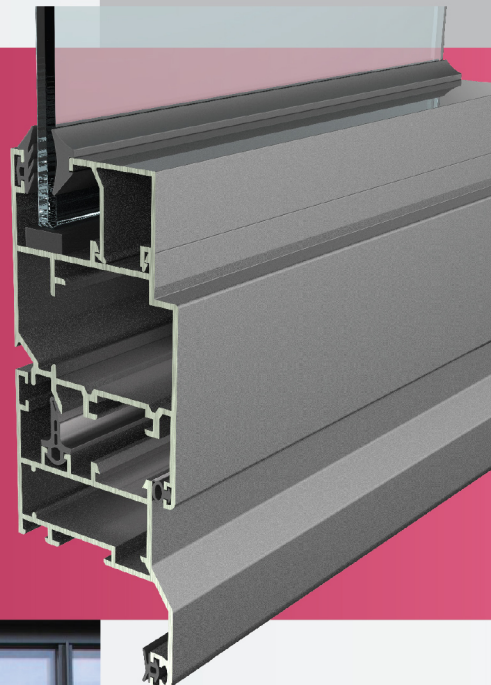




Machines & Aluminium Center
مركز ماكينات ومستلزمات الألومنيوم

SONATA 45

Hinged 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.

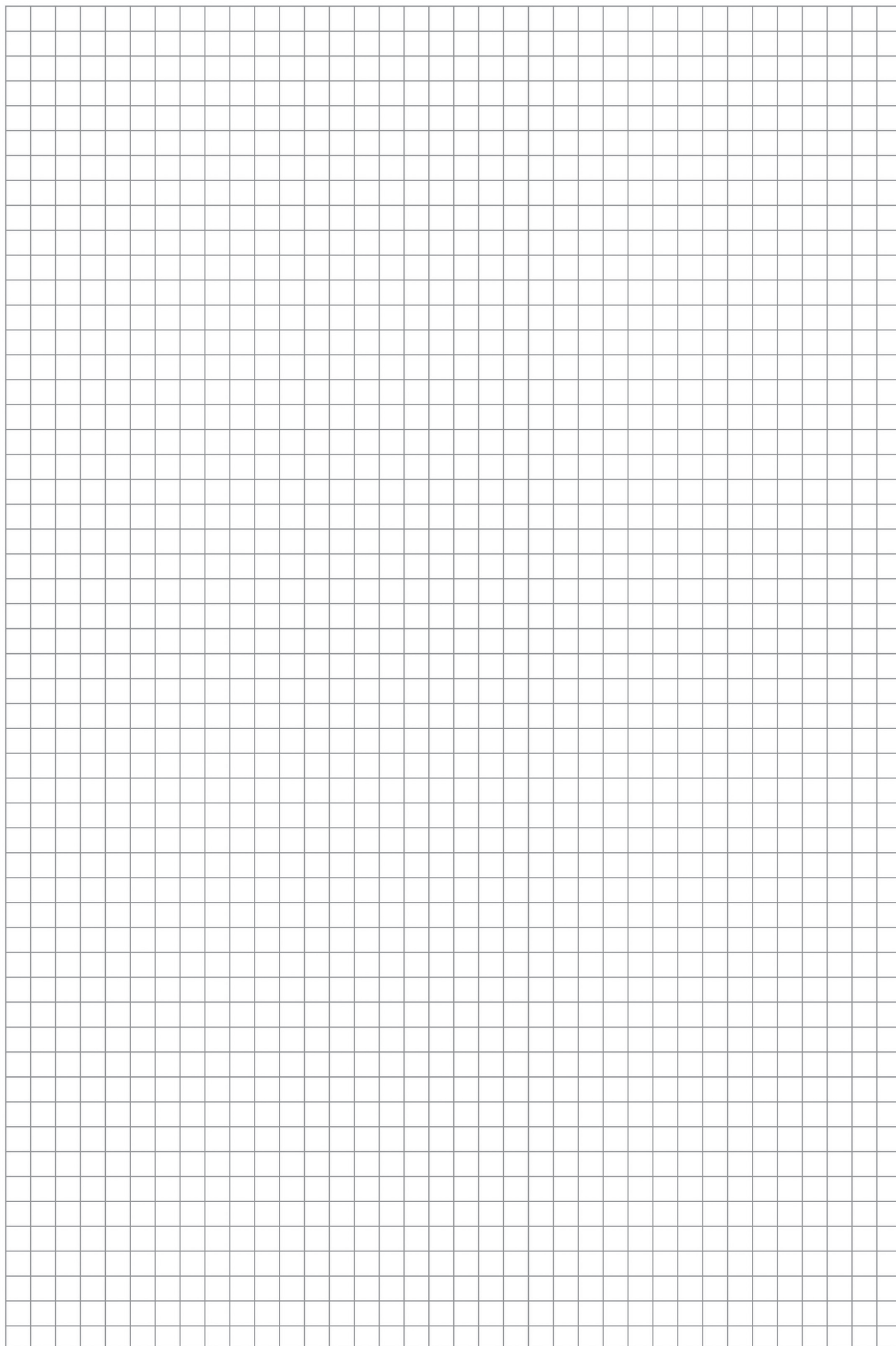
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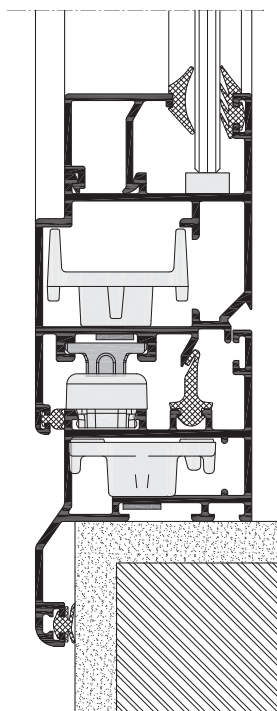
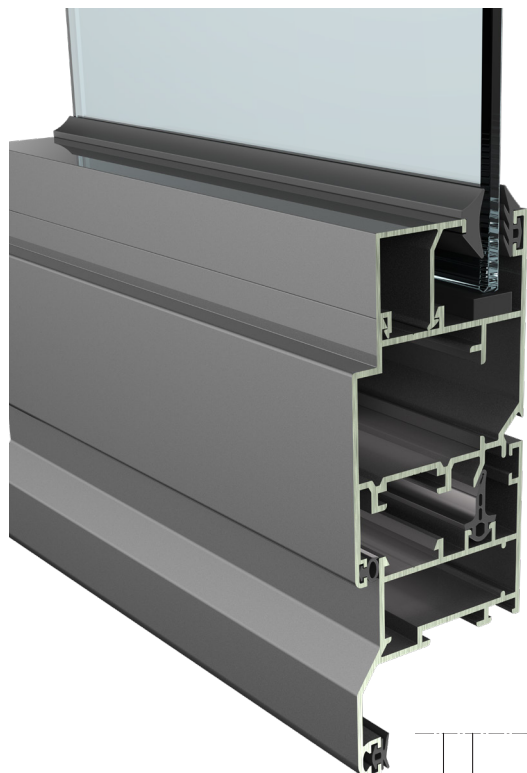
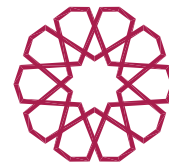
The manufacturer reserves the right to modify the items in this catalog without advanced notice.

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**Complies with European norm
hEN 1435-1**

Air Permeability	(Class 4) up to 600 pa.
Water Tightness	(Class E900) up to 900 pa.
Resistance to wind load	(Class C4) up to 1600 pa.

