

METAL BAFFLE



METAL CEILINGS AND COVERINGS



METAL CEILINGS AND COVERINGS

INNOVATIVE ARCHITECTURAL SOLUTIONS
HIGH PERFORMANCE SYSTEMS
NEWS EXPRESSIVE POSSIBILITIES

Atena has been conceiving and manufacturing metal 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' visions 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 BAFFLE

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

With their simple and minimal design, Atena Baffles are one of the best technical solution to realize high performance ceilings.

A wide range of systems that stand out for their flexibility in configurations, speed of installation and excellence in materials and workmanship.

Properly conceived to assure acoustic comfort, anti-seismic safety and perfect integration with lighting and accessories, Atena Baffles, with their vertical aspect represent the best match of functionality, comfort and design, ensuring maximum stability even to the most "daring" achievements.

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ARCHITECTURAL CEILINGS

BAFFLE STANDARD SERIES



Baffle Standard serie

METAL BAFFLE

Picture: "Baffle Standard serie" metal ceiling | Tamás Bujnovszky

BAFFLE STANDARD SERIE



FEATURES

ELEMENTS DIMENSION

20 x 60 Base 20 carrier
25 x 50 Base 25 carrier

30 x 64 | 100 | 150 TRB carrier with predefined variable distances
30 x 200 | 300
40 x 100 | 140 | 180
50 x 100 | 150 | 200 | 300 TS carrier for distances and/or bases out of measure

Maximum Baffle lenght 4000 mm
Other heights on request

MATERIALS

Aluminum and steel, thickness according to the project and product requirements

STRUCTURE

Baffle interlocking carriers made up of 8/10 thickness black prepainted steel RAL/NCS post-painting on request | Locking system

ANTISEISMIC EQUIPMENTS

Atena antiseismic kits compulsory for buildings in 3 and 4 Class (NTC 2018 - § 7.2.3)

HANGERS

Double hanger with spring
Threaded bar

BAFFLE COLORS

Atena White | Atena Silver
RAL / NCS coating
Wood effects
Sublimation of images and effects

PERFORATION

To choose among Atena perforation range

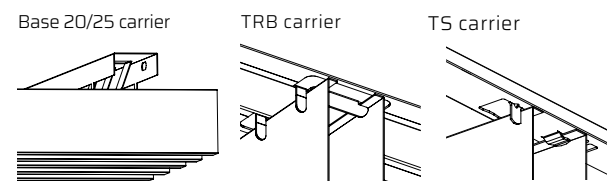
ACCESSORIES

Smooth closing caps on request, different heights kit with Tilt Spin system hook, Baffle and carriers joints, alignment clips

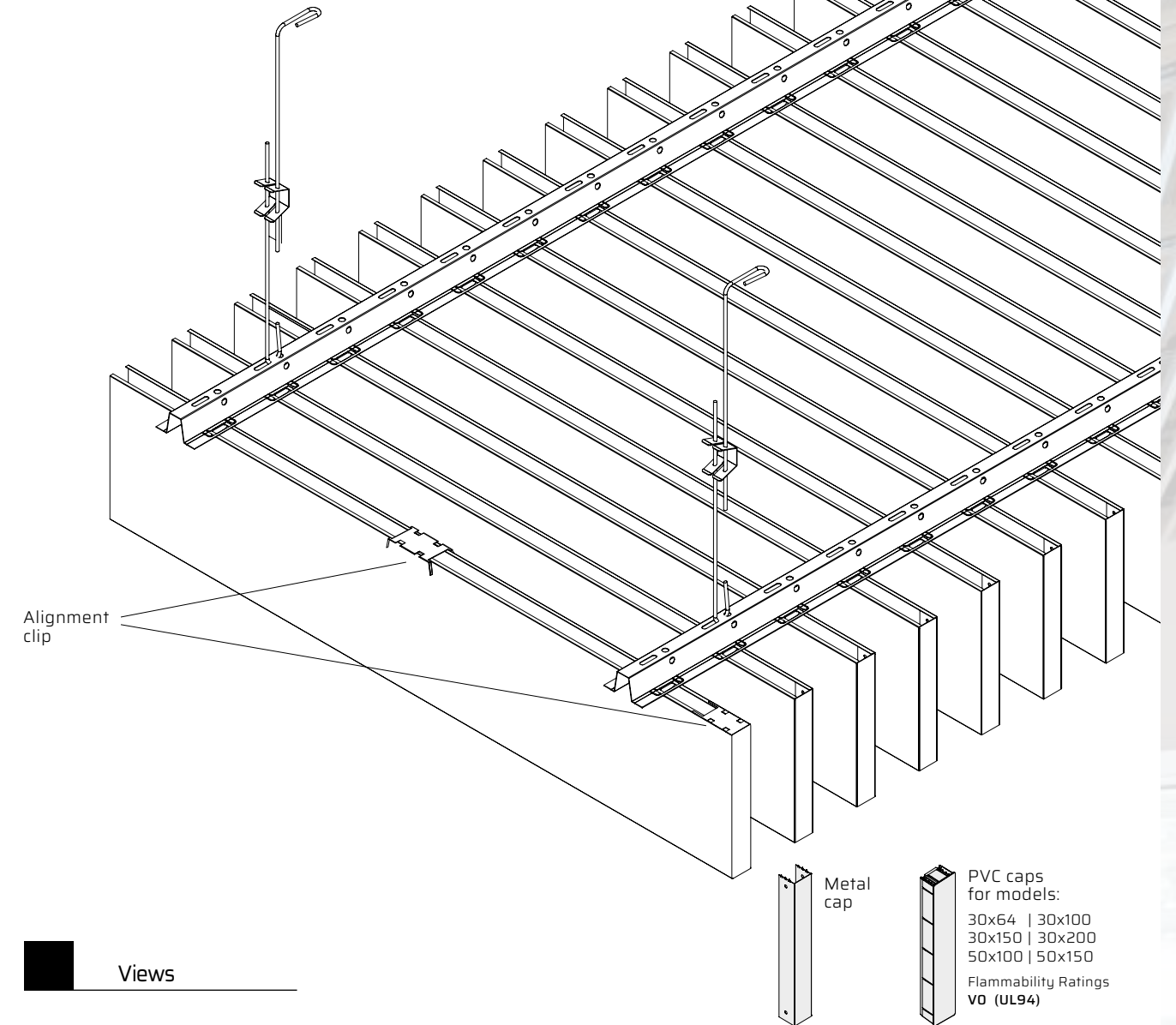
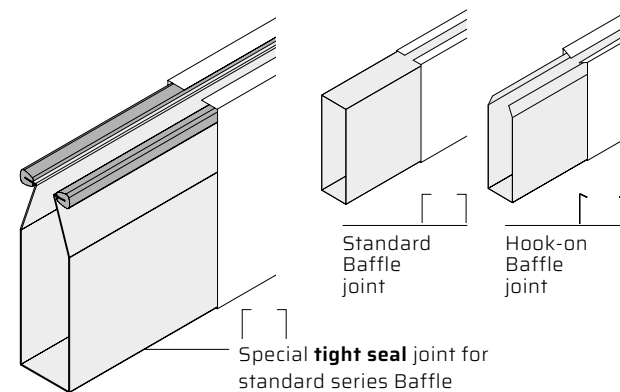
SOUND ABSORBERS

Black acoustic tissue
Standard A1s2d0 | Plus A1
Black Ecofiber Bs2d0
Enveloped mineral fiber B2

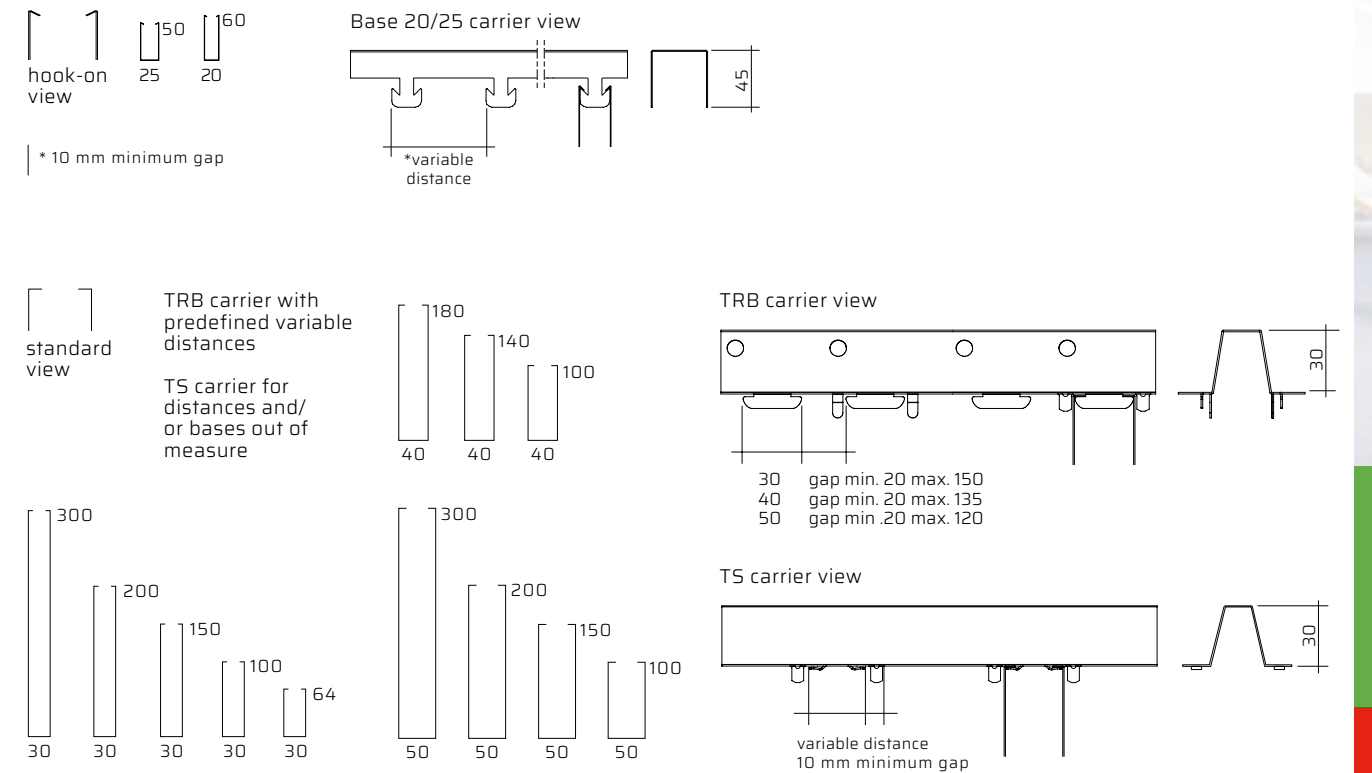
Locking system



Baffle joints

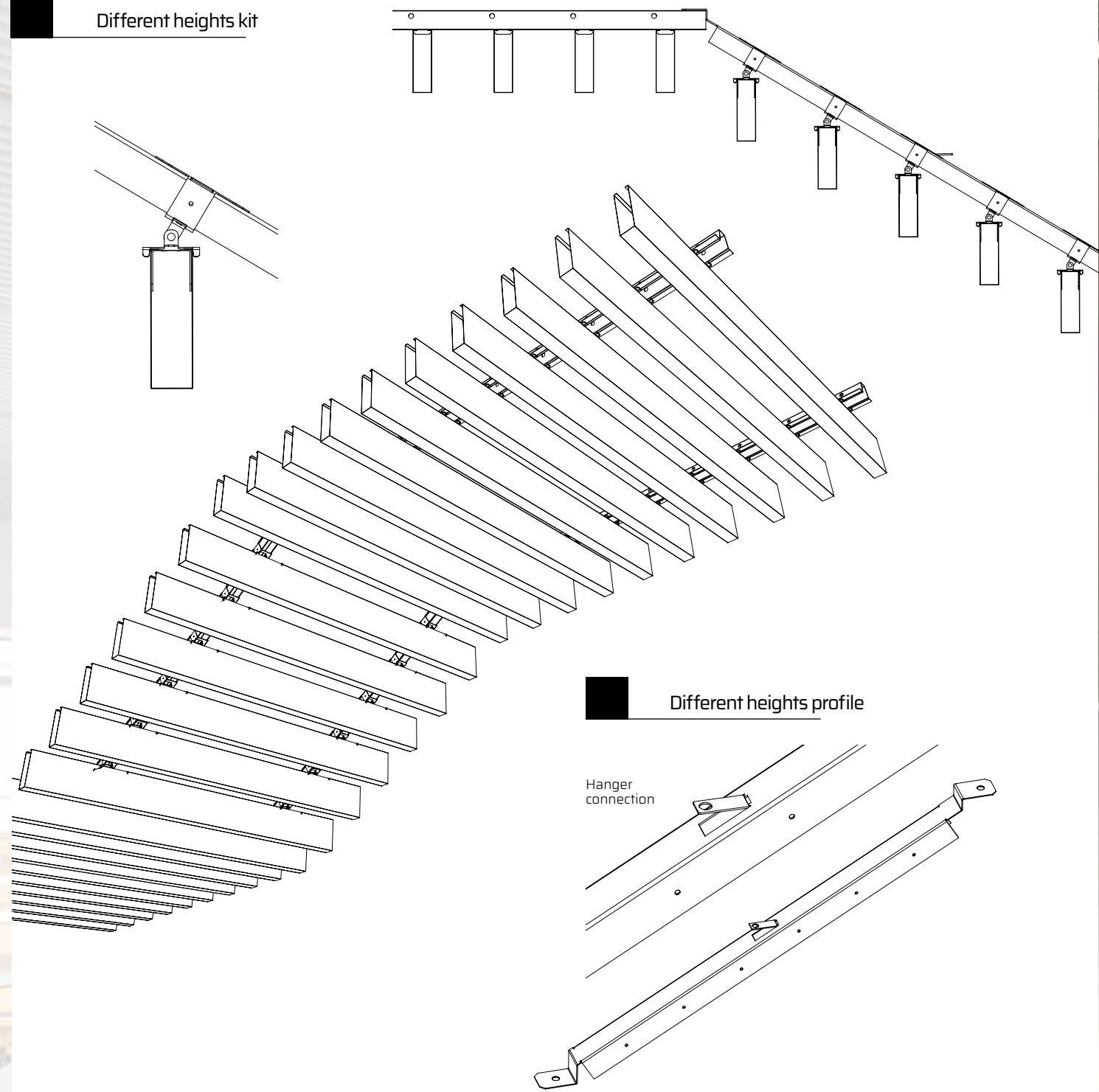


Views

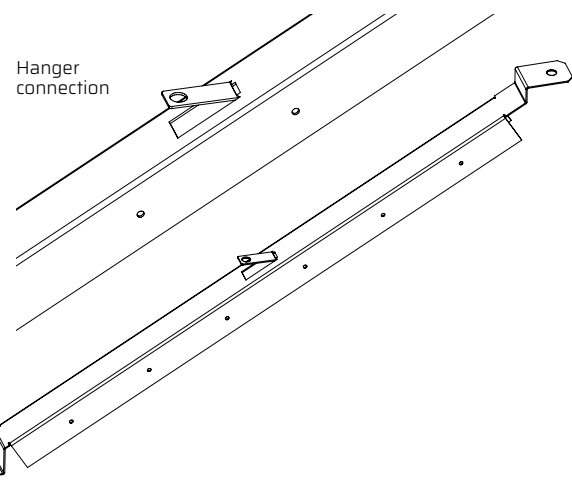


Metal cap
PVC caps for models:
30x64 | 30x100
30x150 | 30x200
50x100 | 50x150
Flammability Ratings
VO (UL94)

Different heights kit



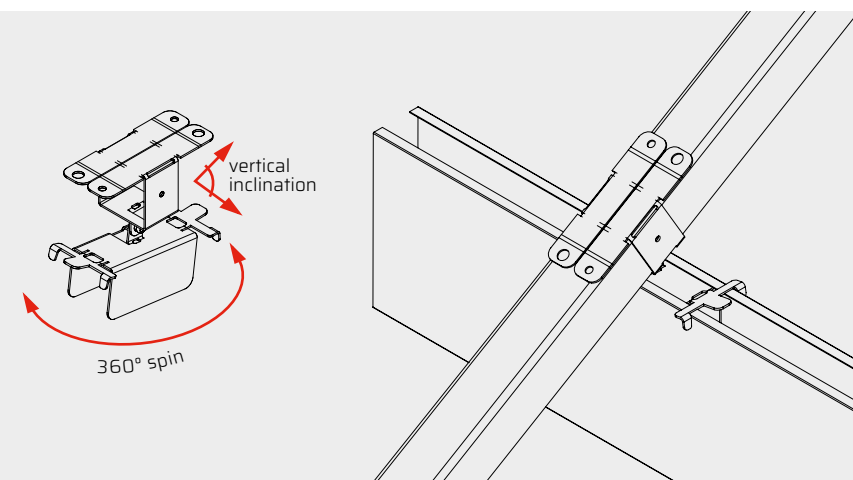
Different heights profile



Tilt Spin system

Patent N° 102016000122736

The "different heights kit" is made up of two elements, the metal profile with perforated ends to fasten carriers and the special patented hook "Tilt Spin system" properly conceived to install Baffles perpendicular to the floor.



