 x 1200 x 125
HERADESIGN® fine	25	57.90	AK-01	2400 x 1200 x 125
		29.20		1200 x 1200 x 125

HERADESIGN® Sky Element

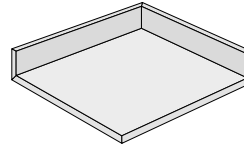
Sizes and dimensions



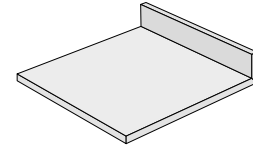
Sizes and dimensions



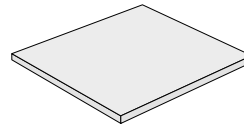
1 Corner component



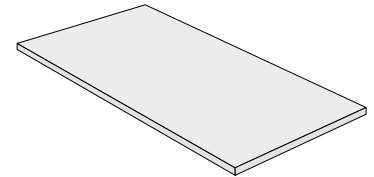
2 Side component 600



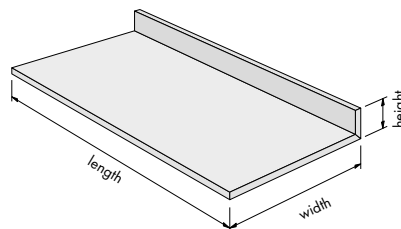
4 Standard 600



5 Standard 1200



3 Side component 1200



	System component	size L x W x H [mm]	Thickness [mm]	Edge configuration
1	Corner component	600 x 600 x 125	25	AK-01
2	Side component 600	600 x 600 x 125	25	AK-01
3	Side component 1200	1200 x 600 x 125	25	AK-01
4	Standard 600	600 x 600	25	AK-01
5	Standard 1200	1200 x 600	25	AK-01

Installation guidelines and advice

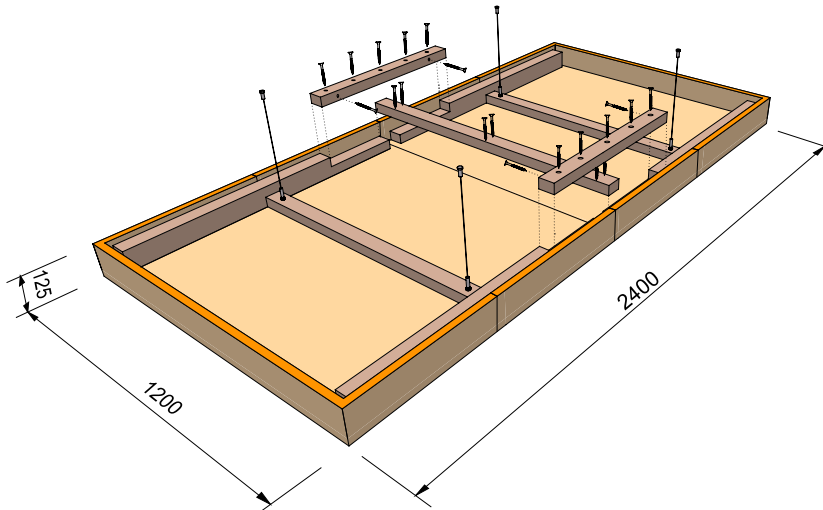
For the installation requirements see DIN 18168 "Lightweight ceiling linings and suspended ceilings", as well as EN 13964 "Suspended ceilings – requirements and test methods".

- Installation of primary profiles: centres according to System B 2.1/B 2.2. In the long direction, set one primary profile into each corner of the upstand of the ceiling raft.
- Distribute main profiles symmetrically in the module, a main profile in each corner of the upstand.
- A 10 mm gap should be ensured between the inside of the upstand and the cross profile.
- Screw patterns see chapter B 2.1/B 2.2.
- Begin tile installation from the middle of the raft.
- Push together and align acoustic tiles – plank formats, across the profile direction and fix to the main profiles with HERADESIGN® screws. For each tile width and centre distance, two screws are required. For indoor swimming pools and vibrating constructions three screws.
- Note: Observe the necessary corrosion protection requirements.
- Square tiles: Observe the installation direction marked on the reverse of the tile when installing the tiles.

- Cross joints: four tile corners meet at one point, which means increased accuracy is required when installing!!
- Screws: HERADESIGN® screws. Corrosion protection must be determined by the prevailing room conditions. The screw heads must be set flush with the tile surface and when coloured HERADESIGN® screws are not used, the screw heads should be painted after installation with the delivered or equivalent paint.
- Acoustic overlays or films are installed step by step with the installation of the acoustic tiles. A PE film with a thickness of up to 30 µm does not affect the sound absorption of the underlying absorber and is recommended as trickle protection for mineral wool overlays
- Damaged or soiled tiles or tiles with colour deviations may not be installed. Tiles with edge configurations for T-profile installations can not be used, as the tile size is smaller than the module.
- Seek professional advice where necessary.

HERADESIGN® Sonic Element Plus 2400 x 1200

Sizes and dimensions

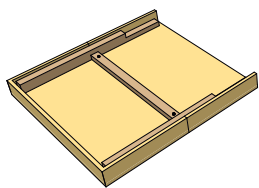


Delivery

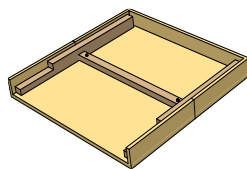
The set delivered consists of:

- Element A with preassembled grid structure and hanger base
- Element B with preassembled grid structure and hanger base
- 3 x connecting elements with the appropriate number of connecting screws, supplied in a plastic bag.
- 4 x individual hangers (hanger height < 500 mm) in a plastic bag
- Elements A and B from different sets are not compatible and should only be used as part of the set provided.

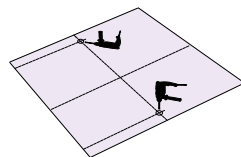
Product	Size L x W x H	Weight kg/ceiling raft
HERADESIGN® superfine	2400 x 1200 x 125 mm tile thickness 25 mm	53.70
HERADESIGN® fine		57.90



1 x element A



1 x element B



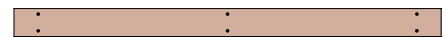
1 x drilling template



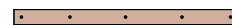
4 x individual hangers



20 x screws



1 x connection component C



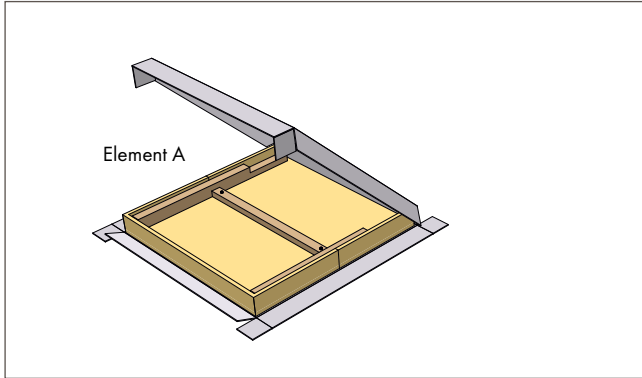
2 x connection components D

Properties

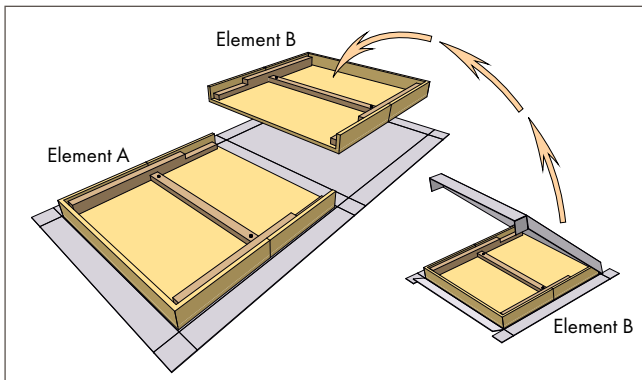
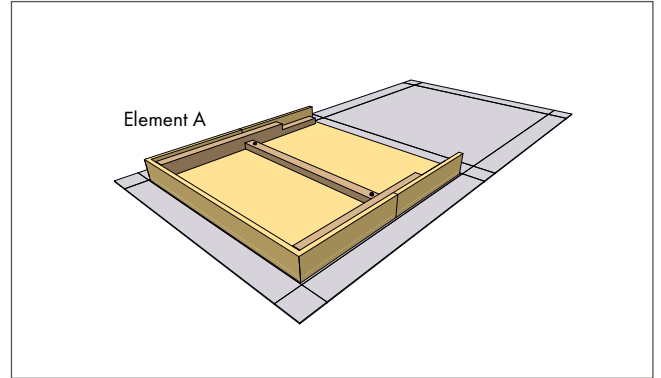
- The ceiling raft set is not suitable for use in indoor swimming pools or spas.
- Surface: The surface layer consists of biologically recommended, magnesite bonded wood wool acoustic tiles.
- Colour: The standard colours of Heradesign® ceiling tiles are white, similar to RAL 9010 or beige, natural tone 13. Other colours (RAL, NCS, StoColor) available on request.

Installation guidelines and advice

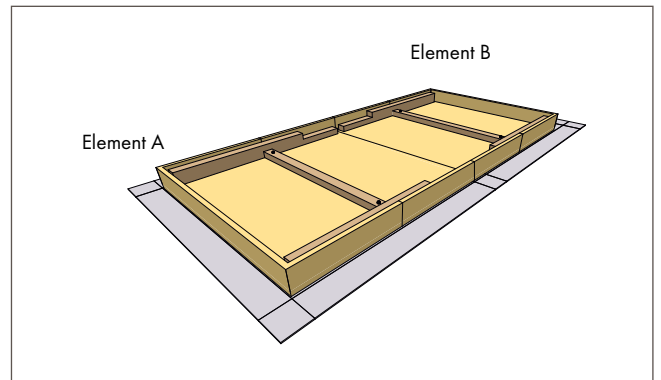
For the installation requirements see DIN 18168 "Lightweight ceiling linings and suspended ceilings", as well as EN 13964 "Suspended ceilings – requirements and test methods".



