METAL MESH

atena®

FALSE CEILINGS AND COVERINGS

FALSE CEILINGS AND COVERINGS

INNOVATIVE ARCHITECTURAL SOLUTIONS
HIGH PERFORMANCE SYSTEMS
NEW EXPRESSIVE POSSIBILITIES

Picture: “Z System” | mesh 43x13, Way lighting by Atena Lux

Atena has been conceiving and manufacturing false ceilings, external coverings and high quality marine fittings for over 30 years, producing in its factory in Italy and distributing in over fifty countries, through its dealers and partners.

Without any limit to the technical development, Atena offers innovative solutions to transform the designers vision into real works, all over the world. It stands out for the capability to make executive the most challenging projects by creating special metal bodies for interior and façade architecture.

In addition to the commercial synergies with different European realities, and not only, Atena cooperates with designers and construction companies, following customers at all levels from the idea to the installation; providing a qualified executive design service and specialized consultancy in acoustics, lighting and seismic engineering.

METAL MESH

TECHNICAL AND FUNCTIONAL ASPECTS
AESTHETIC AND EXECUTIVE PRECISION
CUSTOM-MADE SOLUTIONS

Atena expanded metal systems stand out for their varied applications, the ease of installation and the quality of the workmanship and materials used to make them.

The coating in all RAL and NCS range of colors, combined with the peculiarities of the achievable aesthetic shapes give to the expanded metal modules amazing materic-chromatic effects, opening the designers creativity to new ideas and perspectives for false ceilings and facade coverings.

Modern, sophisticated and dynamic, the expanded metal systems cover without hiding, creating a visual continuity of lines and shapes ensuring the highest stability even to the most “daring” achievements.

Picture: Plan T24 | mesh Q10

INDEX

Picture: composite islands with "Z System" modules | mesh 28x12 mm

CEILING SYSTEMS

CLIP-IN

Standard clip-in models

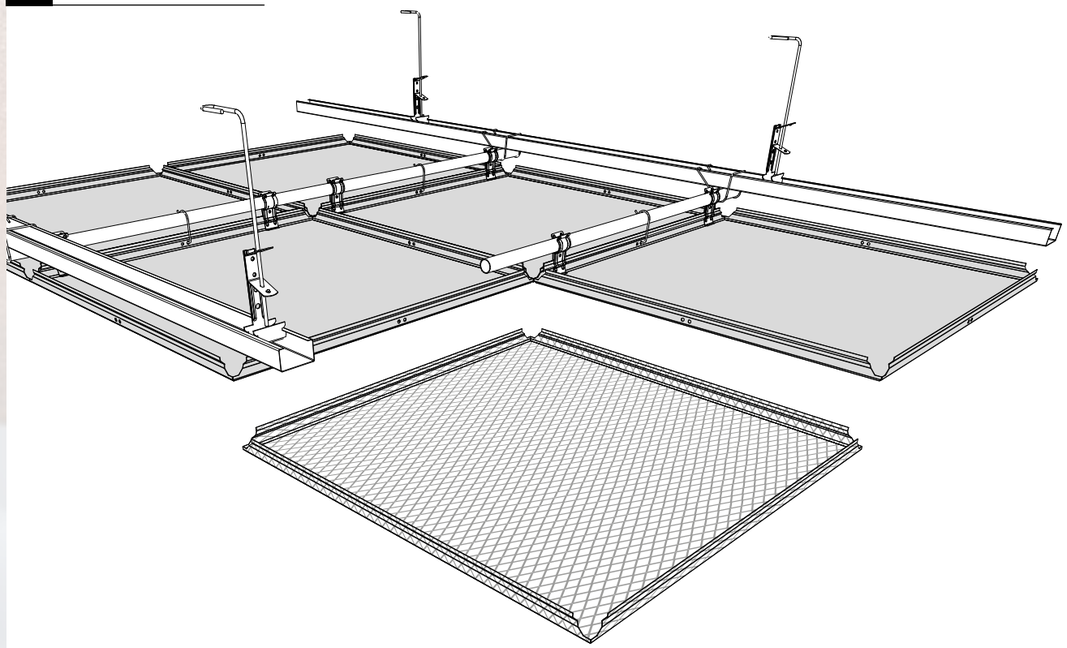
Matrox models

Enigma models

METAL MODULAR

Picture: Matrox | mesh Macramè, Giove spot by Atena Lux

MATROX



FEATURES

TYPE
Clip-in tiles

600x600 mm
Other dimensions on request

Bevelled edge

MESHES AND MATERIALS

Expanded Metal
Post-painted steel
Standard meshes R | Q - 6/8/10
Macramè mesh
Other meshes on request

Mesh perforation*
Steel 5-6/10
Aluminum 5-6-7/10
Type R16 | R25

*right edge available

STRUCTURE
Matrox
Anti-seismic kit available

COLORS | FINISHING
RAL/NCS matt and gloss colors

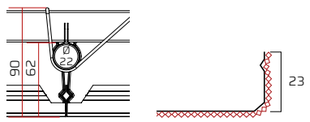
SOUND ABSORBERS

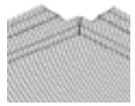
Mesh perforation
Black acoustic tissue
Standard A1s2d0 | Plus A1

Expanded metal
Black Ecofiber Bs2d0

Tiles | Edges

Matrox
bevelled edge

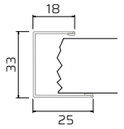




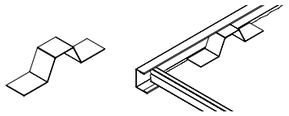
TX0
Bended
shape

Wall angles

"C" 18x33x25 mm



Omega spring optional



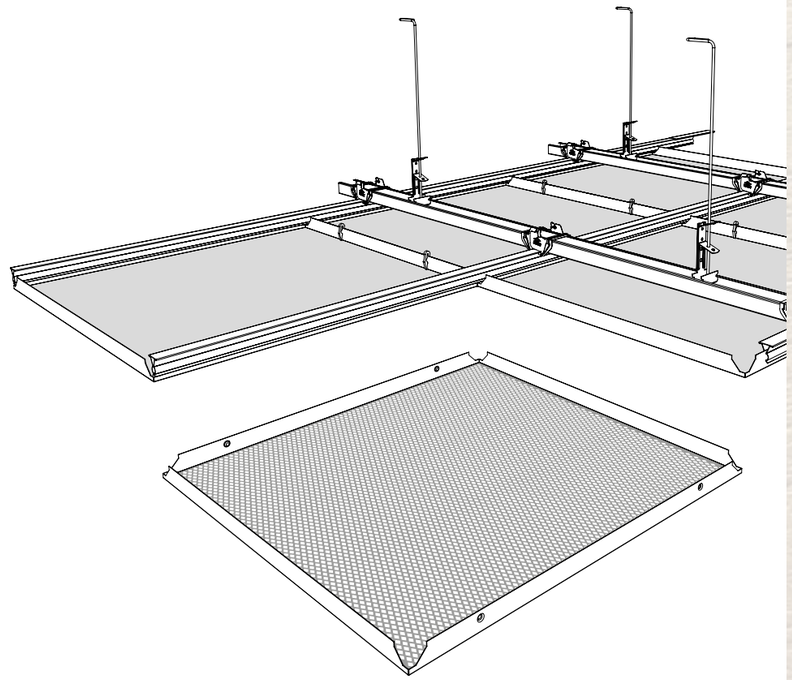
1 CLASS | C CLASS | B CLASS

ENIGMA

R16 MESH PERFORATION

Atena new perforation with
expanded metal effect

Variable plain border



FEATURES

TYPE
Clip-in tiles

600x600 | 600x1200 | 625x625 mm
300x300 | 300x1200 | 300x1500 mm
400x1000 | 400x1200 | 400x1500 mm
Other dimensions on request

For Enigma Link system
600x600 | 600x550
550x550 | 500x550 | 500x500 mm

Bevelled or right edge

MESHES AND MATERIALS

Mesh perforation
Steel 5-6/10
Aluminum 5-6-7/10
Type R16 | R25

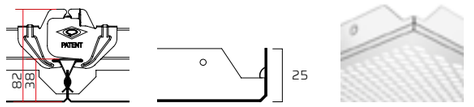
STRUCTURE
Single triangular structure
Double triangular structure with Winger
Single continental structure
Double continental with Winger
Double continental with "U" profile
Anti-seismic kit available

COLORS | FINISHING
White - silver prepainted aluminum
White - silver prepainted steel
RAL/NCS matt and gloss colors

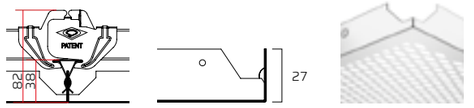
SOUND ABSORBERS
Black acoustic tissue
Standard A1s2d0 | Plus A1
Black Ecofiber Bs2d0

Tiles | Edges

Enigma bevelled edge

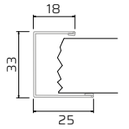


Enigma right edge

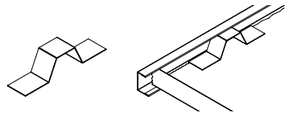


Wall angles

"C" 18x33x25 mm



Omega spring optional



1 CLASS | C CLASS | B CLASS

CEILING SYSTEMS

LAY-IN | LAY-ON

T-grid models

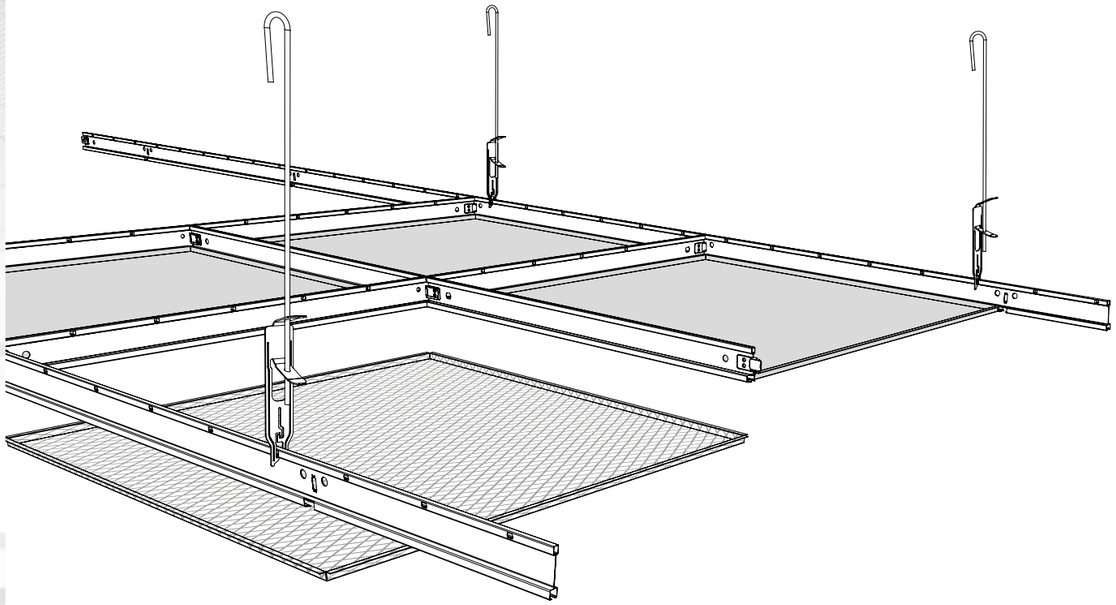
15 Linear Design | Easy Line models

T-grid: T24 | T15 | T35 | T43 models

METAL MODULAR

Picture: 15 Linear Design - Easy Line | Mesh R16 perforation, Four Side lighting by Atena Lux

15 LINEAR DESIGN | EASY LINE MODEL



FEATURES

TYPE
Lay-in | Lay-on tiles

600x600 mm
Other dimensions on request

Right edge

MESHES AND MATERIALS

Expanded metal
Post-painted steel
Standard meshes R | Q - 6/8/10
Macramè mesh
Other meshes on request

Mesh perforation
Steel 5-6/10
Aluminum 5-6-7/10
Type R16 | R25

STRUCTURE
Easy Line
Anti-seismic kit available

COLORS | FINISHING
RAL/NCS matt and gloss colors

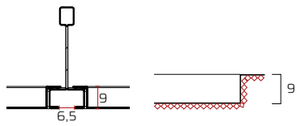
SOUND ABSORBERS

Mesh perforation
Black acoustic tissue
Standard A1s2d0 | Plus A1

Expanded metal
Black Ecofiber Bs2d0

Tiles | Edges

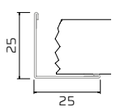
15 Linear Design | Easy Line
right edge - 9 mm lowered



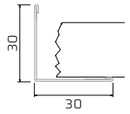
TXO
Bended
shape

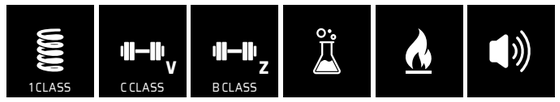
Wall angles

"L" 25x25mm

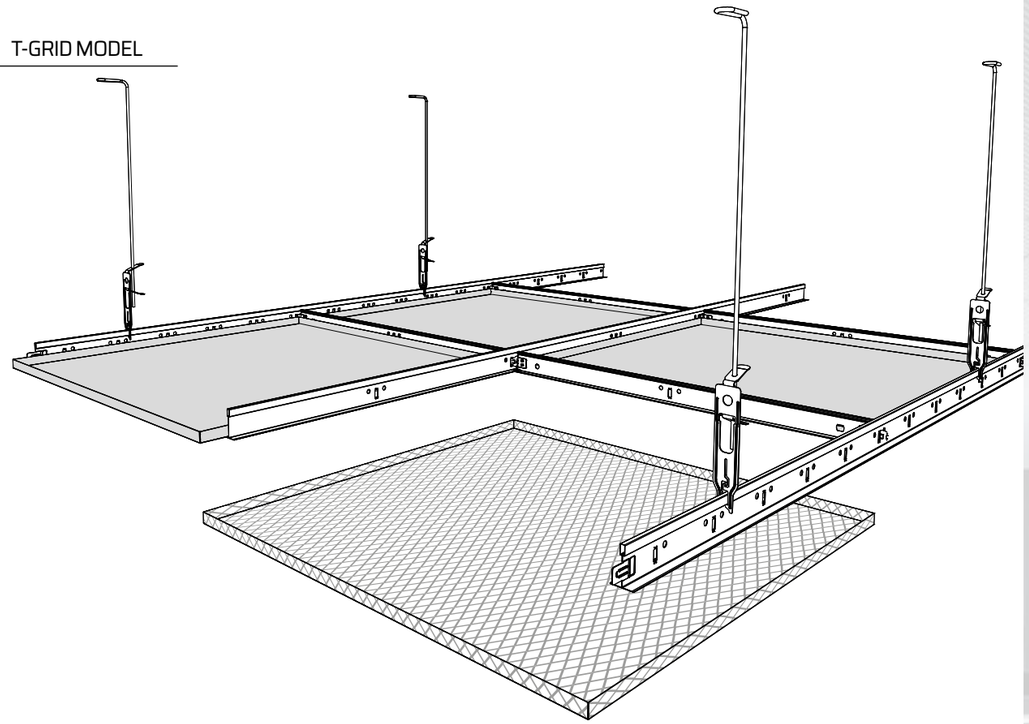


"L" 30x30mm





T-GRID MODEL



FEATURES

TYPE
T-grid lay-in | Lay-on tiles
600x600 mm | Other dimensions on request

MESHES AND MATERIALS

Expanded metal
Post-painted steel
R | Q - 6/8/10 | Macramè
Other meshes on request

Mesh perforation
Steel 5-6/10 | Aluminum 5-6-7/10

STRUCTURE
Steel Strong T15 | T24 | T35 | T43
Anti-seismic kit available

COLORS | FINISHING
RAL/NCS matt and gloss colors

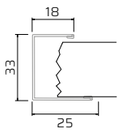
SOUND ABSORBERS

Mesh perforation
Black acoustic tissue
Standard A1s2d0 | Plus A1

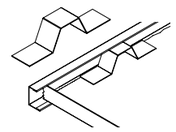
Expanded metal
Black Ecofiber Bs2d0

Wall angles

"C" 18x33x25 mm

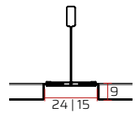


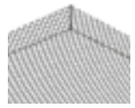
Omega spring optional



Tiles | Edges

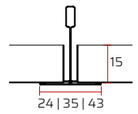
24 Linear Tegular (right edge) T24 9/15 mm lowered
15 Linear Design (right edge) T15 9/15 mm lowered



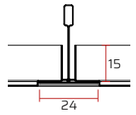


TXO
Bended
shape

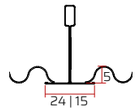
Plan (right edge)



FLAT (right edge)



Basic Wave



TXOC
Wavy
shape

CEILING SYSTEMS

“Z SYSTEM”