ARCHITECTURAL CEILINGS

LIGHTING BAFFLE



Lighting Baffle LB50
Lighting Baffle LB30

METAL BAFFLE

Picture: "Lighting Baffle" metal ceiling | lighting by Atena Lux

ATENA METAL BAFFLE | Lighting Baffle

LB30 - LB50

Properly conceived to achieve a **perfect integration** between lightings and metal ceilings the Lighting Baffle powered by Atena Lux technology are equipped with last generation fittings.

Developed according to the **Human Centric Lighting Criteria**, Atena Lux fittings are programmed in temperature, colour and intensity to satisfy the human **biological cycle** in order to improve the general comfort and the performance levels, in relation to the environment features and its uses.

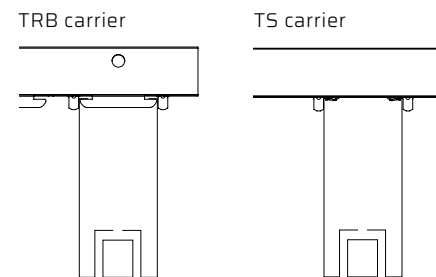
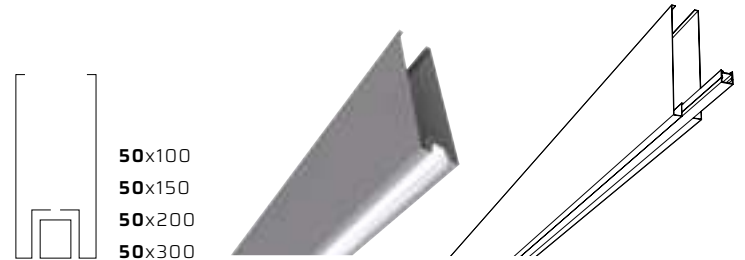


Picture: "Lighting Baffle" metal ceiling



Picture: "Lighting Baffle" metal ceiling

LB 50

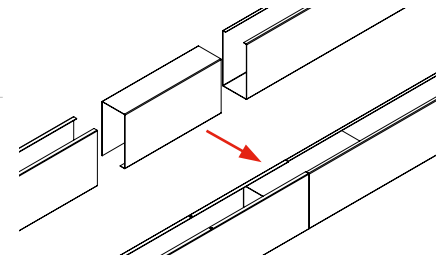


MATERIALS
Aluminum | Steel

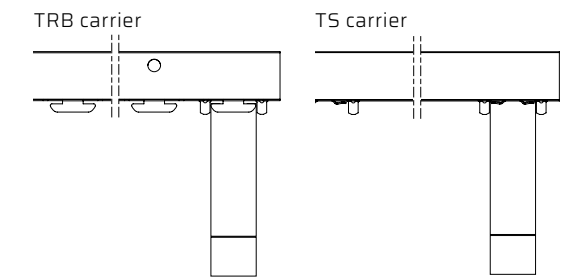
LB 50 DIMENSIONS
50x100 | 150 | 200 | 300
Other heights on request

SOURCE
Long lasting LED
High level of chromatic index (CRI>90)
"RGB" and "TUNABLE WHITE"
Balanced light emission
Opal and microprismatic optics

COMPONENTS
Smart drivers
LED closing heads kits (2 pcs)
Joints to couple Baffles and Lighting Baffles
Steel and aluminum Baffle caps
Electric cable length 1m



LB 30

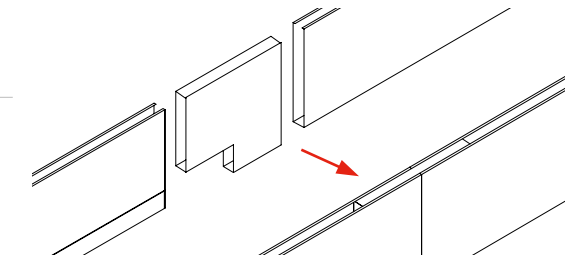


MATERIALS
Aluminum | Steel

LB 30 DIMENSIONS
30x64 | 100 | 150 | 200 | 300
Other heights on request

SOURCE
Long lasting LED
High level of chromatic index (CRI>90)
"RGB" and "TUNABLE WHITE"
Balanced light emission
Opal and microprismatic optics

COMPONENTS
Smart drivers
LED closing heads kits (2 pcs)
Joints to couple Baffles and Lighting B.
Steel and aluminum Baffle caps
Electric cable length 1m



* Width LED module	WATT power	**CCT	CRI	IP
500 mm	7,5 12,5	4000 K	>90	IP40
1000 mm	15 25	4000 K	>90	IP40
1500 mm	22,5 37,5	4000 K	>90	IP40
2000 mm	30 50	4000 K	>90	IP40

* Modular system with direct emission that can be used both individually and in continuous rows.

CCT= 3000 K on request

Perfect **integration** between **lightings** and metal ceilings

Schedule: source features
CCT= Color temperature
CRI= Chromatic index
IP= Protection degree

* Width LED module	WATT power	CCT	CRI	IP
561 mm	13	4000 K	>80	IP40
1121 mm	26	4000 K	>80	IP40
1681 mm	39	4000 K	>90	IP40
2241 mm	52	4000 K	>80	IP40
2801 mm	65	4000 K	>80	IP40

* Modular system with direct emission that can be used both individually and in continuous rows.

CCT= 3000 K on request
CRI= >90 on request

Programmed **lighting systems** able to mimic the **natural light** according the circadian biorhythms

Schedule: source features
CCT= Color temperature
CRI= Chromatic index
IP= Protection degree

ARCHITECTURAL CEILINGS

SLIDING BAFFLE

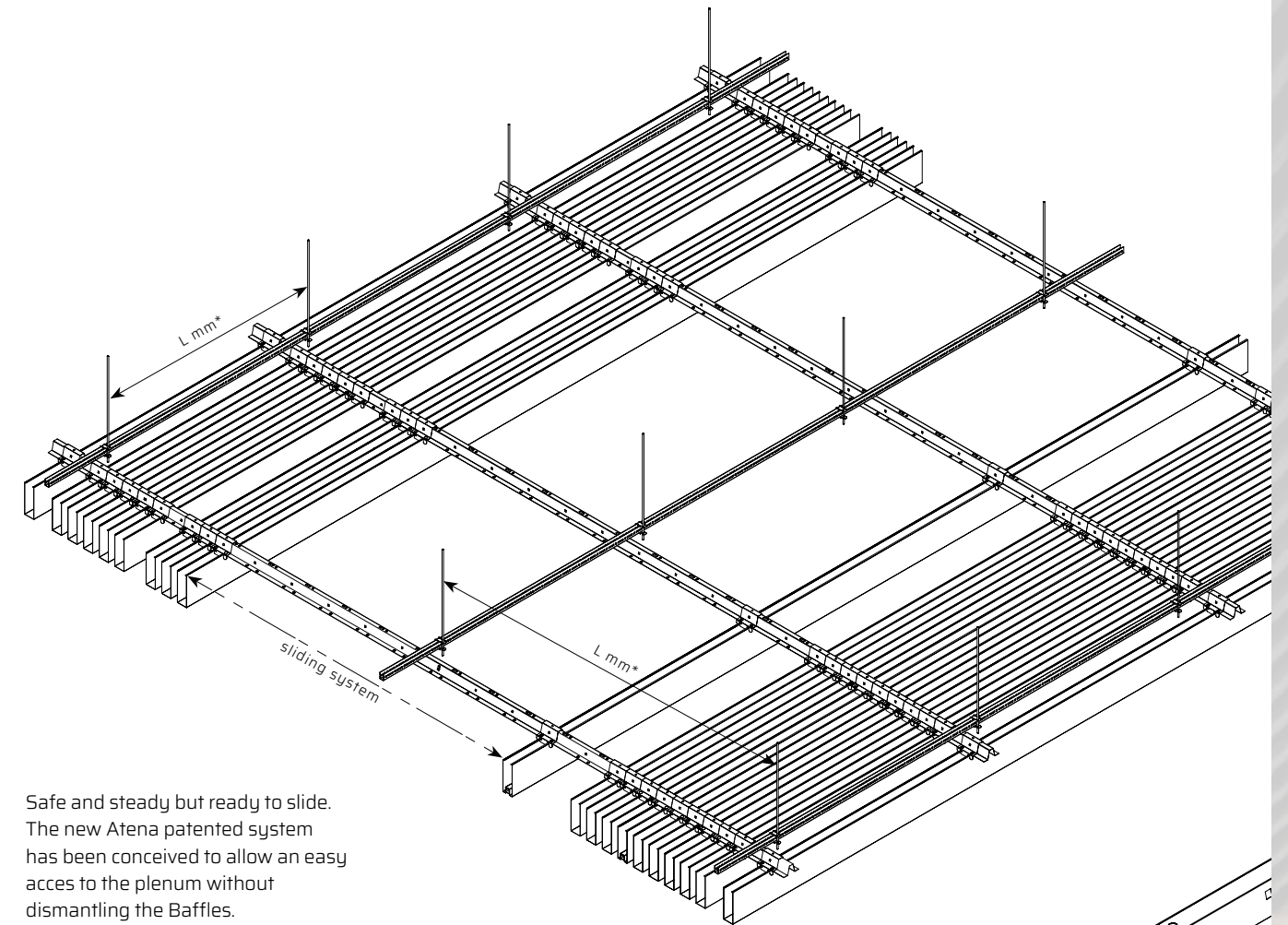
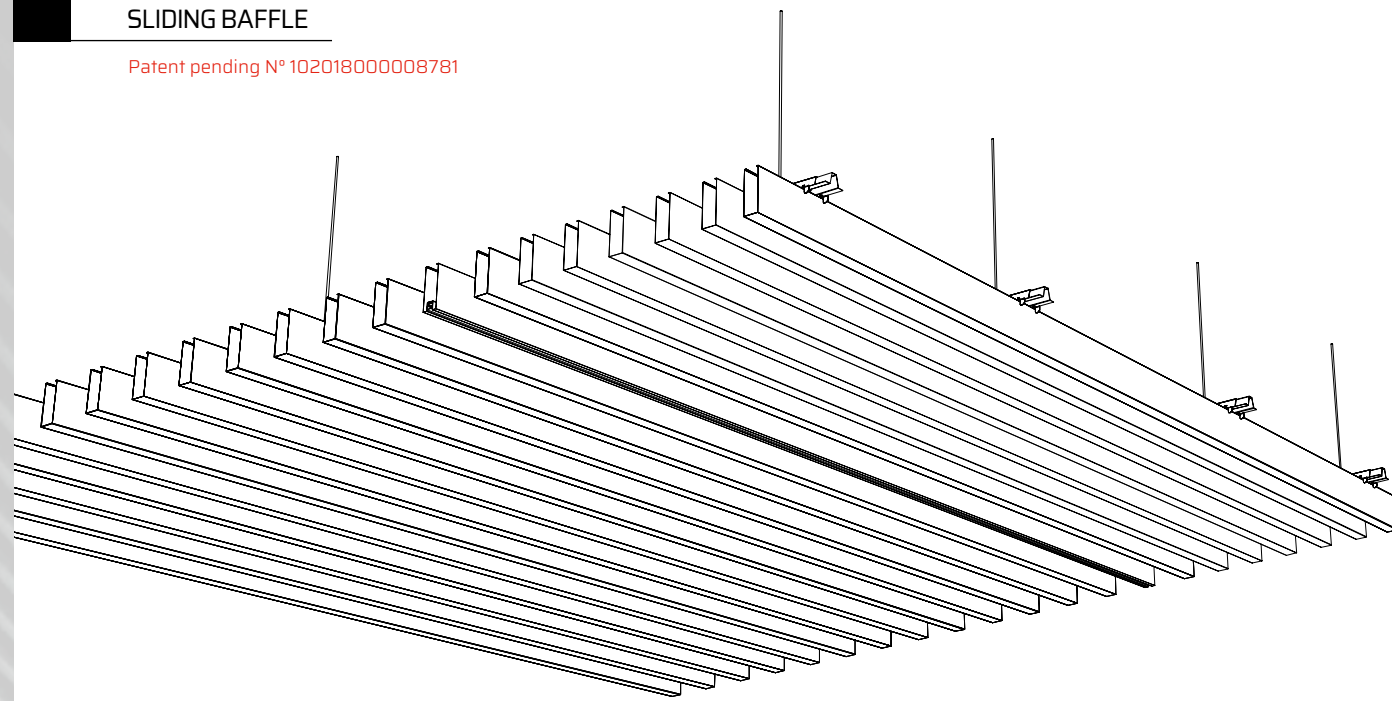
Sliding Baffle

METAL BAFFLE

Picture: "Sliding Baffle" metal ceiling

SLIDING BAFFLE

Patent pending N° 102018000008781



Safe and steady but ready to slide. The new Atena patented system has been conceived to allow an easy access to the plenum without dismantling the Baffles.

*Verify the interaxe according to the load at m² and particular conditions.

