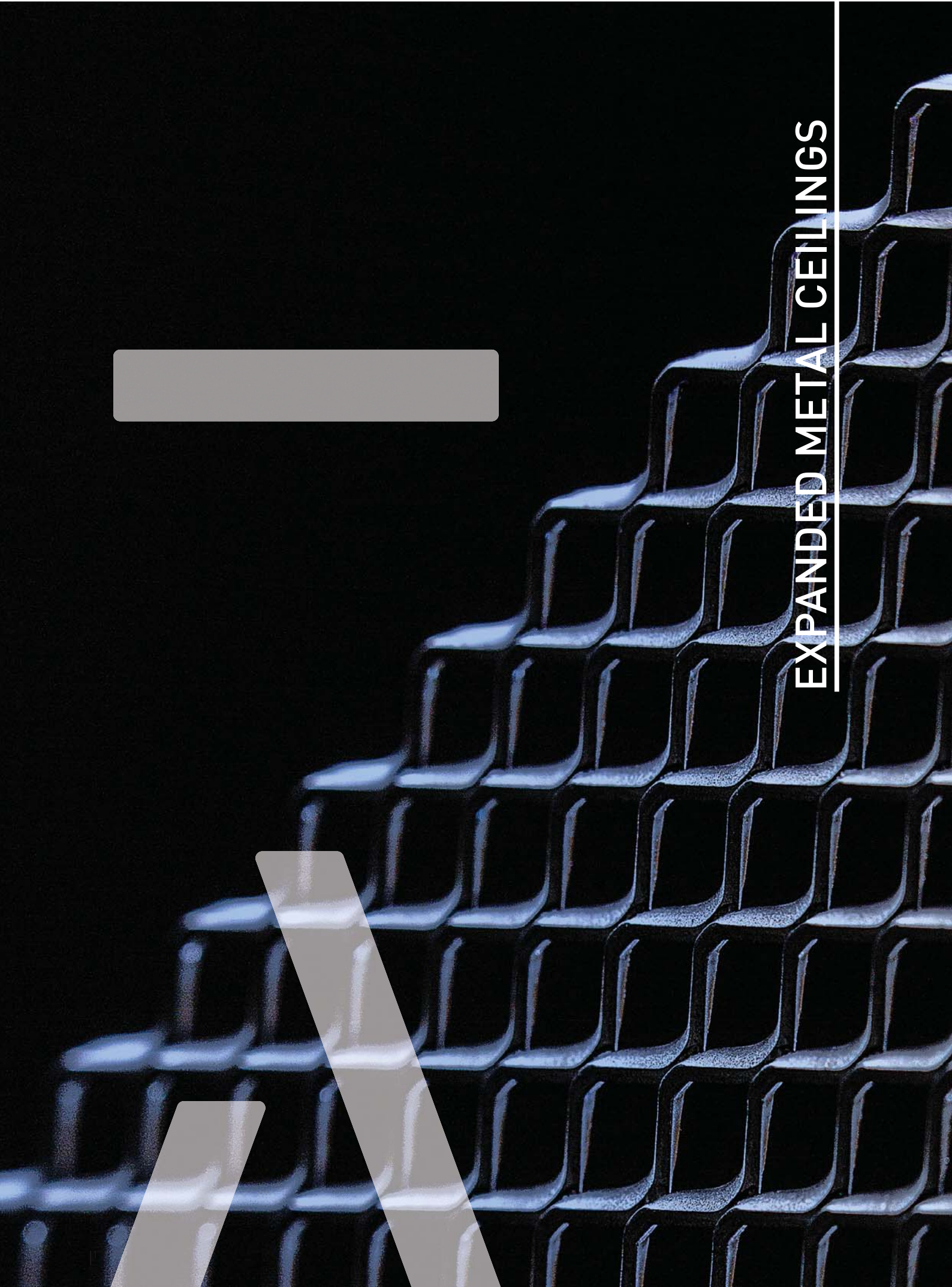
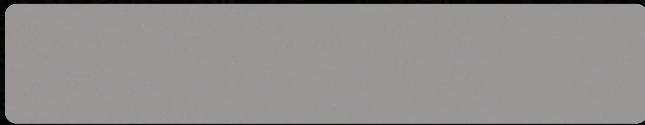


EXPANDED METAL CEILINGS



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Intro

Mesh types

Tiles and joints

Systems

Wall connections

Built-in parts

Coatings

WE ARE EXPANDED METAL CEILINGS

We are family!

Fural Systeme in Metall GmbH in Gmunden (Austria), Metalit AG in Büron (Switzerland) and Dipling Werk GmbH in Frankfurt/Hungen (Germany) have been a strong, international corporate group in the expanded metal ceiling sector since the first half of 2019.

With this international partnership, we are bundling decades of experience in development and production, and the understanding of the needs of the respective regional markets.

We regard ourselves as quality leaders in expanded metal ceilings, and therefore as your primary contact for aesthetically, technically and logistically challenging architectural and building projects.

The benefits of expanded metal ceilings

Expanded metal ceilings are characterised by their distinctive and unique appearance. The wide range of mesh widths, tile formats, joint patterns and possibilities for colour schemes allow architectural highlights to be set.

In addition to the optical qualities, the expanded metal ceiling also stands for highest functionality levels:

- Meshes with large, free cross-sections are outstandingly suitable for **ventilation** and **smoke extraction**.
- Expanded metal ceilings are ideal for use as **cooling ceilings**.
- Expanded metal ceilings can also help to improve **room acoustics**.
- The individual tiles can be opened and closed at any point. This eliminates the need for inspection doors.

