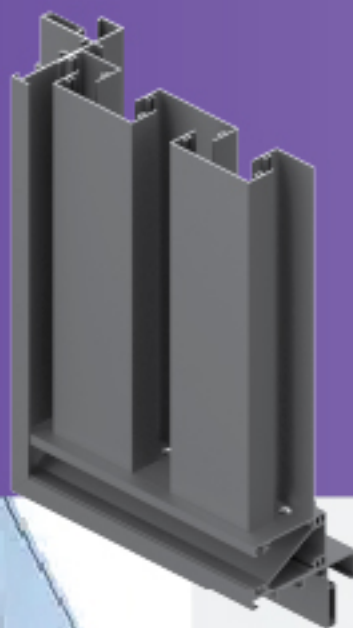




**Machines & Aluminium Center**  
مركز ماكينات ومستلزمات الألومنيوم

# RAMAK 88

Shading System



**PROFILES 1:1**

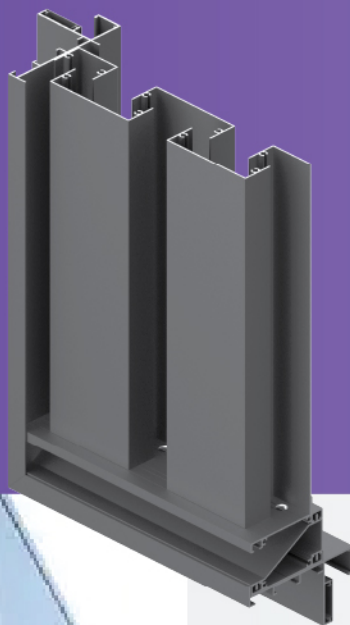
**2026**  
**VER. 01**



**Machines & Aluminium Center**  
مركز ماكينات ومستلزمات الألومنيوم

# RAMAK 88

Shading System



**PROFILES 1:1**

**2026**  
**VER. 01**

## **MACHINES AND ALUMINUM CENTER**

Machines and Aluminum Center is an Egyptian based company established in the year 1981 and started its activity with aluminium applications in architectural and construction field.

They represent and cooperate with several leading European firms in field of aluminium business including aluminium fabrication machinery, accessories and hardware for architectural applications and different aluminium systems varying from windows and doors, up to facades and solar protection.

Our goal is to supply our clients with whatever is needed to apply our aluminium systems in the building construction. We are specialized in supplying all required machinery, equipments, dies, punches, hardware and fittings for our aluminium systems.

We offer a wide range of products to local market and neighbor countries. Our product range includes windows and doors, partition systems, different façade solutions and the related integrated accessories.

We partner with our customers with value added services which means that with the help of our specialized team of engineers, we provide our clients with technical support to assist them in improving their product's quality.

We are committed to innovative and creative product design to fulfill all architectural requirements. Our products can meet the most exacting engineering and technical standards while overcoming sophisticated design challenges.



**Machines & Aluminium Center**  
مركز ماكينات ومستلزمات الألومنيوم

The profiles shown in this catalogue are patented.

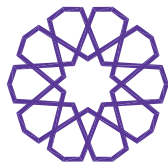
The items shown are the exclusive property of **MACHINES & ALUMINIUM CENTER** and may not be even partially reproduced without **MACHINES & ALUMINIUM CENTER** authorization.

The manufacturer reserves the right to modify the items in this catalog without advanced notice.

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## Materials

### *Aluminium Profiles:*

All aluminium profiles are made of EN AW 6063 alloy in accordance with EN 755-1 or EN 12020-1, condition T5, T6. The alloy is resistant to corrosion and permits the production of high precision profiles according to EN 755-9.

### *Gaskets:*

All rubber gaskets profiles are produced from ethylene-propylene rubber (EPDM) are used to seal infill units, window middle part in a hardness that suit its applications, ensuring condensate removal and frame-sash connection.

### *Accessories:*

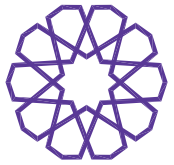
All systems are designed to use most of standard hardware. The hardware should be selected according to the minimum requirements mentioned in the system catalog.

### *Fixing elements:*

All the connectors and fasteners used for profiles, accessories and hardware connection should be made from galvanized steel or stainless steel.

### *Surface treatment:*

All exposed surfaces of the aluminium profiles is treated either by anodizing treatment (QUALANOD certified anodizing) or by electrostatic powder coating to meet international standards (QUALICOAT certified powder coating).



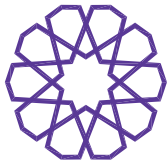
## Technical Features

- In all systems there are varieties available in types and dimensions.
- Tolerances in weights & dimensions are according to standard EN 755-9, EN 12020-2 or ANSI H35.2-5.
- The profiles provide a large range of infill types and measures, due to the availability of different profile types and a wide range of gaskets sizes.
- Glazing gaskets inside and outside of E.P.D.M. all-around, gasket profiles visually are in the same level inside and outside to enhance the gasket visibility.
- General compatibility of profiles, accessories and gaskets to hence fewer system accessories and reduced warehouse inventory.
- Charts are available for each system and its profiles indicate allowable panel /sash sizes and the right profile regarding the effective moment of inertia, wind load and window's type to guarantee resistance avoiding any deformation greater than allowable deflection 1/200 of window span according to European Standard hEN 14351-1

under load 500 Pascal up to 1000 Pascal, and up to 2000 Pascal for curtain wall according to EN 13830, charts are available also if requested with deflection (1/175 max 19mm.) of window/façade span according to American Standard) AAMA/WDMA/CSA 101/I.S.2.

- Water resistance is confirmed to International standards, water tightness performance varies according to window type and system design with no water penetration under pressure up to 600 Pascal for sliding types, and not less than 900 Pascal for hinged window types and façade types.

- Air permeability performance varies according to window type and system design, air permeability at pressure 100 Pascal is not greater than 2.25 cubic meter per hour per meter length of opening joint for sliding systems, and not greater than 0.75 cubic meter per hour of opening joint for hinged window types and not greater than 1.5 cubic meter per hour for each square meter of façade types.



## Powder Coating

ALWAN is one of the largest facilities in Egypt, in the field of electrostatic application of pure-polyester powder coatings as surface treatment, specifically designed to meet stringent requirements of the construction industry for architectural and industrial aluminum profiles.