FEATURES

ELEMENTS DIMENSION

- 30 x 64 | 100 | 150
- 40 x 100 | 140
- 50 x 100 | 150

Maximum Baffle lenght 4000 mm
Other heights on request

MATERIALS

Aluminum and steel, thickness according to the project and product requirements

STRUCTURE

TS-Sliding carrier made up of 10/10 black prepainted steel equipped with TS-Sliding brackets in 8/10 black prepainted steel

ANTISEISMIC EQUIPMENTS

Atena antiseismic kits compulsory for buildings in 3 and 4 Class (NTC 2018 - § 7.2.3)

HANGERS

Threaded bar

BAFFLE COLORS

Atena White | Atena Silver
RAL / NCS coating
Wood effects
Sublimation of images and effects

PERFORATION

To choose among Atena perforation range

ACCESSORIES

Smooth closing caps on request,
Baffle and carriers joints, alignment clips

SOUND ABSORBERS

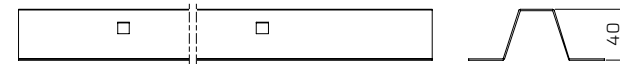
Black acoustic tissue
Standard A1s2d0 | Plus A1
Black Ecofiber Bs2d0
Enveloped mineral fiber B2

Components

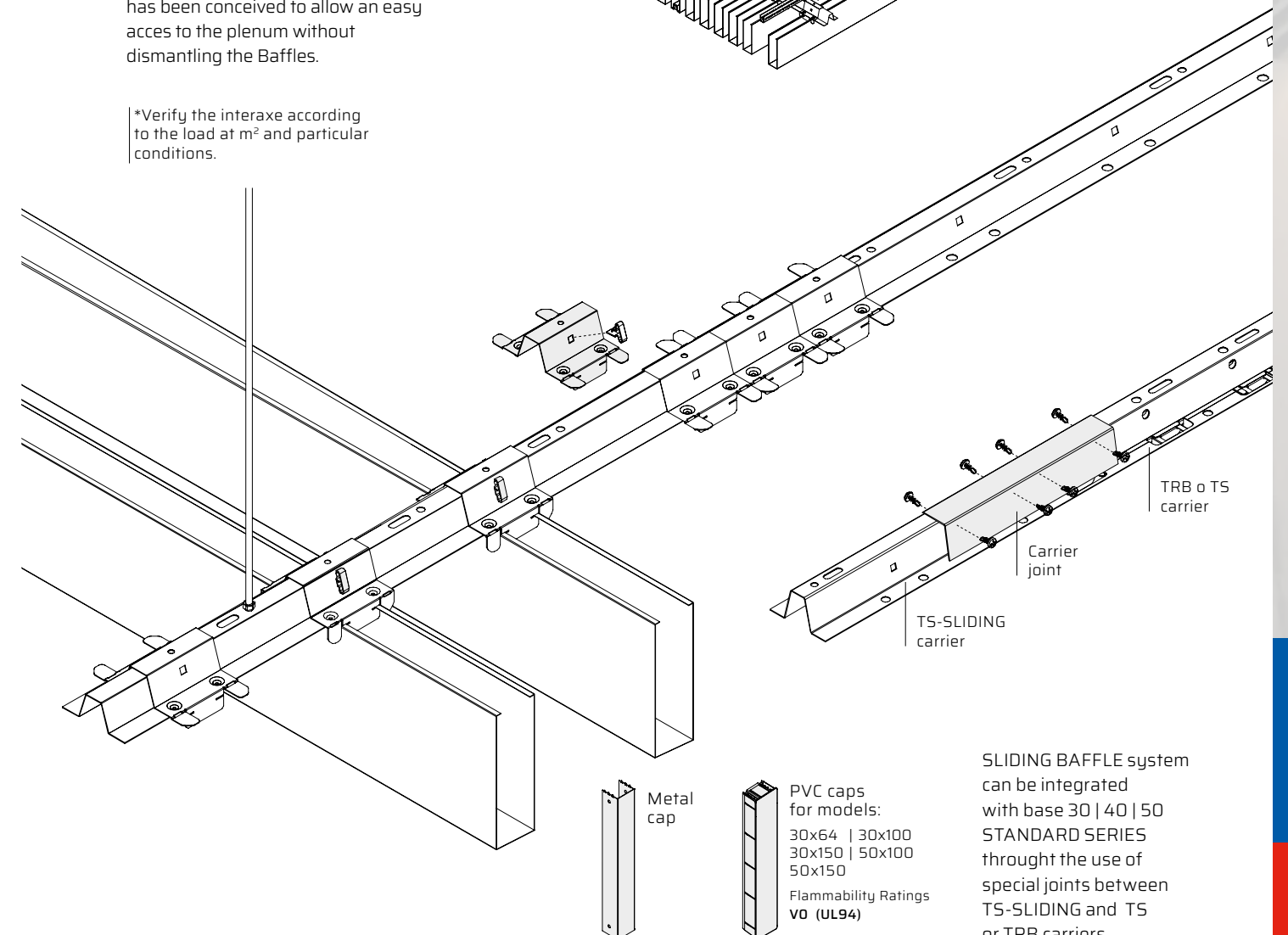
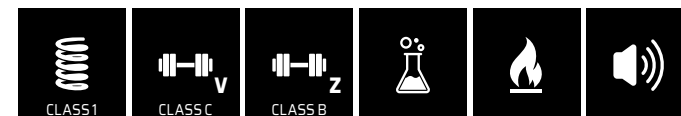
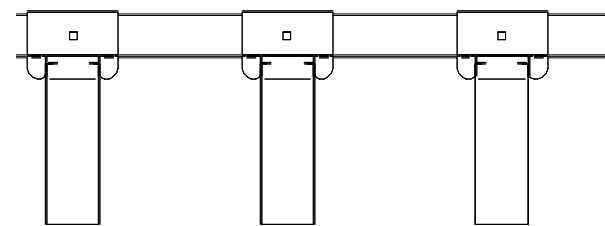
Standard section

- 30x64 | 100 | 150
- 40x100 | 140
- 50x100 | 150

TS SLIDING carrier view



pitch holes 200 mm | 70 mm minimum gap



SLIDING BAFFLE system can be integrated with base 30 | 40 | 50 STANDARD SERIES through the use of special joints between TS-SLIDING and TS or TRB carriers.

PVC caps for models:
30x64 | 30x100
30x150 | 50x100
50x150
Flammability Ratings
V0 (UL94)

ARCHITECTURAL CEILINGS

BAFFLE FREE FLOW

Baffle Free Flow - T24
Baffle Free Flow - special profile

METAL BAFFLE

Picture: "Baffle Free Flow" metal ceiling

FREE FLOW T24

Patent N° 102016000122736



SPECIFICHE

ELEMENTS DIMENSION

30 x 64 | 100 | 150 | 200
 40 x 100 | 140 | 180
 50 x 100 | 150 | 200

Maximum Baffle lenght 4000 mm
 Other heights on request

MATERIALS

Aluminum and steel, thickness according to the project and product requirements

STRUCTURE

Easy B24 white | black | silver
 Easy antisismico B24 white | black | silver
 RAL/NCS coating
 Baffle hooking:
 Spin System | Tilt Spin system

ANTISEISMIC EQUIPMENTS

Atena antisismic kits compulsory for buildings in 3 and 4 Class (NTC 2018 - § 7.2.3)

HANGERS

Twister, Nonius, 90° hanger,
 Double hanger with spring

BAFFLE COLORS

Atena White | Atena Silver | RAL / NCS coating
 Wood effects | Sublimation of images and effects

PERFORATION

To choose among Atena perforation range

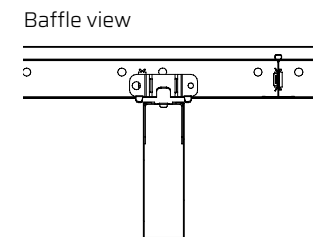
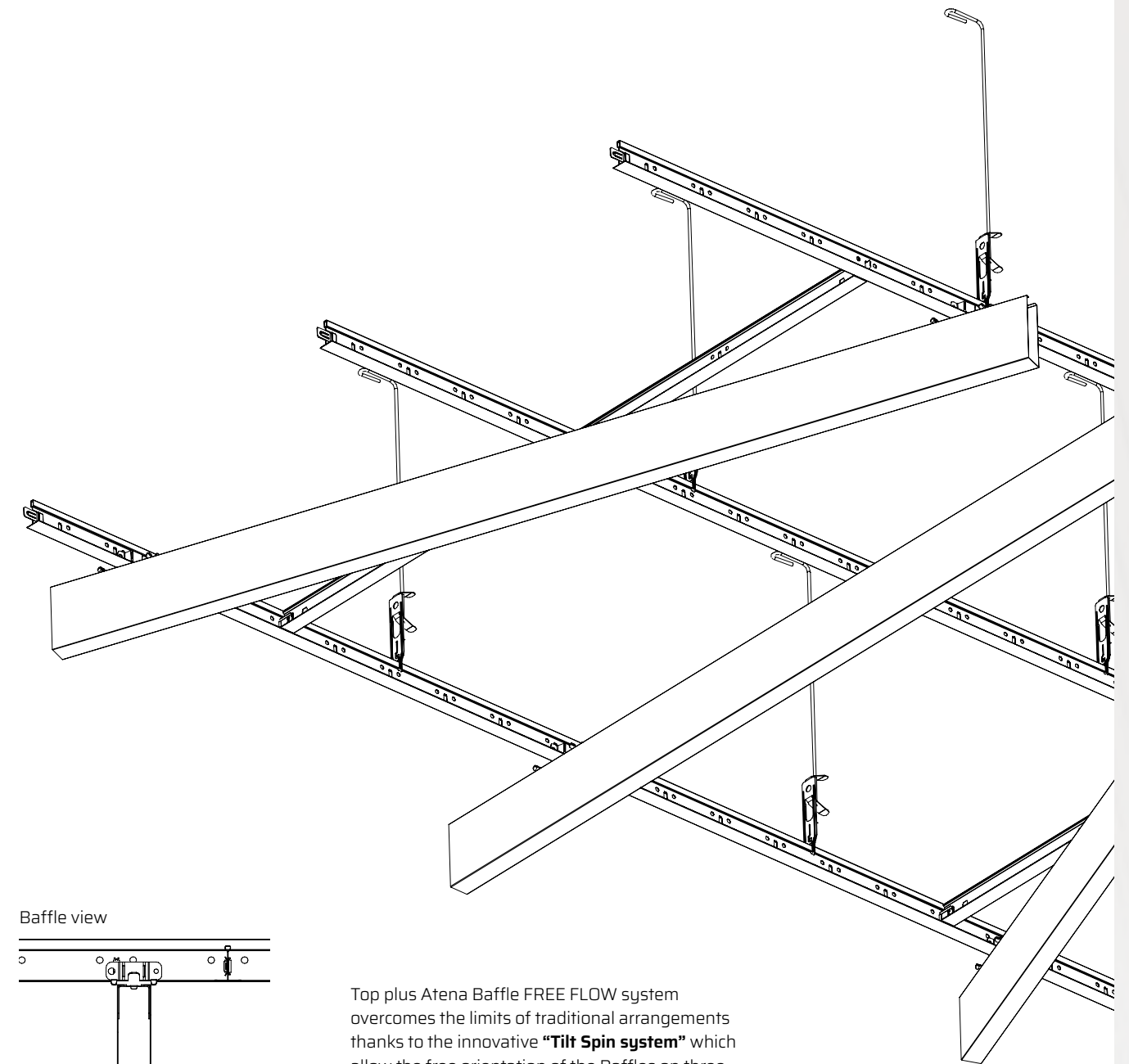
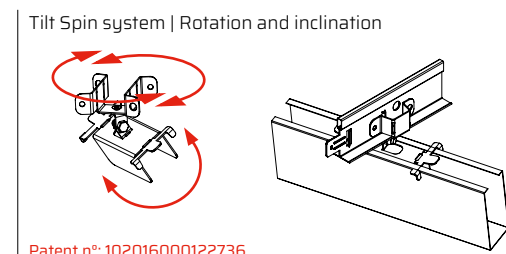
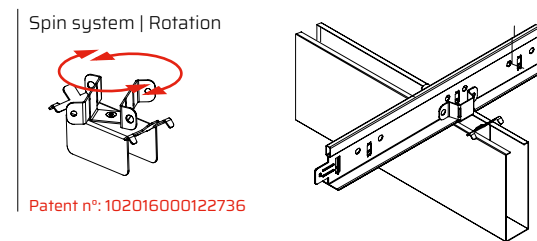
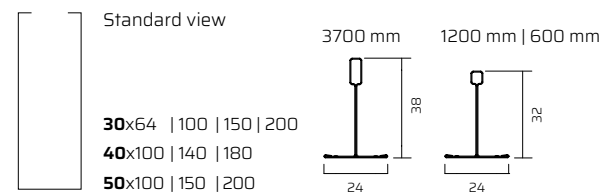
ACCESSORIES

Smooth closing caps on request, Baffle joints, alignment clip

SOUND ABSORBERS

Black acoustic tissue
 Standard A1s2d0 | Plus A1
 Black Ecofiber Bs2d0
 Enveloped mineral fiber B2

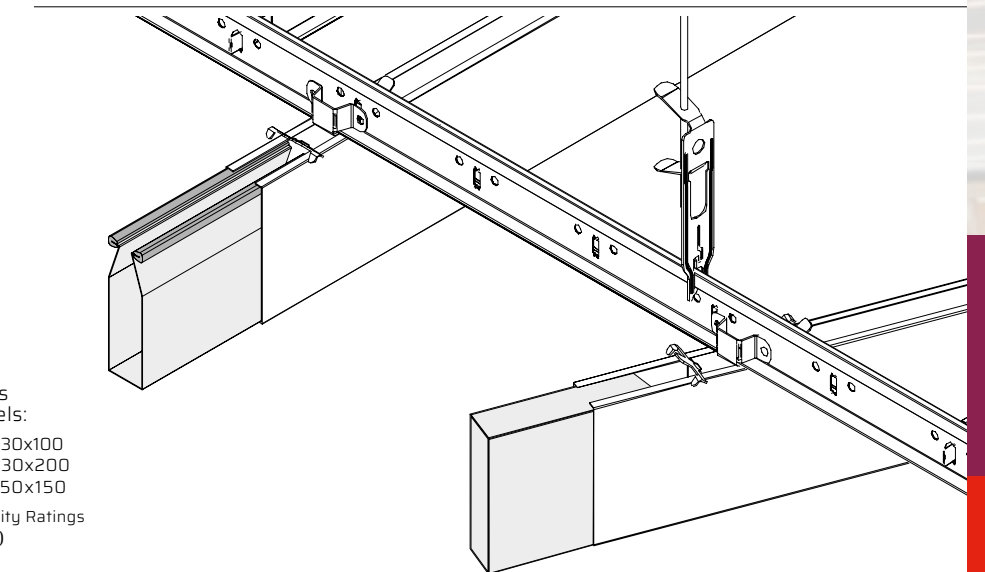
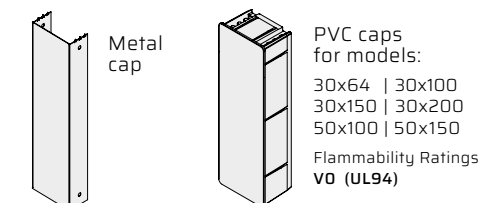
Components



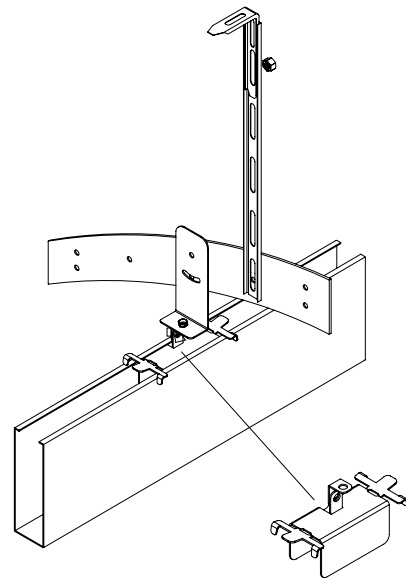
Top plus Atena Baffle FREE FLOW system overcomes the limits of traditional arrangements thanks to the innovative "Tilt Spin system" which allow the free orientation of the Baffles on three axes with any degree of rotation and inclination.

Accessories

As with all systems with standard Baffle sections, metal and PVC caps, standard and pressure joints can also be applied to this model.

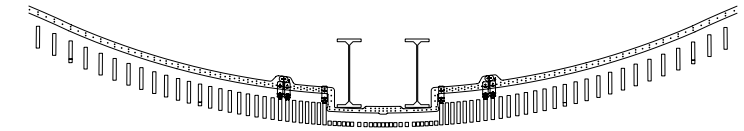


FREE FLOW SPECIAL PROFILE



Plus

The vertical elements are hooked to an innovative bearing structure, made up of a wavy profile, equipped with special anchoring joints, which allow the free orientation of the Baffles on three axes with any degree of rotation and inclination.