Expanded metal ceilings impress with their

- Aesthetics
- Functionality
- Durability
- Sustainability
- Quality
- Versatility

»Expanded metal ceilings are an ideal combination of design with functional needs.«

(Patrick Handler, Innocad Architektur ZT GmbH)

C & P Headquarter, Graz

- Architecture: Innocad Architektur ZT GmbH, Graz
- Mesh 30.0 x 15.05 x 4.0 x 1.5 mm (L x W x B x A)
- Tile Type B
- Colour Parzifal® RAL 7024 Graphite grey
- Z-hang-in system

WE THINK IN TERMS OF ARCHITECTURE

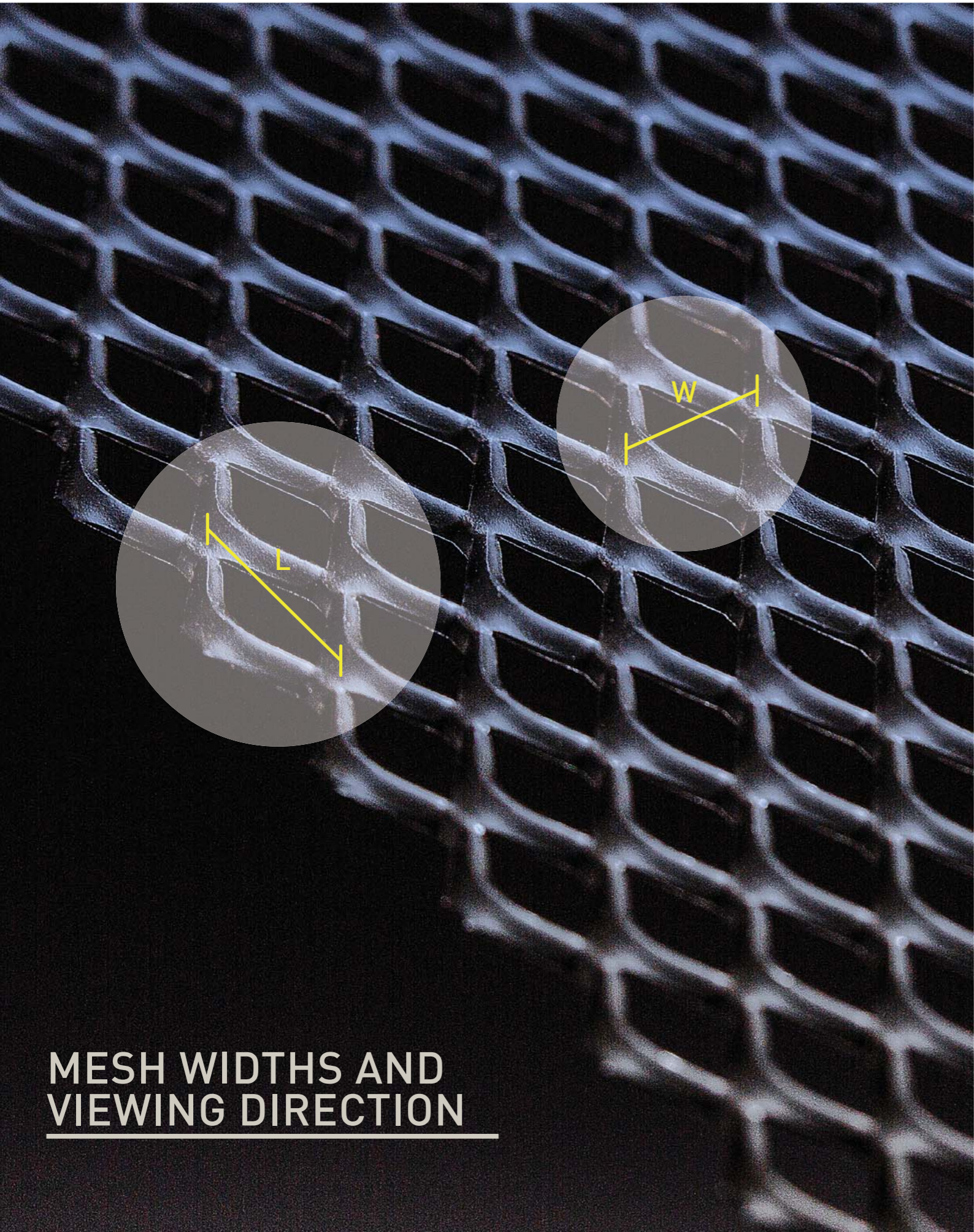
We think in terms of categories – **city, building, room and users**, and not in terms of square metres of expanded metal ceiling. We take you and your projects seriously and search together with you for the best solution, even if it first has to be developed. We see ourselves as your supplier of **high-quality architecture components** and look forward to collaborating with you!

At the end, we can both be proud of what we have achieved and look forward to working together for many years.

»The details are not the details – they are the design.«
(Charles Eames)

- Office building, Spreitenbach, Switzerland
- Architecture: Brügger Architekten AG, Thun
 - Mesh 16.0 × 10.0 × 2.0 × 1.5 mm
(L × W × B × A)
 - Colour RAL 9010 pure white
 - Special design grid-hang-in system





MESH WIDTHS AND VIEWING DIRECTION

Viewing direction

The term "viewing direction" is always used to refer to the view towards the more closed side of the expanded metal. If the installed expanded metal tile is viewed from below, the mesh width is visible and is generally wider than the material thickness. Particular attention must always be paid to the viewing direction when planning and installing expanded metal ceilings. A choice of mesh widths with dimensions as per the sketch below can be found on the following pages of this brochure. A wide range of other mesh configurations are also possible.

Special formats

In addition to our standard formats, special sizes and customised versions are also possible. Please ask your local contact for further details.

Formula of the free cross-section

The formula for calculating the free cross-section F_0 in percent describes the ratio of the "open space" created by the expansion to the overall expanded metal mesh area.

$$F_0 = (1 - 2B/W) \times 100\%$$

Mesh length L

L stands for the mesh length, i.e. the distance between the intersection points in the long diagonal. Intersection points are the points in the expanded metal mesh at which the webs meet.

Web width B

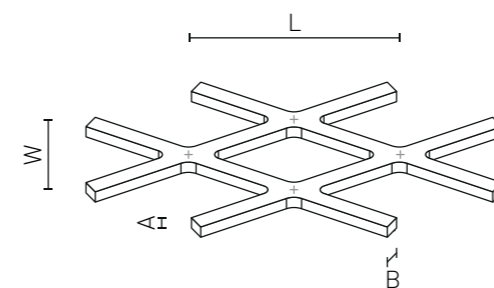
B stands for the web width, i.e. the width of the material left between the mesh openings.

Mesh width W

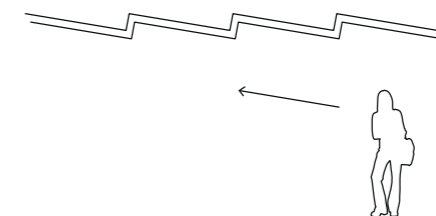
W stands for the mesh width, i.e. the distance between the intersection points in the short diagonal.