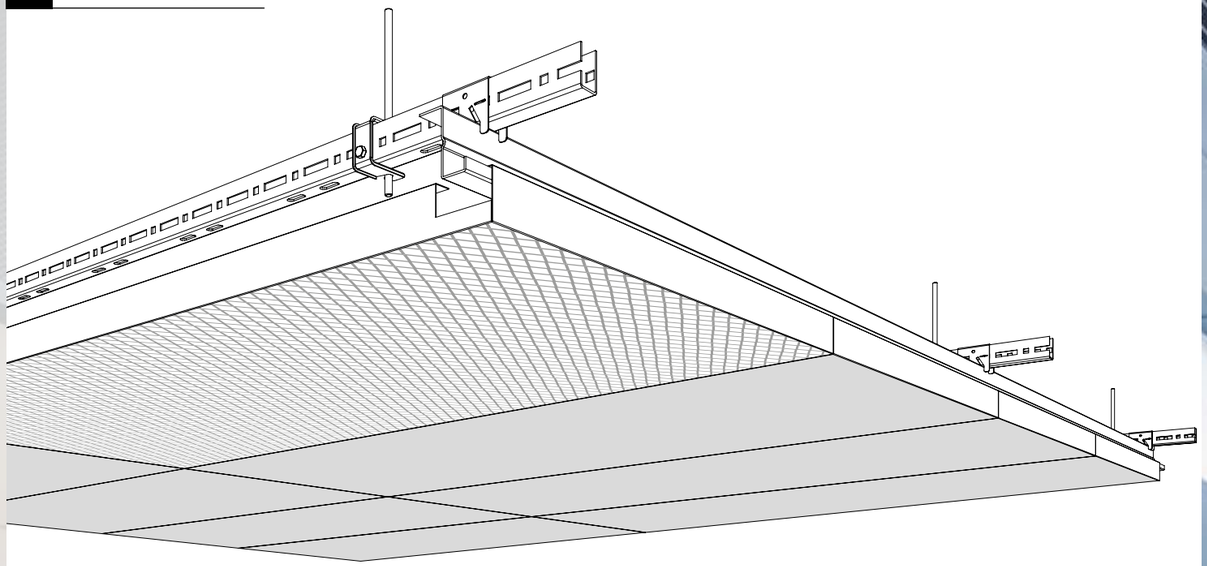
“WIDE SPACES” hook-on models with “Z” profile

“Z System” Wide spaces
“Z System” Corridor
“Z System” Wavy

METAL SHAPES

Picture: “Z System” Wide spaces | mesh 43x13, Way lighting by Atena Lux

WIDE SPACES



FEATURES

TYPE
Hook-on tiles
Side by side or with 4 mm gap
Expanded metal models with 10 mm visible
or semi-concealed smooth frame
Expanded metal models welded with hidden frame
Small meshes bended and welded on vertical frame
Right edges
Custom-made size

MESHES AND MATERIALS

Expanded metal
Steel small meshes
R/Q - 6 | 8 | 10
Steel or aluminum medium meshes
ML 28x12 | MR 43x18 | MR 16x8
Steel Macramè mesh
Steel Bouclè mesh
Other meshes on request

Mesh perforation
steel or aluminum

STRUCTURE
Concealed with"Z" profile.
Anti-seismic kit available

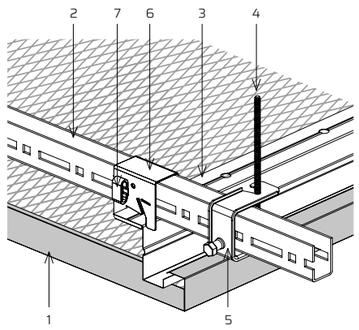
WALL ANGLES
"L" 25x25 | 30x30 | 55x20 mm
Special double "L" 43x10x15x20 mm

COLORS | FINISHING
RAL/NCS matt and gloss colors

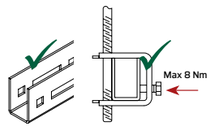
SOUND ABSORBERS

Mesh perforation
Black acoustic tissue
Standard A1s2d0 | Plus A1

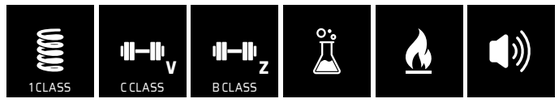
Expanded metal
Black Ecofiber Bs2d0



1	Tiles
2	Punched "U" profile
3	"Z" profile
4	Threaded bar
5	Threaded bar bracket
6	"Z" profile bracket
7	Locking clip



Right arrangement for suspension system



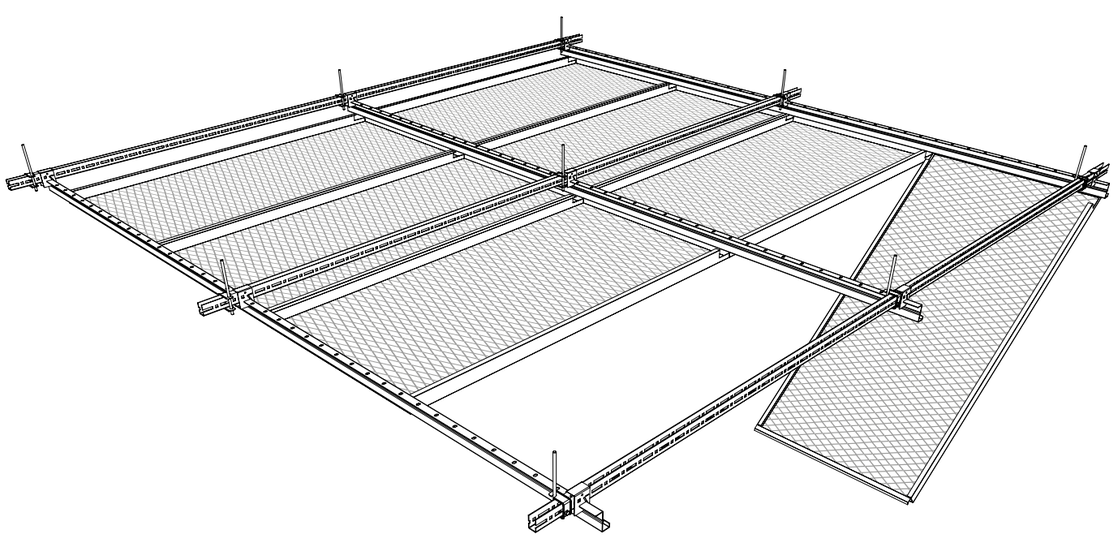
Picture: "Z System" Wide space | mesh 43x13, Gap lighting by Atena Lux

FOCUS

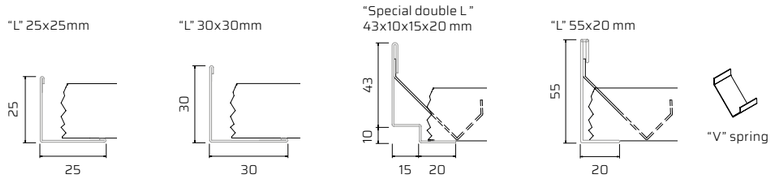
Mighty versatile Atena "Z System" is made up of custom-made tiles hanged on a hidden double structure made of "Z" and "U" profiles.

In this system, the tiles, with different shapes and sizes, play a main role: linear and perfectly flat, with variable gap, the models made with Atena "Z System" are the perfect choice to create false-ceiling with special configuration.

Picture: "Z System" Wide space | mesh 43x13, Way lighting by Atena Lux

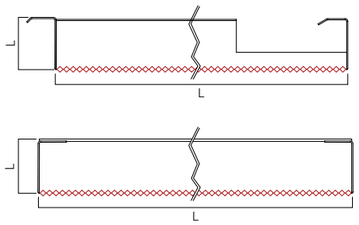


Wall angles

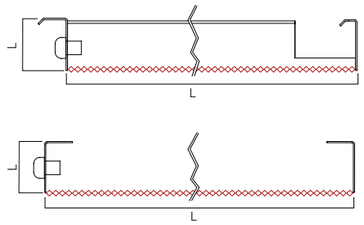


Tiles

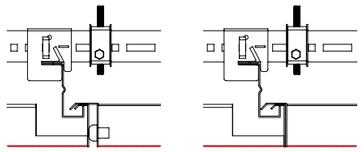
Side by side tiles view



4mm gap on all sides view

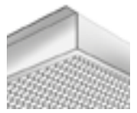


Edges

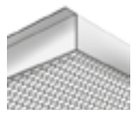


The expanded metal "Z System" tiles can be made to be install side by side, or with 4 mm gap on two or four sides. The expanded metal tiles can have no frame giving the false ceilings a continuous aesthetic effect or can be made with a visible or semi-concealed ~ 10 mm frame.

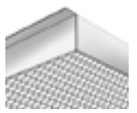
Easy access to plenum: tiles can be open and hanged on the "Z" profile.



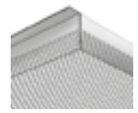
TX1
Visible frame



TX2
Semi concealed frame



TX3
No frame



TX4
Four sides reinforced frame (R | Q 6/8/10/12 only)

CEILING SYSTEMS

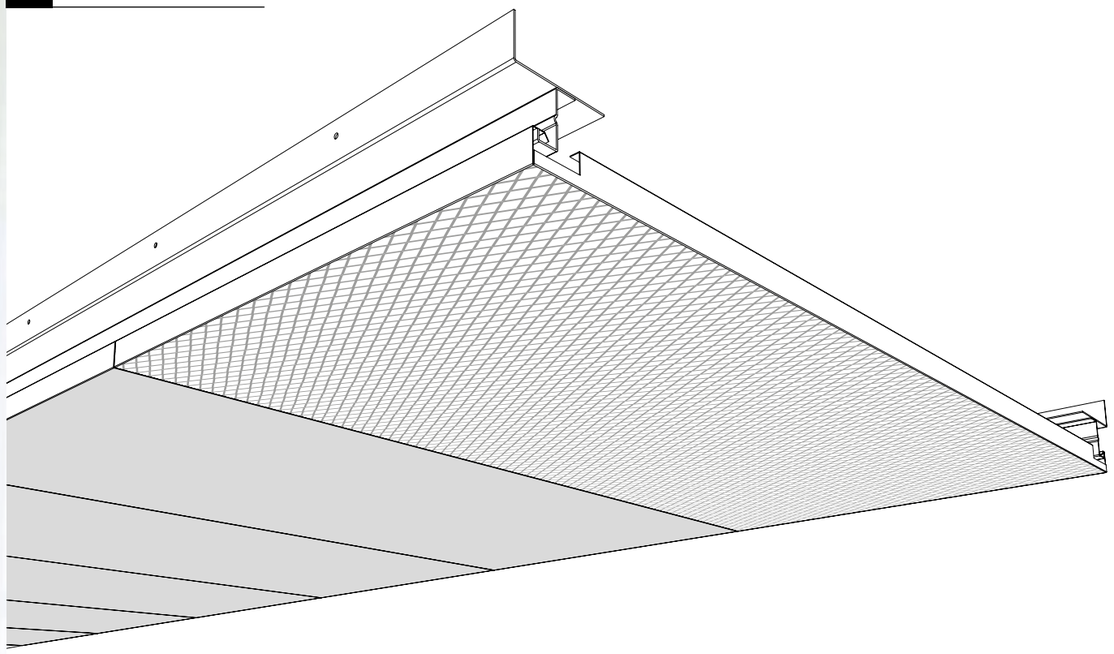
“Z SYSTEM”

“CORRIDOR” hook-on models with “Z” profile

“Z System” Wide spaces
“Z System” Corridor
“Z System” Wavy

Picture: “Z System” Corridor | mesh 43x13

CORRIDOR



FEATURES

TYPE
Hook-on tiles
Side by side or with 4 mm gap
Expanded metal models with 10 mm visible
or semi-concealed smooth frame
Expanded metal models welded with hidden frame
Small meshes bended and welded on vertical frame
Right edges
Custom-made size

MESHES AND MATERIALS

Expanded metal
Steel small meshes
R/Q - 6 | 8 | 10
Steel or aluminum medium meshes
ML 28x12 | MR 43x18 | MR 16x8
Steel Macramè mesh
Steel Bouclè mesh
Other meshes on request

Mesh perforation
steel or aluminum

STRUCTURE
Concealed with“Z” profile
Anti-seismic kit available

WALL ANGLES
Punched “L” profile for corridor system

COLORS | FINISHING
RAL/NCS matt and gloss colors

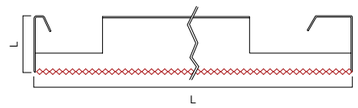
SOUND ABSORBERS

Mesh perforation
Black acoustic tissue
Standard A1s2d0 | Plus A1

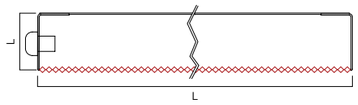
Expanded metal
Black Ecofiber Bs2d0

Tiles

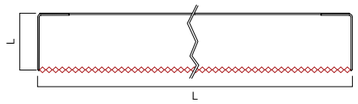
Long side view

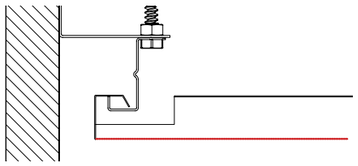


Short side no gap view



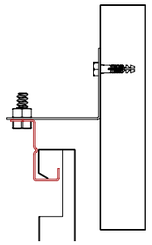
Short side with gap view



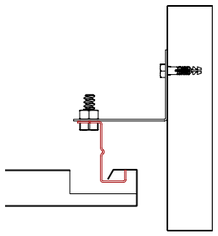


Views

Open tile section



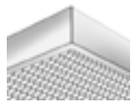
Closed tile section



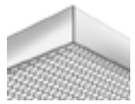
For an easy access to the plenum each tile can be open and hooked on “Z” profile.

1 Tile
2 “Z” profile
3 Punched “L” profile
4 Suspension

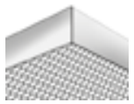
Edges



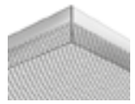
TX1
Visible frame



TX2
Semi concealed frame



TX3
No frame



TX4
Four sides reinforced frame (R | Q 6/8/10/12 only)

CEILING SYSTEMS

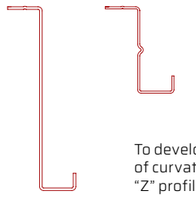
“Z SYSTEM”

“WAVY” hook-on models with “Z” profile

“Z System” Wide spaces
“Z System” Corridor
“Z System” Wavy

Picture: “Z System” Wavy | mesh 43x13, Way lighting by Atena Lux

WAVY



To develop wide radius
of curvature custom-made
"Z" profile will be used.

FEATURES

TYPE
Hook-on tiles
Side by side or with 4 mm gap
Expanded metal models welded with hidden frame
Right edges
Custom-made size

MESHES AND MATERIALS

Expanded metal
Steel small meshes
R/Q - 6 | 8 | 10
Steel or aluminum medium meshes
ML 28x12 | MR 43x18 | MR 16x8
Steel Macramè mesh
Steel Bouclè mesh
Other meshes on request

Mesh perforation
steel or aluminum

STRUCTURE
Concealed with"Z" profiles
Anti-seismic kit available

WALL ANGLES
"L" 25x25 | 30x30 mm

COLORS | FINISHING
RAL/NCS matt and gloss colors

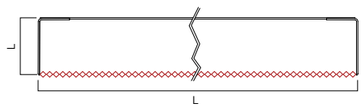
SOUND ABSORBERS

Mesh perforation
Black acoustic tissue
Standard A1s2d0 | Plus A1

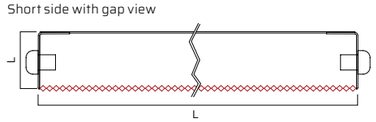
Expanded metal
Black Ecofiber Bs2d0

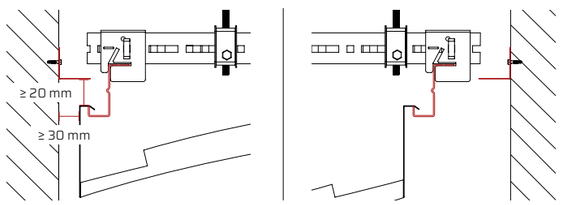
Tiles

Short side no gap view

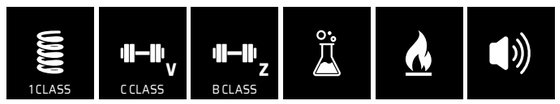


Short side with gap view



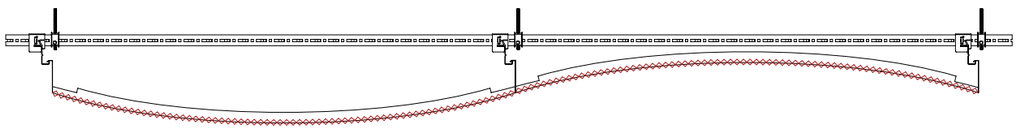


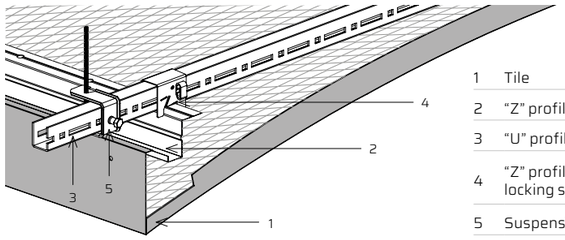
The perimeter frame of Wavy "Z System" is made up of "L" profile used as shutter.



"Z System" wavy solution can be used to realise all curved false-ceiling, thanks to its sinuous custom made tiles, with various dimensions and finishing, hooked on the "Z" profiles.