We guarantee complete customer satisfaction on all our delivered products. Every production line has a fully equipped laboratory in order to meet all international quality specifications and standards as set by the QUALICOAT organization. The certifications of QUALICOAT  Quality Management ISO 9001 and Environmental Management ISO 14001, provide complete quality assurance. We ensure a full control over all the critical parameters concerning chemical

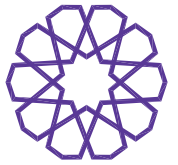
pretreatment and the use of enhanced chemical pretreatment process, with high etching degree, in accordance to QUALICOAT specifications, as well as a full control on the painting processes and polymerization during the whole surface treatment procedure. Therefore, through a unique blending system, stringent quality assurance and compliance to measures, consistent quality during the production process is guaranteed.

The application of the above-mentioned steps will assist along the line with the overall excellent properties and the longevity of the color, providing an attractive finish to the projects and building components by ensuring gloss retention, color stability and corrosion protection.

## Available Colors

In regards to the colors, they are available in RAL Gloss & RAL matt. The gloss affects how the eye perceives color so some slight variations in the finish may occur. In addition to that,

the coating provides a wide range of custom-made colors that gives a variety of effects, including metallic effects.



Most of the colors are available in standard durable and some are available in super durable, which complies with advanced levels of weather resistance, gloss and color retention, and corrosion resistance, when compared to the standard durable specification.

Color customization to our standard products may be available on a request basis, with unlimited options of powder coating. In this respect, Non-standard designs and applications can be reviewed to determine the feasibility on a project-specific basis.

## Warranty

The warranty is subject to terms and conditions based on the geographical location & when used on an architectural aluminum substrate.

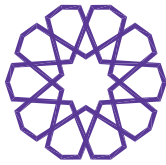
Standard Durable Class 1: Up to 10 years

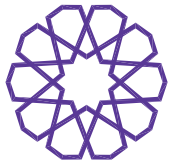
Super Durable Class 2: Up to 25 years

### Notes:

- As the products are very often used under conditions beyond supplier's control, we cannot guarantee anything but the quality of the product itself.
- It is expected that any fading and/or chalking and/or change in gloss retention, either uniform or non-uniform that a color will experience in the field will result in the falling within acceptable range as specified in the Qualicoat specification standards.

\*QUALICOAT is a quality label organization committed to maintaining and promoting the quality of lacquering, painting and coating on aluminum and its alloys, for architectural applications.








Interpon D Approved Applicator



### Series D1000

## MACHINES AND ALUMINIUM CENTER (Alwan)

213, 2<sup>nd</sup> industrial Zone, 6<sup>th</sup> of October City, Giza  
Egypt

Has fulfilled AkzoNobel's tests and inspection regarding the pre-treatment, application, quality management standards and procedures, and complies with the requirements of the Architectural Range Approved Applicator schedule.

This certificate is effective from  
**12<sup>th</sup> October 2022 to 11<sup>th</sup> October 2023**

Approved for Aluminium Alloys: AA6060  
Approved for Pre-treatment Type: Chrome

  
**AKZO NOBEL**  
 Powder Coatings SAE  
 Industrial Zone No.4  
 6<sup>th</sup> of October City, Egypt  
 Tel: +2028331415 - 8335028  
 Fax: +20235330369

Wael Mahmoud  
Sales and Marketing Manager  
North Africa & Levant

12/10/2022  
AkzoNobel Industrial Paints




Interpon D Approved Applicator



### Series D2000

## MACHINES AND ALUMINIUM CENTER (Alwan)

213, 2<sup>nd</sup> industrial Zone, 6<sup>th</sup> of October City, Giza  
Egypt

Has fulfilled AkzoNobel's tests and inspection regarding the pre-treatment, application, quality management standards and procedures, and complies with the requirements of the Architectural Range Approved Applicator schedule.

This certificate is effective from  
**12<sup>th</sup> October 2022 to 11<sup>th</sup> October 2023**

Approved for Aluminium Alloys: AA6060  
Approved for Pre-treatment Type: Chrome

  
**AKZO NOBEL**  
 Powder Coatings SAE  
 Industrial Zone No.4  
 6<sup>th</sup> of October City, Egypt  
 Tel: +2028331415 - 8335028  
 Fax: +20235330369

Wael Mahmoud  
Sales and Marketing Manager  
North Africa & Levant

12/10/2022  
AkzoNobel Industrial Paints



## Certificate of Approval

### Machines & Aluminium Center (ALWAN)

**is certified as an Approved Applicator to coat**  
**Jotun SuperDurable**  
a product from Jotun Powder Coatings

This Company fulfils the requirements set by Jotun Powder Coatings for pre-treatment and application of powder coatings. These include having the necessary equipment, process controls and technical knowledge to comply with Jotun Powder Coatings' standards.

  
**December 31, 2025**  
(Certificate valid until above date)

  
 Authorised Signatory  
**Jotun Powder Coatings UAE (LLC)**



## Certificate of Approval

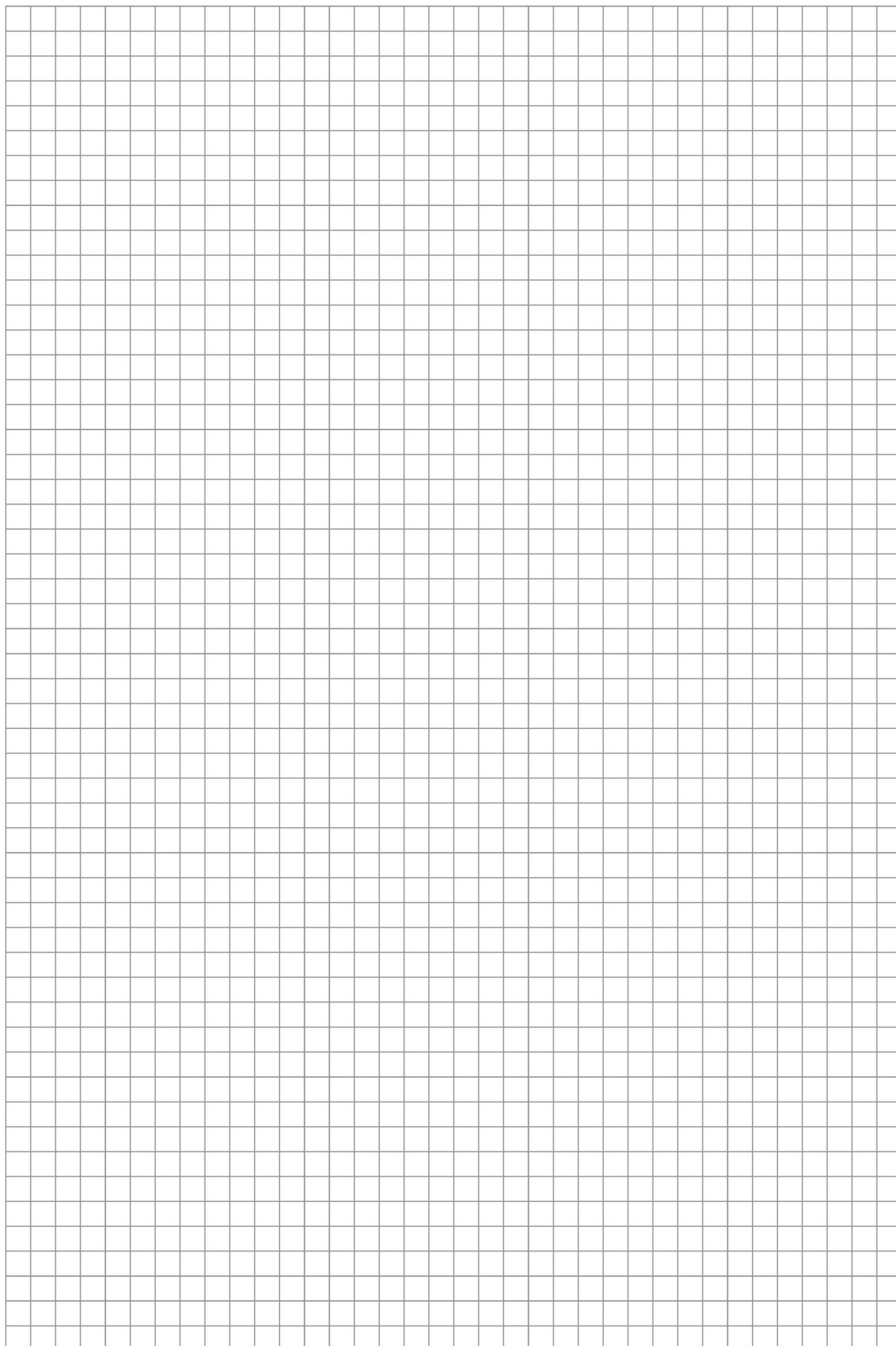
### Machines & Aluminium Center (ALWAN)

