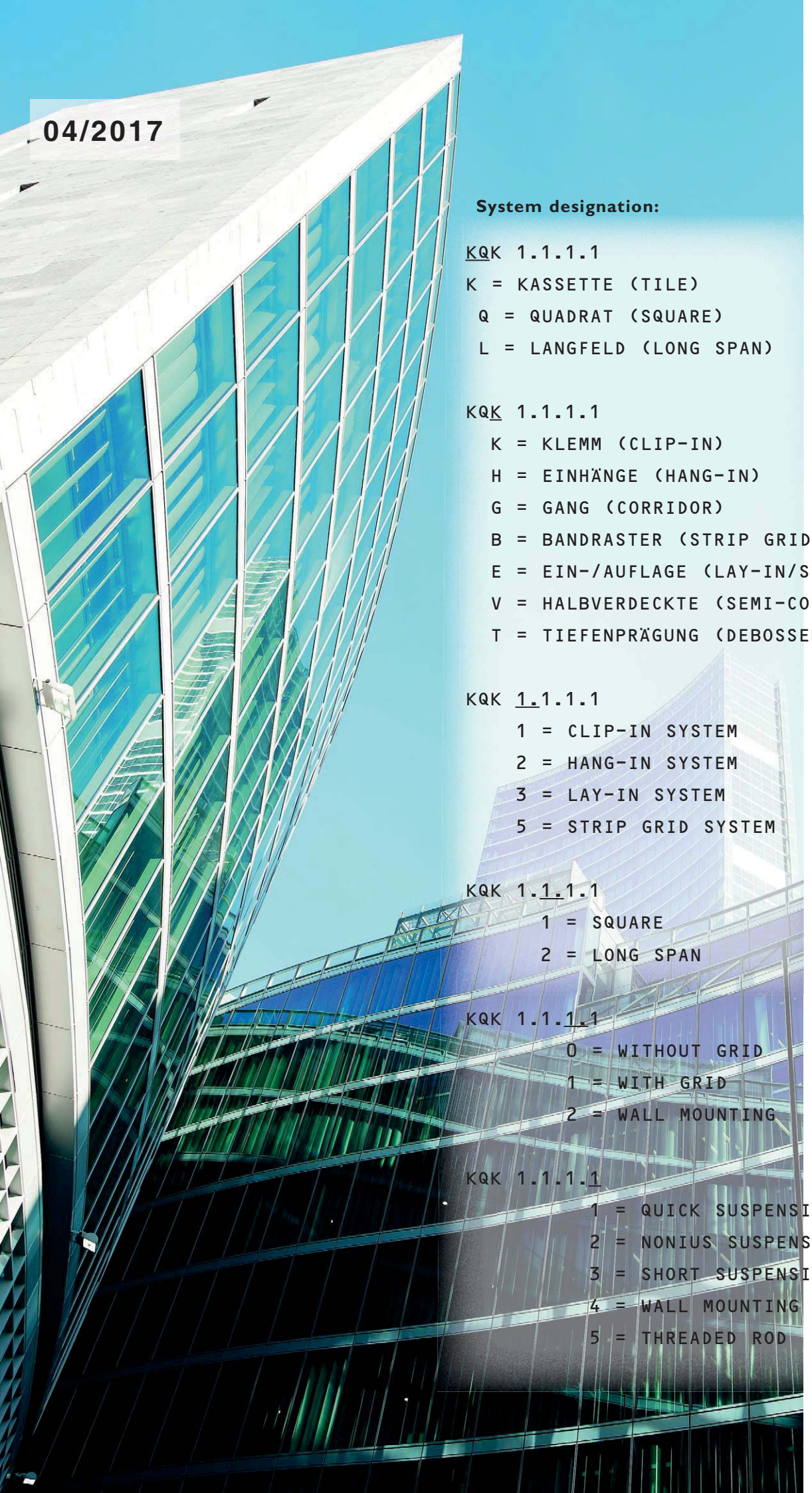
PERFEKT

FURAL®

METALLDECKEN

CEILING MANUAL

- CLIP-IN SYSTEM
- HANG-IN SYSTEM
- LAY-IN SYSTEM
- STRIP GRID SYSTEM
- SUPPORT SYSTEM
- SWING OUT/SLIDING CEILINGS
- SPECIAL CEILINGS
- FLOATING CEILINGS



04/2017

System designation:

KQK 1.1.1.1
K = KASSETTE (TILE)
Q = QUADRAT (SQUARE)
L = LANGFELD (LONG SPAN)

KQK 1.1.1.1
K = KLEMM (CLIP-IN)
H = EINHÄNGE (HANG-IN)
G = GANG (CORRIDOR)
B = BANDRASTER (STRIP GRID)
E = EIN-/AUFLAGE (LAY-IN/SUPPORT)
V = HALBVERDECKTE (SEMI-CONCEALED)
T = TIEFENPRÄGUNG (DEBOSSEMENT)

KQK 1.1.1.1
1 = CLIP-IN SYSTEM
2 = HANG-IN SYSTEM
3 = LAY-IN SYSTEM
5 = STRIP GRID SYSTEM

KQK 1.1.1.1
1 = SQUARE
2 = LONG SPAN

KQK 1.1.1.1
0 = WITHOUT GRID
1 = WITH GRID
2 = WALL MOUNTING

KQK 1.1.1.1
1 = QUICK SUSPENSION
2 = NONIUS SUSPENSION
3 = SHORT SUSPENSION
4 = WALL MOUNTING
5 = THREADED ROD

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navigator

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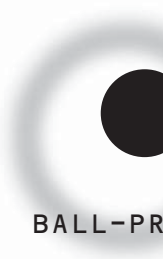
Function:

+



Formats:	Page:
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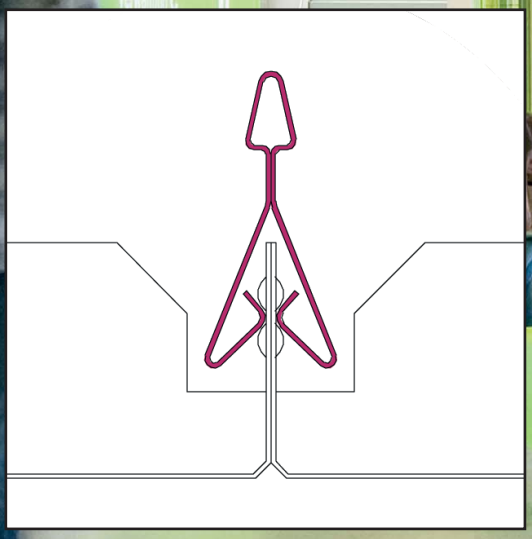
For all systems, in addition we offer:

ADVANTAGES OF THE CLIP-IN SYSTEM:



› Excellent visual impression

- No faulty alignment or distorted tile joints, stress-free installation
- No level difference - precision double clipping knobs

› Little waste:

- Square tiles – all 4 webs with clipping knobs
- Clipping rails – residues can be used for longitudinal connection

› Minimum logistics requirements:

- Same type of rail used as clipping rail and grid rail
- Free positioning of suspension elements on the bare ceiling
- The clipping rail can also be mounted onto an existing T-rail

C CLIP-IN SYSTEM

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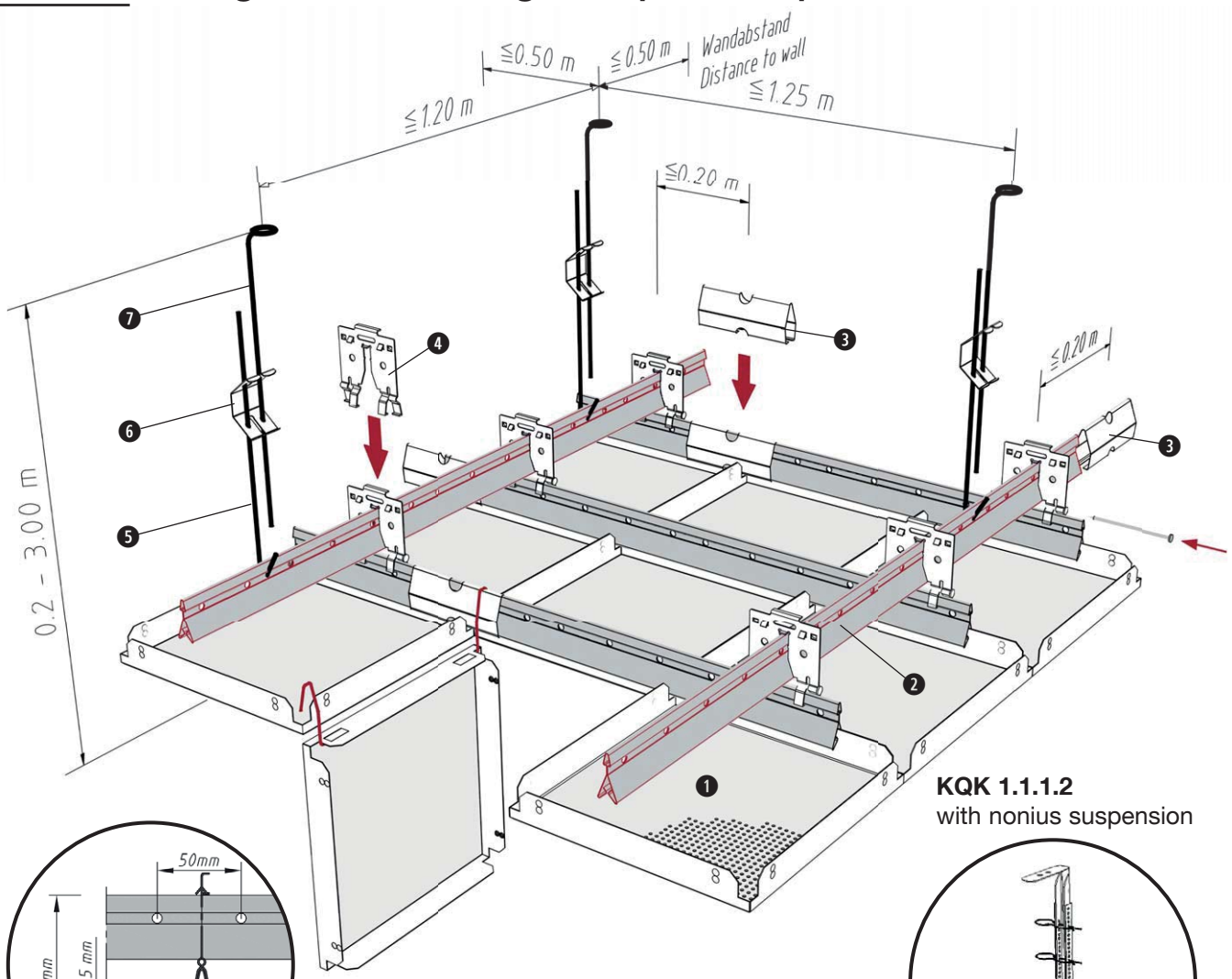
KQK 1.1.1.1

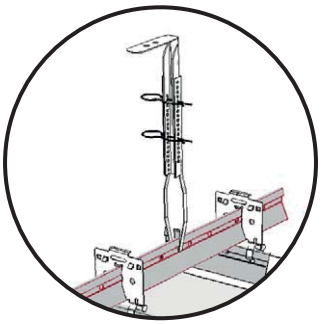
FURAL® Acoustic Ceilings

Square tiles – clip-in system

Standard design with double grid - quick suspension element



KQK 1.1.1.2
with nonius suspension



Stress-free, quick installation - clean visual impression!

Standard components required: KQK 1.1.1.1

Item	Designation	Quantity / m² 750	625	600	
1	Ceiling tile	1.78	2.56	2.78	units
2	Clipping rail 16/38	2.13	2.40	2.47	metres
3	Main runner connector	0.53	0.60	0.62	units
4	Suspension key + security pin	1.07	1.28	1.33	units
5	Suspension wire with hook	0.67	0.67	0.67	units
6	Spring bracket	0.67	0.67	0.67	units
7	Suspension wire with loop	0.67	0.67	0.67	units

Installation

Distance between fixing points according to the sketch

Ceiling weight per m²: alu app. 5 kg, steel app. 8 kg

further instructions: p. 23 and p. 76-77

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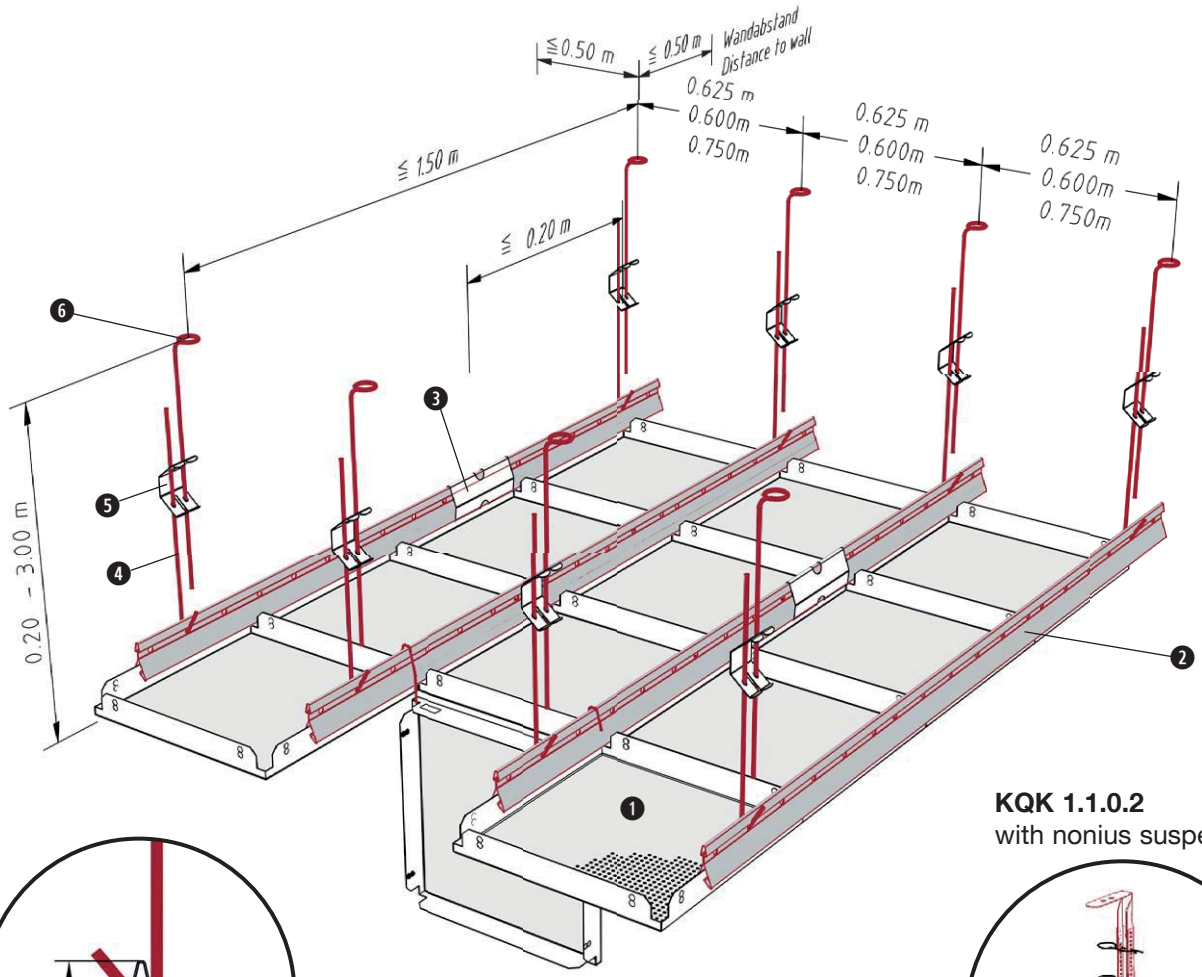
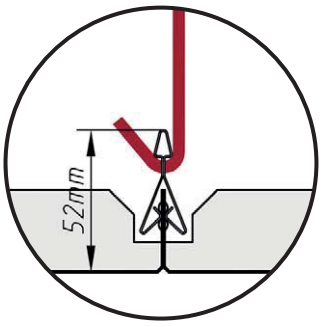
KQK
1.1.0.1

FURAL® Acoustic Ceilings

Square tiles – clip-in system

Standard design without double grid - quick suspension element





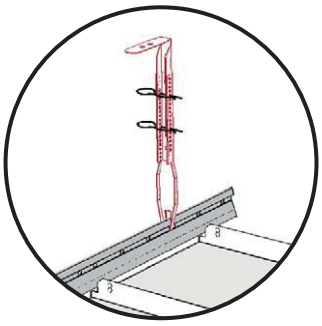
The most cost-efficient solution!

Requirements:

a) Suspension elements must be mounted onto the bare ceiling accurately at a distance equivalent to the length of tiles (locations marked by laser)

b) Accurate height adjustment at each suspension element.

KQK 1.1.0.2
with nonius suspension



Installation

Distance between fixing points according to the sketch

Ceiling weight per m²: alu ca. 4 kg, steel app. 7 kg

further instructions: p. 23 and p. 76-77

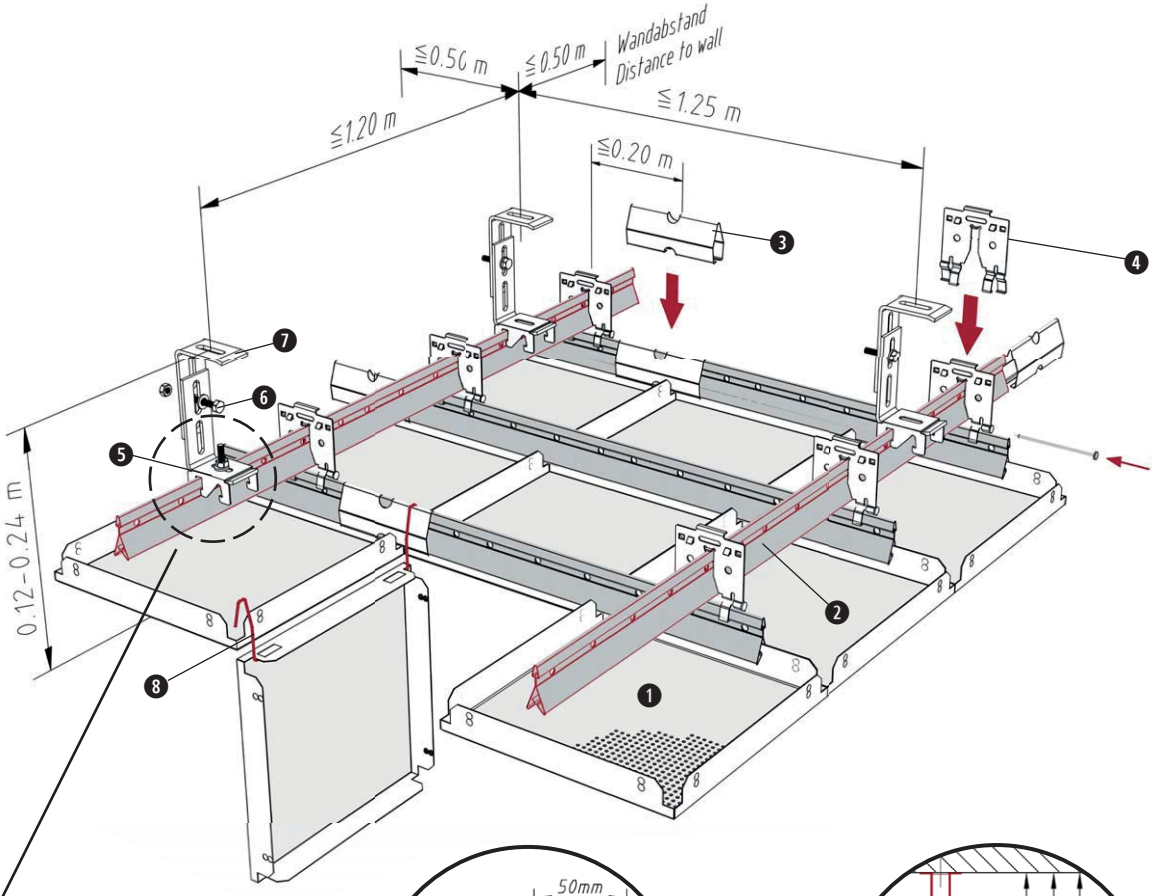
Standard components required: KQK 1.1.0.1

Item	Designation	Quantity / m² 750	625	600	
1	Ceiling tile	1.78	2.56	2.78	units
2	Clipping rail 16/38	1.33	1.60	1.67	metres
3	Main runner connector	0.33	0.40	0.42	units
4	Suspension wire with hook	0.89	1.07	1.11	units
5	Spring bracket	0.89	1.07	1.11	units
6	Suspension wire with loop	0.89	1.07	1.11	units

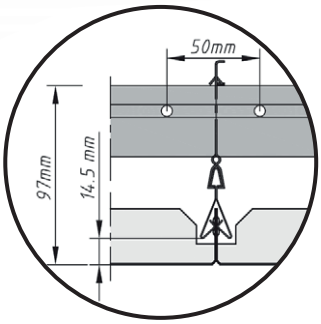
KQK
1.1.1.3

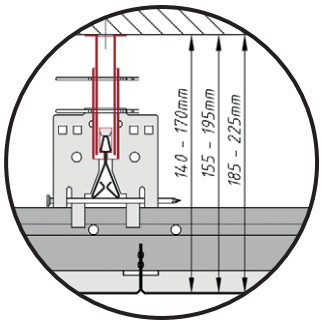
FURAL Acoustic Ceilings
Square tiles – clip-in system

Standard design with double grid - low suspension height



Screw fastening:
1 x every 5 m² ceiling area,
but at least 2 x per room in
the case of smaller areas





Version: with nonius short suspension

Clean visual impression even at lowest suspension height.

Standard components required: KQK 1.1.1.3

Item	Designation	Quantity / m² 750	625	600	
1	Ceiling tile	1.78	2.56	2.78	units
2	Clipping rail 16/38	2.13	2.40	2.47	metres
3	Main runner connector	0.53	0.60	0.62	units
4	Suspension key + security pin	1.07	1.28	1.33	units
5	Fixing plate	0.67	0.67	0.67	units
6	Screw M6, complete	0.67	0.67	0.67	units
7	Universal fastening bracket	1.34	1.34	1.34	units
8	DOOR-wire bracket	3.56	5.12	5.56	units

Installation

Distance between fixing points according to the sketch

Ceiling weight per m²: alu app. 5 kg, steel app. 8 kg

further instructions: p. 23 and p. 76-77

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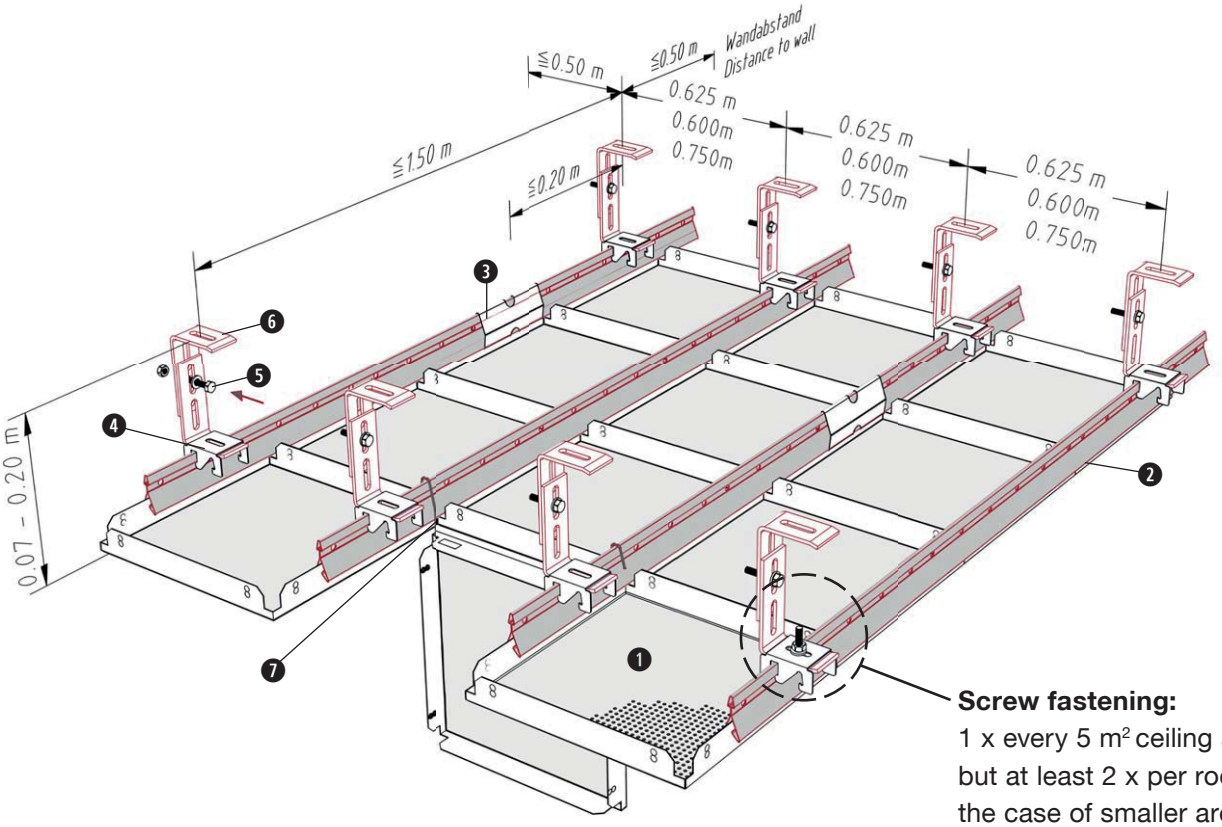
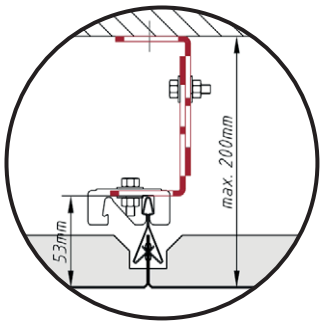
KQK
1.1.0.3

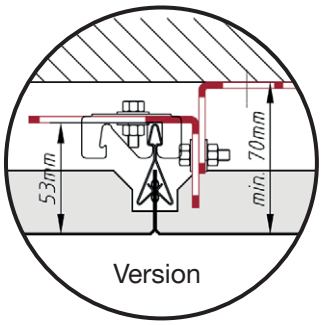
FURAL Acoustic Ceilings
Square tiles – clip-in system

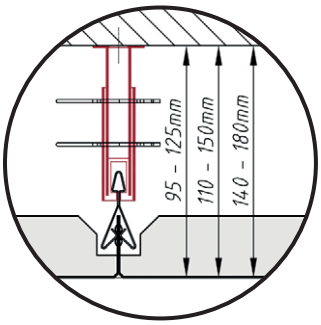
Standard design without double grid - minimum suspension height



Screw fastening:
1 x every 5 m² ceiling area,
but at least 2 x per room in
the case of smaller areas







Version: with nonius short suspension

Lowest suspension height - simply unbeatable!

Installation

Distance between fixing points
according to the sketch
Ceiling weight per m²: alu app. 4 kg,
steel app. 7 kg
further instructions: p. 23 and p. 76-77

Standard components required: KQK 1.1.0.3

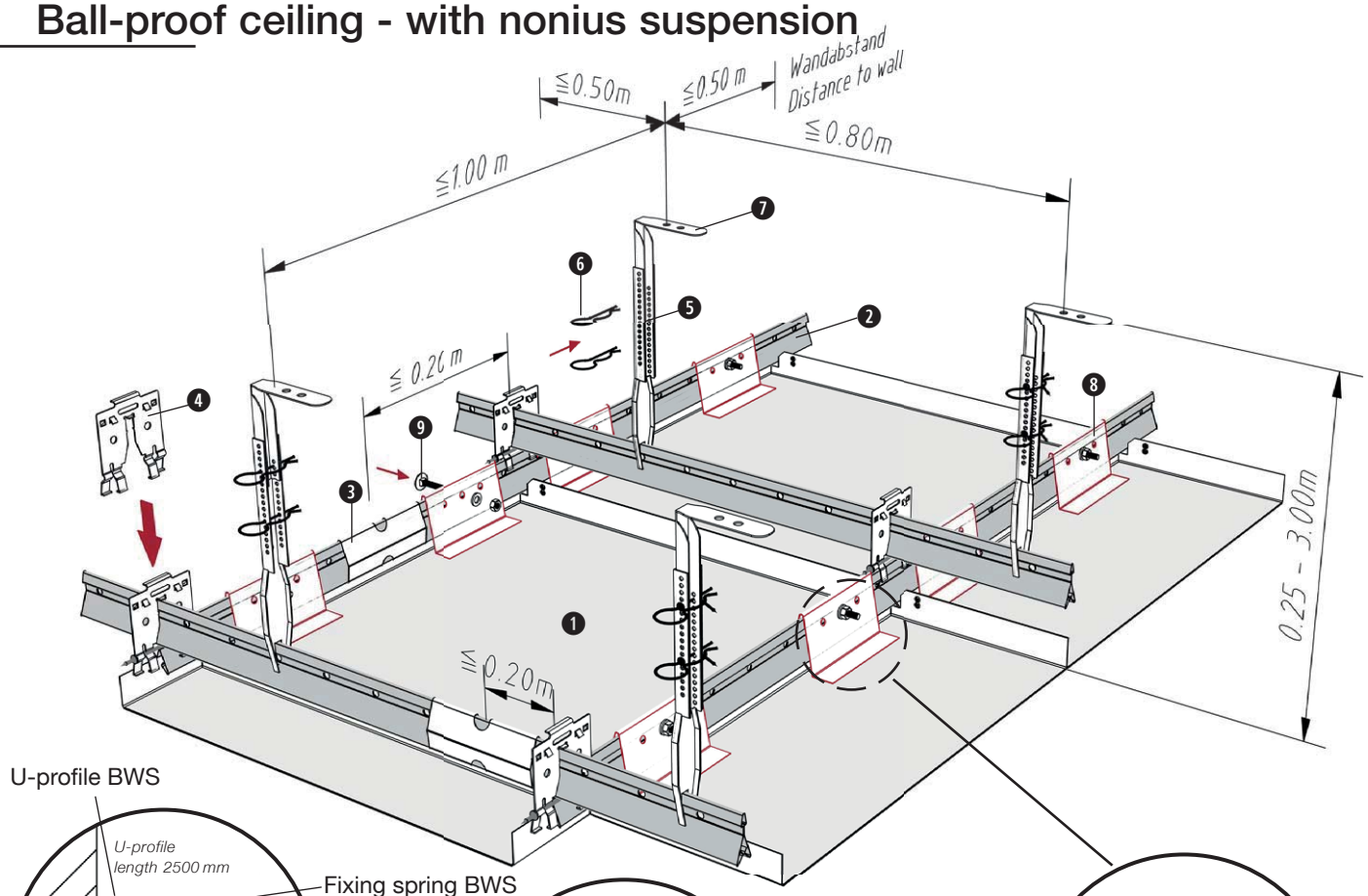
Item	Designation	Quantity / m² 750	625	600	
❶	Ceiling tile	1.78	2.56	2.78	units
❷	Clipping rail 16/38	1.33	1.60	1.67	metres
❸	Main runner connector	0.33	0.40	0.42	units
❹	Fixing plate	0.89	1.07	1.11	units
❺	Screw M6, complete	0.89	1.07	1.11	units
❻	Universal fastening bracket	1.78	2.14	2.22	units
❼	DOOR-wire bracket	3.56	5.12	5.56	units

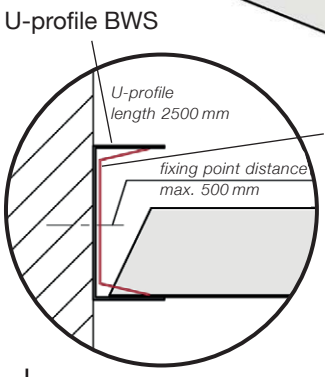
KQK 1.1.1.2 BWS

FURAL® Acoustic Ceilings

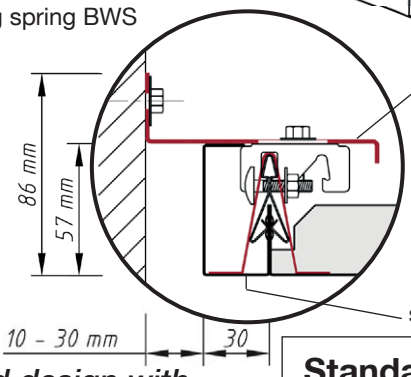
Square tiles – clip-in system

Ball-proof ceiling - with nonius suspension

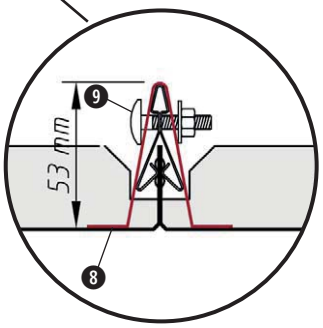




wall connections



shadow section BWS



The proven standard design with the additional benefits of being ball-proof and providing maximum sound absorption. Test certificate according to DIN 18032, Part 3 & EN 13964 attachement D.

Standard components required: KQK 1.1.1.2 BWS

Item	Designation	Quantity / m² 625	600	
❶	Ceiling tile	2.56	2.78	units
❷	Clipping rail 16/38	2.60	2.67	metres
❸	Main runner connector	0.65	0.67	units
❹	Suspension key + security pin	1.60	1.67	units
❺	Lower nonius	1.25	1.25	units
❻	Securing pin	2.50	2.50	units
❼	Upper nonius	1.25	1.25	units
❽	Supporting bracket	5.12	5.56	units
❾	Mushroom head bolt (square necked)	5.12	5.56	units

Installation

Distance between fixing points according to the sketch

Ceiling weight per m² steel app. 8kg

further instructions: p. 23 and p. 76-77

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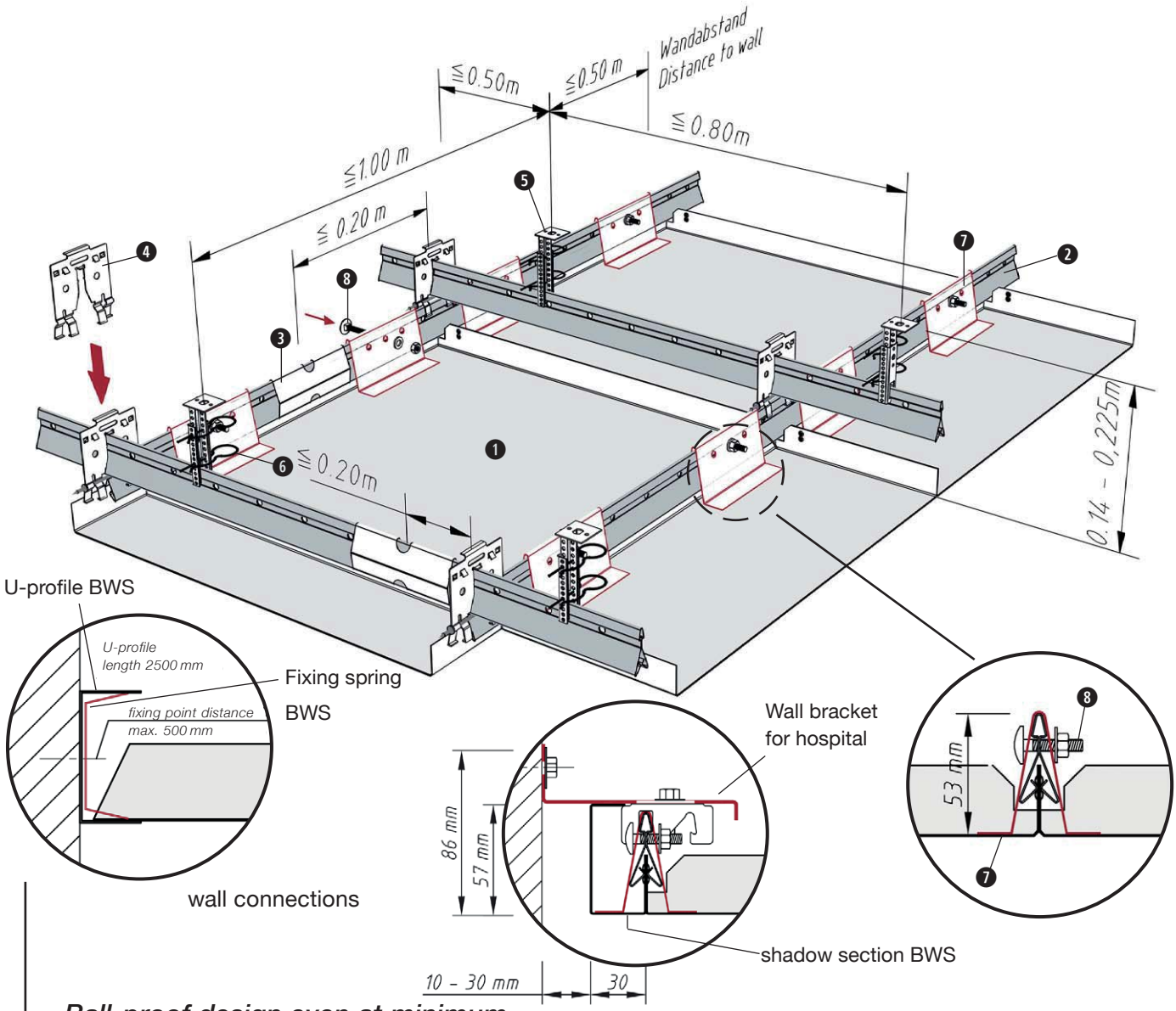
KQK 1.1.1.3 BWS

FURAL® Acoustic Ceilings

Square tiles – clip-in system

Ball-proof ceiling - with short suspension



Ball-proof design even at minimum suspension height and maximum sound absorption. Test certificate according to DIN 18032 Part 3 & EN 13964 attachement D.

Standard components required: KQK 1.1.1.3 BWS

Item	Designation	Quantity / m² 625	600	
❶	Ceiling tile	2.56	2.78	units
❷	Clipping rail 16/38	2.60	2.67	metres
❸	Main runner connector	0.65	0.67	units
❹	Suspension key + security pin	1.60	1.67	units
❺	Upper and lower nonius (set)	1.25	1.25	units
❻	Securing pin	2.50	2.50	units
❼	Supporting bracket	5.12	5.56	units
❽	Mushroom head bolt (square necked)	5.12	5.56	units

Installation

Distance between fixing points according to the sketch

Ceiling weight per m² steel app. 8kg

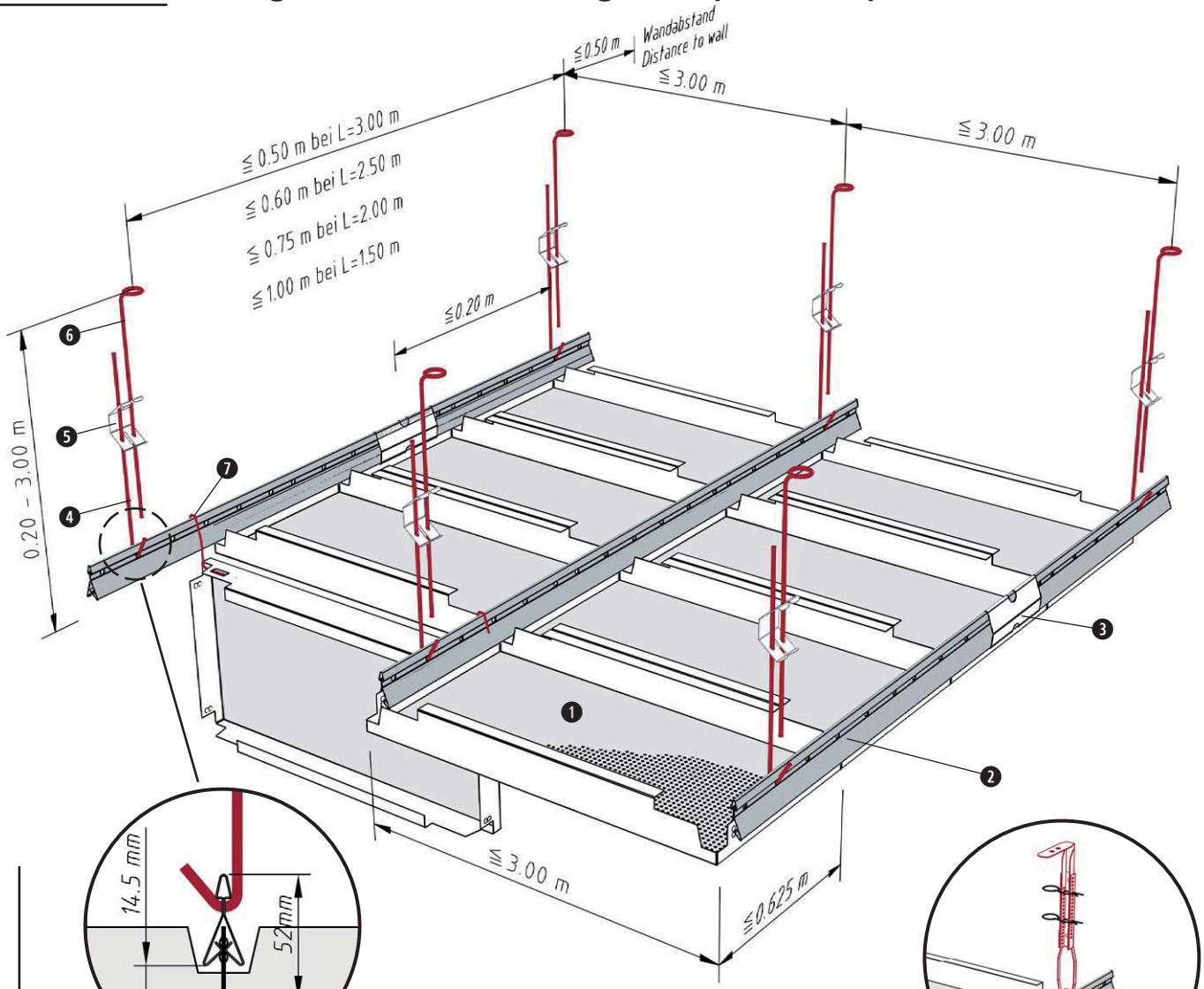
further instructions: p. 23 and p. 76-77

KLK 1.2.0.1

FURAL® Acoustic Ceilings

Long span tiles – clip-in system

Standard design without double grid - quick suspension element



KLK 1.2.0.2
with nonius suspension

Quick installation. Elegant visual impression.

Installation

Distance between fixing points according to the sketch

Ceiling weight per m² alu app. 5 kg
steel app. 8 kg

further instructions: p. 23 and p. 76-77

Standard components required: KLK 1.2.0.1

Item	Designation	Quantity / m² L=3.0m	L=2.5m	L=2.0m	L=1.5m	
❶	Long span tile					
❷	Clipping rail 16/38	0.33	0.40	0.50	0.67	metres
❸	Main runner connector	0.08	0.10	0.13	0.17	units
❹	Suspension wire with hook	0.67	0.67	0.67	0.67	units
❺	Spring bracket	0.67	0.67	0.67	0.67	units
❻	Suspension wire with loop	0.67	0.67	0.67	0.67	units
❼	DOOR-wire bracket depending on tile format					

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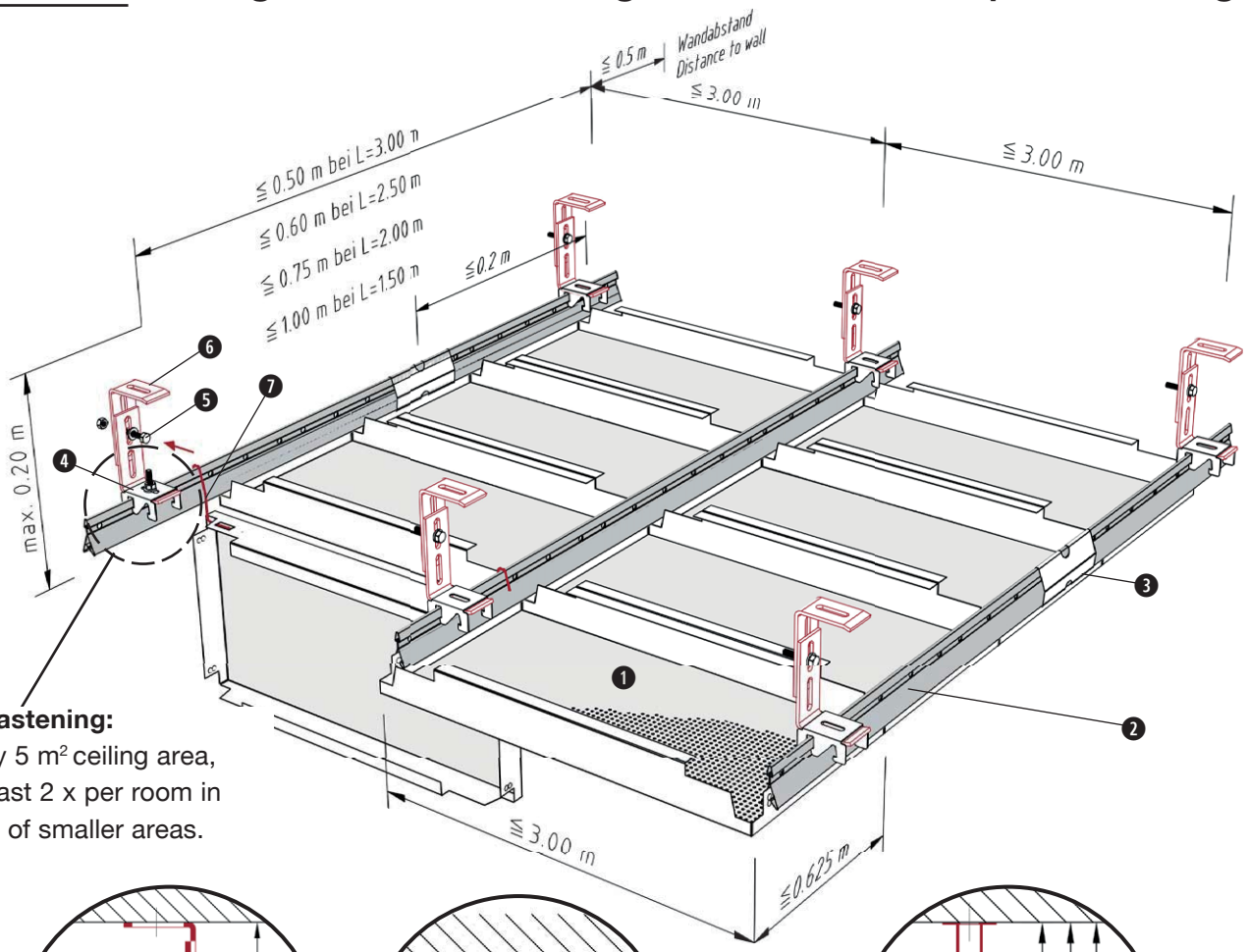
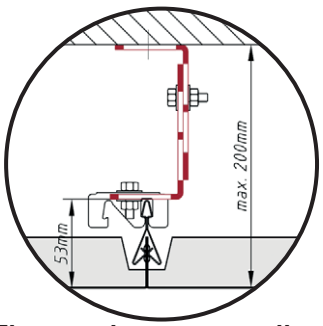
KLK
1.2.0.3

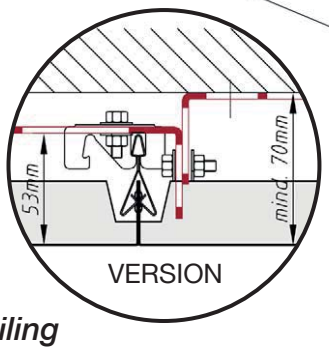
FURAL Acoustic Ceilings
Long span tiles – clip-in system

Standard design without double grid - minimum suspension height

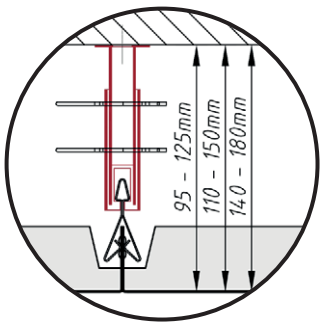


Screw fastening:
1 x every 5 m² ceiling area, but at least 2 x per room in the case of smaller areas.





Elegant long span tile ceiling design with unbeatably low suspension height!