FEATURES

ELEMENTS DIMENSION

30 x 64 | 100 | 150 | 200 | 300
 40 x 100 | 140 | 180
 50 x 100 | 200 | 300

Maximum Baffle length 4000 mm
 Other heights on request

MATERIALS

Aluminum and steel, thickness according to the project and product requirements

STRUCTURE

Special custom made shaped profile equipped with brackets for hook-special profile connection and baffle fixing hook

ANTISEISMIC EQUIPMENTS

Atena antiseismic kits compulsory for buildings in 3 and 4 Class (NTC 2018 - § 7.2.3)

HANGERS

Holed bar with fixing bracket

BAFFLE COLORS

Atena White | Atena Silver
 RAL / NCS coating
 Wood effects
 Sublimation of images and effects

PERFORATION

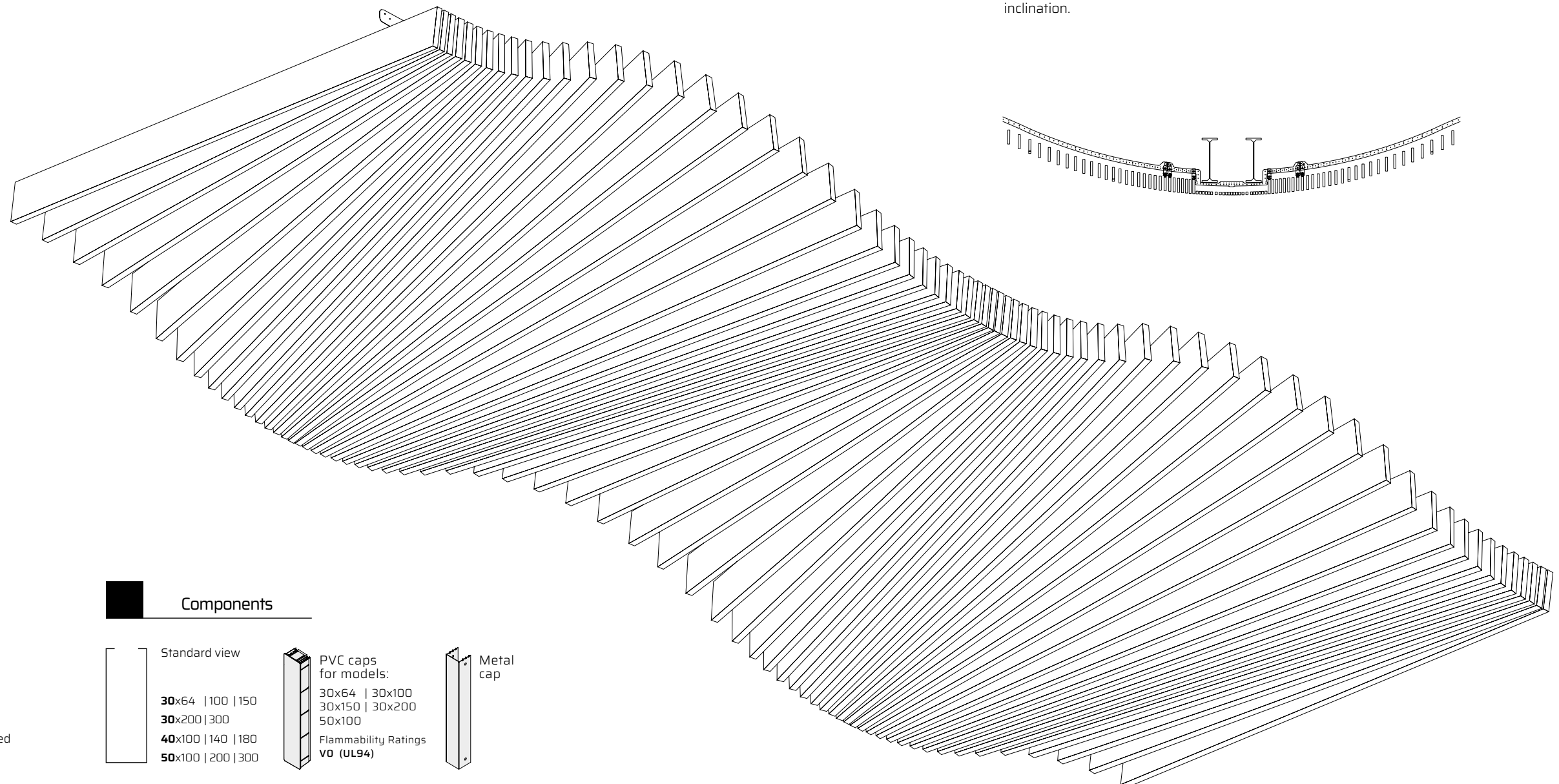
To choose among Atena perforation range

ACCESSORIES

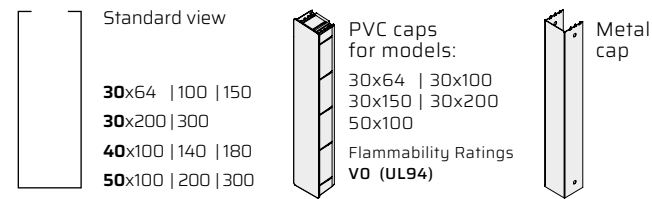
Smooth closing caps on request,
 Baffle joints, alignment clips

SOUND ABSORBERS

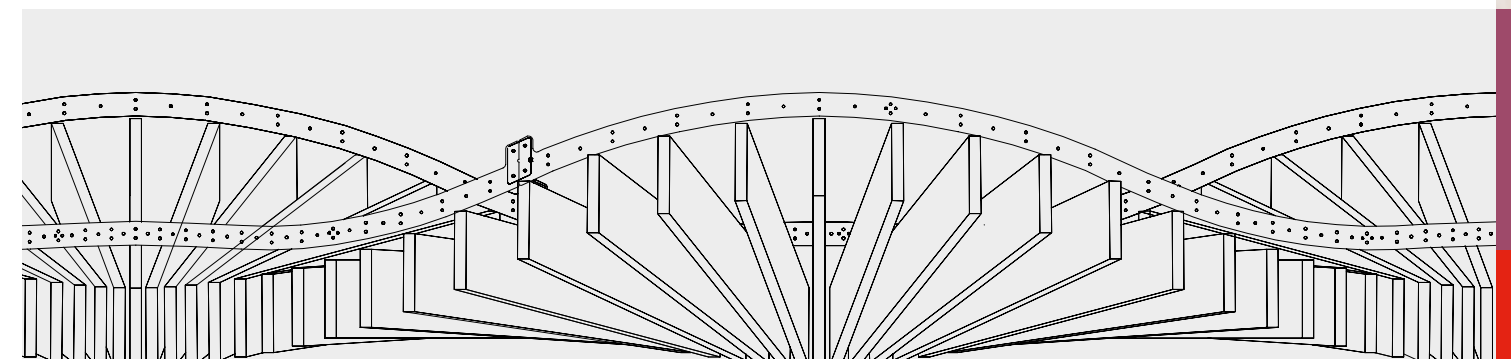
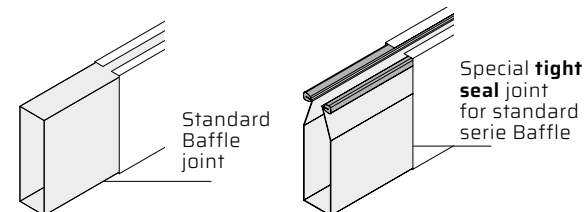
Black acoustic tissue
 Standard A1s2d0 | Plus A1
 Black Ecofiber Bs2d0
 Enveloped mineral fiber B2



Components

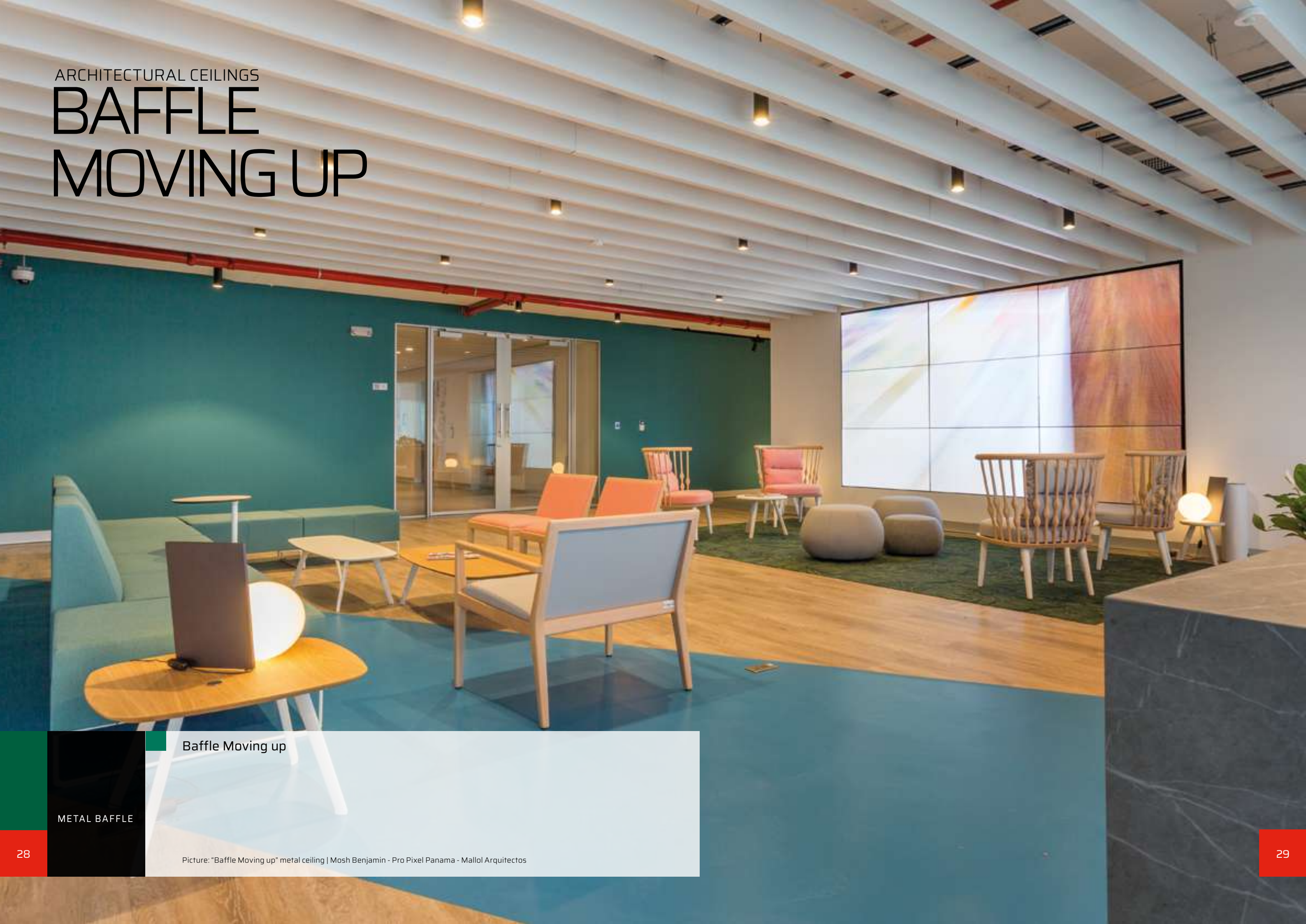


Joints



ARCHITECTURAL CEILINGS

BAFFLE MOVING UP



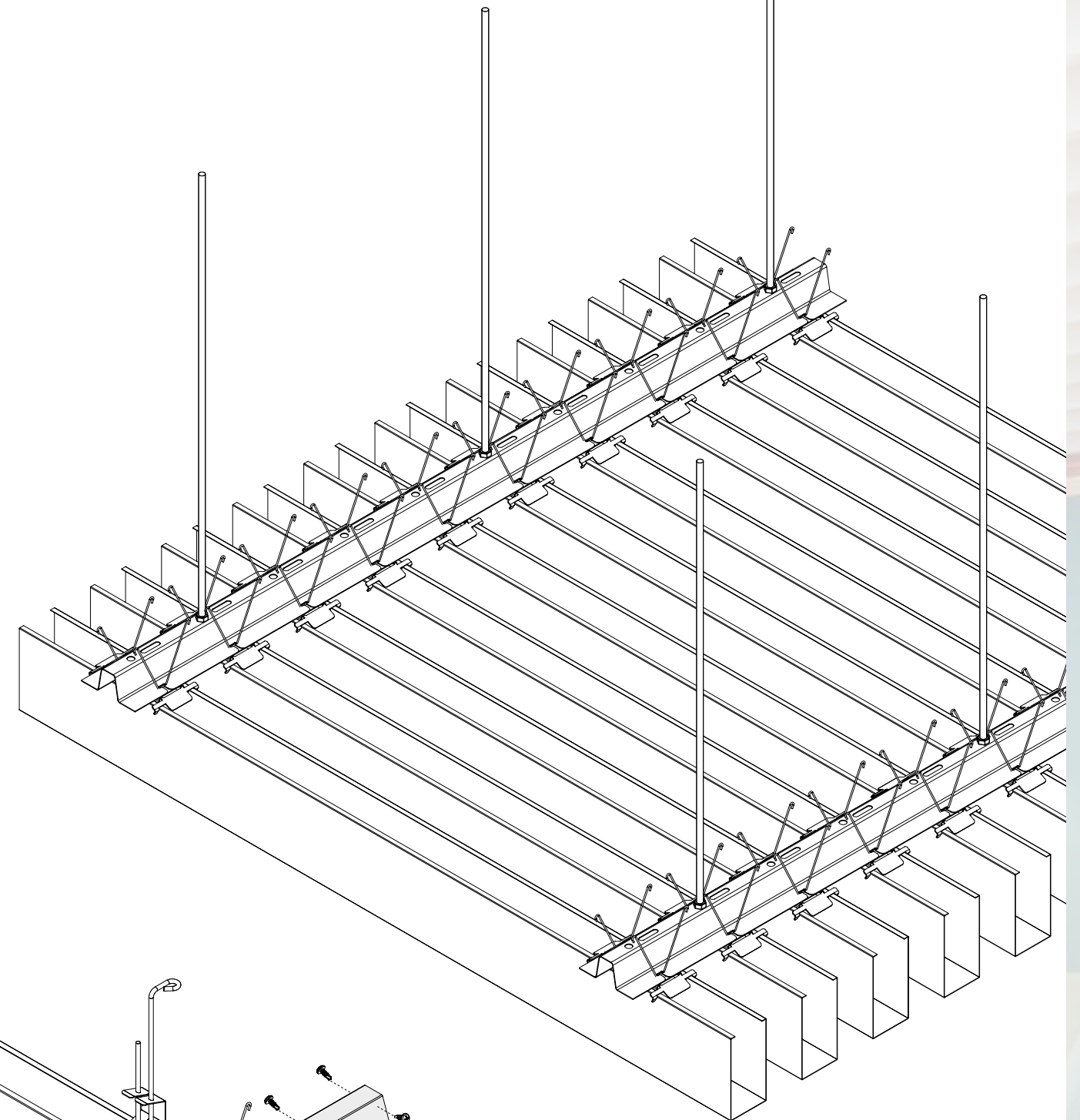
Baffle Moving up

METAL BAFFLE

Picture: "Baffle Moving up" metal ceiling | Mosh Benjamin - Pro Pixel Panama - Mallol Arquitectos

BAFFLE MOVING UP

Patent N°102017000047206



FEATURES

ELEMENTS DIMENSION

30 x 64 | 100 | 150 | 200 | 300
 40 x 100 | 140 | 180
 50 x 100 | 200 | 300

Maximum Baffle length 4000 mm
 Other heights on request

MATERIALS

Aluminum and steel, thickness according to the project and product requirements

STRUCTURE

TS UP carriers in 8/10 black prepainted steel or with RAL/NCS post-painting. Special TS UP brackets equipped with hanging springs

ANTISEISMIC EQUIPMENTS

Atena antiseismic kits compulsory for buildings in 3 and 4 Class (NTC 2018 - § 7.2.3)

HANGERS

Double hanger with spring
 Threaded bar

BAFFLE COLORS

Atena White | Atena Silver | RAL / NCS coating
 Wood effects | Sublimation of images and effects

PERFORATION

To choose among Atena perforation range

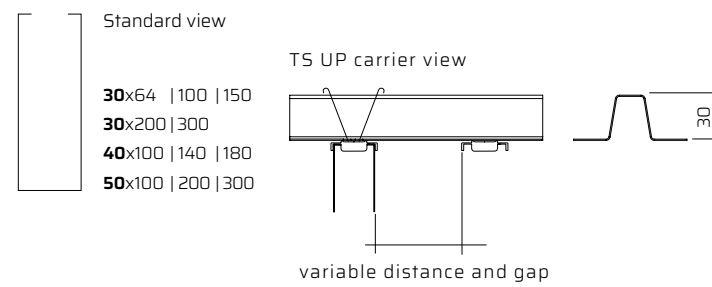
ACCESSORIES

Smooth closing caps on request,
 Baffle and carrier joints, alignment clips

SOUND ABSORBERS

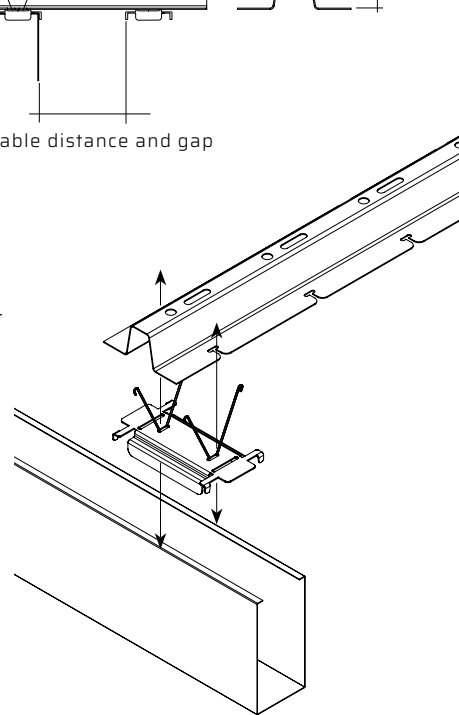
Black acoustic tissue
 Standard A1s2d0 | Plus A1
 Black Ecofiber Bs2d0
 Enveloped mineral fiber B2

Components

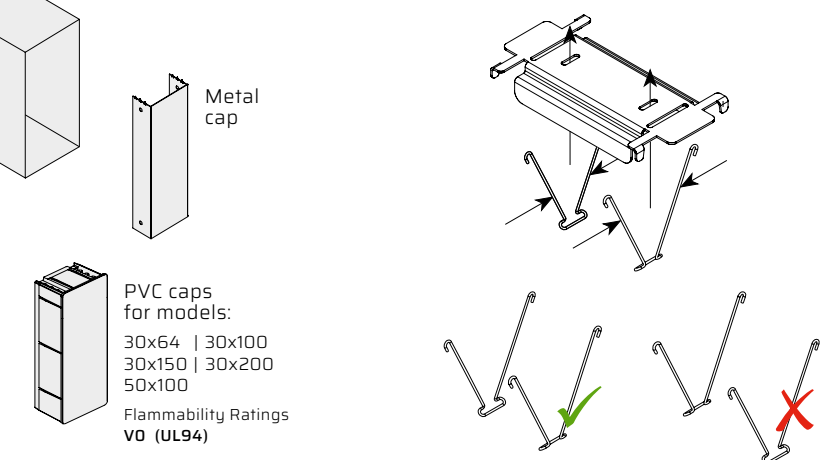


Spring system

Special brackets equipped with hanging springs to be inserted in carrier slits properly conceived to assure fast locking and frequent Baffle dismounting.