- Wide variety of frames and sashes in design and aesthetic shapes that match the architectural trends while offering a full range of accessories for various types of openings.
- Offers a solution for every standard application for inward and outward opening windows and flush doors.
- Offers integrated inward or outward hinged doors solution with facade systems adding an aesthetic value to the glass facades.
- Used for doors and windows with medium to large openings.

Technical Characteristics

Frame Depth

45 mm. to 154 mm.

Frame Height

46 mm. to 116 mm.

Sash Depth

46 mm. to 52 mm.

Sash Height

64 mm. to 100 mm.

Max Glass Thickness

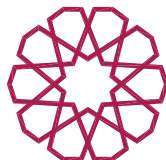
Up to 44 mm.

Max Sash Weight

Up to 160 kg.

Sealing Type

EPDM gasket with central gasket



EUROPEAN CERTIFYING ORGANIZATION S.p.A.
NOTIFIED TESTING LABORATORY N. 0714
FOR REGULATION (EU) No 305/2011
CLASSIFICATION ASSESSMENT
N. 0714-CPR-1288 DATED AUGUST, 05 2015

In compliance with Regulation (EU) No. 305/2011 of the European Parliament and of the Council of 9 March 2011, that replaces Council Directive 89/106/EEC and lays down conditions for the placing or making available on the market of construction products by establishing harmonised rules on how to express their performance in relation to their essential characteristics and taking account of the horizontal legal framework for the marketing of products in the internal market, established by Regulation (EC) No. 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products, as well as by Decision No. 768/2008/EC of the European Parliament and of the Council of 9 July 2008 on a common framework for the marketing of products,

and in compliance with hEN 14351-1:2006 - A1:2010 Windows and doors - Product standard, performance characteristics - Part 1: Windows and external pedestrian doorsets without resistance to fire and/or smoke leakage characteristics, which is currently in force,

European Certifying Organization S.p.A., notified laboratory NB 0714, carried out the following:

type-testing

for the determination of the essential characteristics

Air Permeability - Water tightness - Resistance to Wind Load

on the below mentioned external pedestrian doorset without resistance to fire and/or smoke leakage characteristics

In compliance with EN 12207:1999, EN 12208:1999, EN 12210:1999 - Classification,

EN 1026:2000, EN 1027:2000, EN 12211:2000 - Tests and calculations

System of assessment and verification of constancy of performance 3

The specimen, as provided by the Manufacturer, was identified as follows:

DESCRIPTION OF THE PRODUCT

Type: Single hinged window, inward opening.
Model: SONATA 45
Width = 800 mm, Height = 1,200 mm, Thickness = 53 mm
Fabrication number: -
Date of fabrication: 2015

PRODUCED IN THE FACTORY

Name: MACHINES & ALUMINIUM CENTER
Address: 122, MOHIY AL-DIN ABU AL-EZZ ST., DOKKI - GIZA - EGYPT

PLACED ON THE MARKET BY

Name: MACHINES & ALUMINIUM CENTER
Address: 122, MOHIY AL-DIN ABU AL-EZZ ST., DOKKI - GIZA - EGYPT

Taking into account the documentation submitted by the Manufacturer and on the basis of the results of the type-testing carried out, as described in the laboratory report ECO CP0025/1, dated August, 05 2015, in accordance with Annex ZA of hEN 14351-1:2006 - A1:2010 and with the EN 12207:1999, EN 12208:1999 and EN 12210:1999 classification, to the specimen, as previously identified,

THE FOLLOWING CLASSIFICATION IS AWARDED

AIR PERMEABILITY:	CLASS 4
WATERTIGHTNESS:	CLASS E900
RESISTANCE TO WIND LOAD:	CLASS C4

The results refer only to the specimen that has been provided by the Manufacturer and submitted to type-testing listed above.
This classification assessment consists of 1 page and its reproduction is permitted in full only.