Version: with nonius short suspension

Standard components required: KLK 1.2.0.3

Item	Designation	Quantity / m² L=3.0m	L=2.5m	L=2.0m	L=1.5m	
❶	Long span tile					
❷	Clipping rail 16/38	0.33	0.40	0.50	0.67	metres
❸	Main runner connector	0.08	0.10	0.13	0.17	units
❹	Fixing plate	0.67	0.67	0.67	0.67	units
❺	Screw M6, complete	0.67	0.67	0.67	0.67	units
❻	Universal fastening bracket	1.34	1.34	1.34	1.34	units
❼	DOOR-wire bracket depending on tile format					

Installation

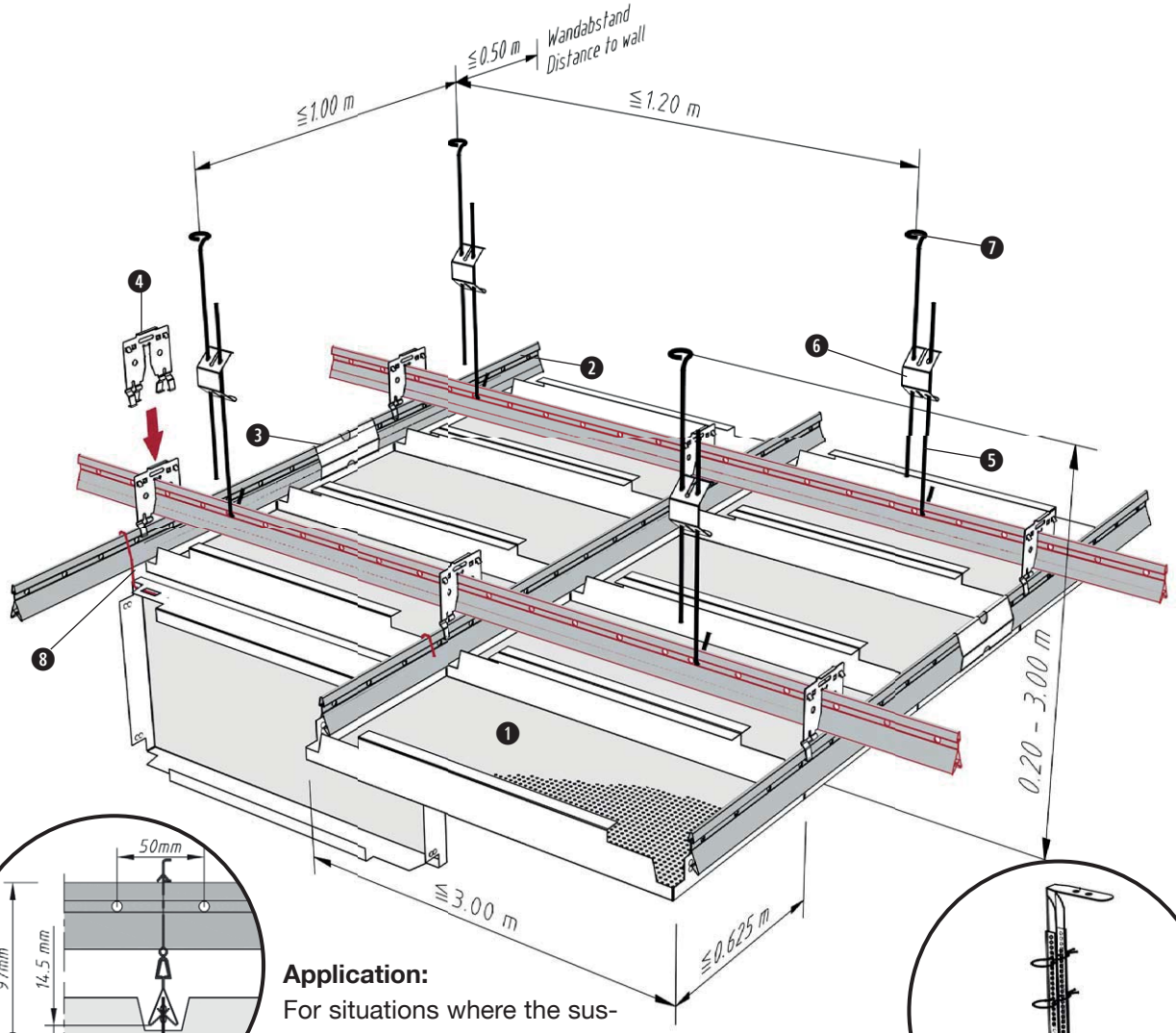
Distance between fixing points according to the sketch

Ceiling weight per m²	alu app. 5 kg
	steel app. 8 kg
further instructions:	p. 23 and p. 76-77

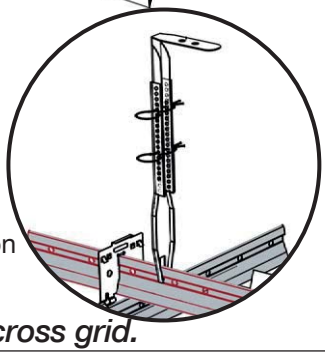
KLK
1.2.1.1

FURAL Acoustic Ceilings
Long span tiles – clip-in system

Standard design with double grid - quick suspension element



Application:
For situations where the suspension elements can't be installed where the clipping rail is running.



KLK 1.2.1.2
with nonius suspension

Long span tiles with a length of 3,000 mm and the advantages of the cross grid.

Standard components required: KLK 1.2.1.1

Item	Designation	Quantity / m² L=1.5 m	
❶	Long span tile		
❷	Clipping rail 16/38	1.67	metres
❸	Main runner connector	0.42	units
❹	Suspension key + security pin	0.67	units
❺	Suspension wire with hook	0.83	units
❻	Spring bracket	0.83	units
❼	Suspension wire with loop	0.83	units
❽	DOOR-wire bracket depending on tile formate		

Installation

Distance between fixing points according to the sketch	
Ceiling weight per m²	alu app. 5 kg steel app. 8 kg
further instructions:	p. 23 and p. 76-77

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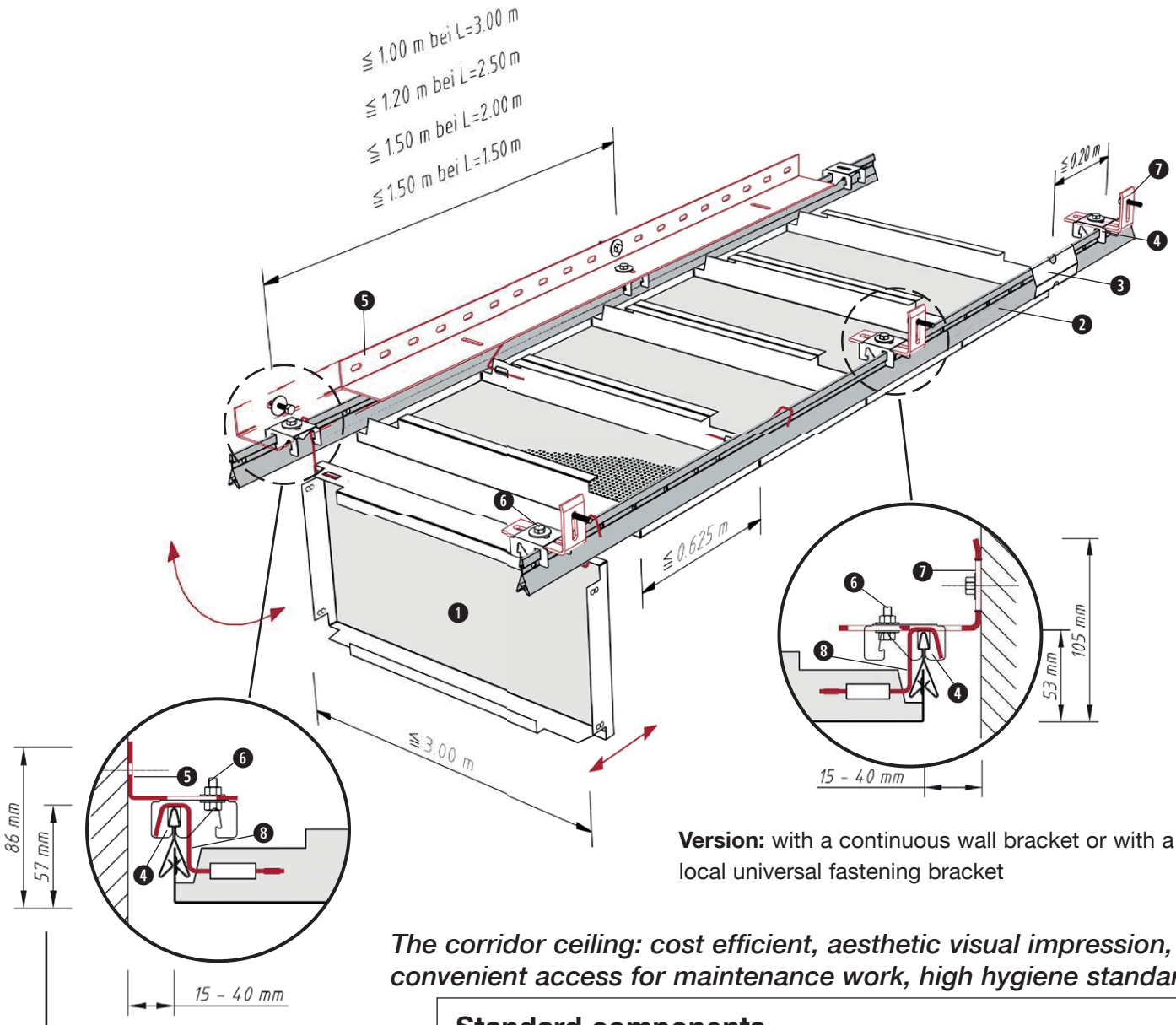
FURAL Acoustic Ceilings
Long span tiles – clip-in system

Corridor ceiling „DOOR“ - hinged



Version: with a continuous wall bracket or with a local universal fastening bracket

The corridor ceiling: cost efficient, aesthetic visual impression, convenient access for maintenance work, high hygiene standard

Installation

Distance between fixing points according to the sketch

Ceiling weight per m²: alu app. 5 kg
steel app. 8 kg

further instructions: p. 23 and p. 76-77

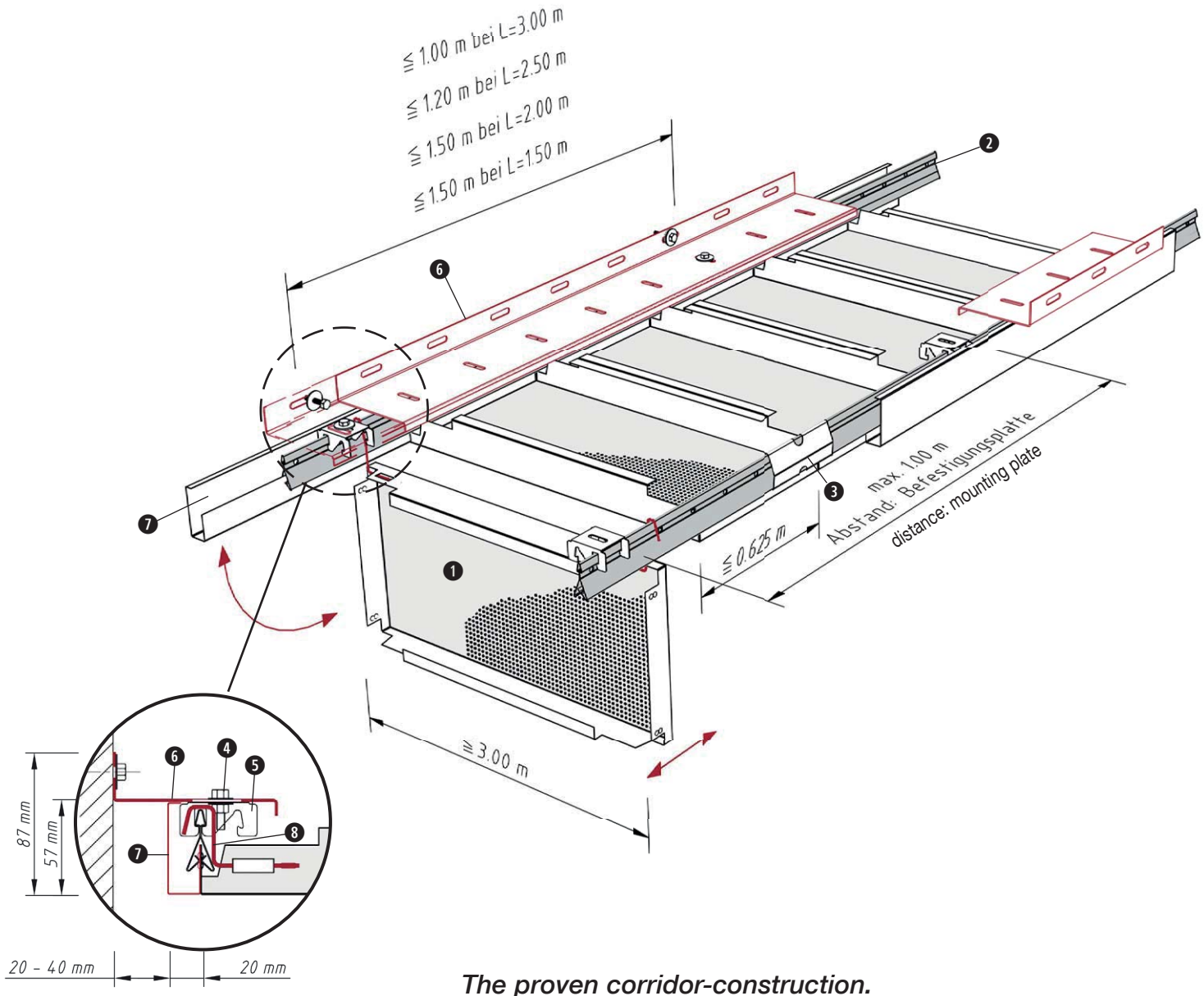
Standard components required: KLK 1.2.2.3

Item	Designation	Quantity / m² L=3.0m	L=2.5m	L=2.0m	L=1.5m	
❶	Long span tile					
❷	Clipping rail 16/38	0.67	0.80	1.00	1.34	metres
❸	Main runner connector	0.17	0.20	0.25	0.34	units
❹	Fixing plate	0.67	0.67	0.67	0.89	units
❺	Wall bracket 30/90	0.67	0.80	1.00	1.34	metres
❻	Screw M6, complete	0.67	0.67	0.67	0.89	units
❼	Universal fastening bracket	0.67	0.67	0.67	0.89	units
❽	DOOR-wire bracket depending on tile format					

KLK
1.2.3.4

FURAL Acoustic Ceilings
Long span tiles – clip-in system

Corridor ceiling „DOOR“ - hinged with closed shadow gap



The proven corridor-construction.

Standard components
required: KLK 1.2.3.4 Corridor

Item	Designation	Quantity / m² L=3.0 m	L=2.5 m	L=2.0 m	L=1.5 m	
❶	Long span tile					
❷	Clipping rail 16/38	0.67	0.80	1.00	1.34	metres
❸	Main runner connector	0.17	0.20	0.25	0.34	units
❹	Screw M6, complete	0.67	0.67	0.67	0.89	units
❺	Fixing plate	0.67	0.67	0.67	0.89	units
❻	Wall bracket for hospital	0.67	0.80	1.00	1.34	metres
❼	Shadow section for hospital	0.67	0.80	1.00	1.34	metres
❽	DOOR-wire bracket depending on tile format					

Installation

Distance between fixing points according to the sketch

Ceiling weight per m²: alu app. 5 kg
steel app. 8 kg

further instructions: p. 23 and p. 76-77

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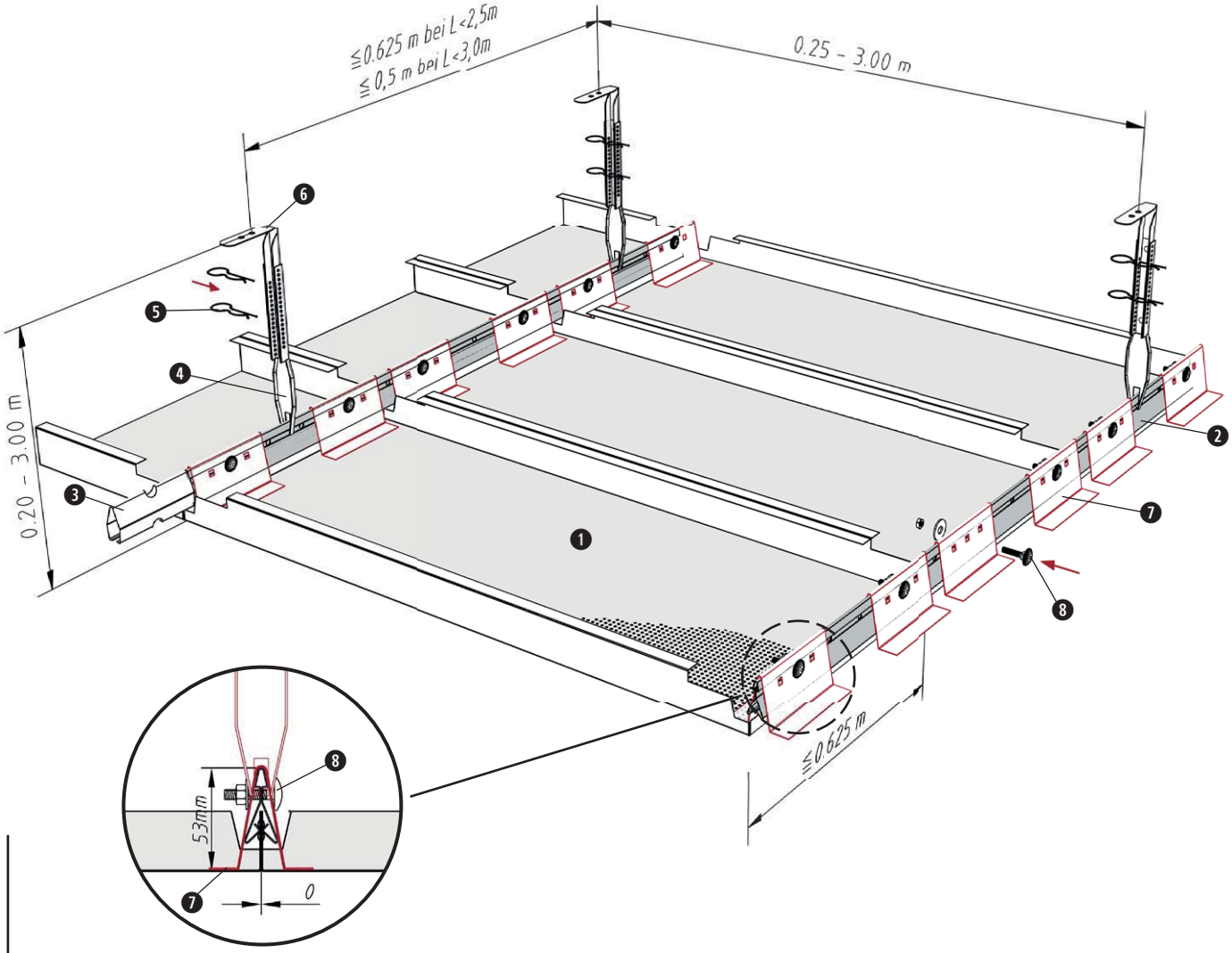
KLK 1.2.0.2 BWS

FURAL® Acoustic Ceilings

Long span tiles – clip-in system

Ball-proof ceiling - with nonius suspension



Ball-proof design and maximum sound absorption. Test certificate according to DIN 18032 Part 3 & EN 13964 attachement D.

Standard components required: KLK 1.2.0.2 BWS

Item	Designation	Quantity / m² At a tile width of 400 mm Tile L=1.5 m	Tile L=1.0 m	
❶	Long span tile			
❷	Clipping rail 16/38	0.67	1.00	metres
❸	Main runner connector	0.16	0.25	units
❹	Lower nonius	1.07	1.60	units
❺	Securing pin	2.14	3.20	units
❻	Upper nonius	1.07	1.60	units
❼	Supporting bracket	3.34	5.00	units
❽	Mushroom head bolt (square necked)	3.34	5.00	units

Installation

Distance between fixing points according to the sketch

Ceiling weight per m²: steel app. 8 kg

further instructions: p. 23 and p. 76-77

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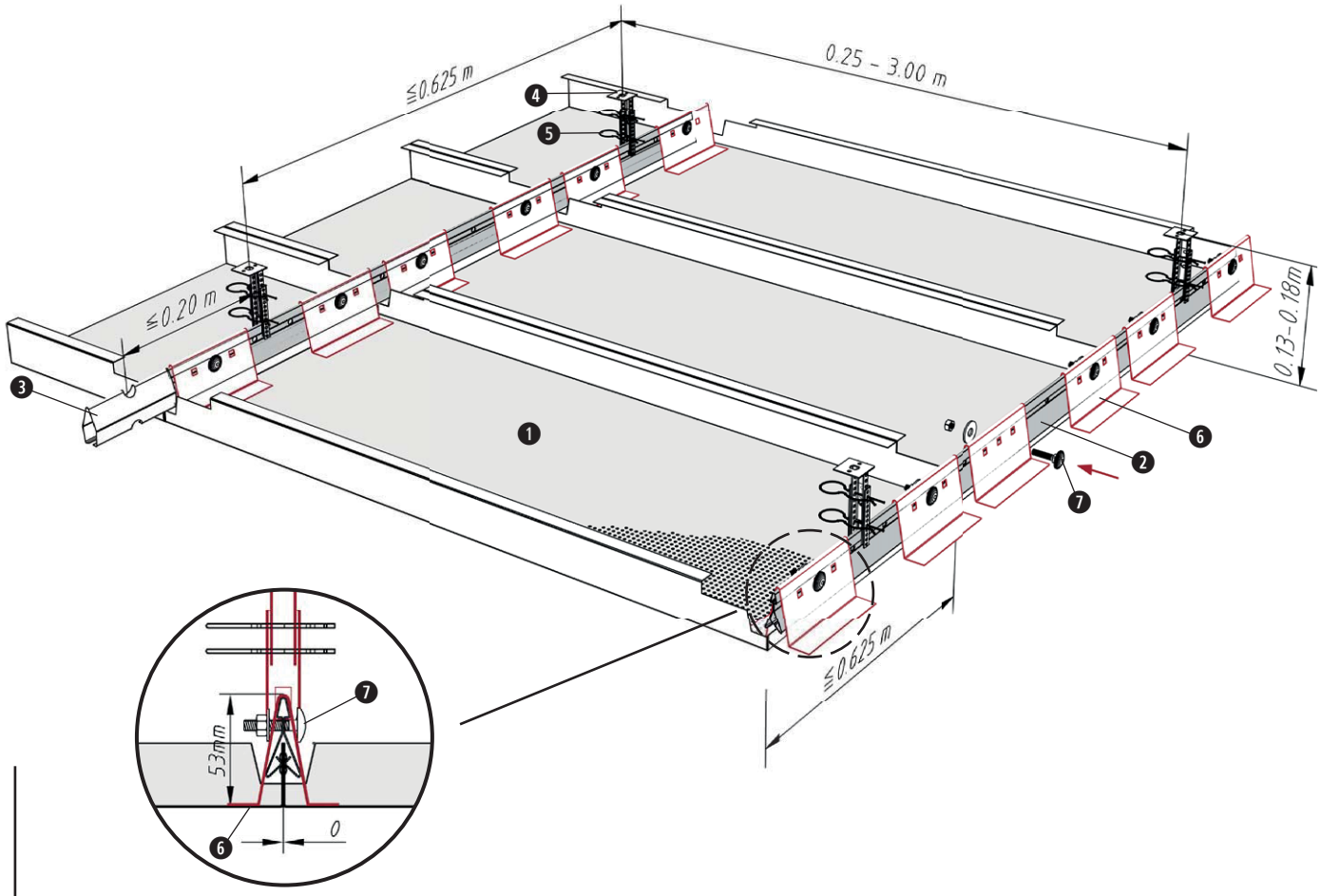
Ball-proof ceiling - short suspension



Ball-proof design even at minimum suspension height and maximum sound absorption. Test certificate according to DIN 18032 Part 3 & EN 13964 attachement D.

Standard components required: KLK 1.2.0.3 BWS

Item	Designation	Quantity / m² Tile L=1.5 m	Tile L=1.0 m	
❶	Long span tile			
❷	Clipping rail 16/38	0.67	1.00	metres
❸	Main runner connector	0.16	0.25	units
❹	Upper and lower nonius (set)	1.07	1.60	units
❺	Securing pin	2.14	3.20	units
❻	Supporting bracket	3.34	5.00	units
❼	Mushroom head bolt (square necked)	3.34	5.00	units

Installation

Distance between fixing points according to the sketch

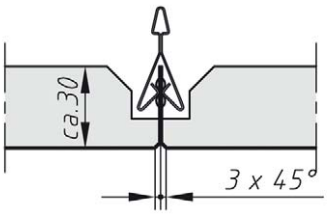
Ceiling weight per m² steel app. 8 kg

further instructions: p. 23 and p. 76-77

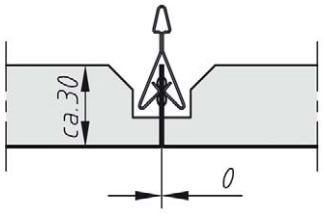
FURAL Acoustic Ceilings
Tile – Joints

for clip-in system

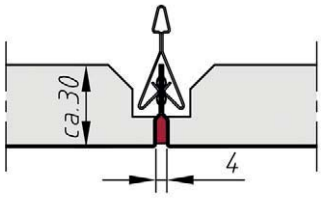
KQK



with bevelled edges

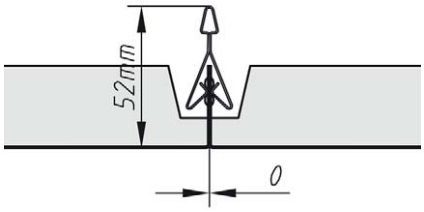


sharp edged

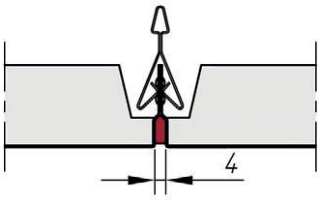


with crimp

KLK

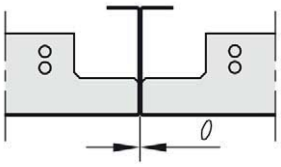


KLK sharp edged

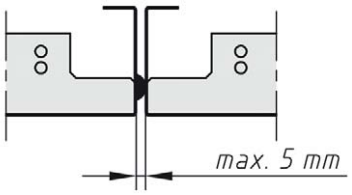


KLK with crimp

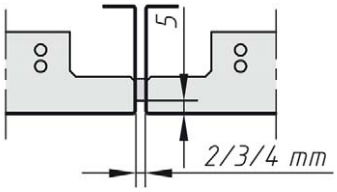
Longitudinal webs



without gap



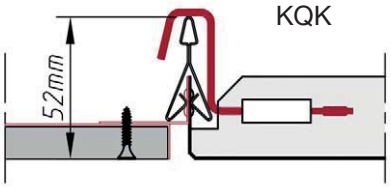
distance embossing

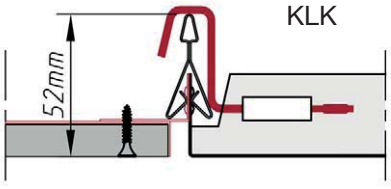


sealing tape

Edge

Connection plasterboard





joint as desired

Further wall connections
see page 69

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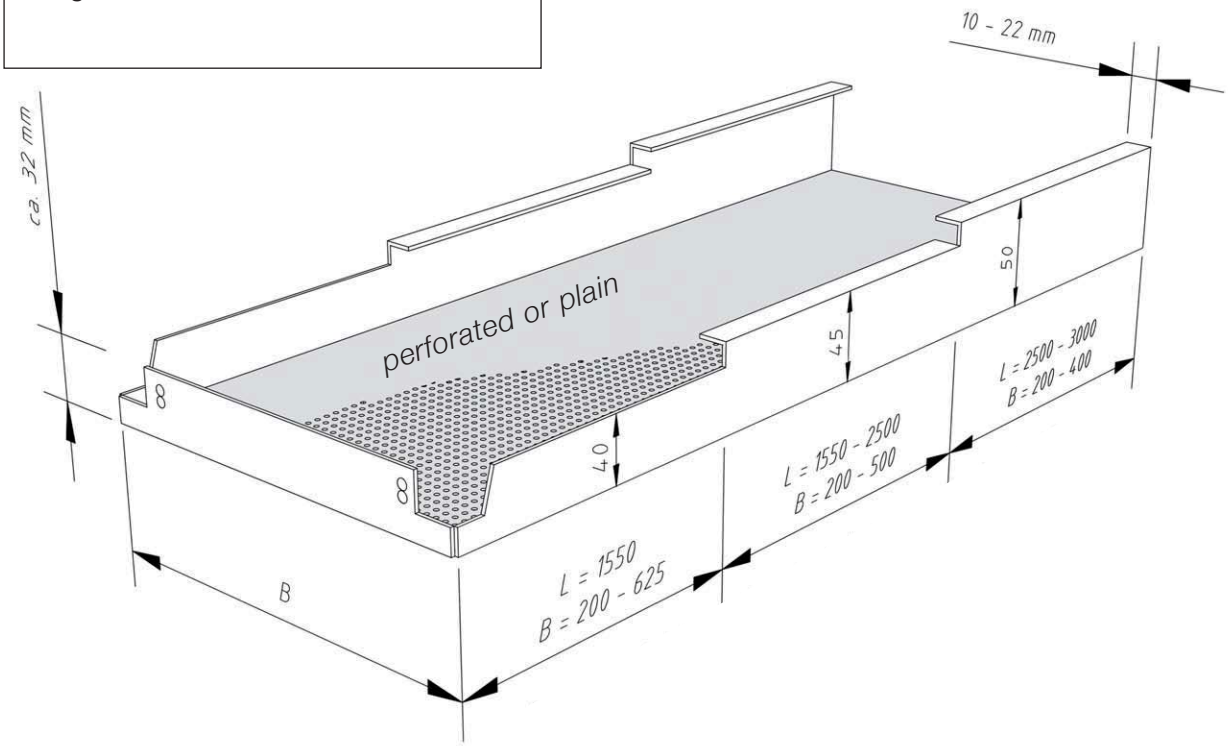
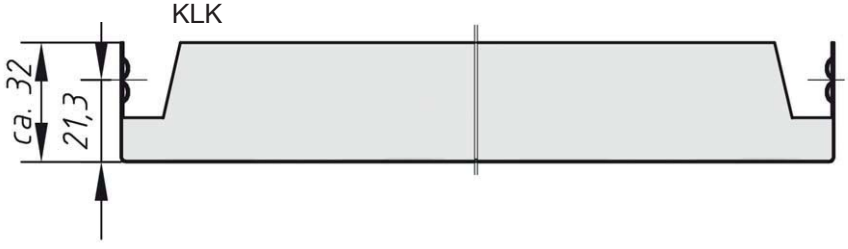
FURAL Acoustic Ceilings
Edges and webs

for clip-in system

Standard long span tiles:
Length and width variabel

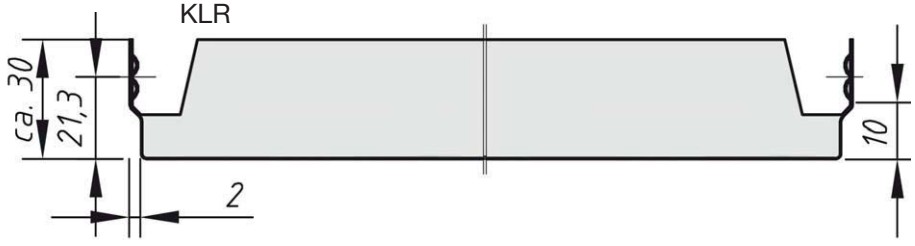


KLK



STANDARD
BB sharp edged

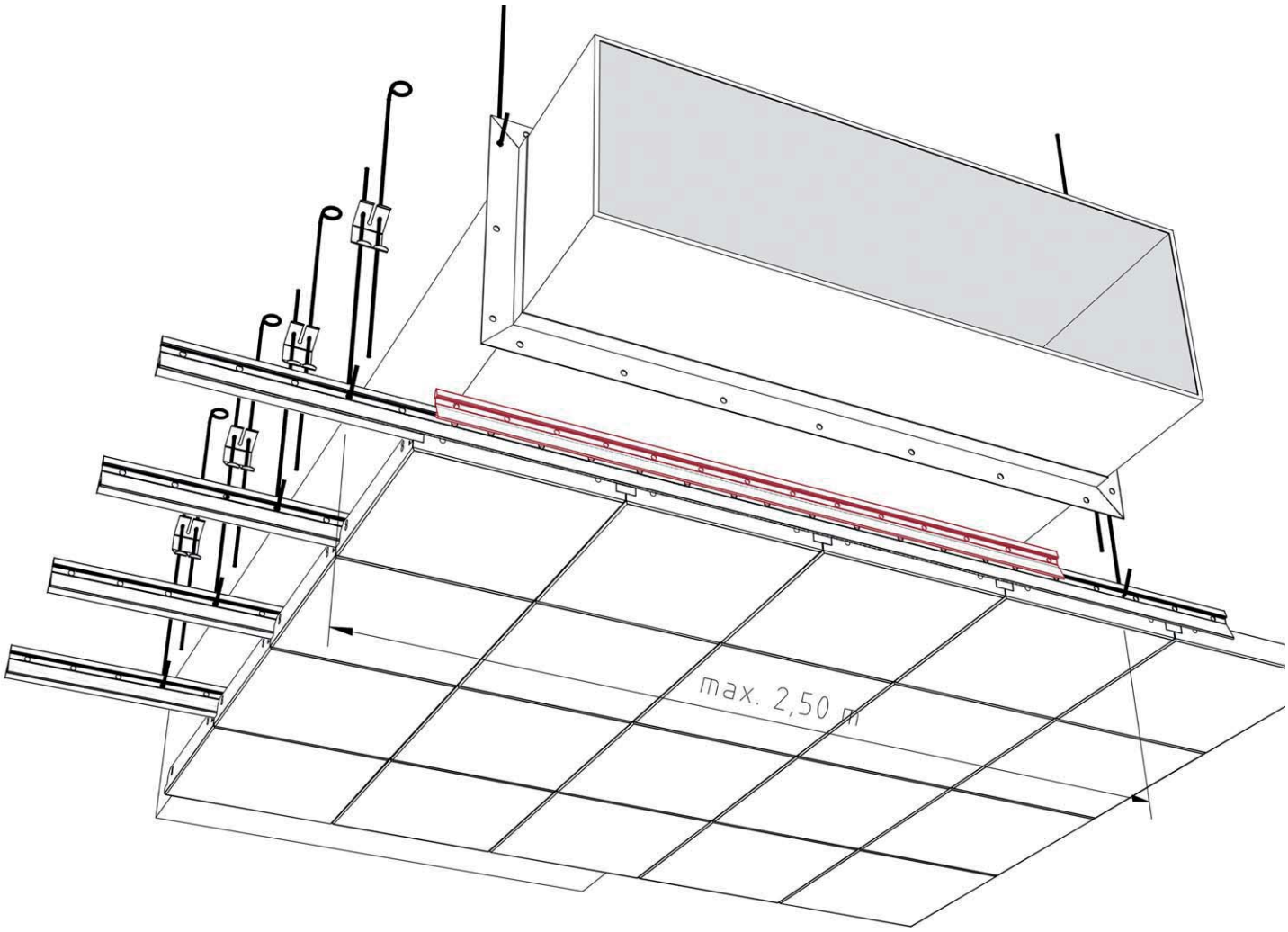
KLR

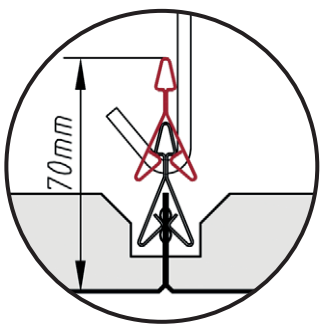


BB with crimp
(for hygiene ceiling)

FURAL® Acoustic Ceilings
Wide-span girders

for clip-in system – square tiles





Wide-span girders
for bridging installations
(e.g. ventilation or cable ducts)
Maximum distance between suspension elements: 2.50 m
Clip 2 clipping rails one above the other.

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FURAL Acoustic Ceilings
Clip-in system

Suspension element installation
• quick suspension element
• nonius hanger
• universal mounting bracket

Fastener spacing:
- According to respective system description (page 6 -22)

Fastening materials:
- Use only fasteners suitable for the type of substrate and, where appropriate, with the necessary building authority approval

Tools:
- Hammer drill (solid concrete), power drill
- Depending on rawl plug and bolt types, hammer and/or spanners

Installation procedure:
- Check whether any inbuilt parts (such as ventilation ducts, etc.) are installed too low in the ceiling cavity – if so, discuss with site manager
- First mark suspension element position on the raw ceiling with a chalk line or laser and tape measure
- Drill hole and insert rawl plug, fasten suspension element with bolt in rawl plug
- Adjust suspension elements roughly to the required height

Clipping rail installation
- Install single-rail grid or double-rail grid, depending on ceiling system, normally with the clipping rail in a longitudinal direction to the lower clipping rail layer always parallel to the room‘s long side (with strip lighting also always parallel to the strip light‘s long side)
- With a double-rail grid, first place the cross-connectors onto the upper clipping rails and press in the lower clipping rail; always taking care to press in the securing pin.
- Pay attention to a clean cut at the end of the clipping rail; if the cut is not clean and the clipping rail sides open, insert an M6 x 20 mm bolt with 2 large washers (Ø 25 – 30 mm) into a dividing hole at the end of the rail. Tighten the nut by hand only until the two radii of the sides contact one another. This is necessary to achieve a sufficient retaining force of the clipping rails
- Use the clipping rail coupler for clipping rail butt joints
- Adapt the rails roughly to the later tile junction
- Now adjust the suspension elements precisely to the ceiling height

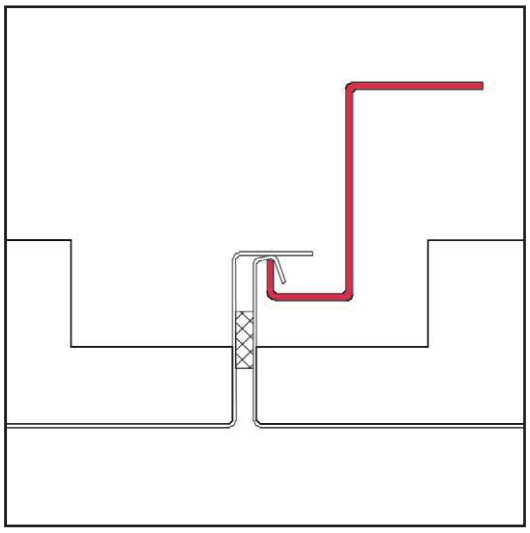
Tile Installation
- Unpack and install the tiles - always wear ceiling installer gloves when working in order to avoid soiling
- Always install the first complete row of tiles on the longer side of the room and check whether the tile edges are in a line and run parallel to the wall. Mark the exact tile edge with a line tied from wall to wall or with a rotating laser, ensuring that the tiles do not interlock at the corners – install precisely corner to corner
- Install the cut tiles in the open space remaining between the wall and the first complete row of tiles, and then install the next complete row of tiles, etc.
- For the cut tiles, measure the distance from the edge of the tile to the front edge of the edge profile and add + 15 mm for the support - this is the cutting dimension
- Cut the tile to size using an electric nibbler or sheet metal shears
- Push in the cut tile at a slight angle from below between the upper edge of the edge bracket and the lower edge of the trimming, turn the front edge of the cut tile also to a slight angle relative to the front edge of the edge bracket to allow the tile to be pressed in more easily, then press the tile web into the clipping rail
- In the corner of the room, always install the corner tile with two cut sides first, then the cut tile alongside the corner tile

Tile removal
- See ceiling manual, page 118
- Always pull off the tiles at the clipping rail web in the corner of the tile

Information:
For variants of the different ceiling systems, see system descriptions in the ceiling manual. Please also note the information regarding the requirements of EN 13964 relating to the CE standard marking on pages 76 – 77.

HANG-IN SYSTEM

ADVANTAGES:



› Maximum safety:

- Continuous hang-in edges guarantee the perfect fit of the support structure.

› Convenient installation:

- **FURAL** Z-rail continuously adjustable on the grid rail
- No tools required for dismantling

› Visual advantages:

- The freely floating ceiling solution without enclosing section
- Free choice of wall connections

PERFEKT FURAL® METALLDECKEN

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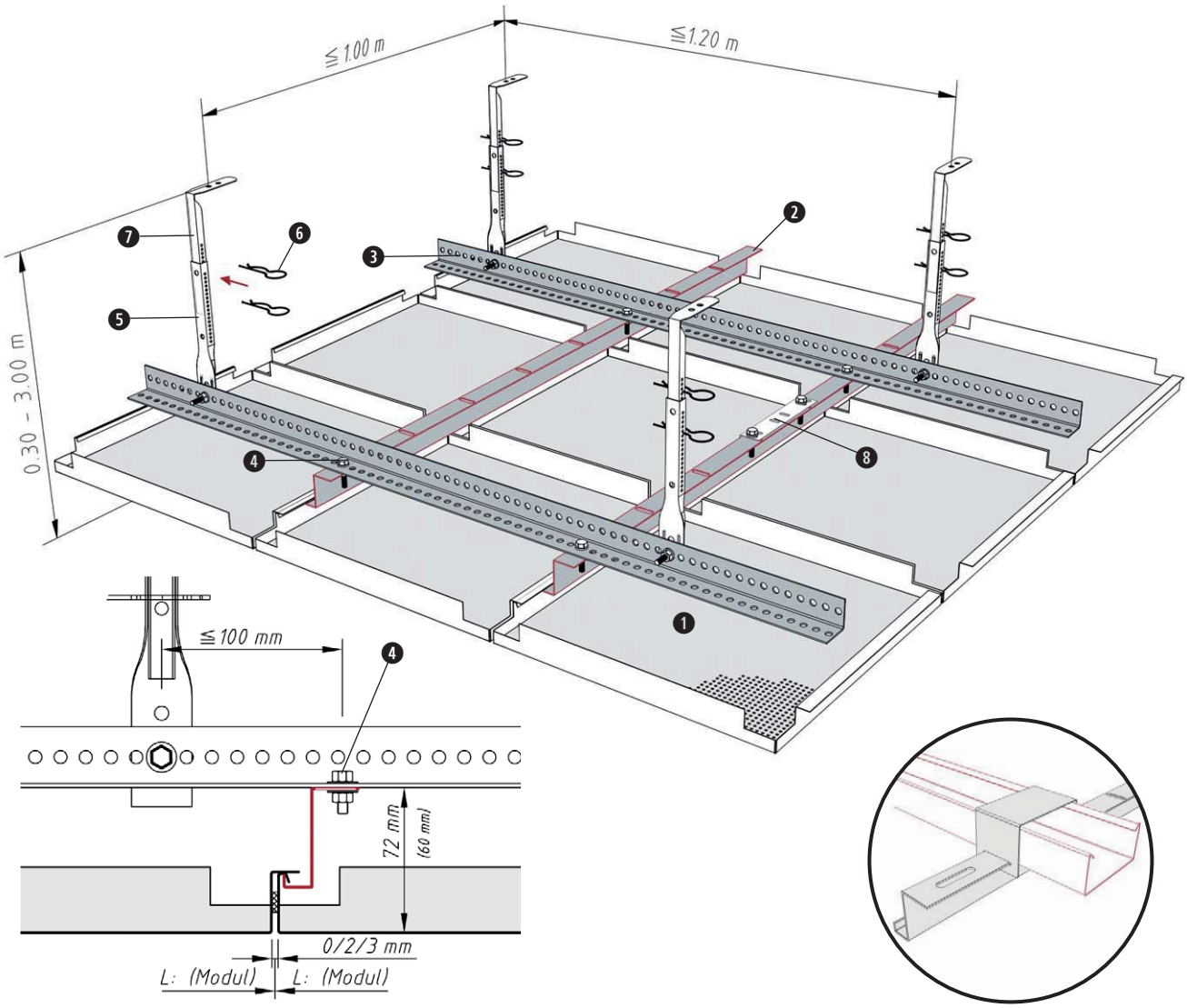
www.fural.com, fural@fural.at, fax: -11
+43 - (0) 7612 - 74851 - 0

KQH
2.1.1.2

FURAL Acoustic Ceilings
Square tiles – hang-in system

Standard design with double grid - nonius suspension



All height specifications refer to the Z-hang-in-rail, height 50 mm.

Version: with CD-profile and alternative Z-hang-in-rail

Stress-free quick installation - clean visual impression

Standard components required: KQH 2.1.1.2

Item	Designation	Quantity / m² 625	600	
❶	Hang-in tile	2.56	2.78	units
❷	Z-hang-in-rail 50 (38)	1.60	1.67	metres
❸	Grid bracket 30/30	1.00	1.00	metres
❹	Hexagon screw M6	3.71	3.83	units
❺	Lower nonius	0.83	0.83	units
❻	Securing pin	1.66	1.66	units
❼	Upper nonius	0.83	0.83	units
❽	Main runner connector for Z-hang-in-rail	*	*	units

* depends on Z-hang-in-rail used

Installation

Distance between fixing points according to the sketch

Ceiling weight per m²	steel app. 8 kg
further instructions:	p. 33 and p. 76-77

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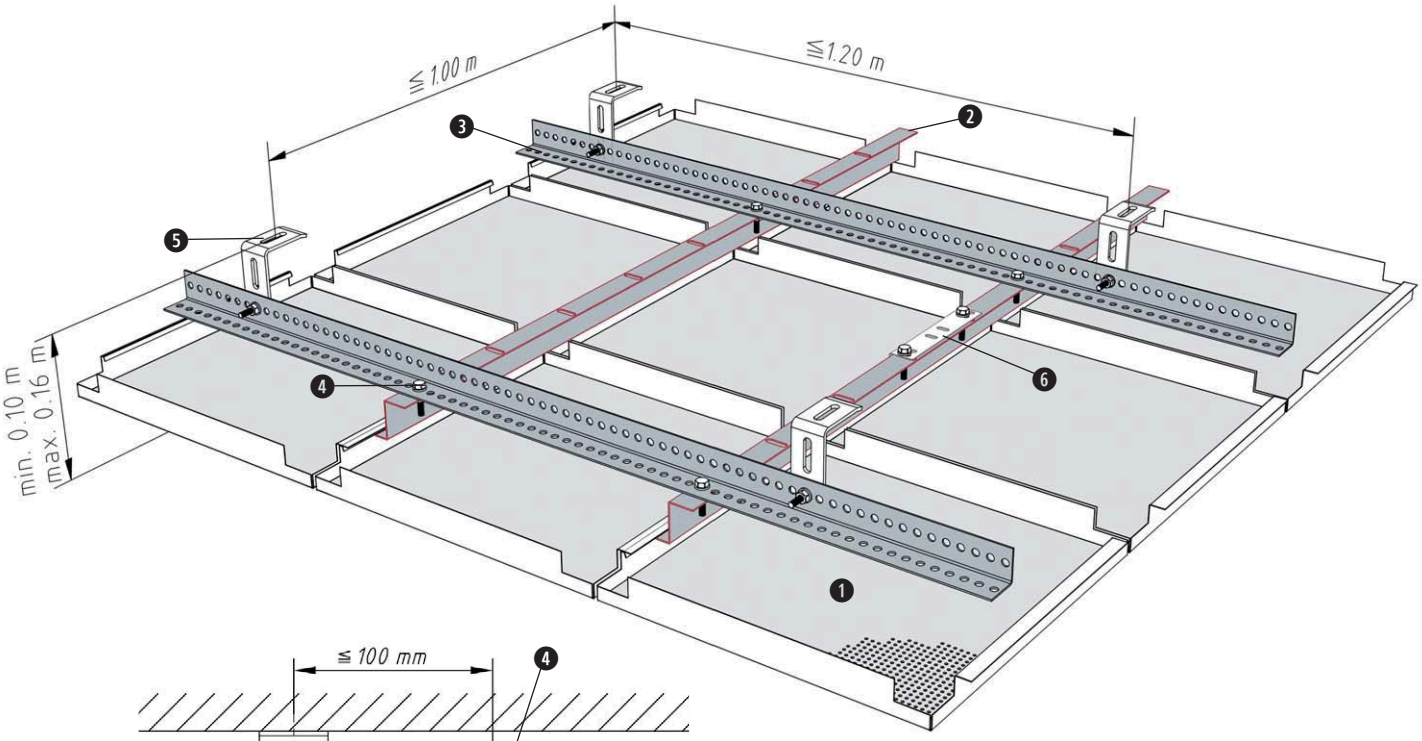
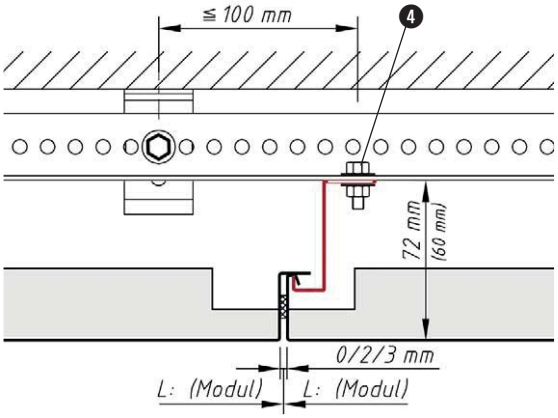
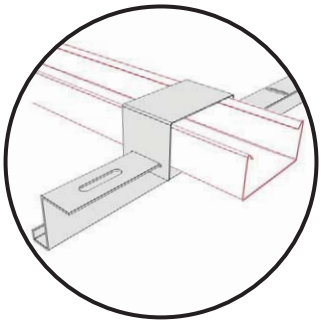
KQH
2.1.1.3

FURAL Acoustic Ceilings
Square tiles – hang-in system

Standard design with double grid - short suspension







All height specifications refer to the Z-hang-in-rail, height 50 mm.