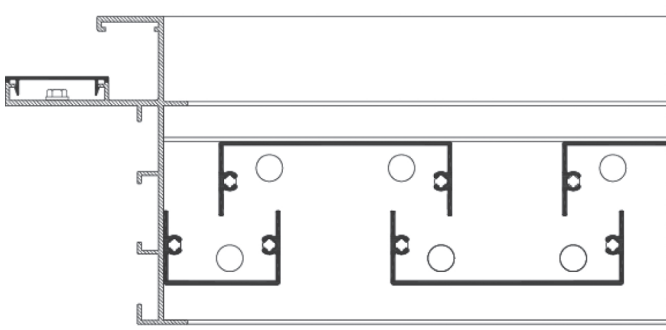
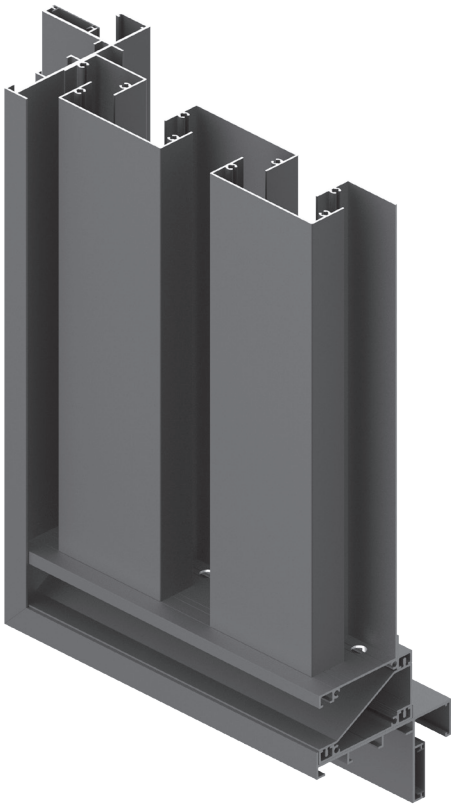
**is certified as an Approved Applicator to coat**  
**Jotun Durasol**  
a product from Jotun Powder Coatings

This Company fulfils the requirements set by Jotun Powder Coatings for pre-treatment and application of powder coatings. These include having the necessary equipment, process controls and technical knowledge to comply with Jotun Powder Coatings' standards.

  
**December 31, 2025**  
(Certificate valid until above date)

  
 Authorised Signatory  
**Jotun Powder Coatings UAE (LLC)**





### OPTIONS:

- Bird Screen, Fly screen (mesh size on request)
- Anti-dust filter cassette.

- Pre-filtration Media for airborne sand, allow air to pass through it while keeping out unwanted elements such as sand, water, and dirt.
- Architectural (STATIC) ventilation device integrated in the building envelope.
- Suitable for both industrial and commercial ventilation applications.
- Self-cleaning base through which the filtered sand is drained out easily.
- Symmetric louvre when the multiple is even or odd.
- Concealed assembly screws.

## Technical Characteristics

### Dimension Frame

56 mm. to 124 mm.

### Dimension Blade

44 mm. to 88 mm.

### Blade Pitch - Blade 60

85 mm.

### Blade Pitch - Blade 88

130 mm.

### Blade Type

Vertical blade

### Max Dimensions

2000 mm. X 1300 mm.

### Physical Free Area

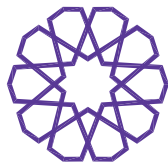
32%










### Airflow

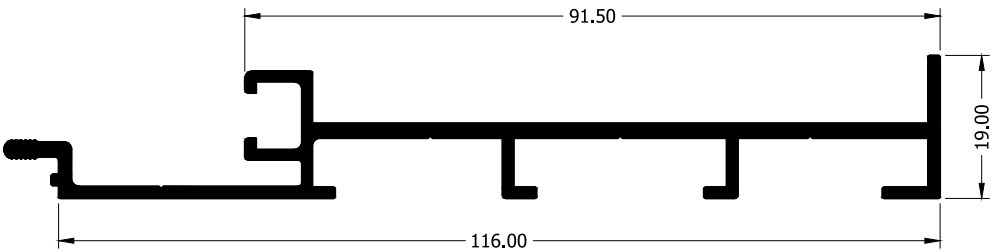
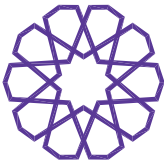
EN 13030