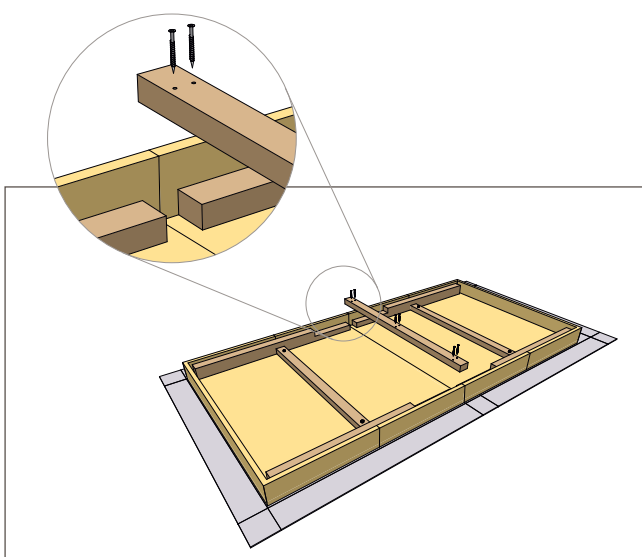
Carefully unpack the elements



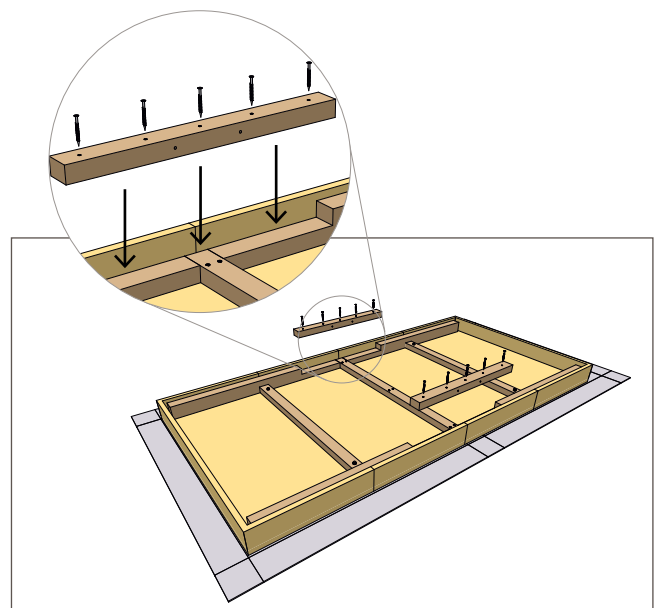
Put elements together



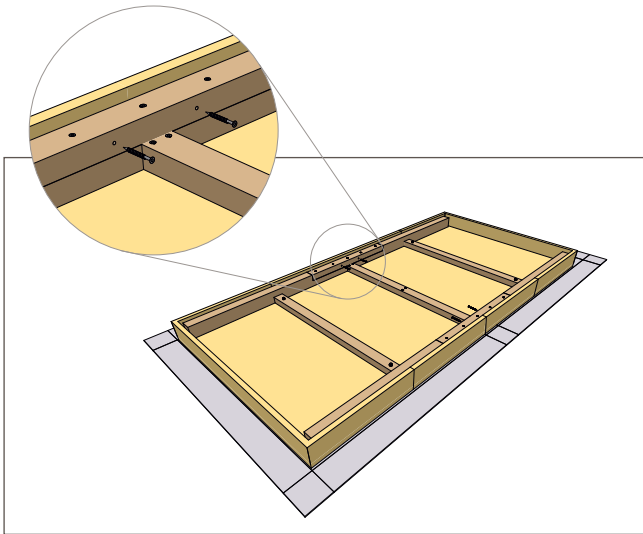
Ensure precise alignment



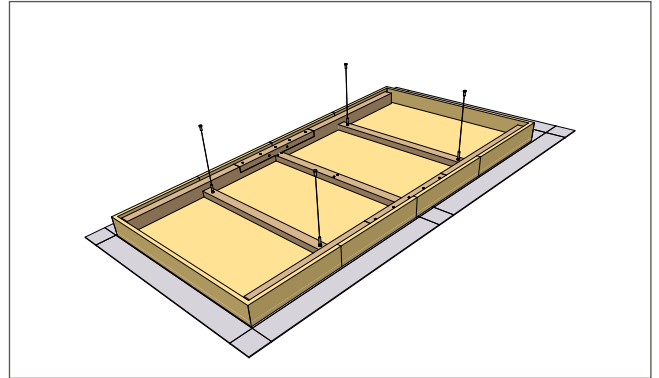
Install connection component C with 6 screws.



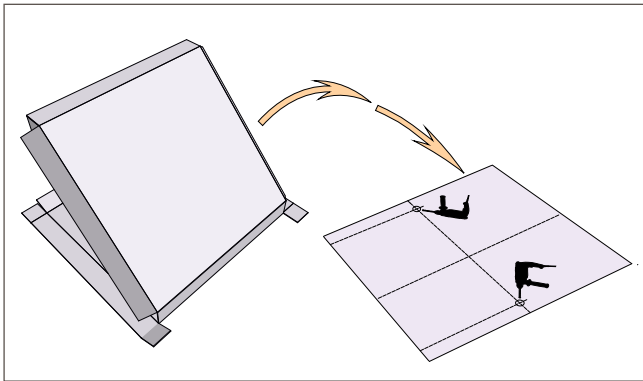
Install connection components D, each with 5 screws.



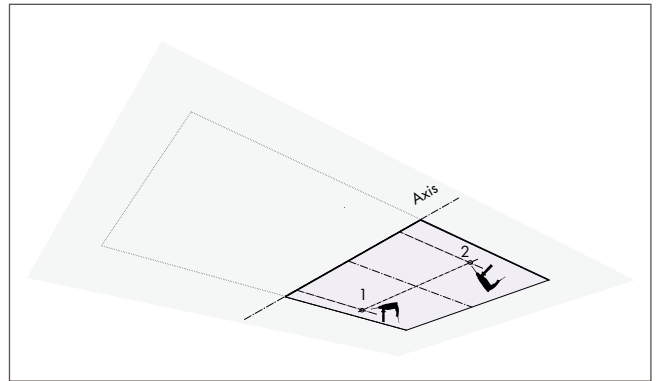
Fix connection component D with an additional 2 screws, horizontally.



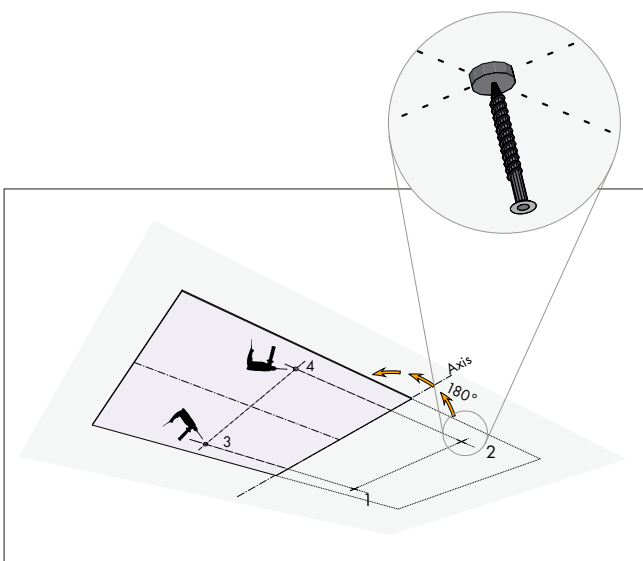
Install the 4 hangers.



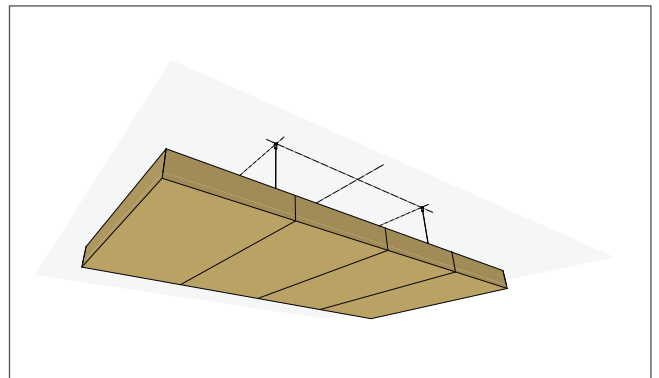
Remove the drilling template from the packaging.



Determine the axis for the ceiling raft. Lay the drilling template on the axis and mark the holes to be drilled for hangers 1 and 2.



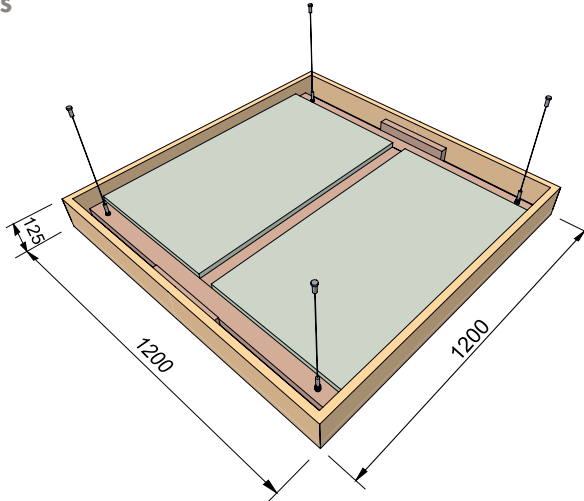
Turn the drilling template 180° on the axis and mark the holes to be drilled for hangers 3 and 4. Install upper hanger parts for hangers 1 to 4.



Install the ceiling raft. Lift the ceiling raft, holding it level and fix the upper hangers to the lower parts.

HERADESIGN® Sonic Element Plus 1200 x 1200

Sizes and dimensions

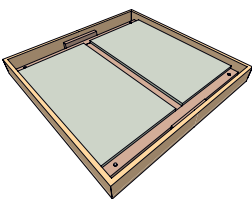


Delivery

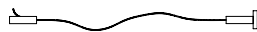
The set delivered consists of:

- Element A with preassembled grid structure and hanger base
- 4 x individual hangers (hanger height < 500 mm) in a plastic bag

Product	Size L x W x H	Weight kg/ceiling raft
HERADESIGN® superfine	1200 x 1200 x 125 mm	27.10
HERADESIGN® fine	Tile thickness 25 mm	29.20



1 x element A



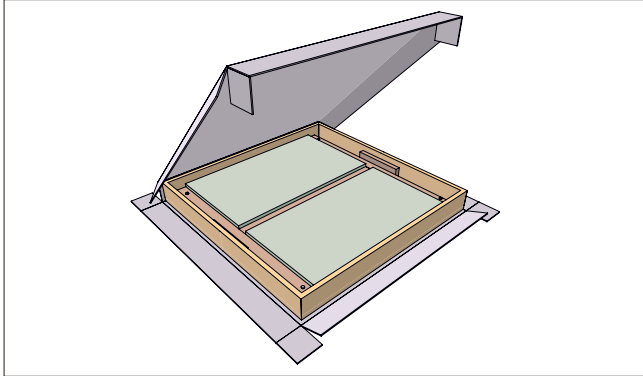
4 x individual hangers

Properties

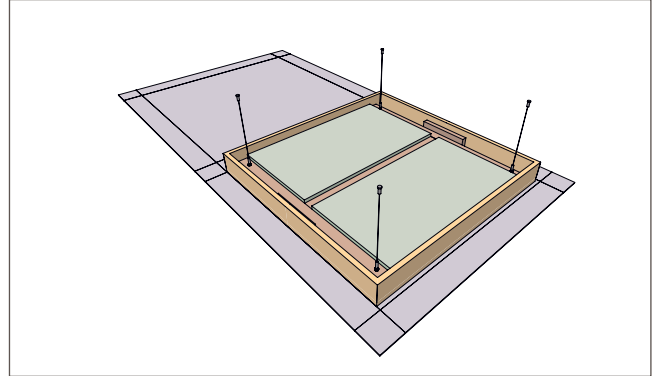
- The ceiling raft set is not suitable for use in indoor swimming pools or spas.
- Surface: The surface layer consists of biologically recommended, magnesite bonded wood wool acoustic tiles.
- Colour: The standard colours of Heradesign® ceiling tiles are white, similar to RAL 9010 or beige, natural tone 13. Other colours (RAL, NCS, StoColor) available on request.