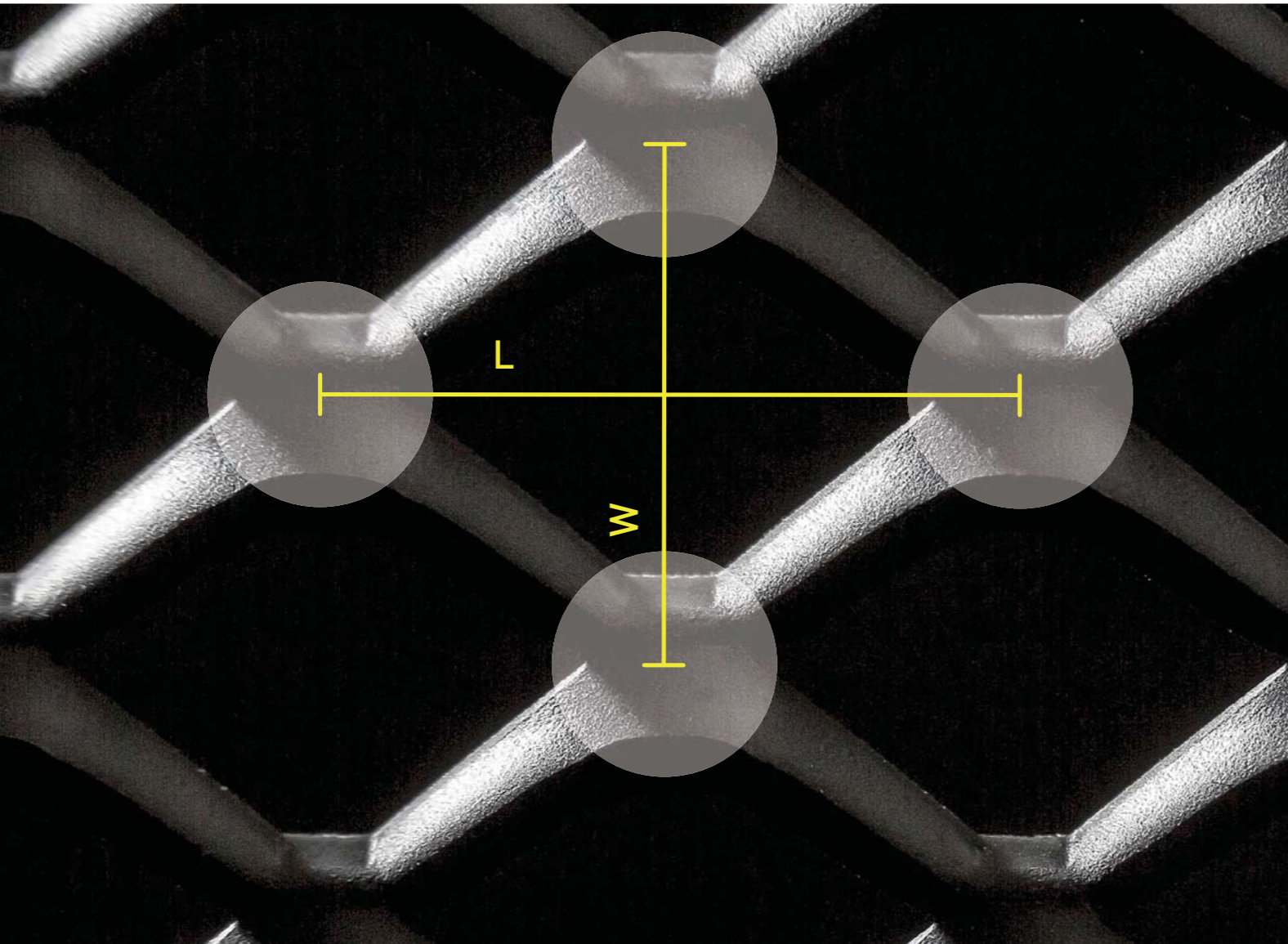
Web thickness A

A stands for the web thickness and indicates the thickness of the material from which the expanded metal was manufactured.



Viewing direction





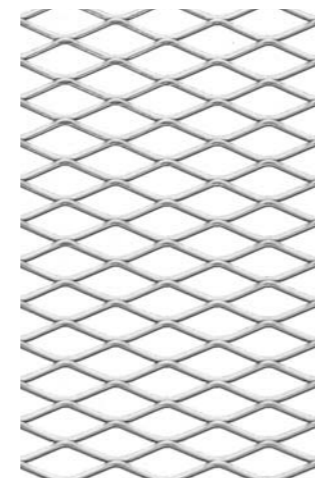
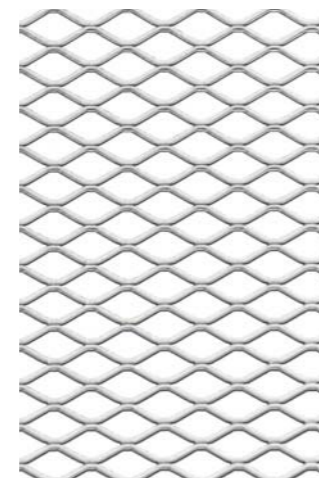
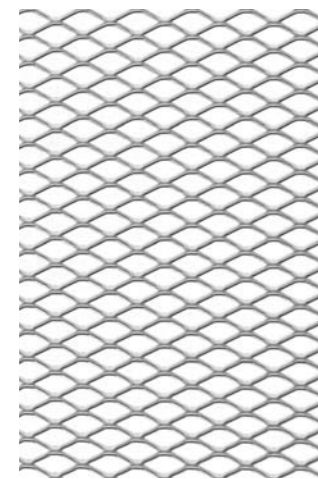
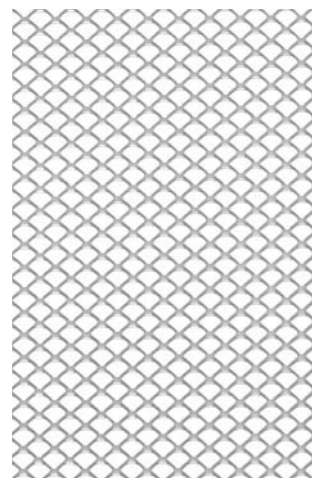
MESH TYPES

Range

We offer you an extensive range of different mesh sizes and types, from micro meshes and small meshes through medium-sized meshes right up to long web and large meshes. A large number of other configuration options are also possible, on request.