TS UP Brackets



ARCHITECTURAL CEILINGS

BAFFLE SYNCRO UP

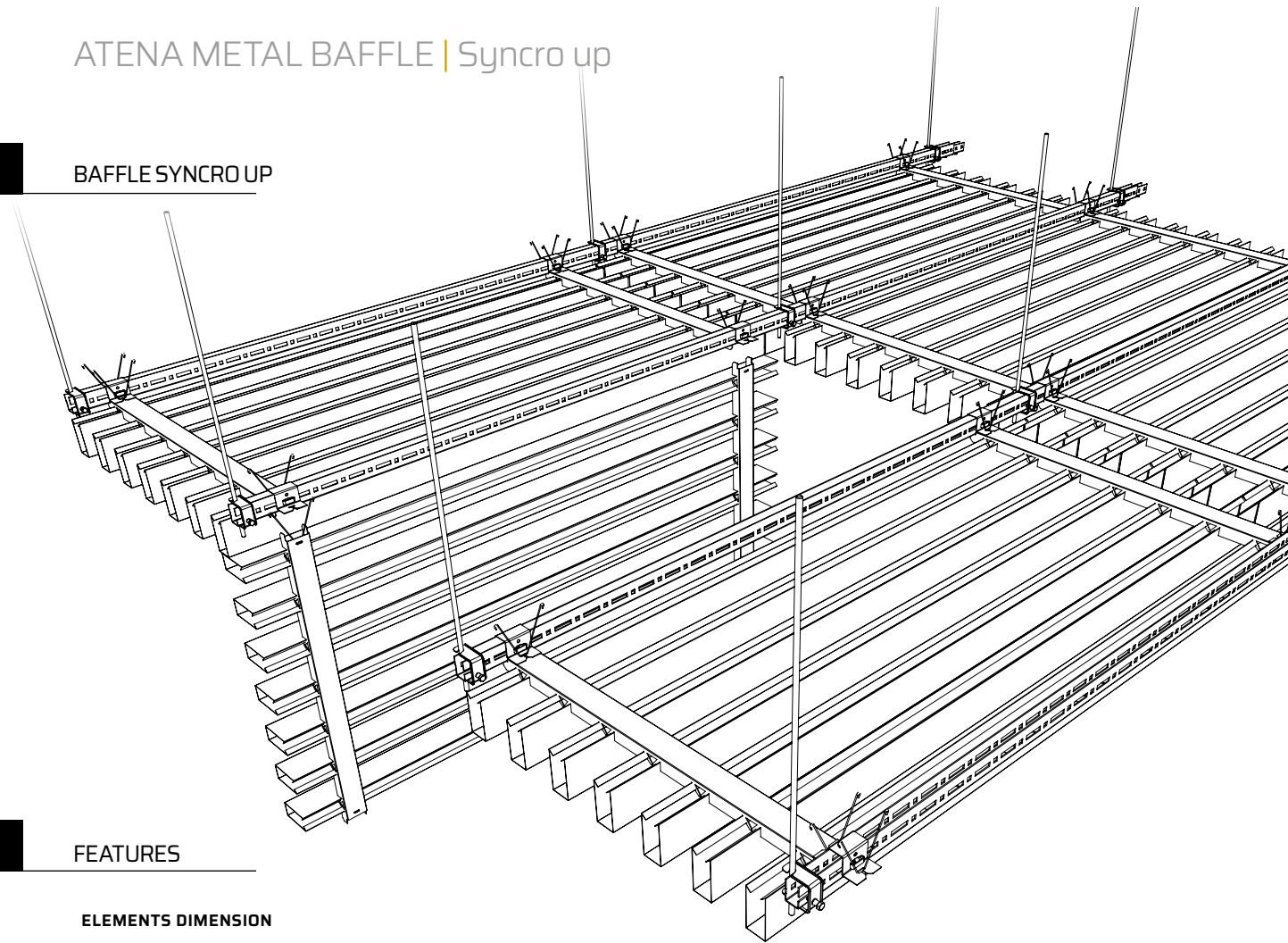


Baffle Syncro up

METAL BAFFLE

Picture: "Baffle Syncro up" metal ceiling

BAFFLE SYNCRO UP



FEATURES

ELEMENTS DIMENSION

20 x 60	TS-Up 20/25
25 x 50	carrier
30 x 64 100	TS-Up 30/40/50
40 x 100	carrier
50 x 100	

Maximum Baffle length 2000 mm

MATERIALS

5/10 aluminium and steel for Baffles base 20 h 60
7/10 aluminium and steel for Baffles base 25/30/40/50

STRUCTURE

Syncro Up carriers in 8/10 black prepainted steel fixed to "U" profiles in 15/10 galvanized steel through Syncro up brackets, springs and fixing clips

ANTISEISMIC EQUIPMENTS

Atena antiseismic kits compulsory for buildings in 3 and 4 Class (NTC 2018 - § 7.2.3)

HANGERS

Threaded bar

BAFFLE COLORS

Atena White | Atena Silver
RAL / NCS coating
Wood effects
Sublimation of images and effects

PERFORATION

To choose among Atena perforation range

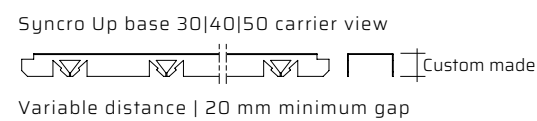
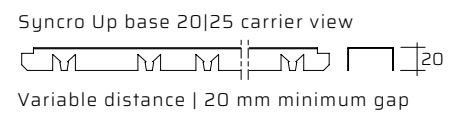
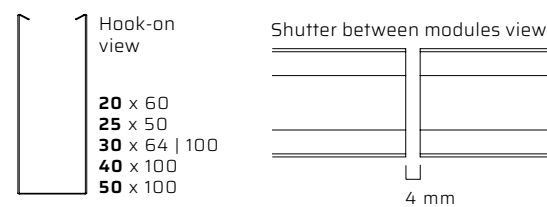
ACCESSORIES

Smooth closing caps on request, "U" profile joints

SOUND ABSORBERS

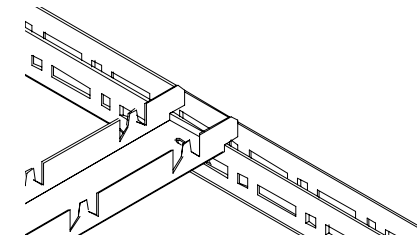
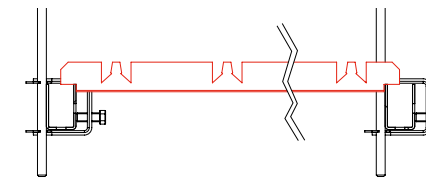
Black acoustic tissue
Standard A1s2d0 | Plus A1
Black Ecofiber Bs2d0
Enveloped mineral fiber B2

Components

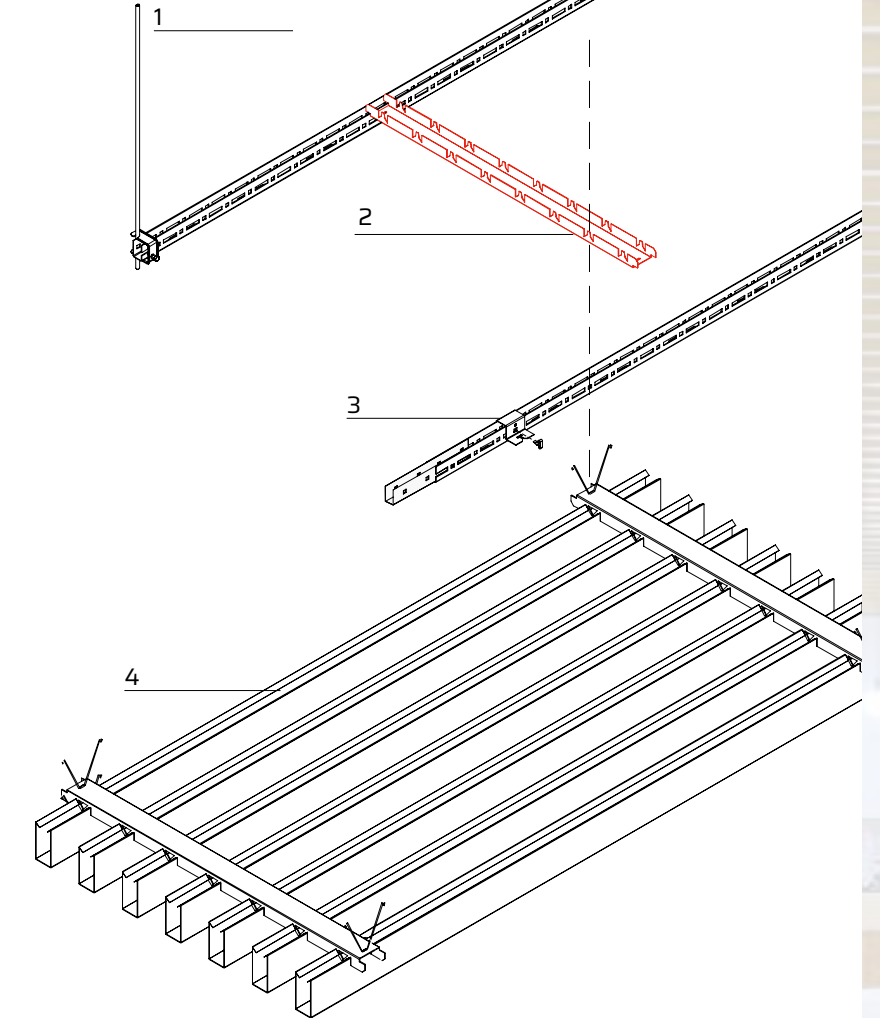


Easy installation steps

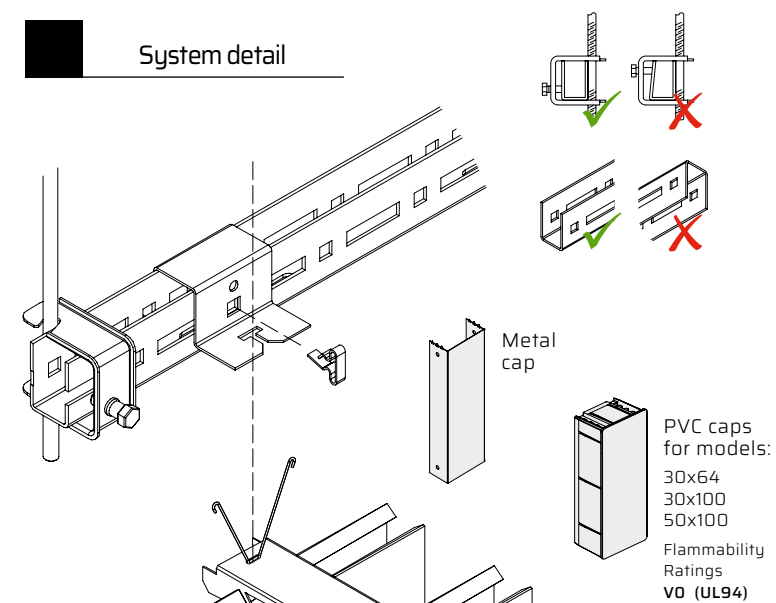
Syncro - up carrier "double face" mode to install "U" profile at the right distance



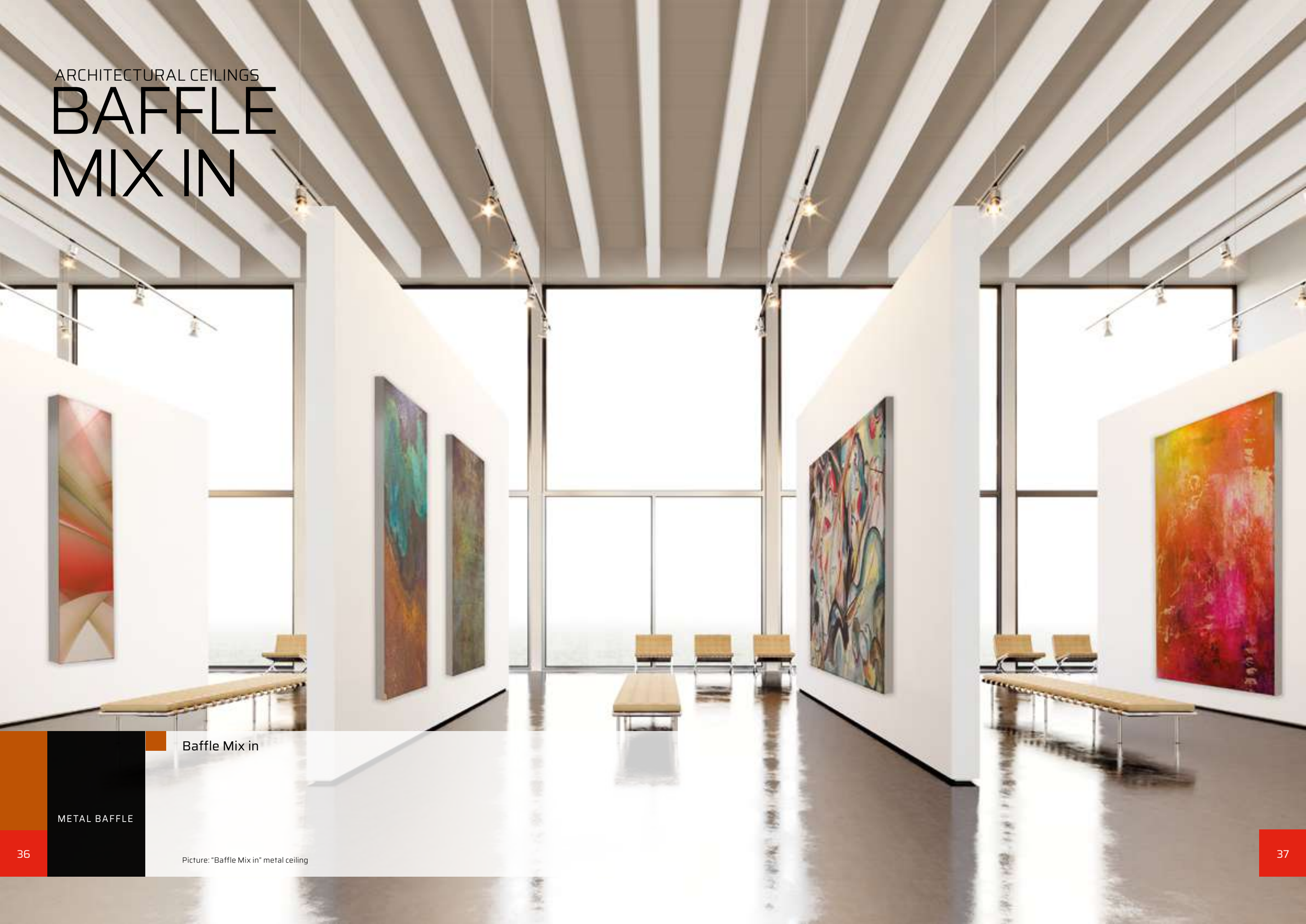
1. Hanging system.
2. Special Syncro up carrier with dual function, as template to install "U" profile at right interaxe, as baffle carrier to create the baffle modules.
3. Syncro up brackets to with locking clip to install Baffle modules and secure the installation.
4. Syncro up modules.



