







ATENA S.P.A. HAS A QUALITY MANAGEMENT SYSTEM CERTIFICATED BY RINA IN COMPLIANCE WITH ISO 9001





#### **PANELS DIMENSION**

600x600 | 600x1200 mm other modules on request

## **OPEN CELL ELEMENTS**

Base 4 H30 TM-TF interlocking profiles

# **OPEN CELL MATERIAL**

4/10 Aluminum

#### **INTEGRATED STRUCTURE**

Carriers/spacers 27x33x27 L=2400 mm in 8/10 black prepainted steel Wire steel hooking springs

# **HANGERS**

Threaded bar

To be evaluated according to the load per m<sup>2</sup>, the project requirements and the anti-seismic kits where provided.

## COLORS

Atena standard white and silver pre-painted aluminum RAL / NCS post-painting Wood finishing on request

# **WALL ANGLES**

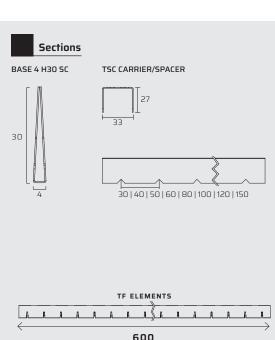
"C" 18x33x25 perimeter profile 5/10 aluminum with the same finishing of the open cell

#### **ACCESSORIES**

Lighting adapters, carriers and spacers joints

#### **MESHES | INCIDENCES | WEIGHTS**

See schedule on page 4



TM ELEMENTS

600/1200

#### **TECHNICAL PERFORMANCES**

$\leq$
$\geq$
<b>3</b>
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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 aluminum 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

A1 Class



CLEANING

Wet cloth with warm water and neutral non-abrasive detergents.



COLOR STABILITY

In compliance with technical tolerances standard.

Test according the  $\Delta E$  - CIELab method.





PAINTED ITEMS DURABILITY C Class EN13964



GALVANIZED ITEM DURABILITY

B Class EN13964

# **SUSTAINABILITY**

Data declared according to ISO 14021 standard and validated during the EPD verification. Type III environmental labelling.



RECYCLED PRODUCT CONTENT

Compliance CAM 2.5.8



GREEN BUILDING Requirements compliance: **LEED® | BREEAM® | WELL™** CAM 1.3.4



MATERIAL DEMOLITION AND REMOVAL Non hazardous waste in compliance with CAM 2.6.2. Y

GREEN ENERGY Renewables prevalent use



DISASSEMBLY

Steel | Aluminium 100% recyclable CAM 2.6.2 | 2.4.14

WASTE MANAGEMENT Compliance CAM 2.6.2.

CAM 1.2



ACOUSTIC PERFORMANCE

Not applicable

BIM

BIM DESIGN AND MAINTEINANCE PLAN OF THE WORK

CAM 2.7.3 | 2.4.13

Absent



**SVHC PRESENCE** 

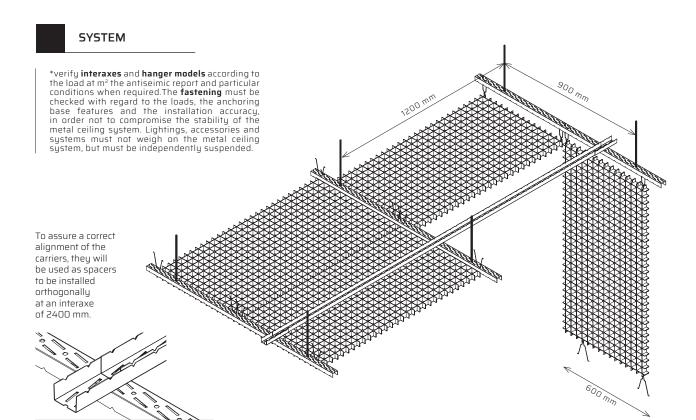
Compliance CAM 2.5.7 o G

FORMALDEHYDE

E1 Class CAM 2.5.1. | 3.2.8



RELEASE OF DANGEROUS SUBSTANCES None CAM 2.5.1. | 3.2.8 EN13964 Requirement 2.5.1 - Compliance on all products. Rewarding requirement 3.2.8 - Compliance for post painted products with "Gold Leaf" high performance coating.