Categories

- Micro meshes L 2-6 mm
- Small meshes L 8-20 mm
- Medium-sized meshes L 22-50 mm
- Large meshes L 62-88 mm
- Square meshes L 10-15 mm
- Long web meshes L 44-52 mm
W 10-15 mm

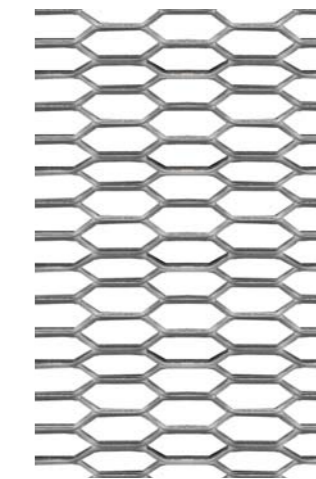
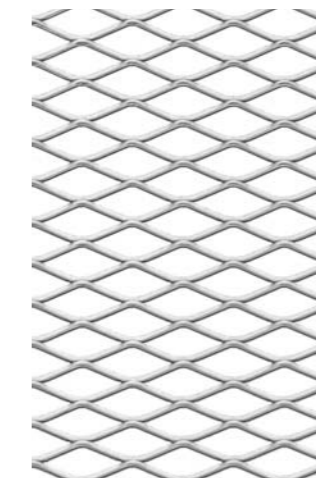


Small mesh 1
L 10.0 mm
W 7.5 mm
B 1.5 mm
A 1.0 mm
F₀ 60.0 %

Small mesh 2
L 16.0 mm
W 8.0 mm
B 1.5 mm
A 1.0 mm
F₀ 62.5 %

Medium-sized mesh 1
L 22.0 mm
W 12.0 mm
B 2.0 mm
A 1.5 mm
F₀ 66.7 %

Medium-sized mesh 2
L 30.0 mm
W 12.0 mm
B 2.0 mm
A 1.5 mm
F₀ 66.7 %

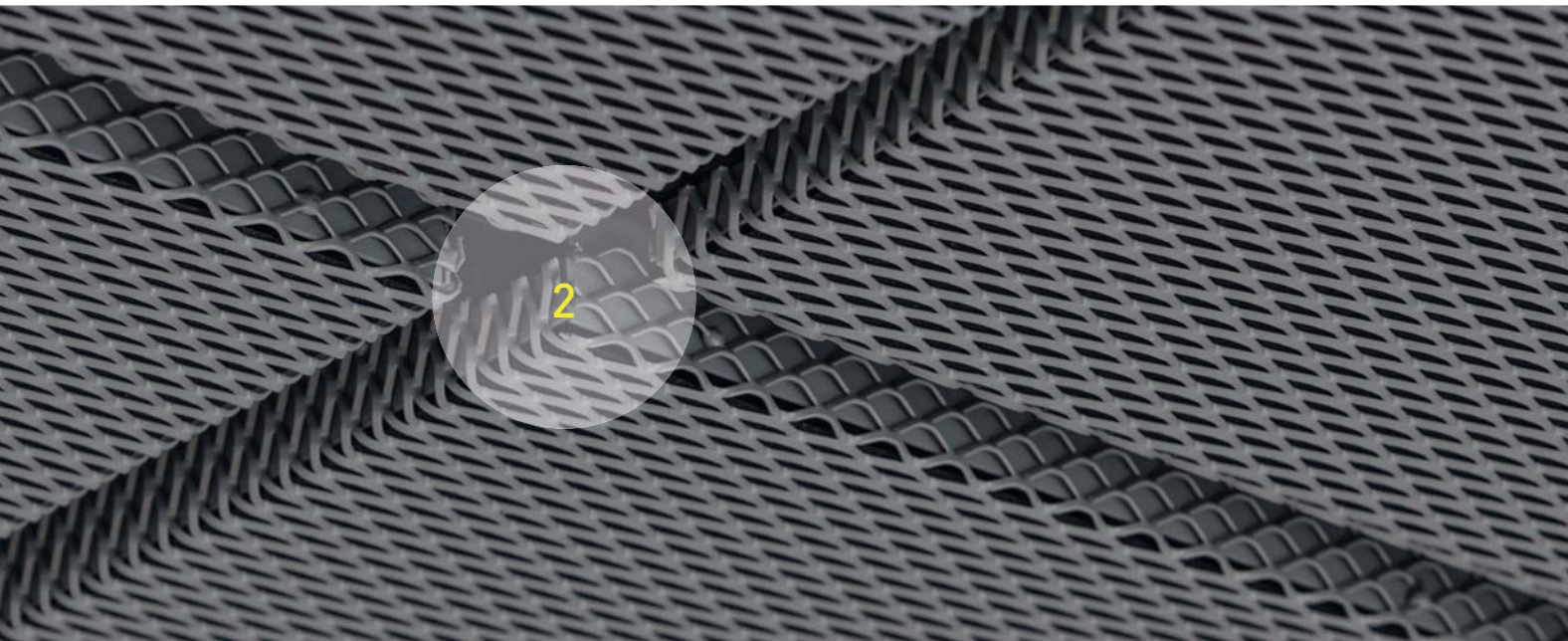
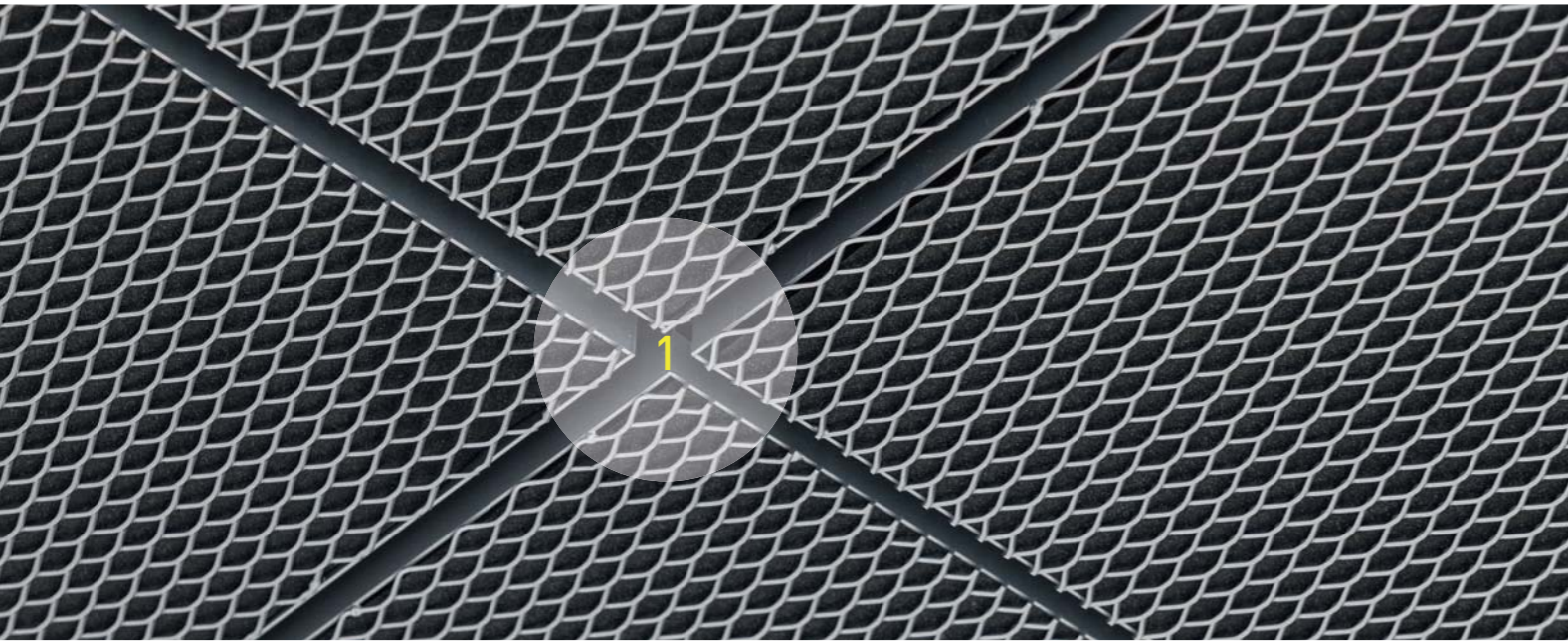