System detail



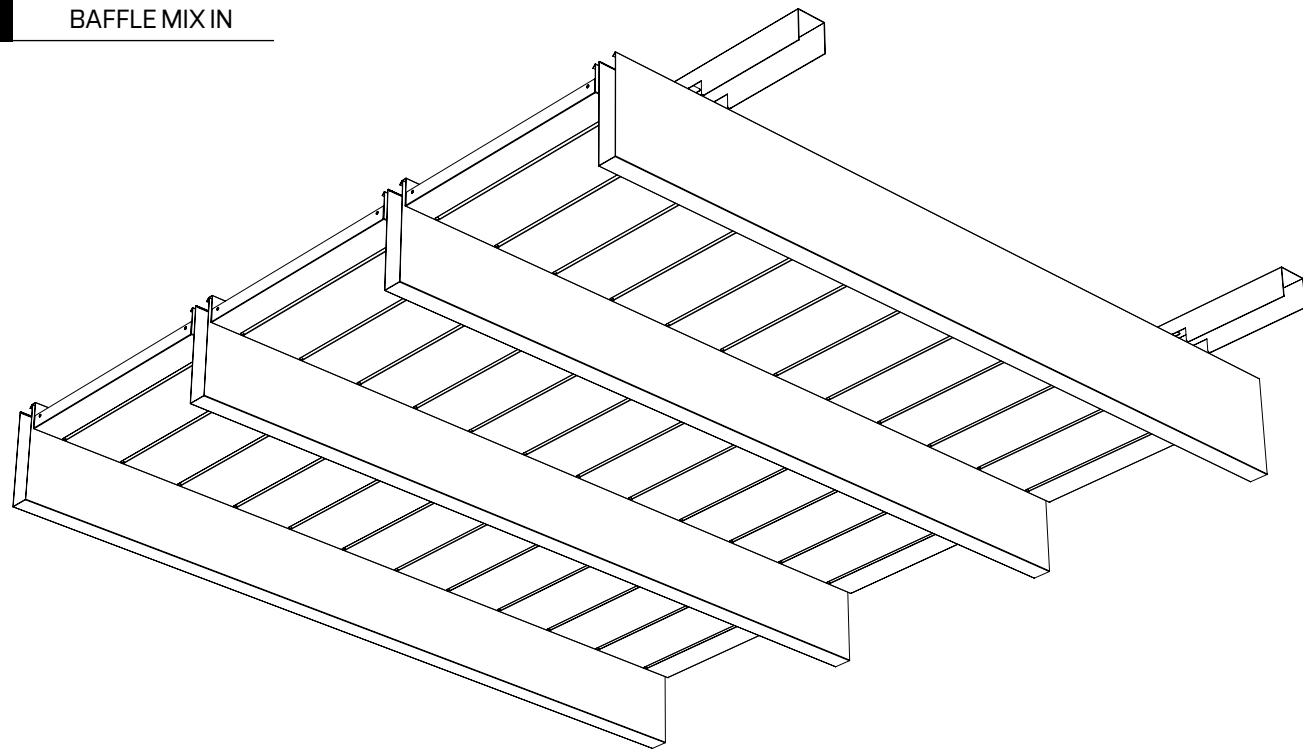
ARCHITECTURAL CEILINGS
**BAFFLE
MIX IN**



Baffle Mix in

METAL BAFFLE

BAFFLE MIX IN



FEATURES

ELEMENTS DIMENSION

Baffle: 30 x 150
Panels: custom made

Maximum Baffle length 2800mm
 Maximum Panels dimensions 400x2800mm

MATERIALS

7/10 aluminum and steel, other thickness according to project /product requirements

STRUCTURE

MX carrier made up of 8/10 black pre-painted steel or post-painted with color on request

ANTISEISMIC EQUIPMENTS

Atena antiseismic kits compulsory for buildings in 3 and 4 Class (NTC 2018 - § 7.2.3)

HANGERS

Threaded bar

BAFFLE COLORS

Atena White | Atena Silver
 RAL / NCS coating
 Wood effects
 Sublimation of images and effects

PERFORATION

To choose among Atena perforation range

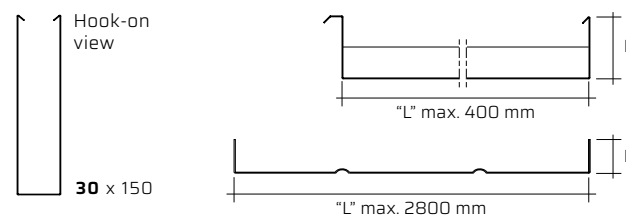
ACCESSORIES

Smooth closing caps on request,
 Baffle and carrier joints, alignment clips

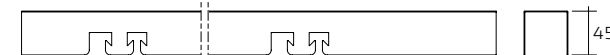
SOUND ABSORBERS

Black acoustic tissue
 Standard A1s2d0 | Plus A1
 Black Ecofiber Bs2d0
 Enveloped mineral fiber B2

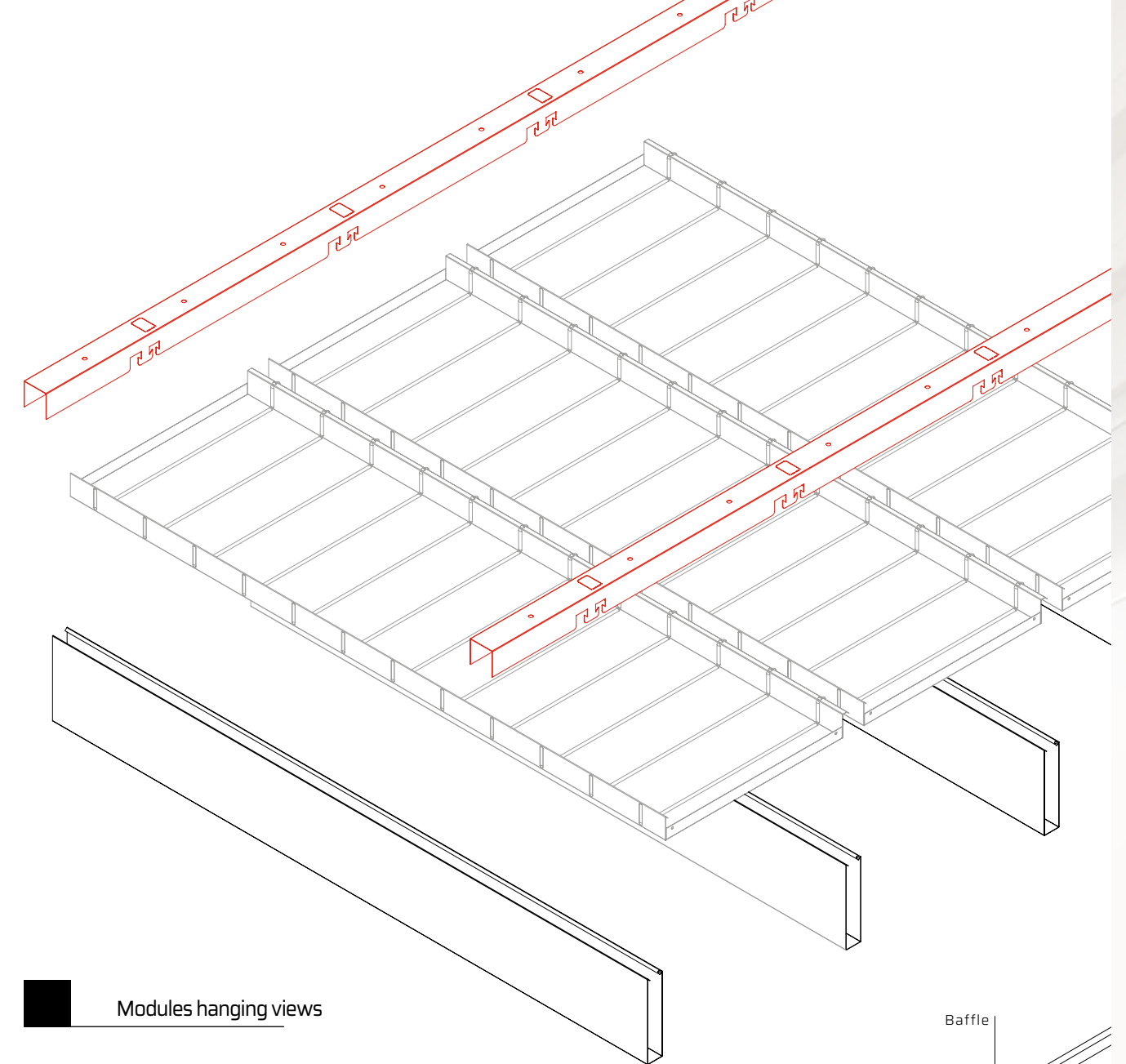
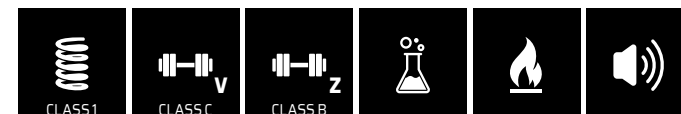
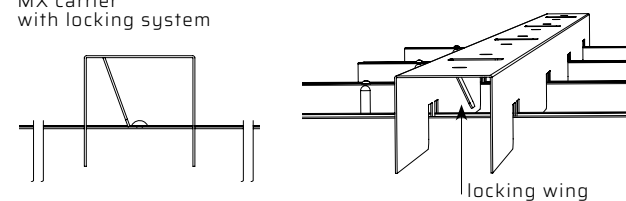
Components



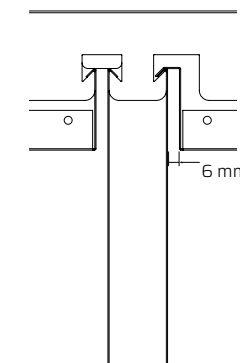
MX carrier view | variable distance and gap



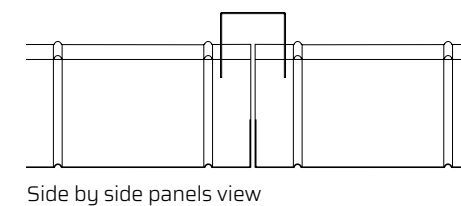
MX carrier with locking system



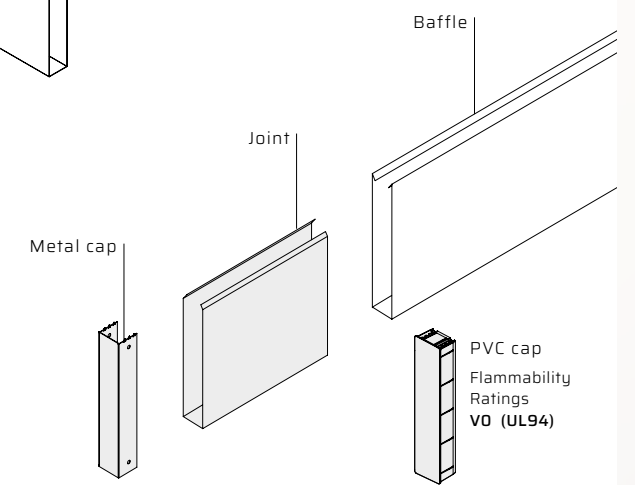
Modules hanging views



Custom made panels max. 400x2800 mm.
 6 mm gap between panel and Baffle



Side by side panels view

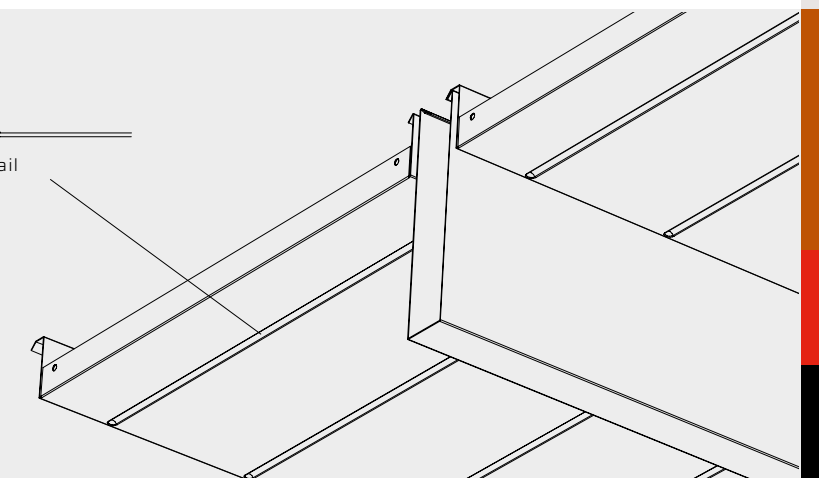


Special molding

On request laser cuts, moldings and bas-reliefs to create special visual effects.

Panel molding detail

In the example, 400x1200 mm panels with molding at 100 mm distance.



BAFFLE WALL APPLICATION



Baffle Wall application

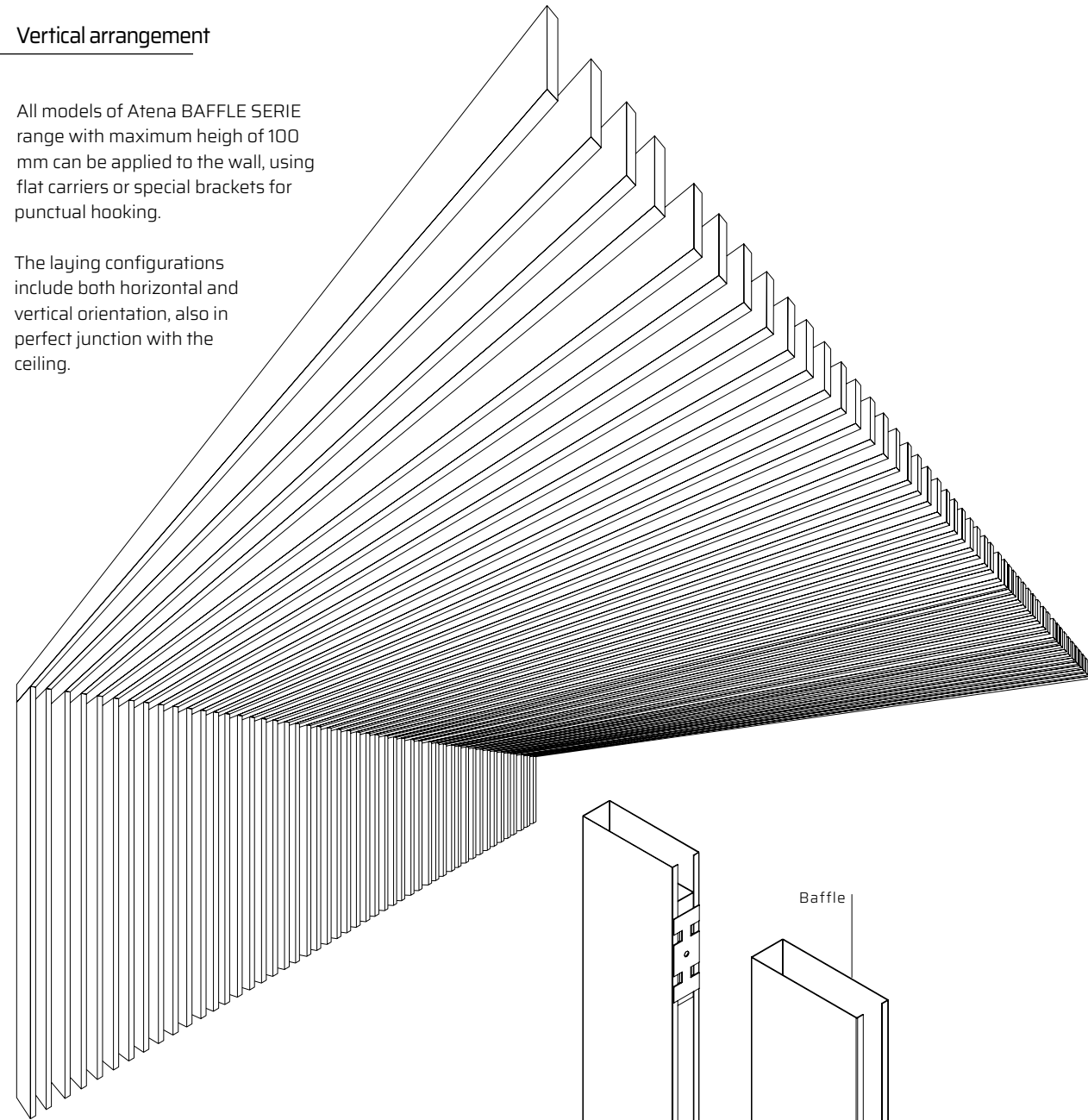
METAL BAFFLE

Picture: "Baffle Wall application"

Vertical arrangement

All models of Atena BAFFLE SERIE range with maximum height of 100 mm can be applied to the wall, using flat carriers or special brackets for punctual hooking.