Installation guidelines and advice

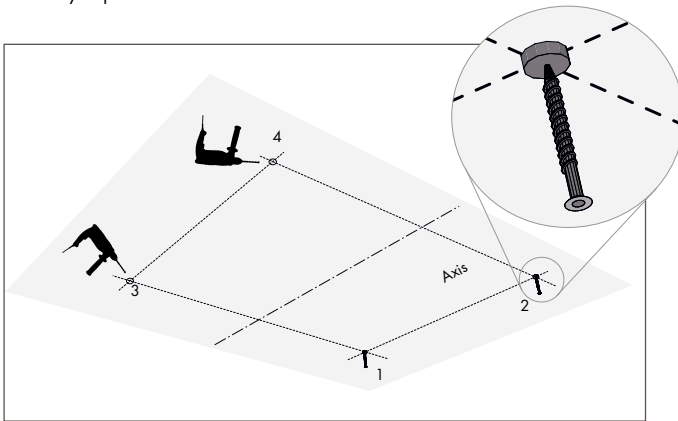
For the installation requirements see DIN 18168 "Lightweight ceiling linings and suspended ceilings", as well as EN 13964 "Suspended ceilings – requirements and test methods".



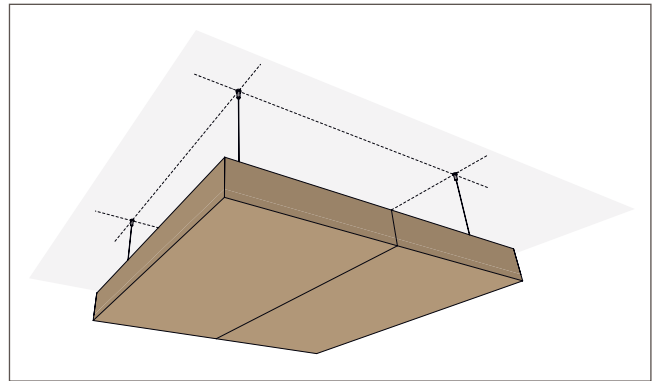
Carefully unpack the elements.



Screw the enclosed cable hanger onto the hanger base.



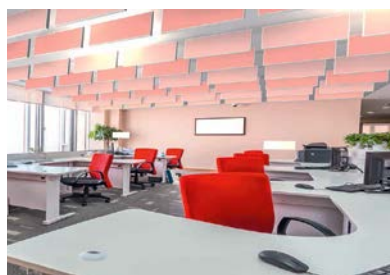
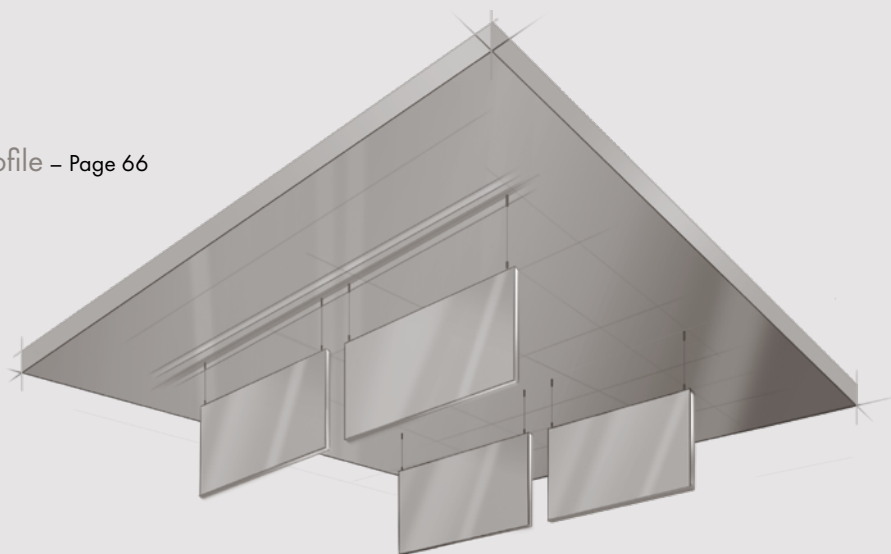
Mark the holes on the soffit at the correct centres and drill according to the plugs being used. Fix the upper hanger parts using suitable screws for the underlying surface.



Install the ceiling raft. Lift the ceiling raft, holding it level and fix the upper hangers to the lower parts.

Baffles

HERADESIGN® Baffle Line / Element Profile – Page 66



Product Range

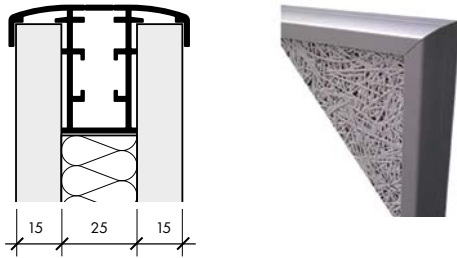
Product programme HERADESIGN® Baffle	Baffle size [mm]	Approx. weight [kg/baffle]							
		HERADESIGN® fine		HERADESIGN® fine A2		HERADESIGN® superfine		HERADESIGN® superfine A2	
		Element Profile	Line	Element Profile	Line	Element Profile	Line	Element Profile	Line
	600 x 300	3.1	4.5	4.8	6.1	3.0	4.4	4.5	5.8
	1200 x 300	6.3	8.7	9.7	12.0	6.0	8.4	8.9	11.3
	1800 x 300	9.4	12.9	14.5	17.8	9.0	12.5	13.4	16.8
	600 x 600	6.1	8.3	9.5	11.6	5.8	8.0	8.8	10.9
	1200 x 600	12.2	15.9	19.0	22.5	11.6	15.3	17.6	21.1
	1800 x 600	18.3	23.4	28.5	33.5	17.4	22.6	26.4	31.4

Other dimensions on request

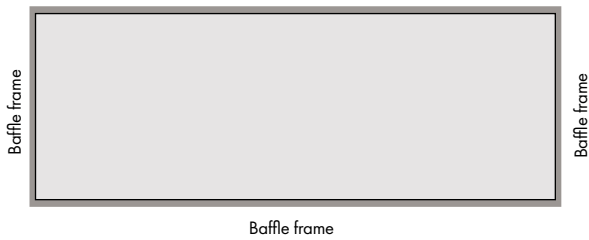
HERADESIGN® Baffle Line / Element Profile

Product Range

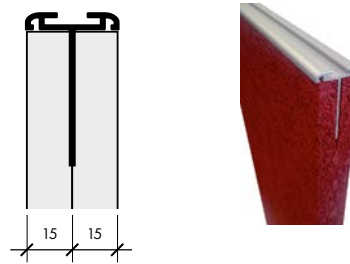
HERADESIGN® Baffle Line



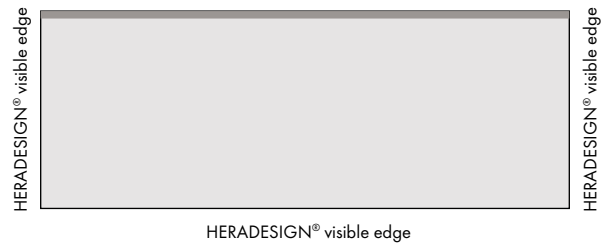
- 3-layer baffle with HERADESIGN® surface layer and mineral wool absorber core.
- Frame with completely closed anodised aluminium profile (colour A6/C0), with integrated punching for HERADESIGN® hangers.



HERADESIGN® Baffle Element Profile



- 2-layer baffle with HERADESIGN® surface layer and upper side anodised Alu-profile (colour A6/C0).

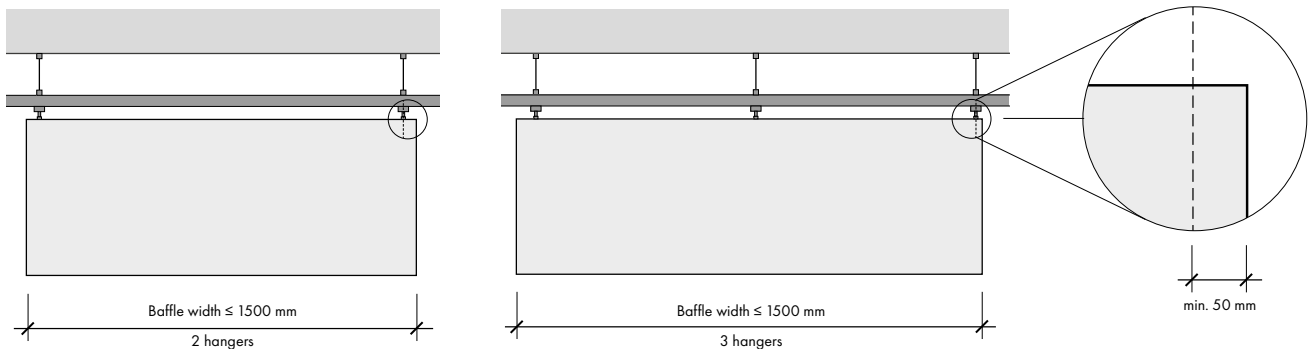


System component	Length [mm]	Packaging unit [pcs.]
Fixing profile and guide profile	3000	2

Special lengths available on request

System component	Suspension height [mm]	Packaging unit [pcs.]
Short hanger	45	12
Cable hanger	< 500	12
Angled hanger (only for Baffle Line)	< 500	12
Independent hanger (use WITHOUT fixing profile)	< 500	12

Number of hangers per baffle



Application areas

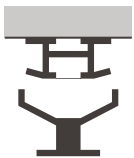
As a decorative and acoustic ceiling element for internal applications with a constant relative humidity of upto max. 85%.
Not suitable for use in indoor swimming pools, underground car parks and external applications!

Installation guidelines and advice

HERADESIGN® suspension system for Baffle Line and Baffle Element Profile

Short hanger

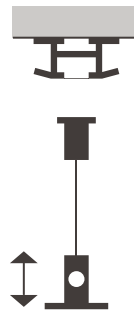
Pre-assembled hanger with integrated anti-twist device and easy-to-click metal clip for suspending HERADESIGN® Baffle Line or Baffle Element Profile from ceiling fixing profiles or guide profiles.



- Complete installation without tools
- Self-fixing
- Baffle base surface: matt nickel
- Quick and easy installation at the desired point
- Quickest possible installation due to easy-to-click function
- Suspension height 42.5 mm (upper edge of ceiling profile to upper edge of baffle)
- min. 2 hangers per baffle
- max. load per hanger 300 N/30 kg
- max. breaking load per hanger 1500 N/150 kg

Cable hanger

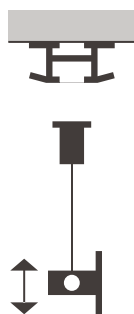
Pre-assembled hanger with integrated anti-twist device in the hanger and baffle base for suspending HERADESIGN® Baffle Line or Baffle Element Profile from ceiling fixing profiles or guide profiles.



- Complete installation without tools
- Millimetre exact height adjustment
- Cable Ø 1.2 mm, 7 x 7 galvanised steel, length 500 mm
- Nominal strength: 2400 N/mm²
- With side cable release
- Hanger and baffle base surface: matt nickel
- max. suspension height = 450 mm (upper edge of ceiling profile to upper edge of baffle)
- min. 2 hangers per baffle
- max. load per hanger 160N/16 kg
- max. breaking load per hanger 800N/80 kg

Angled hanger (only for HERADESIGN® Baffle Line)

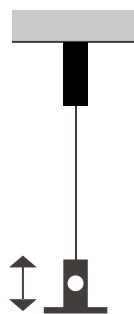
Pre-assembled hanger with integrated anti-twist device in the hanger and baffle base for the angled suspension of HERADESIGN® Baffle Line from ceiling fixing profiles or guide profiles.