Medium-sized mesh 3
L 30.0 mm
W 15.0 mm
B 4.0 mm
A 1.5 mm
F₀ 46.3 %

Medium-sized mesh 4
L 50.0 mm
W 22.0 mm
B 2.5 mm
A 1.5 mm
F₀ 77.3 %

Long web mesh 1
L 44.0 mm
W 10.0 mm
B 2.0 mm
A 1.5 mm
F₀ 60.0 %

Large mesh 1
L 60.0 mm
W 32.0 mm
B 3.0 mm
A 1.5 mm
F₀ 81.3 %



TILE TYPES AND JOINT APPEARANCE

Types

Our expanded metal tiles are available in three different versions. The joint appearance varies, depending on the tile type, and ranges from the zero joint (no gap) up to a joint width of 20 mm or more, depending on the selected substructure system. The optical effect of expanded metal ceilings is characterised by the choice of the mesh size in combination with the joint appearance.



1 Tile type A

- Expanded metal without folded edges with butt-welded sheet metal webs
- Tile ends with the corresponding suspension elements or supporting edge folds
- Sheet metal web long sides with upper edge fold [C-shape]
- End fold H 40 mm
- Joint width 5-20 mm



2 Tile type B

- Expanded metal with folded edges and butt-welded sheet metal webs (on the expanded metal web inner side)
- Tile ends with the corresponding suspension elements or supporting edge folds
- Sheet metal web long sides with upper edge fold [C-shape]
- End fold H 40 mm
- Joint width 8-20 mm



3 Tile type C

- Flat expanded metal incorporated into a sheet metal tile
- Sheet steel tile with tile fold and cut-out
- Visible tile edge from below 12 mm on all tile sides
- Expanded metal inserted, fixing on all sides of the expanded mesh in the tile with surrounding metal brackets
- End fold H 30 mm
- Joint width 0-5 mm

SUSPENSION SYSTEMS

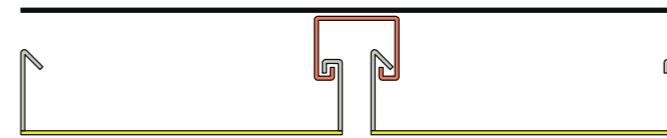
Various systems are available for suspending the expanded metal ceiling. Various hook-in, strip grid, lay-in and lay-on systems can be chosen, depending on the technical and design requirements. Special solutions tailored to the project are also possible. Detailed information on the individual suspension systems can be found in our data sheets that are available for download from our website.

»Details are a process. They go a long way to determining the aesthetic appearance of the ceiling.«
(Prof. Markus Frank, Frank Architekten GmbH)



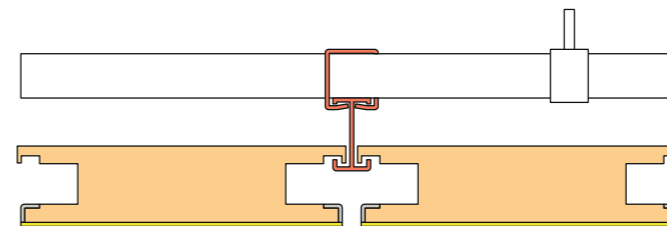
Z hang-in system

- The tiles are hooked into a Z-shaped profile and can be opened without using tools.
- Available up to module 2,500 × 625 mm, depending on the tile type
- Suitable for expanded metal tiles A, B or C



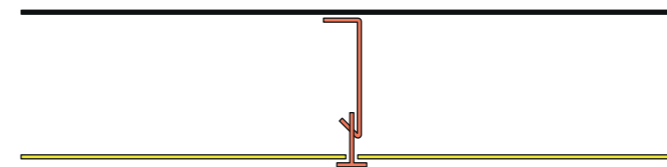
DZ hang-in system

- The tiles are hooked into a DZ suspension profile and can be opened without using tools.
- Available up to module 2,500 × 625 mm, depending on the tile type
- Suitable for expanded metal tiles A, B or C