#### "C" PROFILE

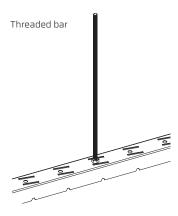
18x33x25 mm L=4000 mm

# COMPONENT INCIDENCES 600x600 MODULE

ID	DESCRIPTION	INCIDENCE*
1	OPEN CELL PANEL	2,78 pcs/sqm
2	WALL ANGLE	1 lm/sqm
3	HANGERS	1 pcs/sqm
4	CARRIERS (1200 mm pitch)	0,85 lm/sqm
5	SPACERS (2400 mm pitch)	0,42 lm/sqm

<sup>\*</sup> Incidenze componenti si veda tabella pagina 1







# **ANTISEISMIC EQUIPMENTS**

According to the NTC 2018, when the non-structural element is assembled on site: structure designer is in charge of identifying the request, the supplier and / or installer is in charge of providing elements and connection systems of adequate capacity, the project manager is in charge of verifying the accuracy of installation. Therefore it is necessary to communicate to Atena the stresses acting on the false ceiling (seismic acceleration, wind load,.) in order to allow a proper calculation of the single elements. For more information on Atena's anti-seismic systems, contact the reference sales offices. The documentation on the site is for example only. (NTC 2018 § 7.2.3-72.4).

Continuous open cell ceilings are not suitable for use in areas with seismic risk.

Where anti-seismic open cell ceilings are required, we recommend BASE 4 open cell panel with EASY ANTISEISMIC T24 structure. Contact the Atena S.p.A. technical department to define the appropriate sizing.

# **INCIDENCES**

	600x600 PANEL ELEMENT QUANTITY						CYCTEM						
MODEL*	SQUARE MESHES	OPEN AREA	TM 600	TF 600			MODEL	PITCH	600 mm		2400 mm		SYSTEM
			mm	mm	LM/SQM	KG/SQM	MODEL	mm	LM/SQM	KG/SQM**	LM/SQM	KG/SQM**	KG/SQM
	40x40	81%	15	15	50,00	3,41	TSC40	40	1,70	0,88	0,42	0,22	4,80
	50x50	85%	12	12	40,00	2,73	TSC50	50	1,70	0,88	0,42	0,22	4,12
BASE 4 H30 SC	60x60	87%	10	10	33,33	2,27	TSC30	60	1,70	0,88	0,42	0,22	3,67
600x600 mm	100x100	92%	6	6	20,00	1,36	TSC50	100	1,70	0,88	0,42	0,22	2,76
	120x120	93%	5	5	16,67	1,14	TSC30   TSC40	120	1,70	0,88	0,42	0,22	2,53
	150x150	95%	4	4	13,33	0,91	TSC30   TSC50	150	1,70	0,88	0,42	0,22	2,30
							CARRIER						CVCTEM
			600x120	O PANEL ELE	MENT QUA	NTITY			CARF	RIER			CVCTEM
MODEL*	SQUARE MESHES	OPEN AREA	600x120 TM 1200	O PANEL ELE TF 600				PITCH		RIER D mm	240	0 mm	SYSTEM
MODEL*	SQUARE MESHES	OPEN AREA			MENT QUA		MODEL	PITCH mm	1200			0 mm KG/SQM**	SYSTEM KG/SQM
MODEL*			TM 1200	TF 600			MODEL TSC40		1200	) mm			
MODEL*	MÈSHES	AREA	TM 1200 mm	TF 600 mm	LM/SQM	KG/SQM		mm	1200 LM/SQM	C mm KG/SQM**	LM/SQM	KG/SQM**	KG/SQM
MODEL*	40x40 50x50	AREA 81%	TM 1200 mm	TF 600 mm	LM/SQM 50,00	KG/SQM 3,41	TSC40	mm 40	1200 LM/SQM 0,85	0 mm KG/SQM**	<b>LM/SQM</b>	<b>KG/SQM**</b>	KG/SQM 4,22
	40x40 50x50	81% 85%	TM 1200 mm 15	TF 600 mm 30 24	LM/SQM 50,00 40,00	<b>KG/SQM</b> 3,41 2,73	TSC40 TSC50	mm 40 50	1200 LM/SQM 0,85 0,85	0 mm KG/SQM** 0,44	0,42 0,42	<b>KG/SQM**</b> 0,22 0,22	KG/SQM 4,22 3,53
BASE 4 H30 SC	40x40 50x50 60x60	81% 85% 87%	TM 1200 mm  15  12  10	TF 600 mm 30 24 20	LM/SQM 50,00 40,00 33,33	3,41 2,73 2,27	TSC40 TSC50 TSC30	mm 40 50 60	1200 LM/SQM 0,85 0,85	0 mm KG/SQM** 0,44 0,44	0,42 0,42 0,42	0,22 0,22 0,22	KG/SQM 4,22 3,53 3,08