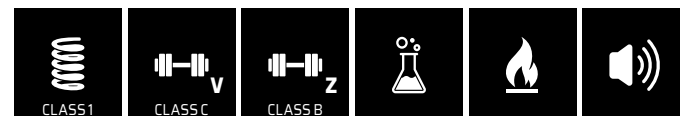
The laying configurations include both horizontal and vertical orientation, also in perfect junction with the ceiling.



Components

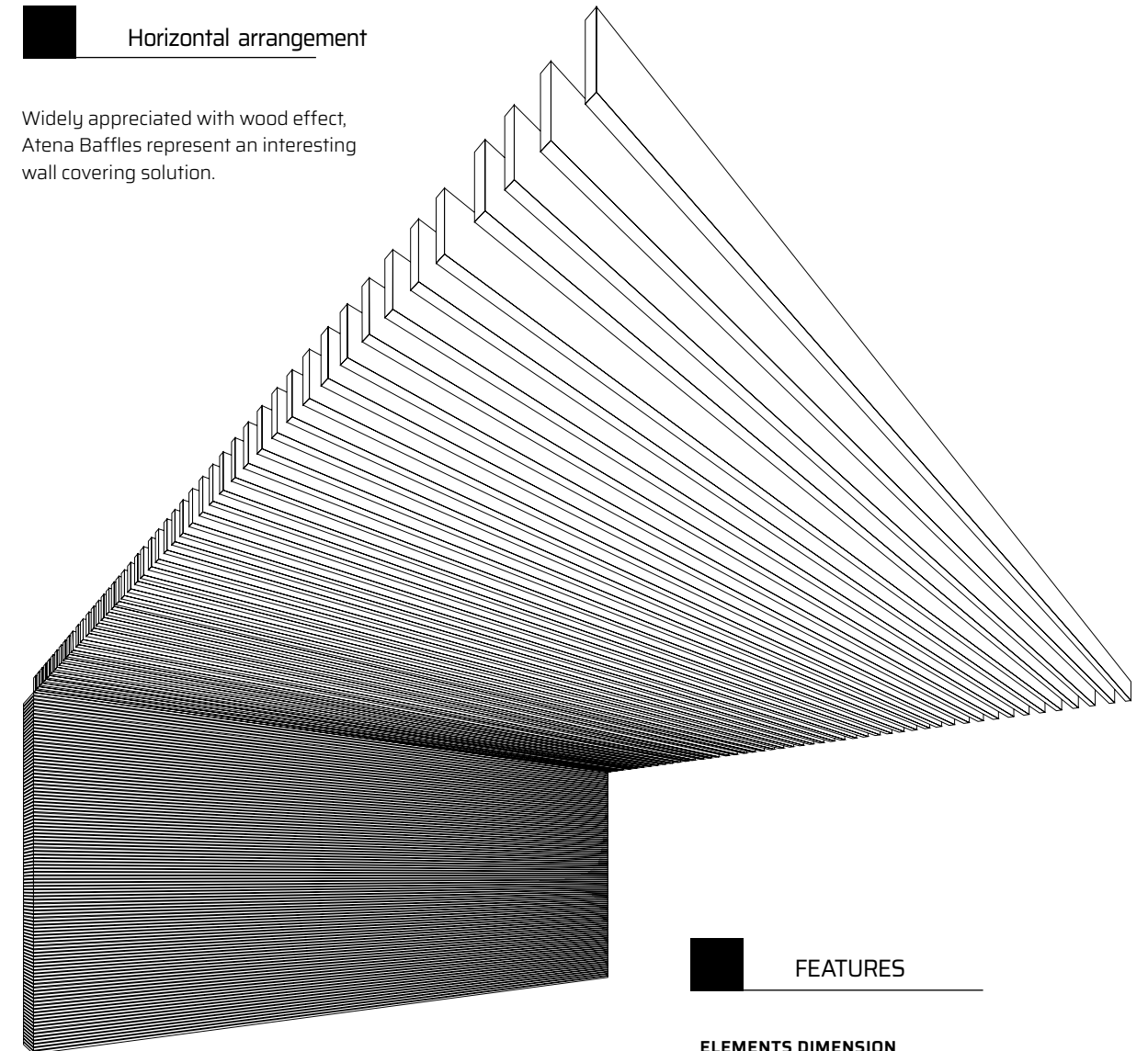
- Standard view
- 30x64
 - 30x100
 - 40x100
 - 50x100

The Baffle Wall application system can only be made with a maximum height of 100 mm.



Horizontal arrangement

Widely appreciated with wood effect, Atena Baffles represent an interesting wall covering solution.



FEATURES

ELEMENTS DIMENSION

- 30 x 64 | 100
- 40 x 100
- 50 x 100

Maximum Baffle length 4000 mm
Other sizes on request

MATERIALS

Aluminum and steel, thickness according to the project and product request

STRUCTURE

Special brackets for punctual hooking and stiffening or TS flat carrier

BAFFLE COLORS

Atena white | Atena silver
RAL / NCS coating
Wood effects
Sublimation of images and effects

PERFORATION

To choose among Atena perforation range

ACCESSORIES

Smooth closing caps on request,
Baffle and carrier joints

SOUND ABSORBERS

Black acoustic tissue
Standard A1s2d0 | Plus A1
Black Ecofiber Bs2d0
Enveloped mineral fiber B2



EXECUTIVE ENGINEERING

TECHNICAL CONSULTING

DIMENSIONING, DESIGN FEASIBILITY

- Acoustics
- Special architectural shapes
- Finishing
- Perforations
- Antiseismic engineering

Picture: "Baffle standard serie" metal ceiling

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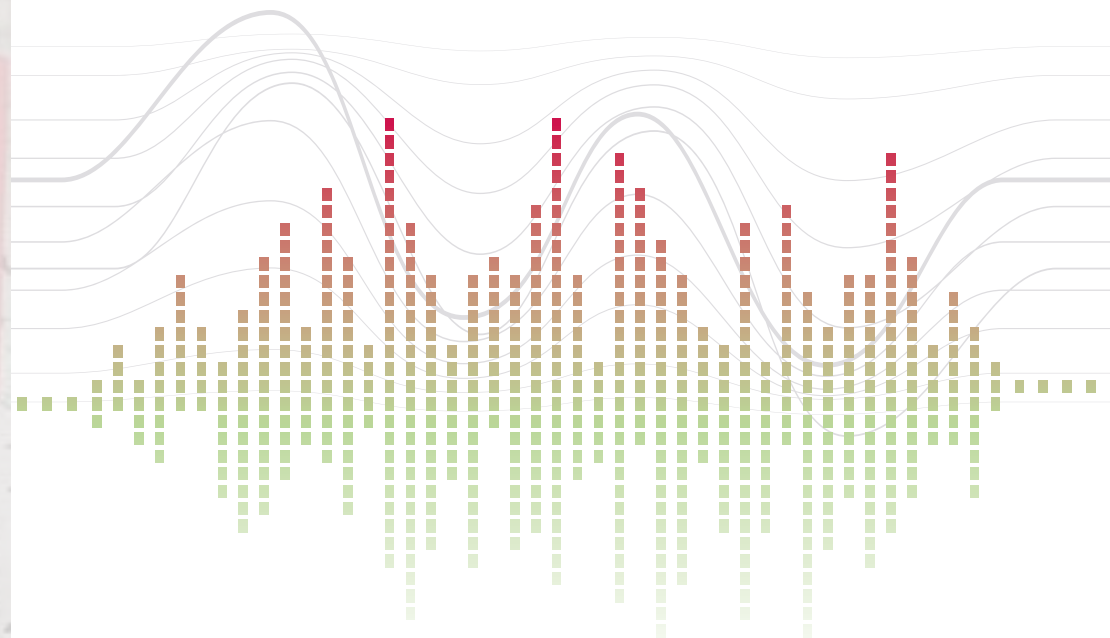
SOUND ABSORPTION AND NOISE REDUCTION



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

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. Chosen in smooth version **Atena Baffles** are compact, bright and thanks to their ultra-reflective surface the sound wave reverberates in the room; on the other hand, **perforated with acoustic material**, Atena Baffles balance the sound reverberation and absorption improving speech intelligibility.

Each environment needs 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 enjoy 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: "Baffle standard serie" metal ceiling

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.



VARIETY OF CONFIGURATIONS

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

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.



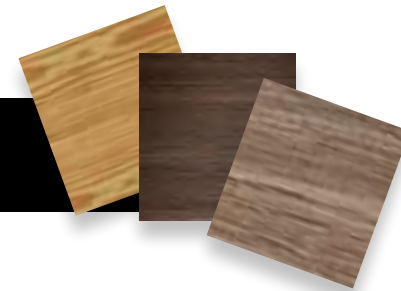
The industrial dimension of Italian craftsmanship

Foto:
Special Wavy Baffle | Baffle Free Flow

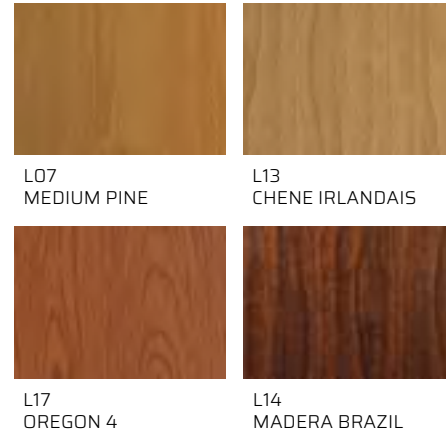
SPECIAL FINISHING

- Metal wood effect
- PVC covering
- Nanotech powder coatings
- Sublimations
- Digital printing

The **aesthetic metal finishing** represents an important phase of the manufacturing process, and includes a wide range of **decorative techniques**, high levels of **precision in execution**, continuous research of **new materials** and **latest generation machines** to ensure high quality standards.

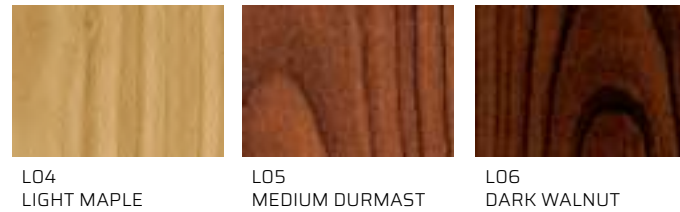


Standard aluminum wood



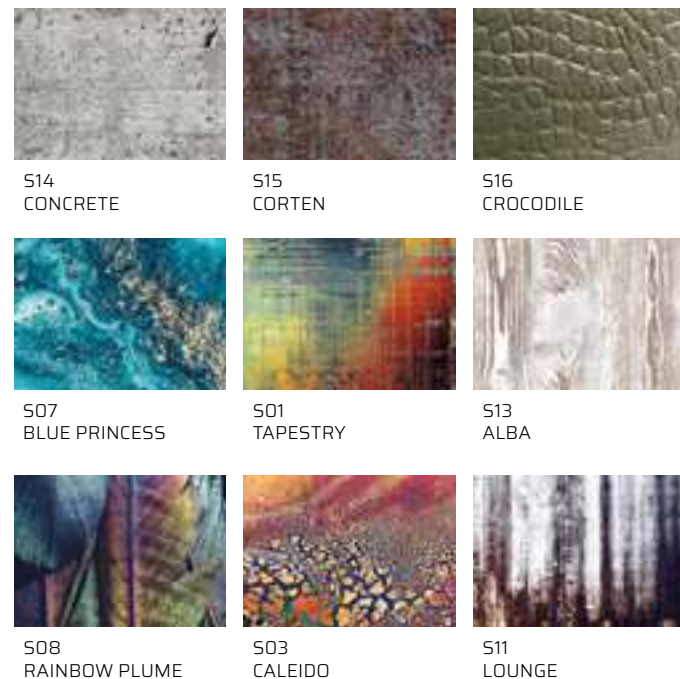
L07 MEDIUM PINE
L13 CHENE IRLANDAIS
L17 OREGON 4
L14 MADERA BRAZIL

Standard steel wood



L04 LIGHT MAPLE
L05 MEDIUM DURMAST
L06 DARK WALNUT

Sublimation



S14 CONCRETE
S15 CORTEN
S16 CROCODILE
S07 BLUE PRINCESS
S01 TAPESTRY
S13 ALBA
S08 RAINBOW PLUME
S03 CALEIDO
S11 LOUNGE

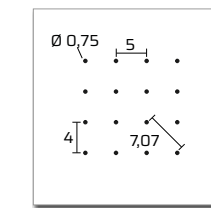


PERFORATION SET

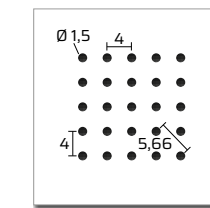
PARALLEL PERFORATIONS
Ø = 0,75 ≤ 1,5 mm

DIAGONAL PERFORATION
Ø = 0,75 ≤ 1,5 mm

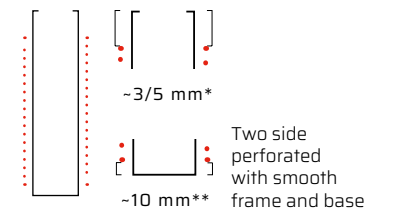
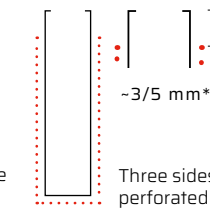
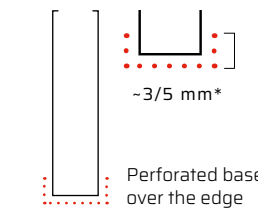
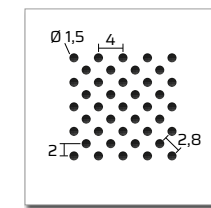
AP 0,75 / 2% P



AP 1,5 / 11% P



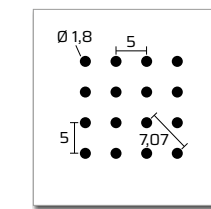
AP 1,5 / 22% D



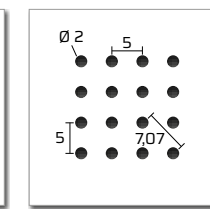
PARALLEL PERFORATIONS
Ø = 1,8 ≤ 2 mm

DIAGONAL PERFORATION
Ø = 1,8 ≤ 2 mm

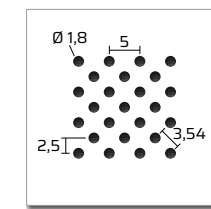
AP 1,8 / 9,5% P



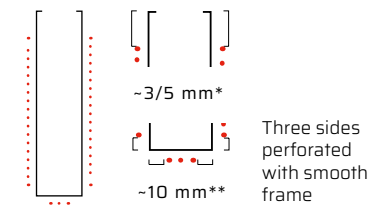
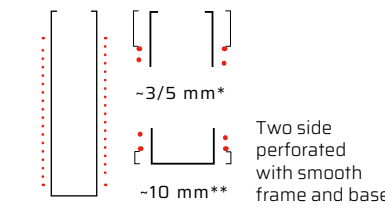
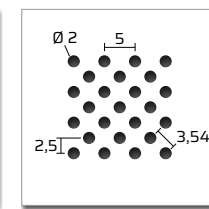
AP 2 / 12,5% P



AP 1,8 / 19% D



AP 2 / 25% D



Perforations legend

•••• Perforated area

* According to holes interaxe;

** According to holes interaxe; not available for base 30 mm

Schedule: thickness of drillable steel-aluminum
NA= Not available
CW= Maximum coil length
PW= Maximum perf. width
6/10 for 30x100 | 50x100 only.