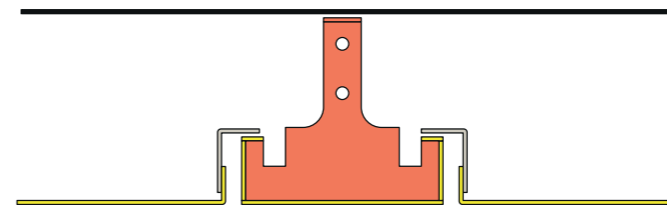
H35 hang-in system

- The tiles are hooked into an H35 suspension profile at the ends and can be opened without using tools.
- Available up to module 2,500 × 625 mm, depending on the tile type
- Suitable for expanded metal tiles A, B or C



T24 lay-in system

- The lay-in system for plane ceiling tiles laid in standard commercial T24 rails
- Available as modules in dimensions 625 × 625 mm and 600 × 600 mm



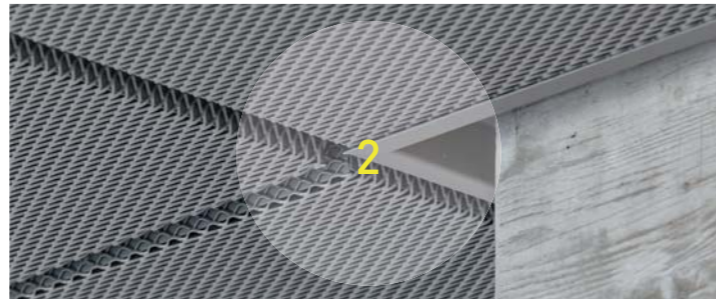
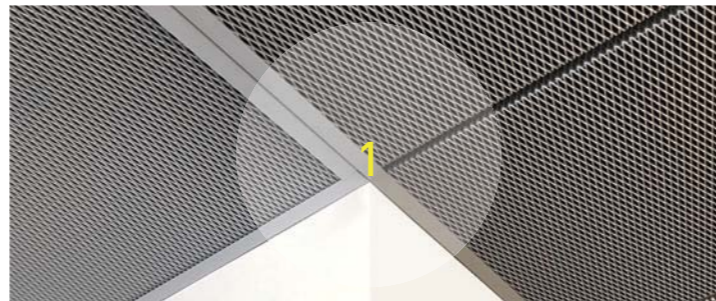
Strip grid system

- Laid on Q or C strip grids
- Also available as a hinged variant
- Available up to module 2,500 × 625 mm, depending on the tile type
- Suitable for expanded metal tiles A, B or C
- We recommend wide joints for an optimum appearance.

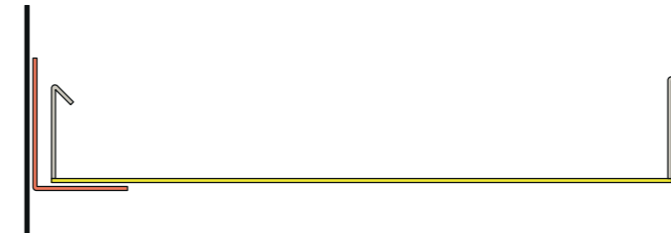
Edge strips provide the optimum connection for the expanded metal ceiling to the wall. A wide choice of differently sized strips is available, depending on the desired appearance. The profiles are made of extruded aluminium; steel profiles are also available, on demand. Split-level ceilings can be easily and attractively designed using aprons that can be connected directly to the raw ceiling or to another expanded metal ceiling.

»The high production quality is reflected in the outstanding appearance of the ceiling.«
 (BM DI Andreas Grabner, Dozent an der FH Joanneum, Institut Baumanagement und Ingenieurbau, C & P Immobilien AG, Bereichsleitung Projekte Österreich und Kroatien)

University of Art Linz
 - Architecture: Adolf Krischanitz, Vienna
 - Mesh 30.0 x 12.0 x 2.5 x 1.5 mm (L x W x B x A)
 - Colour Parzifal®
 - RAL 9006 white aluminium
 - Z-hang-in aystem



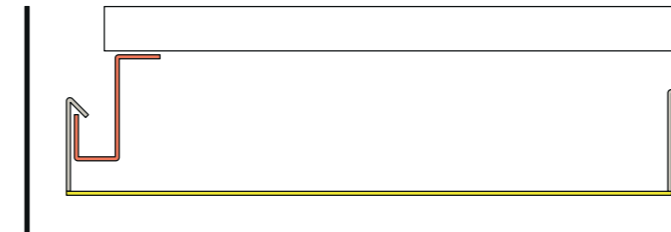
PERFECTION RIGHT UP TO THE EDGE



- 1 Edge bracket**
- Wall connection
 - No shadow joint
 - The expanded metal tile is placed directly on the edge bracket.
 - Suitable for expanded metal tiles A, B or C



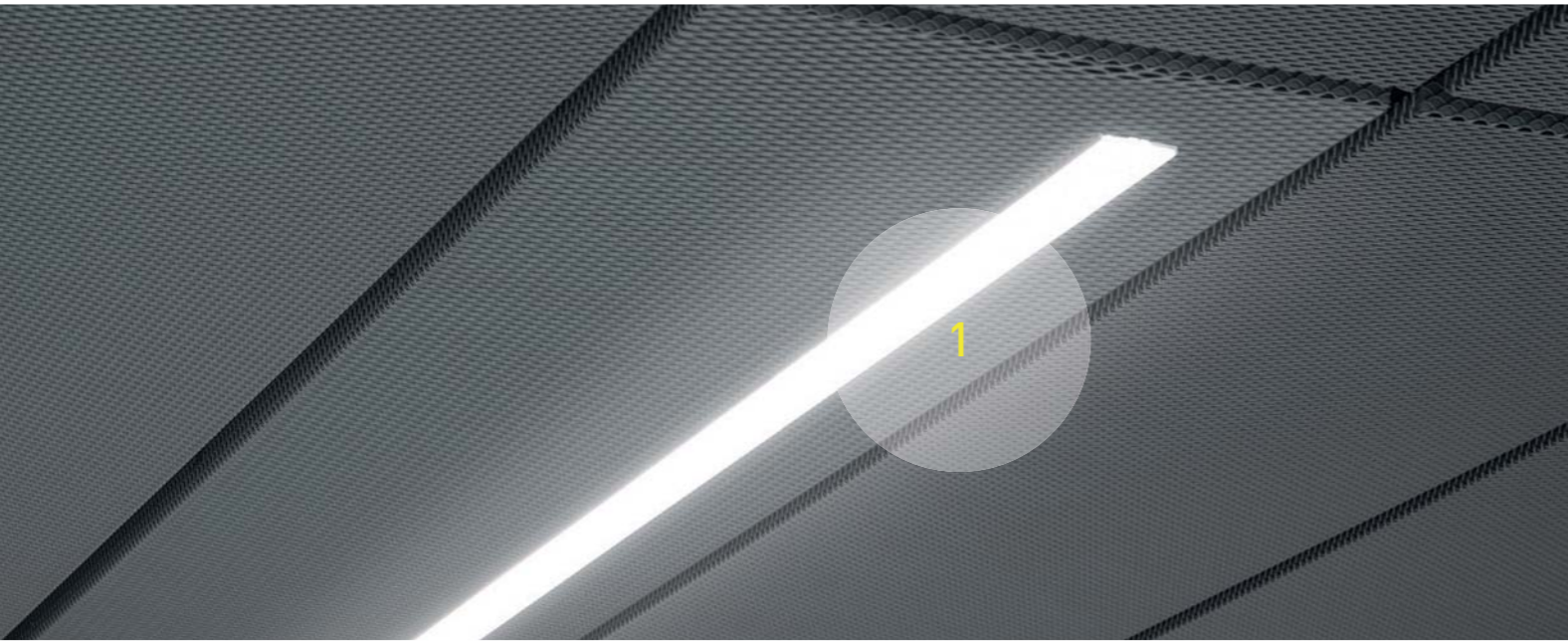
- 2 Stepped edge bracket**
- Wall connection
 - Shadow joint
 - The expanded metal tile is placed directly on the stepped edge bracket.
 - Suitable for expanded metal tiles A, B or C