<sup>\*</sup> Swinging side at 600 mm only. | For specific project requirements, the hanger incidence may vary. Please check with the Atena S.p.A technical department.

# BASE4 H30 SC | 600x600mm

			600x600 PANEL ELEMENTS QUANTITY										
MODEL*	RECTANG. MESHES	OPEN AREA	TM 600	TF 600				PITCH	600 mm		2400 mm		SYSTEM
			mm	mm	LM/SQM	KG/SQM	MODEL	mm	LM/SQM	KG/SQM**	LM/SQM	KG/SQM**	KG/SQM
	30x60	81%	20	10	50,00	3,41	TSC30	30	1,70	0,88	0,42	0,22	4,80
	30x100	83%	20	6	43,33	2,96	TSC30	30	1,70	0,88	0,42	0,22	4,35
	30x120	84%	20	5	41,67	2,84	TSC30	30	1,70	0,88	0,42	0,22	4,23
	30x150	84%	20	4	40,00	2,73	TSC30	30	1,70	0,88	0,42	0,22	4,12
	40x100	86%	15	6	35,00	2,39	TSC40	40	1,70	0,88	0,42	0,22	3,78
	40x120	87%	15	5	33,33	2,27	TSC40	40	1,70	0,88	0,42	0,22	3,67
	40x150	88%	15	4	31,67	2,16	TSC40	40	1,70	0,88	0,42	0,22	3,55
	50x100	88%	12	6	30,00	2,05	TSC50	50	1,70	0,88	0,42	0,22	3,44
	50x120	89%	12	5	28,33	1,93	TSC50	50	1,70	0,88	0,42	0,22	3,32
	50x150	90%	12	4	26,67	1,82	TSC50	50	1,70	0,88	0,42	0,22	3,21
	60x40	86%	10	12	36,67	2,50	TSC30	60	1,70	0,88	0,42	0,22	3,89
BASE 4 H30 SC	60x100	90%	10	6	26,67	1,82	TSC30	60	1,70	0,88	0,42	0,22	3,21
600x600 mm	60x120	90%	10	5	25,00	1,71	TSC30	60	1,70	0,88	0,42	0,22	3,10
	60x150	91%	10	4	23,33	1,59	TSC30	60	1,70	0,88	0,42	0,22	2,98
	100x40	86%	6	15	35,00	2,39	TSC50	100	1,70	0,88	0,42	0,22	3,78
	100x50	88%	6	12	30,00	2,05	TSC50	100	1,70	0,88	0,42	0,22	3,44
	100x60	90%	6	10	26,67	1,82	TSC50	100	1,70	0,88	0,42	0,22	3,21
	100x150	93%	6	4	16,67	1,14	TSC50	100	1,70	0,88	0,42	0,22	2,53
	120x40	87%	5	15	33,33	2,27	TSC30   TSC40	120	1,70	0,88	0,42	0,22	3,67
	120x50	89%	5	12	28,33	1,93	TSC30   TSC40	120	1,70	0,88	0,42	0,22	3,32
	120x60	90%	5	10	25,00	1,71	TSC30   TSC40	120	1,70	0,88	0,42	0,22	3,10
	150x40	88%	4	15	31,67	2,16	TSC30   TSC50	150	1,70	0,88	0,42	0,22	3,55
	150x50	90%	4	12	26,67	1,82	TSC30   TSC50	150	1,70	0,88	0,42	0,22	3,21
	150x60	91%	4	10	23,33	1,59	TSC30   TSC50	150	1,70	0,88	0,42	0,22	2,98

<sup>\*\*</sup> The weight includes the joints and the carriers used both as profile with 600 or 1200 mm pitch (in relation to the panel size), and as spacer with 2400 mm pitch.