PERFORATIONS	0,5	0,6	0,7	CL	PW
AP 0,75/2% P	•	•	NA	1000	850
AP 1,5/11% P	•	•	•	1300	1300
AP 1,8/9,5% P	•	•	•	900	800
AP 2/12,5% P	•	•	•	1250	1200
AP 1,5/22% D	•	•	•	1300	1300
AP 1,8/19% D	•	•	•	900	800
AP 2/25% D	•	•	•	1250	1200

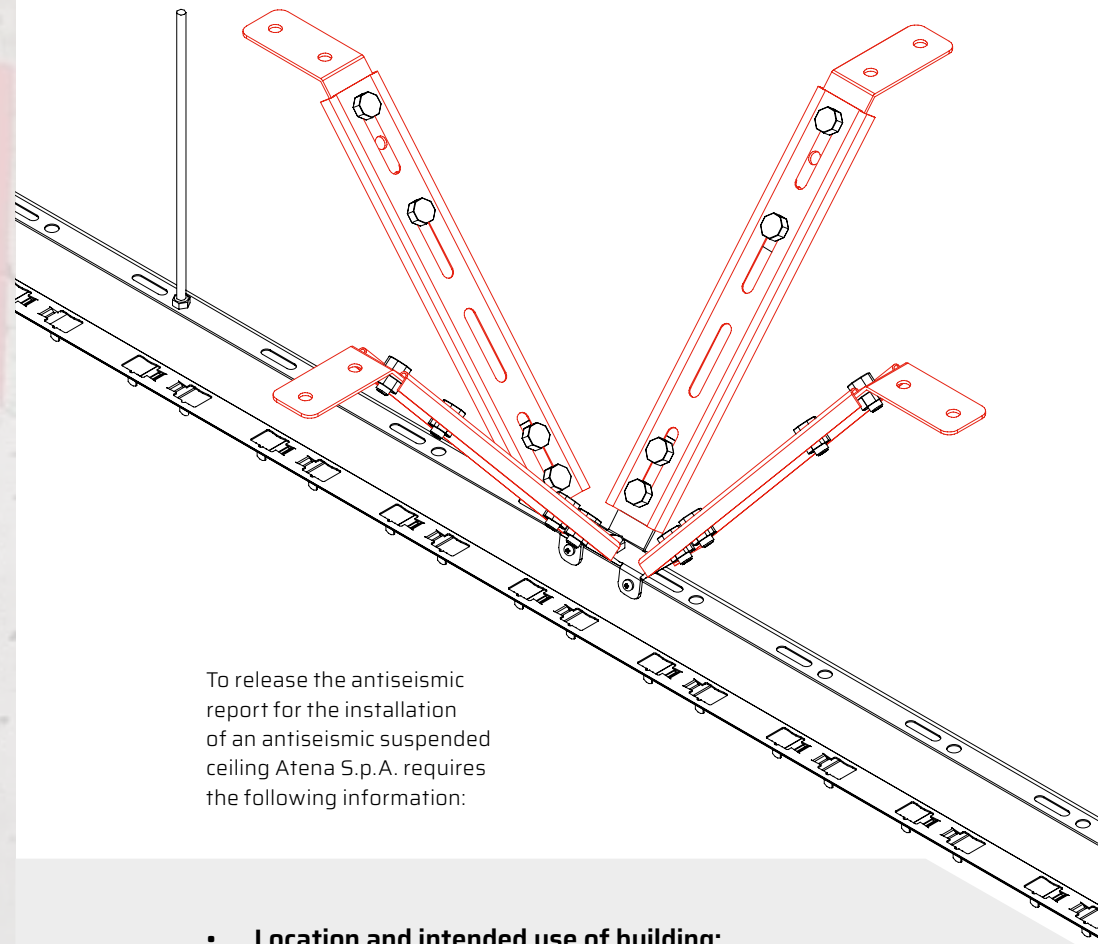
ANTISEISMIC FALSE CEILINGS



All Atena metal ceilings can be reinforced with **Atena Antiseismic Kit**, properly conceived to dissipate the seismic energy **preventing the metal 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 metal 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 metal 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



The effectiveness of Atena's 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 behavior of Atena Antiseismic metal ceilings.



Picture: "Baffle serie" metal ceiling | Mosh Benjamin - Pro Pixel Panama - Mallol Arquitectos

INTEGRATED LIGHTINGS



Properly conceived to meet the requirement of **each specific environment**, the **Atena Lux** lighting devices, are developed to achieve a perfect technical and aesthetic **integration** between lighting and metal ceiling.

High lighting standard:

- Last generation long-lasting LED sources
- High Colour Render Index (CRI > 90)
- "RGB" and "TUNABLE WHITE" technology
- balanced light emission
- Opal and microprismatic optics
- Protection degree IP65



Picture: "Baffle serie" metal ceiling



RIPRODURRE LA LUCE NATURALE

All Atena Lux lighting fittings are developed according to **Human Centric Lighting criteria**, therefore temperature, colour and intensity are programmed **to satisfy the human biological cycle system** in order to improve the general comfort and the performance levels, in relation to the **environment features and its uses**.

Picture: "Baffle Standard serie" metal ceiling



Picture: "Baffle Free Flow" metal ceiling

HIGH PERFORMANCE SYSTEMS

CERTIFICATIONS

INTERNATIONAL TECHNICAL STANDARDS



Certifications

ATENA-IT.COM

Picture: "Baffle serie" metal ceiling

PERFORMANCE



Picture: "Baffle serie" metal ceiling



	FLEXION RESISTANCE	Maximum span mm 1200 - 1 Class EN13964
	CORROSION RESISTANCE	Galvanized steel products: C2 Class Pre-painted galvanized steel products: C3 Class Post-painted galvanized steel products: C4 Class Pre/post-painted aluminium products: C5 Class
	(RH%) RELATIVE HUMIDITY RESISTANCE	Galvanized steel products: ≤ 90% Pre/post-painted galvanized steel products: > 90% Stainless steel and aluminium products: > 90%
	FIRE REACTION UNI EN 13501-1	Structure, suspensions and wall angles: A1 Class Smooth or perforated Baffle with Plus acoustic fleece: A1 Class Perforated Baffle with Standard acoustic fleece: A2s1d0 Class
	ACOUSTICS	Information in "Acoustic Performance"
	CLEANING	Wet cloth with warm water and neutral non-abrasive detergents.
	COLOR STABILITY	In compliance with technical tolerances standard. Test according the ΔE - CIELab method. ISO 7724-2 (3)
	DURABILITY OF PAINTED ITEMS	C Class EN13964
	GALVANIZED DURABILITY	B Class EN13964

SUSTAINABILITY

	RELEASE OF DANGEROUS SUBSTANCES*	None CAM 2.4.13 EN13964		FORMALDEHYDE*	E1 Class CAM 2.3.5.5
	DISASSEMBLY*	Steel Aluminium 100% recyclable CAM 2.4.11		MATERIAL DEMOLITION AND REMOVAL*	Non hazardous waste in compliance with CAM 2.5.1.
	RECYCLED PRODUCT CONTENT*	CAM 2.4.18 compliance		GREEN BUILDING	Requirements: LEED (BREEAM and ITACA for cross-section aspects)

* Data declaration as required by the ISO 14021 standard



TECHNICAL STANDARDS

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

For **external application**, metal 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 D.o.P. (Declaration Of Performance) CE mark according to the European Law 305/2011.



BEARING CAPACITY AND FLEXION RESISTANCE

Limit states of **bearing and flexion resistance** of Atena structures and panels are reported in technical data sheets. Atena panels are classified in 1st Class of flexion resistance. Structures have generally a **maximum span of 1200 mm**. According to Technical Norme for Construction - D.M. 14/01/2018, **lighting elements and accessories must be fixed directly to the concrete and not load the metal ceiling system**.

According to the engineering criteria of metal ceilings, panels are tested to support their mass and to maintain flatness and curvature properties. On request Atena S.p.A. can conceive and produce panels suitable to support additional loads, that must be clearly specified in terms of quantity, position and application modes.



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**.



INDOOR WIND LOAD RESISTANCE

For the calculation on the panels mechanical strength Atena S.p.A. considered the vertical dead load. **Any upward thrusts** that can overcome the dead weight of the metal 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.

DURABILITY

Atena metal 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 CLASSIFICATION
A	Buildings frequently exposed to relative humidity up to 70% and varying temperatures up to 25°C but with no corrosive pollutants.	Atena galvanized 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 galvanized steel products
C	Exposure to an atmosphere with 90% humidity level and risk of condensation.	Atena post-painted 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 metal 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.

FIRE REACTION

All Atena metal 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**.

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 metal 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 56.

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.
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.
C3 AVERAGE $0,7 < r_{corr} \leq 2^*$	AVERAGE AGGRESSIVE ENVIRONMENT	Moderate presence of moisture and pollution due to light productive processes.
C4 HIGH $2 < r_{corr} \leq 4^*$	AGGRESSIVE ENVIRONMENT	Frequent moisture and high pollution levels due to industrial processes and sports pools.
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



GREEN ENERGY

By joining the “100% clean energy Dolomiti Energia” certification program, Atena uses **energy from renewable sources**.



GREEN BUILDING

Get credits for building certification according to the **LEED protocol** and to **BREEAM** and **ITACA** standards for cross-cutting aspects, by using Atena products.



RECYCLED MATERIAL CONTENT

CAM 2.4.1.8 | LEED REQUIREMENT
Atena products are, as a whole, **manufactured using recycling processes materials**, the **recycled content** is **calculated for each type of product**, in compliance with C.A.M. requirements and declared according to the ISO 14021 standard.



RELEASE OF DANGEROUS SUBSTANCES

CAM 2.3.5.5 | LEED REQUIREMENT
Atena products **do not release dangerous substances** including formaldehyde. Paints and sublimations are carried out using VOC-free substances.



CONTENT OF SVHC

CAM 2.4.1.3 | LEED REQUIREMENT
Atena uses raw materials **free of SVHC** very high concern substances listed in “Candidate list of SVHC” released by the European Chemical Agency.



DISASSEMBLY

CAM 2.4.1.1 | LEED REQUIREMENT
Atena steel and aluminum products are **100% recyclable** and at the end of their life cycle can be prepared for re-use, recovery, recycling and selective demolition.



MATERIALS DEMOLITION AND REMOVAL

CAM 2.5.1. | LEED REQUIREMENT
At the end of their life cycle, the Atena products become **non-hazardous waste** that can be prepared for re-use, recovery or recycling.

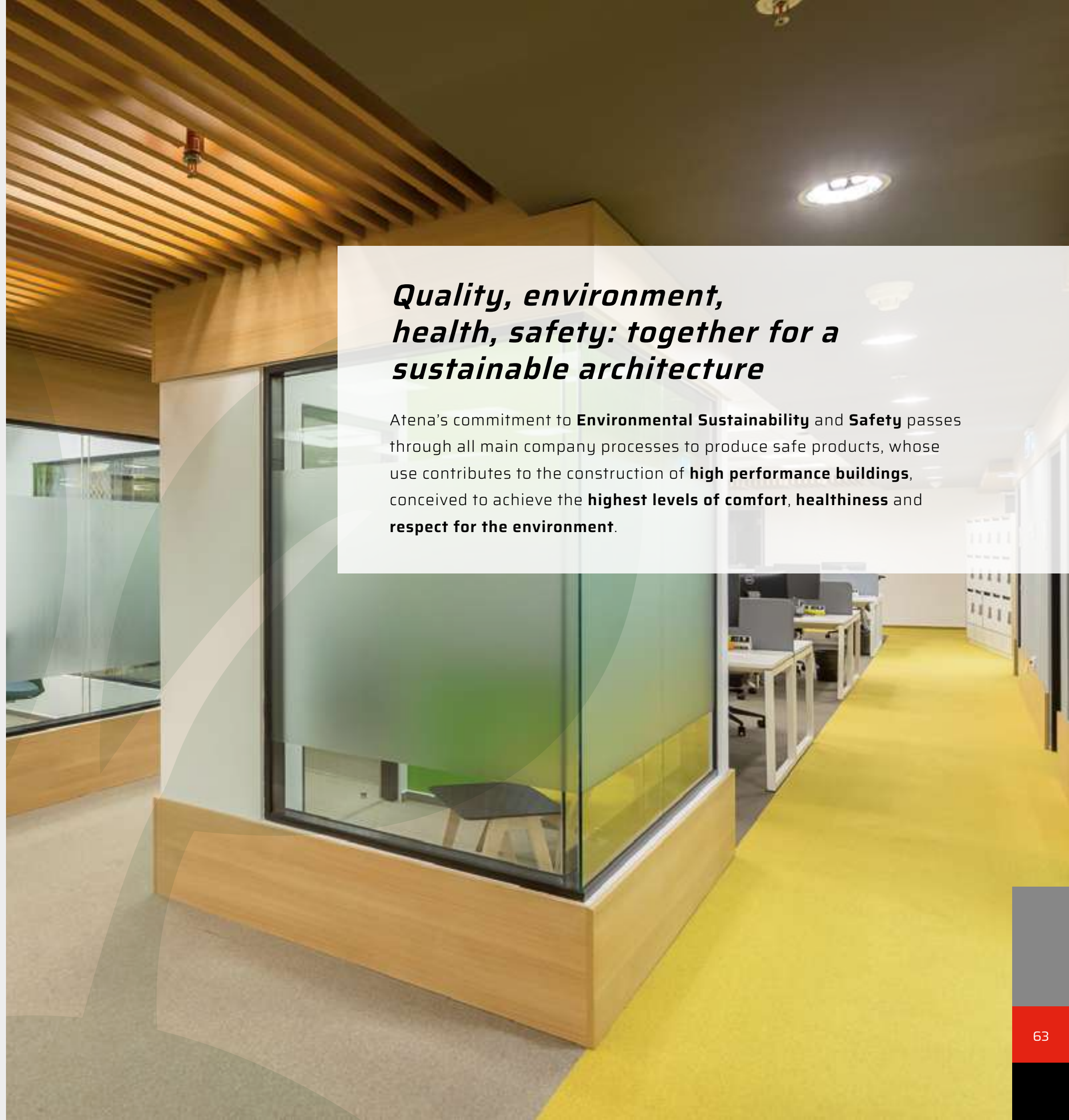


WASTE MANAGEMENT

CAM 2.5.1. | LEED REQUIREMENT
Atena uses **recyclable** packaging.

Quality, environment, health, safety: together for a sustainable architecture

Atena’s commitment to **Environmental Sustainability** and **Safety** passes through all main company processes to produce safe products, whose use contributes to the construction of **high performance buildings**, conceived to achieve the **highest levels of comfort, healthiness** and **respect for the environment**.





TO BE INSPIRED
atena-it.com

follow us



Thinking about new projects...

Photos:
istockphoto.com: p. 36,37,48,50
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INNOVATIVE ARCHITECTURAL SOLUTIONS



ISO 9001

All dimensions are nominal and expressed in millimeters.
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More details concerning colours, perforations, perimeter profiles and laying instructions are described in technical data sheets suitable on line: atena-it.com
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METAL CEILINGS AND COVERINGS

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