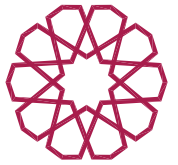
Faenza, August, 05, 2015

The undersigned ECO Certificazioni S.p.A. Director

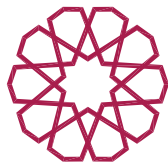
Eng. Gianluca Cammilleri Mengolina, 13
FAENZA (RA)

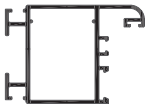
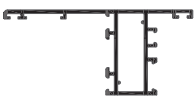
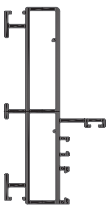
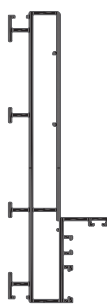


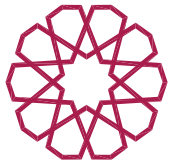
ECO Certificazioni S.p.A. - Via Mengolina, 33
48018 Faenza (RA) - ITALY
Tel.: +39 0546 824911 - Fax +39 0546 824922
E-mail: info@eco-cert.it - www.ecocertificazioni.eu

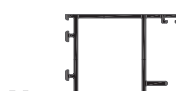
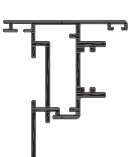
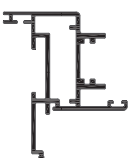
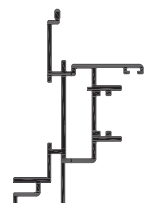
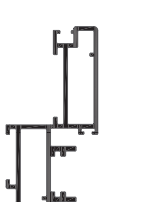
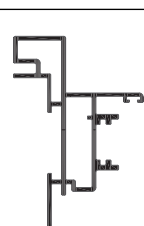


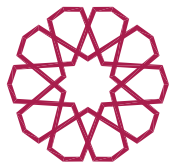
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	10451132	Frame Profile	1.040	390	13.93	11.91	18
	10451138	Frame Profile	1.015	374	13.09	10.98	18
	10451150	Frame Profile	1.099	430	12.49	21.80	18
	10451152	Frame Profile	1.158	440	16.78	26.17	18
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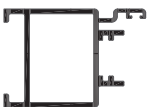
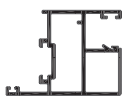
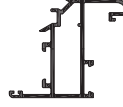
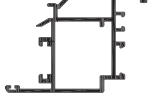
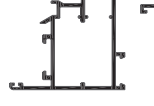
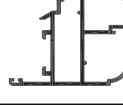
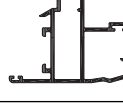
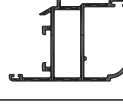
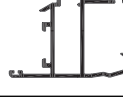


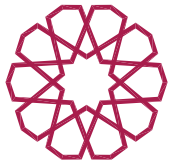
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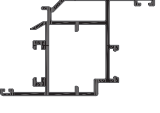
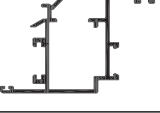
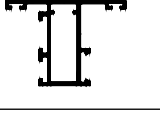
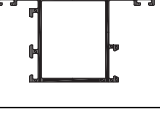
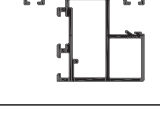
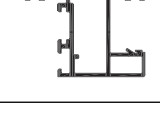
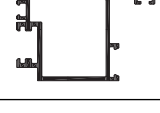
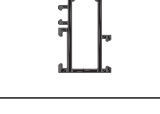
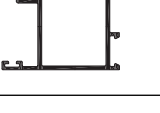
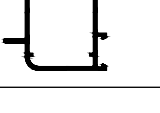