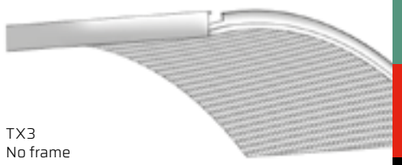
Total view





1	Tile
2	"Z" profile
3	"U" profile
4	"Z" profile bracket with locking spring
5	Suspension

Edges



TX3
No frame

CEILING SYSTEMS

BANDRASTER

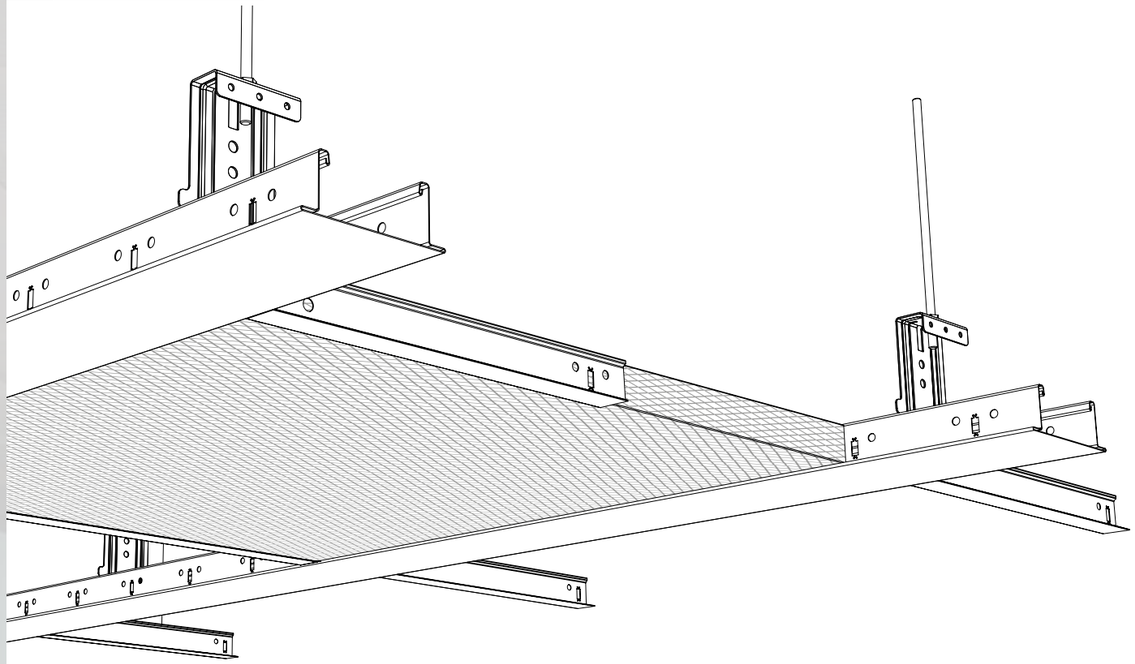
"CROSSING" lay-in models

Bandraster Crossing T24
Bandraster Crossing
Bandraster Parallel

METAL SHAPES

Picture: Bandraster Crossing | mesh R12

BANDRASTER CROSSING T24



FEATURES

TYPE
Tiles laid on visible beam
Custom-made sizes

MESHES AND MATERIALS

Expanded metal
Steel small meshes
R/Q - 6 | 8 | 10
Steel or aluminum medium meshes
ML 28x12 | MR 43x18 | MR 16x8
Steel Macramè mesh
Steel Bouclè mesh
Other meshes on request

Mesh perforation
steel or aluminum

STRUCTURE
Bandraster Crossing | Bandraster Crossing T24
Anti-seismic kit available

WALL ANGLES
"L" 25x25 | 30x30 | 55x20 mm
Special double "L" 43x10x15x20 mm
"C" 30x40x40 mm

COLORS | FINISHING
RAL/NCS matt and gloss colors

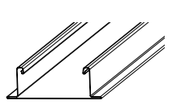
SOUND ABSORBERS

Mesh perforation
Black acoustic tissue
Standard A1s2d0 | Plus A1

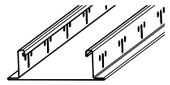
Expanded metal
Black Ecofiber Bs2d0

Bandraster Crossing and Bandraster Crossing T24: two configurations, one technical system.

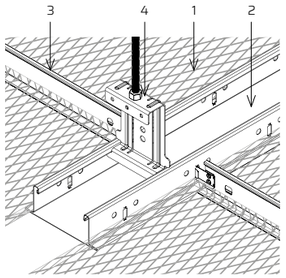
Bandraster beams can be made both with and without punches, the punched ones are properly conceived to be crossed with **Atena T24 Easy** and **Easy Fox** profiles.



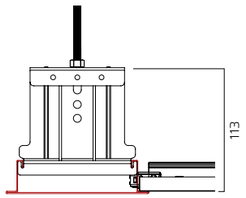
Without punches



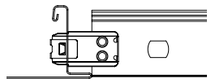
With punches

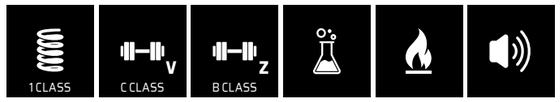


1	Tile
2	Bandraster beam
3	T24
4	Suspension



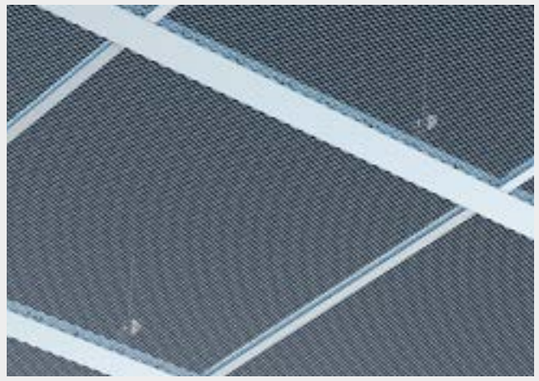
The special geometry of the reed and punches allows a quick and safe clipping of T-grid on Bandraster profiles.

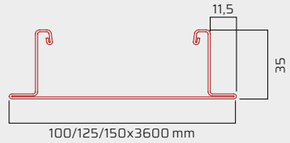




Picture: Bandraster Crossing T24 | mesh 28x12

SYSTEM DETAIL





Bandraster profile
Steel 6/10 - Aluminum 8/10

T24 suitable profiles
Easy / Easy Fox

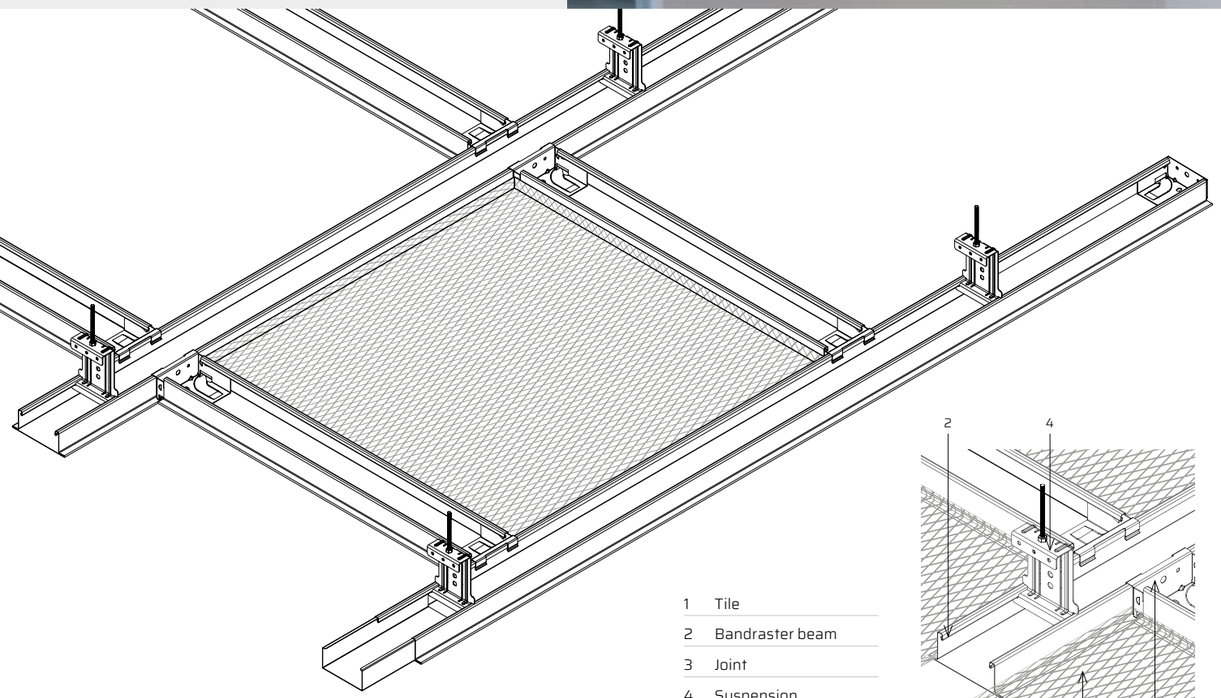
The Bandraster Crossing T24 system is realized by clipping Easy / Easy Fox T24 on Bandraster punches, a choice, this one, where the base 24, smaller in size, gives the false-ceiling an elegant aesthetic result.

BANDRASTER CROSSING

Bandraster system is generally used to create false-ceilings with a prominent visible structure made up of main beams and spacers crossing each other through orthogonal joints, properly conceived to ensure an easy and safe installation, while on the visible side, Bandraster beams and spacers are perfectly flat.

Thanks to this system a great variety of custom-made tiles can be realized.

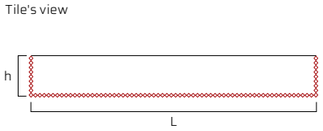
Picture: Bandraster Crossing | mesh R12

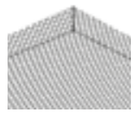


1	Tile
2	Bandraster beam
3	Joint
4	Suspension

Bandraster Crossing T24 | Bandraster Crossing tiles and edges

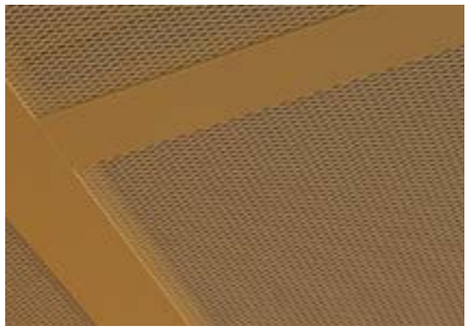
Tile's view





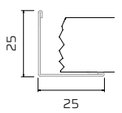
TXO
Bended
shape

The Bandraster Crossing system is made up of expanded metal bended tiles laid in main Bandraster profiles and spacers.

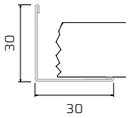


Bandraster Crossing T24 | Bandraster Crossing wall angles

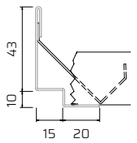
"L" 25x25mm



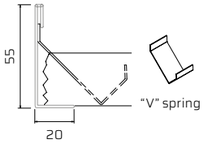
"L" 30x30mm



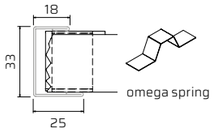
"Special double L"
43x10x15x20 mm



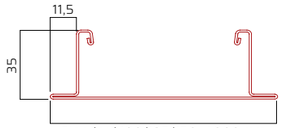
"L" 55x20 mm



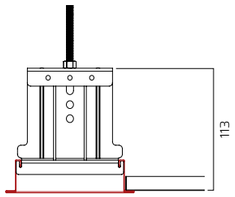
"C" 18x33x25 mm



Bandraster profiles
Steel 6/10
Aluminum 8/10



Standard 100/125/150x4000 mm
Extra 75/175/200x4000 mm



CEILING SYSTEMS

BANDRASTER

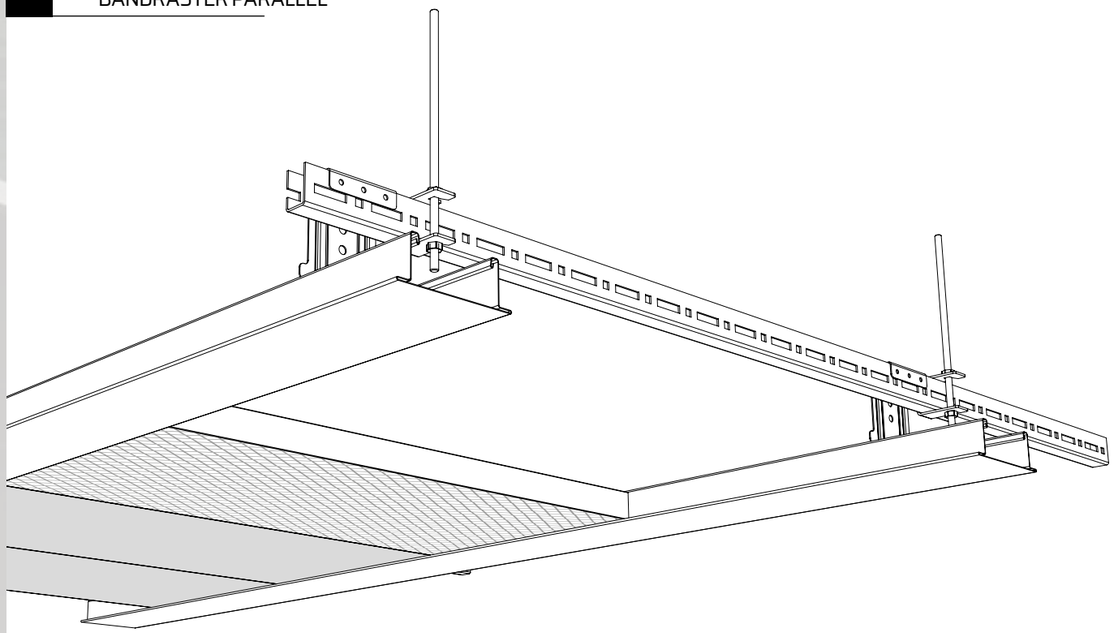
"PARALLEL" lay-in models

Bandraster Crossing T24
Bandraster Crossing
Bandraster Parallel

METAL SHAPES

Picture: Bandraster Parallel | mesh 43x13
sound absorbing wall | mesh 43x10

BANDRASTER PARALLEL



FEATURES

TYPE
Tiles laid on visible beam
Custom-made sizes

MESHES AND MATERIALS

Expanded metal
Steel small meshes
R/Q - 6 | 8 | 10
Steel or aluminum medium meshes
ML 28x12 | MR 43x18 | MR 16x8
Steel Macramè mesh
Steel Bouclè mesh
Other meshes on request

Mesh perforation
steel or aluminum

STRUCTURE
Bandraster Parallel
Anti-seismic kit available

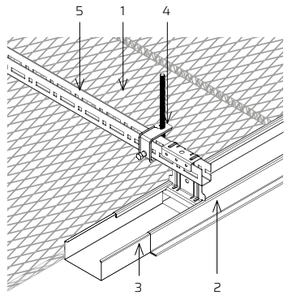
WALL ANGLES
“L” 25x25 | 30x30 | 55x20 mm
Special double “L” 43x10x15x20 mm
“C” 30x40x40 mm

COLORS | FINISHING
RAL/NCS matt and gloss colors

SOUND ABSORBERS

Mesh perforation
Black acoustic tissue
Standard A1s2d0 | Plus A1

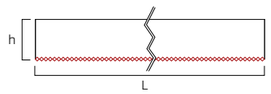
Expanded metal
Black Ecofiber Bs2d0

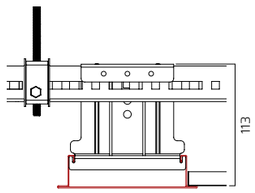


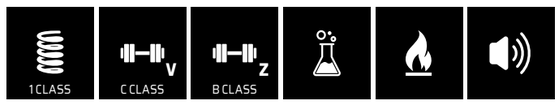
1 Tile
2 Bandraster beam
3 Joint
4 “U” profile
5 Suspension

Tiles

Side by side tiles view

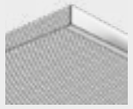




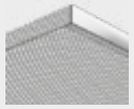


Picture: Bandraster Parallel | mesh 43x10

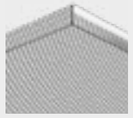
Edges



TX1
Visible frame



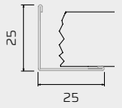
TX2
Semi concealed frame



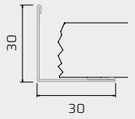
TX4
Two sides reinforced frame
(R | Q 6/8/10/12 only)