Version: with CD-profile and alternative Z-hang-in-rail

The solution for short suspension.

Standard components required: KQH 2.1.1.3

Item	Designation	Quantity / m² 625	600	
❶	Hang-in tile	2.56	2.78	units
❷	Z-hang-in-rail 50 (38)	1.60	1.67	metres
❸	Grid bracket 30/30	1.00	1.00	metres
❹	Hexagon screw M6	3.71	3.83	units
❺	Universal fastening bracket	0.83	0.83	units
❻	Main runner connector for Z-hang-in-rail	*	*	units

* depends on Z-hang-in-rail used

Installation

Distance between fixing points according to the sketch

Ceiling weight per m² steel app. 8 kg

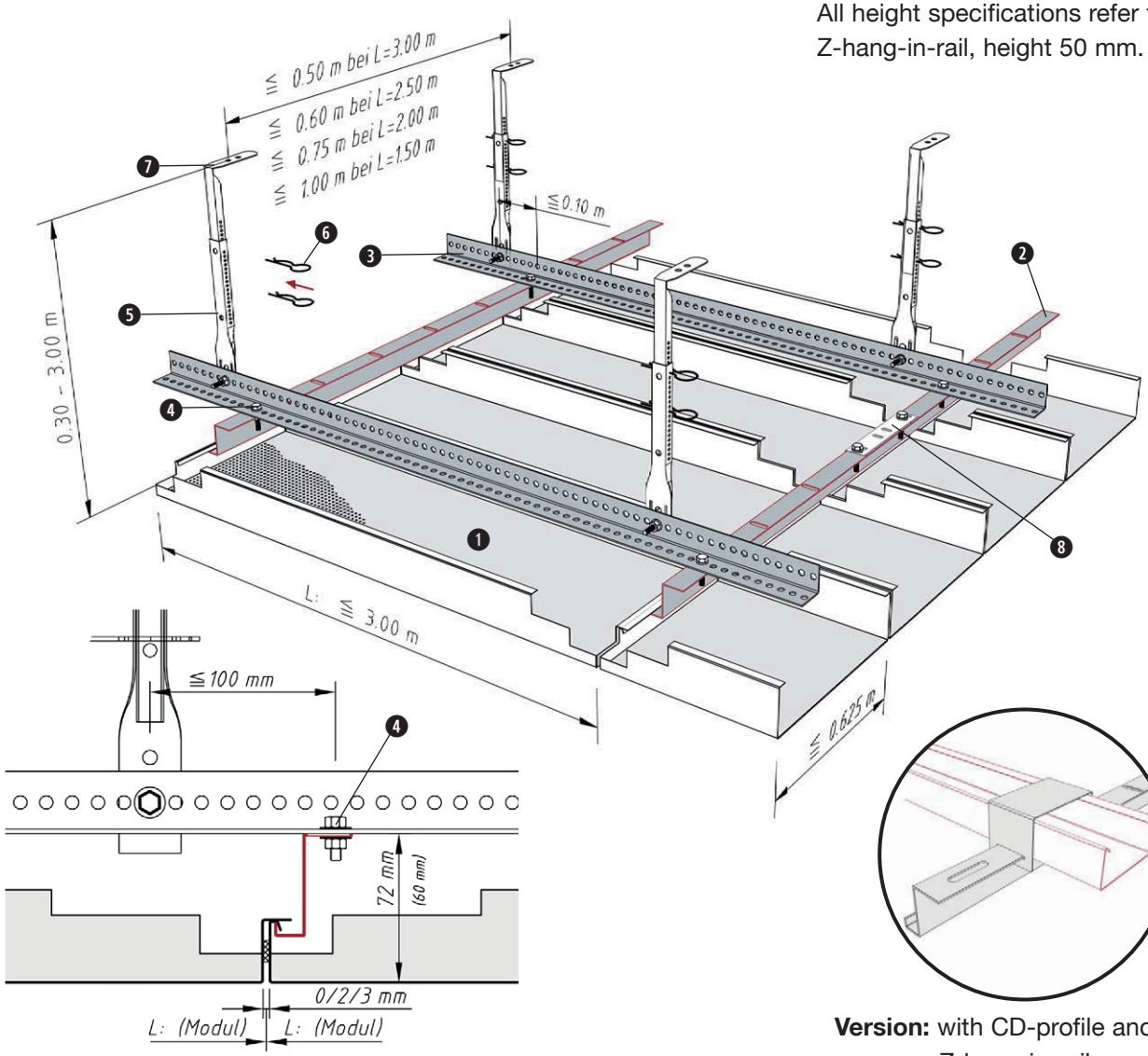
further instructions: p. 33 and p. 76-77

KLH
2.2.1.2

FURAL Acoustic Ceilings
Long span tiles – hang-in system

Standard design with double grid - nonius suspension

All height specifications refer to the Z-hang-in-rail, height 50 mm.



Version: with CD-profile and alternative Z-hang-in-rail

Clean visual impression and ease of installation thanks to variable adjustment of the support structure.

Installation

Distance between fixing points according to the sketch
Ceiling weight per m²:
steel app. 8 kg
further instructions:
p. 33 and p. 76-77

Standard components required: KLH 2.2.1.2

Item	Designation	Quantity / m² L=3.0 m	L=2.5 m	L=2.0 m	L=1.5 m	
❶	Hang-in tile					
❷	Z-hang-in-rail 50 (38)	0.33	0.40	0.50	0.67	metres
❸	Grid bracket 30/30	2.00	1.67	1.33	1.00	metres
❹	Hexagon screw M6	1.60	1.66	1.74	1.88	units
❺	Lower nonius	0.67	0.67	0.67	0.67	units
❻	Securing pin	1.34	1.34	1.34	1.34	units
❼	Upper nonius	0.67	0.67	0.67	0.67	units
❽	Main runner connector for Z-hang-in-rail	0.13	0.16	0.20	0.27	units

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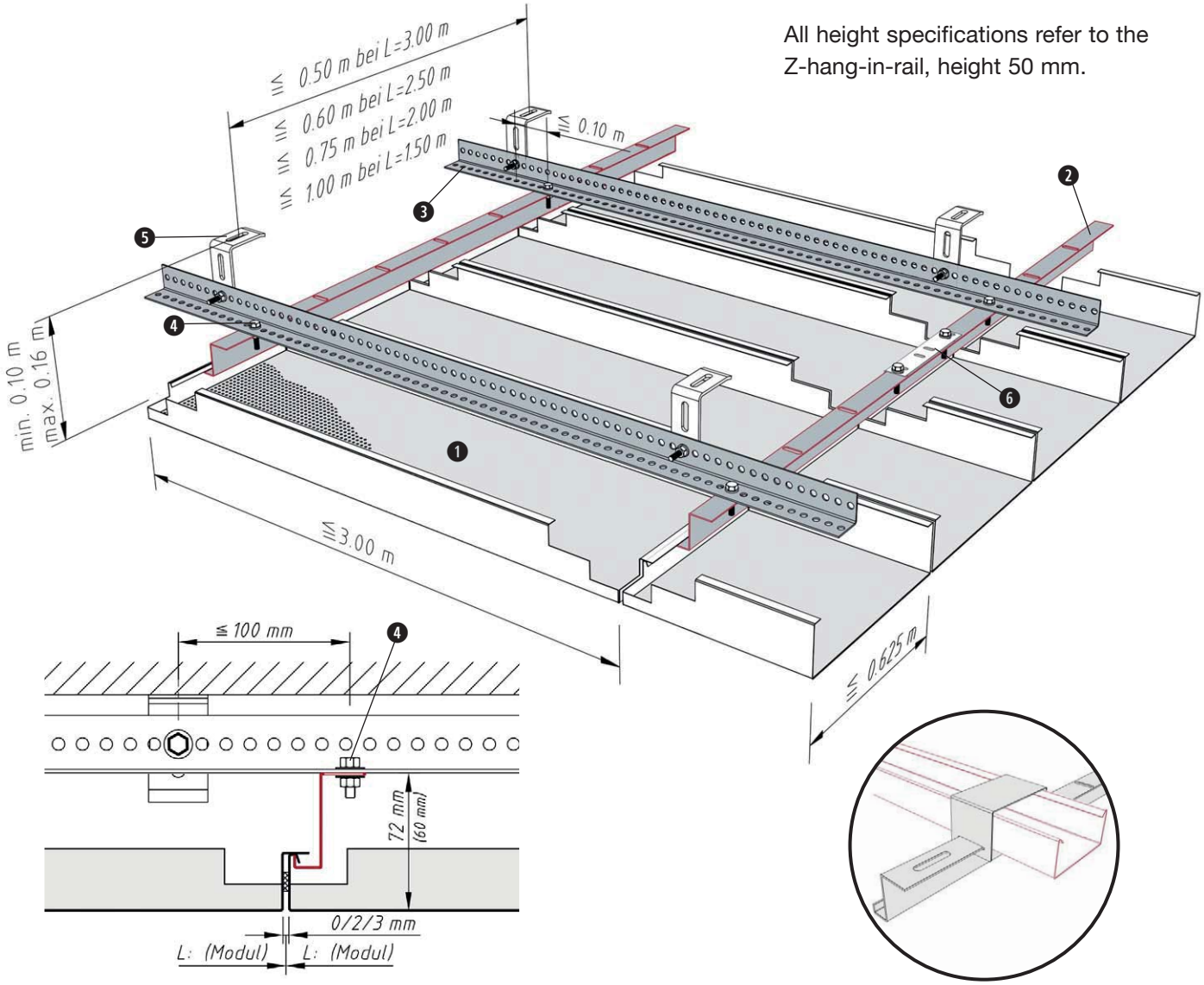
KLH
2.2.1.3

FURAL Acoustic Ceilings
Long span tiles – hang-in system

Standard design with double grid - with short suspension

All height specifications refer to the Z-hang-in-rail, height 50 mm.



Version: with CD-profile and alternative Z-hang-in-rail

The advantages of the hang-in system even at minimum suspension height.

Installation

Distance between fixing points according to the sketch
Ceiling weight per m²
steel app. 8 kg
further instructions:
p. 33 and p. 76-77

Standard components required: KLH 2.2.1.3

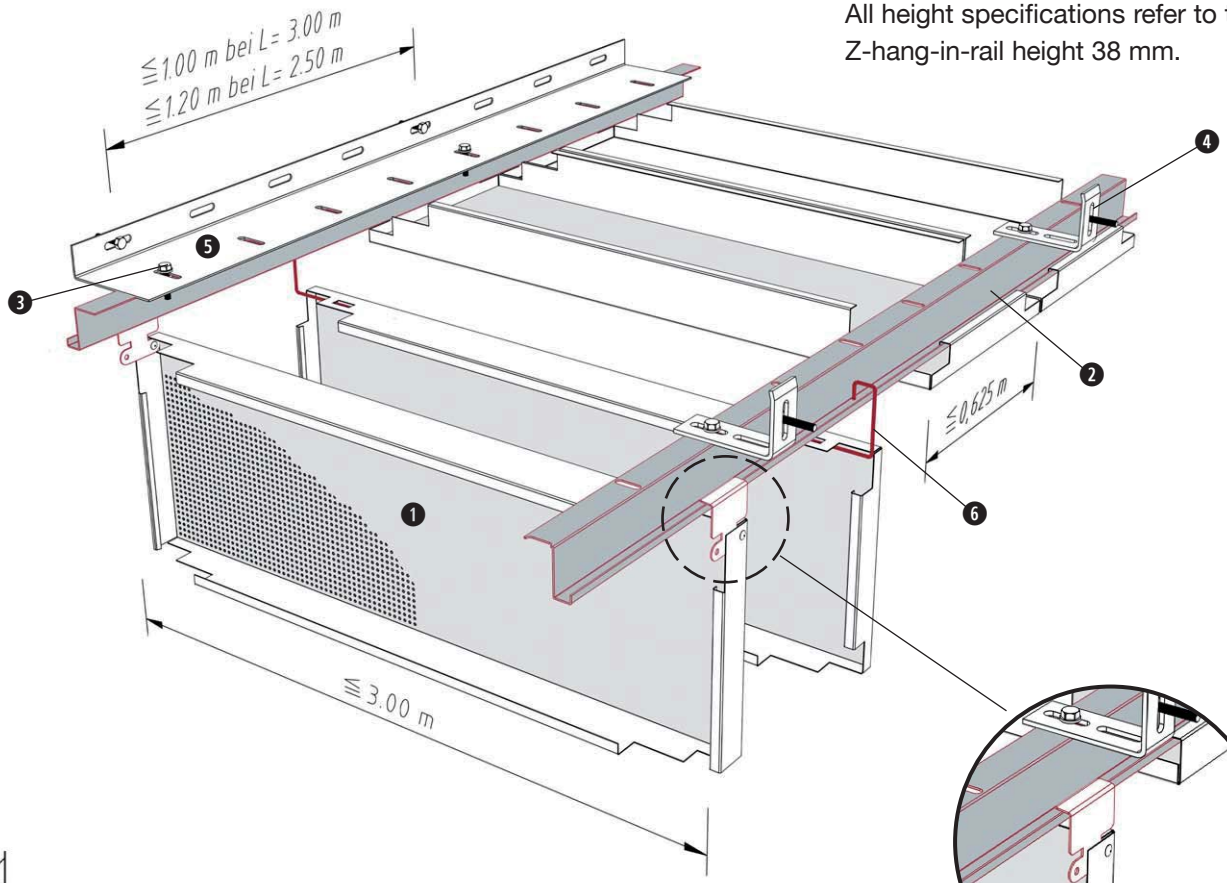
Item	Designation	Quantity / m² L=3.0 m	L=2.5 m	L=2.0 m	L=1.5 m	
❶	Hang-in tile					
❷	Z-hang-in-rail 50 (38)	0.33	0.40	0.50	0.67	metres
❸	Grid bracket 30/30	2.00	1.67	1.33	1.00	metres
❹	Hexagon screw M6	1.60	1.66	1.74	1.88	units
❺	Universal fastening bracket	0.67	0.67	0.67	0.67	units
❻	Main runner connector for Z-hang-in-rail	0.13	0.16	0.20	0.27	units

KLG
2.2.2.3

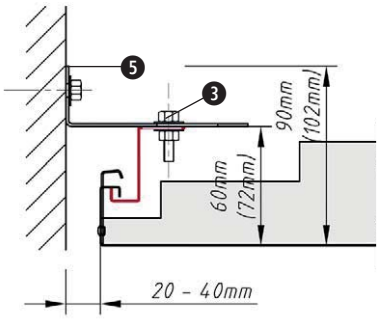
FURAL Acoustic Ceilings
Long span tiles – hang-in system

Standard design corridor ceiling

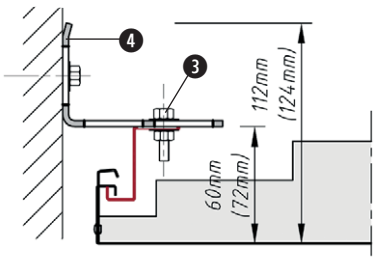
All height specifications refer to the Z-hang-in-rail height 38 mm.



Option for hinge down:
with DOOR-bracket



Wall mounting type A:
with continuous wall bracket



Wall mounting type B:
with local universal fastening bracket

Accuracy, hygiene and a high degree of safety!

Installation

Distance between fixing points according to the sketch
Ceiling weight per m²
steel app. 8 kg
further instructions:
p. 33 and p. 76-77

Standard components required: KLG 2.2.2.3

Item	Designation	Quantity / m² L=3.0 m	L=2.5 m	L=2.0 m	L=1.5 m	
❶	Hang-in tile					
❷	Z-hang-in-rail 50 (38)	0.67	0.80	1.00	1.34	metres
❸	Hexagon screw M6					
❹	Universal fastening bracket	0.67	0.67	0.82	1.02	units
❺	Wall bracket 30/90	0.67	0.80	1.00	1.34	metres
❻	DOOR-wire bracket					

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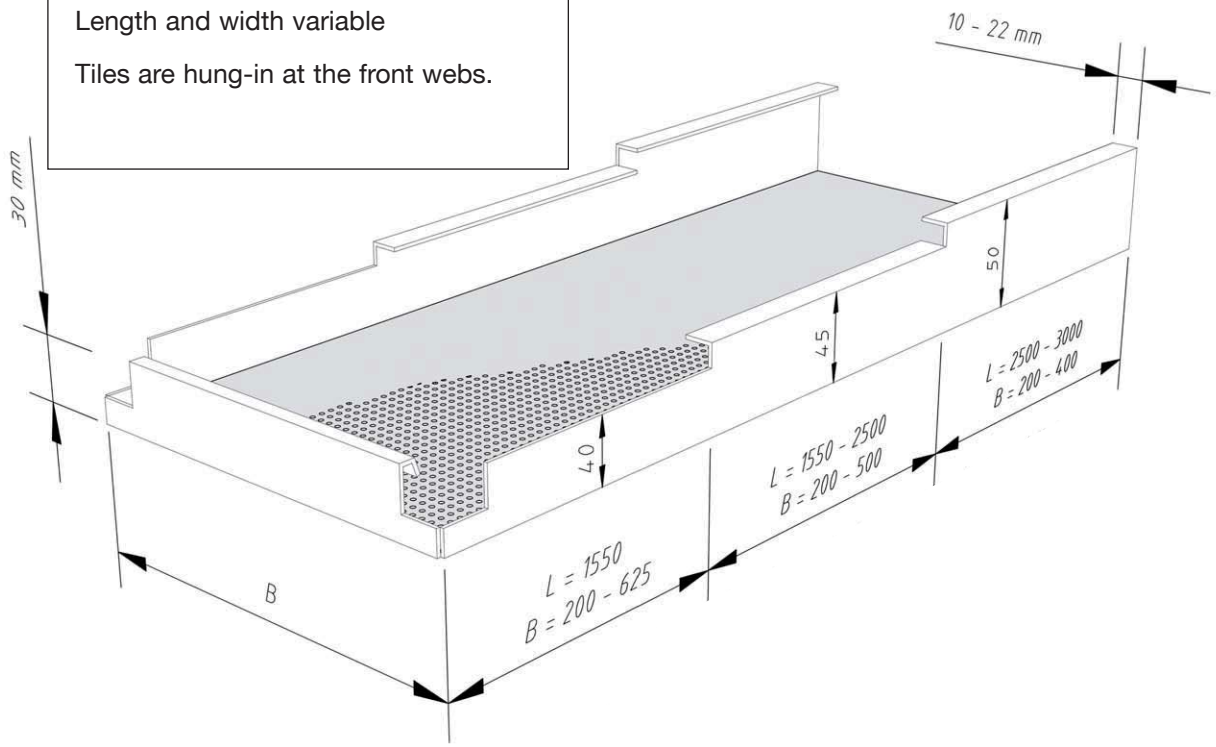
FURAL Acoustic Ceilings
Joints/Edges/Webs

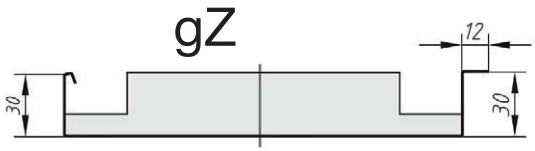
for hang-in system with Z-hang-in-rail

Long span tiles:
Length and width variable

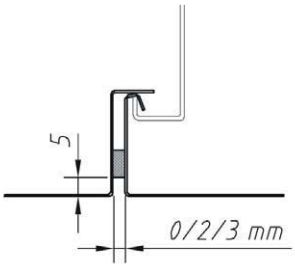
Tiles are hung-in at the front webs.



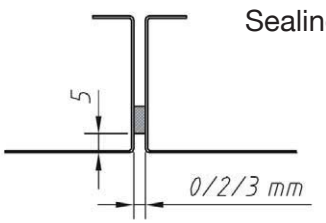
KLH
room



KLG
corridor



Joint cross-web



Joint longitudinal web

FURAL® Acoustic Ceilings
Hang-in system with Z-hang-in-rail

Suspension element installation

• Nonius hanger
• Universal mounting bracket

Fastener spacing:
- According to respective system description (page 26 – 31)

Fastening materials:
- Use only fasteners suitable for the type of substrate and, where appropriate, with the necessary building authority approval

Tools:
- Hammer drill (solid concrete), power drill
- Depending on rawl plug and bolt types, hammer and/or spanners

Installation procedure:
- Check whether any inbuilt parts (such as ventilation ducts, etc.) are installed too low in the ceiling cavity – if so, discuss with site manager
- First mark suspension element position on the raw ceiling with a chalk line or laser and tape measure
- Drill hole and insert rawl plug, fasten suspension element with bolt in rawl plug
- Adjust suspension elements roughly to the required height

Installation of Z-hang-in-rail and transverse structure

- Install upper grid profile (grid angle 30/30/2 mm or CD profile)
- Connect Z-shaped profile to upper grid profile (with M6 bolt). For grid angle, use FURAL Z-hang-in-rail H 50 mm with slots at the top (commercially available rails do not provide adequate adjustment options!)
- For CD profile, commercially available Z-hang-in-rail can be used with special retaining bracket (this allows the Z-shaped profile to be steplessly positioned on the CD profile)
- **FURAL** recommends 50 mm high Z-hang-in-rails, as the tiles in the middle of the section are then easier to remove.
- Normally in rooms, always install the Z-hang-in-rails parallel to the room long side
- Now adjust the suspension elements precisely to the ceiling height

Tile installation

- Unpack and install the tiles - always wear ceiling installer gloves when working in order to avoid soiling
- Always install the first complete row of tiles on the longer side of the room and check whether the tile edges are in a line and run parallel to the wall. Mark the exact tile edge with a line tied from wall to wall or with a rotating laser, ensuring that the tiles do not interlock at the corners – install precisely corner to corner
- Install the cut tiles in the open space remaining between the wall and the first complete row of tiles, and then install the next complete row of tiles, etc.
- For the cut tiles, measure the distance from the edge of the tile to the front edge of the edge profile and add + 15 mm for the support - this is the cutting dimension
- Cut the tile to size using an electric nibbler or sheet metal shears
- Push in the cut tile at a slight angle from below between the upper edge of the edge bracket and the lower edge of the trimming, turn the front edge of the cut tile also to a slight angle relative to the front edge of the edge bracket to allow the tile to be pressed in more easily, then press the tile web into the Z-hang-in-rail
- In the corner of the room, always install the corner tile with two cut sides first, then the cut tile alongside the corner tile
- With an open joint to the wall, the first row of tiles can be installed directly at the wall – pay attention to the perpendicularity of the tile long side relative to the wall
- Always ensure the same bending direction of the end tabs (do not mix)

Tile removal

- For tiles in the hall area, simply lift them out without using tools
- For tiles in rooms, lift up the front end of the tile with rectangular edge-fold by approx. 40 mm and lift the tile with the hook edge-fold by approx. 10 mm then pull the tile in longitudinal direction away from the Z-shaped profile

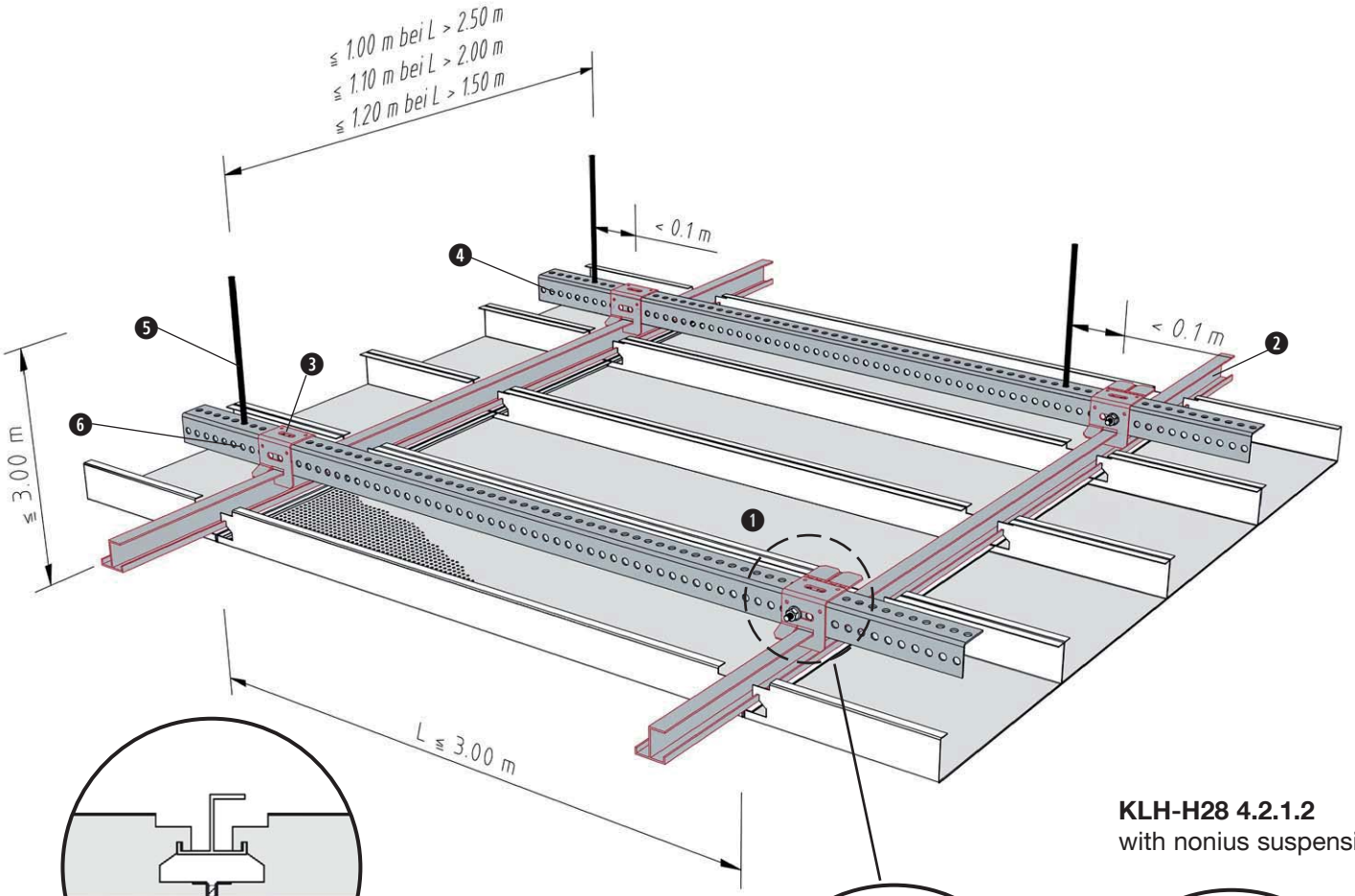
Information

For variants of the different ceiling systems, see system descriptions in the ceiling manual. Please also note the information regarding the requirements of EN 13964 relating to the CE standard marking on pages 76 – 77.

FURAL® Acoustic Ceilings

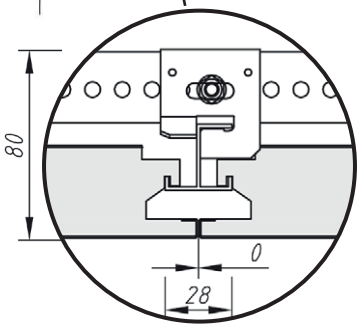
Long span tiles – H-hang-in system

Standard design with H-profile



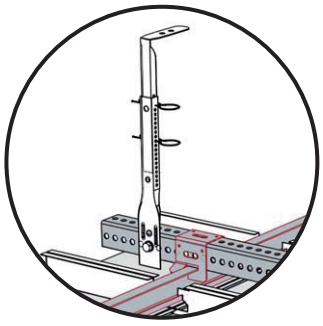
Version:
3 mm gap with H-profile 31
optional with sealing tape

H-profile and suspension key for H-profile ensure precise joint pattern.



Mounting height ceiling tile - Grid bracket

KLH-H28 4.2.1.2
with nonius suspension



Installation

Distance between fixing points according to the sketch
Ceiling weight per m²
steel app. 8 kg or 5 kg alu
further instructions:
p. 33 and p. 76-77

Standard components required: KLH-H28

Item	Designation	Quantity / m² L=3,0 m	L=2,5 m	L=2,0 m	L=1,5 m	
1	Hang-in tile					
2	H-profile 28 (31)	0.33	0.40	0.50	0.67	metres
3	Suspension key for H-profile	0.33	0.40	0.45	0.56	units
4	Grid bracket 30/30	1.00	1.00	0.91	0.83	metres
5	Threaded rod M6	0.33	0.40	0.45	0.56	units
6	Nut + washer M6	0.33	0.40	0.45	0.56	units

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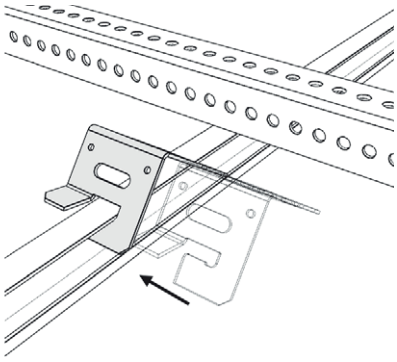
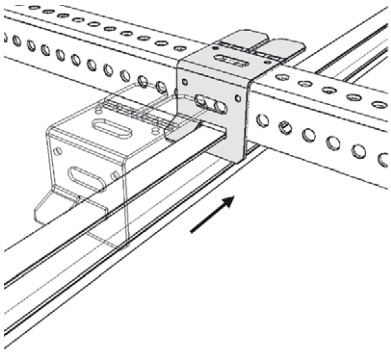
FURAL Acoustic Ceilings
Long span tiles – H-hang-in system

Installation

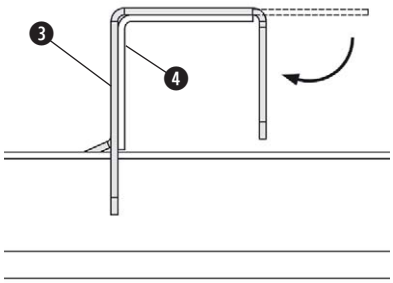
Slide in the suspension key in H-profile



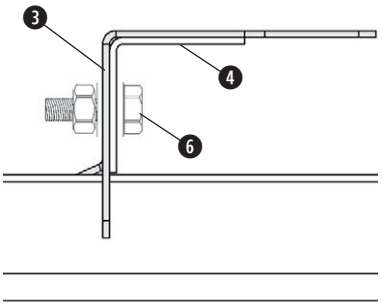
Move the suspension key toward the grid bracket.



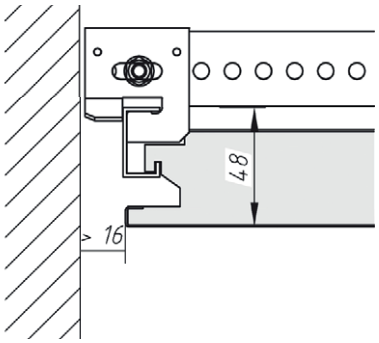
Safeguard is done manually by turning down the locking tab!



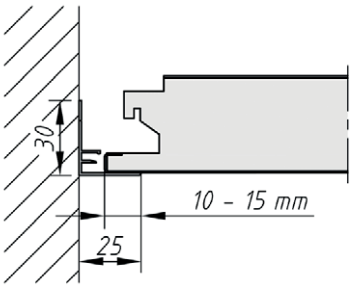
Additional: Safeguard is done by screwing 1x per H-profile.



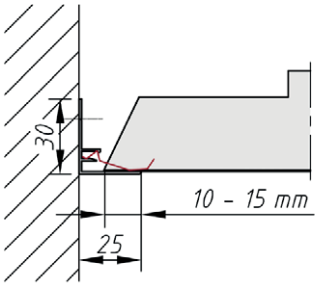
Wall connections



With C-profile for shadow gap



With trimming section for entire tile

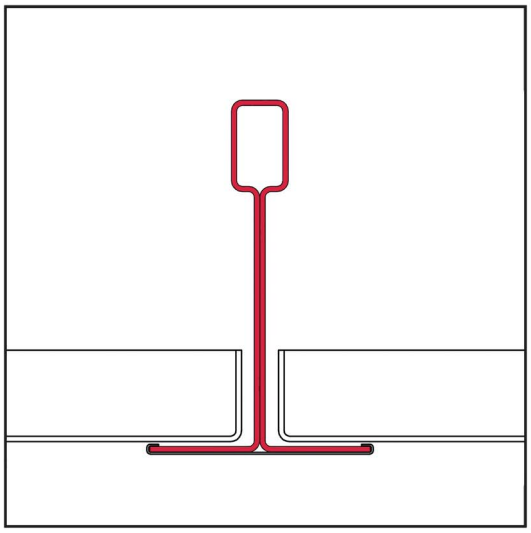


Support with trimming section for cut tile

ACOUSTIC CERTIFIED

LAY-IN SYSTEM

ADVANTAGES:



Flexibility in visual impression:
- Coarse structure with tile joints
- Neat, harmonious lines with level or raised lay-in tiles

Convenient installation:
- No tools required for installation and dismantling
- Easy even for persons without system training

Immediate availability:
- Of T-rails
- Of lay-in tiles

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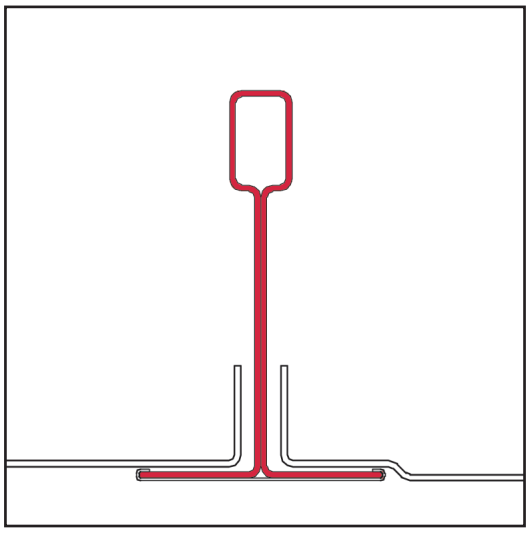
LAY-IN SYSTEM

ADVANTAGES:



› Flexibility in visual impression:

- Coarse structure with tile joints
- Neat, harmonious lines with level or raised lay-in tiles

› Convenient installation:

- No tools required for installation and dismantling
- Easy even for persons without system training

› Immediate availability:

- Of T-rails
- Of lay-in tiles

Modul:	Formats:	Suspension:	Function:	Code:	Page:
625	600	wire 4 mm	Semi-concealed	KQV - 3.1.0.1 T24	38
600	575				38
600	584	wire 4 mm	Semi-concealed	KQV - 3.1.0.1 T15	39
625	620	wire 4 mm	Level	KQE - 3.1.0.1 T24	40
600	595				40

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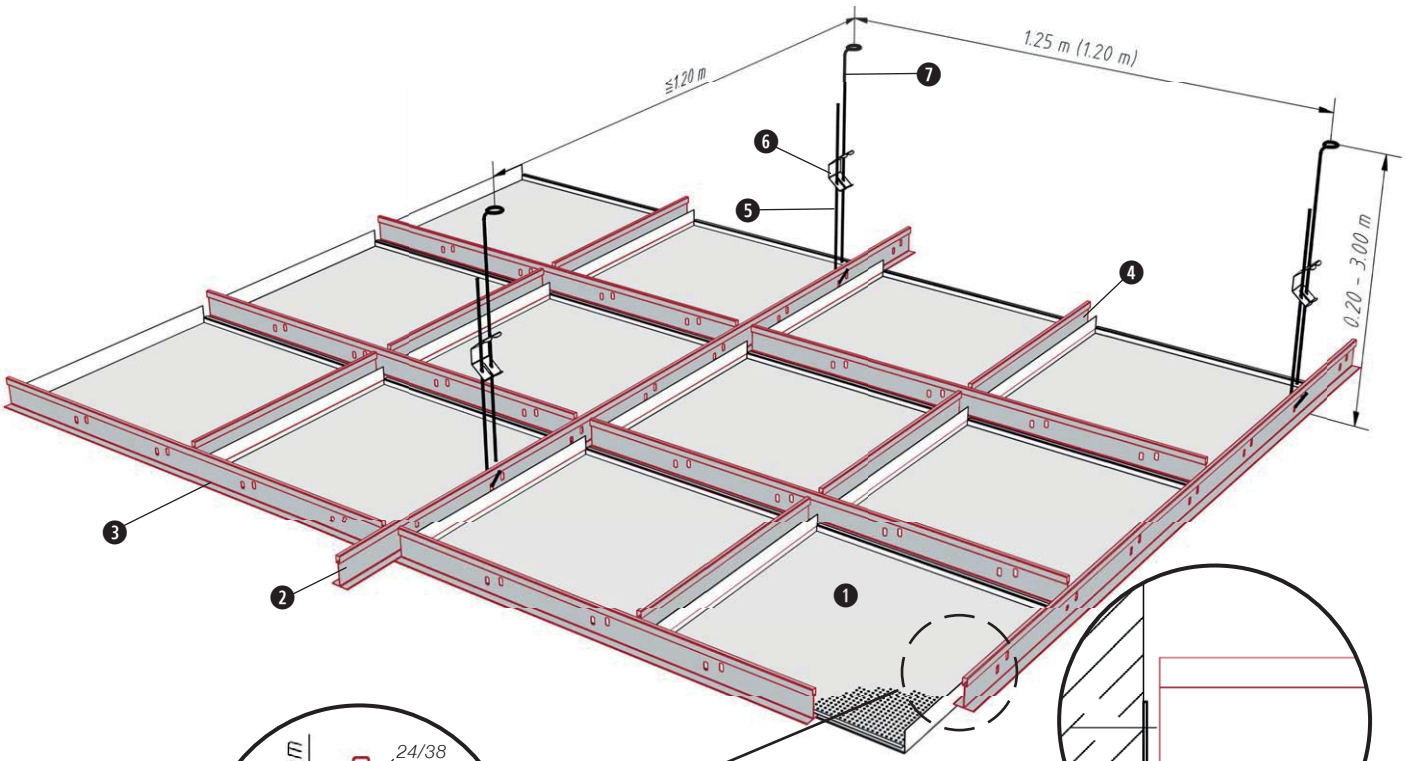
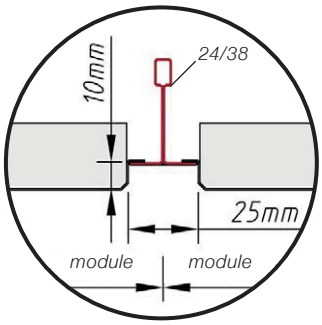
FURAL Acoustic Ceilings
Square tiles - lay-in system

Lay-in system for rail T24 - semi-concealed (HV)





wall connection
with SFL 10/15

Only tiles with accurately bent edges ensure a harmonious visual impression of the entire ceiling.

Installation

Distance between fixing points according to the sketch

Ceiling weight per m²	aluminium app. 5 kg steel app. 8 kg
further instructions:	p. 43 and p. 76-77

Standard components

required: KQV 3.1.0.1 T24

		Module 625		Module 600	
Item	Designation	Rail T24	Units /m²	Rail T24	Units/m²
❶	Semi-concealed (HV) tile	600 mm	2.56	575 mm	2.78
❷	T support rail	L=3750 mm	0.21	L=3600 mm	0.23
❸	T cross rail	L=1250 mm	1.28	L=1200 mm	1.39
❹	T cross rail	L= 625 mm	1.28	L= 600 mm	1.39
❺	Suspension wire with hook		0.67		0.70
❻	Spring bracket		0.67		0.70
❼	Suspension wire with loop		0.67		0.70

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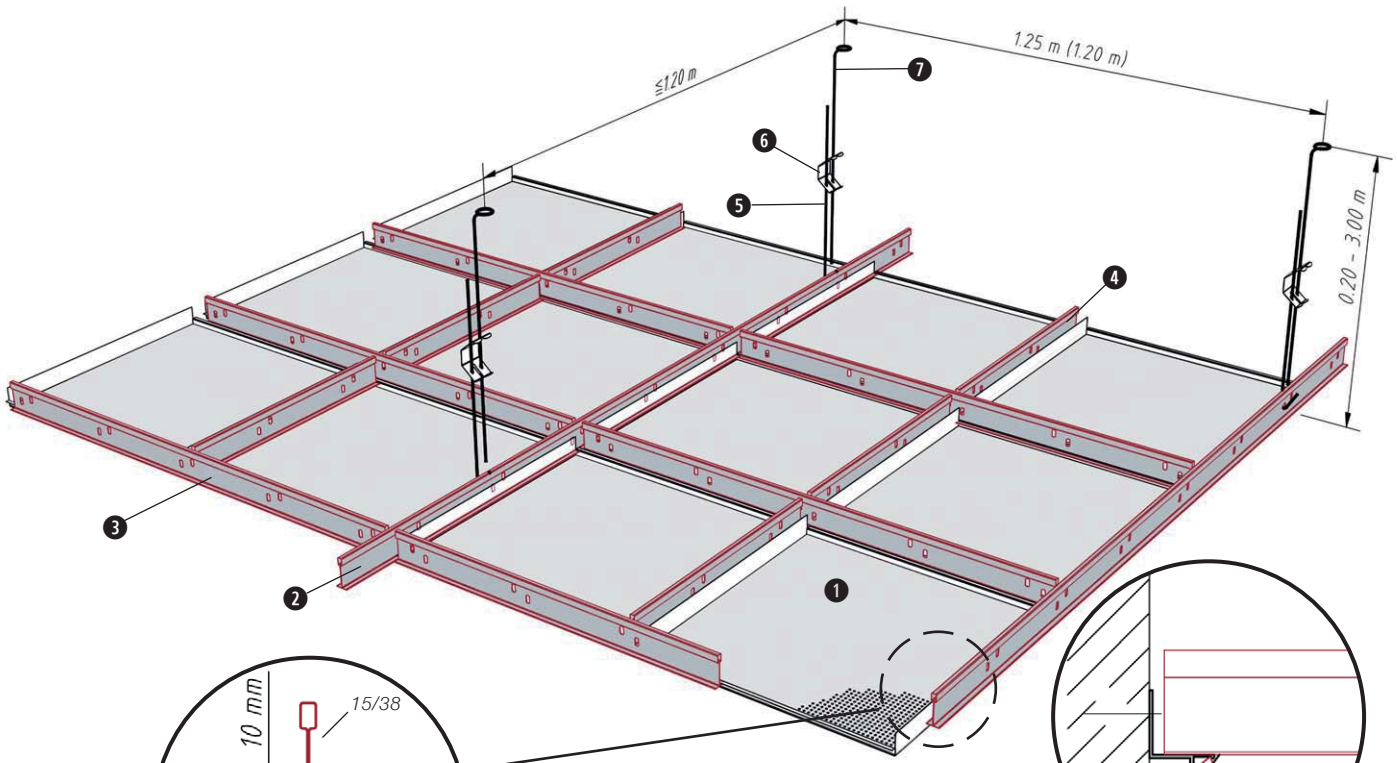
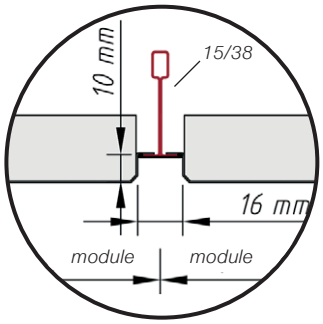
FURAL Acoustic Ceilings
Square tiles - lay-in system

Lay-in system for rail T 15 - semi-concealed (HV)





wall connection
with SFL 10/15

Installation

Distance between fixing points according to the sketch

Ceiling weight per m²	aluminium app. 5 kg
	steel app. 8 kg
further instructions:	p. 43 and p. 76-77

Somewhat finer joints with precisely fitting tiles.

Standard components
required: KQV 3.1.0.1 T15 — Module 600

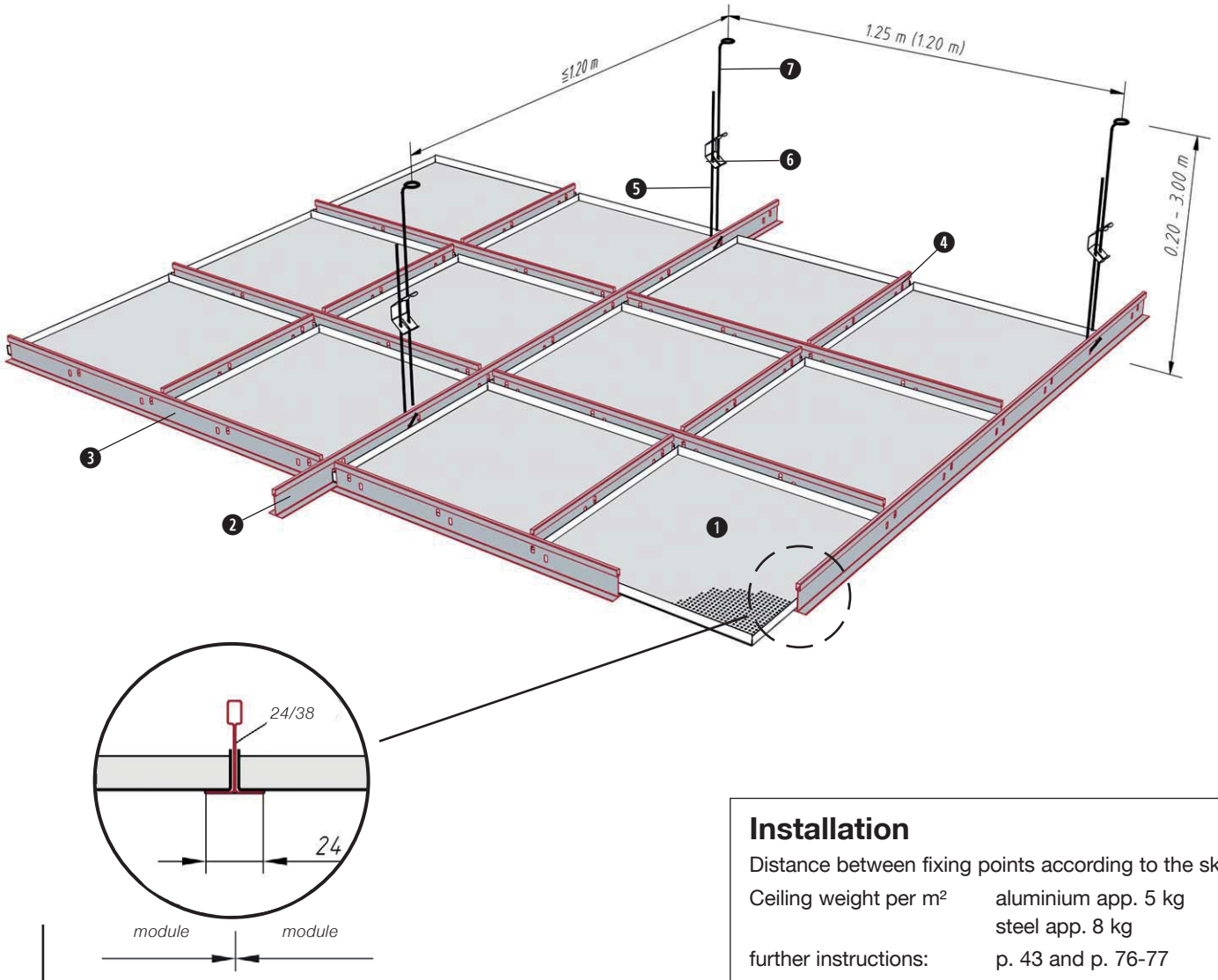
Item	Designation	Rail T15	Units/m²
❶	Semi-concealed (HV) tile	584 mm	2.78
❷	T support rail	L=3600 mm	0.23
❸	T cross rail	L=1200 mm	1.39
❹	T cross rail	L= 600 mm	1.39
❺	Suspension wire with hook		0.70
❻	Spring bracket		0.70
❼	Suspension wire with loop		0.70

KQE 3.1.0.1 T24

FURAL® Acoustic Ceilings

Square tiles - lay-in system

Lay-in system for rail T 24 - level tiles



A solution of timeless elegance.