- 3 Wall connection with open joint**
- Attached to the substructure
 - Shadow joint
 - The tiles are hooked into a Z-shaped profile.
 - Suitable for expanded metal tiles A, B or C



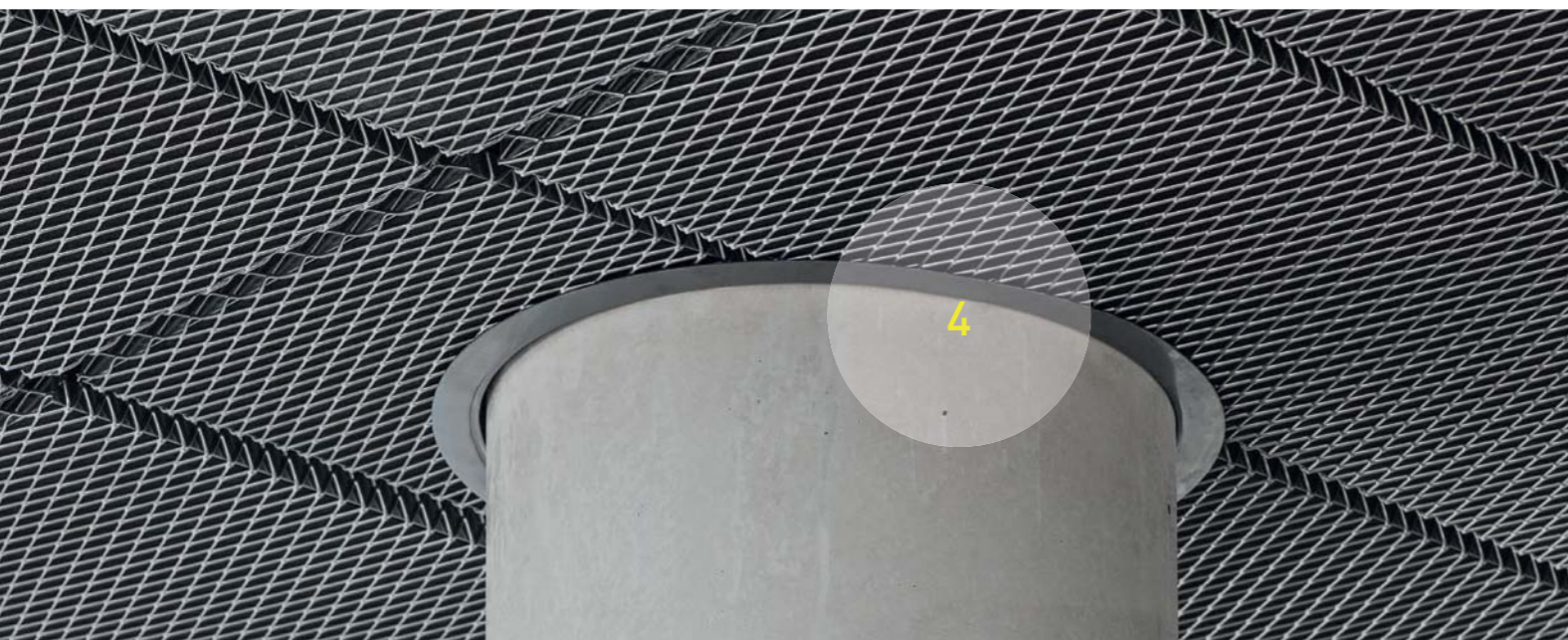
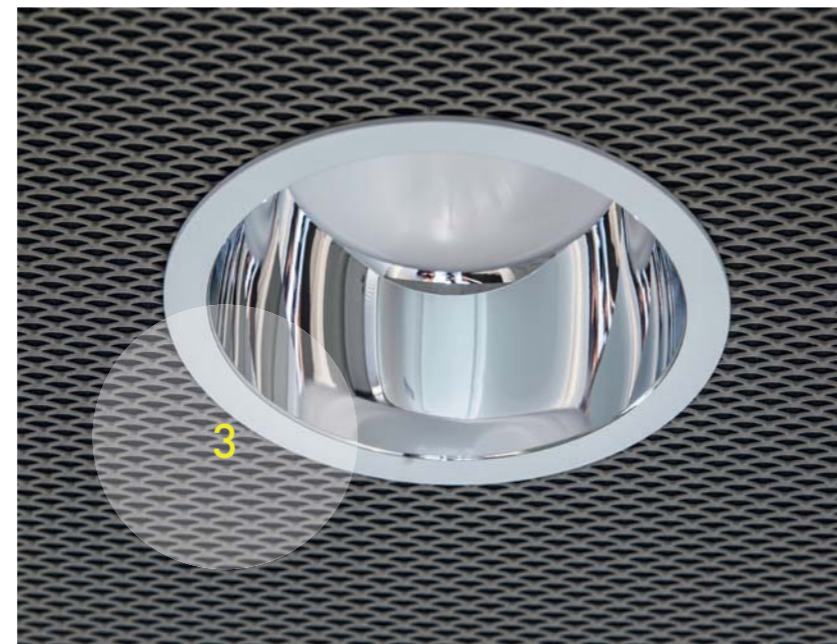
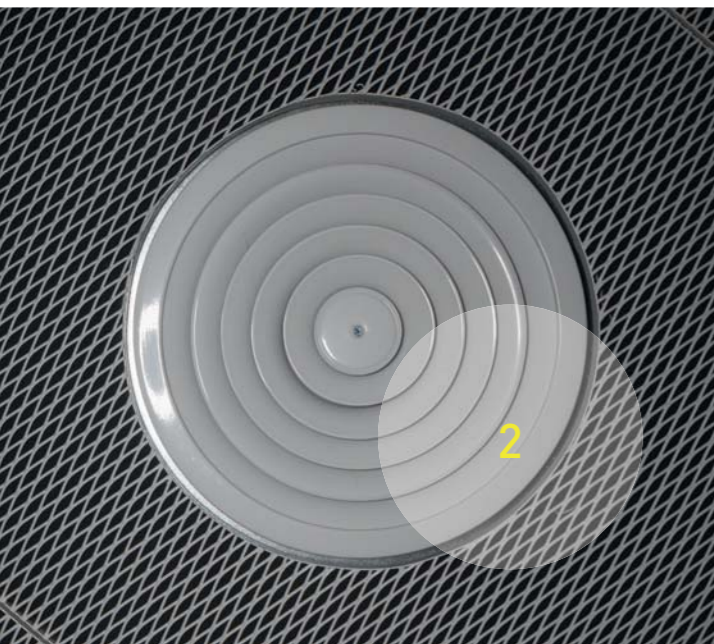
- 4 Apron**
- Ceiling mounting
 - Apron can be manufactured from expanded metal
 - The expanded metal tile is placed directly on the wall profile.
 - Suitable for expanded metal tiles A, B or C