Wall angles

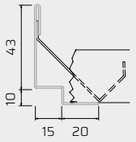
“L” 25x25mm



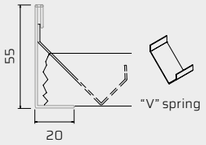
“L” 30x30mm



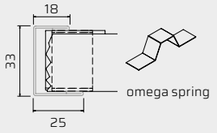
“Special double L ”
43x10x15x20 mm



“L” 55x20 mm



“C” 18x33x25 mm



ISLAND SYSTEMS

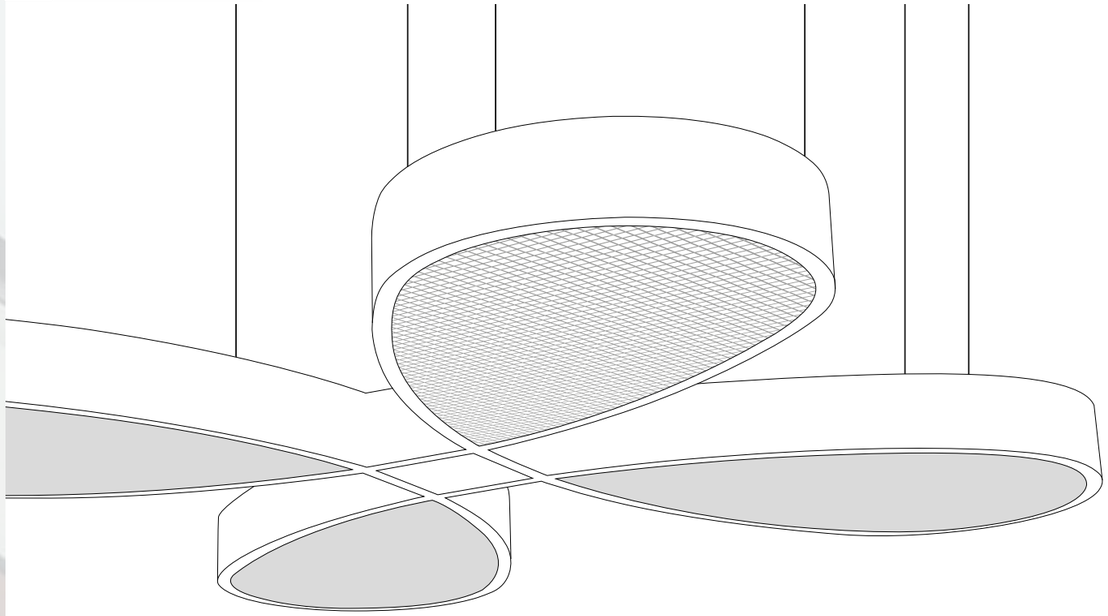
MONOLITHIC ISLANDS

Special custom-made configurations

Monolithic islands
Composite islands

Picture: “Ring” monolithic island | mesh R10

MONOLITHIC ISLANDS



FEATURES

TYPE
Custom-made architectural elements
with 10 mm visible frame

MESHES AND MATERIALS

Expanded metal
Steel small meshes
R/Q - 6 | 8 | 10
Steel or aluminum medium meshes
ML 28x12 | MR 43x18 | MR 16x8
Steel Macramè mesh
Steel Bouclè mesh
Other meshes on request

Mesh perforation
steel or aluminum

SUSPENSION
Atena special suspension kit

COLORS | FINISHING
RAL/NCS matt and gloss colors

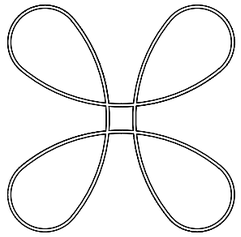
SOUND ABSORBERS

Mesh perforation
Black acoustic tissue
Standard A1s2d0 | Plus A1

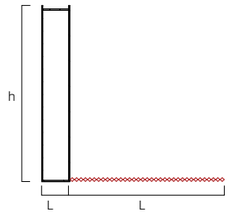
Expanded metal
Black Ecofiber Bs2d0

The special geometry of this flower was made exclusively for Milanofiori Shopping Center.

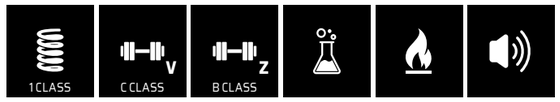
Island shape



Tiles and edges



TX1
Visible
frame



Picture: flower island | mesh Macramè

TYPES

Atena expanded metal islands customized by shape, size and colours are architectural elements greatly appreciated, to meet the specific requirements of each project.

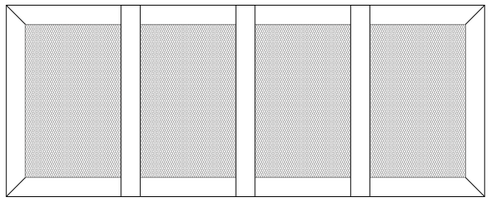
Integrated with proper lightings and combined with specific sound absorption materials, Atena islands are an excellent solution to enrich the aesthetics of an environment by improving the acoustic comfort and the lighting.

Pictures: monolithic islands | mesh Macramè

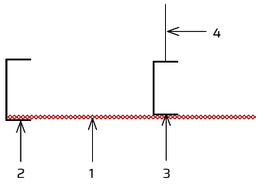
Special shapes for suspended islands

MODEL	SHAPE	ANGLE	DIMENSIONS		CURVATURE OPTIONS
CELL		RIGHT	800x800 mm 1000x1000 mm	h200 mm h200 mm	Flat Concave Convex
PAD		RIGHT	800x1600 mm 1000x2000 mm	h200 mm h200 mm	Flat Concave Convex
HEXAGON		RIGHT	800x800 mm 1000x1000 mm	h200 mm h200 mm	Flat
RING		-	Ø 800 mm Ø 1000 mm	h200 mm h200 mm	Flat
ORBIT		-	1000x1500 mm	h200 mm	Flat
WAVE		-	To verify	-	Wave
ENJOY		Customize your project with original solutions: invent your shape and check the feasibility with Atena technical office			Flat

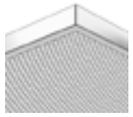
Top view



Long side view



1 Expanded metal
2 Wall angle
3 Stiffening profile
4 Suspension



TX1
Visible frame

Short side view

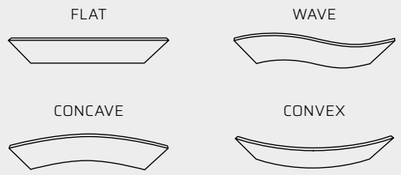
TILES MAXIMUM DIMENSIONS WITHOUT THE USE OF STIFFENING PROFILES

- ≥ 800 x ≤ 1500 mm
- ≤ 600 x max 2000 mm

Picture: "Wave" monolithic islands | mesh MR 16x8

CURVATURE OPTIONS

Atena expanded metal islands, can be made with flat, concave, convex or sinusoidal geometries.



ISLAND SYSTEMS

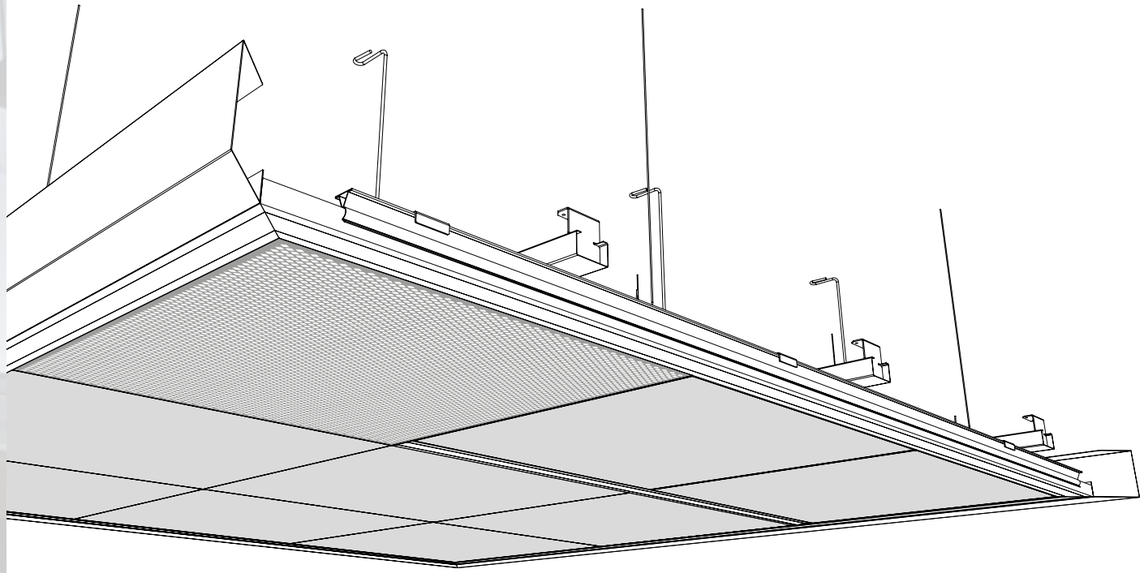
COMPOSITE ISLANDS

Special custom-made configurations

Monolithic islands
Composite islands

Picture: “Enigma Link” island | Mesh R16 perforation, “Link” integrated lighting by Atena Lux

COMPOSITE ISLANDS



FEATURES

TYPE
Islands made up of Metal Modular system tiles with visibles and hidden structures. Special modules on request.

FALSE-CEILINGS SYSTEMS

Hidden structure systems
Matrox made of expanded metal
Enigma | Enigma Link with Mesh perforation

Visible structure systems
15 Linear Design (right e. - 9 mm drop) | Easy Line
15 Linear Design (right e. - 9 mm drop) | T15
Plan (right e.) | T24 | 35 | 43
Flat (right e.) | T24
24 Linear Tegular (right e. - 9/15 mm drop) | T24
Anti-seismic kit available

MESHES AND MATERIALS

Expanded metal
Steel small meshes: R/Q - 6 | 8 | 10
Steel Macramè mesh
Other meshes on request

Mesh perforation
steel or aluminum

SUSPENSION
Atena special suspension kit

WALL ANGLES
Special perimeter frames

COLORS | FINISHING
RAL/NCS matt and gloss colors

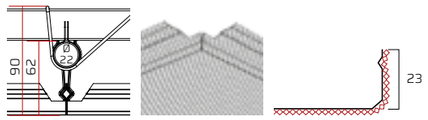
SOUND ABSORBERS

Mesh perforation
Black acoustic tissue
Standard A1s2d0 | Plus A1

Expanded metal
Black Ecofiber Bs2d0

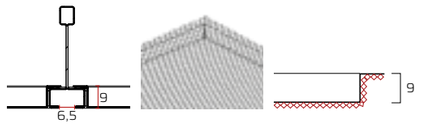
Tiles | Edges

Matrox
bevelled edge
(right edge
available)

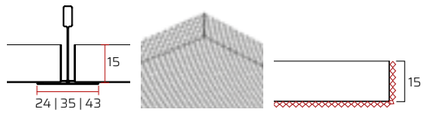


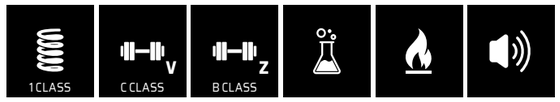
Enigma
bevelled edge
(right edge
available)

15 Linear Design
Easy Line
right edge
9 mm drop



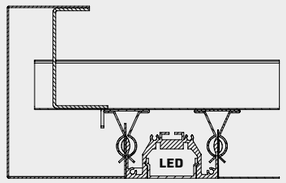
Plan
T24
right edge





Picture: island with special modules | mesh Q10
sound absorbing wall | mesh 43x10

Enigma Link



"Link" lighting by Atena Lux

Standard and special composite islands:
The suspended islands are modular false-ceilings delimited by an important visible frame. Among the **standard solutions** the **Enigma Link** model with Mesh perforation and LINK lighting by Atena Lux allows to create modules which stand out for the creation of **integrated light cutting**, **wall washer** and **light lanes**.
Thanks to the versatility of Atena systems you can create composite islands with any type of Atena special false-ceiling with visible and hidden structure.

STAVES SYSTEMS

SELF BEARING STAVES

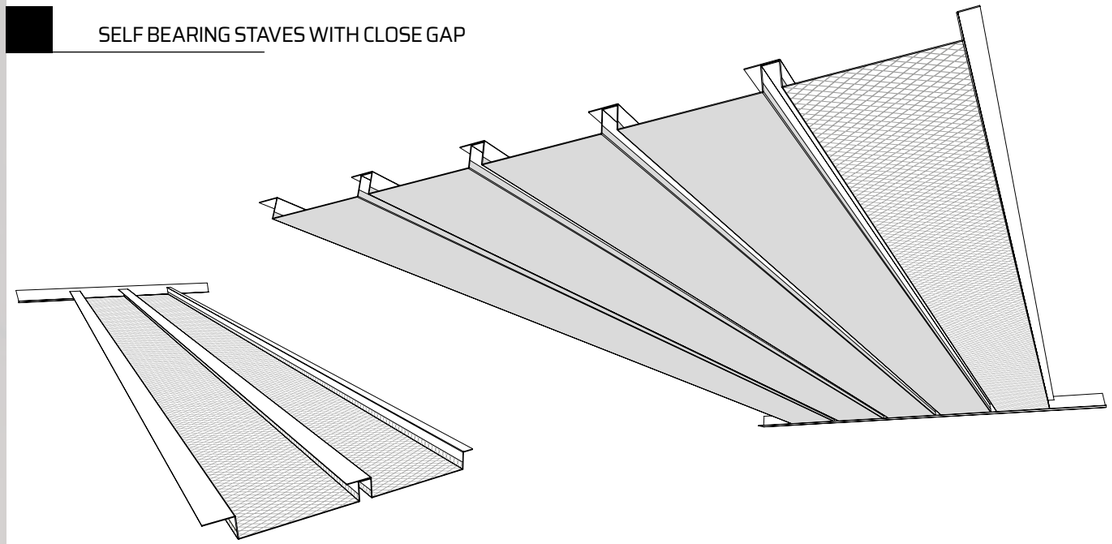
Special configurations with standard staves

Self bearing staves with closed gap
Side by side self bearing staves

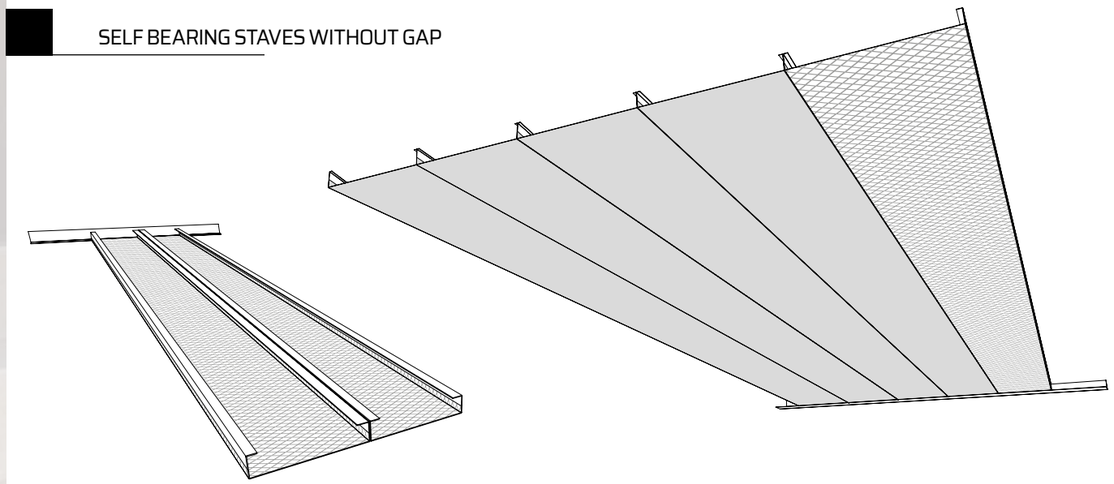
METAL SERIES

Picture: self bearing AP - SR staves | mesh R12

SELF BEARING STAVES WITH CLOSE GAP



SELF BEARING STAVES WITHOUT GAP



FEATURES

SELF BEARING STAVES
Self bearing lenght up to 2500 mm
Side by side and closed gap
Width 200 | 250 | 290 | 300 mm

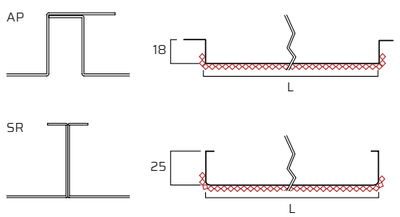
MESHES AND MATERIALS
Steel small meshes
R/Q - 6 | 8 | 10
Macramè
Steel and aluminum medium meshes
ML 28x12 | MR 43x18 | MR 16x8

WALL ANGLES
"L" 30x30 mm
Other models on request

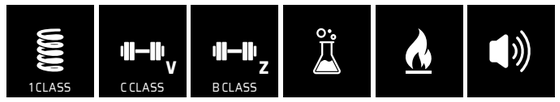
COLORS | FINISHING
RAL/NCS matt and gloss colors

SOUND ABSORBERS
Black Ecofiber Bs2d0

Views

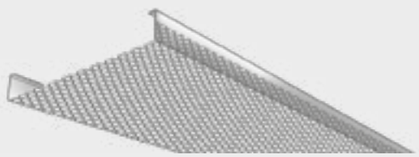


Suitable for corridors and small places, Atena expanded metal staves with and without gap are self-supporting up to three meters.