Installation

Distance between fixing points according to the sketch

Ceiling weight per m²	aluminium app. 5 kg steel app. 8 kg
further instructions:	p. 43 and p. 76-77

Standard components required: KQE 3.1.0.1 T24

Item	Designation	Module 625 Rail T24	Module 625 Units/m²	Module 600 Rail T24	Module 600 Units/m²
❶	Lay-in tile	620 mm	2.56	595 mm	2.78
❷	T support rail	L=3750 mm	0.21	L=3600 mm	0.23
❸	T cross rail	L=1250 mm	1.28	L=1200 mm	1.39
❹	T cross rail	L= 625 mm	1.28	L= 600 mm	1.39
❺	Suspension wire with hook		0.67		0.70
❻	Spring bracket		0.67		0.70
❼	Suspension wire with loop		0.67		0.70

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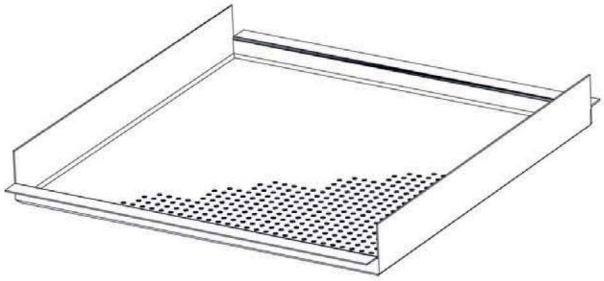
Bemagger

FURAL Acoustic Ceilings

Perforation margins

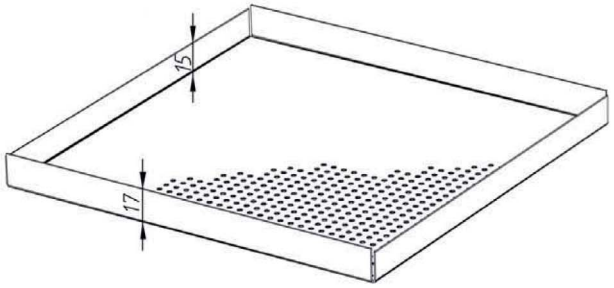
for lay-in system

KQV

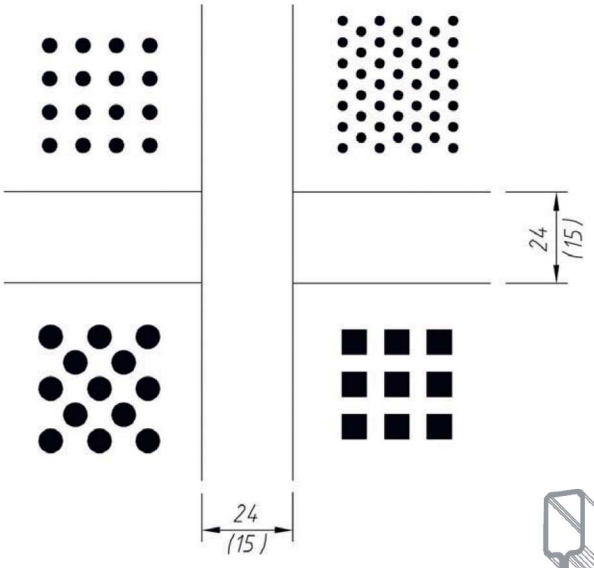


Module	Format
KQV 625	600 (T24) with bevel
KQV 600	575 (T24) with bevel
KQV 600	584 (T15) with bevel
KQV 625	600 (T24) sharp edged

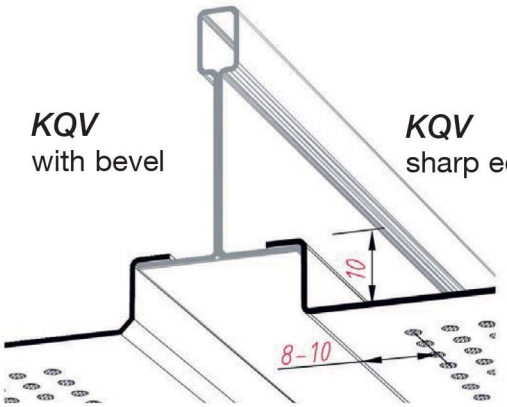
KQE



Module	Format
KQE 625	620 (T24)
KQE 600	595 (T24)



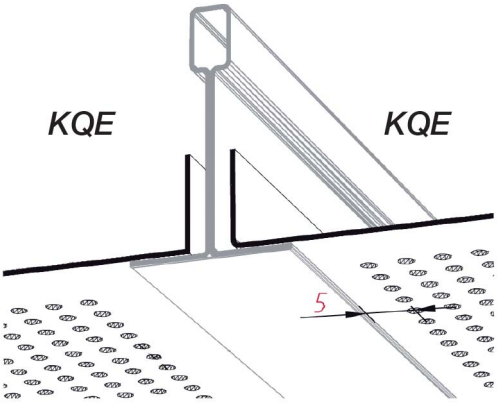
KQV
with bevel



KQV
sharp edged

KQE

KQE



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FURAL Acoustic Ceilings
Lay-in system

Suspension element installation
• Quick suspension element
• Nonius suspension
Support spacing:
- According to respective system description (page 38 – 42)

Fastening materials:
- Use only fasteners suitable for the type of substrate and, where appropriate, with the necessary building authority approval

Tools:
- Hammer drill (solid concrete), power drill
- Depending on rawl plug and bolt types, hammer and/or spanners

Installation procedure:
- Check whether any inbuilt parts (such as ventilation ducts, etc.) are installed too low in the ceiling cavity – if so, discuss with site manager
- First mark suspension element position on the raw ceiling with a chalk line or laser and tape measure
- Drill hole and insert rawl plug, fasten suspension element with bolt in rawl plug
- Adjust suspension elements roughly to the required height

T-rail installation
- Normally, always install the T-rail in a longitudinal direction (supporting rail) parallel to the room‘s long side (with strip lighting also always parallel to the strip light‘s long side)
- Hook in the transverse rails with module spacing
- Now adjust the suspension elements precisely to the ceiling height

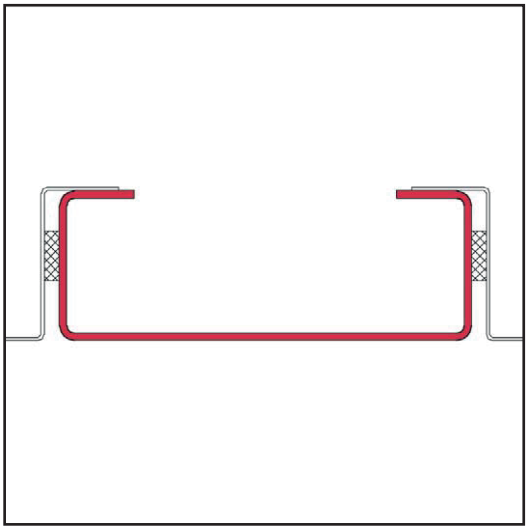
Tile installation
- Unpack and install the tiles - always wear ceiling installer gloves when working in order to avoid soiling
- Always install the first complete row of tiles on the longer side of the room and check whether the tile edges are in line and run parallel to the wall. Mark the exact tile edge with a line tied from wall to wall or with a rotating laser
- Install the cut tiles in the open space remaining between the wall and the first complete row of tiles, and then install the next complete row of tiles, etc.
- For the cut tiles, measure the distance from the edge of the tile to the front edge of the edge profile and add + 15 mm for the support - this is the cutting dimension
- Cut the tile to size using an electric nibbler or sheet metal shears
- Push in the cut tile at a slight angle from below between the upper edge of the edge bracket and the lower edge of the trimming, turn the front edge of the cut tile also to a slight angle relative to the front edge of the edge bracket to allow the tile to be pressed in more easily, then press the tile web into the T-rail
- In the corner of the room, always install the corner tile with two cut sides first, then the cut tile alongside the corner tile

Tile removal
- Lift out the tiles easily, without using tools, into the ceiling cavity and guide them down through the opening

Information
For variants of the different ceiling systems, see system descriptions in the ceiling manual. Please also note the information regarding the requirements of EN 13964 relating to the CE standard marking on pages 76 – 77.

STRIP GRID SYSTEM

ADVANTAGES:



› A high degree of flexibility

- Adjustment to the construction grid
- Incorporation of partition walls
- Can be upgraded to meet strict longitudinal sound absorption requirements

› Convenient installation:

- No tools required for dismantling
- Minimum suspension height is possible

› Visual advantages:

- Tile- and strip grid sections are precisely aligned
- Uniform coating of all visible components

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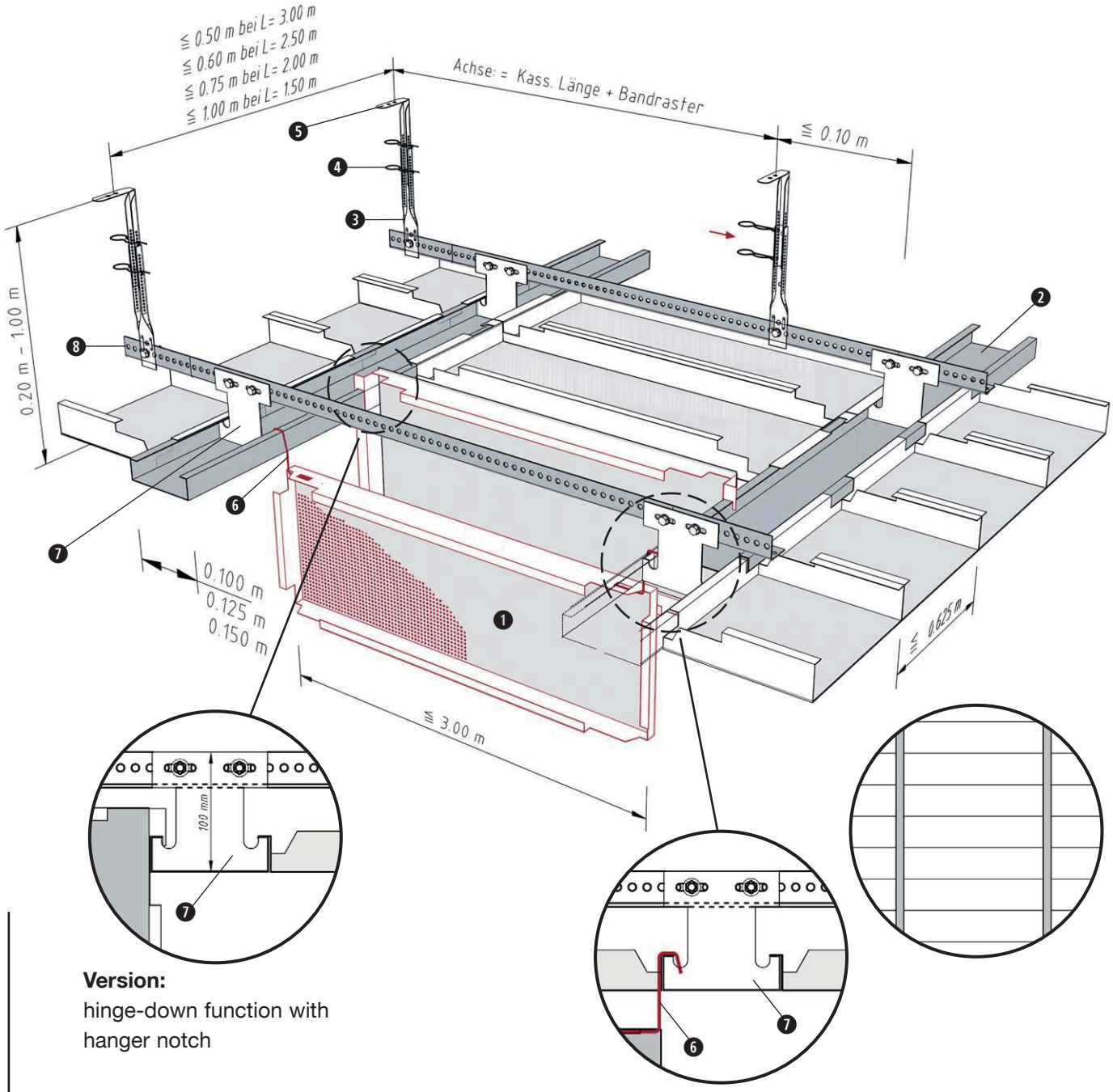
KLB
5.2.1.2 Längs

FURAL Acoustic Ceilings
Long span tiles – strip grid system

Longitudinal strip grid with double grid



Version:
hinge-down function with
hanger notch

The only strip grid ceiling with hinged tiles.

1. Strip grid tile
2. Main runner (strip grid)
3. Lower nonius
4. Securing pin
5. Upper nonius
6. DOOR wire bracket
7. Grid element hanger
8. Grid bracket 30/30

Installation

Distance between fixing points according to the sketch

Ceiling weight per m²	steel app. 10 kg
further instructions:	p. 51 and p. 76-77

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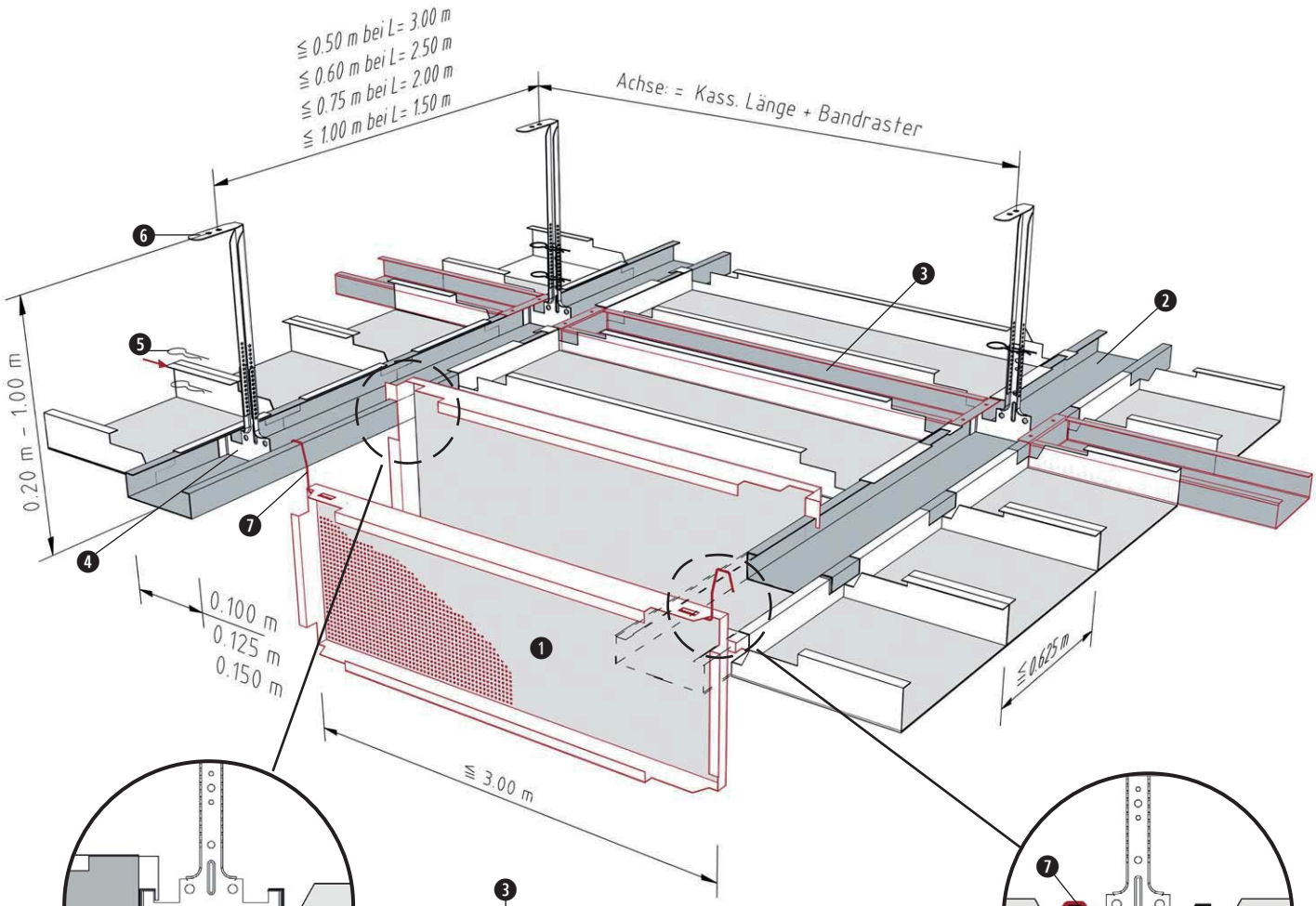
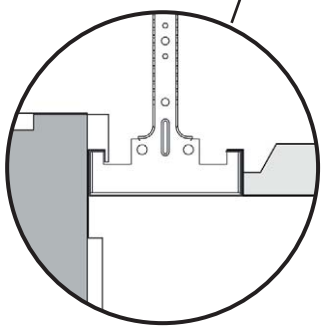
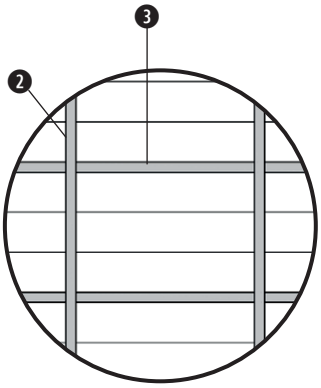
FURAL® Acoustic Ceilings

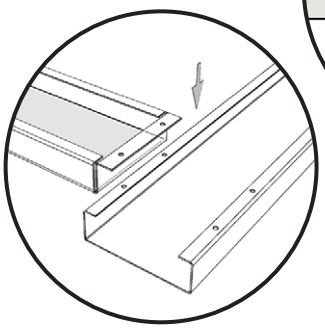
Long span tiles – strip grid system

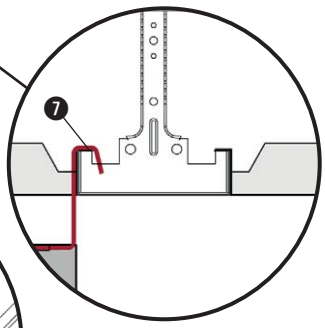
Cross strip grid without double grid











Version:
hinge-down function with hanger notch

The advantages of cross strip grid with hinged tiles.

❶ Strip grid tile
❷ Main runner (strip grid)
❸ Secondary runner (strip grid)
❹ Lower nonius for strip grid
❺ Securing pin
❻ Upper nonius
❼ DOOR wire bracket

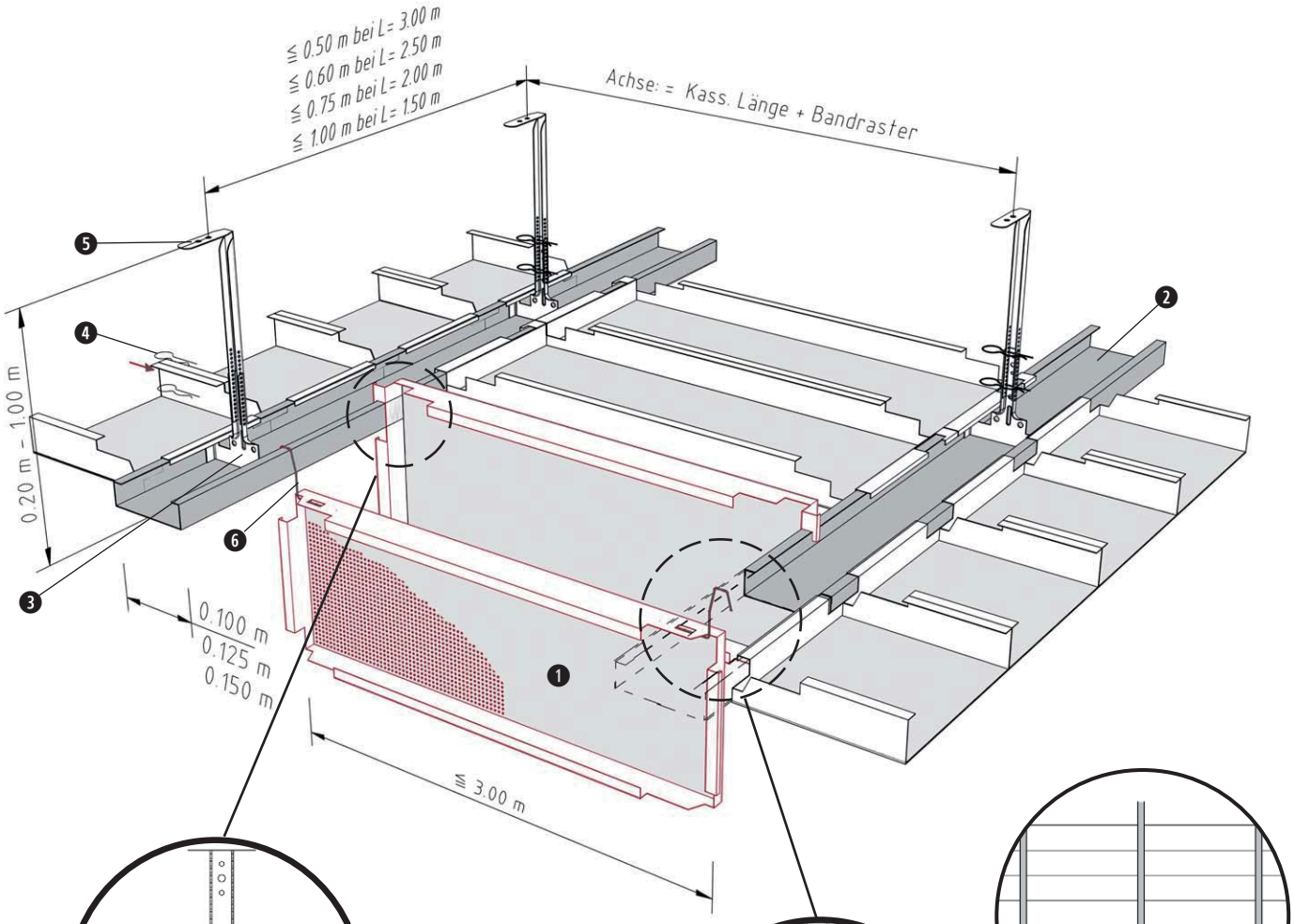
Installation

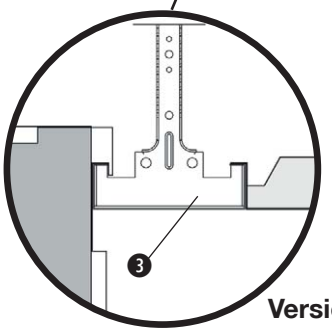
Distance between fixing points according to the sketch
Ceiling weight per m² steel app. 10 kg
further instructions: p. 51 and p. 76-77

KLB
5.2.0.2 Längs

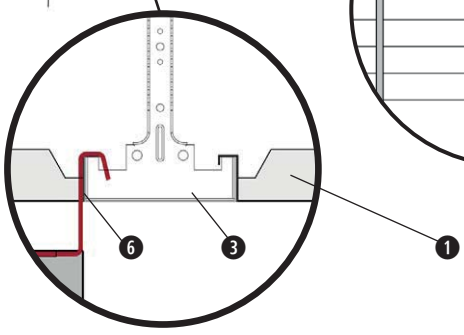
FURAL Acoustic Ceilings
Long span tiles – strip grid system

Longitudinal strip grid with French Hook (Fire stability see NBN 713.020)





Version:
hinge-down function with
hanger notch



The strip grid ceiling with
French Hook for more stability.

Installation

Distance between fixing points according to the sketch

Ceiling weight per m²	steel app. 10 kg
further instructions:	p. 51 and p. 76-77

1. Strip grid tile with French Hook
2. Main runner (strip grid)
3. Lower nonius for strip grid
4. Securing pin
5. Upper nonius
6. DOOR wire bracket

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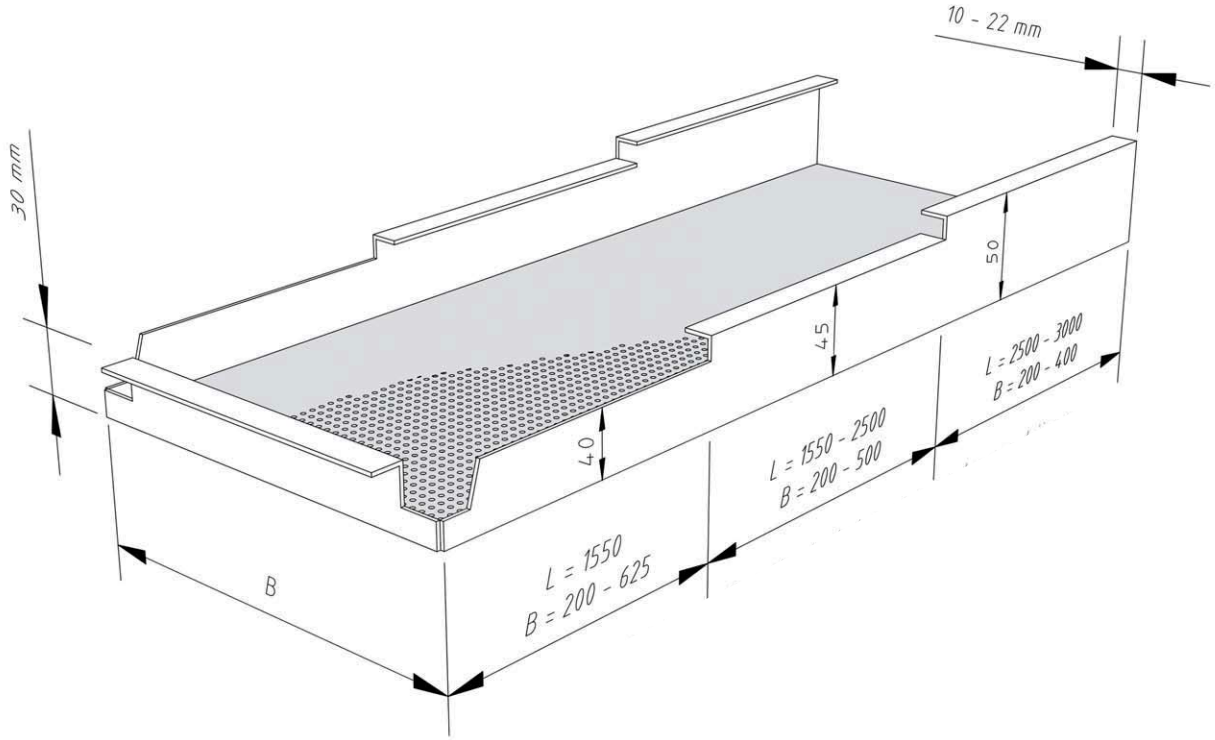
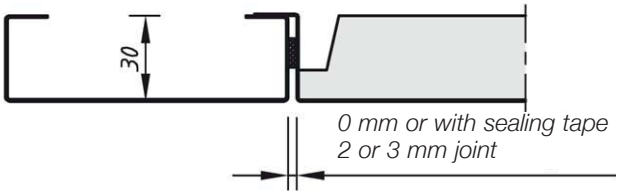
for strip grid system



Strip grid

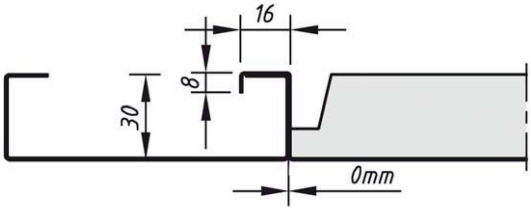
Standard

grid element Tile front side



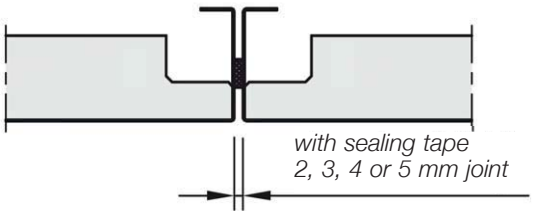
French Hook

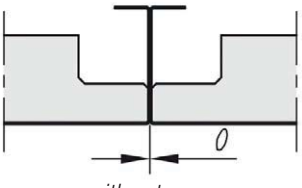
grid element Tile front side



Joints

Tile long side Tile long side

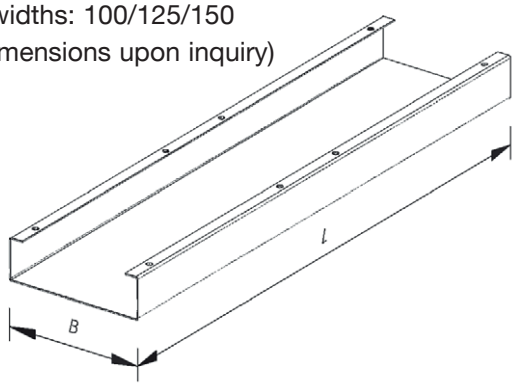




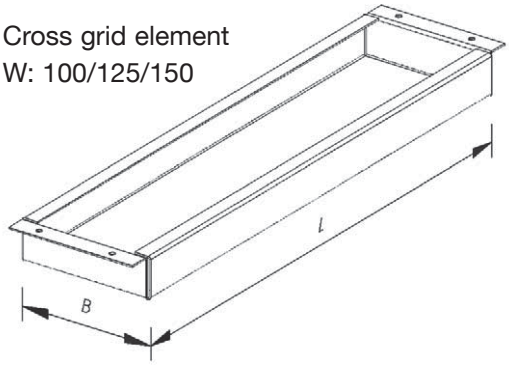
FURAL® Acoustic Ceilings
Joints/Edges/Webs/Strip grid

for strip grid system

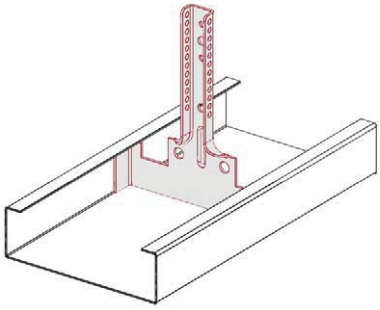
Standard widths: 100/125/150
(Special dimensions upon inquiry)



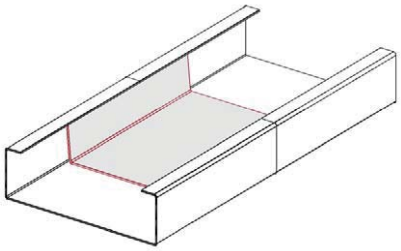
Cross grid element
W: 100/125/150



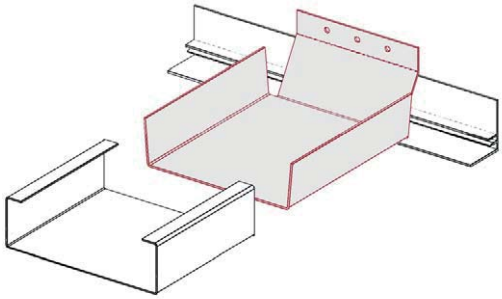
Lower nonius for strip grid
(suitable for the respective
grid element width)



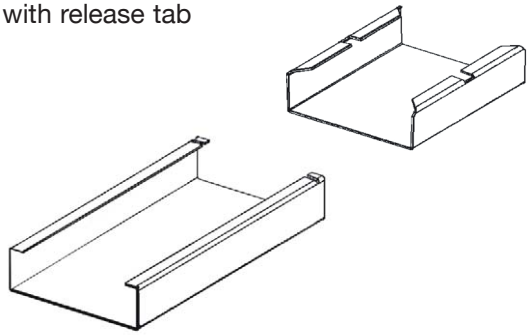
Grid element connector
(suitable for the respective
grid element width)



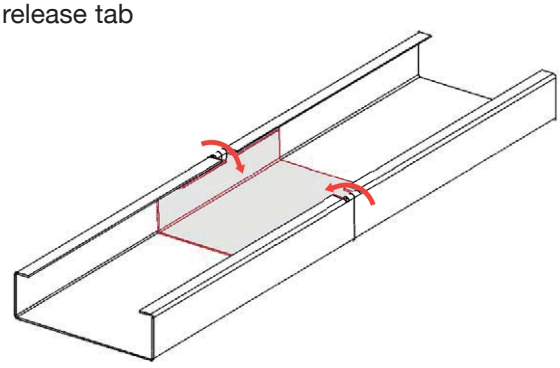
Grid element wall mounting set
(suitable for the respective
grid element width)



Optional:
Grid element and grid element connector
with release tab



To lock the grid element push down the
release tab



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FURAL® Acoustic Ceilings
Strip grid system

Suspension element installation

• Nonius suspension

Support spacing:

- According to respective system description (page 46 – 48)

Fastening materials:

- Use only fasteners suitable for the type of substrate and, where appropriate, with the necessary building authority approval

Tools:

- Hammer drill (solid concrete), power drill
- Depending on rawl plug and bolt types, hammer and/or spanners

Installation procedure:

- Check whether any inbuilt parts (such as ventilation ducts, etc.) are installed too low in the ceiling cavity – if so, discuss with site manager
- First mark suspension element position on the raw ceiling with a chalk line or laser and tape measure
- Drill hole and insert rawl plug, fasten suspension element with bolt in rawl plug
- Adjust suspension elements roughly to the required height

Strip grid installation

• Longitudinal strip grid

- Attach single-rail grid at nonius hangers using M6 x 20 mm bolts (including washers) and install strip grid suspension elements, longitudinal strip grid direction normally at right angles to the façade

• Cross-strip grid

- Install longitudinal strip grid on strip grid using lower nonius, longitudinal strip grid direction normally at right angles to the façade
- Place cross-strip grid with Z-edge-fold on longitudinal strip grid and screw or rivet in place

• Strip grids – general

- Use the strip grid coupling at strip grid butt joints
- Use wall shoe at the end of the profile (protection against twisting)
- Provide sufficient transverse stiffening for the strip grid, depending on the suspension height
- Now adjust the suspension elements precisely to the ceiling height

Tile installation

- Unpack and install the tiles - always wear ceiling installer gloves when working in order to avoid soiling
- Always install the first complete row of tiles on the longer side of the room and check whether the tile edges are in line and run parallel to the wall. Mark the exact tile edge with a line tied from wall to wall or with a rotating laser, ensuring that the tiles do not interlock at the corners – install precisely corner to corner
- Install the cut tiles in the open space remaining between the wall and the first complete row of tiles, and then install the next complete row of tiles, etc.
- For the cut tiles, measure the distance from the edge of the tile to the front edge of the edge profile and add + 15 mm for the support - this is the cutting dimension
- Cut the tile to size using an electric nibbler or sheet metal shears
- Push in the cut tile at a slight angle from above between the upper edge of the edge bracket and the lower edge of the trimming, turn the front edge of the cut tile also to a slight angle relative to the front edge of the edge bracket to allow the tile to be pressed in more easily, then rest the tile web on the strip grid
- In the corner of the room, always install the corner tile with two cut sides first, then the cut tile alongside the corner tile

Tile removal

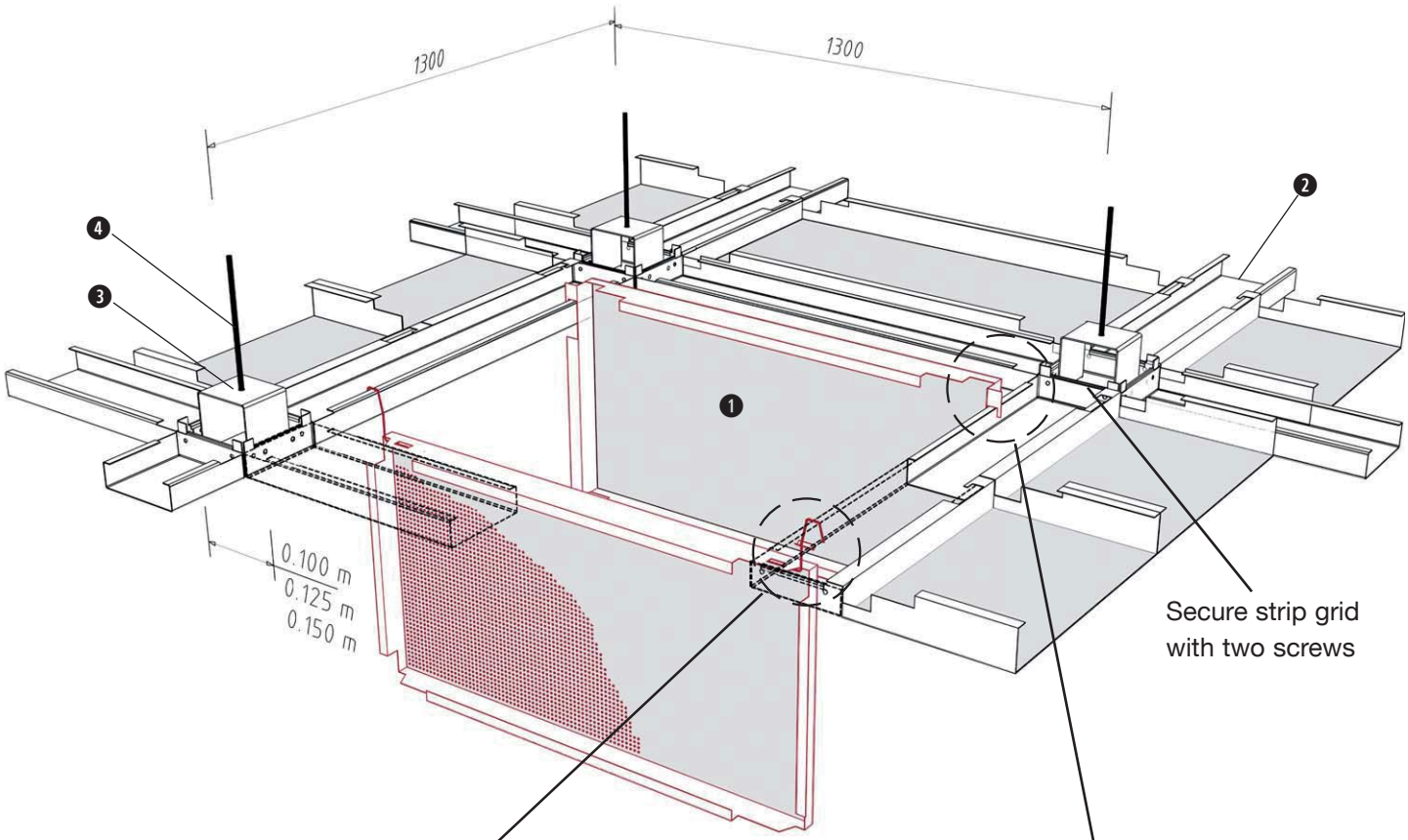
- Lift out the front end of the tile easily, without using tools, over the strip grid into the ceiling cavity and guide it down through the opening

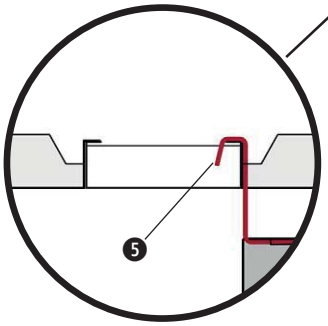
Information

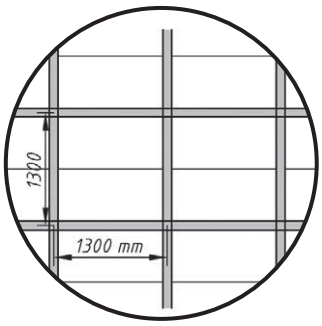
For variants of the different ceiling systems, see system descriptions in the ceiling manual. Please also note the information regarding the requirements of EN 13964 relating to the CE standard marking on pages 76 – 77.

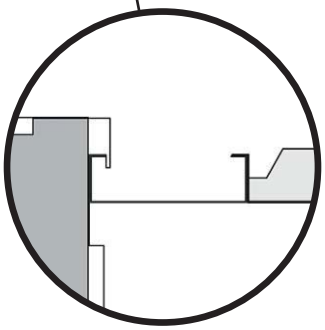
FURAL Acoustic Ceilings
Long span tiles – strip grid system

Node strip grid









Version:
hinge-down function with
hanger notch

Installation

Distance between fixing points according to the sketch

Ceiling weight per m²	steel app. 10 kg
further instructions:	p. 51 and p. 76-77

1. Strip grid tile
2. Main runner (strip grid)
3. Node
4. Threaded rod M6
5. DOOR wire bracket

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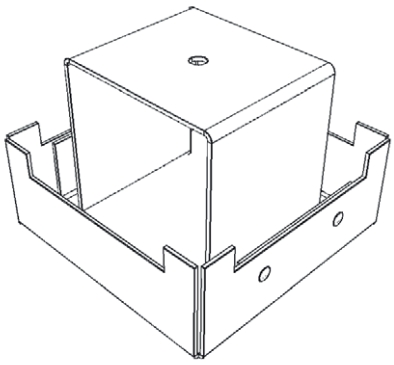
FURAL Acoustic Ceilings

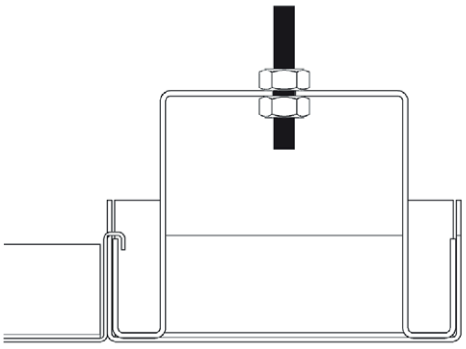
Long span tiles – strip grid system

Node strip grid

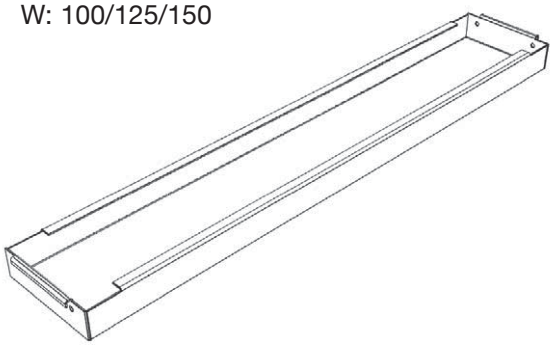
Node



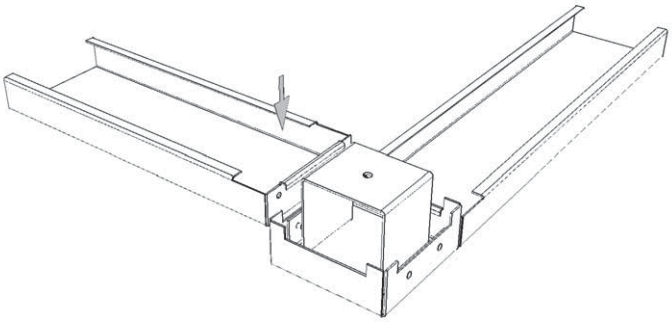
Suspension with threaded rod M6



Standard widths with edgefolding for node
W: 100/125/150

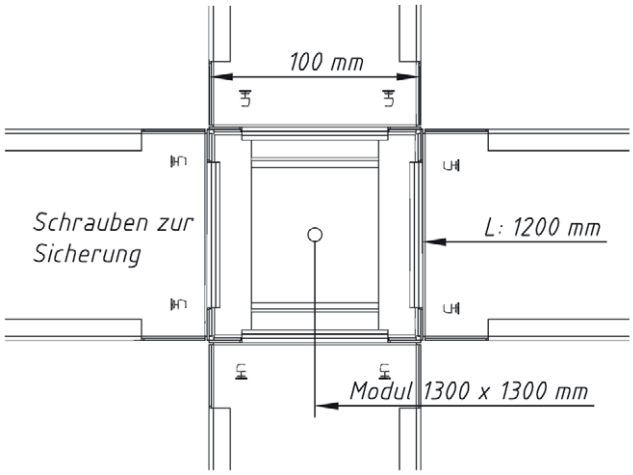


Hang in grid element on the node sides and secure with 2 screws



Depending on the axial dimension, main runners as well as the cross runners separately centered must be in case they are loaded. For this purpose, a grid element wall mounting can be used.

The dimensioned ceiling module here (1300 x 1300 mm) serves as an example. Other modules are possible in accordance with our production options.