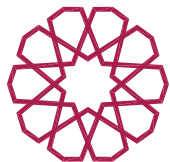
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	10453619	Frame Profile	1.835	525	63.12	16.94	26
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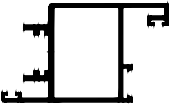
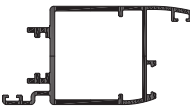
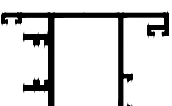
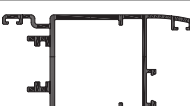
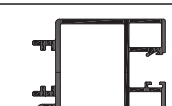
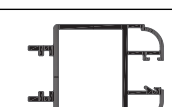
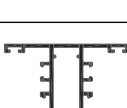
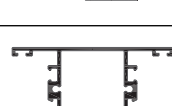
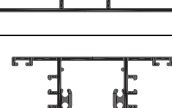
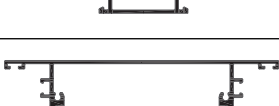


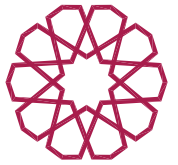
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	10454112	Leaf Profile	0.986	357	12.94	7.52	28
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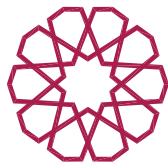
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	10454220	Leaf Profile	1.064	363	12.21	17.54	31
	10454240	Leaf Profile	1.129	351	11.30	11.77	32
	10454250	Leaf Profile	1.090	351	11.67	10.72	32
	10454320	Leaf Profile	1.438	451	19.38	29.53	32
	10454370	Leaf Profile	0.918	336	9.15	6.72	32
	10454610	Leaf Profile	1.080	329	12.97	17.34	33
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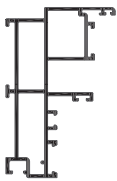


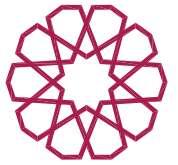
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	10454764	Leaf Profile	1.639	434	23.00	42.27	34
	10454790	Leaf Profile	1.778	413	23.42	38.67	35
	10454793	Leaf Profile	1.754	416	22.13	36.66	35
	10454810	Leaf Profile	1.086	323	12.92	16.08	35
	10454820	Leaf Profile	1.491	359	17.29	33.51	35
	10455010	Transom Profile	0.926	354	6.81	8.90	36
	10455020	Transom Profile	1.144	373	11.54	19.14	36
	10455030	Transom Profile	1.785	492	22.11	116.14	37
	10455120	Transom Profile	1.242	393	12.03	19.30	36
	10455130	Transom Profile	1.890	512	21.97	123.61	37

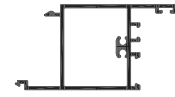
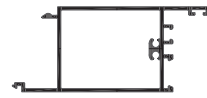
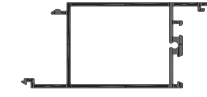


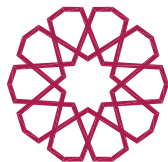
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					Ix	Iy	
	10455140	Transom Profile	2.163	572	27.62	222.27	38
	10455170	Transom Profile	1.204	355	9.29	17.71	38
	10455190	Transom Profile	1.204	355	14.79	10.39	38
	10455330	Bottom Rail Profile	1.987	549	143.19	24.28	39
	10455340	Bottom Rail Profile	2.268	609	250.72	29.89	39
	10455520	Transom Profile	1.768	469	47.79	29.84	36
	10456110	Glass Beading Profile	0.289	173	1.02	0.68	40
	10456130	Glass Beading Profile	0.270	163	0.75	0.65	40
	10456140	Glass Beading Profile	0.262	159	0.64	0.62	40
	10456142	Glass Beading Profile	0.246	148	0.55	0.56	40
	10456145	Glass Beading Profile	0.240	145	0.44	0.56	40

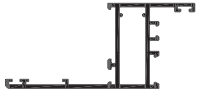
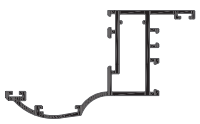
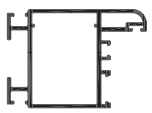
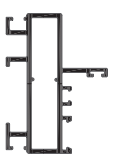
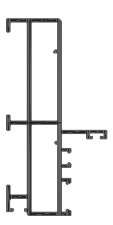
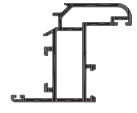
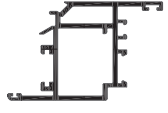
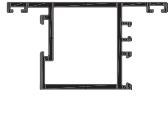