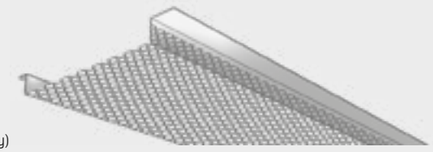


Picture: self bearing staves | mesh R12

Edges



TX4
Two side reinforced frame (R | Q 6/8/10/12 only)



TX4
Two side reinforced frame (R | Q 6/8/10/12 only)

COVERING SYSTEMS

INTERIOR COUNTER WALLS

Special custom-made configurations

Interior counter walls

Picture: sound absorbing wall | mesh Q10

INTERIOR COUNTER WALLS

MACRAMÈ

The new Atena "crepe weave" expanded metal mesh

FEATURES

TYPE
Custom-made architectural elements
Bended expanded metal tiles
welded on stiffening profiles
Side by side tiles
~ 10 mm horizontal gap
Dimensions
300 / 400 / 500 x 600 mm
300 / 400 / 500 x 1200 mm
Other dimensions on request

MESHES AND MATERIALS

Expanded metal
Steel small meshes
R/Q - 6 | 8 | 10
Steel Macramè
Other meshes on request

Mesh perforation
steel or aluminum

STRUCTURE
Carriers for tiles hooking
Horizontal and vertical finishing profiles

COLORS | FINISHING
RAL/NCS matt and gloss colors

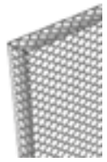
SOUND ABSORBERS

Mesh perforation
Black acoustic tissue
Standard A1s2d0 | Plus A1

Expanded metal
Black Ecofiber Bs2d0

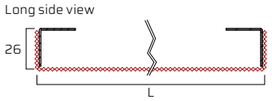
Edges

Expanded metal modules

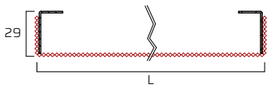


TX4
Four side reinforced frame

Long side view



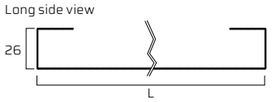
Short side view



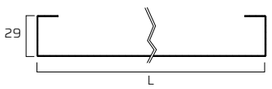
Mesh perforation modules

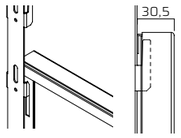
Visible smooth frame
~ 10 mm

Long side view



Short side view





Tile and carrier total size 30,5 mm

1 CLASS | C CLASS | B CLASS

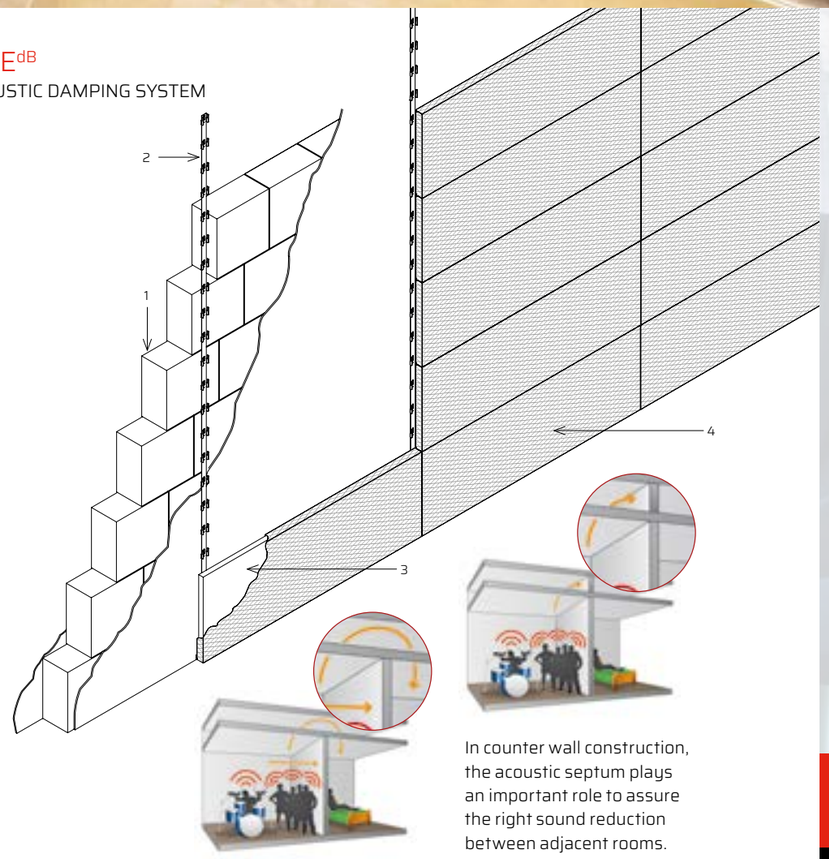
Picture: sound absorbing wall | mesh Q10
ceiling lowering covering | mesh 43x10

ATENA METAL SILENCE^{dB}

MASS- SPRING - MASS: THE ACOUSTIC DAMPING SYSTEM

The **Atena Metal Silence**^{dB} package for acoustic partition is based on the physical principle **of mass - spring - mass**. The clay or other material provides the necessary mass to assure the noise reduction, while the interspace and the counter wall brake the sound waves and act as an **acoustic absorber**.

Each material, in fact, in relation to its composition, vibrates at different frequencies.
Therefore, many layers of different materials work better than a single one, because having different resonance frequencies they absorb together a wider spectrum.



1 Brick wall

ATENA METAL SILENCE^{dB} KIT

2 Carriers

3 Acoustic absorber

4 Expanded metal tile

In counter wall construction, the acoustic septum plays an important role to assure the right sound reduction between adjacent rooms.

COVERING SYSTEMS

EXTERNAL COVERINGS

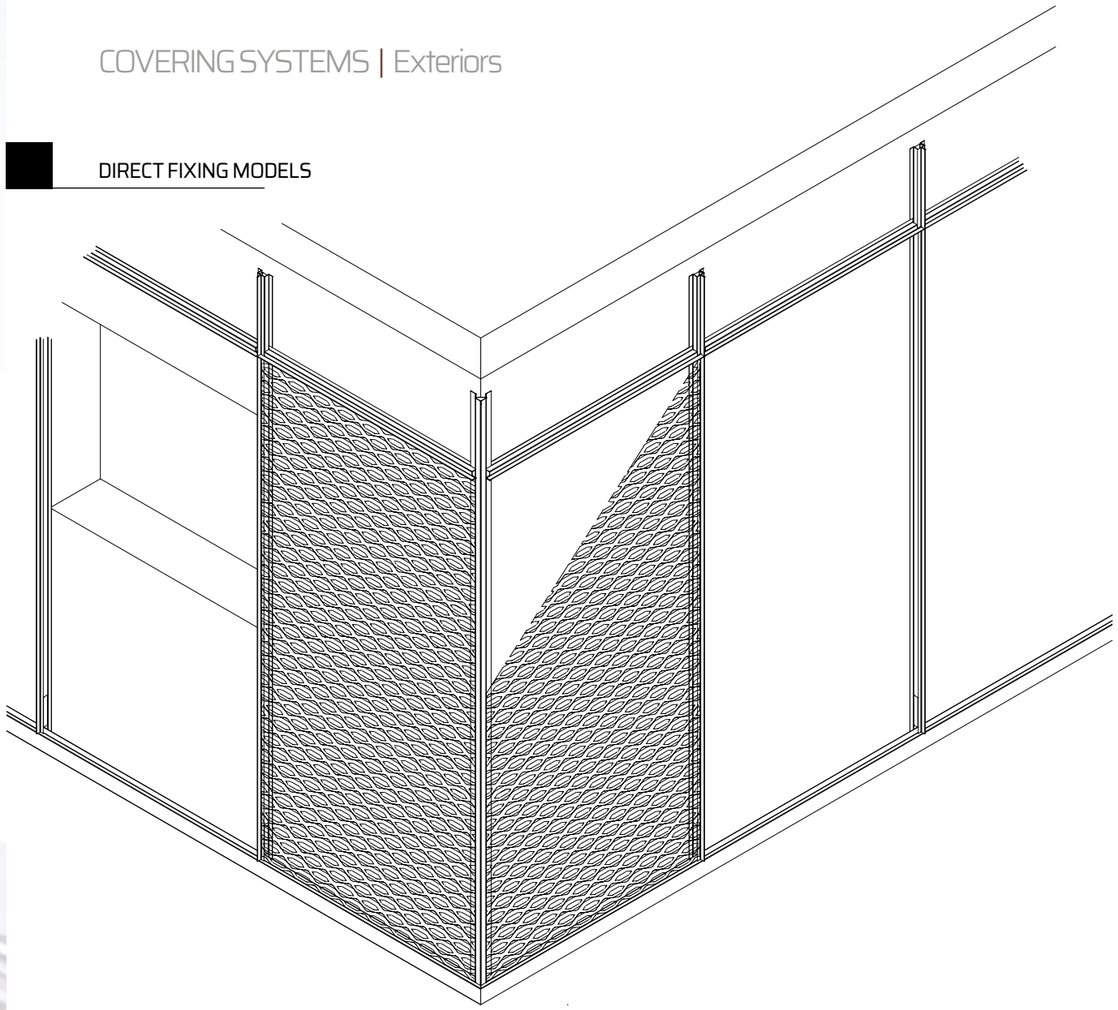
Special custom-made configurations

Direct fixing models
Hooked models

METAL COVERINGS

Picture: expanded matal external covering | mesh TF8/10

DIRECT FIXING MODELS



FEATURES

EXTERNAL COVERINGS
Custom-made architectural elements
Expanded metal sheets screwed directly on profiles
with visibile screws

Maximum dimensions:
base 1000 mm
height 2500 mm

MESHES AND MATERIALS
Steel and aluminum exterior application meshes
VIEW TF8/9 | TF55/39 | TF0/2 | TF8/10 | TF26/14
Other meshes on request

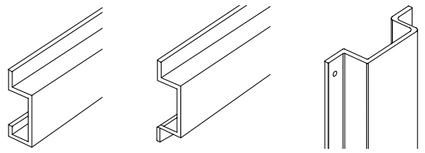
STRUCTURE
Starter profile
Horizontal profile
Vertical profile

Accessories
Vertical/horizontal cutting protection profiles
Finishing elements

Corner solutions
Cutting protection profile wall jont
Upper covering profiles

COLORS | FINISHING
RAL/NCS matt and gloss colors

Main components



1 Starter profile
2 Horizontal profile
3 Vertical profile

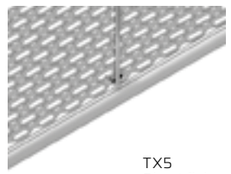
Accessories

4 Horizontal cutting protection profile
5 Vertical cutting protection acc.
(5+3) Assembly view vertical profile and cutting protection

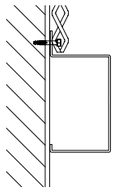
Picture: expanded matal external covering | mesh TF8/10

Edge and views

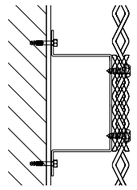
The expanded metal sheets
for exterior application can be spaced
out with cut protection profiles
or fixed directly on profiles
by overlapping each other.



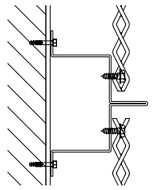
TX5
Direct fixing



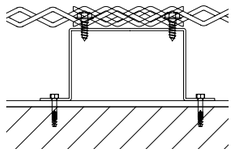
Starter profile
view



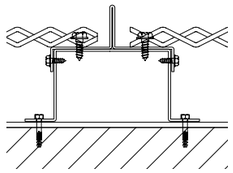
Horizontal profile
view without cutting
protection accessory



Horizontal profile
view with cutting
protection accessory

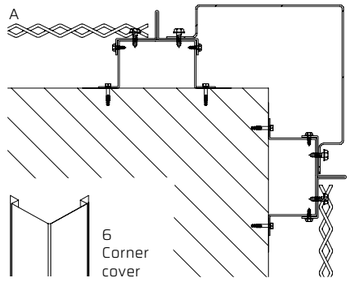


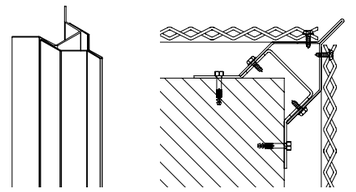
Vertical profile view without
cutting protection accessory



Vertical profile view with
cutting protection accessory

Corner solutions





(7+8) Assembly corner joint and cutting protection acc.

WINDOWS FRAMES AND SPECIAL SOLUTIONS

The façade coverings design related to windows, doors and openings in general plays a main role, both to ensure compliance with the functional requirements of the intrados and extrados and for the aesthetic impact on the overall design of the building.

In addition to traditional windows frame systems, by using expanded metal, openings can be completely covered, allowing the light to enter the building depending on the specific frontal transparency degree of each mesh.

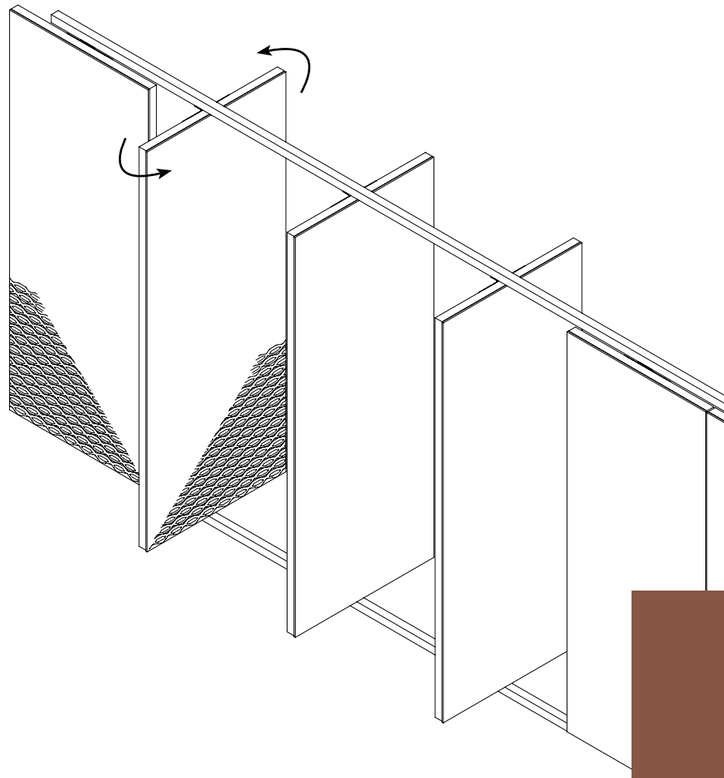
FEATURES

EXTERNAL COVERING
Custom-made architectural elements
Windows frame
Window pivoting shielding
Custom made technical solutions on request

MESHES AND MATERIALS
Steel and aluminum external application meshes
VIEW TF8/9 | TF55/39 | TF0/2 | TF8/10 TF26/14
Other meshes on request

STRUCTURE
Custom made profiles according to the building features

COLORS | FINISHING
RAL/NCS matt and gloss colors

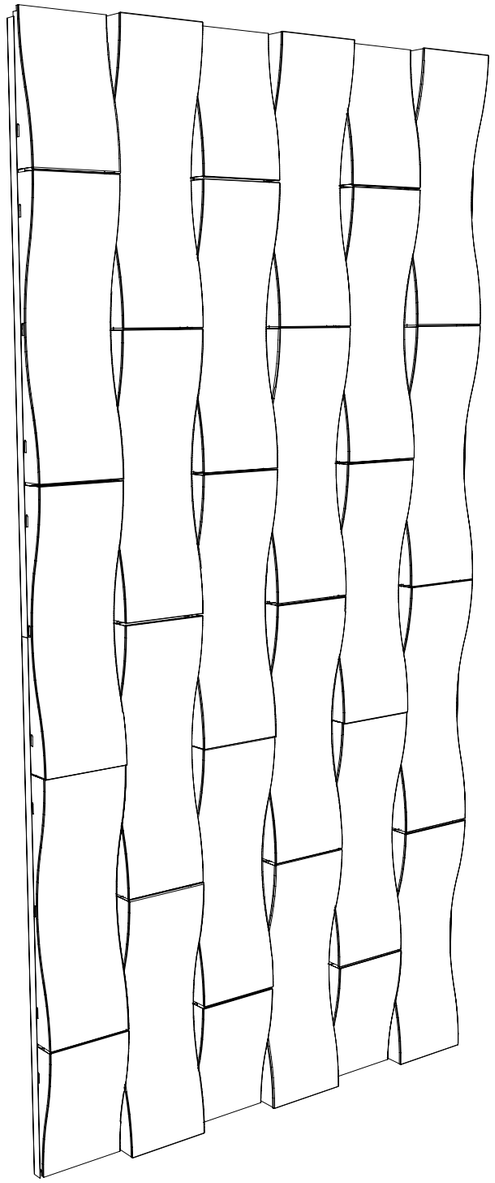


In addition to the total shielding solutions, and to the traditional window frame systems, Atena realizes special solutions with mechanical and automated pivoting tiles.

Picture: expanded metal external covering | mesh TF8/10

EXPANDED METAL HOOKING PANELS

Hidden structures and screws



Using the Atena FORMAL system,
you can create any shape
of expanded metal panel.
A solution this one to configure
the most daring vision.