### Filtration Efficiency

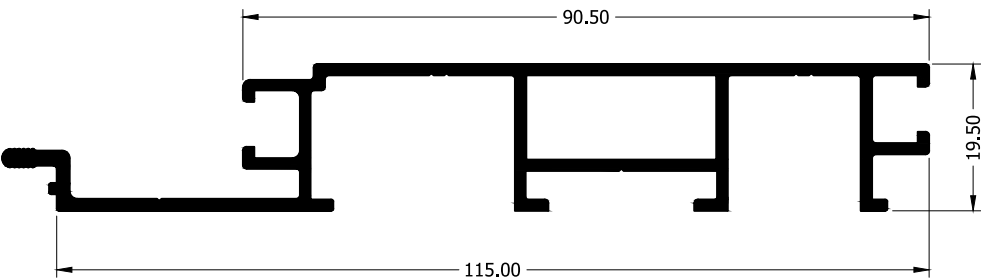
EN 13181



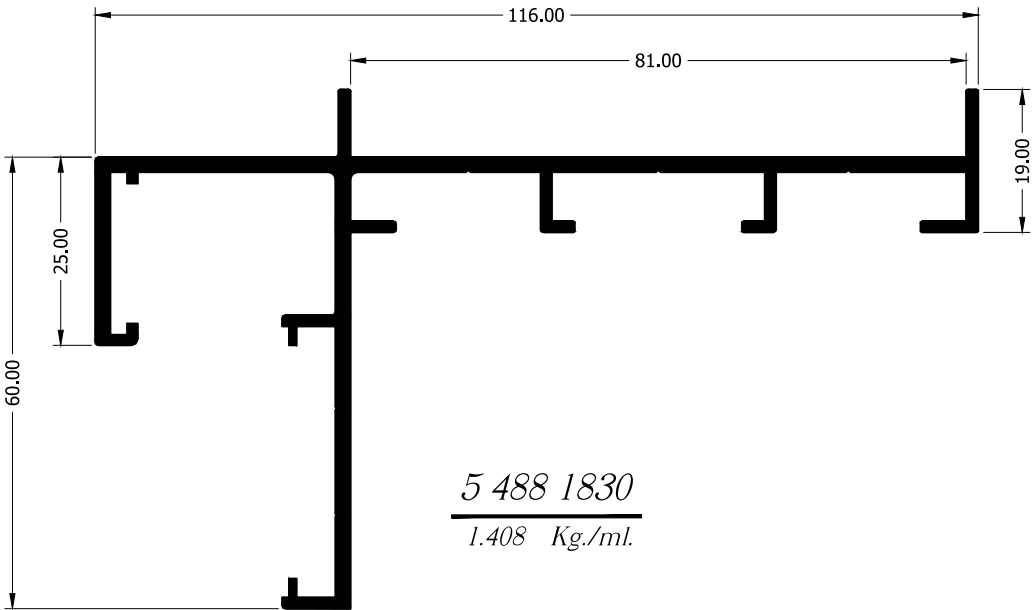
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					Ix	Iy	
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	5 4881520	Frame Profile	1.088	457	2.00	48.94	13
	5 4881830	Frame Profile	1.408	566	14.52	63.47	13
	5 4883181	Ending Profile	0.614	282	0.40	16.06	14
	5 4883280	Ending Profile	0.615	306	3.24	16.07	14
	5 4883985	Transom Profile	0.997	282	17.44	42.30	14
	5 4884841	Slat Profile	0.482	241	1.30	5.73	14
	5 4884861	Slat Profile	0.517	284	1.53	11.35	14
	5 4884881	Slat Profile	0.660	329	1.68	28.65	14



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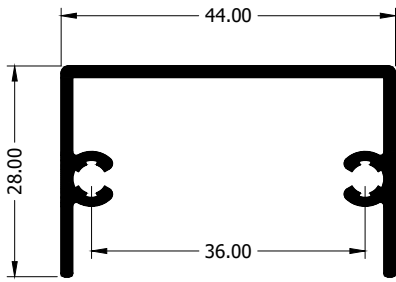
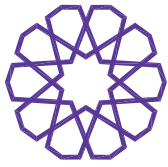


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1.088 Kg./ml.