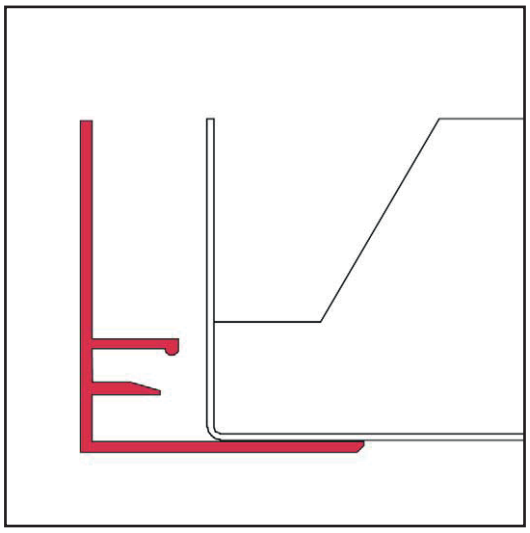


Further installation instructions
see page 51


06

SUPPORT SYSTEM

ADVANTAGES:



A high degree of flexibility:

- Available on short notice
- Ideal adaptation to special features of the building structure

Excellent visual impression:

- Support on existing angles
- Large selection of **FURAL**-(shadow) wall mounting sections

Most convenient installation:

- Easy even without knowledge of the system

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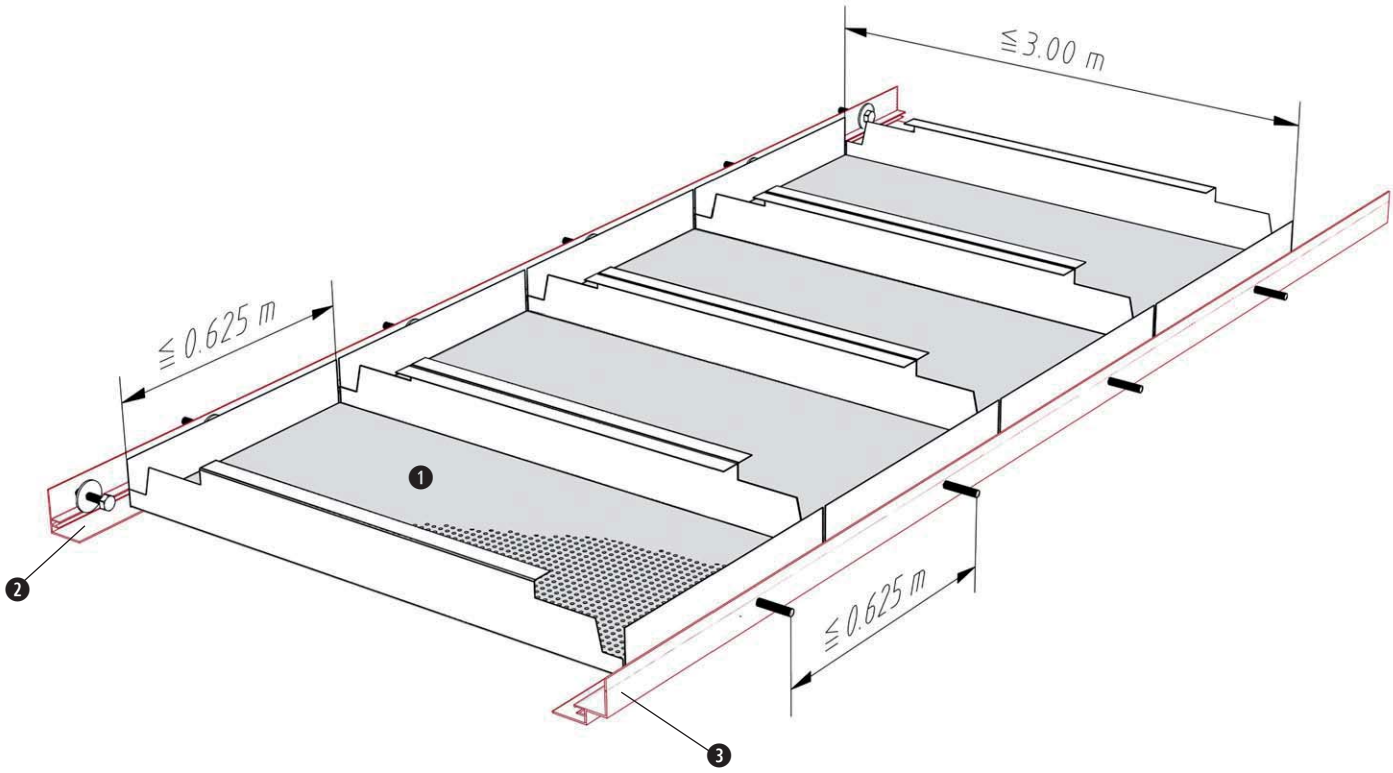
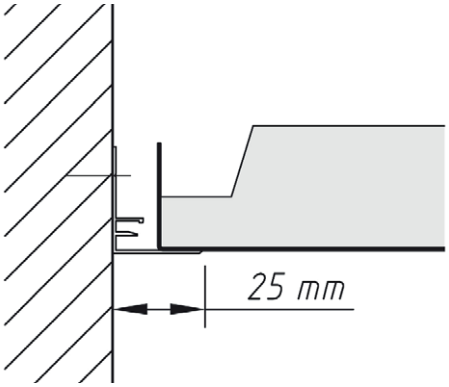
www.fural.com, fural@fural.at, fax: -11
+43 - (0) 7612 - 74851 - 0

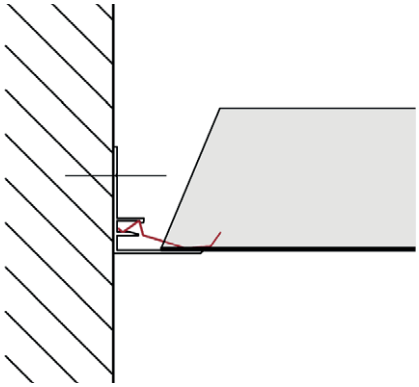
FURAL Acoustic Ceilings
Support system

Support on edge profile





Tile support for entire tile



Tile support for cut-off tile

Installation

Distance between fixing points are ≤ 625 mm

Ceiling weight per m²	alu app. 3 kg, steel app. 5 kg
max. size:	L = 3,000 mm, B = 625 mm
further instructions:	p. 60 and p. 76-77

❶ Tile
❷ Trimming section
❸ Shadow trimming section

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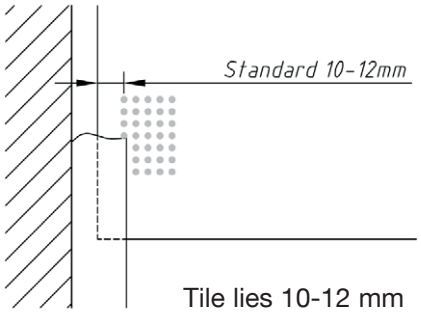
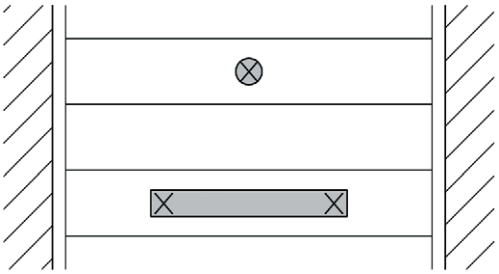
FURAL Acoustic Ceilings
Support system

Support on edge profile

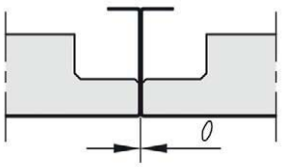


Tile lies 10-12 mm
on edge profile

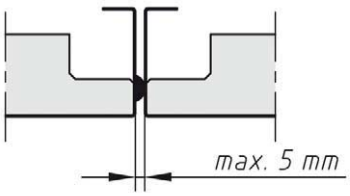


Installation of light fittings: (Direct suspension)

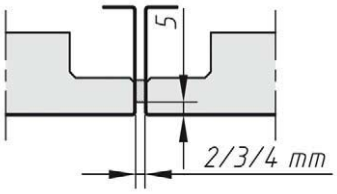
Longitudinal webs



without gap

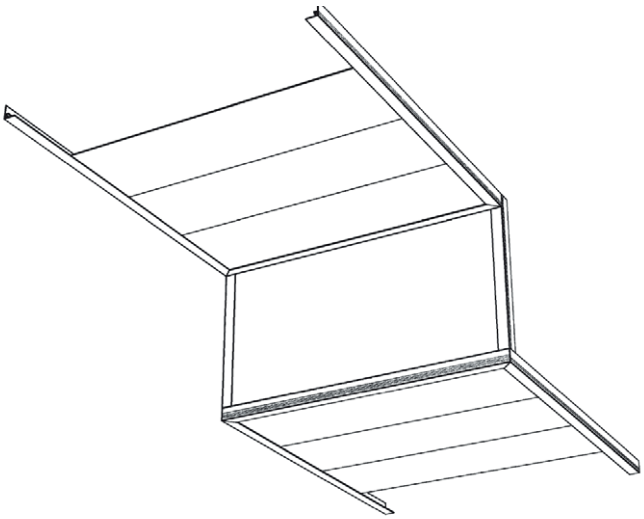


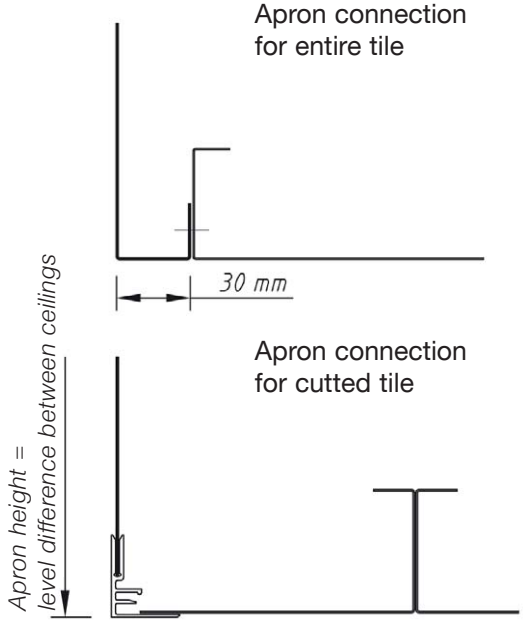
distance embossing



sealing tape

Apron for difference in ceiling level

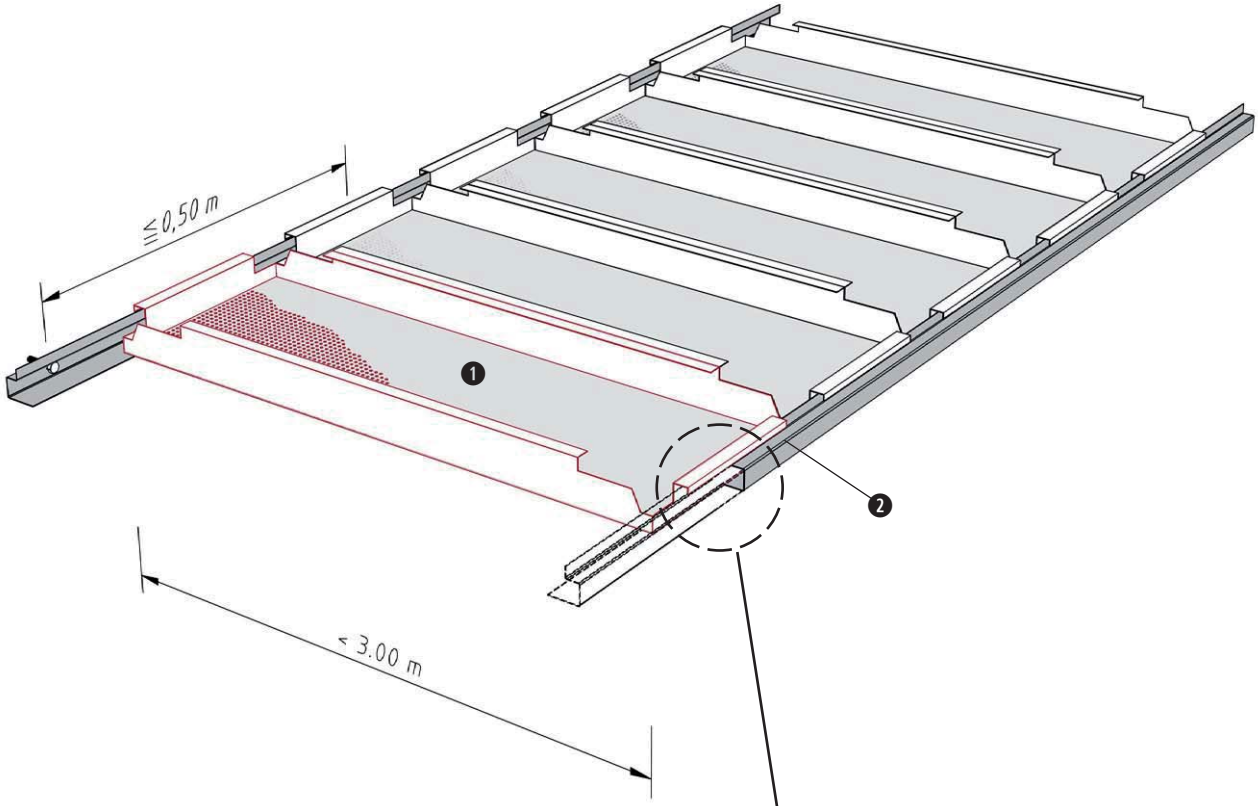




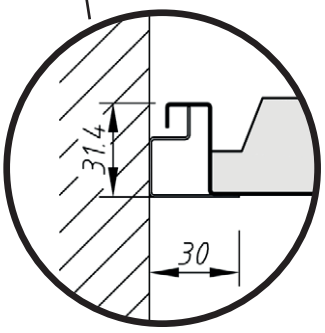
KLE
SF

FURAL® Acoustic Ceilings
Support system

Support on SF-trimming profile (fire stability according to NBN 713.020)



Support on SF-trimming profile
of 0.7 mm sheet steel



Installation

Distance between fixing points are ≤ 500 mm

Ceiling weight per m²	steel app. 5 kg
max. size:	L = 3,000 mm, B = 600 mm
further instructions:	p. 60 and p. 76-77

1. Tile
2. SF-trimming profile

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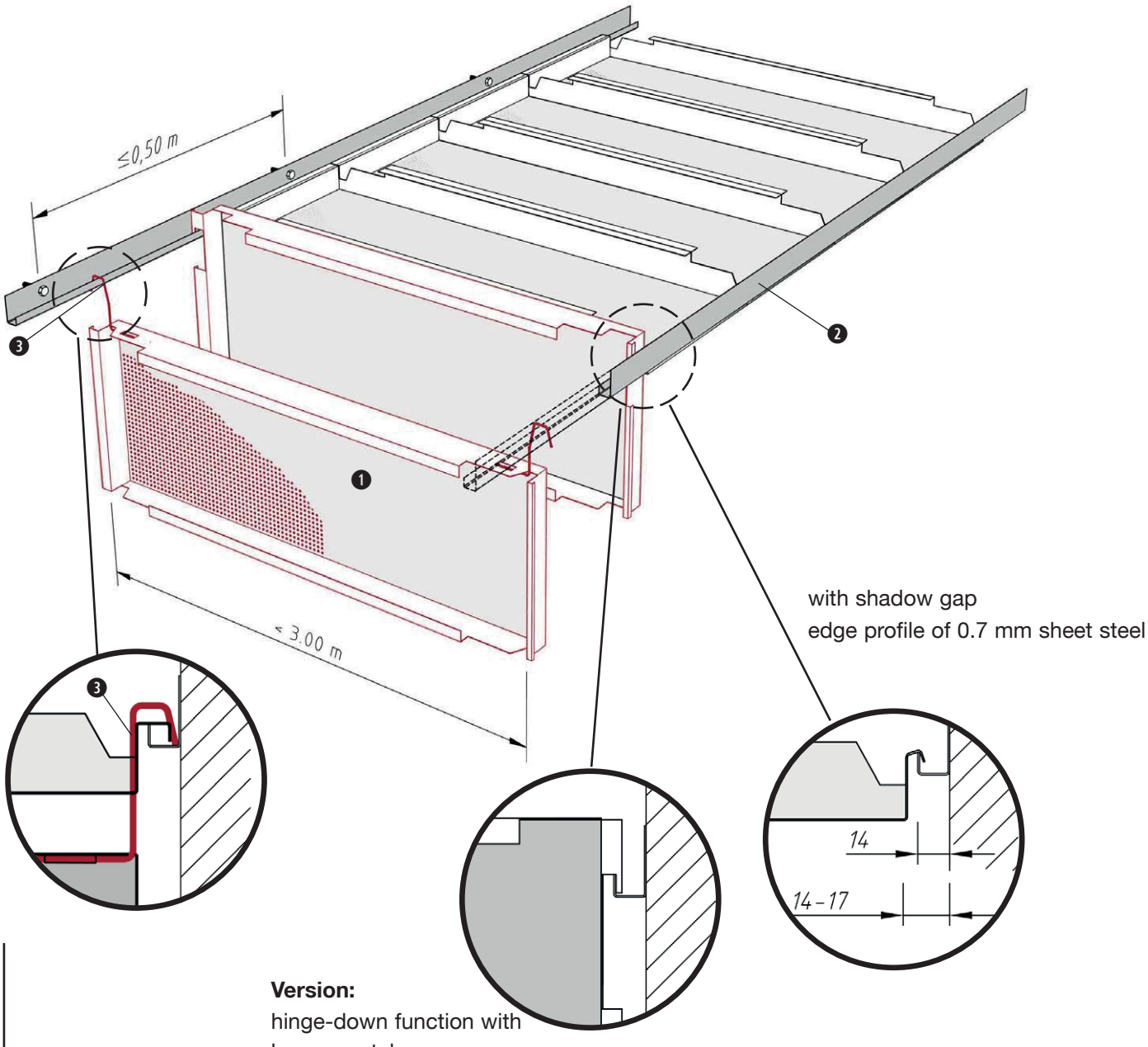
FURAL® Acoustic Ceilings
Support system

Support on SJ-trimming profile (fire stability according to NBN 713.020)



Version:
hinge-down function with
hanger notch

Installation

Distance between fixing points are ≤ 500 mm

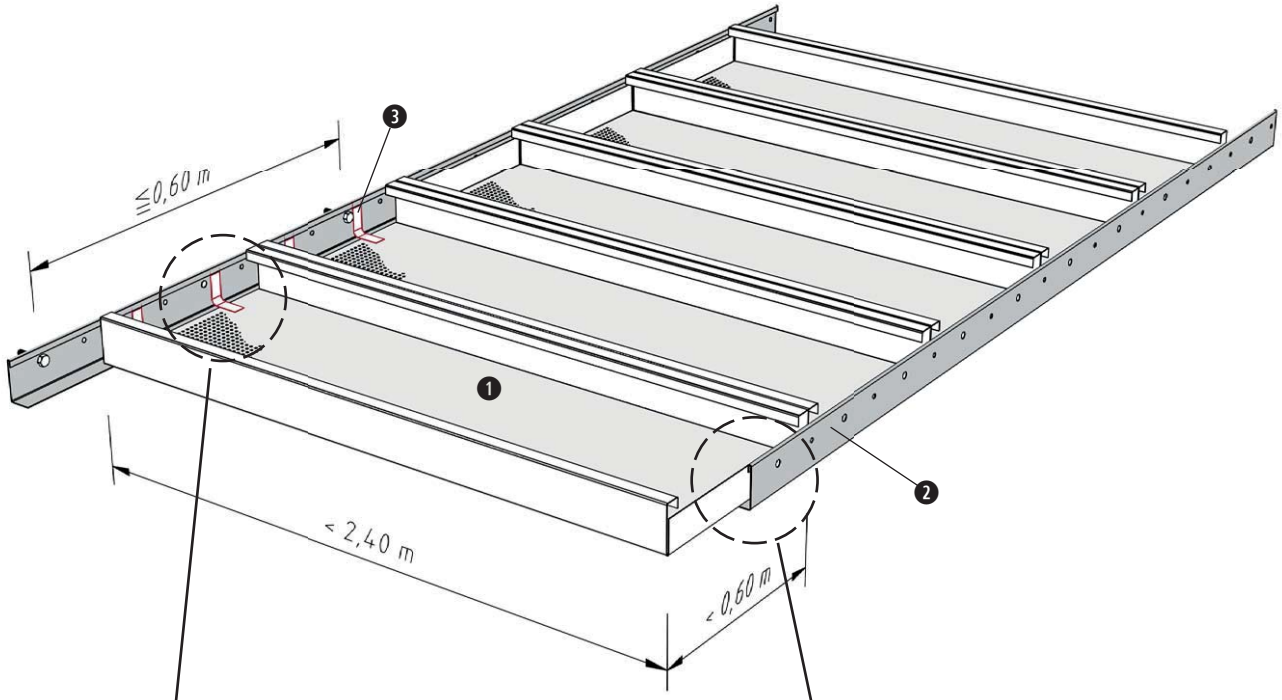
Ceiling weight per m²	steel app. 5 kg
max. size:	L = 3,000 mm, B = 600 mm
further instructions:	p. 60 and p. 76-77

1. Tile
2. SJ-trimming profile 31/14/10
3. DOOR-wire bracket

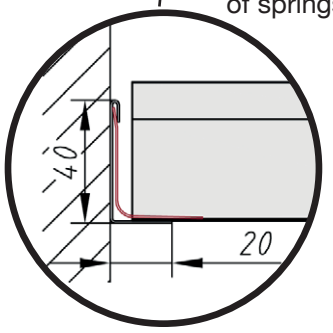
KLE
SL

FURAL Acoustic Ceilings
Support system

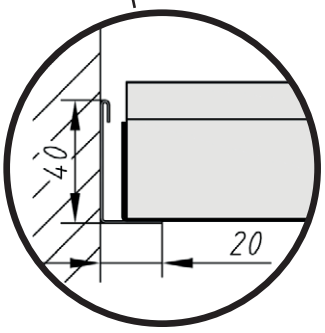
Support on SL-trimming profile (fire stability according to NBN 713.020)



Fix cutted tile with 2 pieces
of springs per tile



Edge profile of 0,75 mm sheet steel
Support for entire tile



Installation

Distance between fixing points are ≤ 600 mm

Ceiling weight per m²	steel app. 5 kg
max. size:	L = 2,400 mm, B = 600 mm
further instructions:	p. 60 and p. 76-77

1. Tile
2. SL-trimming profile
3. Fixing spring for SL-trimming profile

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FURAL Acoustic Ceilings
Support system

Edge profile installation

- Trimming section 30/25 mm
- Shadow trimming section 15/10 mm
- Shadow trimming section 20/20 mm
- Shadow trimming section 25/25 mm
- Shadow trimming section 30/30 mm
- Picture rail 15/10 mm
- Steel edge profile SF, SJ, SL (please observe special
- notes “FIRE STABILITY”)

Support spacing:
- ≤ 625 mm (see ceiling manual, page 71)
- For steel edge profile SF, SJ, SL („FIRE STABILITY“) see system descriptions on page 58, 59, 60

Fastening materials:
- Use only fasteners suitable for the type of substrate and, where appropriate, with the necessary building authority approval

Tools:
- Make horizontal reference height mark for installation with a laser or chalk line
- Cut to length and mitre cut with Ø 220 – 250 mm mitre saw blade with 50 carbide teeth
- Hammer drill (solid concrete), power drill
- Depending on rawl plug and bolt types, hammer and/ or spanners

Fixing springs, trimming and shadow trimming sections, aluminium:
- 6 per linear metre edge profile
- Use with cut tiles
- Press in fixing springs just before installing the cut tiles (for precise position in the trimming section, see ceiling manual, page 71)
- For room corners, use mitre connection

Springs for SL edge profile (“FIRE STABILITY”)
- 2 per tile end face
- Use with cut tiles
- Press in fixing springs just before installing the cut tiles (for precise position in the SL edge profile, see ceiling manual, page 60)

Installation procedure:
- Always make the horizontal reference height mark on the upper edge of the edge profile
  Horizontal reference height = ceiling height + profile height
- Check whether any inbuilt parts (such as ventilation ducts, etc.) are installed too low in the ceiling cavity – if so, discuss with site manager

Tile installation

- Unpack and install the tiles - always wear ceiling installer gloves when working in order to avoid soiling
- Never cut the tiles shorter than the distance from edge profile front edge to edge profile front edge plus 20 mm (applies to trimming and shadow trimming sections, aluminium)
- For SL edge profile („FIRE STABILITY“), from edge profile front edge to edge profile front edge plus 30 mm
- Cut the tile to size using an electric nibbler or sheet metal shears
- Push in the cut tile at a slight angle from above between the upper edge of the edge bracket and the lower edge of the trimming, turn the front edge of the cut tile also to a slight angle relative to the front edge of the edge bracket to allow the tile to be pressed in more easily, then rest the tile web on the edge strip of the parallel wall
- In the corner of the room, always install the corner tile with two cut sides first, then the cut tile alongside the corner tile

Tile removal

- Lift out the tiles easily, without using tools, into the ceiling cavity and guide them down through the opening
- Pay attention to any fixing springs that may be installed

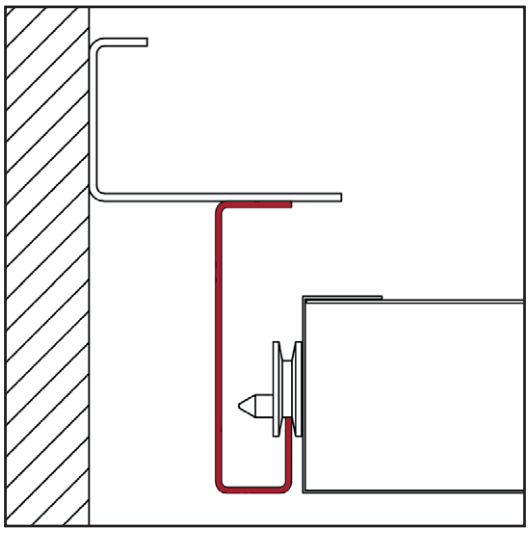
Information

For variants of the different ceiling systems, see system descriptions in the ceiling manual. Please also note the information regarding the requirements of EN 13964 relating to the CE standard marking on pages 76 – 77.


MENDING
BROKEN
HEARTS

SWING OUT / SLIDING CEILINGS

ADVANTAGES:



› Maximum comfort:

- Each tile can be swung out and slid by the use of wheels.
- Large areas can be opened for maintenance or inspection with a twist of the wrist
- You determine the position and size of inspection areas

› Visual advantages:

- These riveted tiled ceilings ensure optimum visual impression, even after repeated dismantling and re-assembling of the ceiling.
- Formats/perforation/colours: a wide variety of design options
- No disruptive inspection doors

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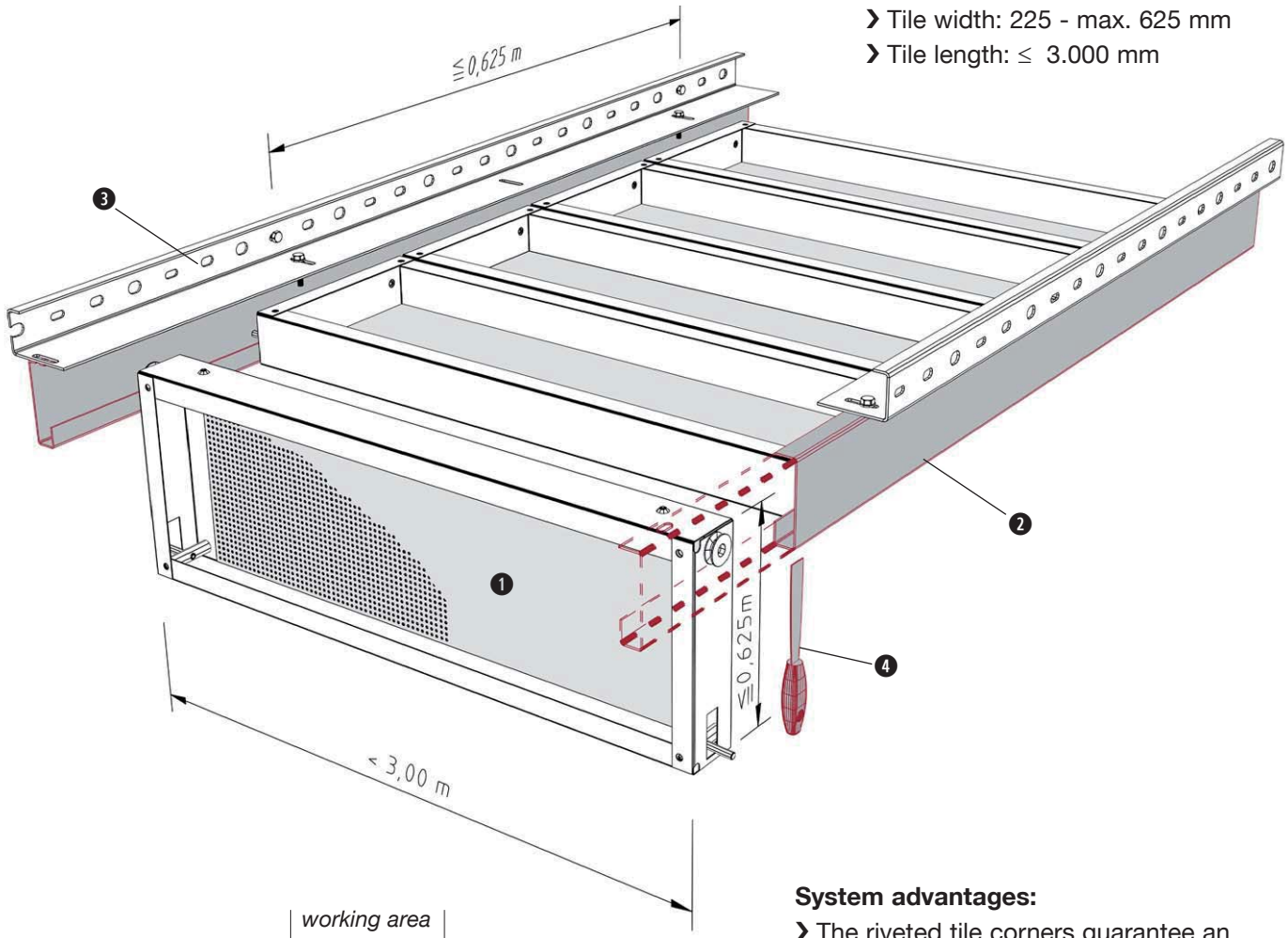
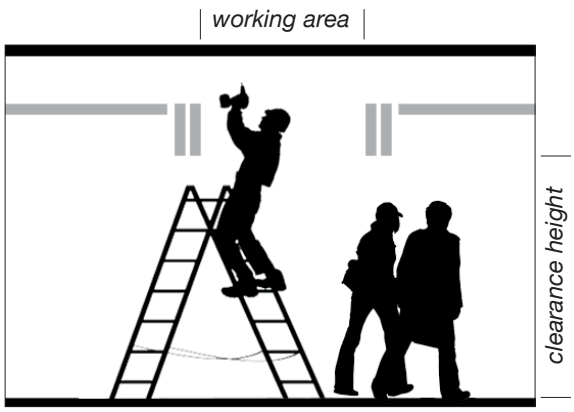
FURAL Acoustic Ceilings
Long span tiles

Long span tile type “SWING”

- Tile width: 225 - max. 625 mm
- Tile length: ≤ 3.000 mm





System advantages:

- The riveted tile corners guarantee an outstanding appearance, even after frequent removal and refitting
- No inspection doors necessary
- Ceiling elements remain in the substructure, therefore no risk of injuring people underneath nor of damaging the ceiling elements
- Undisturbed movement of people / office activity possible even in case of major maintenance work.

Installation

Distance between fixing points is ≤ 625 mm

Ceiling weight per m²	steel app. 7 kg
max. size:	L = 3000 mm, B = 625 mm
further instructions:	p. 67 and p. 76-77

1. Tile type SWING (with 2 twist locks and 2 turning disks)
2. G-support section
3. U-Wall mounting angle
4. Ceiling opener for unlocking the tile with hidden twist lock

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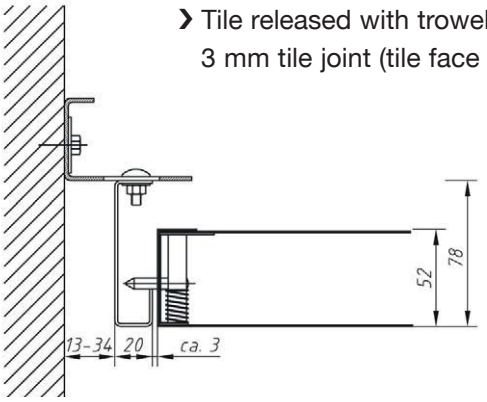
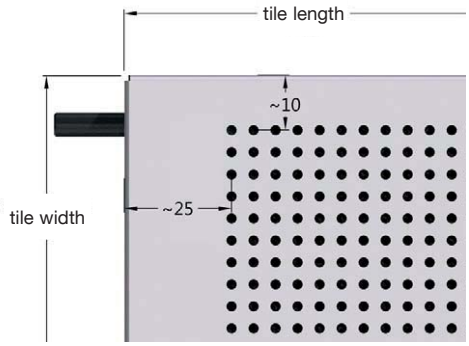
FURAL Acoustic Ceilings
Long span tiles

Versions

Hidden twist lock: **Perfect in form and function**

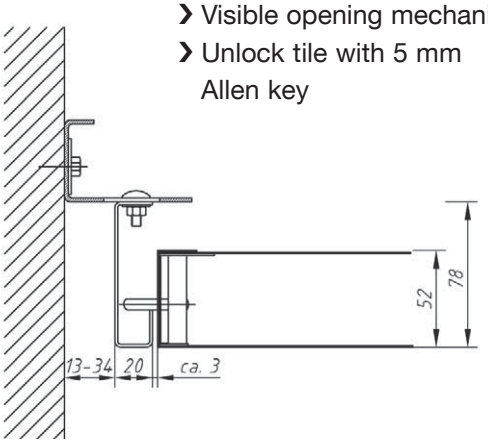
- Hidden opening mechanism
- Tile released with trowel in the 3 mm tile joint (tile face side)

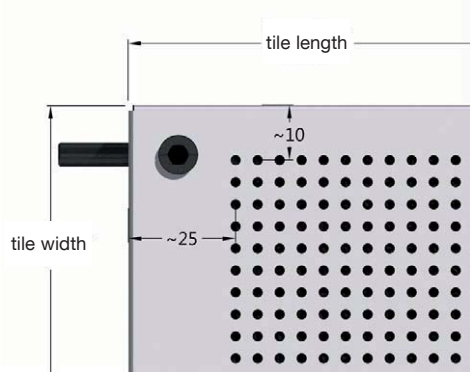




Visible twist lock: **The right rotation**

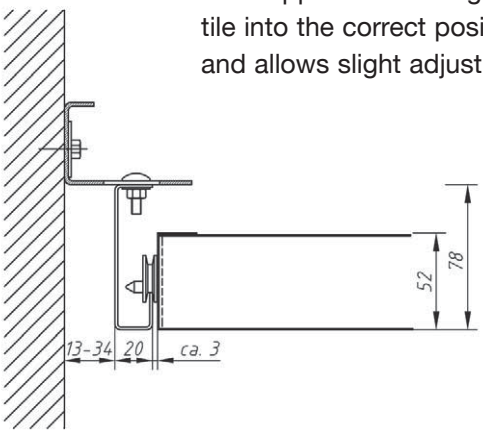
- Visible opening mechanism
- Unlock tile with 5 mm Allen key

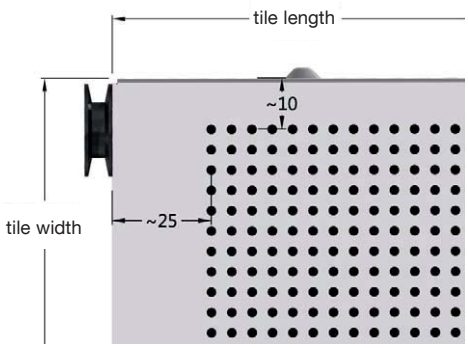




Support roller: **Automatic fixing**

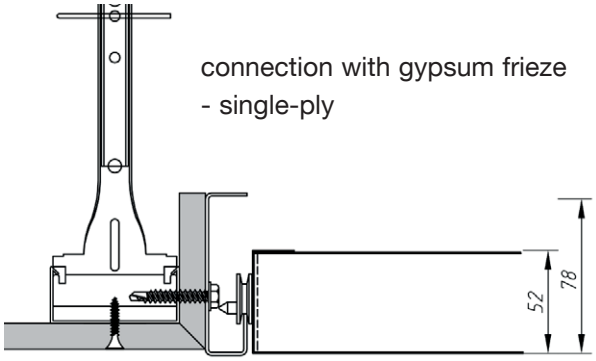
- The support roller brings the tile into the correct position and allows slight adjustment.



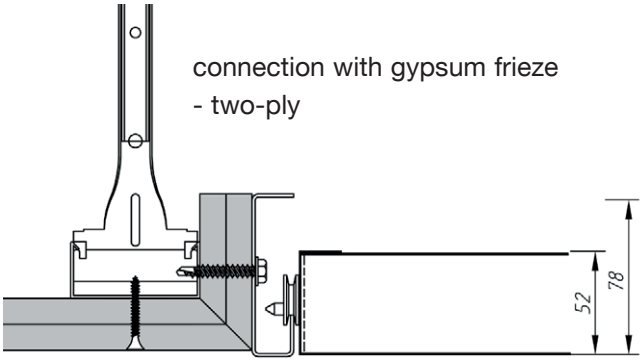


FURAL Acoustic Ceilings
Long span tiles

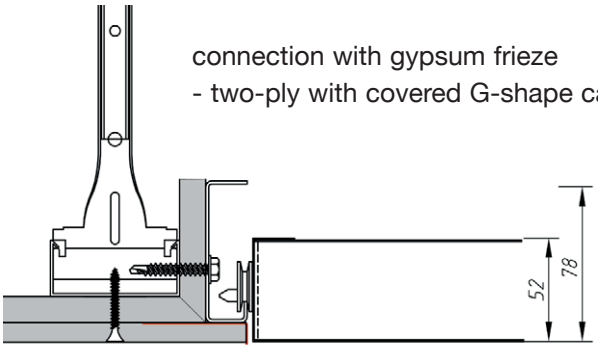
frieze connection



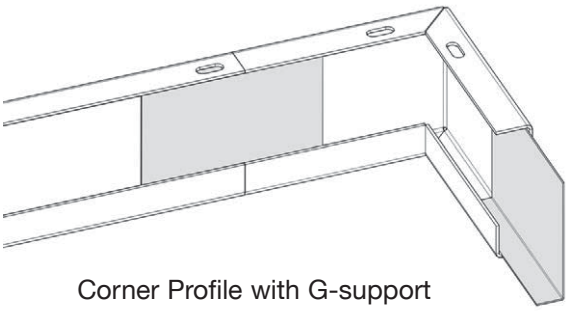
connection with gypsum frieze
- single-ply



connection with gypsum frieze
- two-ply

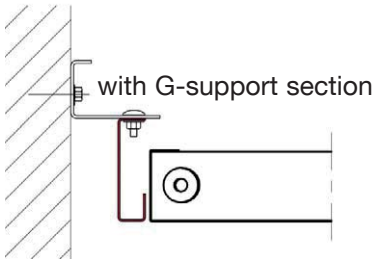


connection with gypsum frieze
- two-ply with covered G-shape carrier

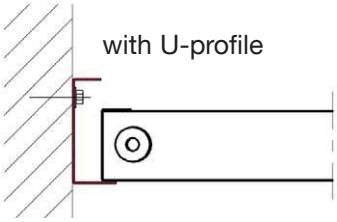


Corner Profile with G-support
section with main runner connector (engagement)

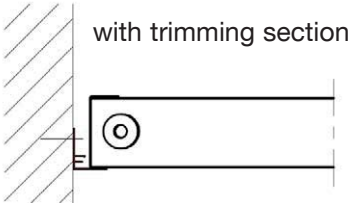
front connection



with G-support section



with U-profile



with trimming section 30/25

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FURAL Acoustic Ceilings
Swing out / Sliding ceilings

U-shaped edge bracket installation

Support spacing:
- According to respective system description ≤ 625 mm (page 64)

Fastening materials:
- Use only fasteners suitable for the type of substrate and, where appropriate, with the necessary building authority approval

Tools:
- Hammer drill (solid concrete), power drill
- Depending on rawl plug and bolt types, hammer and/ or spanners

Installation procedure:
- Mark U-shaped edge bracket position on solid wall or plasterboard stud wall with a chalk line or laser and tape measure
- Drill hole and insert rawl plug, fasten wall angle with bolt in rawl plug

G-shaped supporting profile installation

- Screw G-shaped supporting profile to U-shaped edge bracket using M6 x 16 mm mushroom head bolt, M6 nut and M8 washer
- Adjustable shadow gap of approx. 13 – 34 mm
- First align and secure one side of the corridor
- Then align the second side parallel to the tile length + approx. 6 mm -> Setting gauge available from FURAL
- For corridor end faces, see variants on page 66

Tile installation

- Unpack and install the tiles - always wear ceiling installer gloves when working in order to avoid soiling
- Hook in the tiles in folded condition using the roller in the G-shaped supporting profile
- Fold up the tile and align the end joints, ensuring that the tiles do not interlock at the corners – install precisely corner to corner
- For the cut tiles at the corridor ends, measure the distance from the edge of the tile to the front edge of the edge profile and add + 15 mm for the support - this is the cutting dimension
- Cut the tile to size using an electric nibbler or sheet metal shears

Tile removal

- Fold down the tiles and unhook the roller diagonally, see also fire protection ceiling manual F30/EI 30.

Information

For variants of the different ceiling systems, see system descriptions in the ceiling manual. Please also note the information regarding the requirements of EN 13964 relating to the CE standard marking on pages 76 – 77.

WALL CONNECTIONS

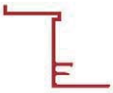
ADVANTAGES:

› Extruded aluminium sections:
- neat wall connection
- pleasant visual impression

› Tiles can be cut as required on site:
- short installation times
- low cost

› Bevelling of section ends:
- avoid the picture frame effect

› Continuous notch for nails:
- permits convenient and fast installation



› Fixing springs for securing:
- neat visual impression of the edges

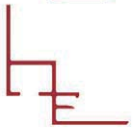
› Suitable mitre joints available:
- neat corner connection

› Curtain rail:

› Curtain lifting aid incorporated by the manufacturer:
- convenient installation

› Trimming section connection at both sides:
- convenient installation

› A wide variety of ceiling connection options:
- allows a high degree of freedom of interior design



Versions: **Page:**

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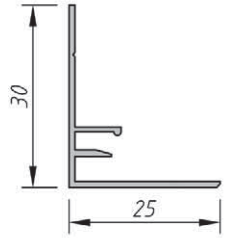
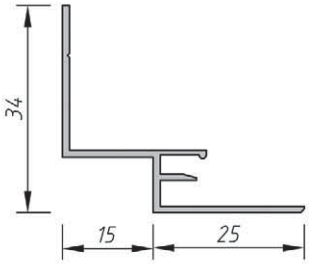
FURAL Acoustic Ceilings

Trimming sections – wall connection

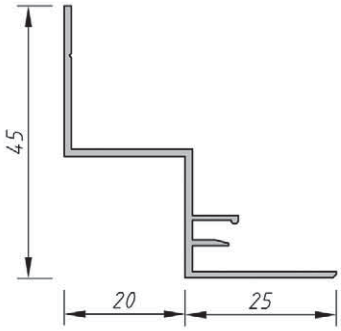
Dimensions and information for installation



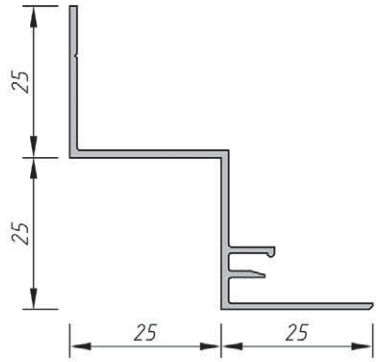
Trimming section
30/25



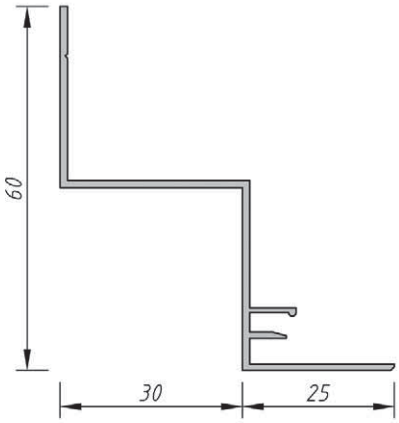
Shadow trimming section
15/10



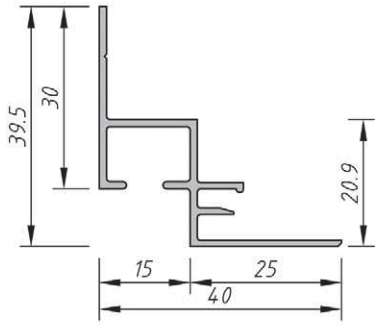
Shadow trimming section
20/20



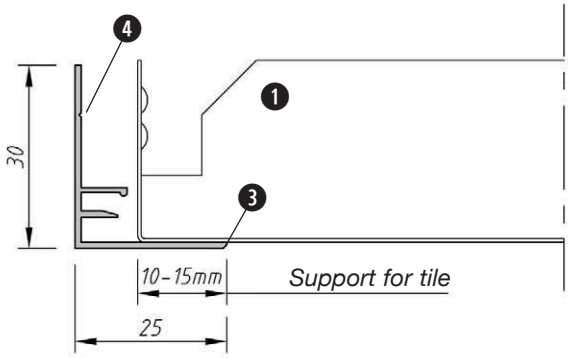
Shadow trimming section
25/25



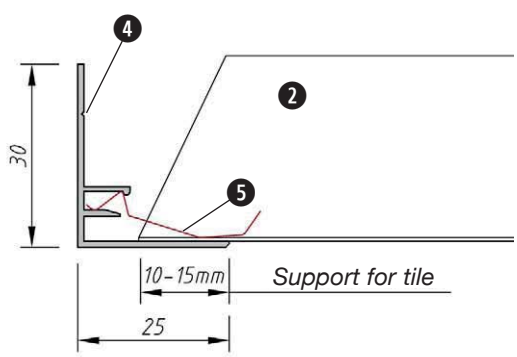
Shadow trimming section
30/30



Picture rail
15/10



Support for entire tile



Support for sectioned tile

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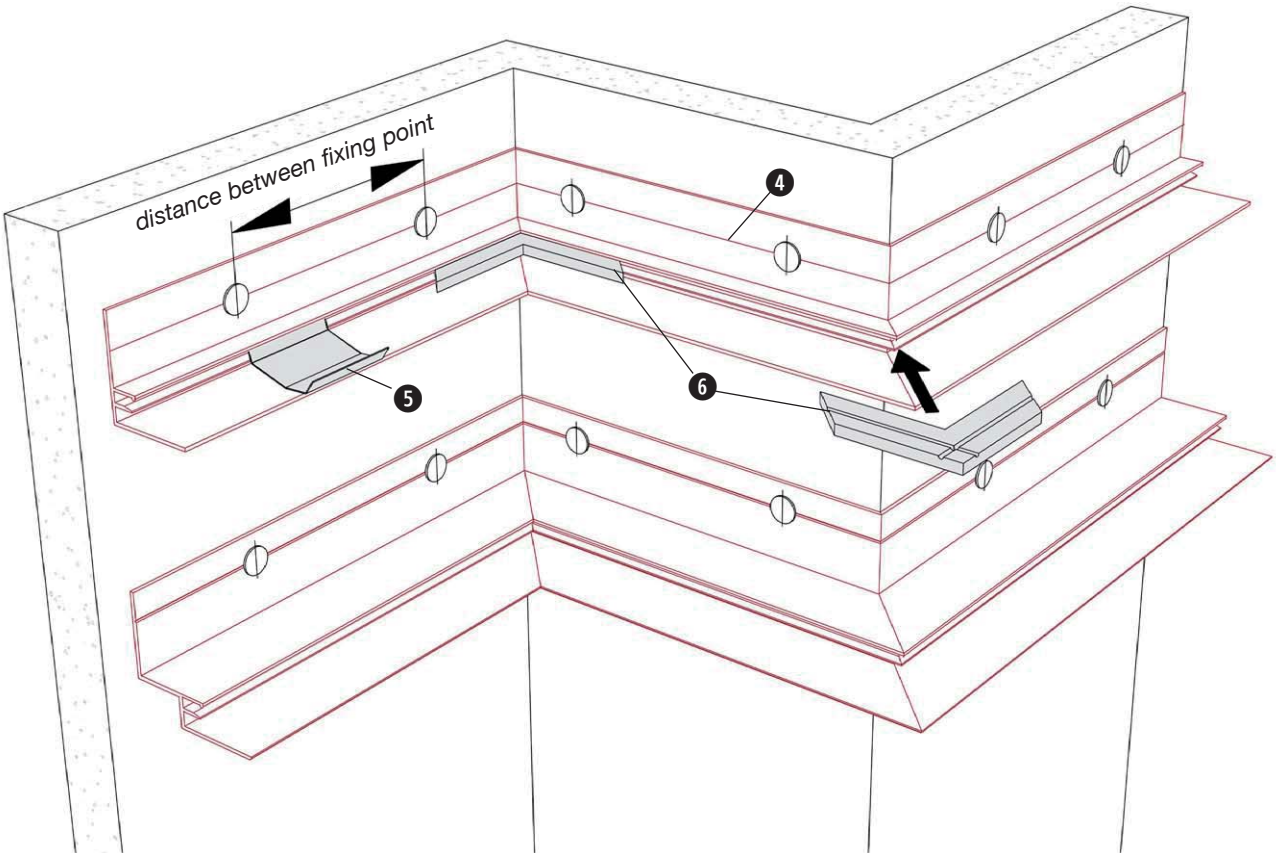
FURAL Acoustic Ceilings
Trimming sections – wall connection

Dimensions and information for installation



› **FURAL** trimming sections are made of extruded aluminium sections coated in the colour of the ceiling.
Standard colour RAL 9010.
Delivery length: 4 m

› 4 fixing springs per 625/625 tile correspond to approximately 6 fixing springs per metre of trimming section.