FEATURES

EXTERNAL COVERINGS
Expanded metal panels
Hidden screws
Vertical waves

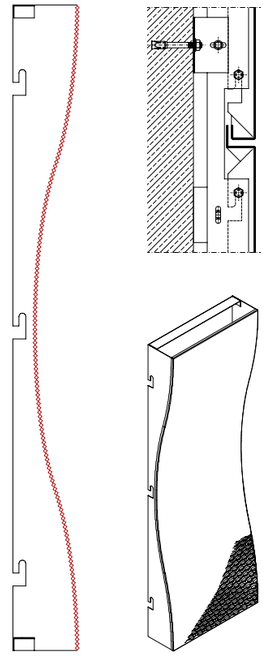
Maximum dimensions:
base 800 mm
height 2500 mm

MESHES AND MATERIALS
Steel and aluminum big meshes
VIEW TF8/9 | TF55/39 | TF0/2 | TF8/10 | TF26/14
Other meshes on request

STRUCTURE
Step carriers to hook panels equipped
with anti-vibration rubberised rungs
10 mm vertical gap to absorb thermal expansions
Ø mm or 10 mm horizontal gap
Special finishing profiles

COLORS | FINISHING
RAL/NCS matt and gloss colors

Views



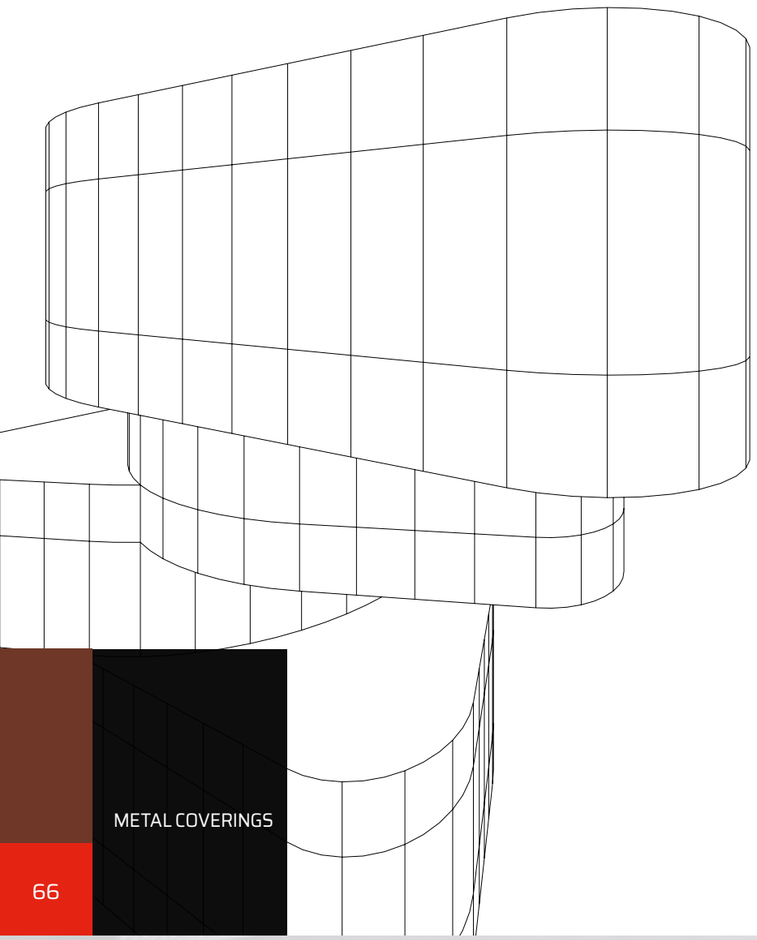
Picture: Atena Formal external covering with expanded metal | mesh TF8/10

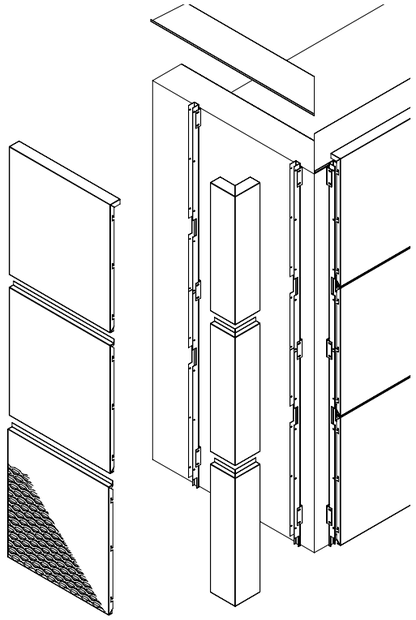
Special solutions

The expanded metal Atena Formal system is made up of “C” shaped bearing vertical carriers, equipped with Ø 8 mm anti-vibration rubberised rungs, to hook the panels and step holes on the back side to screw the carriers directly on walls.

The panels can have a flat, curved surface, or rounded on the perimeter edges, for a façade design totally planned out.

Picture: Atena Formal external covering with expanded metal | mesh TF8/10





The Atena FORMAL system is easy to install even in the most complex architectural elements.
The Formal wall has a square, rectangular or variable mesh, with a 10 mm gap between tiles in order to contain the thermal expansion.

FEATURES

EXTERNAL COVERINGS
Expanded metal panels
Hidden screws
Vertical waves

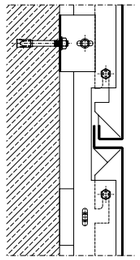
Maximum dimensions:
base 2500 mm
height 800 mm

MESHES AND MATERIALS
Steel and aluminum external application meshes
VIEW TF8/9 | TF55/39 | TF0/2 | TF8/10 | TF26/14
Other meshes on request

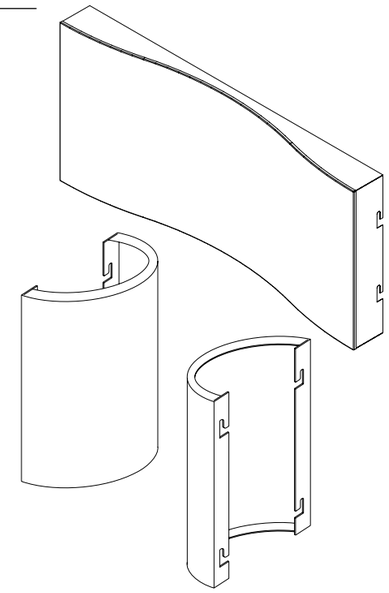
STRUCTURE
Step carriers to hook panels equipped with anti-vibration rubberised rungs
10 mm vertical gap to absorb thermal expansions
Ø mm or 10 mm horizontal gap
Special finishing profiles

COLORS | FINISHING
RAL/NCS matt and gloss colors

Tiles



Vertical view panels' hooking on structure



CURVATURE OPTIONS

Atena expanded metal covering panels can be made with, concave, convex or sinusoidal geometries.

EXECUTIVE ENGINEERING

TECHNICAL CONSULTING

DIMENSIONING, DESIGN FEASIBILITY

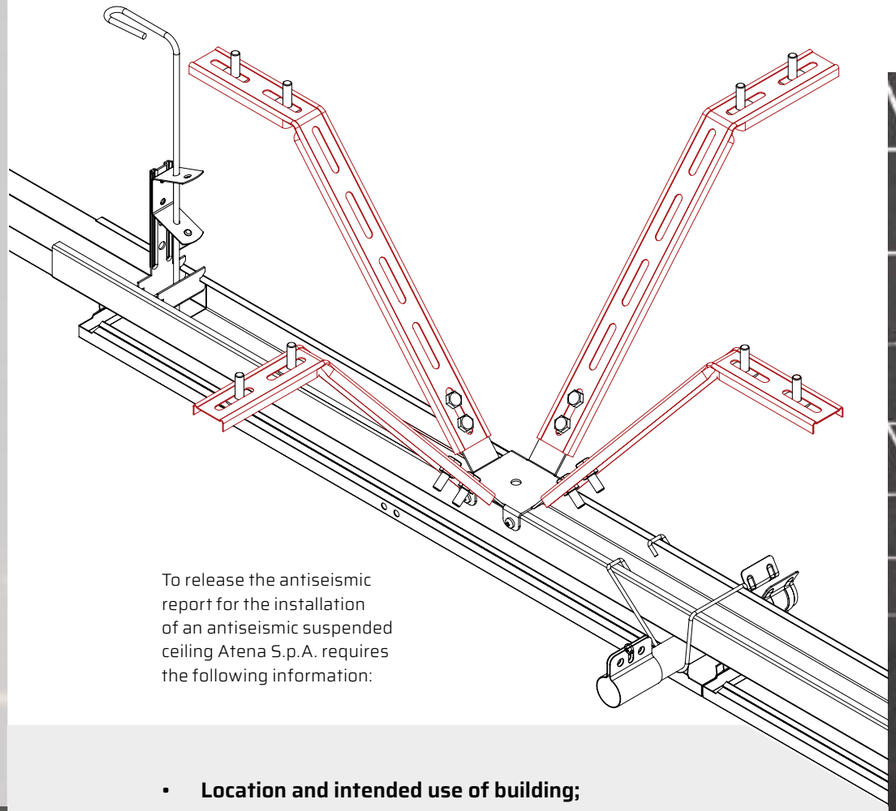
- Antiseismic engineering
- Acoustics
- Meshes features

ANTISEISMIC FALSE-CEILINGS

All Atena false-ceilings can be reinforced with **Atena Antiseismic Kit**, properly conceived to dissipate the seismic energy **preventing the false ceiling fall**.

Atena offers a specialized technical consulting and releases a specific **antiseismic report**, where numbers and types of reinforced elements are indicated, according to the false ceiling features and the seismic area of the site.

Atena antiseismic report complies with NTC and European standard for the building test and the **antiseismic certification**.



To release the antiseismic report for the installation of an antiseismic suspended ceiling Atena S.p.A. requires the following information:

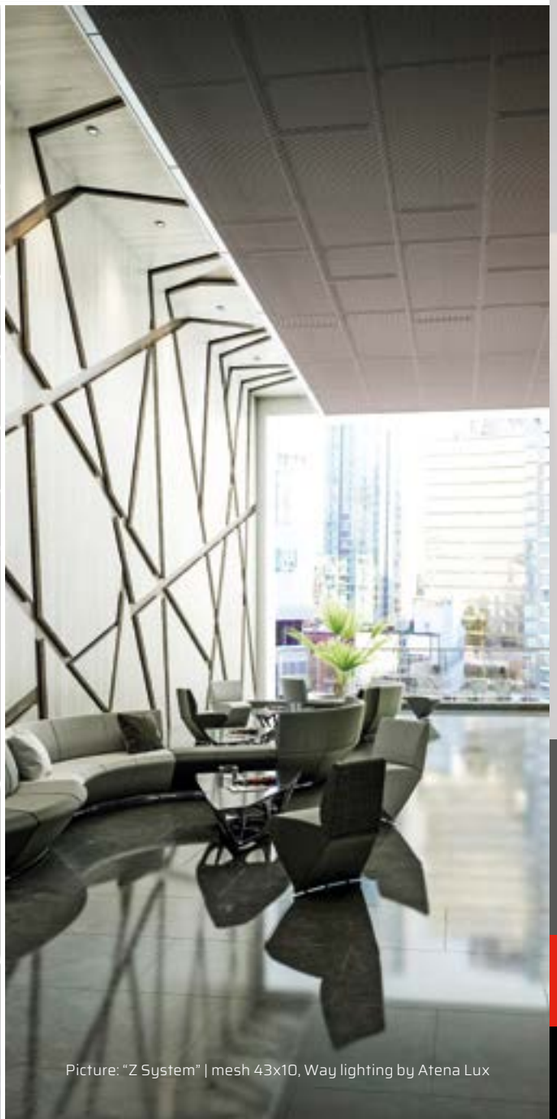
- **Location and intended use of building;**
- **Type of construction of the building and floors (masonry, ca ...) where false ceilings will be installed;**
- **Updated plans and sections 1:100 (paper or CAD) of the areas;**
- **Geological report, if available;**
- **Special prescription if required.**

THE EXPERIMENTAL CAMPAIGN

TESTED ANTISEISMIC KIT

UNIVERSITÀ DEGLI STUDI DI PADOVA | ICEA

The effectiveness of Atena antiseismic systems has been tested by the **Department of Civil, Construction and Environment Engineering (DICEA) of the University of Padua**, which carried out the first international campaign of almost static and monotonous cyclic tests to verify the global seismic behaviour of Atena Antiseismic false-ceilings.



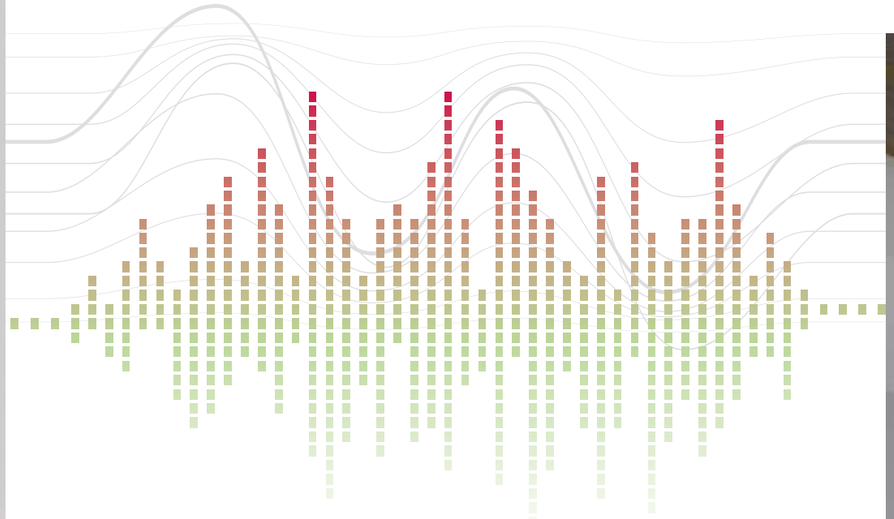
Picture: "Z System" | mesh 43x10, Way lighting by Atena Lux

SOUND ABSORPTION AND NOISE REDUCTION

Expanded metal and **sound-absorbing materials** to achieve **maximum acoustic performance**.

Expanded metal tiles with their wide open surface favour the sound wave absorption over its reflection; in an environment correctly treated from the acoustic point of view, where everything is correctly balanced, people can enjoy a new sound dimension and experience a superior listening quality level.

Each environment requires a specific acoustic treatment:
Require a specialized technical consulting to choose the right product in order to achieve the desired performance.



ACOUSTIC WAVE CONTROL

When everything is laid out correctly,
the sound source seems to disappear,
the environment itself gives
the impression to vibrate
and the receiver empower a unique
listening experience: this is
the effective and brilliant result
of a specific design which takes
into account all acoustic aspects,
including, the physiological
mechanisms of perception
and the human ear functioning.

ACOUSTIC STANDARDS

Norme UNI EN 12354-1:2017, “Building acoustics - Estimation of acoustic performance of buildings from the performance of elements”.
Technical Report UNI TR 11175.
Norme UNI 11532-1:2018
“Internal acoustical characteristics of confined spaces – Design methods and evaluation techniques”.

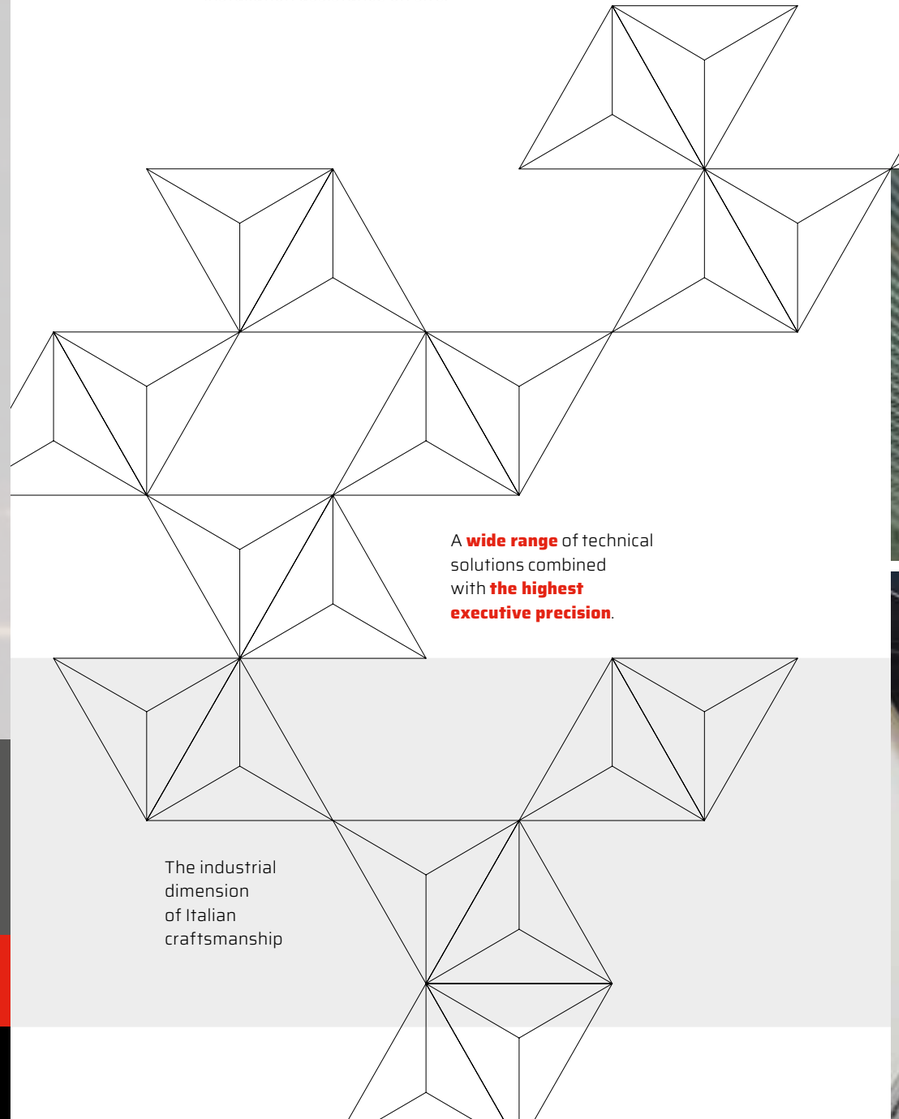
Picture: Bandraster Crossing | mesh R12

SPECIAL ARCHITECTURAL SHAPES

Thanks to a thirty-year experience in the realization of **progressively more complex projects**, Atena aims to develop **high performance architectural systems** for ceilings and external coverings able to meet any specific requirements, creating amazing settings of **great visual impact**, and meeting the needs of an ever more sophisticated international market.