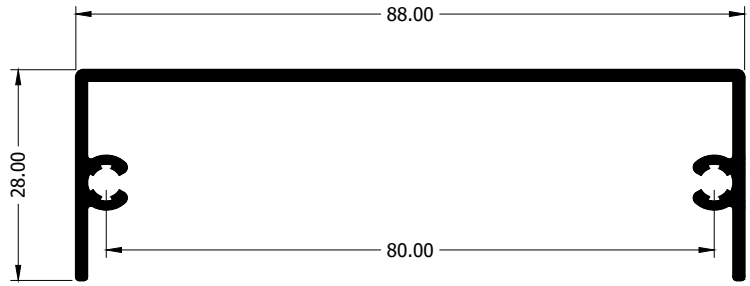


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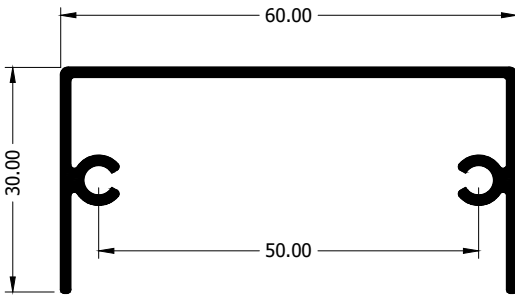
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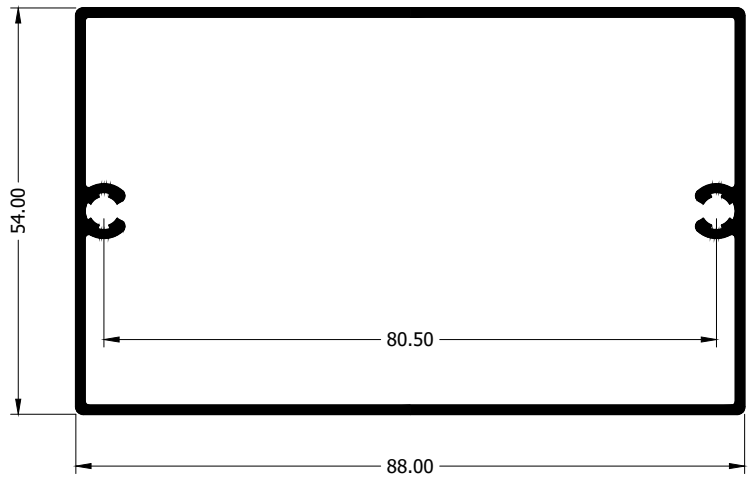
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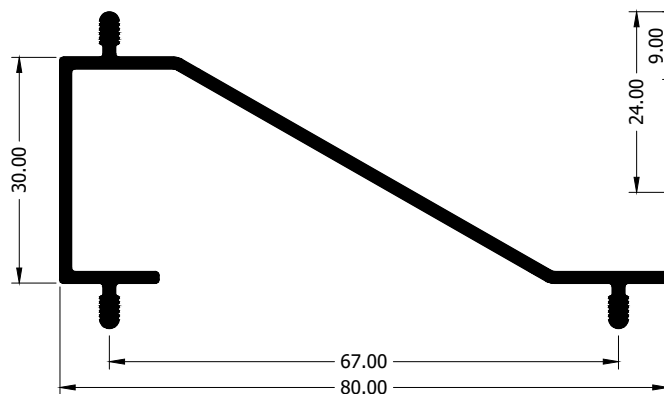
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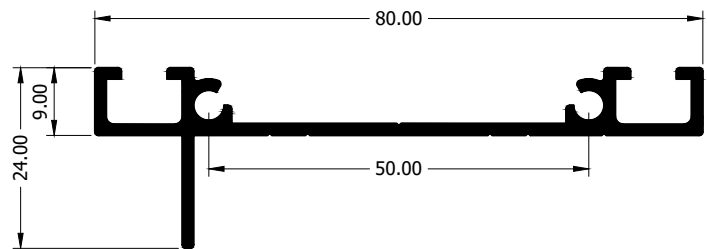
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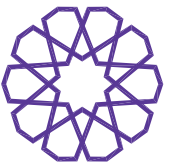
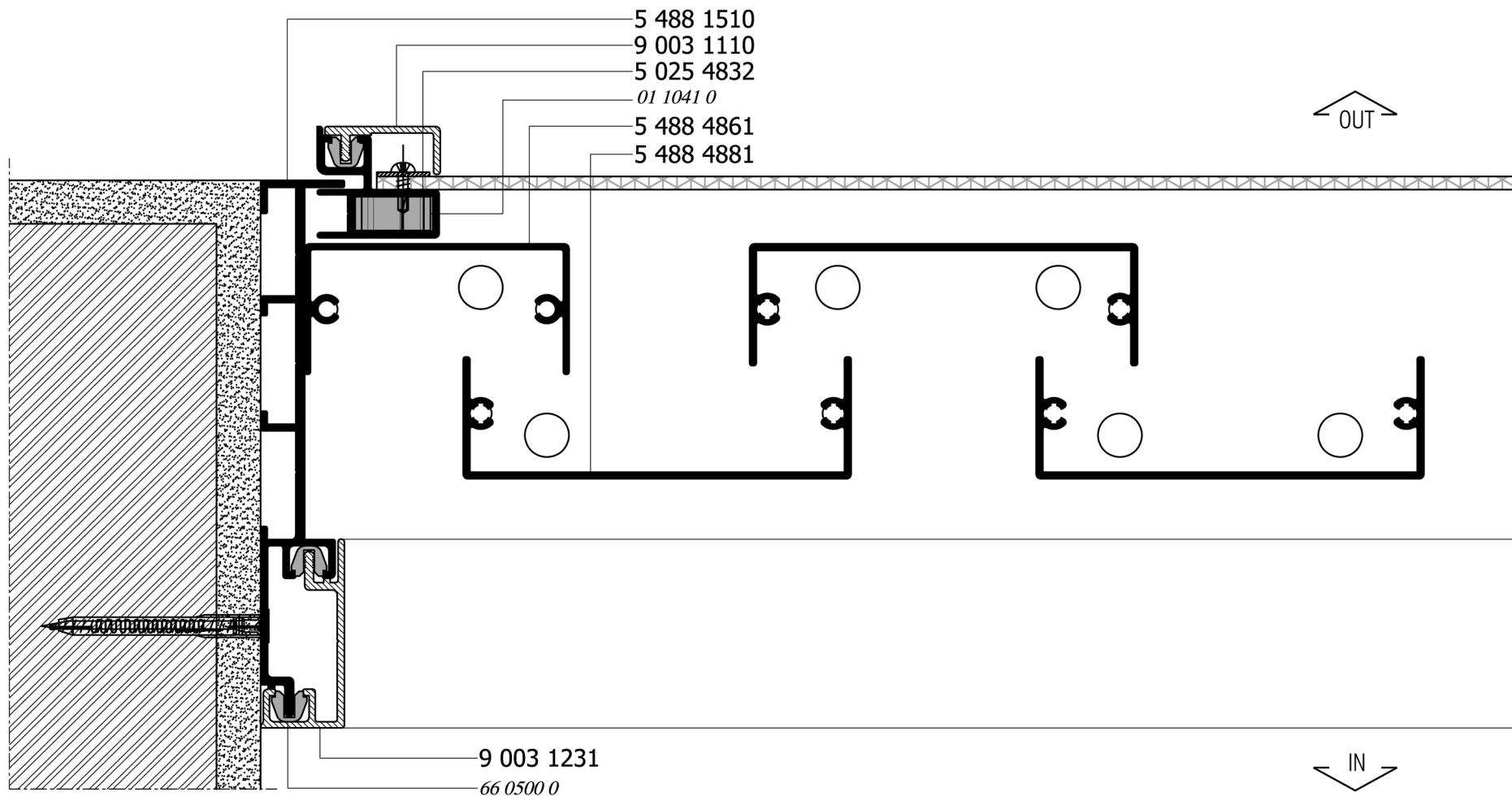
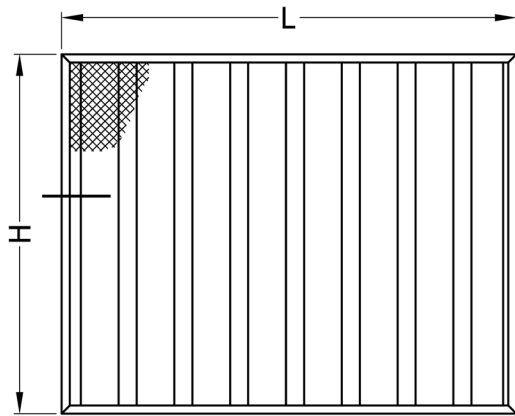