<sup>\*</sup> Swinging side at 600 mm only. | For specific project requirements, the hanger incidence may vary. Please check with the Atena S.p.A technical department.

\*\* The weight includes the joints and the carriers used both as profile with 600 or 1200 mm pitch (in relation to the panel size), and as spacer with 2400 mm pitch.

# BASE4 H30 SC | 600x1200mm

	RECTANG. MESHES		600x1200	CARRIER									
MODEL*		OPEN AREA	TM 1200	TF 600				PITCH	1200 mm		2400 mm		SYSTEM
			mm	mm	LM/SQM	KG/SQM	MODEL	mm	LM/SQM	KG/SQM**	LM/SQM	KG/SQM**	KG/SQM
	30x60	81%	20	20	50,00	3,41	TSC30	30	0,85	0,44	0,42	0,22	4,22
	30x100	83%	20	12	43,33	2,96	TSC30	30	0,85	0,44	0,42	0,22	3,76
	30x120	84%	20	10	41,67	2,84	TSC30	30	0,85	0,44	0,42	0,22	3,65
	30x150	84%	20	8	40,00	2,73	TSC30	30	0,85	0,44	0,42	0,22	3,53
	40x100	86%	15	12	35,00	2,39	TSC40	40	0,85	0,44	0,42	0,22	3,19
	40x120	87%	15	10	33,33	2,27	TSC40	40	0,85	0,44	0,42	0,22	3,08
	40x150	88%	15	8	31,67	2,16	TSC40	40	0,85	0,44	0,42	0,22	2,97
	50x100	88%	12	12	30,00	2,05	TSC50	50	0,85	0,44	0,42	0,22	2,85
	50x120	89%	12	10	28,33	1,93	TSC50	50	0,85	0,44	0,42	0,22	2,74
	50x150	90%	12	8	26,67	1,82	TSC50	50	0,85	0,44	0,42	0,22	2,62
	60x40	84%	10	30	41,67	2,84	TSC30	60	0,85	0,44	0,42	0,22	3,65
	60x100	90%	10	12	26,67	1,82	TSC30	60	0,85	0,44	0,42	0,22	2,62
	60x120	90%	10	10	25,00	1,71	TSC30	60	0,85	0,44	0,42	0,22	2,51
BASE 4 H30 SC 600x1200 mm	60x150	91%	10	8	23,33	1,59	TSC30	60	0,85	0,44	0,42	0,22	2,40
	80x40	86%	7,5	30	37,50	2,56	TSC40	80	0,85	0,44	0,42	0,22	3,36
	80x50	87%	7,5	24	32,50	2,22	TSC40	80	0,85	0,44	0,42	0,22	3,02
	80x120	92%	7,5	10	20,83	1,42	TSC40	80	0,85	0,44	0,42	0,22	2,23
	80x150	92%	7,5	8	19,17	1,31	TSC40	80	0,85	0,44	0,42	0,22	2,11
	100x40	86%	6	30	35,00	2,39	TSC50	100	0,85	0,44	0,42	0,22	3,19
	100x50	88%	6	24	30,00	2,05	TSC50	100	0,85	0,44	0,42	0,22	2,85
	100x60	90%	6	20	26,67	1,82	TSC50	100	0,85	0,44	0,42	0,22	2,62
	120x40	87%	5	30	33,33	2,27	TSC30   TSC40	120	0,85	0,44	0,42	0,22	3,08
	120x50	89%	5	24	28,33	1,93	TSC30   TSC40	120	0,85	0,44	0,42	0,22	2,74
	120x60	90%	5	20	25,00	1,71	TSC30   TSC40	120	0,85	0,44	0,42	0,22	2,51
	150x40	88%	4	30	31,67	2,16	TSC30   TSC50	150	0,85	0,44	0,42	0,22	2,97
	150x50	90%	4	24	26,67	1,82	TSC30   TSC50	150	0,85	0,44	0,42	0,22	2,62
	150x60	91%	4	20	23,33	1,59	TSC30   TSC50	150	0,85	0,44	0,42	0,22	2,40