- Complete installation without tools
- Required angle of the Baffle infinitely variable
- Millimetre exact height adjustment
- Cable Ø 1.2 mm, 7 x 7 galvanised steel, length 500 mm
- Nominal strength: 2400 N/mm²
- With side cable release
- Hanger and baffle base surface: matt nickel
- max. suspension height = 450 mm (upper edge of ceiling profile to upper edge of baffle)
- min. 4 hangers per baffle
- max. load per hanger 160 N/16 kg
- max. breaking load per hanger 800 N/80 kg

Independent hanger

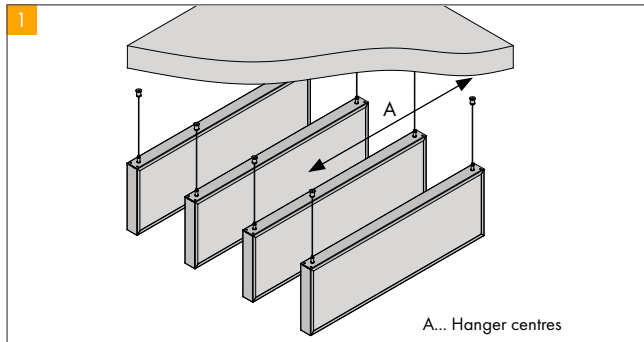
Pre-assembled hanger with integrated anti-twist device in the hanger and baffle base for suspending HERADESIGN® Baffle Line or Baffle Element Profile from the soffit or suspended ceiling system.



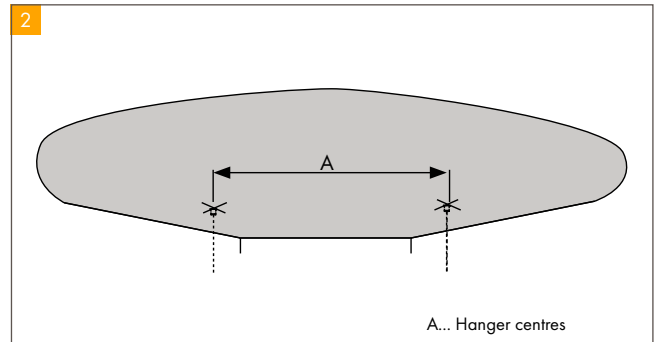
- Complete installation without tools
- Millimetre exact height adjustment
- Cable Ø 1.2 mm, 7x 7 galvanised steel, length 500 mm
- Nominal strength: 2400 N/mm²
- With side cable release
- Hanger and baffle base surface: matt nickel
- max. suspension height = 450 mm (upper edge of ceiling profile to upper edge of baffle)
- min. 2 hangers per baffle
- max. load per hanger 160 N/16 kg
- max. breaking load per hanger 800 N/80 kg
- **Note:** When installing HERADESIGN® Baffle Line with independent hangers, the positioning of the hanger base must be exact to the millimetre.

HERADESIGN® Baffle with independent hangers

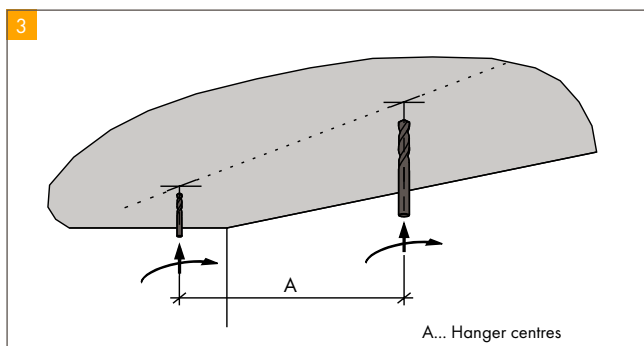
Installation guidelines and advice



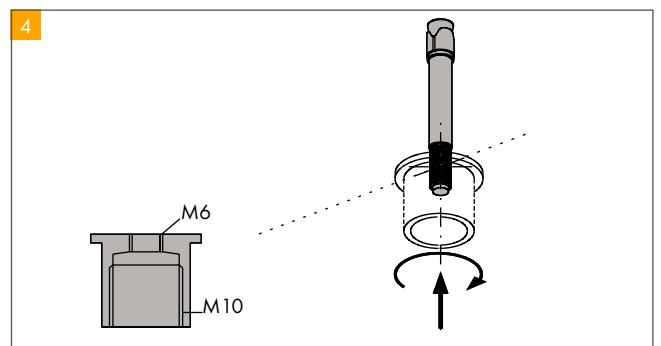
Installation using cable hangers and top screw thread.



The centres in both directions are transferred to the desired fixing positions.

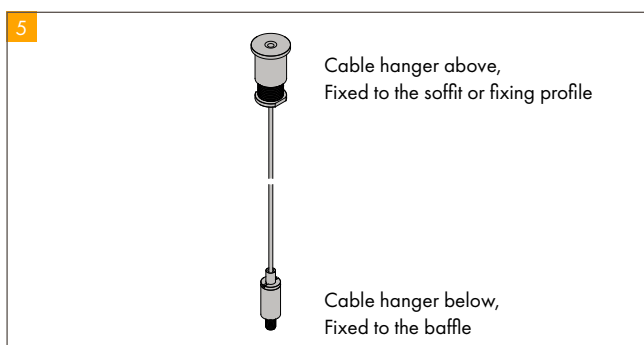


Depending on the soffit material and type of fixing, drilling may be necessary.

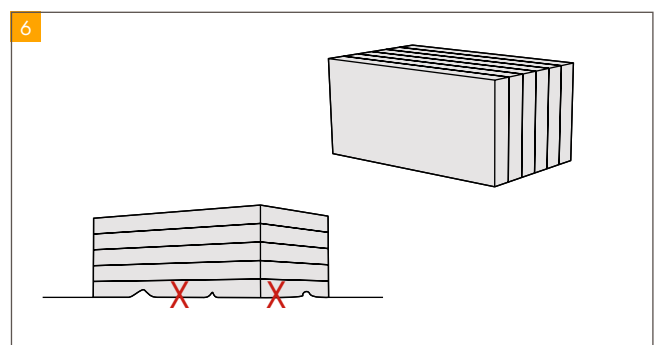


The included ceiling mounts feature an M6 internal thread for installation to the ceiling (soffit). Suitable fixings should be chosen for the specific installation and the type of soffit in consultation with the screw/plug manufacturer.

Possible fixings: M6 bolt or appropriate screw and plug combination.



Install cable hanger.

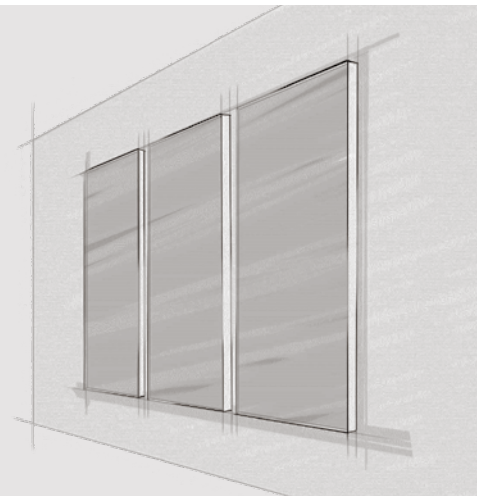


The baffles must always be stored on a dry and flat surface and can either be stacked (max 8 pieces) or stand on the long edge (no stacking permitted). Mechanical stress (impacts etc.) can cause damage to the product. During transport and installation of baffles, the baffles must always be carried by two people. When removing the packaging and at all times when handling the baffles, clean white cotton gloves should be worn. Ensure that only the frames of the baffles are handled.

Wall Absorbers

FABRIC Wallcoustic Line: Wall panel with frame – Page 70

HERADESIGN® Wallcoustic Element: Ready-to-install wall panel – Page 71



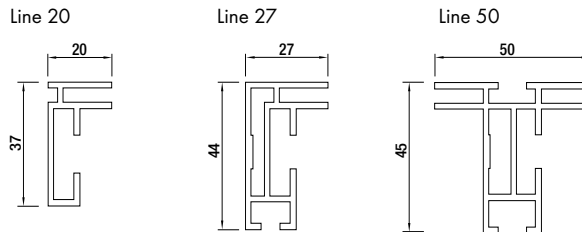
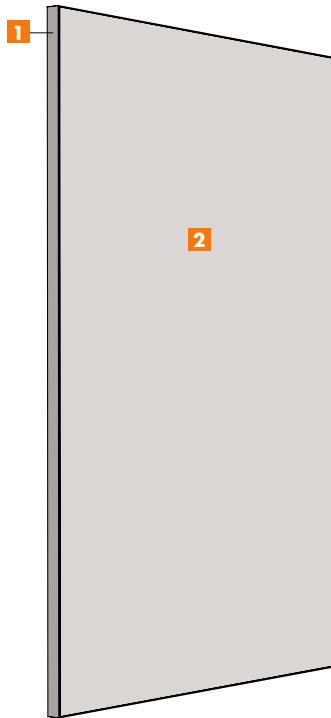
Product Range

Product	Thickness [mm]	Weight [kg]		Module [mm]
		m ²	Pcs.	
Wall absorber FABRIC Wallcoustic Line 27 classic (white) or exclusive (printed motif)	27	5		1200 x 1200
		5		1800 x 1200
		5		2400 x 1200
		5		2400 x 2400
Wall absorber FABRIC Wallcoustic Line 50 classic (white) or exclusive (printed motif)	50	6		600 x 1200
		6		1200 x 1200
		6		1800 x 1200
		6		2400 x 1200
		6		2400 x 2400
		6		4000 x 3000
Wall absorber FABRIC Wallcoustic Line 20	20	3		600 x 600
		4		1200 x 600
HERADESIGN® Wallcoustic Element	100		18.3	1200 x 600

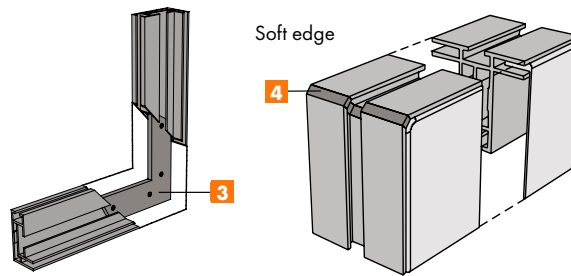
Other formats on request

FABRIC Wallcoustic Line - Wall panel with frame

Installation guidelines and advice



Corner connector



- 1 Alu profile
- 2 Fabric cover
- 3 Corner angle
- 4 Fabric edge

Soft edge only available for:
Line 27 and Line 50

The customisable, printable fabric cover with an elegant aluminium frame – that is FABRIC Wallcoustic Line. The alu-frame is fitted with an all-round groove in which the printed fabric is held using beading. This means the fabric cover can easily be removed and replaced with a new motif – quick, simple and no need for special tools!