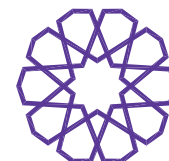
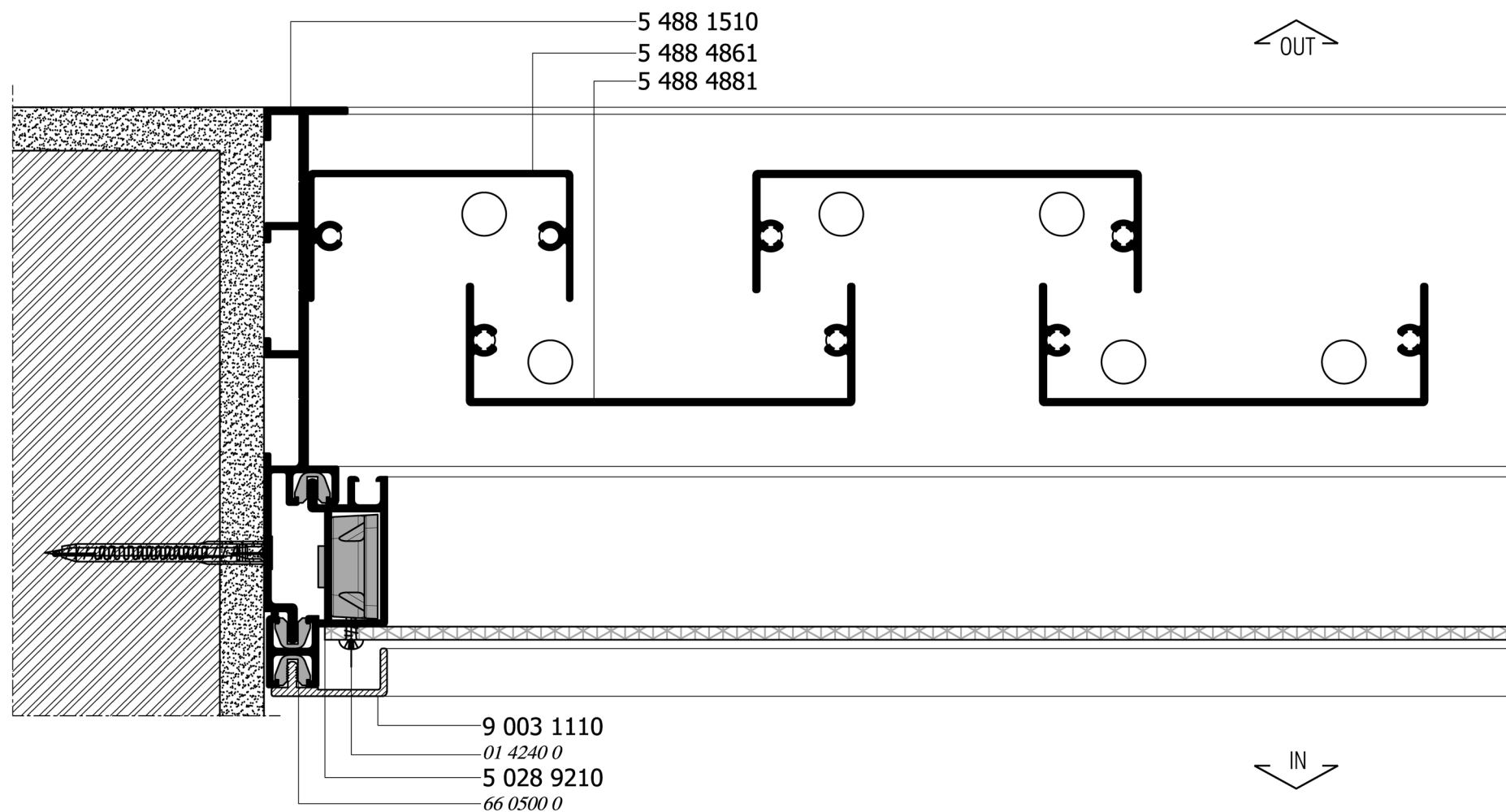
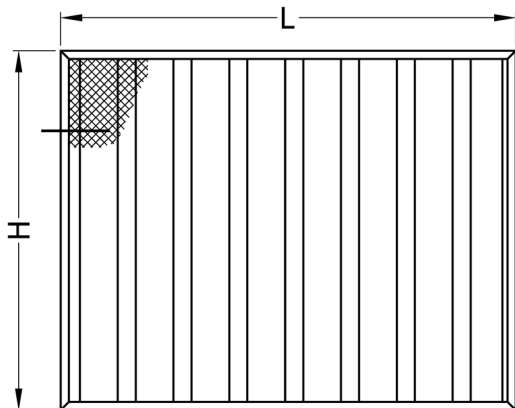
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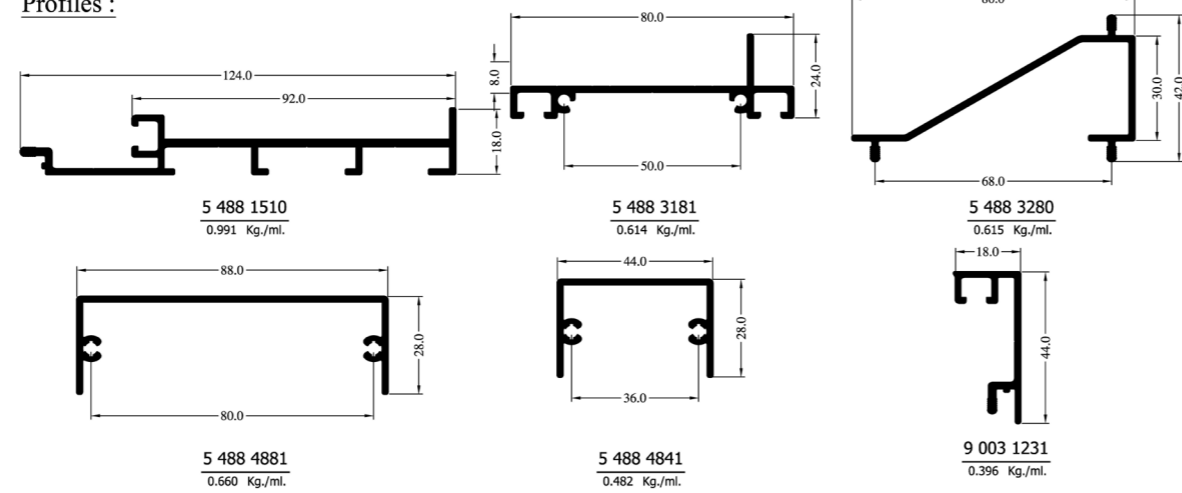
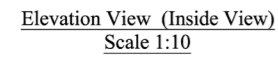