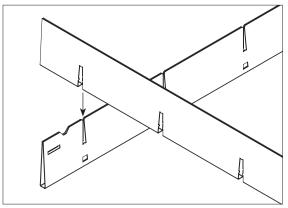
- \* Swinging side at 600 mm only. I For specific project requirements, the hanger incidence may vary. Please check with the Atena S.p.A technical department.
- \*\* The weight includes the joints and the carriers used both as profile with 600 or 1200 mm pitch (in relation to the panel size), and as spacer with 2400 mm pitch.

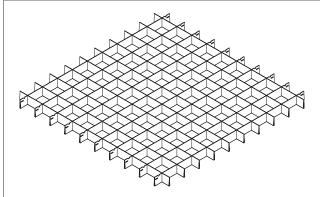


# INSTALLATION STEPS

 Before the installation of the metal ceiling, prepare the BASE 4 h30 SC panels using TF and TM elements provided creating the desired mesh.

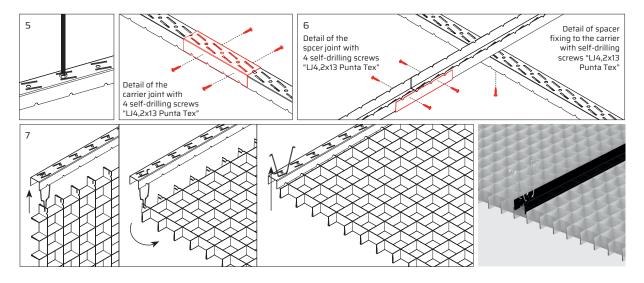
(If the panels are not provided already assembled)





- Proceed with the installation of structure
- 1. Draw the lines of the perimeter frame.
- 2. Determine the height of the ceiling with a level and mark it with a string.
- 3. Install the wall angles with nails, screws and/or plugs suitable to the wall material.
- 4. Fix the hangers according to the type of ceiling to be installed\*.
- 5. Fix the carriers to the hangers adjusting its height using a laser level.
- 6. Fix the spacers on the carriers with a distance of 2400 mm using "LJ4,2x13 Punta Tex" self-drilling screws.
- 7. Insert the hooking springs into the appropriate slots in the open cell panels. Complete the installation of the panels by hooking them on one side in a vertical position, then rotate them to allow them to be hooked on the other side\*. The 600x1200 mm panels must be installed with sleepers with a 1200 mm center distance, therefore the modules must be hooked by inserting the first 2 springs on the 600 mm side. See axonometry on page. 3.

\*verify **interaxes** and **hanger models** according to the load at m² the antiseimic report and particular conditions when required. The **fastening** must be checked with regard to the loads, the anchoring base features and the installation accuracy, in order not to compromise the stability of the metal ceiling system. Lightings, accessories and systems must not weigh on the metal ceiling system, but must be independently suspended.





#### CLEANING, MAINTENANCE AND REMOVAL INSTRUCTIONS

Cleaning and maintenance require some attention and care even though are easy to make and don't take much time. It is necessary to use warm water and neutral and non-abrasive detergents. Metal ceilings maintenance usually refers to: placement, alignment or replacement of damaged or broken modules (panels, staves, baffles, open cells) which can be also removed for restoration or maintenance of the system below.

In order to ensure an excellent results, the maintenance work must be carried out by specialised workers trained with technical data sheets about setting, removal and maintenance of the metal ceilings. Using inadequate tools can damage the bearing structure, causing adherence loss or even accidental modules fall. All the maintenance intervention must follow the technical data sheet instructions or specific information when provided and every diversity has to be promptly reported. Each worker charged with maintenance operation must carefully remove the modules, perform the intervention and do not alter the metal ceiling structure, the hanging system and the connection between these elements.