Distance between fixing points when mounted on support

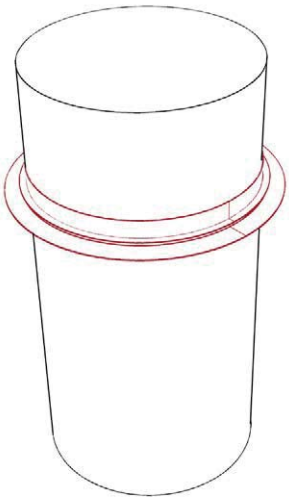
› 625 mm: Trimming section 30/25
Shadow trimming section 15/10 and 20/20

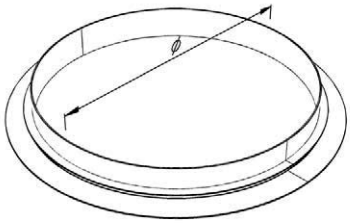
› 400 mm: Shadow trimming section 25/25 and 30/30
Picture rail 15/10

❶ Entire tile
❷ Sectioned tile
❸ Bevel to avoid the picture frame effect
❹ Continuous notch for the recognition of the nail
❺ Fixing springs (only where necessary)
❻ Mitre joint

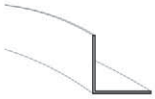
FURAL Acoustic Ceilings
Wall connection – OUTSIDE RING

Outside ring for columns

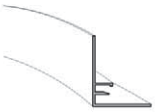




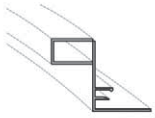
minimum radius



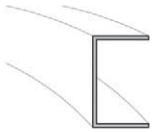
without spring ——— 150 mm



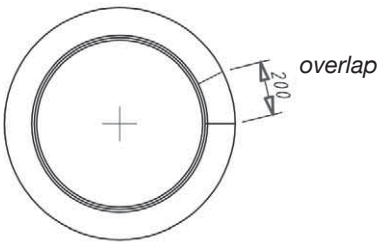
with spring ——— 150 mm



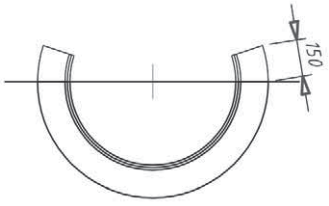
with spring ——— 250 mm



with U-section ——— 150 mm



Complete ring



Half ring

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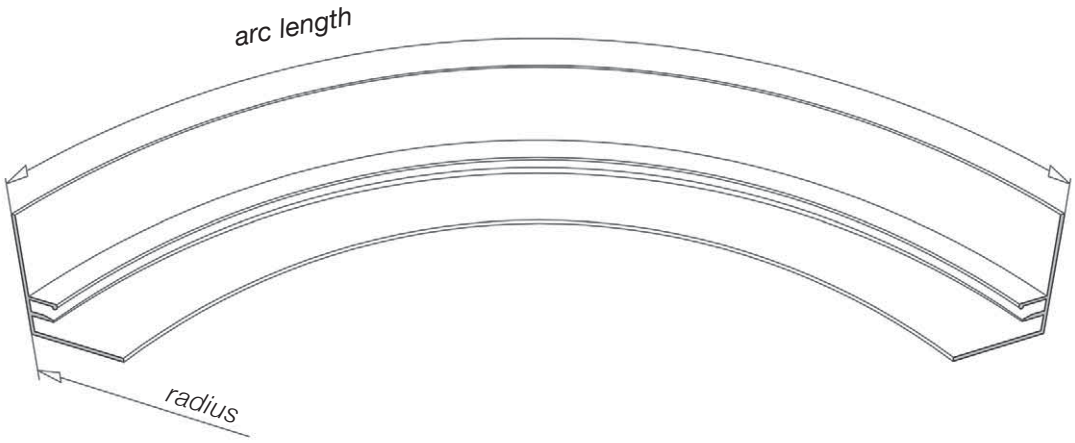
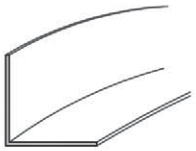
FURAL Acoustic Ceilings
Wall connection – INSIDE RING

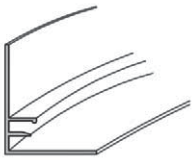
Curved wall connection (inside)



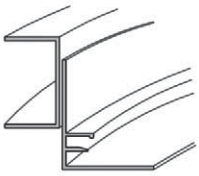
minimum radius



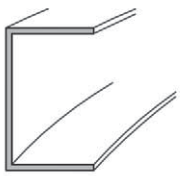
without spring ——— 400 mm



with spring ——— 2,000 mm



with spring ——— 2,000 mm



with U-section ——— 500 mm

Wall curtain rail

FURAL® Acoustic Ceilings

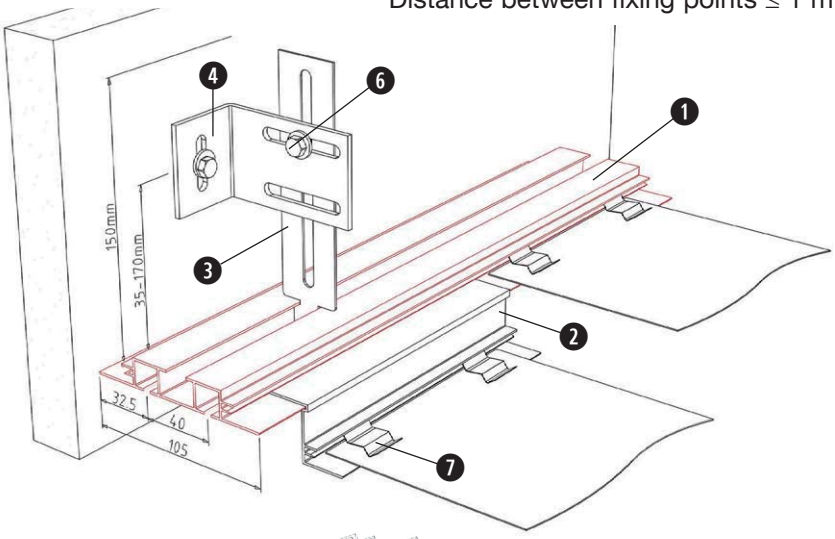
2-way curtain rail by FURAL

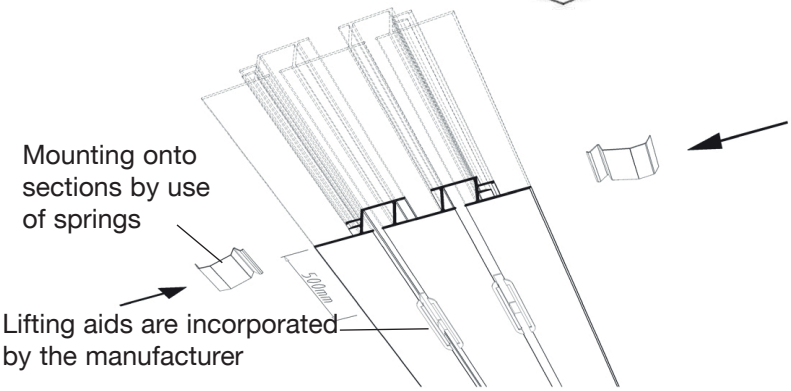
Design and information for application

FURAL curtain rails are made out of precision extruded aluminium sections, and are kept in stock in 4 m lengths. Same surface finish as ceiling tiles.
Standard: RAL 9010

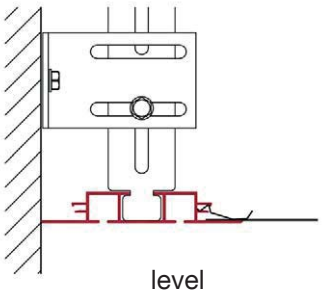
1. **FURAL**-curtain rail, 2-way with lifting aid
2. FVS shadow section
3. Suspension bracket
4. Wall fastening bracket
5. FVS section for frieze mounting
6. Screw M6 x 12 mm
7. Fixing spring

Distance between fixing points ≤ 1 m

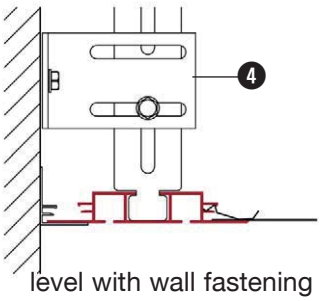




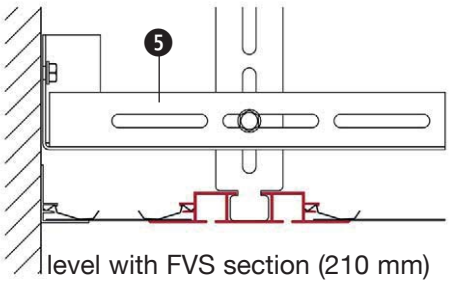
level



level

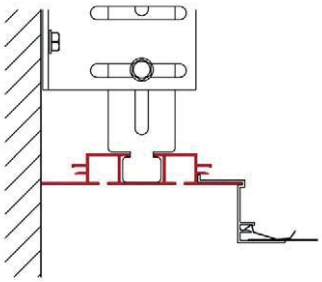


level with wall fastening bracket

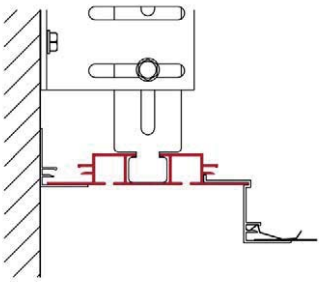


level with FVS section (210 mm) for frieze installation

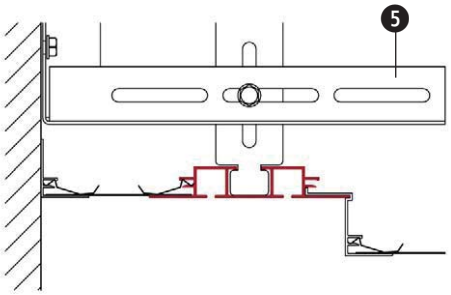
sunk



sunken



sunken with wall fastening bracket



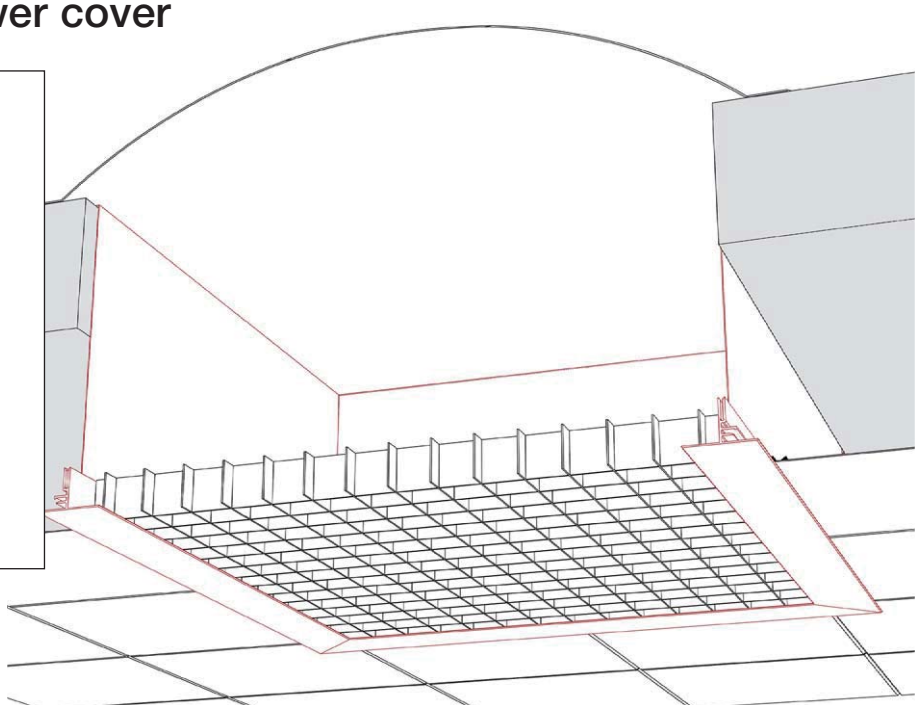
sunken with FVS shadow section

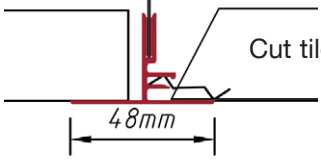
FURAL Acoustic Ceilings
Metal light shaft cladding

with or without lower cover

Light shaft enclosures
Pre-fabricated, coated metal aprons according to actual field dimensions with lower enclosure made out of the light shaft section.
(Extruded section).

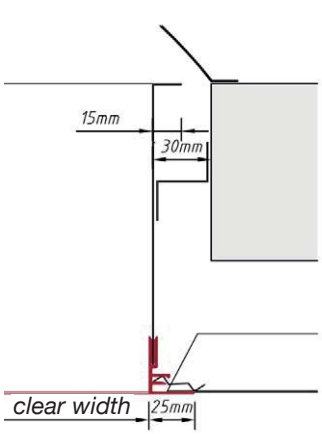
One-sided with trimming section connection.

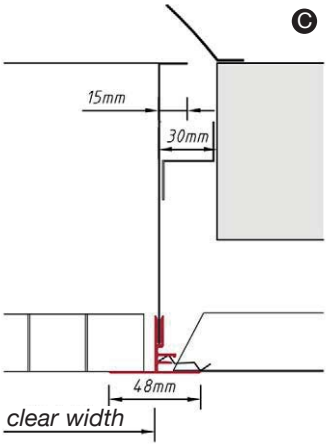




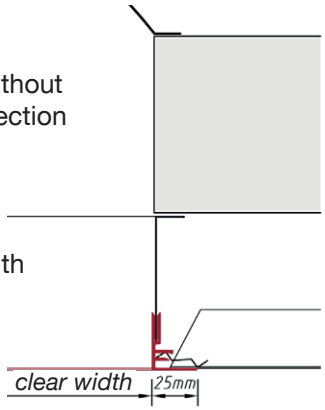
Light dome cover according to specification or open

- Grid
- Plexi glass (perspex)
- Glass

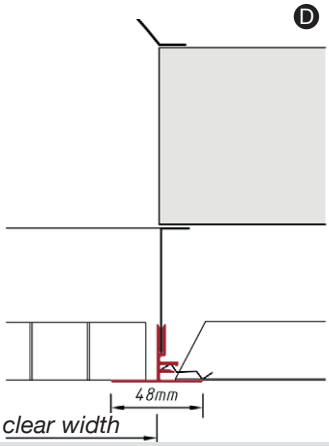




Ⓐ + Ⓑ
Light shaft cladding without cover and apron connection profile



Ⓒ + Ⓓ
Light shaft cladding with cover



FURAL® Acoustic Ceilings
Important information regarding EN 13964

4.3 Mechanical strength and stability of supporting elements
4.3.2 Substructure
The substructure of suspended metal ceilings (suspended ceilings) normally consists of the anchoring of the suspension elements in the substrate (e.g. raw ceiling), the suspension elements and their fasteners, and the system supporting profiles and their connectors. All structural components have been tested in combination and the classification corresponds solely to their joint use in the system. As there are many possible fasteners, the choice can only be made by the company conducting the installation.
The type and number of anchoring elements and edge profile fasteners are defined for each system in the ceiling manual. Observance of these specifications ensures that the load-bearing capacity of the fastener is not exceeded. Always ensure that the fastener selected is suitable for the base material of the supporting structure (raw ceiling/wall) in order to comply with the **requirements of Annex B** of EN 13964.
As there are many options beyond the sphere of influence of the manufacturer, the choice can only be made by the company conducting the installation. We recommend only using components whose suitability is certified by a European Technical Approval (ETA). If such approval is not available, the specifications in Annex B of EN 13964 must be observed. Please contact **FURAL** for any further information or advice. As the manufacturer, however, we can only accept responsibility solely for the components supplied, not however, for the overall responsibility for the installed system.

4.3.2.1. Load-bearing capacity – see also section 5
The load-bearing capacity of the substructure is verified by testing both of each individual component and of components in combination. All system supporting profiles have been tested in accordance with EN 13964 and conform to Class 1 in Table 6.
Due to the large number of possible profile spacings (tile lengths) and for optimum use of the system, the relevant values must be taken from the respective system diagrams.
If further additional loads need to be borne, the planner must be notified accordingly. Only then can a special validation, differing from the standard, be carried out. This can then be performed in accordance with the requirements of the standard (assuming that the costs are met).

4.3.4 Resistance to fasteners
The substructure components and covering layer components are designed for the inherent load-bearing capacity without additional loads. No additional punctual or areal load can be borne without further evaluation.

4.3.5 Resistance to wind loads (special ceiling area)
The installing company is responsible for securing covering layers inside the building in areas where suction or pressure loads due to wind pressures (e.g. near doors and windows) can be expected using suitable components. If the planner requires a wind-proof design, this must be specified on ordering, together with an indication of the wind loads.

4.3.6 Impact resistance
See ceiling manual, page 10 and 11 or 18 and 19.

4.3.7 Resistance to seismic effects
If suspended ceilings will be exposed to seismic vibration, this must be indicated separately by the planner.

4.4 Safety in the event of fire
4.4.2 Fire classification
The fire classification has been verified in accordance with EN 13501-1 and certified by classification reports from „MPA Stuttgart“ (Notified Body No. 0672).

4.5 Hygiene, health and environment — toxic gases and hazardous substances
4.5.1 Release of asbestos (content)
Metal components do not contain asbestos and are therefore marked with „No asbestos content“. Any additional substances, such as coating materials, acoustic inlays, etc. are also free from asbestos.

4.5.2 Release of formaldehyde and/or formaldehyde content
All components of the metal ceiling are free from formaldehyde and are therefore assigned to Class E1. Note: The requirements of the standard still apply as the standard is also applicable to wood and wood materials.

4.5.3 Other hazardous substances
The manufacturer declares that no substances have been used in manufacturing the metal ceilings which cause hazardous emissions, so no initial test is required. Furthermore, substructure components and covering layers have been tested for compliance with the reference values for volatile organic compounds (VOC) according to the assessment system of the German Committee for Health-Related Evaluation of Building Products (AgBB).

4.5.4 Susceptibility to the growth of micro-organisms hazardous to health
When used for their intended purpose, the metallic materials employed are not susceptible to the growth of micro-organisms and are therefore assigned to Class A according to Table 7.

4.6 Safety of use
4.6.1 Splinter resistance
Metal covering layers are not subject to the requirement for determining the behaviour in the event of splintering or breakage. Consequently, the „NPD“ (no performance determined) option is used and no initial test was conducted.

4.6.2 Bending tensile strength
The classification indicated applies to the basic variant of the covering layer without additional weight or openings and is determined on a test specimen representative of the covering layer material under consideration of the span length.
The allowance for deflection of the substructure component stipulated in Table 6 has been neglected, because this is of negligible significance for the method used for fastening metal ceilings. The standard prescribes that the load class according to Table 8 is also specified under this item. If further additional loads need to be borne, the planner must be notified accordingly. Only then can a special validation, differing from the standard, be carried out. This can then be performed in accordance with the requirements of the standard (assuming that the costs are met).

4.6.4 Electrical safety
The requirements of the CENELEC HD 384 standards are so extensive that the manufacturer of the suspended ceiling cannot accept responsibility for comprehensive observance. It is the duty of the planner to draw attention to any requirements in this context and of the installation company to observe these accordingly.
If electric cables are routed through visible or concealed ducts connected to the substructure of the ceiling, this must be indicated accordingly by the planner for structural reasons.

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If the suspended ceiling needs to be earthed, this must be conducted by a licensed specialist company in accordance with national standards. If any modifications to the suspended ceiling are required for this purpose, then this must be indicated separately by the respective planner.

4.7 Acoustics
4.7.2 Sound absorption
See ceiling manual, pages 112 to 114.

4.7.3 Sound insulation
See separate documents.

4.8 Durability
4.8.2 Moisture
The thermal insulation and dew point calculations required by the standard cannot be performed by the manufacturer, as none of the necessary information is available and this requirement would extend far beyond the manufacturer‘s sphere of activity. The manufacturer takes the view that these calculations and any necessary measures derived from them must be performed by the planner. Any additional corrosion protection required according to Table 8 would, in this context, have to be indicated by the planner.

4.8.3 Service life
Depending on how the room is used and the conditions therein, cleaning for visual reasons is recommended at pre-determined intervals. This is not required for functional reasons, in order to maintain fitness for use at any time throughout the entire service life.
Cleaning of visible surfaces, dry cleaning:
- Wipe clean with a dry, soft cleaning cloth
- Use a vacuum cleaner with soft brush attachment

Cleaning of visible surfaces, wet cleaning:
- Use commercially available, non-abrasive cleaning agents diluted with clean water -> the mixing ratio depends on the degree of soiling of the ceiling tiles; all common glass cleaning agents have proven to be effective
- Use special cleaning agents (evaporative – e.g. diluted white spirit) for stubborn, greasy soiling.

Painting of the ceiling with commercially available paints is possible. It should be noted, however, that painting can be detrimental to the fire characteristics of the product. Furthermore, it is not advisable on perforated ceiling panels, because this impairs the acoustic properties. Also note that ugly cracks may occur in the joint area.

4.8.4 Classification of the loading conditions for the suspended ceiling and
4.8.5 Corrosion protection
Ceiling panels: In the standard version, these are made from sheet steel with continuous hot-dip surface finish Z100 to EN 10346, thereby assuring the corrosion protection required in Table 8 for Class B according to Table 7. Substructure parts in the standard variant are made of sheet steel with a hot-dip galvanised surface of at least Z100 to EN 10346 or higher, thereby assuring the corrosion protection required for load class B.
Special materials: If components are made from other materials, the minimum corrosion protection is provided according to Table 8, depending on the required load class.

4.8.6 Protection from contact corrosion
If the design or load class indicates that contact corrosion can occur between different materials, this must be pointed out by the planner. Suitable protection measures can then be taken in accordance with EN ISO 12944-3, section 5.10. Depending on the application, the coating must be applied to at least the more precious metal, or to both metals.

4.9 Colour, light reflection and gloss factor for suspended ceiling components
The substructure components and covering layer components provided with a decorative coating (powder coating, PARZIFAL hydro stove enamelling) in the visible area have the order-specific colour (e.g. RAL or NCS).
In standard cases (RAL 9010, smooth), light reflection value R is approx. 80-85% and is determined according to ISO 7724-2 and ISO 7724-3. In standard cases (RAL 9010), the gloss factor measured at an angle of 60° is approx. 20%, by PARZIFAL hydro stove enamelling at approx. 10% and is determined according to EN ISO 2813.

4.10 Thermal insulation
If thermal insulation is required, this must be indicated separately by the planner. The planner must also draw attention to measures required to prevent the formation of condensation. On request, proof of this is furnished in accordance with EN ISO 6946 and EN ISO 10211-1 on the basis of reference design values to EN 12524 by an approved testing institute (assuming that the costs are met).

5.0 Load-bearing capacity of the substructure components – test methods
5.1 General
Test methods have been applied for metal substructures and suspension and connecting elements if their load-bearing capacity could not be calculated. The components to be tested were tested both individually and in combination as they are used in practice. A safety factor of 2.5 was observed.

5.2 Bending test of metal substructure profiles
Primary and secondary profiles:
The deflection of the primary and secondary profiles of each system was tested by testing institute “ITB - INSTITUT FÜR BAUTECHNIK” (Notified Body No. 1488) on behalf of **FURAL** or its profile suppliers. Deflection class 1 to Table 6 was taken as the basis for the specification. Consequently, the suspension element spacings of the supporting rails have been defined for the dead weight of the ceiling including substructure, but without additional load. In view of the large number of options, reference is made on the product label to the specifications and diagrams in the ceiling manual and/or to the **performance declaration** instead of the classification.
Edge bracket profiles:
The deflection of the edge bracket profiles was also tested by the testing institute.

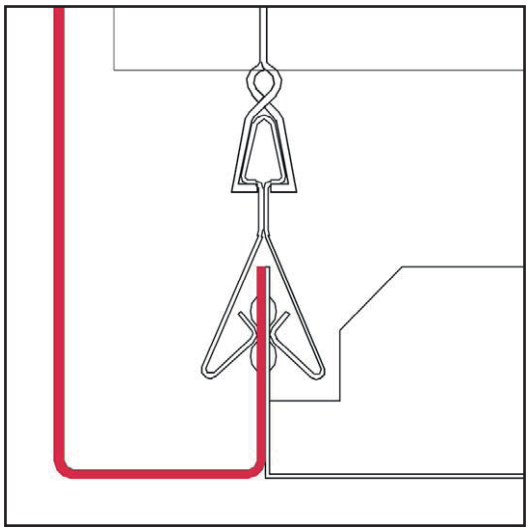
5.3 Testing of the metal suspension and connecting elements
All substructure components were tested individually and in combination as they are used in practice. This allowed the weakest point of a system to be determined. We strongly recommend that only such parts intended for a particular system are used. An incorrect combination of substructure parts can result in the system collapsing.

The numbering refers to the list in EN 13964 and is explained here in excerpts.


Ausgang
exit

D DETAILS / ACCESSORIES

ADVANTAGES:



› Aprons – clean solutions:

- Various designs for each individual case
- For level differences between ceilings and ceiling connection

› Installation of light fittings – many possibilities:

- Installation of light fittings in tile format
- Tiles with factory-made cutouts for recessed light fixtures
- Support structure for light fittings

PERFEKT FURAL® METALLDECKEN

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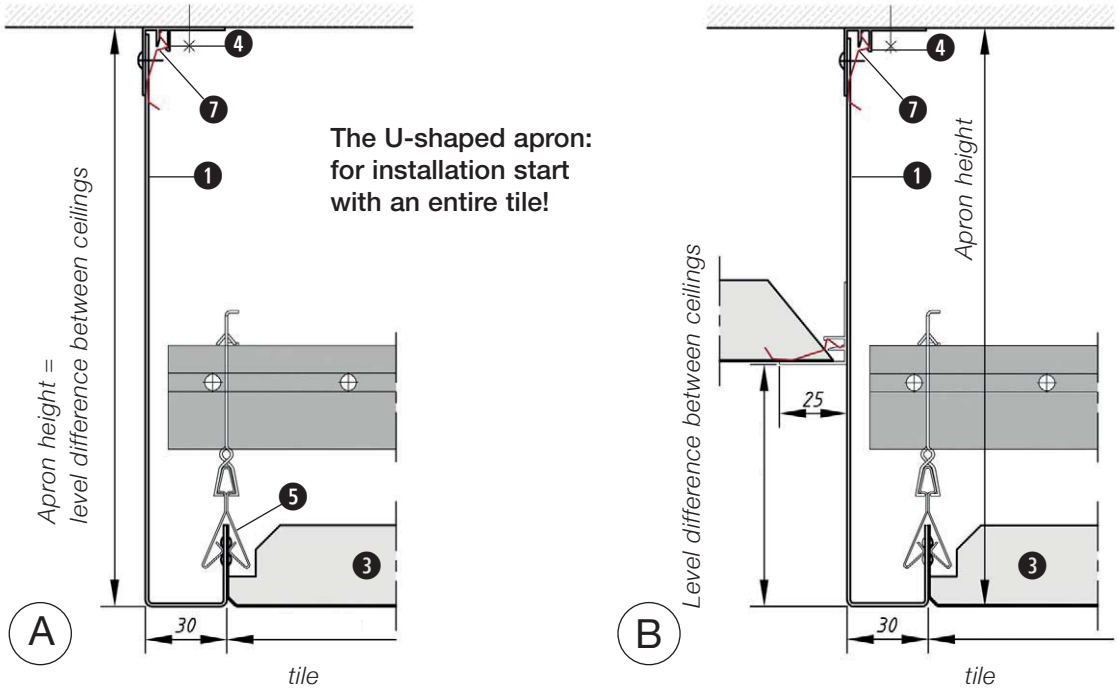
+43 - (0) 7612 - 74851 - 0

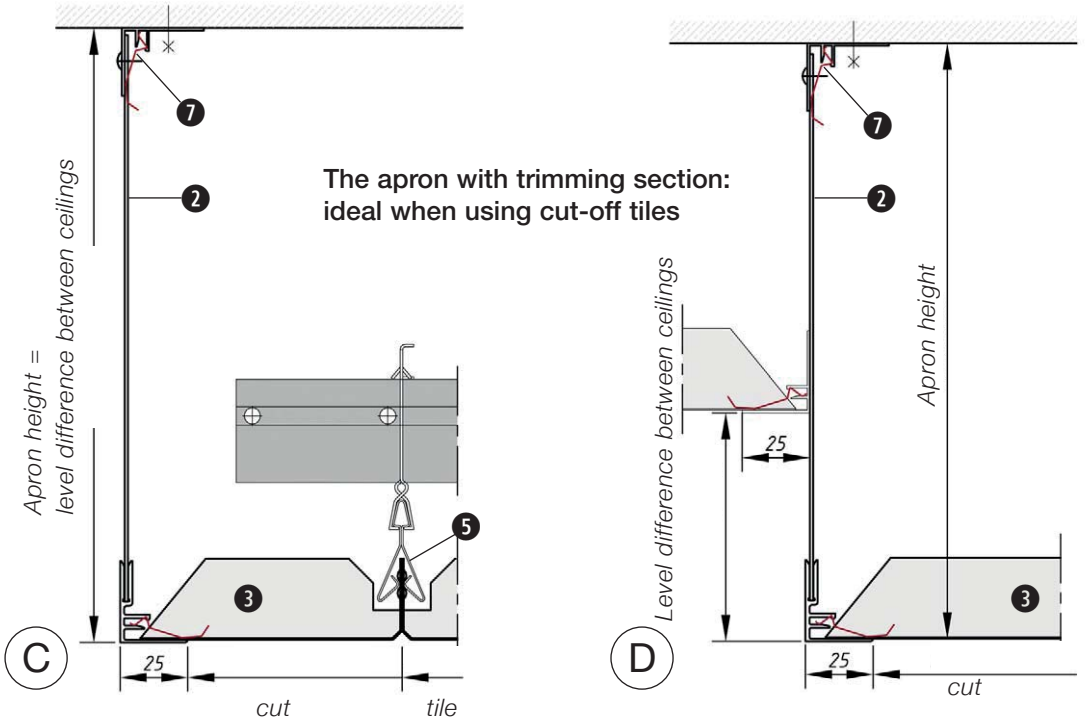
FURAL Acoustic Ceilings
Aprons

for clip-in system

U-shaped apron



with trimming section



❶ Apron with U-shaped end
❷ Apron with trimming section (alu)
❸ Tile
❹ Trimming section
❺ Clipping rail
❻ Suspension element
❼ Fixing springs

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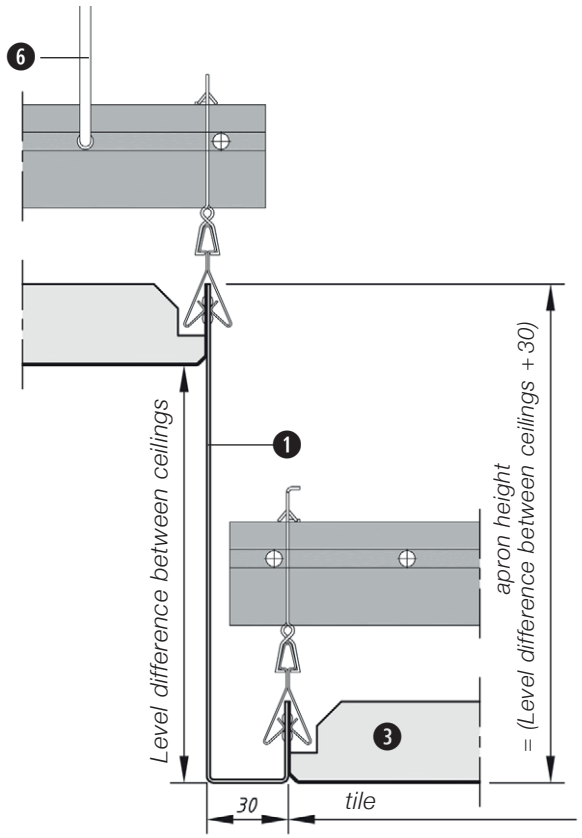
FURAL Acoustic Ceilings

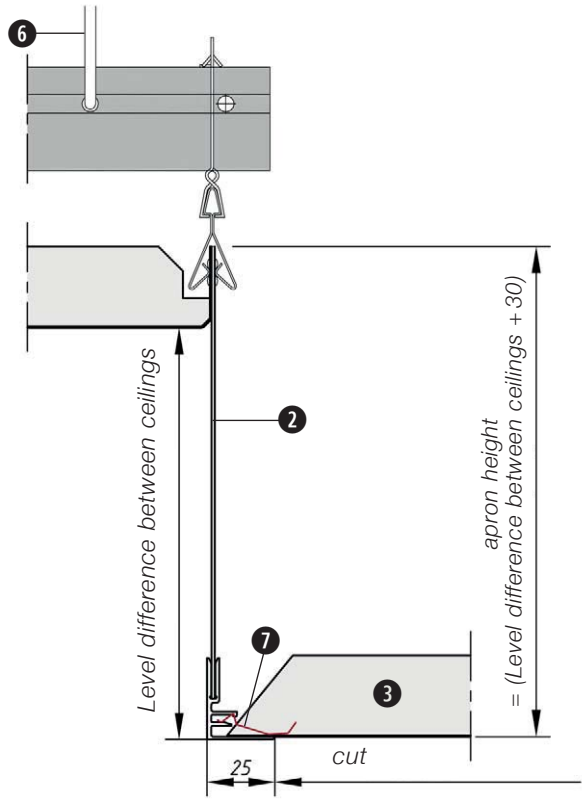
Aprons

for clip-in system

E



F



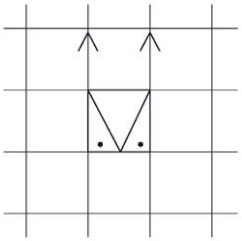
U-shaped apron

with trimming section

FURAL Acoustic Ceilings
Inspection doors

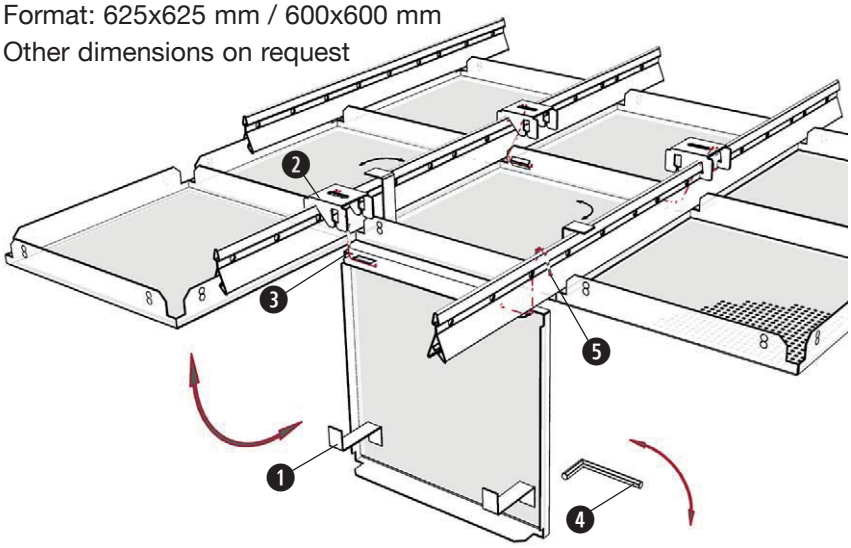
for clip-in system

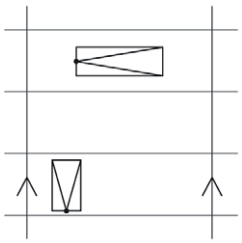
KQK 625/625



1. Twist lock
2. Fixing plate
3. Hinge mounting
4. Allen key 4 mm
5. Special-shackle

Format: 625x625 mm / 600x600 mm
Other dimensions on request



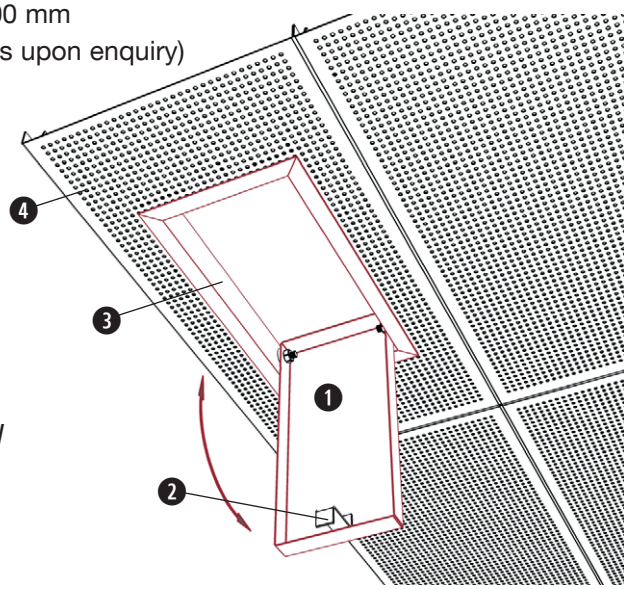


1. Inspection door
2. Twist lock
3. Frame
4. Tile

for long span tiles

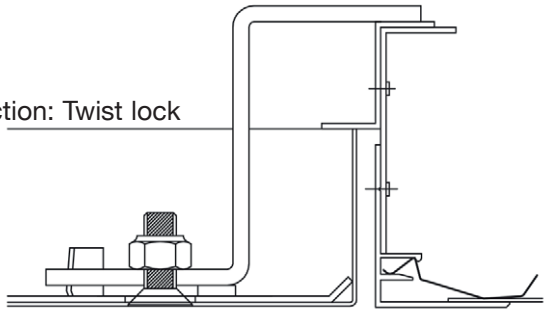
For frequent access to specific locations in the inter-ceiling space.

Format: 300/500 mm
(Special formats upon enquiry)

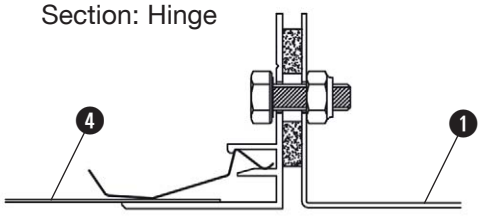


Also suitable for post-installation in long span tiles.
Position and opening direction as required in the specific location. Universally usable.

Section: Twist lock



Section: Hinge



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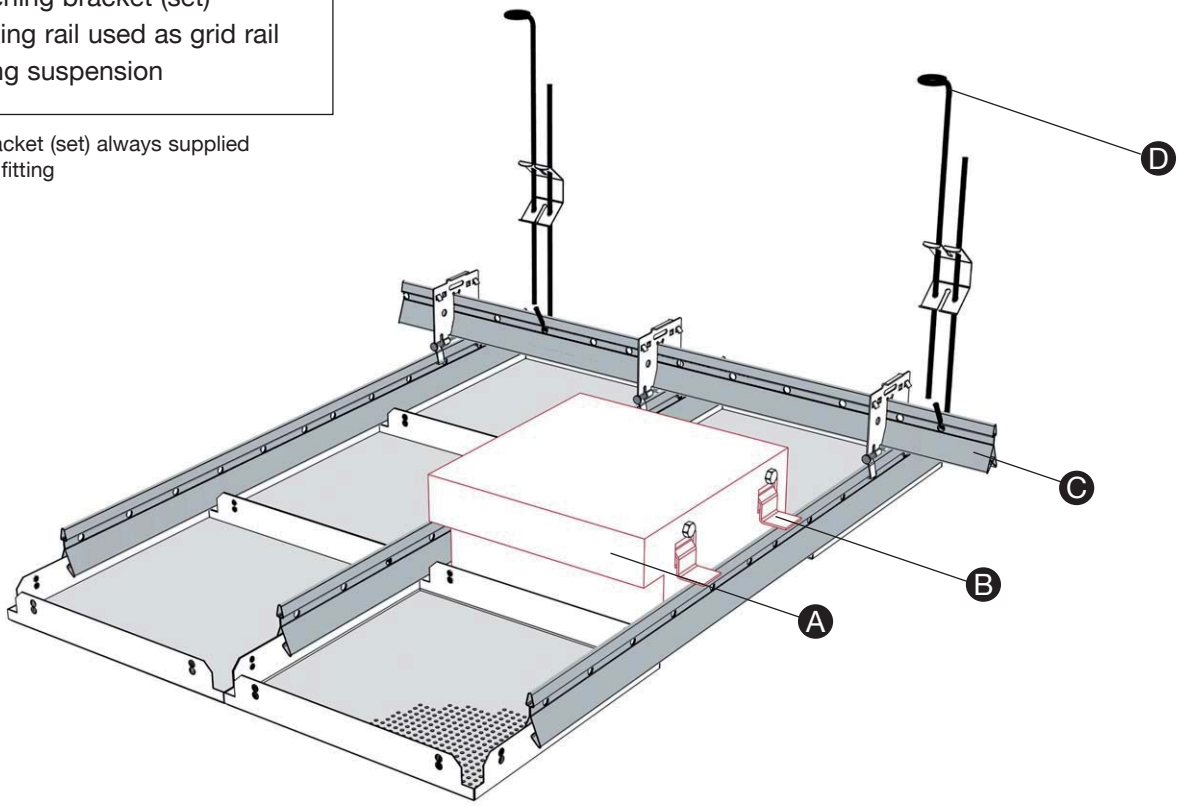
FURAL® Acoustic Ceilings

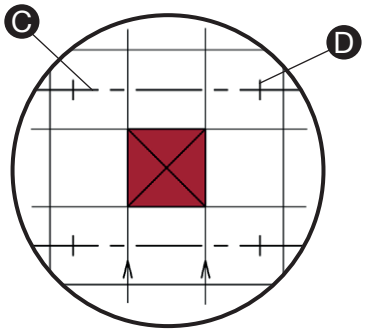
Installation of light fittings – square light fitting

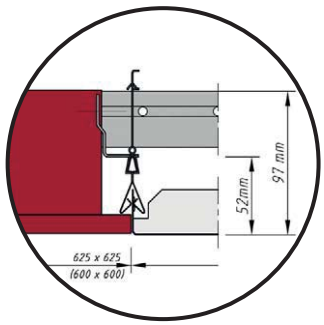
for clip-in system – square tiles

Ⓐ Light fitting
Ⓑ Fastening bracket (set)*
Ⓒ Clipping rail used as grid rail
Ⓓ Ceiling suspension

* Fastening bracket (set) always supplied with the light fitting







Installation of light fitting

- Light fitting Ⓐ in module 625/625 or 600/600 mm
- Install fastening bracket Ⓑ
- Place the light fittings on the clipping rails.
- Light fitting must be suspended separately (not shown).
- Safeguard against falling, in accordance to lighting manufacturer‘s installation instructions.

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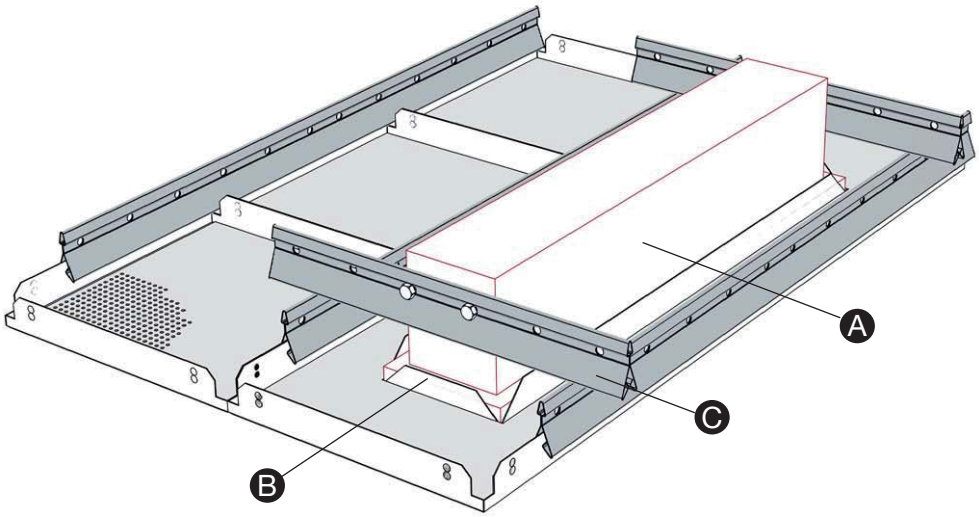
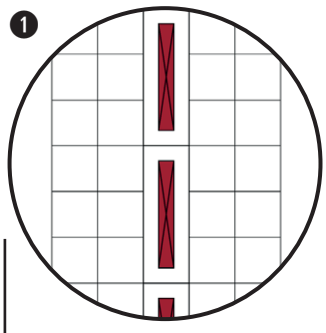
FURAL® Acoustic Ceilings

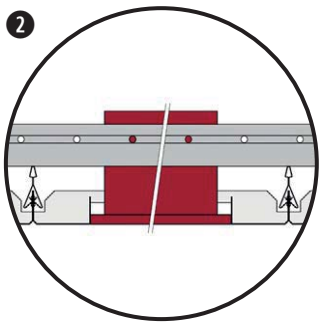
Installation of light fittings – rectangular light fitting in supporting tile

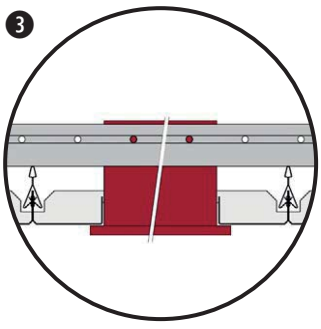
for clip-in system – square tiles

Ⓐ Light fitting
Ⓑ Supporting tile with cut-out (including bent edge)
Ⓒ Clipping rail used as grid rail









❶ Light fitting in supporting tile
❷ Light fitting frame flush with ceiling
❸ Projecting fitting frame

Installation of light fitting

- Mount clipping rail Ⓒ (2 units per light fitting)
- Place the light fittings on the clipping rails.
- Light fitting must be suspended separately (not shown).
- Safeguard against falling, in accordance to lighting manufacturer‘s installation instructions.

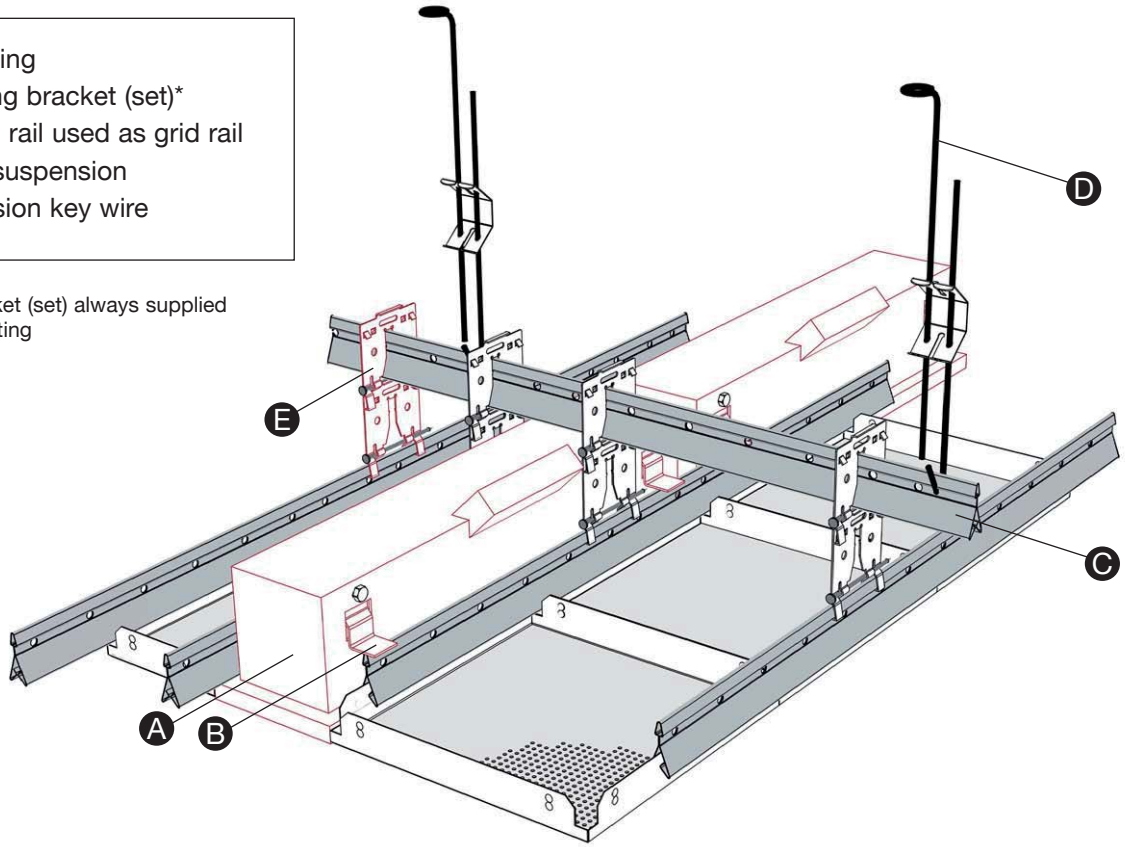
Details
Accessories

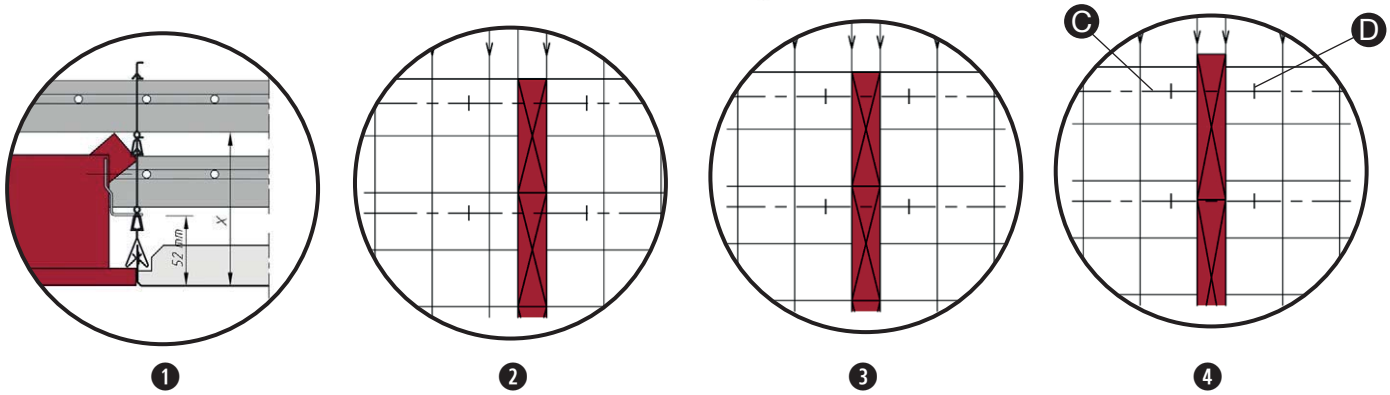
FURAL Acoustic Ceilings
Installation of light fittings – rectangular light fitting - row of light fitting

for clip-in system – square tiles

- Ⓐ Light fitting
- Ⓑ Fastening bracket (set)*
- Ⓒ Clipping rail used as grid rail
- Ⓓ Ceiling suspension
- Ⓔ Suspension key wire

* Fastening bracket (set) always supplied with the light fitting





❶ ❷ ❸ ❹

- ❶ Section: Light fitting / grid profile
- ❷ Light fitting L = 1,250 mm
- ❸ Light fitting L = 1,250 mm
- ❹ Light fitting L = 1,550 mm

Installation of a Row of Light Fittings

- Grid rail running above the lighting box through dimension (x):
  with 2 suspension keys = 113 mm
  with 3 suspension keys = 167 mm
  with 4 suspension keys = 221 mm
- Mounting fastening bracket Ⓑ
- Place the light fittings on the clipping rails.
- Light fitting must be suspended separately (not shown).
- Safeguard against falling, in accordance to lighting manufacturer's installation instructions.