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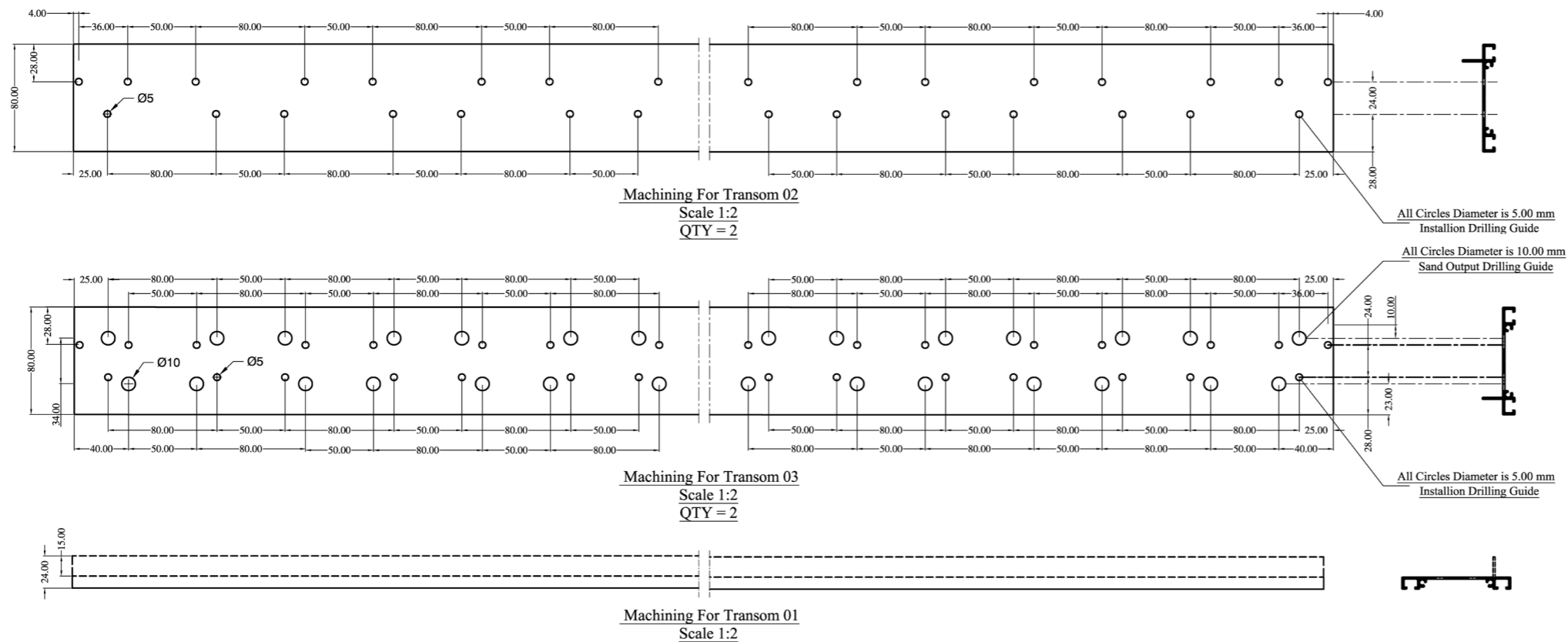
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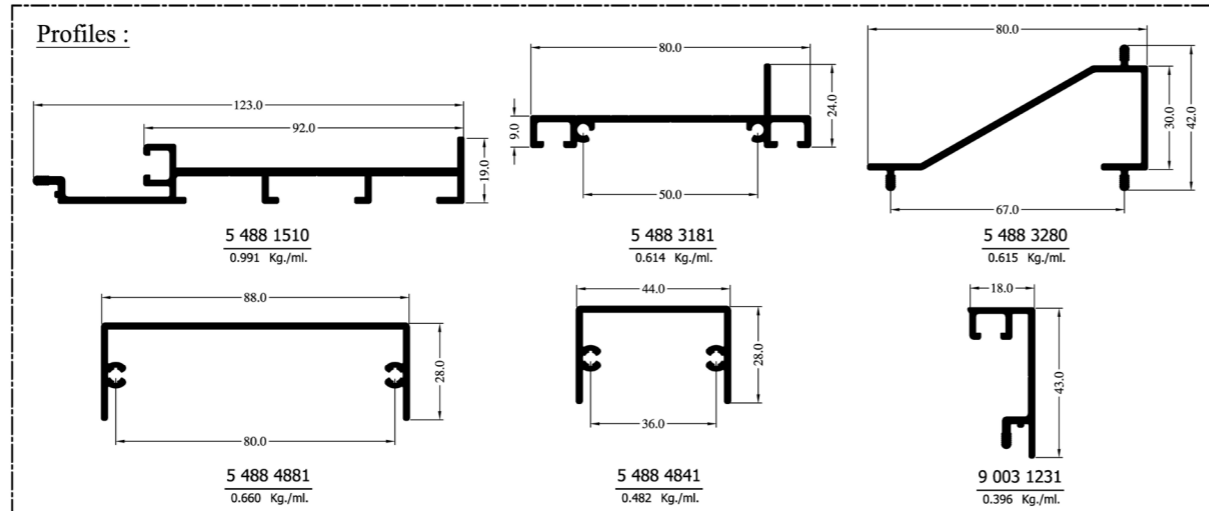
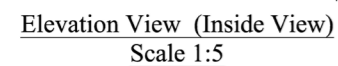














ALL DIMENSIONS IN mm.