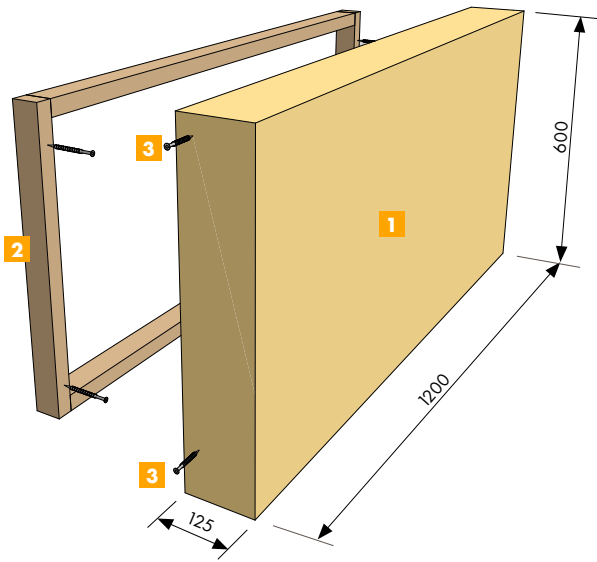
The profile is delivered with an integrated corner connection system.

- Line 20: Light-weight profile for single sided covers in small sizes
- Line 27: Profile for all sizes with single sided covers
- Line 50: Profile for wall panels with double sided covers and for highly absorbing acoustic inlays

Other frame sizes and colours on request.

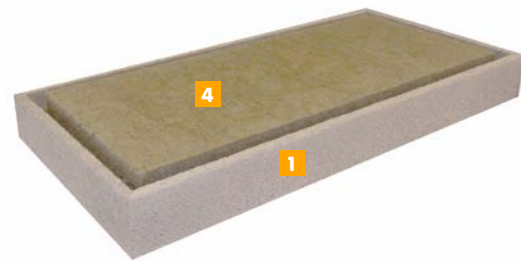
HERADESIGN® Wallcoustic Element - Ready-to-install wall panel

Sizes and dimensions



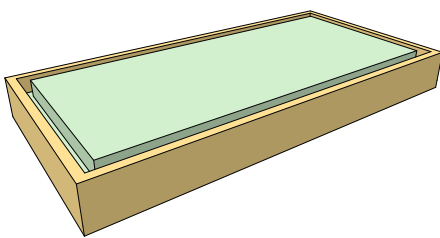
The HERADESIGN® Wallcoustic Element is an acoustic wall panel (1200/600/125 mm) consisting of magnesite bonded wood wool tiles and an adhered acoustic inlay (100 mm). The element is delivered in one piece, read-to-install and can, together with the included wooden frame, be quickly installed on a stable, vertical surface.

- 1 HERADESIGN® absorber
- 2 Installation frame
- 3 Fixing screws
- 4 Adhered acoustic inlay

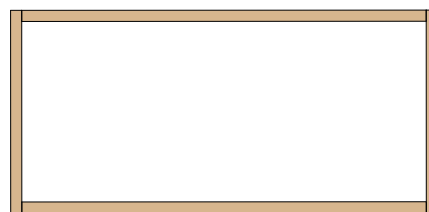


Product	Size L x W x H	Weight kg/ wall absorber
HERADESIGN® Wallcoustic Element surface superfine	1200 x 600 x 125 mm Tile thickness 25 mm	18,30

Delivery



1x wall element with acoustic inlay



1x installation frame

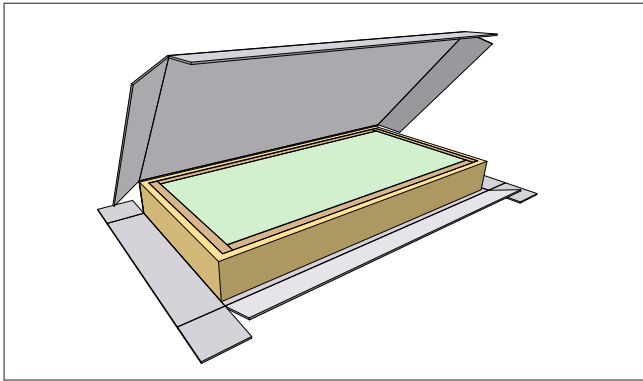


4x fixing screws

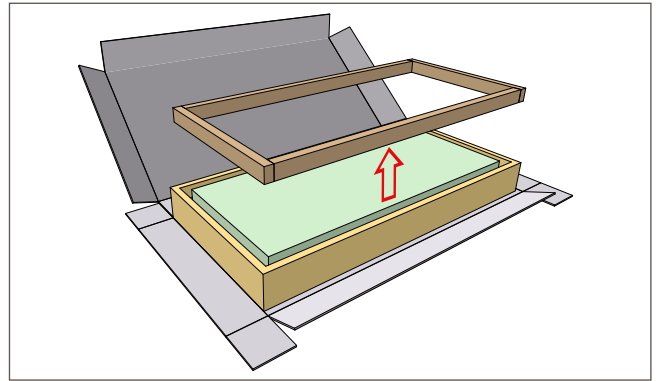
Properties

- The wall absorber is not suitable for use in indoor swimming pools or spas.
- Surface: The surface layer consists of biologically recommended, magnesite bonded wood wool acoustic tiles.
- Colour: The standard colours of HERADESIGN® tiles are white, similar to RAL 9010 or beige, natural tone 13. Other colours (RAL, NCS, StoColor) available on request.

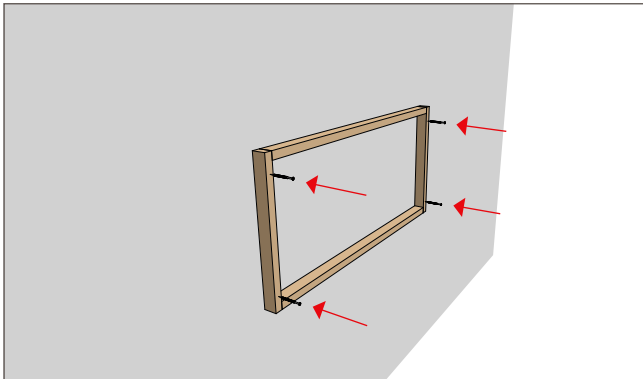
Installation guidelines and advice



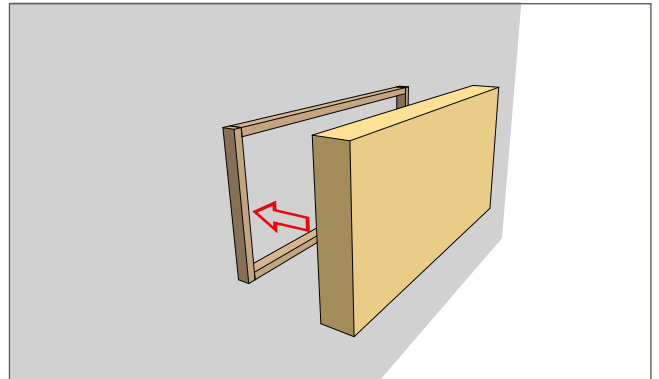
Carefully remove the element from the packaging.



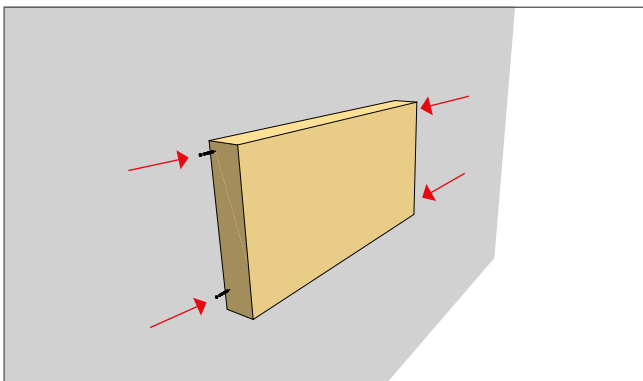
Carefully remove the installation frame.



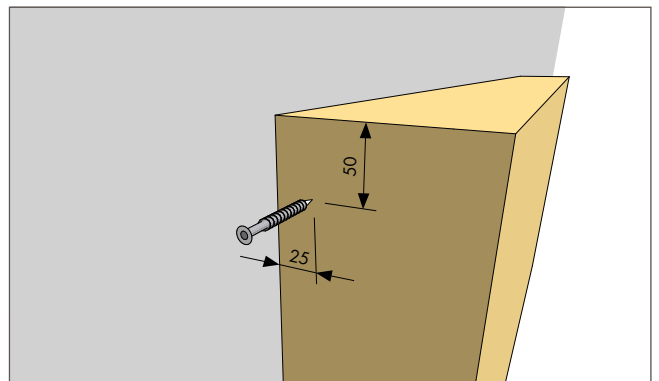
Fix the installation to the desired location with four suitable plugs and screws.



Carefully push the absorber element over the installation frame.



Fix on two opposite sides using two screws, included in the delivery.



Observe the screw centres!

Application, Handling and Accessories

HERADESIGN®
Application and handling – Page 91

HERADESIGN®
Accessories – Page 104



Accessories

Product	General Information
HERADESIGN® Maintenance opening	Ball impact resistant maintenance opening for integration in HERADESIGN® ceilings and wall constructions
HERADESIGN® Acoustic overlay	Mineral wool absorber in various strengths and densities for increased acoustic performance requirements
HERADESIGN® Film bags	Trickle protection for acoustic overlays without influencing the sound absorption
HERADESIGN® Screws	Countersunk screws with Torx T20 in various lengths with coloured screw heads
HERADESIGN® Drilling template	Metal template to exactly set out the screw holes
HERADESIGN® Ceiling angle	Mitred and glued L-element in various dimensions
HERADESIGN® Paint spray	Improvement and cover spray in the standard colours white and beige
HERADESIGN® Bit holder „easy“	The HERADESIGN® bit holder easy enables simple and flush installation of HERADESIGN® screws without damaging the wood wool surface.