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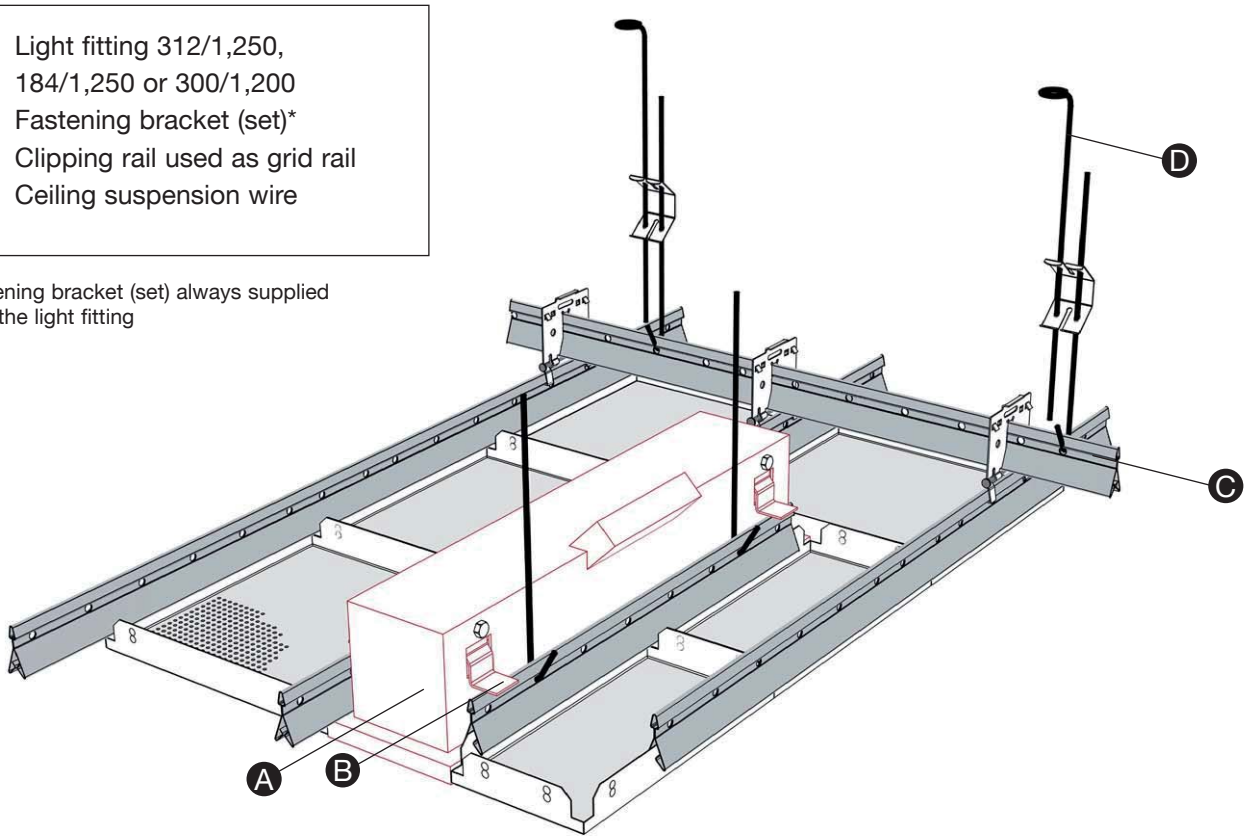
FURAL® Acoustic Ceilings

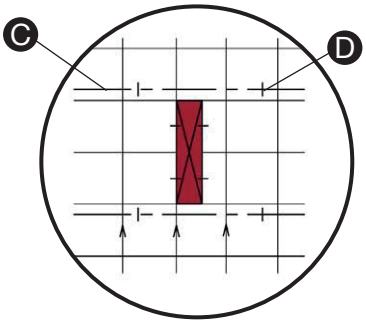
Installation of light fittings – single rectangular light fitting

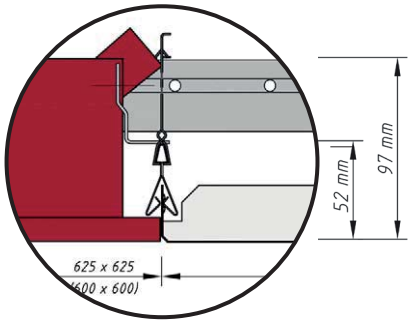
for clip-in system – square tiles

Ⓐ Light fitting 312/1,250, 184/1,250 or 300/1,200
Ⓑ Fastening bracket (set)*
Ⓒ Clipping rail used as grid rail
Ⓓ Ceiling suspension wire

* Fastening bracket (set) always supplied with the light fitting







Installation of light fitting:

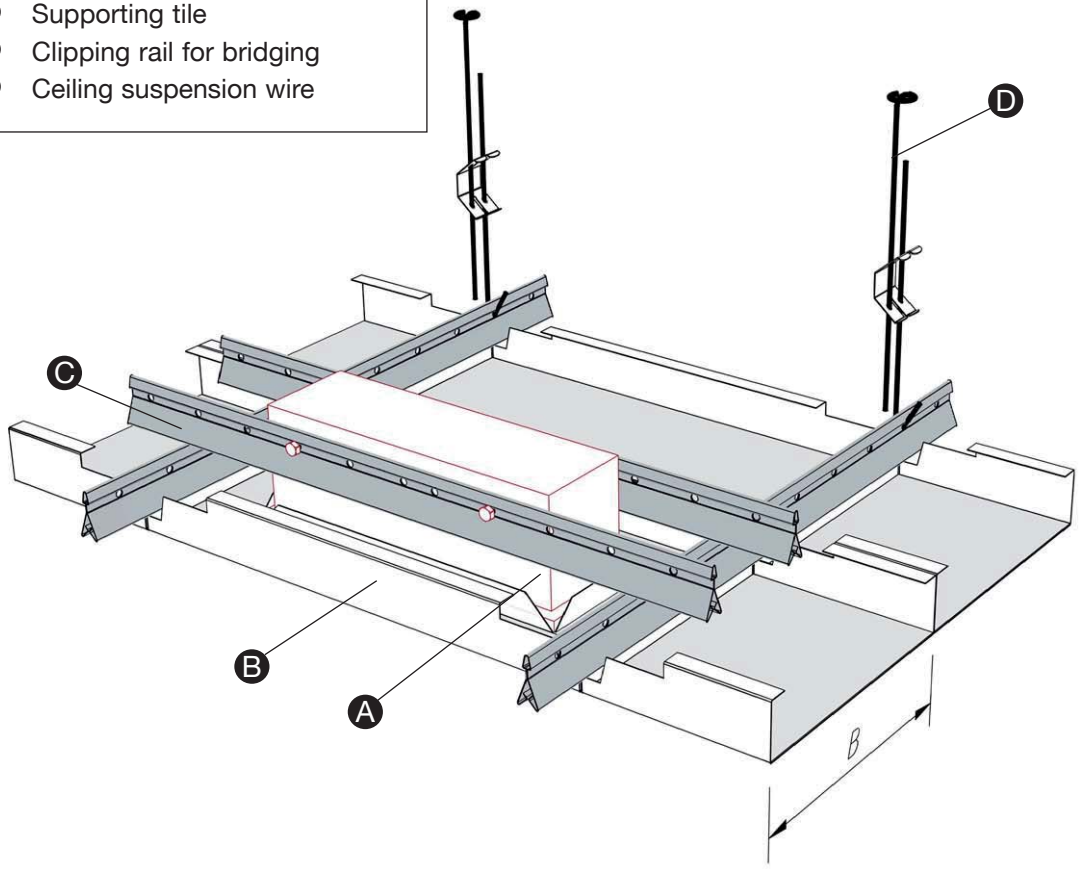
- Mount fastening bracket Ⓑ
- In addition, install one piece of clipping rail (L 1,230)
- Place the light fittings Ⓐ on clipping rails.
- Light fitting must be suspended separately (not shown).
- Safeguard against falling, in accordance to lighting manufacturer‘s installation instructions.

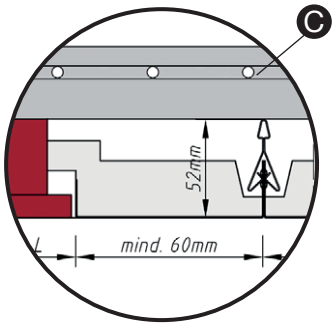
FURAL® Acoustic Ceilings

Installation of light fittings - rectangular light fitting in supporting tile

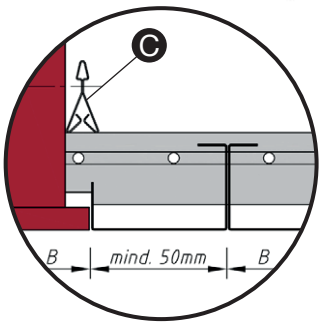
for clip-in system – long span tiles

- Ⓐ Light fitting
- Ⓑ Supporting tile
- Ⓒ Clipping rail for bridging
- Ⓓ Ceiling suspension wire

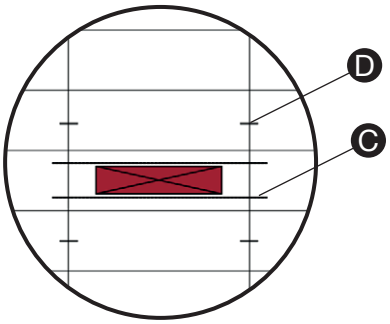




Longitudinal section



Front section



Installation of light fitting:

- Bolt 2 pieces of clipping rail onto the long sides of the light fitting.
- Place the light fittings on the clipping rails.
- Light fitting must be suspended separately (not shown).
- Safeguard against falling, in accordance to lighting manufacturer‘s installation instructions.

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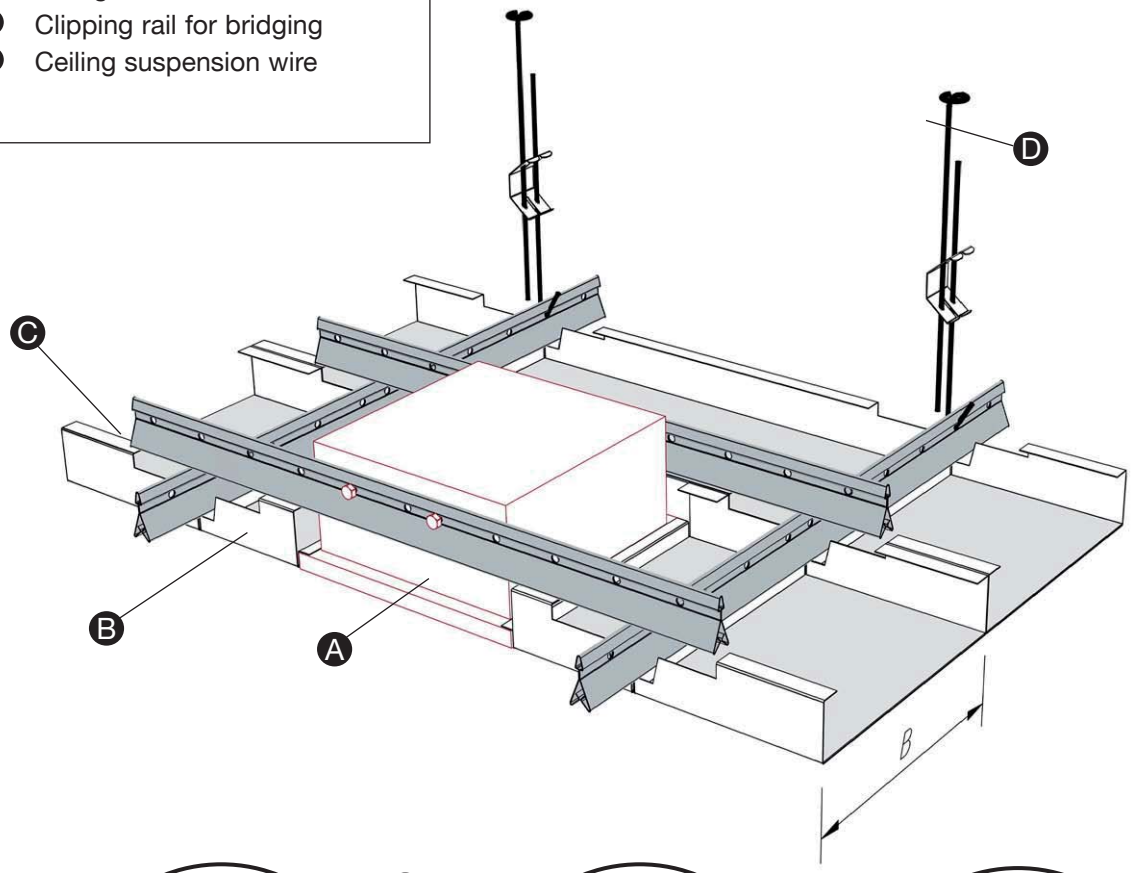
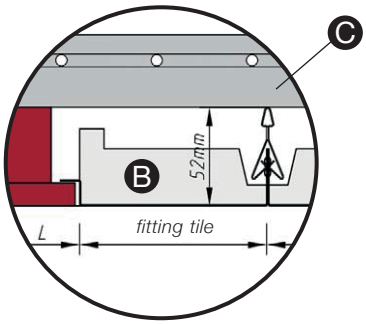
FURAL Acoustic Ceilings

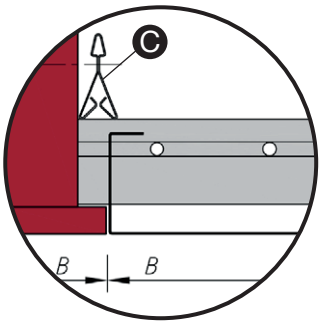
Installation of light fittings - rectangular light - same width as a tile - with fitting tile

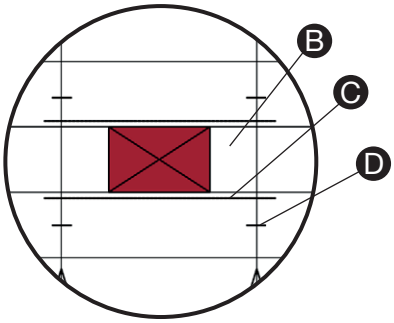
for clip-in system – long span tiles

- Ⓐ Light fitting
- Ⓑ Fitting tile
- Ⓒ Clipping rail for bridging
- Ⓓ Ceiling suspension wire









Installation of light fitting:

- Bolt 2 pieces of clipping rail on to the long sides of the light fitting.
- Place the light fittings on the clipping rails.
- Light fitting must be suspended separately (not shown).
- Safeguard against falling, in accordance to lighting manufacturer‘s installation instructions.

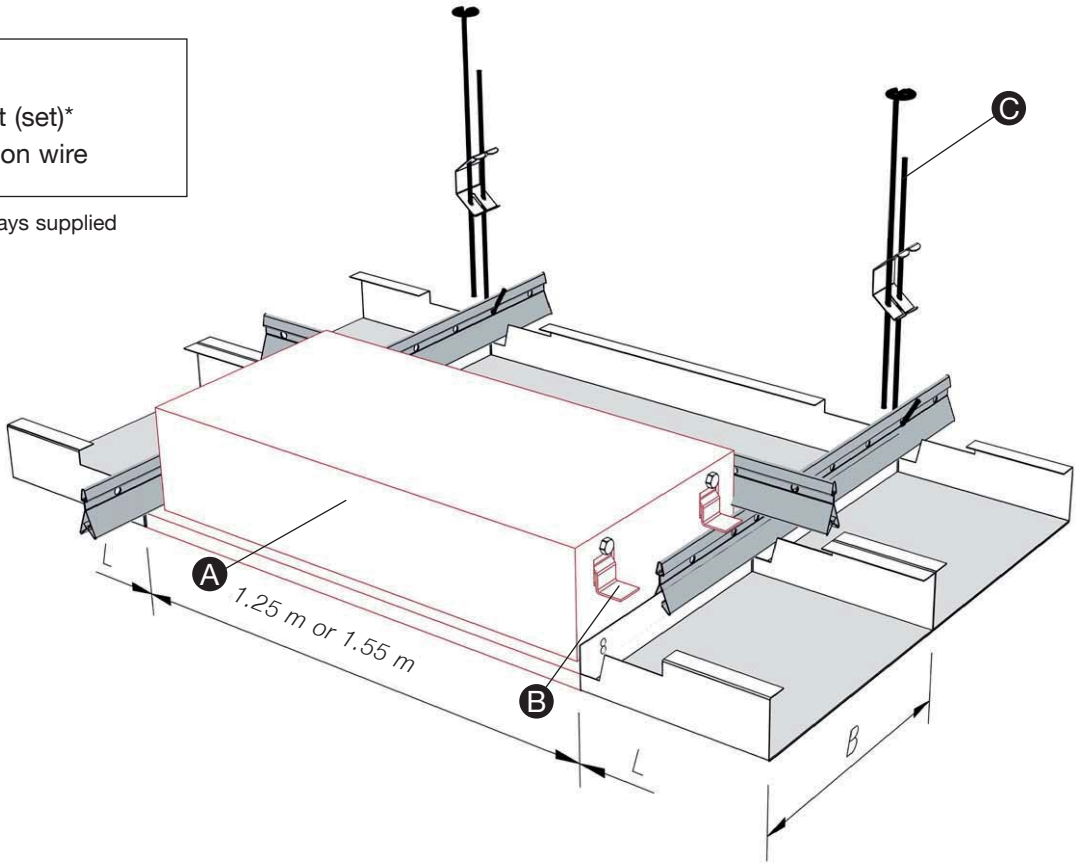
FURAL® Acoustic Ceilings

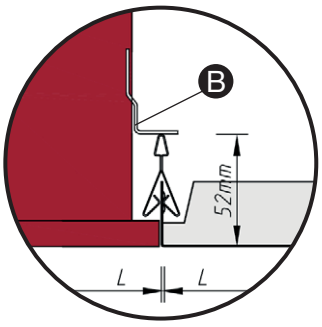
Installation of light fittings - rectangular light fitting - in tile format

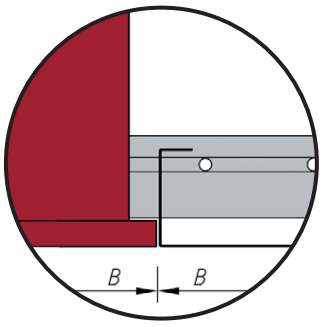
for clip-in system – long span tiles

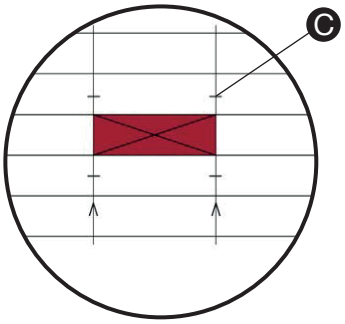
Ⓐ Light fitting
Ⓑ Fastening bracket (set)*
Ⓒ Ceilings suspension wire

* Fastening bracket (set) always supplied with the light fitting









Installation of light fitting:
- Mount fastening bracket Ⓑ
- Place the light fittings on the clipping rails.
- Light fitting must be suspended separately (not shown).
- Safeguard against falling, in accordance to lighting manufacturer‘s installation instructions.

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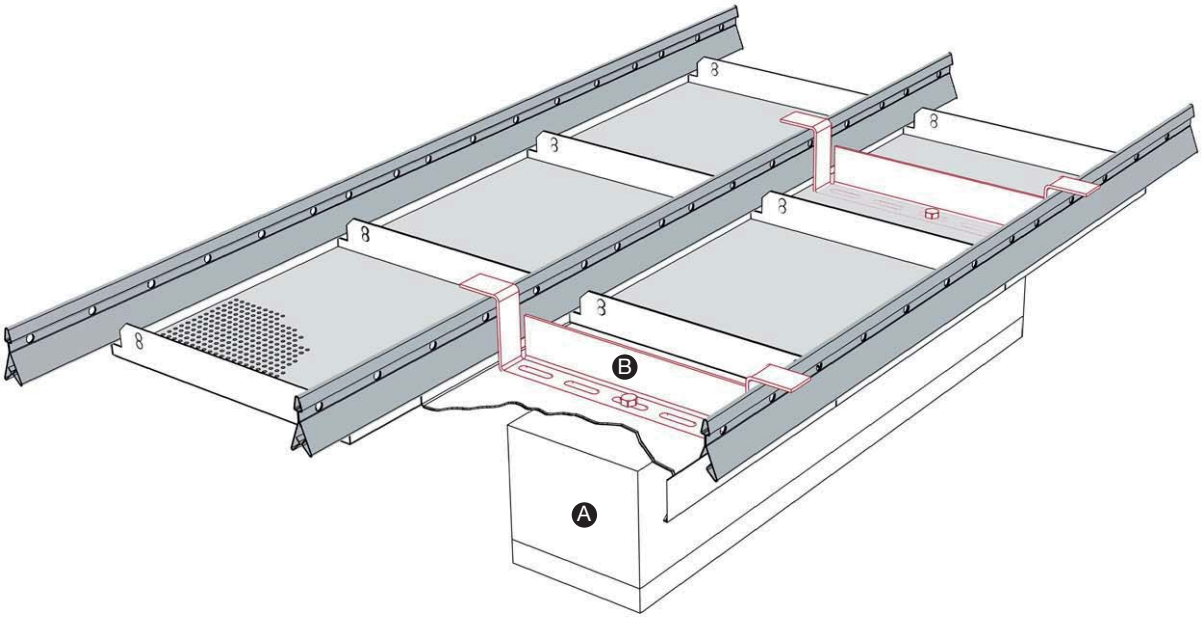
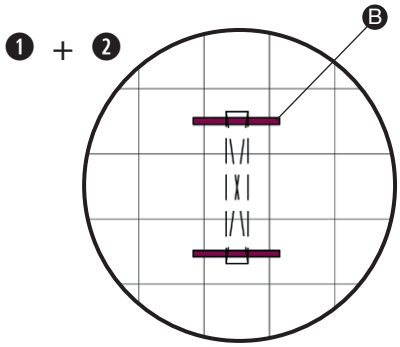
Details
Accessories

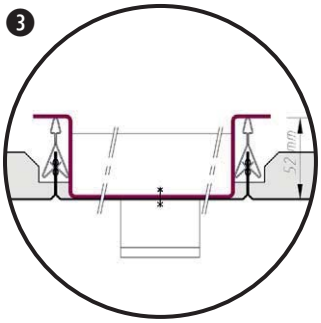
FURAL Acoustic Ceilings
Support structure for light fittings

for clip-in system – square tiles

Ⓐ Support structure for light fittings
Ⓑ Light fitting bridge for modules 625 and 600 mm







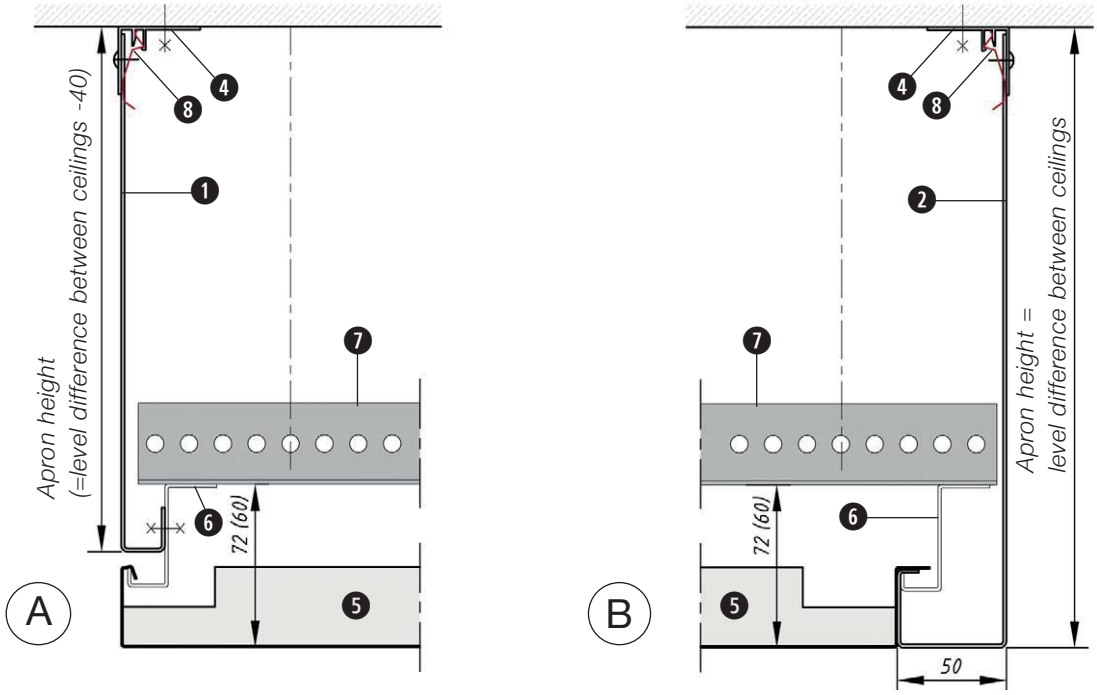
❶ Light fitting L = 1,250 mm
❷ Light fitting L = 1,550 mm
❸ Light fitting bridge for modules 625 and 600 mm

Installation of light fitting:
- 2 bridges per light fitting.
- Bolt light fitting onto the bridges.
- Light fitting must be suspended separately (not shown).
- Safeguard against falling, in accordance to lighting manufacturer‘s installation instructions.

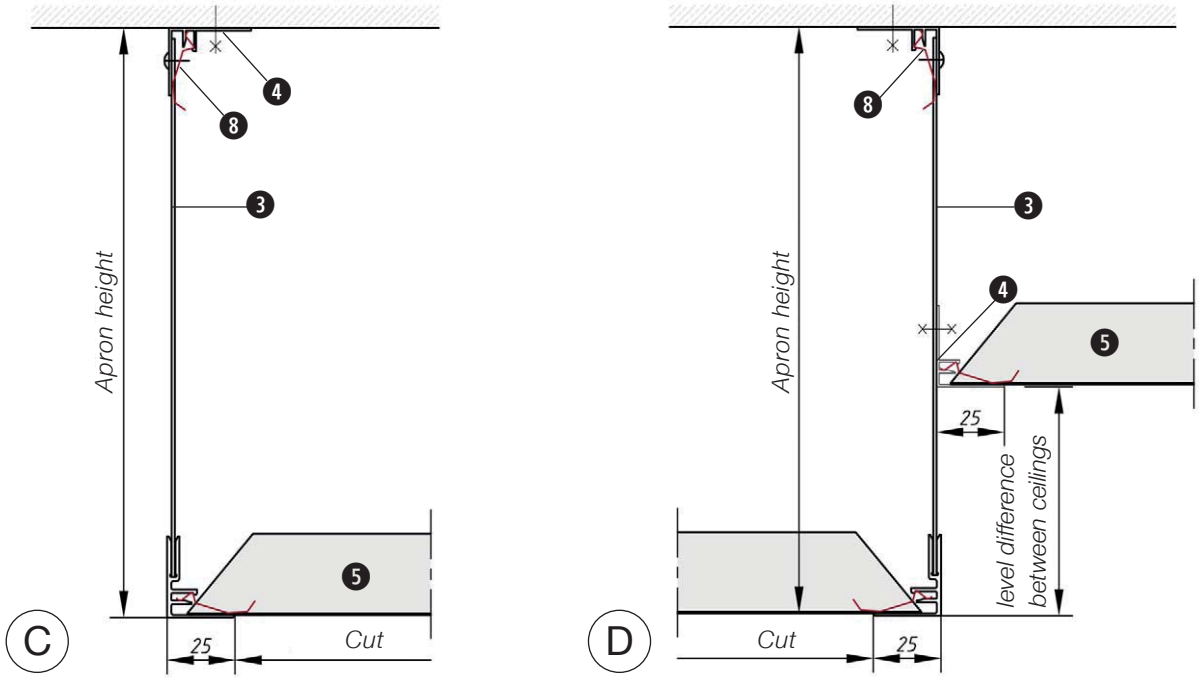
FURAL Acoustic Ceilings
Aprons

for hang-in system

U-shaped apron



with trimming section



❶	Apron with U-shaped end 16x16	❺	Hang-in tile
❷	Apron with U-shaped end 50x30	❻	Hang-in Z rail
❸	Apron with trimming section	❼	Grid bracket 30/30
❹	Trimming section	❽	Fixing springs

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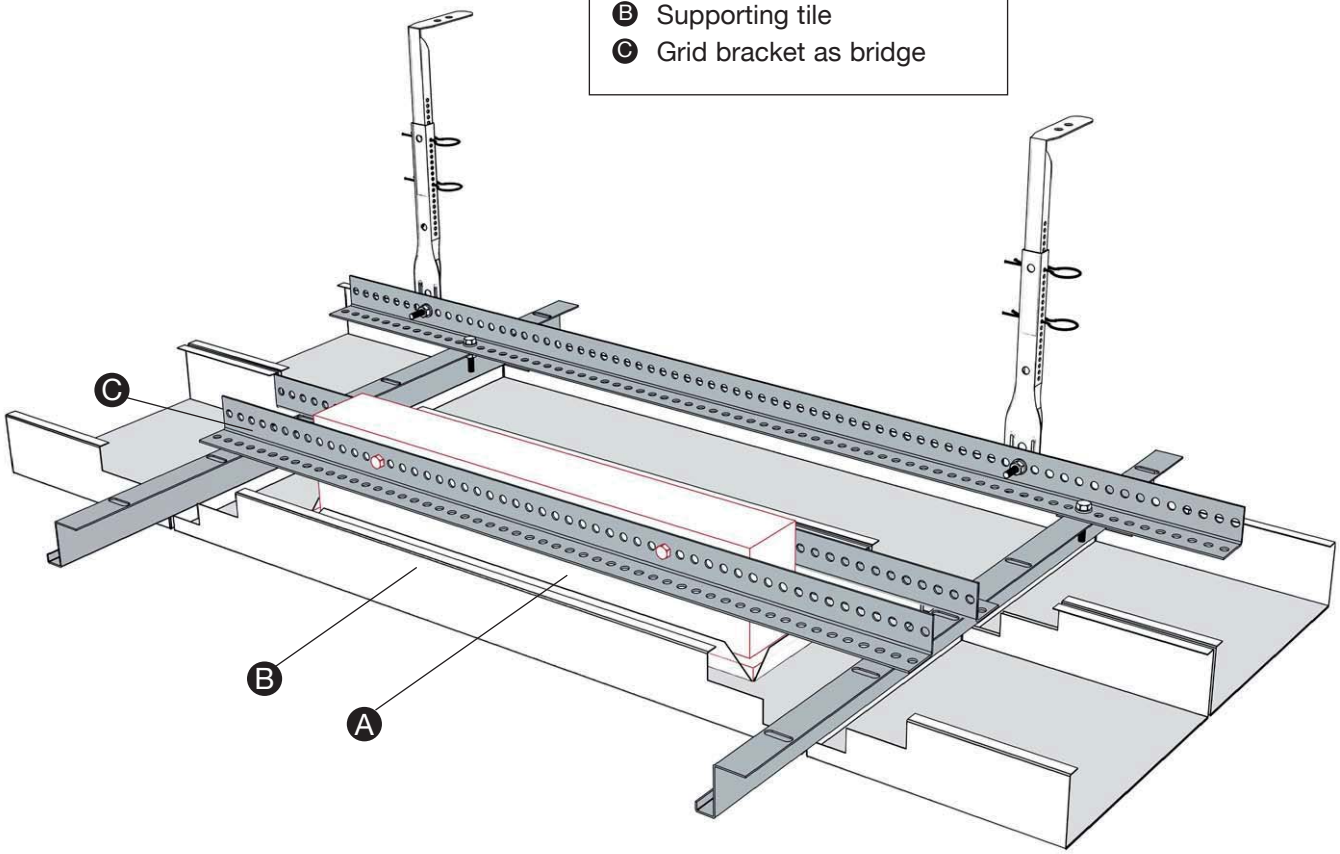
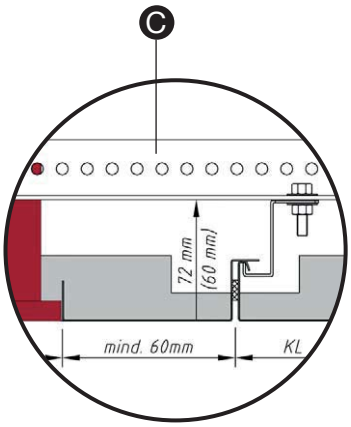
FURAL® Acoustic Ceilings

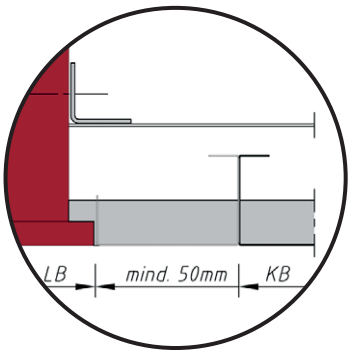
Installation of light fittings - rectangular light fitting in supporting tile

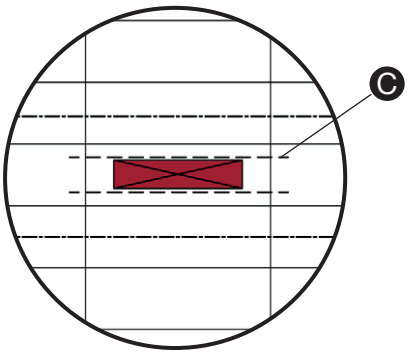
for hang-in system

Ⓐ Light fitting
Ⓑ Supporting tile
Ⓒ Grid bracket as bridge









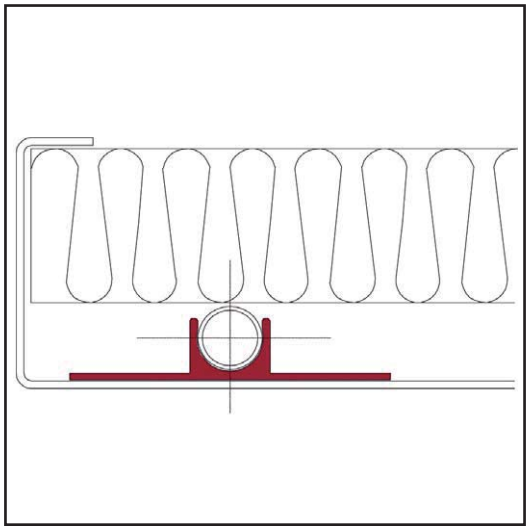
Installation of light fitting:
- Bolt 2 pieces of grid bracket 30/30 onto the long sides of the light fitting.
- Place the light fittings on the Z-shaped profile.
- Light fitting must be suspended separately (not shown).
- Safeguard against falling, in accordance to lighting manufacturer‘s installation instructions.

F&S

α ACOUSTIC H HYGIENE ❄ COOLING CEILINGS

FUNCTIONS- & SPECIAL CEILINGS

ADVANTAGES:



› Flexibility in room design

- Free arrangement of floating ceiling units
- Each ceiling „island“ equipped with complete technical systems

› Cost efficient:

- Ideal alignment with the spatial geometry
- Less disassembly work for accessibility to ceiling cavities, including cleanroom ceilings

› Functionality

- Special design depending on the requirements for acoustic, cooling, wind safety, etc.

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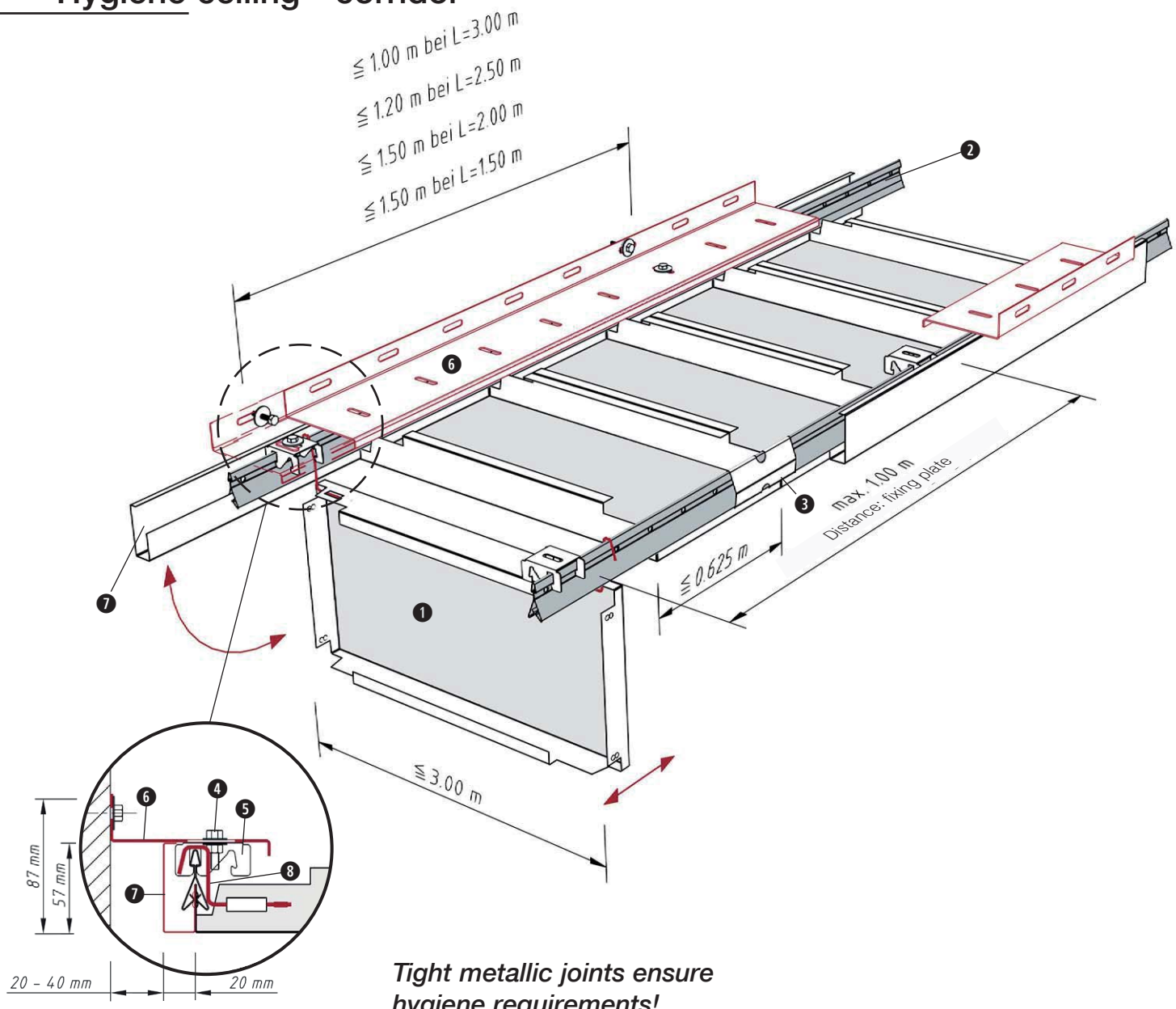
KLK
1.2.3.4

FURAL Acoustic Ceilings
Long span tiles – clip-in system

Hygiene ceiling - corridor



Tight metallic joints ensure hygiene requirements!

Standard components required: KLK 1.2.3.4

Item	Designation	Quantity / m² L=3,0 m	L=2,5 m	L=2,0 m	L=1,5 m	
❶	Long span tile					
❷	Clipping rail 16/38	0.67	0.80	1.00	1.34	metres
❸	Main runner connector	0.17	0.20	0.25	0.34	units
❹	Screw M6, complete	0.67	0.67	0.67	0.89	units
❺	Fixing plate	0.67	0.67	0.67	0.89	units
❻	Wall angle for hospital	0.67	0.80	1.00	1.34	metres
❼	Shadow section for hospital	0.67	0.80	1.00	1.34	metres
❽	DOOR wire bracket	---	---	---	---	

Installation

Distance between fixing points according to the sketch

Ceiling weight per m²: alu app. 5kg
steel app. 8kg

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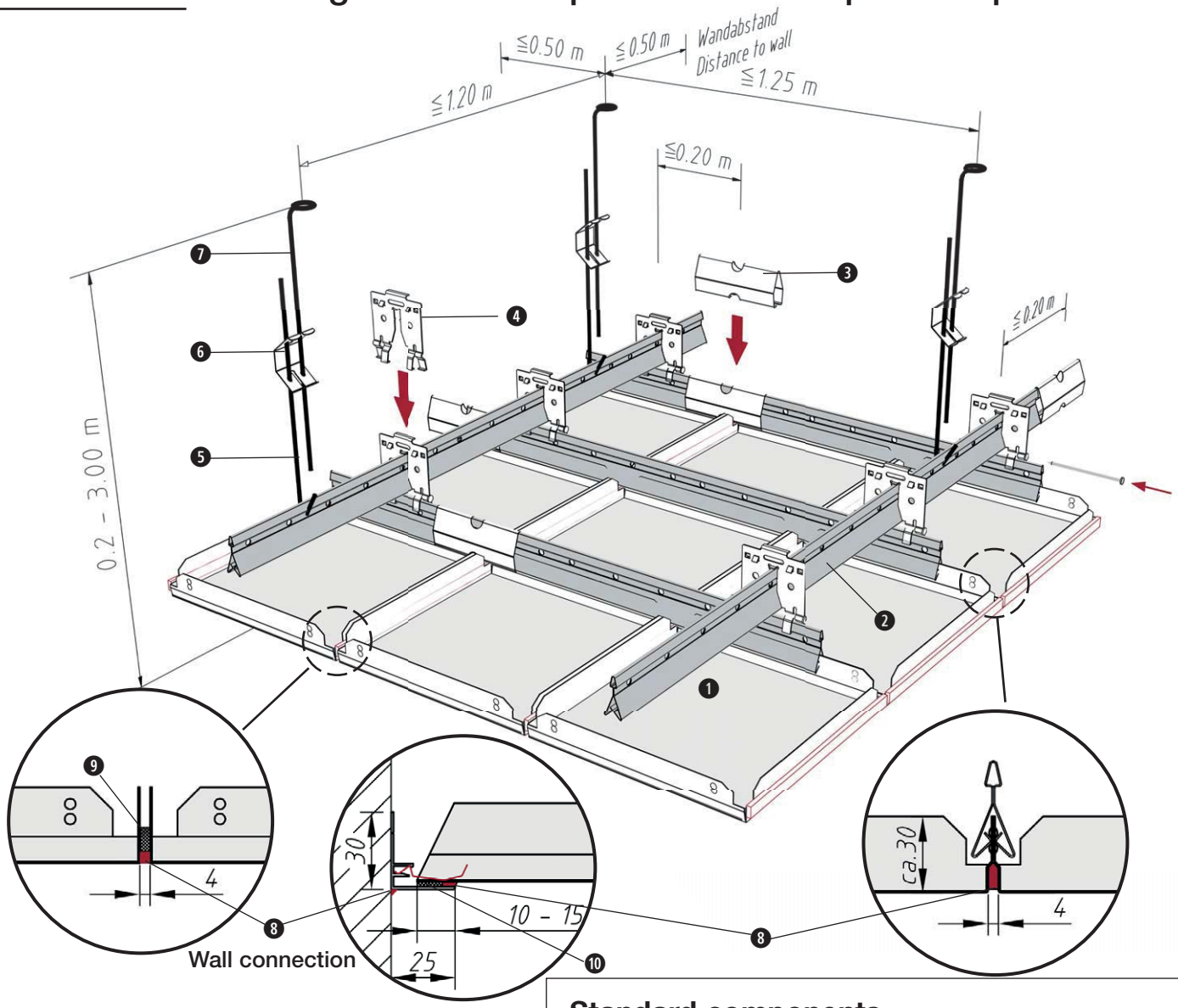
KQR
1.1.1.1

FURAL Acoustic Ceilings
Square tiles – clip-in system

Cleanroom ceiling without overpressure - with quick suspension



Absolutely air-tight. Tile joints are sealed.