The ATENA technical office supports the designer in the choice of construction systems, materials and finishing and through the use of two-dimensional software and latest-generation 3D modelling programs such as CAD and SOLID EDGE is able to perform:

- preliminary and feasibility studies;
- simulation rendering of the intervention to be carried out;
- technical measurements and technical inspections;
- executive planning;
- installation assistance on site.



A **wide range** of technical solutions combined with **the highest executive precision**.

The industrial dimension of Italian craftsmanship

VARIETY OF CONFIGURATIONS

Atena develops cutting-edge technical solutions to combine aesthetic and functional aspects where durability, corrosion resistance, recycled / recyclable material and optimization of installation phases are evaluated in an integrated way, in order to meet the most rigorous requirements of design standards and international building certification.

MESHES FEATURES

The expanded metal has a particular aesthetic, obtained by combining the chosen shape, the perforated surface and the transparency, intended as the quantity of light and air that the mesh leaves to flow.

The expanded metal thus becomes a game of shapes, transparencies and materials particularly appreciated by contemporary architecture.

Picture: Plan T24 | mesh Q8

Picture: Plan T15 | mesh Q16

Types of meshes , edges and systems

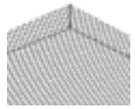
ID	DESCRIPTION	SYSTEM	MODEL	MESHES
TXOC	Wavy expanded metal	T-grid systems T15 | T24 | T35 | T43	-	Standard meshes R | Q - 6/8/10
TXO	Bended expanded metal	Visible structure systems	24 Linear Tegular 15 Linear Design | Plan | Flat Bandraster Crossing Band. Cross. T24	Standard meshes R | Q - 6/8/10 Macramé
		Clip-in systems	Matrox | Enigma*	
		Composite islands		
TX1	~10 mm visible frame expanded metal	Visible structure systems	Badraster Parallel	Standard meshes R | Q - 6/8/10 Macramé | Bouclé ML 28x12 | MR 43x18 | MR 16x8
		Hook on tiles with hidden structure	"Z System" Wide spaces "Z System" Corridor	
		Monolithic islands	-	
TX2	~10 mm semi-concealed frame expanded metal	Visible structure systems	Badraster Parallel	Standard meshes R | Q - 6/8/10 Macramé | Bouclé ML 28x12 | MR 43x18 | MR 16x8
		Hook on tiles with hidden structure	"Z System" Wide spaces "Z System" Corridor	
TX3	No frame expanded metal	Hook on tiles with hidden structure	"Z System" Wide spaces "Z System" Corridor "Z System" Wavy	Standard meshes R | Q - 6/8/10 Macramé | Bouclé ML 28x12 | MR 43x18 | MR 16x8
TX4	Four / two sides reinforced frame expanded metal	Visible structure systems	Badraster Parallel	Standard meshes R | Q - 6/8/10 Macramé | Bouclé ML 28x12 | MR 43x18 | MR 16x8
		Hook on tiles with hidden structure	"Z System" Wide spaces "Z System" Corridor	
		Self bearing staves	Side by side and gap models	R | Q - 6/8/10 ML 28x12 | MR 43x18 | MR 16x8
		Interior counter walls	-	Standard meshes R | Q - 6/8/10 Macramé
TX5	Direct fixing exp. metal exterior application visible screws	Facades	-	Meshes for exterior (VIEW) TF8/9 | TF55/39 | TF0/2 | TF8/10 TF26/14
TX3E	No frame exp.metal hidden structures no visible screws	Facades	Formal System	Meshes for exterior (VIEW) TF8/9 | TF55/39 | TF0/2 | TF8/10 TF26/14

Enigma*: available with right and bevelled edges with perforations MESH R16 and MESH R25 only

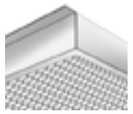
Edges

TXOC

TXO

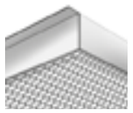


TX1

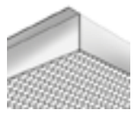


TX1

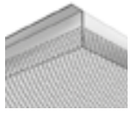
TX2



TX3



TX4



TX4

TX5

TX3E

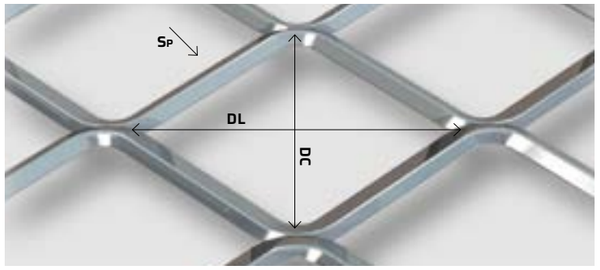
LEGEND

The expanded metal is defined on the basis of the following parameters:

- long diagonal,
- short diagonal,
- advancement,
- thickness.

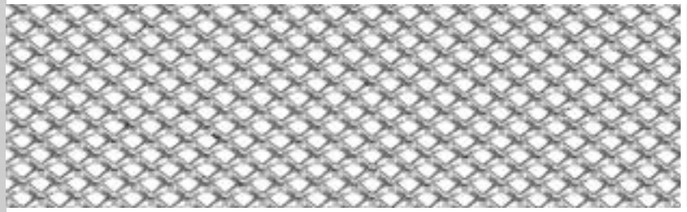
NOMENCLATURES	
DL	Long diagonal
DC	Short diagonal
AV	Advancement
Sp	Thickness

For each type of mesh, the **open area** is indicated as a percentage of empty to the total surface. For exterior application, in addition to the open area, the meshes are classified according to the **frontal transparency** that likewise expresses the degree of shielding.



In the following pages are indicated the features of different offered meshes. Other meshes are available on request.

EXPANDED METAL MESH RANGE

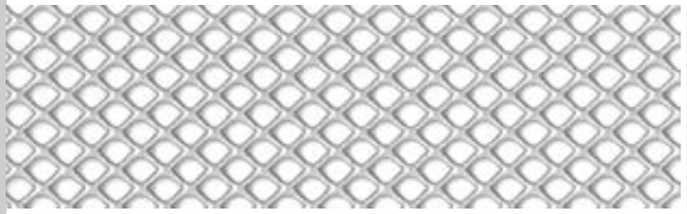


Q6
Square mesh
Long diagonal: 6 mm
Short diagonal: 4,2 mm
Advancement: 1 mm
Thickness: 0,8 mm
Open area: ~51%
Wavy mood available

Application
Interior

Material and weight:
Steel: 3 Kg/m²

SMALL MESH

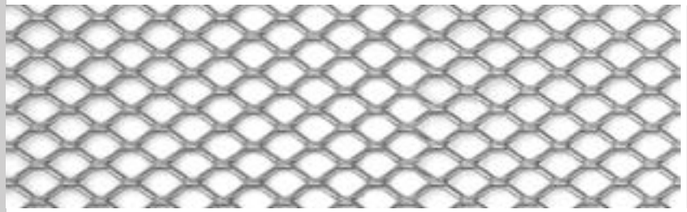


Q8
Square mesh
Long diagonal: 8 mm
Short diagonal: 6 mm
Advancement: 1,15 mm
Thickness: 0,8 mm
Open area: ~60%
Wavy mood available

Application
Interior

Material and weight:
Steel: 2,4 Kg/m²

SMALL MESH

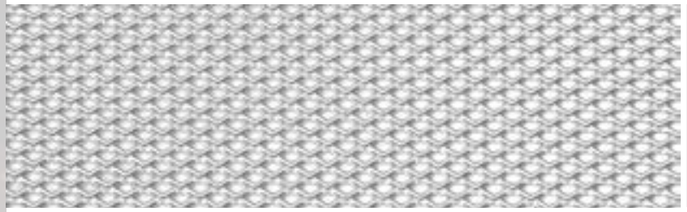


Q10
Square mesh
Long diagonal:10,5 mm
Short diagonal: 7,5 mm
Advancement: 1,3 mm
Thickness: 1 mm
Open area: ~65%

Application
Interior

Material and weight:
Steel: 2,7 Kg/m²

SMALL MESH

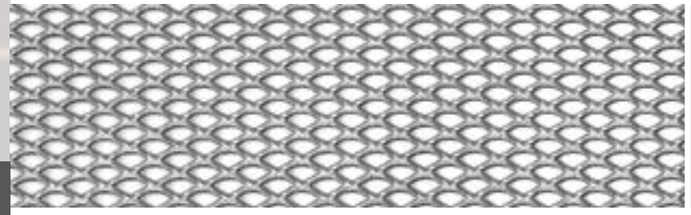


R6
Rhomboidal mesh
Long diagonal: 6 mm
Short diagonal: 3,5 mm
Advancement: 0,9 mm
Thickness: 0,7 mm
Open area:~45%
Wavy mood available

Application
Interior

Material and weight:
Steel: 2,9 Kg/m²

SMALL MESH

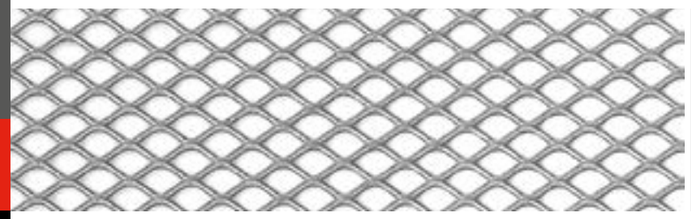


R8
Rhomboidal mesh
Long diagonal: 8 mm
Short diagonal: 4,2 mm
Advancement: 1 mm
Thickness: 0,8 mm
Open area: ~52%
Wavy mood available

Application
Interior

Material and weight:
Steel: 3 Kg/m²

SMALL MESH



R10
Rhomboidal mesh
Long diagonal: 10 mm
Short diagona: 6 mm
Advancement: 1,1 mm
Thickness: 1 mm
Open area: ~62%

Application
Interior

Material and weight:
Steel: 2,9 Kg/m²

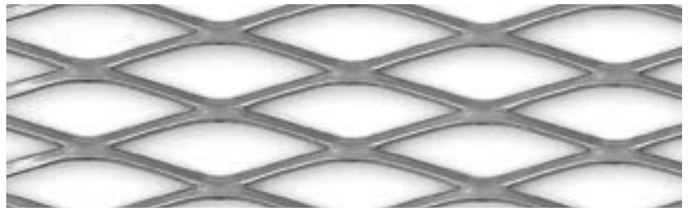
SMALL MESH

ML28x12
Lengthened mesh
Long diagonal: 28 mm
Short diagonal: 12 mm
Advancement: 2 mm
Thickness: 1,5 mm
Open area: ~65%

Application
Interior

Material and weight:
Steel: 3,9 Kg/m²

MEDIUM MESH

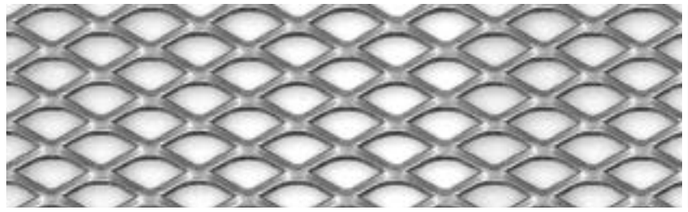


MR43x13
Rhomboidal mesh
Long diagonal 43 mm
Short diagonal 13 mm
Advancement 2 mm
Thickness 1 mm
Open area ~65%

Application
Interior

Material and weight:
Steel: 2,4 Kg/m²

MEDIUM MESH

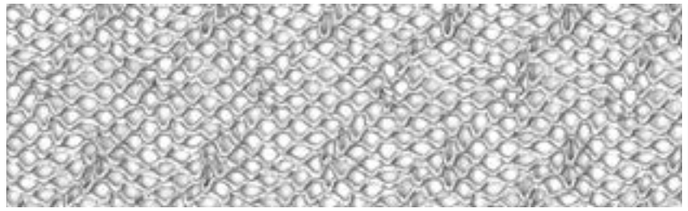


MR16x8
Rhomboidal mesh
Long diagonal: 16 mm
Short diagonal: 8 mm
Advancement: 1,4 mm
Thickness: 0,8 mm
Open area: ~65%

Application
Interior

Material and weight:
Steel: 2,1 Kg/m²

MEDIUM MESH

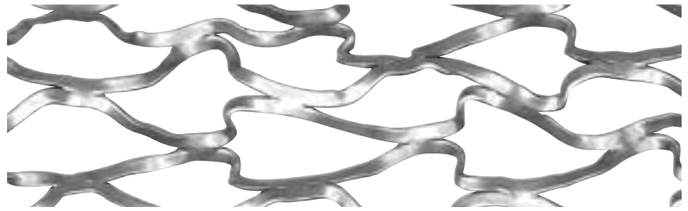


MACRAMÉ
Rhomboidal mesh

Application
Interior

Material and weight:
Steel

MACRAMÉ

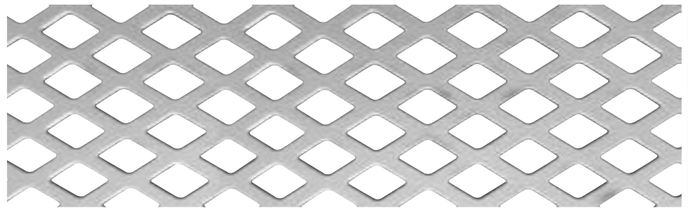


BOUCLÈ
Rhomboidal mesh

Application
Interior

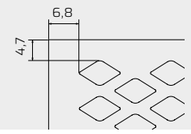
Material:
Steel

BOUCLÈ

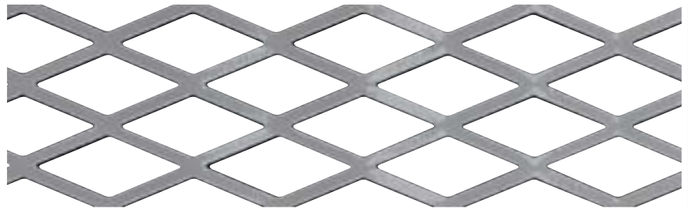


R16x8 - A2,5
9,23x5,52 mm
perforated area: 42,2%
maximum lenghts
coil: 1000 mm
perforation: 900 mm
Steel: 5-6-7 /10
Aluminum 5-6-7 /10

Application
Interior

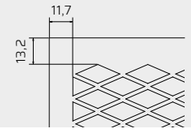


MESH R16



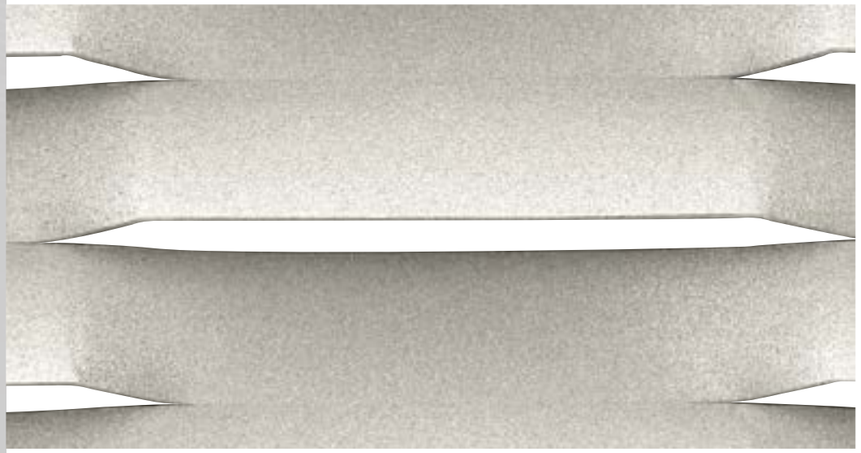
R25x12,5 - A2
22x9,5 mm
perforated area: 67%
maximum lenghts
coil: 1000 mm
perforation: 900 mm
Steel: 5-6-7 /10
Aluminum: 5-6-7 /10