HERADESIGN® Application, Handling and Accessories

Durability of HERADESIGN® acoustic tiles

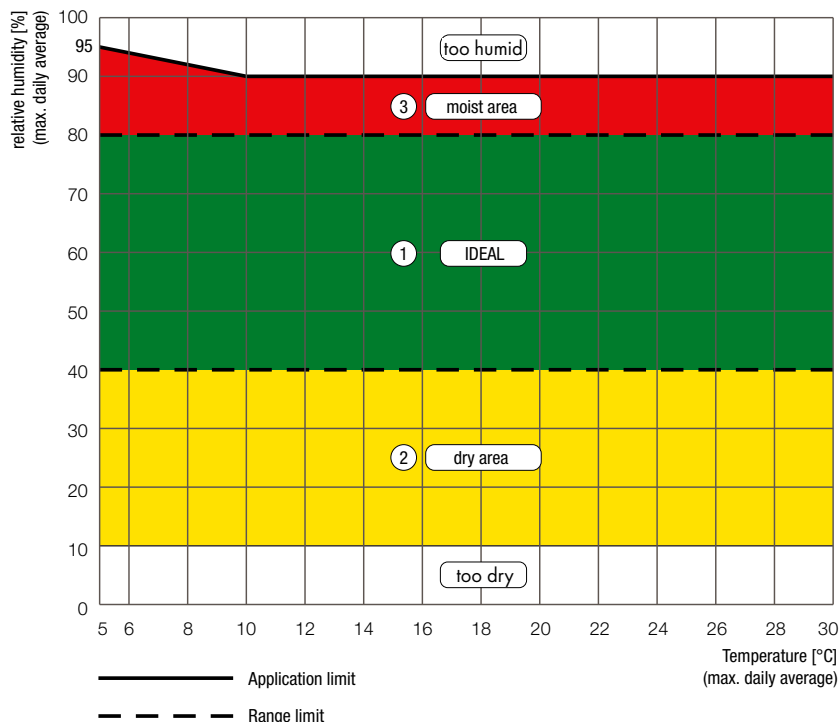
Medium, Attack	Comments
1) Water and water vapour	Not resistant to direct, long-term effects of water (rain, condensation moisture from ground, capillary action). This results in the tiles swelling as well as reduced mechanical stability and efflorescence of magnesium sulphate. Likewise, permanent exposure to water vapour (rel. humidity > 90%) leads to swelling and a reduction of mechanical stability.
2) Organic solvents * (e.g. acetone, alcohol, ether, petrol, benzene, halogenated hydrocarbons, oils, etc.)	Contact with organic solvents in liquid form (local exposures - spots) causes them to be partly absorbed by the tile and released as vapour. No adverse effects to the mechanical stability of the tiles have been observed (except for flammability after exposure to flammable solvents, as well as dirtying of the visible surface). Solvent vapours in concentrations that are allowed by hygienic regulations for the workplace have no effect on the building biological properties of the magnesite bonded HERADESIGN® acoustic tiles according to findings so far.
3) Acids and alkalis	a) Acids: magnesite bonded HERADESIGN® acoustic tiles are not resistant to the direct effects of acids. Depending on the concentration and strength of the acid, direct contact to an acid will cause localised dissolving of the bonding agent in the tile. Generally, harmless salts are formed (partly with a severe reaction). In some cases acid vapours occur, which are within the workplace hygienic regulations (e.g. common in chemical laboratories or similar facilities), and which do not damage the products. b) Alkalis: the effect of alkalis on the tiles causes the bonding agent to soften and is comparable to the effects of water.
4) Colours	The surface of magnesite bonded HERADESIGN® acoustic tiles can be treated with commercial colours based on polyvinyl acetate or acrylates, silicates, distempers, etc. The type of existing paint must be taken into consideration.

*) Questions about applications regarding contact with specific solvents/solvent mixtures or exposure to high concentrations of solvents must be discussed individually with Knauf Ceiling Solutions technical customer service.

Application areas of HERADESIGN® acoustic tiles

In internal areas

HERADESIGN® superfine, HERADESIGN® fine, HERADESIGN® macro, HERADESIGN® micro, HERADESIGN® plano
HERADESIGN® superfine A2, HERADESIGN® fine A2,



- ① Ideal, all constructions and products
- ② Dry range, all products. The installation humidity of the tiles must be lower than 20 % of the weight
- ③ Humid range, exposure class B according to EN 13964. Only specific constructions and products. Colouring with outdoor silicate paint or paint with additives – constructional consultation required

Transport and storage

Transport

HERADESIGN® acoustic tiles are delivered on pallets with a protective cardboard cover. They may only be transported in closed trucks or containers and must be protected against moisture during the entire journey. Only stack a maximum of two pallets. Pallets and boxes must be secured against tipping, slipping and physical damage.

Receiving material

HERADESIGN® acoustic tiles are produced, checked and transported to the construction site with great care.

When receiving material, always check the delivery note:

- Number of package units (pallets, cartons, m²)
- Compare the contents of the package units with the delivery note and the labels on the packaging
- Accessories:
Plugs, screws, re-touch paint, profiles or other items
- Are the goods or parts damaged?

If there are any transport damages, insufficient quantities, or other discrepancies with the delivery note and bill of lading, have this certified by the driver. Also, immediately inform the dealer that shipped the goods. Damaged tiles must not be used.

Storing tiles

The installer is responsible for the correct storage of the goods on-site and for the transport of the goods to the installation point.

Processing

A masterpiece of workmanship

HERADESIGN® acoustic tiles are high-quality visual tiles that are carefully packed and checked and delivered to the construction site. The second important factor for a beautiful ceiling, however, is exact processing and suitable work conditions. This is because only careful work and high product quality ensure a satisfactory result.

Material and air humidity

Due to the organic component of wood, in the HERADESIGN® tiles, slight deviations in the size cannot be excluded. Likewise, the tiles also contract and expand if there is strongly fluctuating air humidity.

- Final shrinkage in a standard climate of 23°C / 50% RH. is max. ± 1‰ for length changes and max. 3‰ for width changes. Therefore, special attention must be given to the temperature and air humidity during installation (if necessary heat, ventilate, back-ventilate the ceiling or dehumidify the air under constant monitoring) in order to ensure constant installation conditions. Adjust the installation conditions to the future conditions of use. Production tolerance for the nominal dimensions is ± 1 mm; for lengths over 1250 mm ± 2 mm.

How to do this correctly:

- Tiles must be stored flat and stable in a dry, clean, swept-out room to protect them from moisture, soiling and dust.
- The existing packaging provides no protection against rain.
- Only stack a maximum of two pallets of HERADESIGN® acoustic tiles (max. height. 250 cm) on top of each other.
- Only store the tiles in rooms where the following conditions are ensured depending on the climate conditions of the designated installation site.

For subsequent installation in heated or air-conditioned rooms: max. relative air humidity of 75% and the temperature must not drop below +7°C or rise above +30°C. For unheated rooms such as underground car parks, etc. the following applies: max. relative air humidity of 85% and minimum temperature of +5°C.



Colour and texture

As a consequence of the natural raw materials of magnesite and wood, differences to the colour and structure may occur. Especially for white coloured acoustic panels, there may be changes to the degree of brightness due to the wood wool structure as well as due to the influence of light sources and the viewpoint of the observer. Only the same type of tiles may be installed in a ceiling. Therefore, constantly check the tiles before installation as well as the overall impression of the ceiling from the floor. The installation direction must be observed for square panels. This is identified by an arrow on the reverse side of tiles. Always install with the arrow in the same direction. Coloured tiles (except RAL 9010) can only be ordered on commission. No liability can be assumed for colour deviations in the event of partial deliveries or deviations from the colour chart.

The tiles are not completely coloured, only the top layer is coated with paint. Deeper areas may not be 100% covered due to texture/fissures.

Paint quality

Silicate paint based on potassium silicate and organic bonding agents is used for colouring HERADESIGN® acoustic tiles in white, pastel and solid colours. The building biology properties of the tiles are retained as a result. HERADESIGN® superfine, HERADESIGN® fine, HERADESIGN®

fine A2 and HERADESIGN® superfine A2 can also be coloured multiple times without losing the outstanding sound absorption properties.

Installation and system conditions:

- The installation of HERADESIGN® tiles is part of interior decorating and must only be carried out under controlled humidity and temperature conditions. All dust-causing construction measures must be completed before starting the installation.
- It must no longer be possible for moisture or rain water to penetrate through walls, ceilings and openings.
- Only install tiles in rooms where the following conditions are ensured: For heated or air-conditioned rooms, the maximum relative humidity must not exceed 75 % and the temperature not below + 7 °C or above 30 °C. For unheated rooms such as underground car parks etc. the following applies: max. relative humidity 85 % and minimum temperature + 5 °C.
- The climatic installation conditions must be similar to the future use conditions. If storage and delivery conditions differ from the installation conditions HERADESIGN® acoustic tiles should be acclimatised for at least 7 days in a room with the same conditions.
- Suitable installation conditions are:
 - Dry and clean rooms
 - At least two weeks after wet trades are complete
 - Installed and glazed windows and doors for controlling temperature and ventilation.
 - Max. installation humidity of the HERADESIGN® acoustic tiles, less than 20% weight.
- Before starting installation, check the underlying surface for loadbearing capacity.
- The suspension system should be installed in accordance with EN 13964 "Suspended ceilings – requirements and test methods".
- Evenness: the greatest deviation from the evenness of the substructure may only be a maximum of 2 mm per metre of length; however, it must not exceed 5 mm over a length of 5.0 m. DIN-EN 13964, section A.5.
- Ensure the installation direction of square tiles. The installation directions are marked on the reverse side with a printed arrow.
- After installing HERADESIGN® acoustic tiles, other tradesmen may only perform finishing work on the ceiling.
- Expansion joints: For large ceiling areas that are installed with screw mounting in a covered outside area or in rooms with highly fluctuating high air humidity (rel. air hum. > 80%), we recommend placing an expansion joint at least every 15 m. The expansion joint must be formed between the substructure and the HERADESIGN® acoustic tile. When connecting these ceilings to fixed limiting structural elements, care must also be given to sufficient expansion possibilities. Here, the free edge distance should be at least 10 mm.
- Direct fixing can prove problematic. Changes in the underlying surface (e.g. deflection and expansion of steel or trusses) can lead to changes in the joint appearance. The absorption properties are also extremely restricted.

- Vibrating elements: suspended ceilings with insertion or screw mounting in which angularly flexible hangers are fastened to structures that tend to have vibrations such as trapezoidal sheet metal roofs, steel or wooden beams/trusses, must be secured by hangers placed on an angle (at least 10% of them) to counter horizontal displacement. For screw installation, at least three screws must be used per tile width and support.
- Resistance to wind loads:
 - If it is to be expected that suspended ceilings in a covered external area or in the inside of a building will be subject to wind loads (e.g. by open windows, doors), then the appropriate measures must be taken to ensure that the top layer and the substructure can withstand suction and/or wind pressure loads.
- Maximum tile span: 625 mm.
- Film as trickle protection for mineral wool overlays is recommended. A PE film upto 30 µm thick does not affect the sound absorption of the absorber and is recommended as trickle protection for mineral wool overlays.

Post-processing:

- For cutting HERADESIGN® wood wool tiles on site we recommend using a fast running circular saw with a carbidetipped saw blade (diameter approx. 400 mm) and dust extraction. Bevels can be reformed using a saw blade set on an angle, by sanding with coarse sand paper or by using a belt sander. Cut the tiles so that the visual surfaces are not dirtied by saw dust!
- If possible the work should be carried out outdoors. Always work with clean hands and clean tools.
- The cutting must not be done using the stack of panels as a base.
- Carefully cover minor damages and screw heads, edges and tile surfaces with paint after installation. Only apply a small amount of paint to avoid colour differences.
- Installations with cross joints (four tile corners in one point) are very time-consuming.
- Increased care needs to be taken installing tiles with square edges and no bevel.

Please note:

- The occupational health and safety guidelines must be observed.
- Observe the manufacturers safety instructions for use of the tools and always wear personal protective equipment such as safety goggles, helmet, etc.

Subsequent painting of HERADESIGN® acoustic tiles

For subsequent painting of HERADESIGN® acoustic tiles, there is a distinction between painting or re-painting the tiles and improvement of surface damage as well as unevenness and refreshing paint. For factory painted HERADESIGN® wood wool tiles, dispersion paint is used. Only paints can be used that are suitable for the ambient conditions and compatible with the existing paint.

For the following applications, the following quantities are recommended:

1) Internal applications upto 80% rel. air humidity:

For all internal applications, dispersion paint tested for harmful substances is recommended.