Standard components required: KQR 1.1.1.1

Item	Designation	Quantity / m² 625	600	
❶	Ceiling tile, sharp edged. plain 2 sides with 2 mm crimp, 1 side with 4 mm sealing tape	2.56	2.78	units
❷	Clipping rail 16/38	2.40	2.47	metres
❸	Main runner connector	0.60	0.62	units
❹	Suspension key + security pin	1.28	1.33	units
❺	Suspension wire with hook	0.67	0.67	units
❻	Spring bracket	0.67	0.67	units
❼	Suspension wire with loop	0.67	0.67	units
❽	PU-sealing compound	50	52	ml
❾	PE sealing tape 10/4	1.60	1.67	metres
❿	PE sealing tape 10/2	–	–	

Installation

Distance between fixing points according to the sketch

Ceiling weight per m²: alu app. 5 kg

steel app. 8 kg

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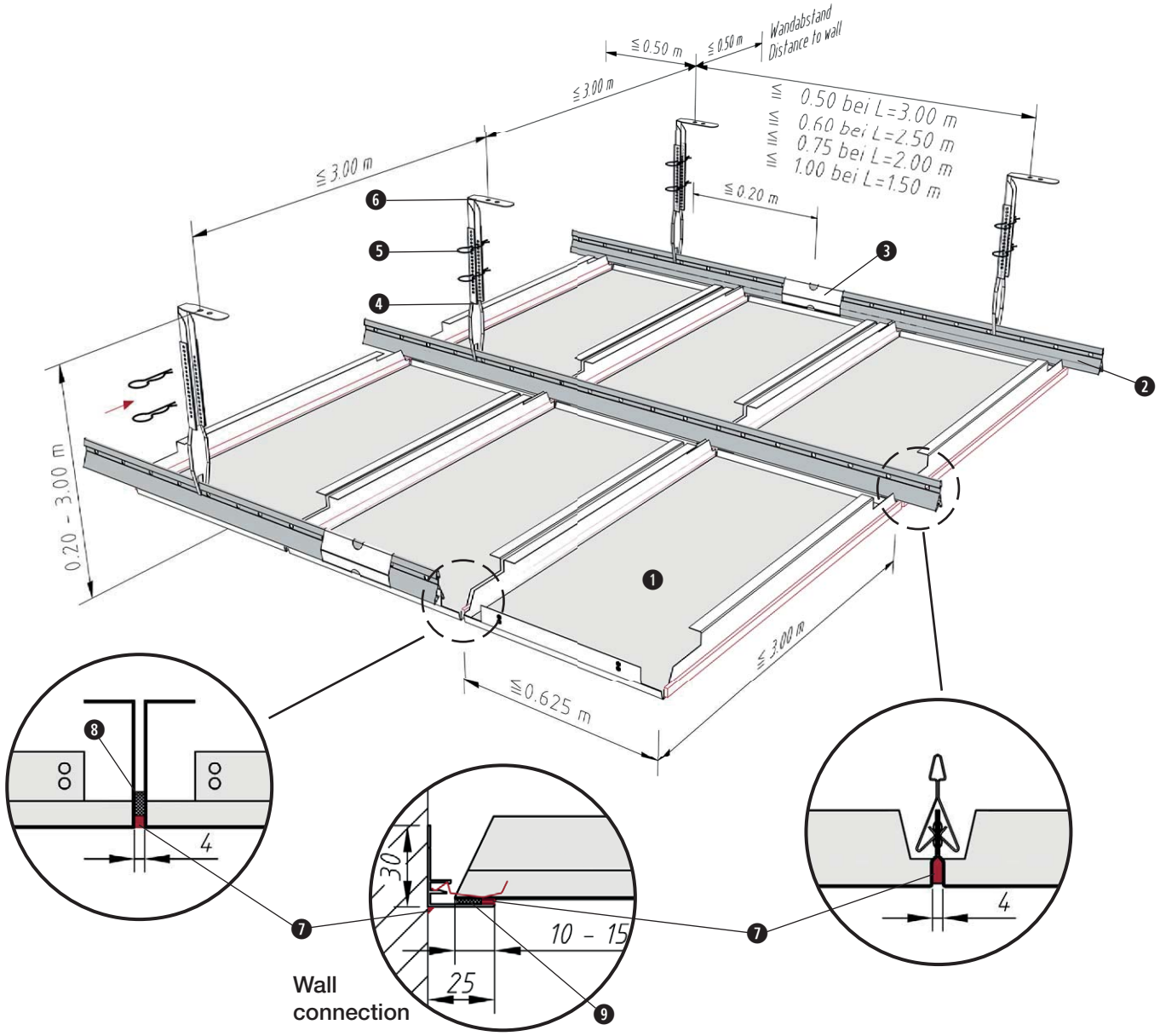
KLR
1.2.0.2

FURAL Acoustic Ceilings
Long span tiles – clip-in system

Cleanroom ceiling without overpressure - with nonius suspension



Elegant visual impression and air tight

Standard components required: KLR 1.2.0.2

Item	Designation	Quantity / m² L=3,0 m	L=2,5 m	L=2,0 m	L=1,5 m	
❶	Long span tile					
❷	Clipping rail 16/38	0.33	0.40	0.50	0.67	metres
❸	Main runner connector	0.08	0.10	0.13	0.17	units
❹	Lower nonius	0.67	0.67	0.67	0.67	units
❺	Securing pin	1.34	1.34	1.34	1.34	units
❻	Upper nonius	0.67	0.67	0.67	0.67	units
❼	PU-sealing compound	---	---	---	---	
❽	PE sealing tape 10/4	---	---	---	---	
❾	PE sealing tape 10/2	---	---	---	---	

Installation

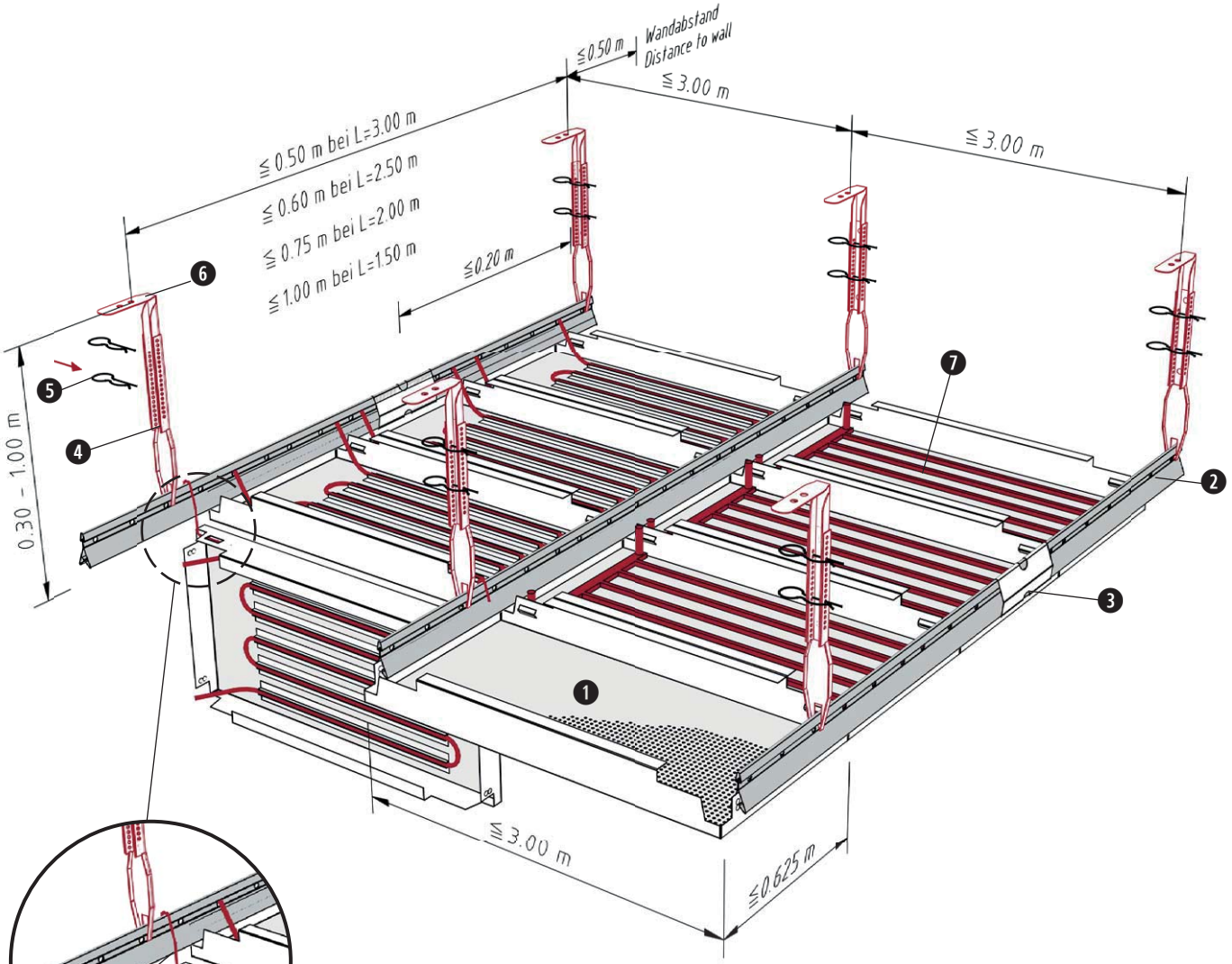
Distance between fixing points according to the sketch

Ceiling weight per m²: alu app. 5 kg
steel app. 8 kg

KLK 1.2.0.2 Kühl

FURAL Acoustic Ceilings
Long span tiles – clip-in system

Cooling ceiling - suitable for copper, aluminium and plastic cooling pipes



No additional safety cable required thanks to the DOOR wire bracket

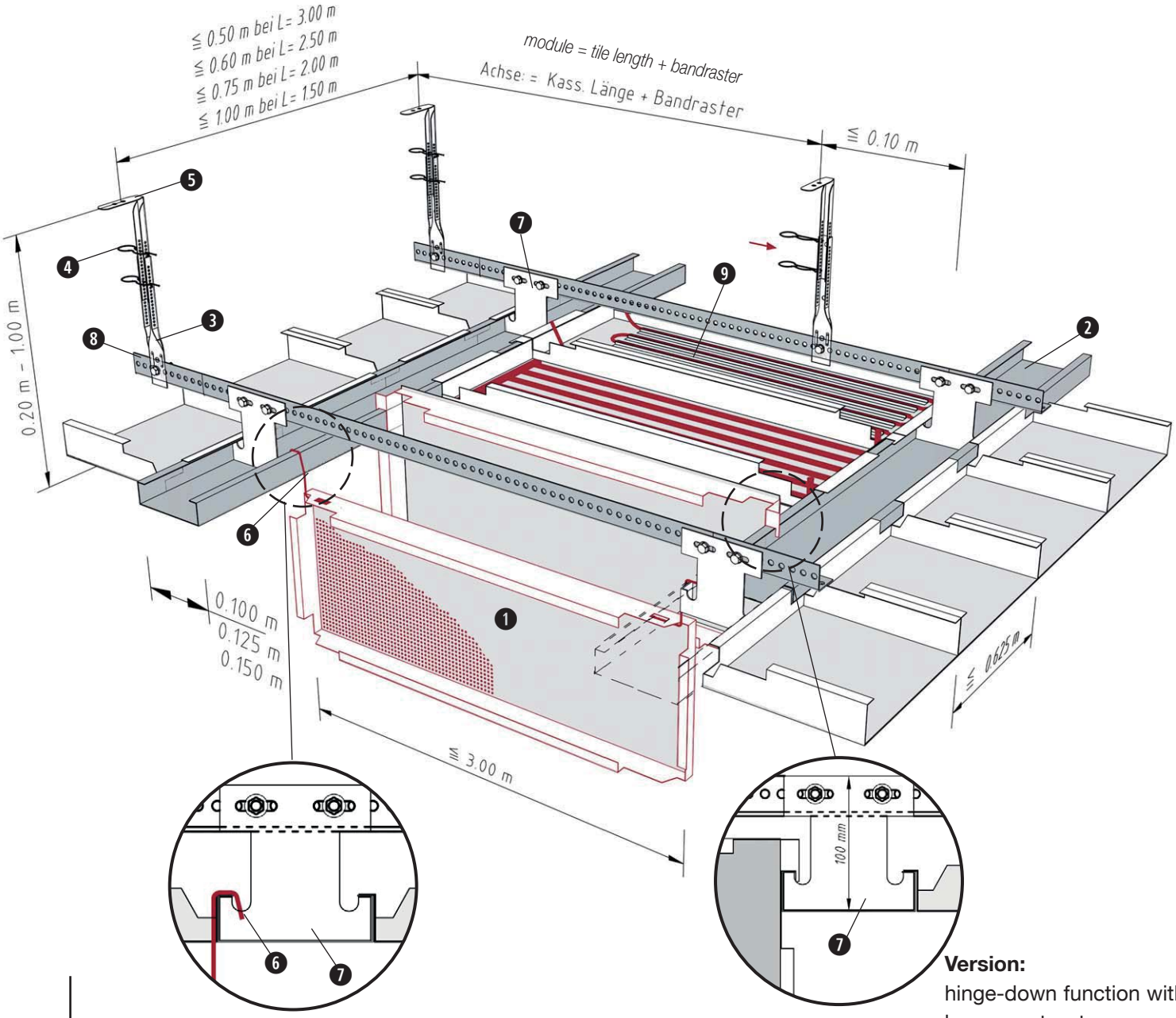
Standard components
required: KLK 1.2.0.2 Kühl Quantity / m²

Item	Designation	L=3,0 m	L=2,5 m	L=2,0 m	L=1,5 m	
❶	Long span tile					
❷	Clipping rail 16/38	0,33	0,40	0,50	0,67	metres
❸	Main runner connector	0,08	0,10	0,13	0,17	units
❹	Lower nonius	0,67	0,67	0,67	0,67	units
❺	Securing pin	1,34	1,34	1,34	1,34	units
❻	Upper nonius	0,67	0,67	0,67	0,67	units
❼	Cooling system	–	–	–	–	
❽	DOOR wire bracket	depends on tile width				

Installation
recommended tile area:
max. 1 m²,
larger tile area on request

FURAL Acoustic Ceilings
Long span tiles – strip grid system

Cooling ceiling - Suitable for copper, aluminium and plastic cooling pipes



Version:
hinge-down function with hanger cut-out

Strip grid with tiles, that can be hinged down.

1. Strip grid tile
2. Main runner (strip grid)
3. Lower nonius
4. Securing pin
5. Upper nonius
6. DOOR wire bracket
7. Grid element hanger
8. Grid bracket 30/30
9. Cooling system

Installation
recommended tile area: max. 1 m², larger tile area on request

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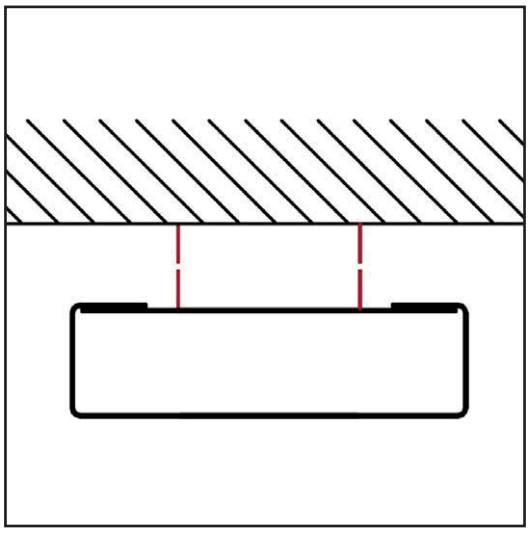
COOLING CEILINGS

ACOUSTIC

FLOATING CEILINGS

ADVANTAGES:



› Impressively functional

- High acoustic efficiency
- Ideal with cooling and heating function
- Several installation systems possible

› High flexibility:

- Mono or multi-part floating ceiling possible
- Different corner constructions
- Multiple installation systems combinable

› Visual benefits:

- Precise manufacturing guarantees perfect edges
- Formats/perforations/color: free choice option
- Floating elements convey lightness

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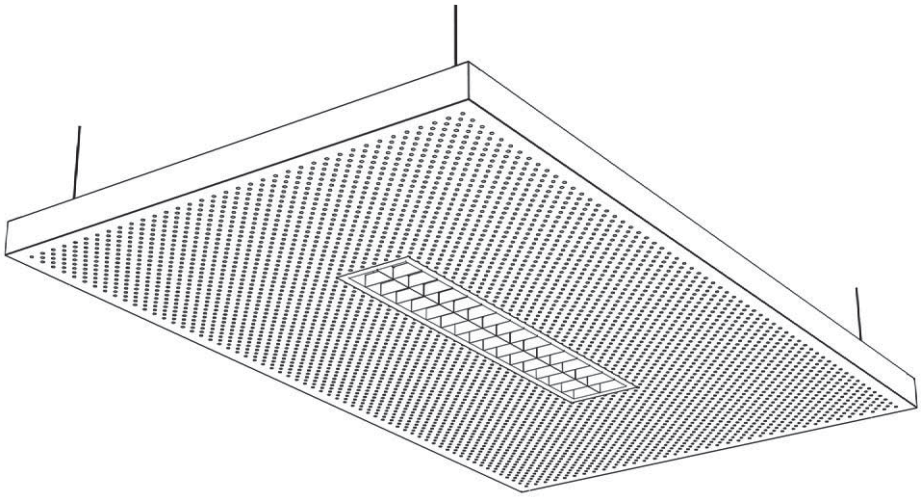
Floating ceiling - without frame

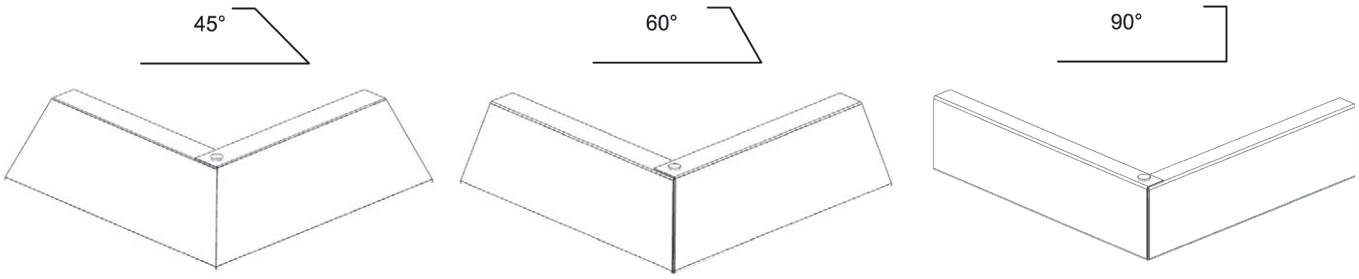


› Standard formats: 1,200 x 2,400 mm
1,200 x 1,800 mm
1,200 x 1,200 mm

› Max. dimensions: 1,250 x 3,000 mm

› Suspension: Great variety of standard suspension versions are possible
e.g.: wire suspension, threaded rod, nonius suspension etc.

Edges:

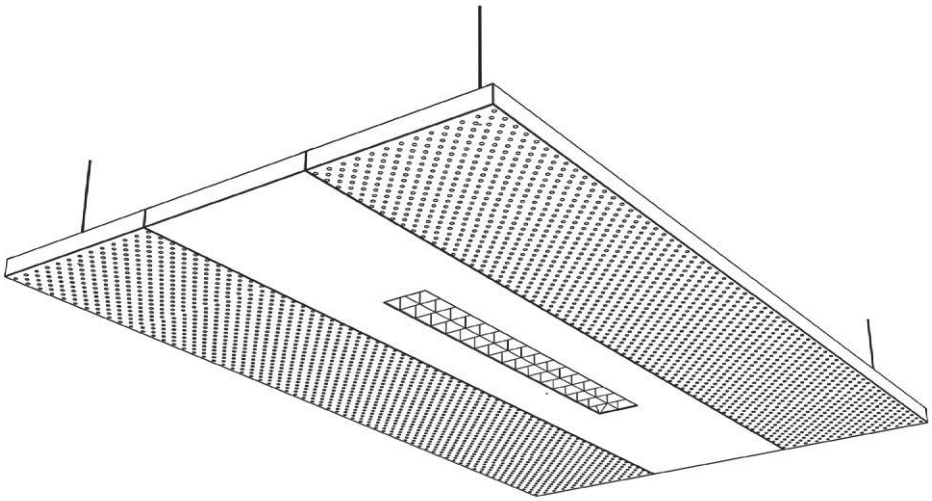


45° - edge
riveted corners

60° - edge
riveted corners

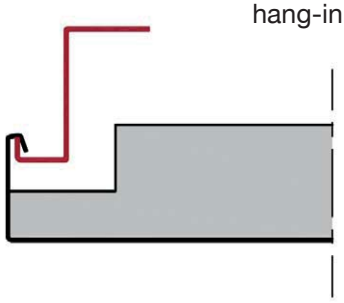
90° - edge
riveted corners

Multi-part floating ceiling



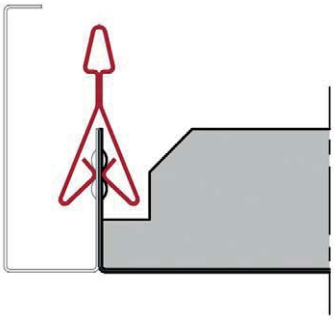
without frame

hang-in system

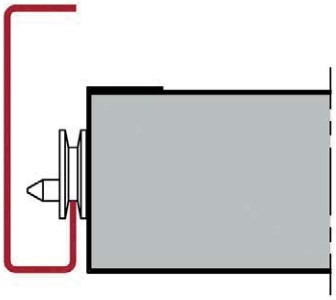


with frame

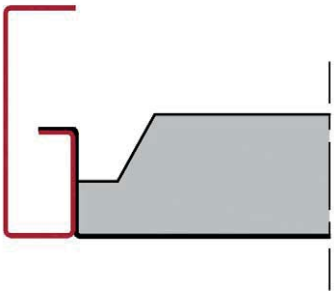
clip-in system with trimming profile



G-trimming profile with SWING-tile

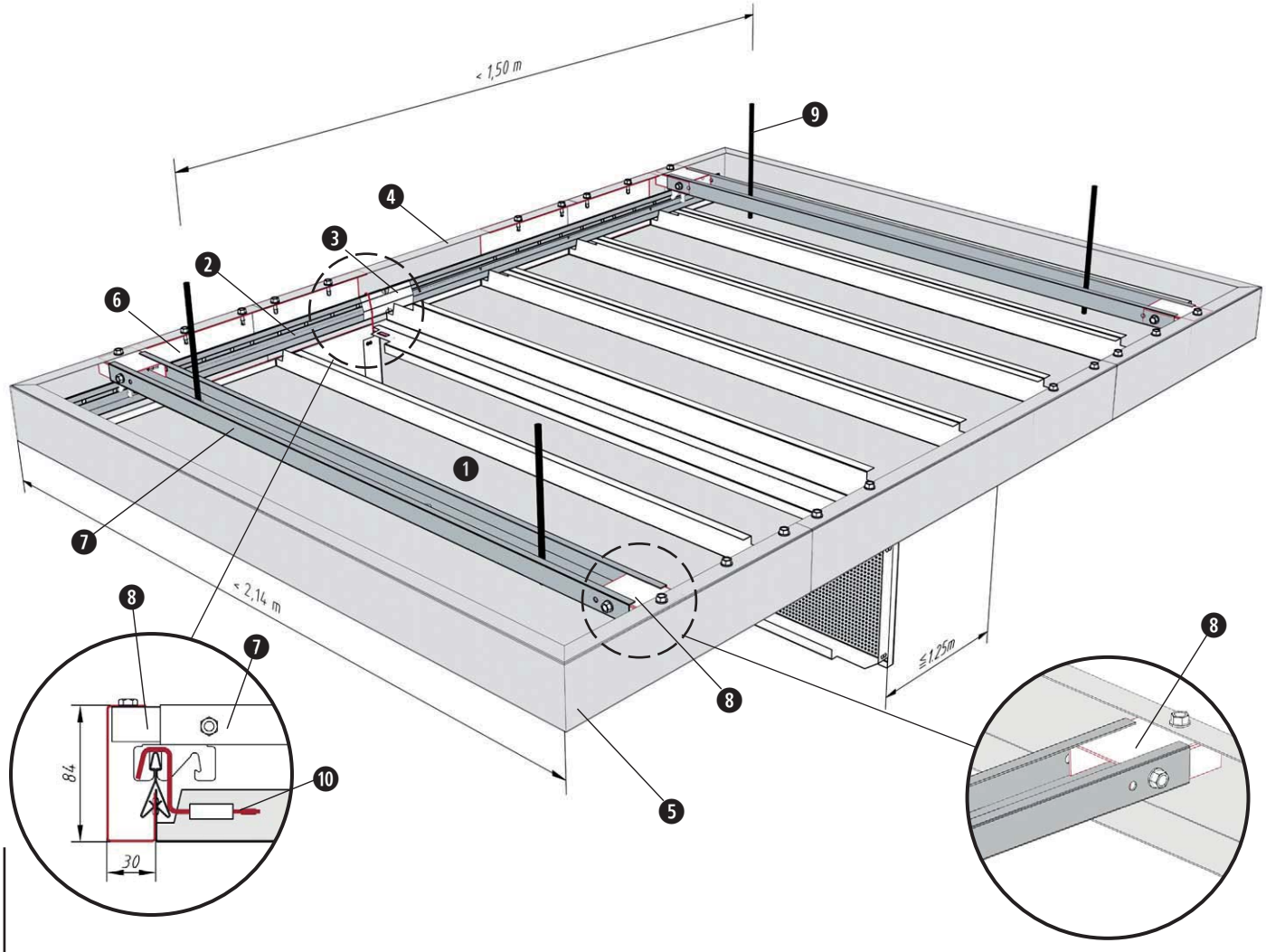


G-trimming profile with Z-support



Multi-part floating ceiling - with G-profile frame

- Max. length of floating ceiling: unlimited
- Max. width of floating ceiling: 2,200 mm
- Max. distance between fixing points: 1,500 mm
- Max. tile width: 1,250 mm
- Max. tile length: 2,140 mm

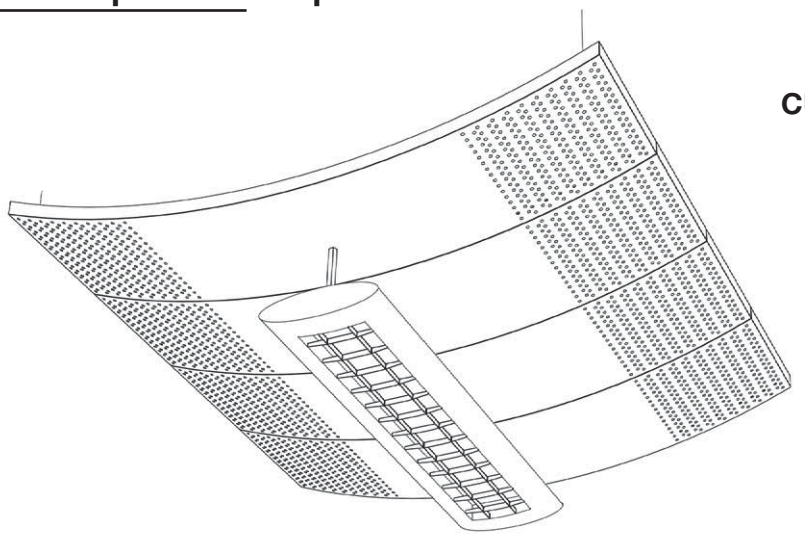


1. Clip-in tile
2. Clipping rail 16/38
3. Main runner connector
4. G-profile longitudinally 84 x 30 mm
5. G-profile on the front side incl. corner construction, one piece
6. Main runner connector for G-profile
7. C-support profile incl. holes for the locking slides and the suspension
8. locking slides
9. suspension, e.g. threaded rod, wire rope
10. DOOR-wire bracket

Installation

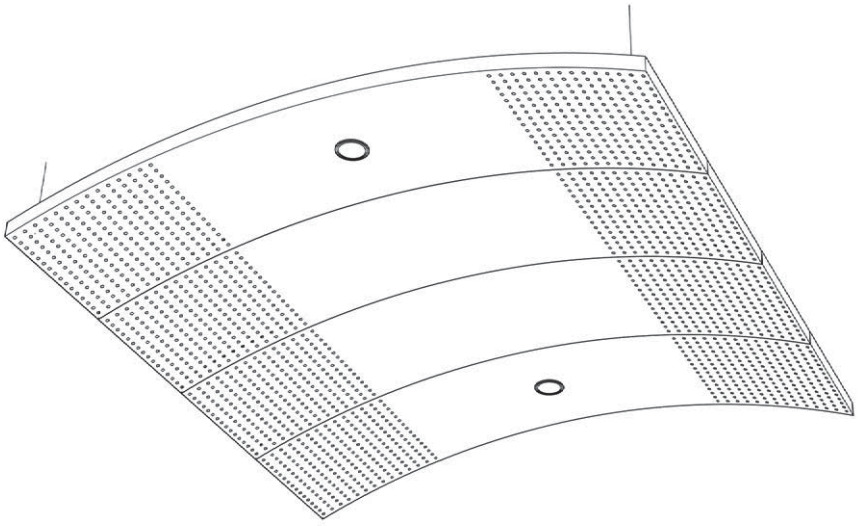
Distance between fixing points according to the sketch
Ceiling weight per m²: steel app. 10kg
further instructions: p. 76-77

Special shapes



curved / convex

curved / concave

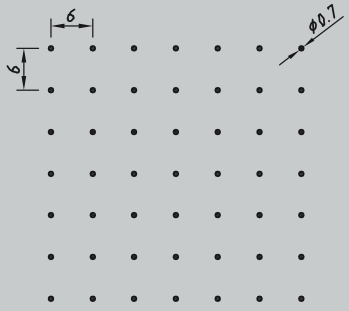


further design versions:

- curved
- trapezoid
- triangular
- central strip grid
- integrated roundings
- Multiple installation systems can be combined eg. multi-part floating ceilings with G-profile frame and central strip grid. (see Page 111)
- Fittings such as lights, air outlets, etc. can be optimally integrated

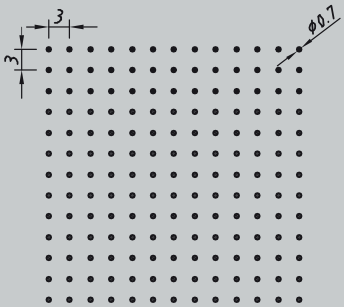
FURAL Acoustic Ceilings
Perforations – sound absorption

FURAL 0701
with fleece
Ø 0.7 mm
Free cross-section 1%
Suspension height 200 mm
Class D
α_w = 0.50 (LM)
max. perforation exterior size 1.140 mm



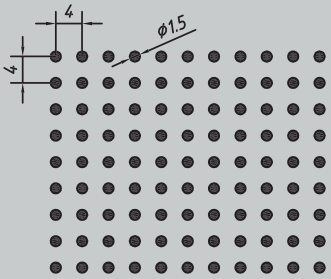
Rg 0.7 - 6.0 (acc. to DIN 24041)

FURAL 0704
with fleece
Ø 0.7 mm
Free cross-section 4%
Suspension height 200 mm
Class C
α_w = 0.75
max. perforation exterior size 1.140 mm



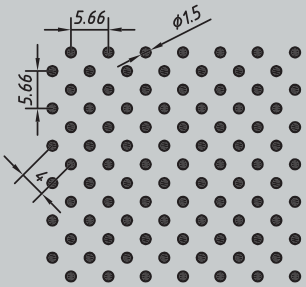
Rg 0.7 - 3.0 (acc. to DIN 24041)

FURAL 1511g
with fleece
Ø 1.5 mm
Free cross-section 11%
Suspension height 200 mm
Class C
α_w = 0.75
max. perforation exterior size 1.486 mm



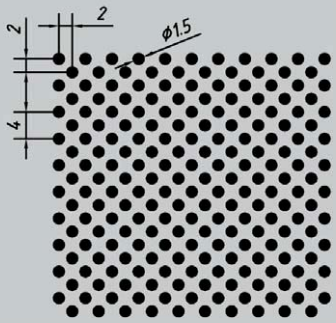
Rg 1.5 - 4.0 (acc. to DIN 24041)

FURAL 1511d
with fleece
Ø 1.5 mm
Free cross-section 11%
Suspension height 200 mm
Class C
α_w = 0.75
max. perforation exterior size 1.486 mm



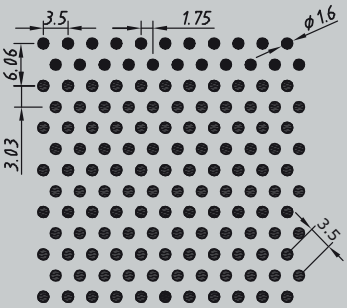
Rd 1.5 - 4.0 (acc. to DIN 24041)

FURAL 1522d
with fleece
Ø 1.5 mm
Free cross-section 22%
Suspension height 200 mm
Class C
α_w = 0.70
max. perforation exterior size 1.486 mm



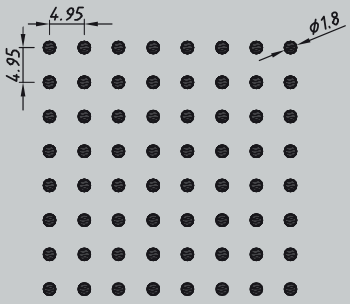
Rd 1.5 - 2.83 (acc. to DIN 24041)

FURAL 1620
with fleece
Ø 1.6 mm
Free cross-section 20%
Suspension height 200 mm
Class B
α_w = 0.80
max. perforation exterior size 1.440 mm



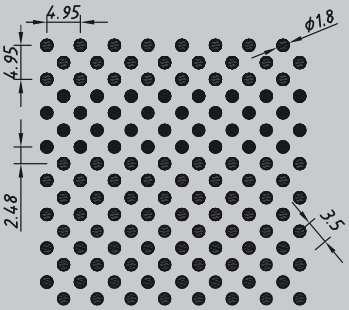
Rv 1.6 - 3.5 (acc. to DIN 24041)

FURAL 1810
with fleece
Ø 1.8 mm
Free cross-section 10%
Suspension height 200 mm
Class C
α_w = 0.75
max. perforation exterior size 1.413 mm



Rd 1.8 - 4.95 (acc. to DIN 24041)

FURAL 1821
with fleece
Ø 1.8 mm
Free cross-section 21%
Suspension height 200 mm
Class C
α_w = 0.75
max. perforation exterior size 1.413 mm



Rd 1.8 - 3.5 (acc. to DIN 24041)

Direction of perforation

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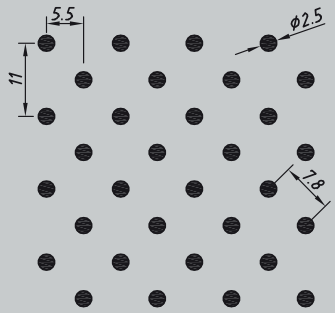
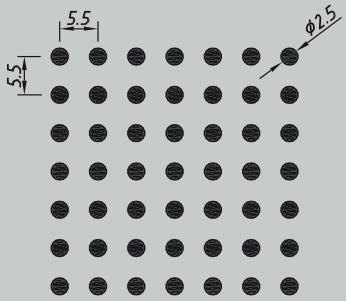
FURAL Acoustic Ceilings
Perforations – sound absorption

FURAL 2508
with fleece
Ø 2.5 mm
Free cross-section 8%
Suspension height 200 mm
Class C
α_w = 0.75
max. perforation exterior size 1.458 mm



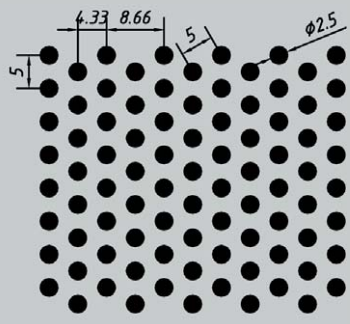
Rd 2.5 - 7.8 (acc. to DIN 24041)

FURAL 2516
with fleece
Ø 2.5 mm
Free cross-section 16%
Suspension height 200 mm
Class B
α_w = 0.80
max. perforation exterior size 1.458 mm



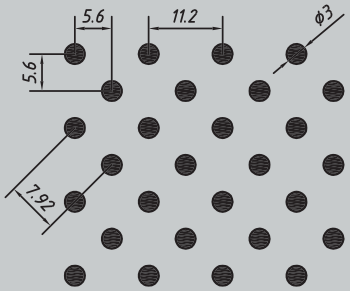
Rg 2.5 - 5.5 (acc. to DIN 24041)

FURAL 2523
with fleece
Ø 2.5 mm
Free cross-section 23%
Suspension height 200 mm
Class C
α_w = 0.75 (L)
max. perforation exterior size 1.458 mm



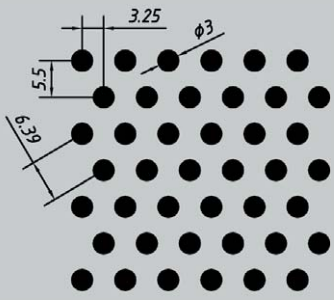
Rv 2.5 - 5.0 (acc. to DIN 24041)

FURAL 311
with fleece
Ø 3.0 mm
Free cross-section 11%
Suspension height 200 mm
Class C
α_w = 0.75
max. perforation exterior size 600 mm



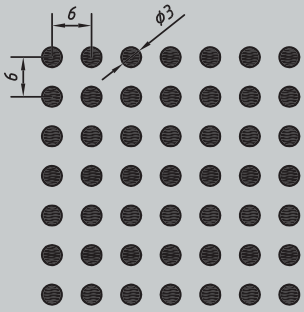
Rd 3 - 7.92 (acc. to DIN 24041)

FURAL 320d
with fleece
Ø 3.0 mm
Free cross-section 20%
Suspension height 200 mm
Class C
α_w = 0.75 (L)
max. perforation exterior size 1.403 mm



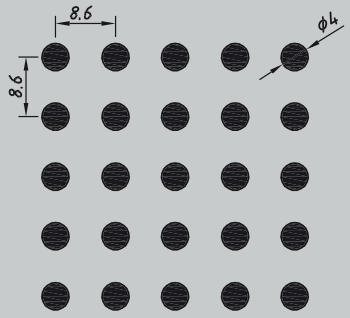
Rv 3.0 - 6.39 (acc. to DIN 24041)

FURAL 320g
with fleece
Ø 3.0 mm
Free cross-section 20%
Suspension height 200 mm
Class C
α_w = 0.75 (L)
max. perforation exterior size 1.430 mm



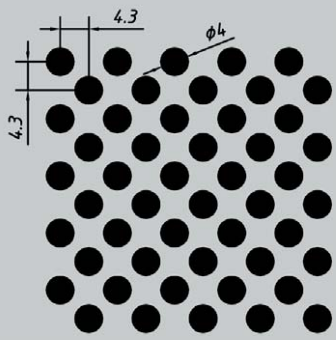
Rg 3.0 - 6.0 (acc. to DIN 24041)

FURAL 417
with fleece
Ø 4.0 mm
Free cross-section 17%
Suspension height 200 mm
Class B
α_w = 0.80
max. perforation exterior size 606 mm



Rg 4.0 - 8.6 (acc. to DIN 24041)

FURAL 433
with fleece
Ø 4.0 mm
Free cross-segment 33%
Suspension height 200 mm
Class B
α_w = 0.80
max. perforation exterior size 606 mm

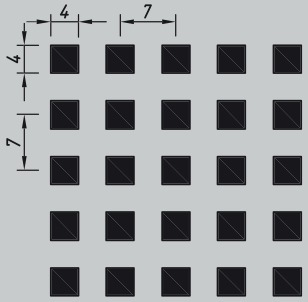


Rd 4.0 - 6.1 (acc. to DIN 24041)

Direction of perforation

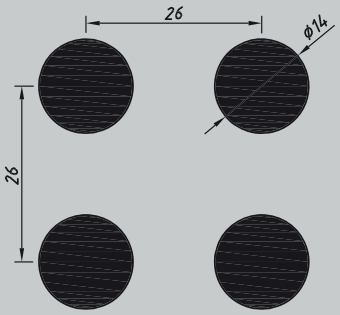
FURAL Acoustic Ceilings
Perforations – sound absorption

FURAL 4433
with fleece
□4.0 mm
Free cross-section 33%
Suspension height 200 mm
Class B
α_w = 0.80
max. perforation exterior size 630 mm



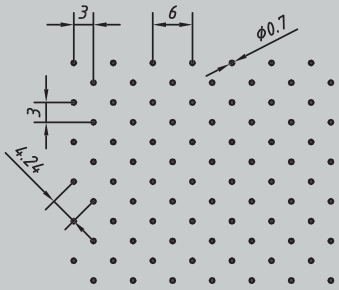
Qg 4.0 - 7.0 (acc. to DIN 24041)

FURAL 1423
with fleece
Ø 14.0 mm
Free cross-section 23%
Suspension height 200 mm
Class C
α_w = 0.75
max. perforation exterior size 598 mm



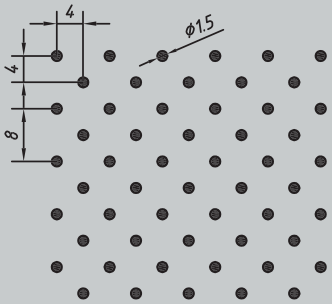
Rg 1.4 - 26.0 (acc. to DIN 24041)

FURAL 0702
with fleece
Ø 0.7 mm
Free cross-section 2%
max. perforation exterior size 1.140 mm



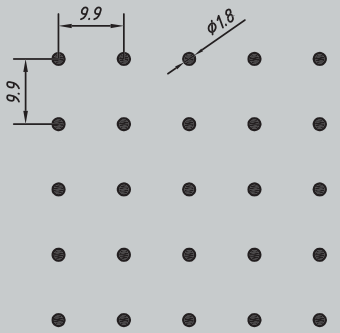
Rd 0.7 - 4.24 (acc. to DIN 24041)

FURAL 1506
with fleece
Ø 1.5 mm
Free cross-section 6%
max. perforation exterior size 1.486 mm



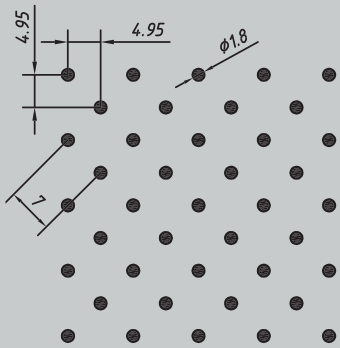
Rd 1.5 - 5.66 (acc. to DIN 24041)

FURAL 1802
with fleece
Ø 1.8 mm
Free cross-section 2%
max. perforation exterior size 1.413 mm



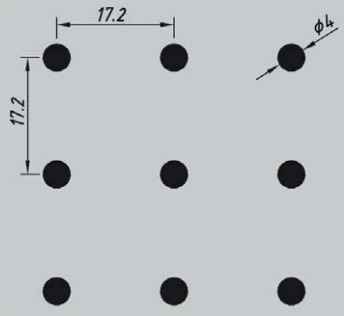
Rg 1.8 - 9.9 (acc. to DIN 24041)

FURAL 1805
with fleece
Ø 1.8 mm
Free cross-section 5%
max. perforation exterior size 1.413 mm



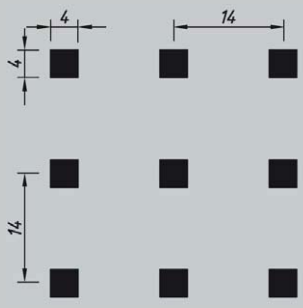
Rd 1.8 - 7.0 (acc. to DIN 24041)

FURAL 404
with fleece
Ø 4.0 mm
Free cross-section 4%
max. perforation exterior size 606 mm



Rg 4.0 - 17.2 (acc. to DIN 24041)

FURAL 4408
with fleece
□4.0 mm
Free cross-section 8%
max. perforation exterior size 630 mm



Qg 4.0 - 14.0 (acc. to DIN 24041)

Direction of perforation

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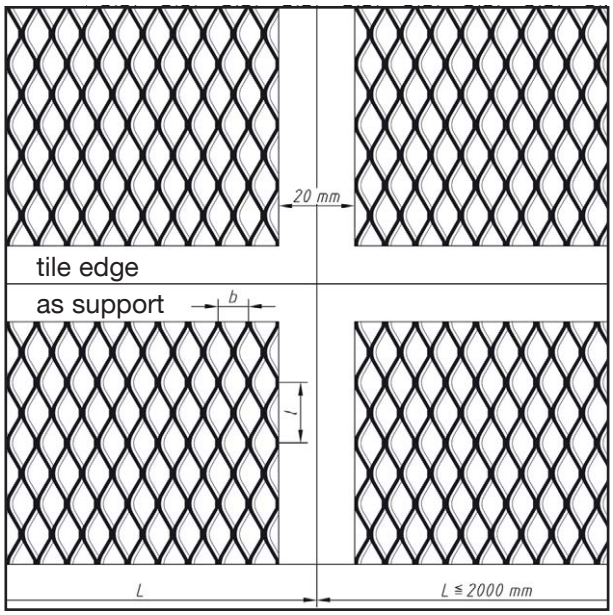
FURAL Acoustic Ceilings
Stretch metal – Galaxy

Stretch metal



› Design:

- Tiles with factory-fitted expanded metal grid stretch metal – mesh size freely selectable.
- Standard mesh: [16 / 8 / 1,5 / 1] mm
- Visible revolving tile edge app. 10 mm
- Coating possible in all RAL colors.

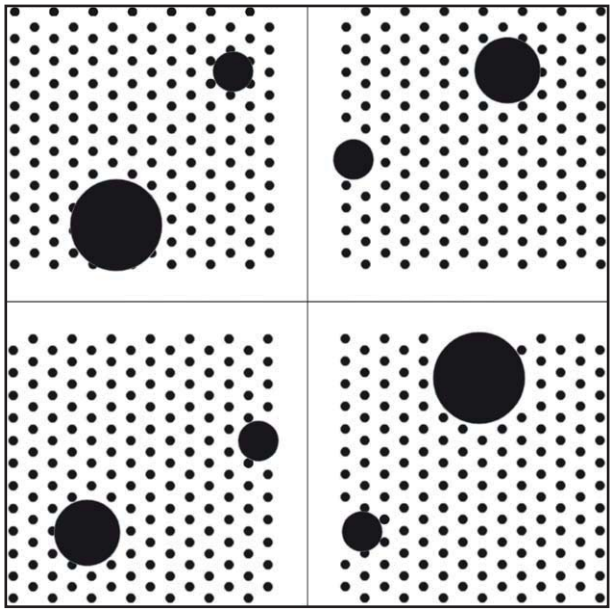
› Systems:

- As clip-in system
  Option: Installation of FURAL-DOOR-Systems to open the ceiling for revision work
- As lay-in system for T24-rail

› Function:

- Acoustically effective ceiling with acoustic fleece (for test values see folder ‚Test values sound absorbtion')
- Designed for mounting with **FURAL** clip-in system for fast and economical installation

Galaxy



Perforation: 1620
GALAXY effect
(hole ⌀ = [6,3 / 10,3 / 14,3]
α_w = 0,8 / Class: B

› Easy to assemble:

- Quick installation on standard substructure

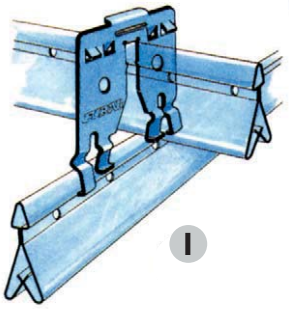
› Optics:

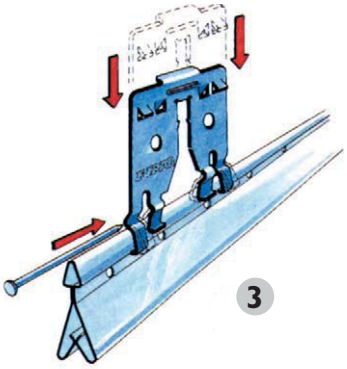
- Unique ceiling appearance with galaxy effect

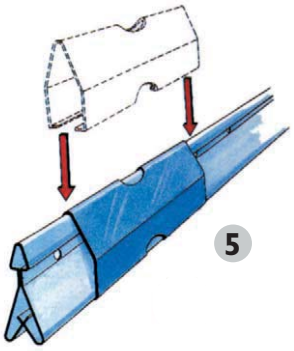
› Acoustic:

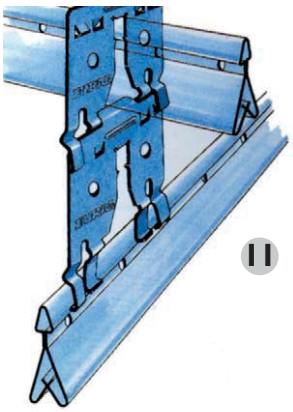
- Acoustically effective through basic perforation

13 REASONS TO SAVE INSTALLATION TIME BY USING FURAL CLIPPING RAILS

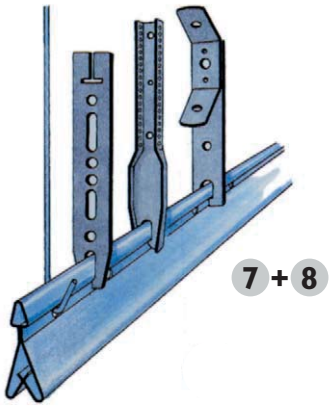


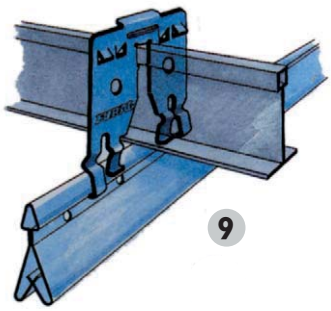


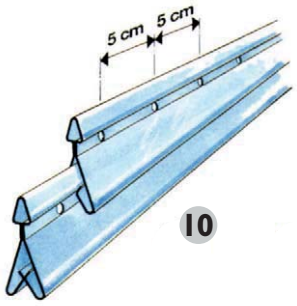


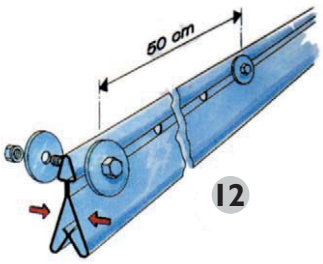


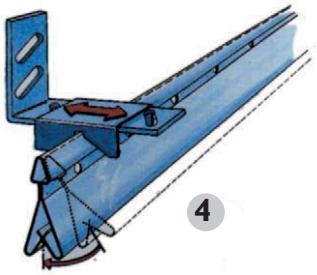
only valid for FURAL clipping rails











1 ONE PROFILE

Clipping rail + grid rail

2 CLIPPING RAIL

Remnants can be used for longitudinal connection

3 CONNECTION

clipping rail to grid rail by use of suspension key
= **FURAL** clip-in method

4 COMFORTABLE

alignment of rails, sliding in either direction is possible

5 ONE MAIN RUNNER CONNECTOR

with free edges - perfect connection of clipping rail and grid rail

6 CLIPPING RAIL

T-connector - any angle can be chosen
(included in the delivery program of **FURAL**)

7 SUSPENSION

the use of quick suspension elements is possible with a distance of 5 cm between suspension points

8 ALSO SUITABLE

for any conventional type of nonius suspension - sliding suspension

9 USING

T-rails - e.g. as grid rails is a possible option with the system

10 DOUBLE CLIPPING TRAIL

with clip-in connection for wide span girders (no special section)
on stock at any time

11 FOR LOW SUSPENSION

-with nonius short suspension

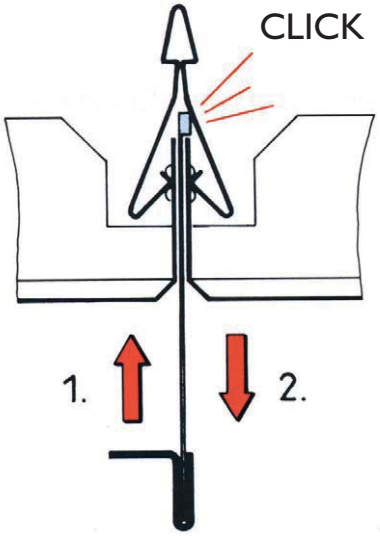
12 FOR ENHANCED SAFETY

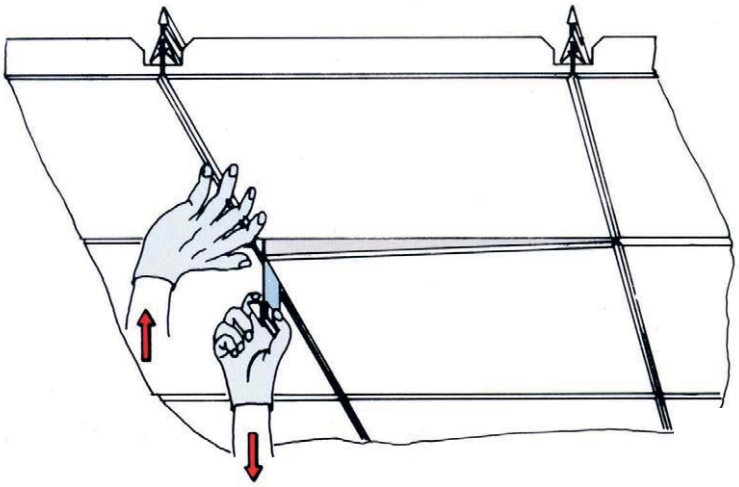
additional use of screw lock is possible

13 ACCURATE

height alignment in case of single and double web installation

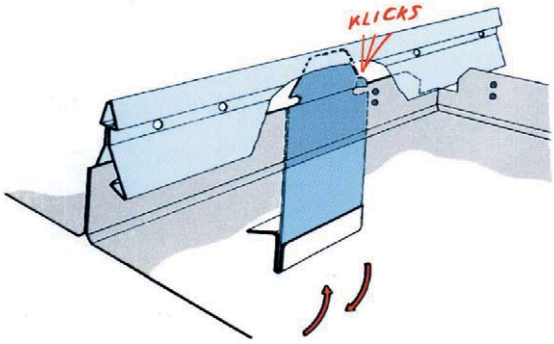
DISMANTLING





› Dismantling:

- Insert ceiling opener carefully into the ceiling joint until the tongue engages
- Pull the tile out of the clipping rail by lever action of the ceiling opener.

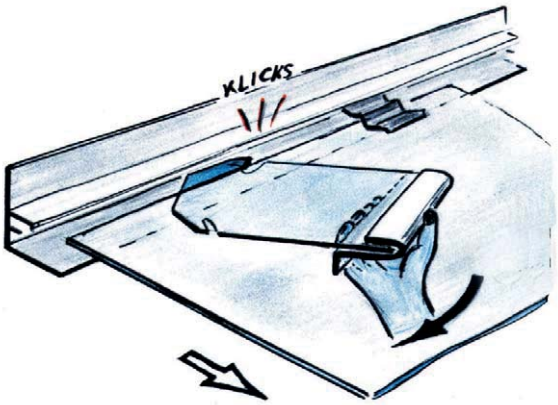


› Demo video:

- Scan the QR - code to watch the dismantling process on youtube

› Adjust:

- Pull tiles out of the wall mounting section and adjust.



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