Application
Interior



MESH R25

EXPANDED METAL MESH RANGE



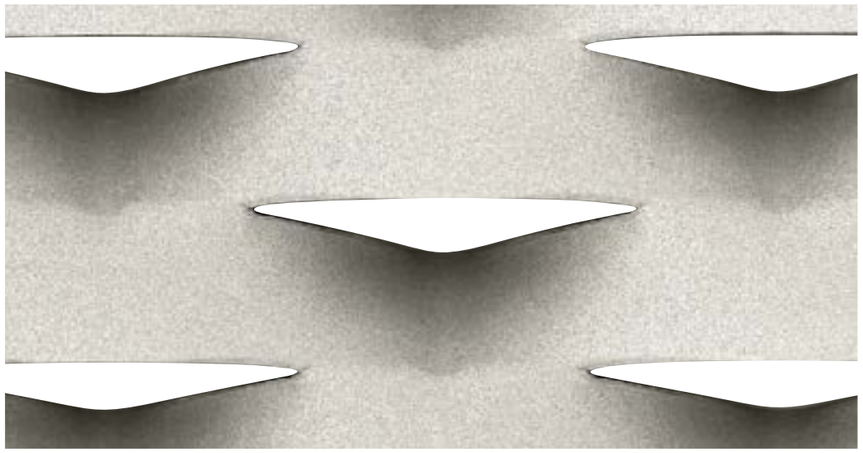
VIEW TF8/9
Shielding mesh
Long diagonal: 225 mm
Short diagonal: 54 mm
Advancement: 25 mm
Thickness: 2 mm
Open aera: ~9%
Frontal trasparency: ~8%

Application
Facades

Materials and weights
Steel: 14,6 kg/m²
Aluminum: 5 kg/m²

Maximum dimensions
1000x3000 mm

BIG MESH



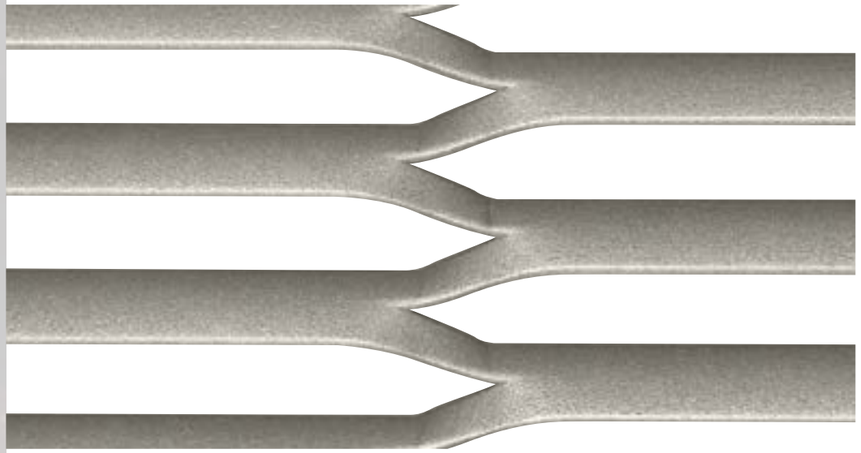
VIEW TF8/10
Shielding mesh
Long diagonal: 112 mm
Short diagonal: 52 mm
Advancement: 24 mm
Thickness: 1,5 mm
Open area: ~10%
Frontal trasparency: ~8%

Application
Facades

Materials and weights
Steel: 10,8 kg/m²
Aluminum: 3,7 kg/m²

Maximum dimensions
1000x3000 mm

BIG MESH



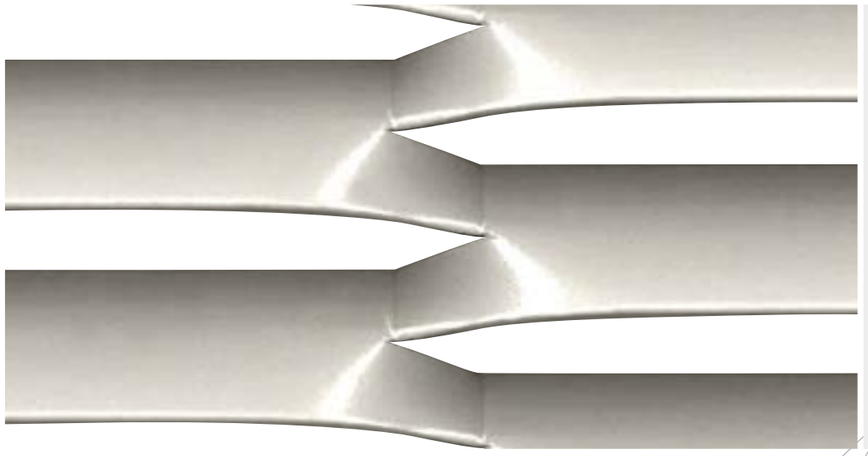
VIEW TF55/39
Shielding mesh
Long diagonal: 225 mm
Short diagonal: 24 mm
Advancement: 7,5 mm
Thickness: 3 mm
Open area: ~39%
Frontal trasparency: ~55%

Application
Facades

Materials and weights
Steel: 14,6 kg/m²
Aluminum: 5 kg/m²

Maximum dimensions
1000x3000 mm

BIG MESH



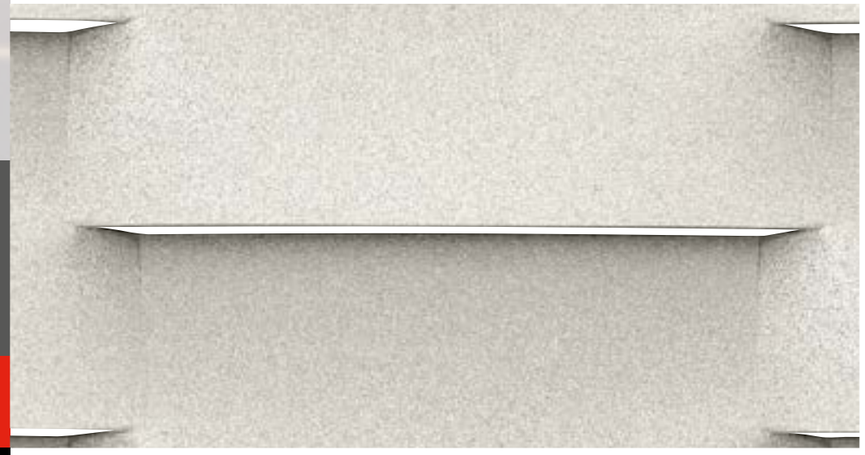
VIEW TF26/14
Shielding mesh
Long diagonal: 225 mm
Short diagonal: 35 mm
Advancement: 15 mm
Thickness: 2mm
Open area: ~14%
Frontal trasparency: ~26%

Application
Facades

Materials and weights
Steel: 13,5 kg/m²
Aluminum: 4,7 kg/m²

Maximum dimensions
1000x3000 mm

BIG MESH



VIEW TF0/2
Shielding mesh
Long diagonal: 225 mm
Short diagonal: 66 mm
Advancement: 33 mm
Thickness: 2 mm
Open area: ~2%
Frontal trasparency: ~0%

Application
Facades

Materials and weights
Steel: 15,7 kg/m²
Aluminum: 5,4 kg/m²

Maximum dimensions
1000x3000 mm

BIG MESH

HIGH PERFORMANCE SYSTEMS

CERTIFICATIONS

INTERNATIONAL TECHNICAL STANDARDS

Certifications

Picture: 24 Linear Tegular T24 | R10 mesh

TECHNICAL STANDARDS

All Atena false-ceilings are produced for **internal use** according to the technical rules for construction NTC 2018 and UNI EN 13964 standard.

For **external application**, false-ceilings and coverings have to be dimensioned on environment features, to list some of the possible examples: earthquakes, wind, thermal expansion, place of installation, use destination of the building and project requirements.

According to NTC 2018 and EUROCODICI each Atena product for interior application has its own DOP (Declaration Of Performance) CE mark according to the European Law 305/2011.

Picture: "Z System" mesh 43x13, Way lighting by Atena Lux

CERTIFICATIONS

TYPE	DATA
FLEXION RESISTANCE	Maximum span mm 1200 1 Class
DURABILITY OF POST-PAINTED ITEMS	C CLASS
DURABILITY OF GALVANIZED ITEMS	B CLASS
RELEASE OF DANGEROUS SUBSTANCES	NONE
FIRE REACTION	Smooth or perforated tiles with Viledon Plus: A1 Class
	Perforated tiles with standard Viledon: A2s1d0 Class
CORROSION RESISTANCE	Galvanised steel products: C2 Class
	Pre-painted galvanised steel products: C3 Class
	Post-painted galvanised steel products: C4 Class
	Pre and post-painted aluminum products: C5 Class

For applications in aggressive environments such as swimming pools, industrial estabilishments with chemical and/or corrosive exhalations, please verify the best suited material and surface treatment with Atena S.p.A. technical and sale department.

While false ceiling systems are covered by Uni En 13964 standard, the exterior systems for facades, made up of aluminium, steel or composite materials tiles, hooked on carriers or directly fixed on metal profiles, are not covered by an harmonized technical standard, including those for curtain walling, therefore CE marking in not compulsory.

BEARING CAPACITY AND FLEXION RESISTANCE

Limit states of bearing and flexion resistance of Atena structures and tiles are reported in technical data sheets. Atena tiles are classified in 1st Class of flexion resistance. Structures have generally a maximum span of 1200 mm. According to Techincal Norme for Construction - D.M. 14/01/2018, lighting elements and accessories must be fixed directly to the concrete and not load the false ceiling system.
According to the engineering criteria of false ceilings, tiles are tested to support their mass and to maintain flatness and curvature properties. On request Atena S.p.A. can conceive and produce tiles suitable to support additional loads, that must be clearly specified in terms of quantity, position and application modes.

DANGEROUS SUBSTANCES

Atena ceilings do not release dangerous substances. Painting and sublimation are made with substances without Volatile Organic Compounds (VOC/VOC).

FIRE REACTION

All Atena false ceilings comply with the Euroclass standard for building materials; systems, with holed or metal membrane with acoustic tissue "PLUS", are incombustible and come into A1 Class.

WIND LOAD RESISTANCE

For the calculation on the tiles mechanical strength Atena S.p.A. considered the vertical dead load.
Any upward thrusts that can overcome the dead weight of the false-ceiling should be checked at project stage by identifying critical areas where upward thrusts can occur, such as in entrances, near the doors or windows, on the corners of buildings, in the presence of large or permanent openings such as car parks or access routes.
In all these cases, the ceiling must be dimensioned to withstand any wind aspirations or pressures.

ECO-FRIENDLY

All Atena recyclable products can contribute to gain scores, in order to obtain LEED certification.

COLOUR TOLERANCE

Atena S.p.A. has a quality control management system to ensure the compliance with law requirements in force and technical standard tolerances. All color controls included those on products made in different production periods or made and processed using raw materials and powders from different lots, are verified and test by Atena according the ΔE - CIELab method.

DURABILITY AND CORROSION PROTECTION

Atena false-ceilings are made of galvanized and painted materials suitable to the different durability exposure classes as set in UNI EN ISO 13964. Specifically, galvanized steel products are classified in exposure B class, painted steel products in C Class, the stainless steel and aluminum elements in D Class. On request Atena S.p.A. can proceed with special treatments against galvanic and chemical corrosion in the most critical conditions.

EXPOSURE CLASS	ENVIRONMENT CONDITIONS	PRODUCTS DURABILITY CLASSIF.
A	Buildings frequently exposed to relative humidity up to 70% and varying temperatures up to 25°C but with no corrosive pollutants.	Atena galvanised steel products
B	Buildings frequently exposed to relative humidity up to 90% and varying temperatures up to 30°C but with no corrosive pollutants.	Atena galvanised steel products
C	Exposure to an atmosphere with 90% humidity level and risk of condensation.	Atena postpainted steel, Stainless steel and aluminum products
D	Critical conditions.	Atena products with specific treatment on request

The durability of a material/component is the capability to maintain its performance properties and perform the required functions during a defined period; Since the moment zero, when the component is installed and put into operation, to the end of its life cycle.

The performance properties declared in D.o.P. Declarations of Performance provided by Atena S.p.A. are guaranteed, if the false-ceiling is installed in the environment conditions for which it has been conceived, the recommended maintenance is executed and it is not affected from inadequate treatments such as tampering, cuts, abrasion, damages which can interrupt the coated layer, please check with Atena's technical department the specific environmental conditions to which the product will be submitted in order to choose the most suitable material.

CHEMICAL CORROSION PROTECTION
According the UNI EN ISO 13964 standard all steel and aluminum components must be protected against corrosion in relation to exposure class. The material corrosion is a natural and irreversible deterioration process of the physical properties due to its slow and continuous consumption.
The corrosion resistance is indicated as low, medium or high, near the environment corrosion class, in order to evaluate the performance of the coating in the environment and under operating conditions.
It should be understood as an indication of the effectiveness of a protection treatment for a given period of time.

UNI EN ISO 12944-1 durability classes
- Low (L) = from 2 to 5 years
- Medium (M) = from 5 to 10 years
- High (H) = over 15 years

This is not a guarantee of durability, but an indication to schedule the maintenance tasks necessary to keep the material's properties in relation to its life cycle.

The durability tests based on the corrosion classes conducted by the Istituto Giordano S.p.A. on the galvanized steel, post-painted galvanized steel, pre-painted galvanized steel and aluminum Atena components used for the construction of false ceilings, report excellent corrosion resistance and have been classified in C5-M media.
Tests were carried out in compliance with UNI EN ISO 6270-2:2005 and 12944-6:2001 standards in humidistatic chamber with humidity atmospheres for the determination of moisture resistance and the protection of steel structures coating against corrosion.
The excellent result has been confirmed by the corrosion resistance tests in salt fog conducted by the Istituto Giordano S.p.A. according to UNI EN ISO 9227:2012. As the laboratory environment can not represent the normal conditions of use, Atena S.p.A., according to its experience, recommends the choice of materials according to the classification given in the schedule on page 84.

PROTECTION AGAINST GALVANIC CORROSION
Electrochemical corrosion is due to the contact of materials with different potentials that produce galvanic currents. In these cases Atena recommends the use of polymer separators and/or the use of post-painted polyester-coated galvanized materials with at least 60 µm; the paint is a good protection against galvanic corrosion in environment conditions that do not deteriorate the coated layer.
For specific applications, please check with Atena technical department the proper material according to the application field.

CLASS OF CORROSIVITY	INTERNAL ENVIRONMENTS	OUTDOOR ENVIRONMENTS
C1 VERY LOW $r_{corr} \leq 0,1$* NOT AGGRESSIVE ENVIRONMENT	Low humidity in heated environment, no pollution.	Dry or cold areas with very rare rain with very limited or absent moisture.
C2 LOW $0,1 < r_{corr} \leq 0,7$* LITTLE AGGRESSIVE ENVIRONMENT	Temperatures and variable humidity in an no-heated environment, low pollution and moisture values.	Temperate areas with low pollution; Dry or cold areas with limited moisture; Countryside, small towns in hinterland.
C3 AVERAGE $0,7 < r_{corr} \leq 2$* AVERAGE AGGRESSIVE ENVIRONMENT	Moderate presence of moisture and pollution due to light productive processes.	Temperate zone with average pollution values (SO_2 up to 30 µg /m^3 or average chlorine content); Urban areas, seaside areas with low deposition of chlorides.
C4 HIGH $2 < r_{corr} \leq 4$* AGGRESSIVE ENVIRONMENT	Frequent moisture and high pollution levels due to industrial processes and sports pools.	Very polluted urban areas, industrial districts, seaside with high deposition of chlorides.
C5-I VERY HIGH / C5-M MARINE $4 < r_{corr} \leq 8$* HIGH AGGRESSIVE ENVIRONMENT	Caves.	Very serious pollution (SO_2 up to 250 µg/m^3); Areas with heavy industrialization, buildings on the coast.

* ENVIRONMENTAL CLASSIFICATION AND CORROSION RATES r_{corr} [=] µm/year (zinc thickness loss)

Source: ISO 9223 - Corrosion of metals and their alloys - UNI EN ISO 14713 – Zinc Coatings, guidelines and recommendations

TO BE INSPIRED

atena-it.com

follow us

Thinking about new projects...

Picture: 24 Linear Flow | mesh Macramè

Expanded metal Rev 0 - 04/2019

Concept, Art Direction and PhotoRender: Care S.r.l. - carecom.it

Photos:
istockphoto.com: p. 1 | p. 71
shutterstock.com: p. 73
adobestock.com: p.69
fotolia.com: p. 90

All dimensions are nominal and expressed in millimeters.
All weights are expressed net of tare.
All technical specification data and information can be changed without advise.
More details concernings colours, perforations, perimeter profiles and laying instructions are described in technical data sheets suitable on line: atena-it.com
For further information please contact sales department:
tel. + 39 0421 75526 commerciale@atena-it.com

100% GREEN ENERGY · DOLOMITI ENERGIA ·

ISO 9001

FALSE CEILINGS AND COVERINGS

Atena S.p.A.
Via A. De Gasperi, 52 - 30020 Gruaro (VE) Italy
Ph: +39 0421 75526 - Fax: +39 0421 75692
atena-it.com - info@atena-it.com