2) Internal applications for rooms with 80 to 90% rel. air humidity such as indoor swimming pools etc.:

Paint with external paint or internal paint with an additional film preservative

3) Covered external applications:

Generally, a silicon or acrylic based facade paint is used.

Recommended quantities:

- **White paint on a white surface (restoration)**
Quantity: approx. 0.20 l/m², one coat
- **Restoring other colours with the same colour (except white):**
Quantity: approx. 0.20 – 0.25 l/m², one coat
- **Painting or changing colours of wood wool tiles:**
Bold or contrasting colours may require increased quantities
Quantity: approx. 0.25 – 0.30 l/m² per coat, min. two coats
- **Small area repair of metallic colours:**
Recommended product: Sto Color Metallic

Protective measures for bordering surfaces, floors, etc.

Bordering surfaces, windows, floors, etc. must be covered. Water can be used to clean surfaces that have been dirtied with paint, while they are still wet. Dried paint can only be removed with a paint stripper and that may cause damage to the underlying surface.

Safety:

Follow the information regarding protective measures in the safety data sheets from the paint manufacturer. If necessary, protect your head, eyes, respiratory system and skin by wearing protective masks, goggles, gloves and work clothing.

Types of application:

a) Painting or changing colours of wood wool tiles:

In order to achieve sufficiently deep penetration of the paint in the wood wool texture, the paint must be applied with an airless sprayer. The paint should be applied in at least two different directions and at varying angles to the tile surface so that the colour penetrates all pores and openings. When applying two coats, the first coat must be dry before the second coat is applied.

b) Refreshing paint and improving paint deviations:

For refreshing paint, improving paint deviations and painting the fibres, a short-pile roller can be used for small areas or for the same or very similar colours. Well suited are for example:

- Glaze or varnish rollers with max. pile depth 13 mm (e.g.: Microfibre rollers 13 mm, glaze rollers 10 mm, etc.)
- Flock rollers

c) Improving damaged or uneven surfaces:

To even out gloss differences in the same colour tones, foam rollers (paint rollers) are suitable.

d) Painting screw heads and improving slight damage to the surface e.g. single fibre breaks):

The screws and individual fibres can be covered with a fine brush.

Avoid double painting the tile surface.

e) Painting bevels:

The paint can be applied with a short-pile paint roller (as described in **point b**), a brush or HERADESIGN® paint spray (only in white and natural). Avoid double painting the tile surface.

Note:

Always apply only the recommended quantities. Too much paint causes excessive moisture to be added and can cause the tiles to warp and swell as well as causing a reduction of the sound absorption of the tiles. Up to 3 proper paint applications (quantity and application) of HERADESIGN® superfine and HERADESIGN® fine, leads to no significant decrease in sound absorption.

The application of the paint and the coverage must be checked constantly from the floor. The manufacturers' regulations and instruction manuals must be observed when working with the paint and operating the equipment.

For application variants **b**) and **c**) a paint roller grid should be used to ensure the paint is evenly distributed on the roller. To avoid clogging the wood wool texture, only light pressure should be applied to the tile. The application should be done cross-wise. It is recommended to test the colour first (hidden tile or sample tile). Deep penetration of the paint in the texture, as necessary when changing the colour of the tile, is only possible with an airless spray application.

Bending HERADESIGN® acoustic tiles

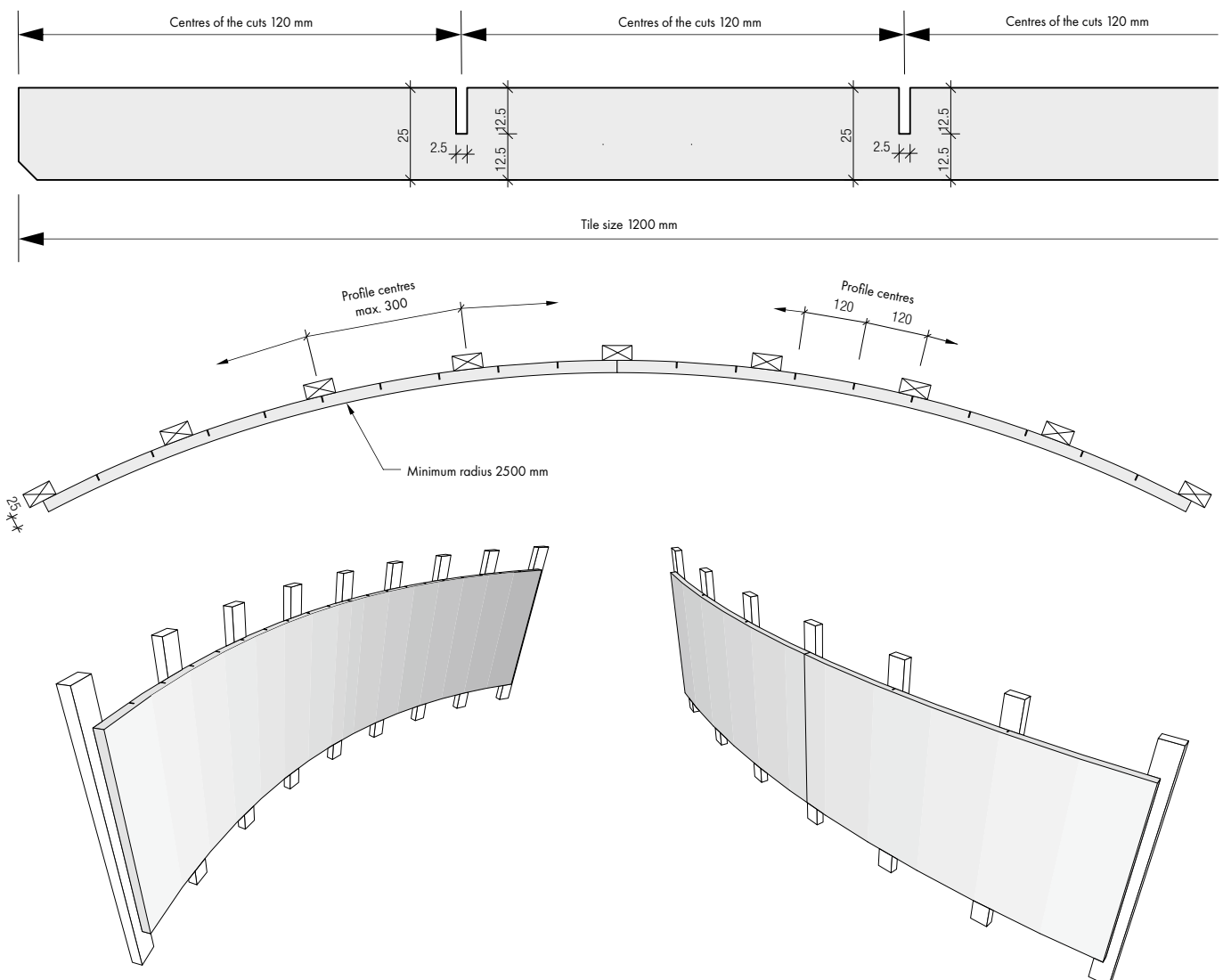
Curved constructions with HERADESIGN® acoustic tiles

HERADESIGN® acoustic tiles can be well adjusted to curved substructures on site. For this, the tiles are cut into on the back by means of a saw (e.g. circular saw) and curved over a template or grid structure.

They are fixed to the wooden substructure by means of HERADESIGN® screws. Per support and tile width (600 mm or 625 mm) at least three HERADESIGN® screws, head diameter approx. 9 mm, must be used. HERADESIGN® micro and HERADESIGN® plano acoustic tiles cannot be bent. Tiles must not be moistened for bending!

HERADESIGN® fine, HERADESIGN® superfine						
Tile thickness [mm]	Radius [m]	Centres of the cuts [mm]	Cut depth [mm]	Cut width [mm]	Support centres [mm]	
25	> 20	-	-	-	600	
	> 10	-	-	-	600	
	> 5	400	10	3	400	
	> 2,5	120	12.5	3	300	
35	> 20	-	-	-	600	
	> 10	400	10	3	600	
	> 5	300	15	3	400	

HERADESIGN® acoustic tile 25 mm, bending radius 2500 mm



Fixing additional loads to HERADESIGN® acoustic tiles

Additional loads e.g. light fixtures, curtain rails and similar, can be fixed to wood wool tiles using cavity plugs, spring toggle raw plugs or self-tapping metal plugs, as long as no fire protection requirements are present.

Heavy loads must be fixed directly to the load-bearing elements (soffit) or a secondary construction installed.

The additional loads have to be considered when designing the grid structure.

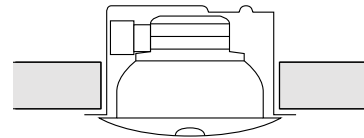
The grid structure centres are determined by the selected acoustic ceiling system, the weight of the grid structure and the additional loads.

Individual point loads in HERADESIGN® acoustic tiles

Maximum additional weight [kg] when fixing directly to HERADESIGN® acoustic tiles, in the middle of the tile				
Tile thickness [mm]	Metal spring toggle raw plug	Metal self-tapping plug	Metal cavity plug	Cavity anchor
	15	1	1	1
25	3	3	3	2
35	6	3	3	2

Integrated spotlights in HERADESIGN® acoustic tiles

Maximum additional weight [kg] from spotlights in HERADESIGN® acoustic tiles		
Tile thickness [mm]	Diameter of aperture DA [mm]	Integrated - spotlights
15	max. 300	1
25	max. 300	3
35	max. 300	6



Apertures should be centred in the tile. Higher weighted lighting must be anchored in the ceiling or suspension construction.

Maximum permitted temperature of the HERADESIGN® acoustic tiles ≤ 60 °C

Single point loads on the grid structure

Individual loads, directly fixed to the grid structure, may not exceed a total of 10 kg per profile/wooden batten and linear metre.

General installation guidelines



1
Carefully remove the separating paper layer from the tiles and dispose of it immediately. Dust lying on it must not fall onto the tile below.



2
Check tile for damage. Remove any remaining dust with a soft brush.



3
When lifting the acoustic tiles from the pile, only carry them on the edges. When lifting tiles from the pile, never drag them over the edge of the pile, in order to prevent damage to the visual side.



4
Never lean the acoustic tiles on an angle against the wall during installation and subsequent painting. This causes the tiles to warp – warped tiles can no longer be installed.



5
Installing the first row of tiles: always start installing from the centre of the room, which has been pre-marked. Align the tiles exactly in both directions.



6
Insert the screws or acoustic tiles with the help of a batten. Make sure that there is enough space at the end of the tile to prevent the edge from displacing. Make sure the screw head is flush to the surface of the tile. The auxiliary batten is removed after installing the first row of tiles. Screw pattern, see chapter "screw-fix systems" B10 or B20.

Edges and screws



1 Creating the edge bevel

The bevel is formed with coarse sand paper, a belt sander or a saw blade set on an angle.



When necessary, remove adherent dust with a soft brush.



3 Painting the bevel

Apply paint using a brush or short-haired roller.



4 Not like this!

The screw head must be flush with the surface of the tile.



To set the screws exactly, we recommend, HERADESIGN® bit holder "easy". The screw depth should be tested/set on a sample tile before installation.



6 Painting over the screw heads

Use a fine brush to cover unpainted screw heads with the colour of the tiles after installation. It is absolutely necessary to avoid double painting of the tile surface around the screw head. This will cause colour differences!