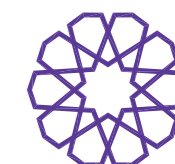
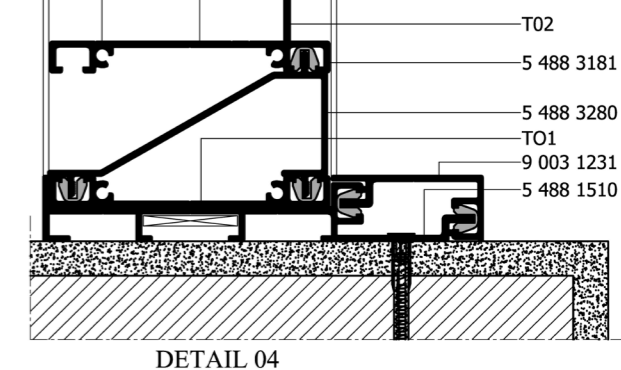
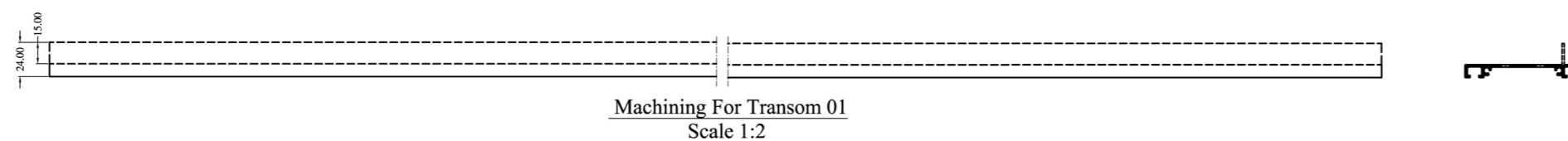
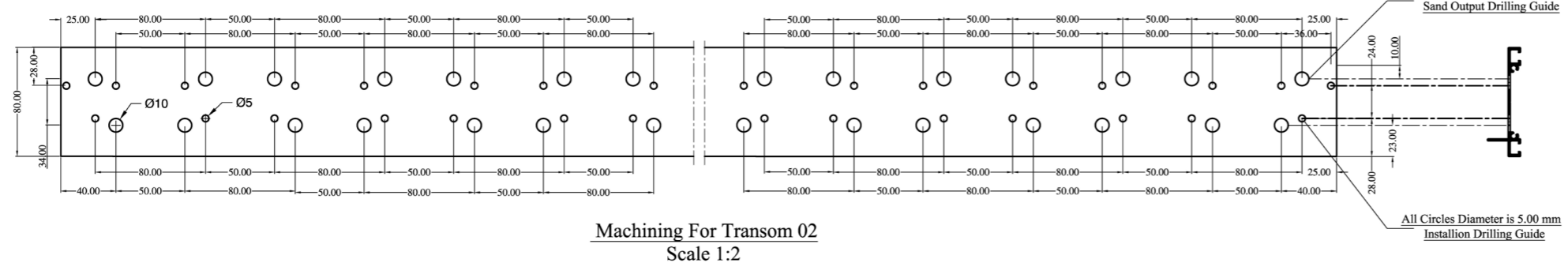
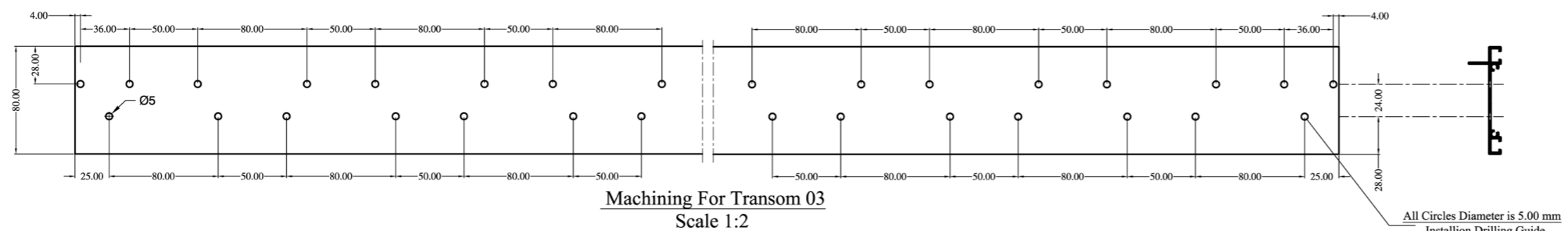
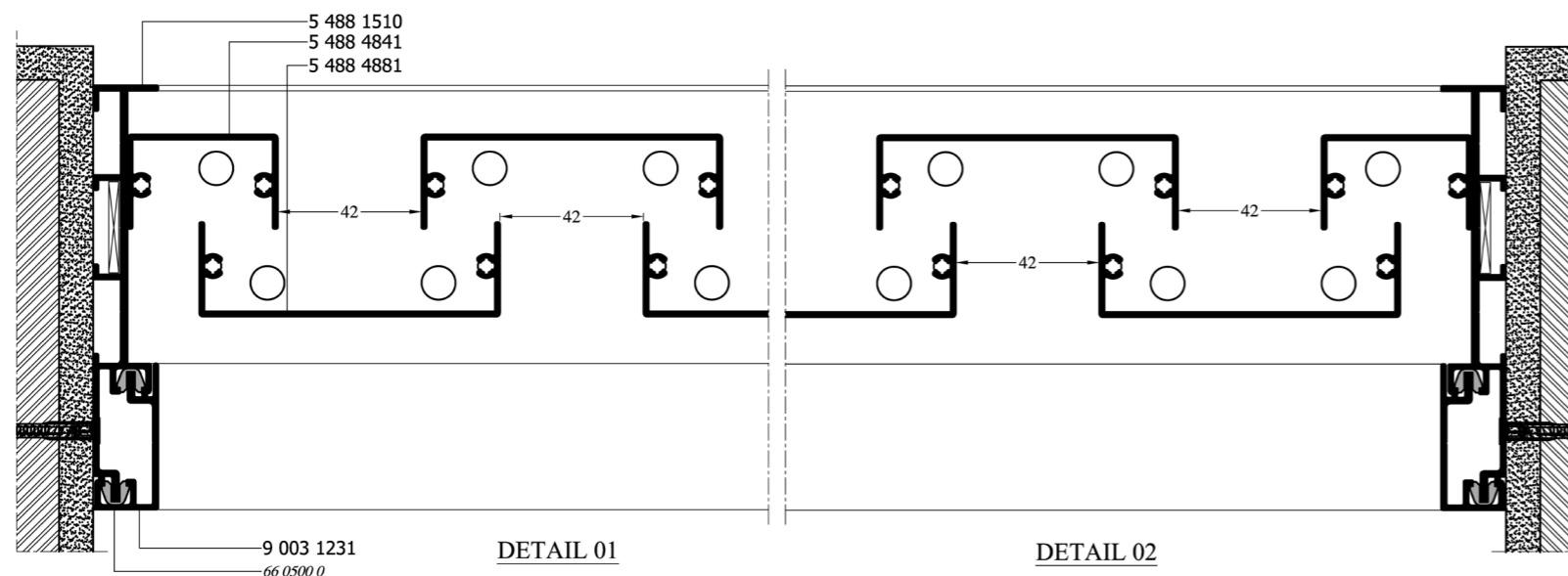
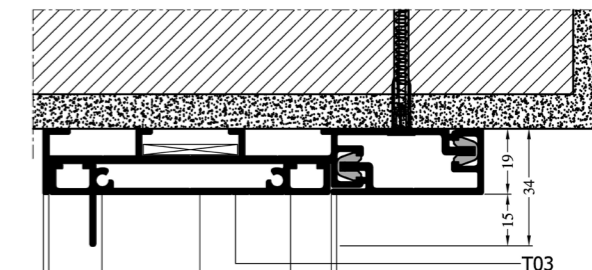




PROFILES CUTTING LIST			
FIGURE	PROF. NO	QTY.	CUTTING LENGTH
	5 488 1510	2	L
		2	H
	5 488 3181	3	L - 20
	5 488 3280	1	L - 20
	5 488 4881	$2 \left( \frac{L-20}{130} \right) - 1$	H - 77
	5 488 4841	2	H - 77
	9 003 1231	2	L
		2	H

ALL DIMENSIONS IN mm.

ACCESSORIES LIST			
FIGURE	ACC. NO	QTY.	DESCRIPTION
	60 0500 0	$\frac{7L + 4H}{250}$	Clip
	Aluminium Angle (5" x 27 mm)	4	Alignment Angle



All profiles are registered as the property of

**Machines & Aluminium Center -2026**

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Tel: 20 (2) 33363658 - 33363657 - 33360568+ Fax: +20 (2) 33356237

Email: [info@machalum.com](mailto:info@machalum.com)