PRECISION BUILT-IN PARTS

Various types of built-in part allow innumerable ceiling design possibilities. For example, luminaires can be installed behind the expanded metal ceiling, suspended from the ceiling or installed directly. Built-in parts such as ventilation outlets or emergency and escape route lighting can be perfectly integrated and pillars elegantly surrounded.

The expanded metal ceiling is willing companion that allows you to install the necessary technical and desired design elements in a wide variety of ways.



- 1 Long-span light**
 - Flush installation
 - Precision edged light recess
- 2 Ceiling diffuser ventilation**
 - Flush installation
 - Precision round opening with surrounding ring
 - The expanded metal tile can be installed independently of the diffuser
- 3 Downlight mit Spiegelreflektor**
 - Practically flush installation over the frame of the mirror reflector
 - Precision opening without surround
 - Transfer of the downlight load to the substructure
- 4 Pillar surround**
 - Prefabricated surrounding ring
 - Cutting of the expanded metal tile on site
 - Enclosure within several tiles

»Perfect expanded metal ceilings result from optimum planning and service.«

(Robert Melchior,
Gnigler GmbH & Co. KG)

Barrack, Thun

- Mesh 62.0 × 20.0 × 2.5 × 1.5 mm
(L × W × B × A)
- Colour RAL 9006 white aluminium
- Hang-in system H35

TRANSPARENCY

SURFACES

Elegant surfaces even with sidelighting thanks to Parzifal®

Matt coated tiles significantly upgrade the appearance of the room. The hydro-stove-enamel-based coating scatters the incident light. This Parzifal® effect sustainably counters any reflections or mirror effects and the ceiling has a uniform and homogeneous appearance. Parzifal® surfaces are ideal for use in large rooms and with room-high windows with incident sidelighting.

Parzifal® matt and structured

The matt PARZIFAL® hydro-stove-enamel lacquer is available in two versions with degrees of glossiness down to below Gardner 10.

The »matt« variant is available in the special colour »bright white« and in all RAL shades, as well as in numerous metallic colours.

The »structured« variant impresses visually with a unique finely structured surface and is available in numerous RAL shades.

Powder coating as standard

Powder coating is a recognised technology for finishing metal ceilings. All visible parts and the expanded metal tiles can be finished in the in-house powder coating plant. This guarantees a lasting, easy-to-clean surface that ensures a perfect appearance for many years.

Textures

Expanded metal ceilings can be ordered with the following textures:

- gloss
- matt
- structured

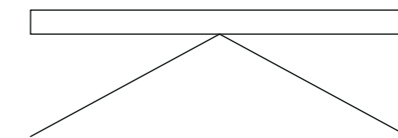
Powder
standard

Parzifal®
matt

Parzifal®
structured

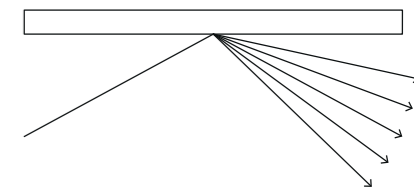
Mirror reflections

- Mirror light reflection with standard surfaces
- Angle of incidence corresponds to reflection angle
- Incident light is not scattered



Diffuse reflections

- No mirror light reflections with Parzifal® surfaces
- Diffuse light reflection prevents mirror effects
- Incident light is scattered



»We design colours:
creative atmosphere up to
the ceiling.«
[Stücheli Architekten AG]

- Secondary school Sandgruben, Basel
- Architecture: Stücheli Architekten AG, Zurich
 - Expanded metal ceiling
 - Mesh 20.0 x 10 x 2 x 1.5 mm
(L x W x B x A)
 - Tile type B
 - Colour RAL 3001 signal red
 - Z-hang-in system

COLOUR



LIGHT

- Tissot Sportarena, Biel
- Architecture: GD Architectes Neuchâtel and GLS Architekten AG, Biel
- Interior design Kino KITAG
- meierpartner architekten, wetzikon with Holzer Kobler Architekturen Zürich
 - Mesh 88 x 44 x 12 x 1.5 mm (L x W x B x A)
 - Tile type A
 - Colour effect RAL 310M Bronze
 - Hang-in system
 - Customised solution

»He who yearns for light is not without light, as the yearning is light in itself.«
(Bettina von Arnim, 1785-1859)

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