Cutting and drilling HERADESIGN® acoustic tiles



Table saw
Lay the acoustic tile down face side up. Always work with a safety guard, guide and an extraction system.



Jack saw
Lay the acoustic tile down face side up. Always work with a guide. Support the free end of the tile.



Circular saw
Lay the acoustic tile down face side down. Always work with a guide and an extraction system. Support the free end of the tile.



Not like this!
Never cut acoustic tiles on a pile!



Jigsaw
Lay the acoustic tile face side down. Always make cuts with a guide.



Cutting openings with a "supercutter"
Only cut at a right angle to the tile surface.

Touching-up HERADESIGN® acoustic tiles



Dangling fibres:
Carefully remove individual loose fibres with a knife.



Chipped fibre:
Cover chipped fibre with a fine brush or a spray gun using the supplied paint or an equivalent.



Brushing:
Efflorescence, dust, etc. can be removed with a soft brush. Set loose fibres with StoPrim Plex primer.



Painting or re-painting:
The paint is sprayed on carefully with a spray gun using various spraying angles.

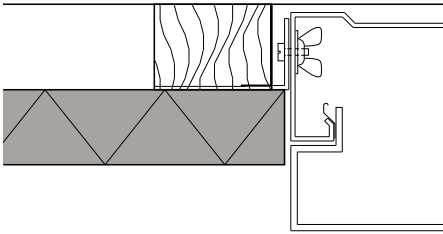


Touching-up small imperfections of HERADESIGN® micro or HERADESIGN® plano acoustic tiles:
Fill the imperfection/chipped edge with acrylate or wood filler, scrape off the excess with a trowel and cover with the same paint as the tile when it's dry.

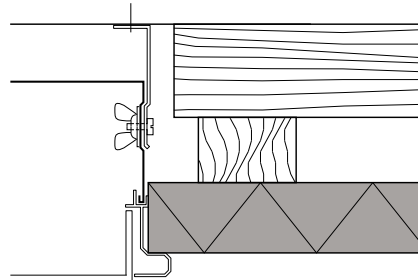


HERADESIGN® micro acoustic tile joints can be filled using Knauf acrylic sealer and can be painted over with silicate paint.

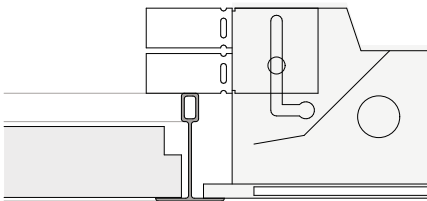
Lighting installation details



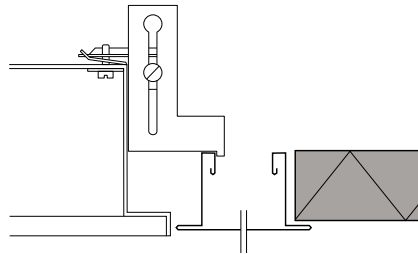
Wooden battens



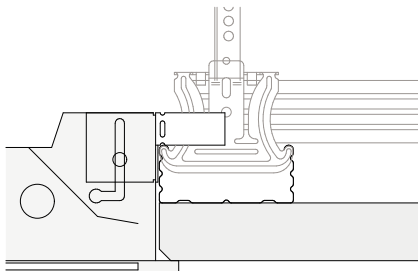
Installation outside the module



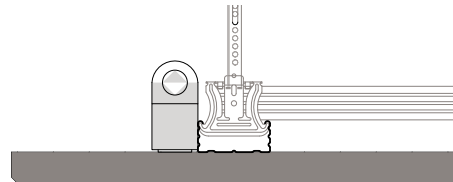
Exposed T-profile



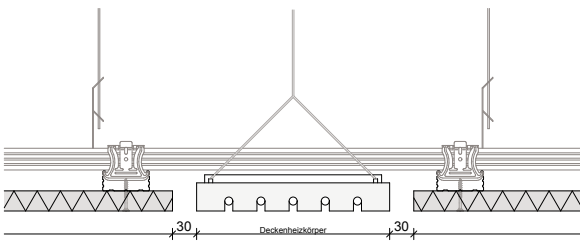
Bandraster construction



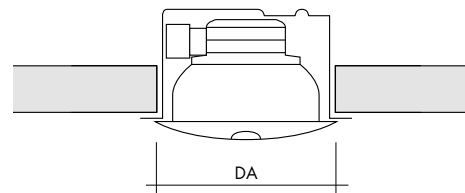
Light installation CD-profile



Indirect lighting (perimeter) CD-profile



Ceiling heating element
Maximum permitted temperature of the HERADESIGN® tile: 60°C



Spotlight and downlight

Installation photos – light installation



1 Exchanging the ceiling grid for the installation of modular lighting: Additional cross profiles and hangers required in the area of the exchange.



2 Installation of edge strip



3 Hang the ceiling light. Fix with the supplied side wings to the T-profiles, CD profiles or wooden battens. Adjust the installation height of the light to the existing suspension height.



4 Alternative: Fix the ceiling light using screws into the wood battens or SD profiles at the sides or direct attachment into the ceiling.



5 Installed modular light. The tile joint is covered by the frame.



6 The joint between the HERADESIGN® acoustic tile and the light is covered by the frame.

Installation photos - spotlights and downlights



1 Drilling of a round aperture for a spotlight, with tile face side up.



2 Cutting out an aperture with a jigsaw, tile face side down.



3 Cover cut edges with paint if these are not concealed by a cover.



4 Insertion of the spotlight housing.



5
Spotlights with a diameter up to = 300 mm
tile thickness from 15 mm, max. weight ≤ 1.0 kg
Spotlights with a diameter up to = 300 mm
tile thickness from 25 mm, max. weight ≤ 3.0 kg
Downlights with a diameter up to = 300 mm
tile thickness from 35 mm, max. weight ≤ 6.0 kg

HERADESIGN® Accessories

Installation of ball impact resistant HERADESIGN® maintenance opening

Sizes [mm]	For tile sizes [mm]	For tile thickness [mm]	Packaging unit [pcs./carton]
400 x 400	600 x 600, 625 x 625	25	1
400 x 400	600 x 600, 625 x 625	35	1
400 x 600	1200 x 600, 1250 x 625	25	1
400 x 600	1200 x 600, 1250 x 625	35	1

Maintenance opening installed centrally in a 1 layer HERADESIGN® acoustic tile.
 Note: Not suitable for indoor swimming pools or external applications.

Ball impact resistant maintenance opening with lock for installation in wall and ceiling constructions.



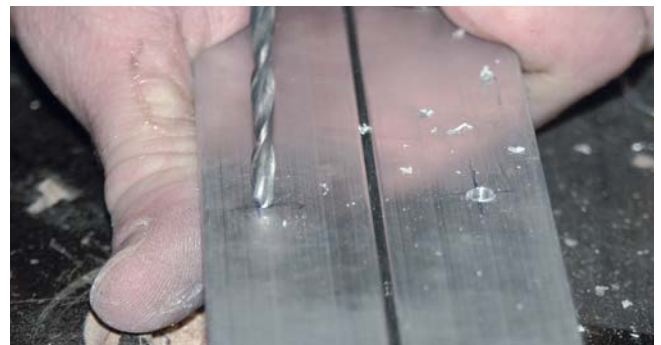
Cutting out of the opening/cover tile from the reverse side of the tile.



Sand the edges.



Paint the edges.



Drill the frame.



Insert the cover tile.



Fix the cover tile with min. 2 x 4 number screws 4.5 x 20 mm per frame 40 x 40 or 2 x 6 number for 60 x 40 cm and Heraklith-BM PU or polymer glue on the inner frame.

Inserting HERADESIGN® acoustic overlays in film bags



Tear off the bags from the roll.



Slide in the acoustic overlay.



Fold over the film edges.



Tape up the film ends.

HERADESIGN® Acoustic overlay – density approx. 50 kg/m³

Mineral wool absorber for increased sound absorption requirements.

Tile thickness [mm]	Weight [approx. kg/m ²]	Tile size [mm]	Packaging unit [m ² /carton]
30	1.5	1200 x 625	12,0
40	2.0	1200 x 625	9,0
50	2.5	1200 x 625	7,5

HERADESIGN® Acoustic overlay – density approx. 90 kg/m³

Mineral wool absorber for increased sound absorption and fire protection requirements, glass fleece laminated on one side.

[mm]	Weight [approx. kg/m ²]	Tile size [mm]	Packaging unit [m ² /carton]
25	2.3	1200 x 625	7,5
50	4.5	1200 x 625	4,5

HERADESIGN® Film bag ¹⁾

PE trickle protection film bags for HERADESIGN® acoustic overlays.

Size mm	For overlay thickness mm	Packaging unit pcs.
1400 x 750	< 80	250

1) Film thickness 30 µm – Important: no influence on sound absorption.

HERADESIGN® Screws

Drywall screw with countersunk head for fixing HERADESIGN® acoustic tiles to wood and metal grid structures 1) 4) 5).

Length / Ø [mm]	Surface/Colour Ruspert® coating ³⁾	Wood			Metal CD-profile			Packaging unit [pcs./carton]
		For tile thickness [mm]			For tile thickness [mm]			
		15	25	35	15	25	35	
35 / 4.5	galvanised	x			x			200
35 c ²⁾ / 4.5	white, beige, RAL ⁶⁾	x			x			200
50 / 4.5	galvanised		x			x	x	200
50 c ²⁾ / 4.5	white, beige, RAL ⁶⁾		x			x	x	200
60 / 4.5	galvanised			x				200
60 c ²⁾ / 4.5	white, beige, RAL ⁶⁾			x				200

1) With partial thread and Torx T20 – suitable for walls or profiles up to 0.6 mm

2) Screw painted in white (similar to RAL 9010) or beige (natural tone 13).

3) Usage class 1 and 2 as per EN 1995-1-1:2010-12 electrogalvanised, yellow chromated, A2L as per EN ISI 4042

4) Screws specially hardened (500 HV 0,3)

5) Optimised tip for use with metal profiles

Note: Not suitable for indoor swimming pools and external applications. Ask the screw supplier for screws with suitable corrosion protection for applications in indoor swimming pools and covered external applications, etc.

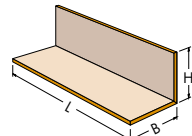
6) Other colours and minimum quantities on request

HERADESIGN® Drilling template

For tile sizes	Packaging unit [pcs./carton]
600 and 625 mm	1
1200 and 1250 mm	1

HERADESIGN® Ceiling angle

Design element for covering and the 3D-design of walls and ceilings.

Tile	Tile thickness [mm]	Weight [kg/m ²]	Dimensions ⁵⁾ - Length x Width x Height	
HERADESIGN® fine	25 / 35	12.4 / 16.3	max. 2500 x 625 x 300 mm max. leg length 625 mm min. leg length 75 mm	
HERADESIGN® superfine	25 / 35	11.3 / 15.0		

5) Edge configurations AK-01 and GK. Lead times, special sizes and other products on request.

HERADESIGN® Paint spray

Improvement and cover spray for HERADESIGN® acoustic tiles.

Colours	Contents [ml]	Packaging unit [pcs.]
white (similar to RAL 9010)	400	1
beige (natural tone 13)	400	1