When the maintenance is over, modules must be installed again, checking that these are well hooked or positioned if they are lay-in/on on a visible structure and that the flatness of the assembly is guaranteed. Any difference in level is caused by wrong installation and, for this reason, the system must be quickly controlled.



#### STORAGE MODE

Materials supplied by Atena S.p.A. shall be maintained in good condition from purchase to installation. Materials must be stored in a closed, clean and dry site, not under direct light. Atena S.p.A. protects its products with resistant packaging under normal handling. Please handle packages with care to avoid shocks and inappropriate handling that might damage what is provided. The manual handling must be carried out with caution and in compliance with safety regulations at work. For carriage of packaged products on pallets, provide a mechanical transport to avoid damages or risks resulting from inadequate transport.



#### **SUSTANABILITY AND SAFETY**

All Atena metal ceilings are made with products that do not release dangerous substances into the environment including formaldehyde. Coating and / or sublimation are free from Volatile Organic Compounds (VOC). The products will be recyclable and as a whole manufactured using recycling processes materials, the recycled material percentage is calculated for each type of product, in compliance with CAM requirements and declared according to the ISO 14021 standard. The metal ceiling systems contribute to getting credits for the certification of building design, construction and sustainable and efficient management according to the LEED protocol and to the BREEAM and ITACA cross-cutting aspects.



#### **FASTENERS**

Atena supplies the hangers and accessories such as screws, washers and nuts to connect the elements of its own supply only. Lightings, accessories and systems must not weigh on the metal ceiling system, but must be independently suspended. The fastening must be checked with regard to the loads, the anchoring base features and the installation accuracy, in order not to compromise the stability of the metal ceiling system.



# NORMATIVE REQUIREMENTS

Atena S.p.A. has adopted a quality management system in compliance with the UNI EN ISO 9001 standard.

All Atena metal ceilings are produced for indoor applications, in compliance with Technical Standards for Construction NTC 2018 and relative circular requirements, the Minimum Environmental Criteria CAM (Ministerial Decree 11 October 2017), the specific technical standards applicable UNI EN 13964 and 14195. Each Atena S.p.A. product has its own DOP (CE Declaration of Performance) according to the European Law for construction products 305/2011.

The performance properties declared in D.o.P. Declarations of Performance provided by Atena S.p.A. are guarantees, if the metal ceiling is installed in the environment conditions for which it has been conceived and the recommended maintenance is executed.

Precisely, metal ceilings are non-structural construction elements therefore they must be properly sized in order to withstand with adequate safety against all actions that can stress the building, such as, but not limited to, earthquakes, winds, thermal expansion, humidity, etc., in relation to the installation site, the building use and the project technical features. Check with Atena technical department the specific environmental conditions to which the product will be subjected, in order to choose the most suitable materials for the installation site.

In the case of outdoor installation, the metal ceilings are not covered by an harmonized technical standard, therefore they are not subject to the regulation 305/2011. They are in any case subjected to the NTC 2018 and to the safety checks of civil constructions, and must be properly sized according to the installation site environmental conditions, to the structural features and to the project specifications.

Indipendently by information, suggestions, advices and technical opinions exchanged between the parts, during pre-agreement negotiations Atena S.p.A. will manufacture the products only according to the orders received and the technical drawings/projects attached, having no responsibility on what is not indicated in the order, in the technical drawings or in the project.

All rights are reserved and subject to industrial protection. Changes to the illustrated products, even if partial, can be carried out only if explicitly authorized by the company Atena S.p.A. All data provided and illustrated are indicative and Atena S.p.A. reserves the right to make changes at any time according the business needs and the production processes.

The information contained in this following sheet must to be considered updated at the date of writing. Changes in product performance occurred after that date may affect the accuracy of the data sheet: it is compulsory for users to make sure to have the latest version of this sheet



# WARRANTY

Atena S.p.A. as a manufacturer, covers the manufacturing defects of its products; Except as provided in the specific warranty extensions, the warranty period is one year from delivery of goods. Any complaints must be communicated in accordance with the sales terms and conditions.

The Atena metal celings system components have been conceived for this purpose only, any other use is considered improper.