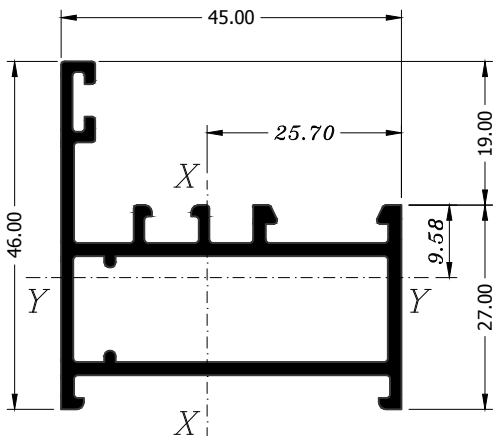
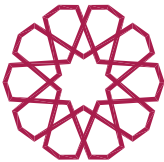
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					Ix	Iy	
	10456160	Glass Beading Profile	0.251	152	0.40	0.59	40
	10456180	Glass Beading Profile	0.211	138	0.28	0.51	40
	10456182	Glass Beading Profile	0.206	126	0.24	0.42	40
	10456290	Glass Beading Profile	0.227	118	0.17	0.58	40
	10456292	Glass Beading Profile	0.186	91	0.16	0.38	40
	10457181	Frame Profile	1.515	502	44.88	12.04	27
	10459010	Insert Profile	0.116	84	0.30	0.02	41
	10459110	Insert Profile	0.540	242	4.78	1.01	41
	10459120	Insert Profile	0.356	187	0.46	1.20	41
	10459140	Insert Profile	0.629	239	5.20	1.04	41
	10459210	Insert Profile	0.221	102	0.89	0.06	41
	10459240	Insert Profile	1.031	283	10.85	4.97	41



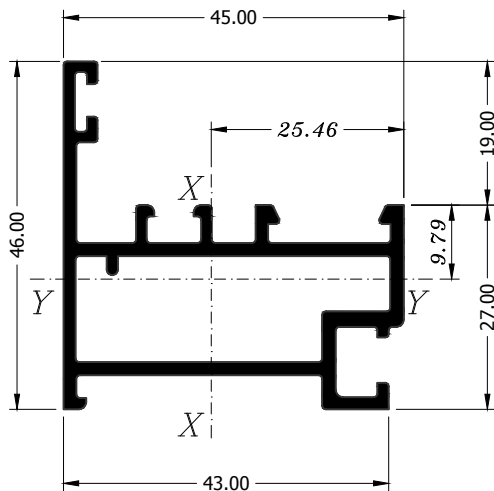
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					Ix	Iy	
	10459410	Insert Profile	0.824	285	7.64	5.29	42
	10459420	Insert Profile	0.807	282	7.52	5.23	42
	10459430	Insert Profile	0.540	278	4.97	2.03	41
	10459440	Insert Profile	0.541	260	3.68	0.58	41
	10459510	Insert Profile	1.045	345	11.99	17.10	42
	10459520	Insert Profile	1.242	387	14.74	34.62	42
	10459521	Insert Profile	1.199	379	14.69	34.63	42
	10459570	Insert Profile	0.359	177	2.18	0.10	43
	10459610	Insert Profile	0.853	310	8.32	5.14	43
	10459620	Insert Profile	0.670	199	5.09	2.24	43
	10459630	Insert Profile	0.902	268	7.06	3.80	43
	10459810	Insert Profile	0.591	174	3.60	0.50	43
	10459910	Control Rod	0.146	48	0.19	0.01	43



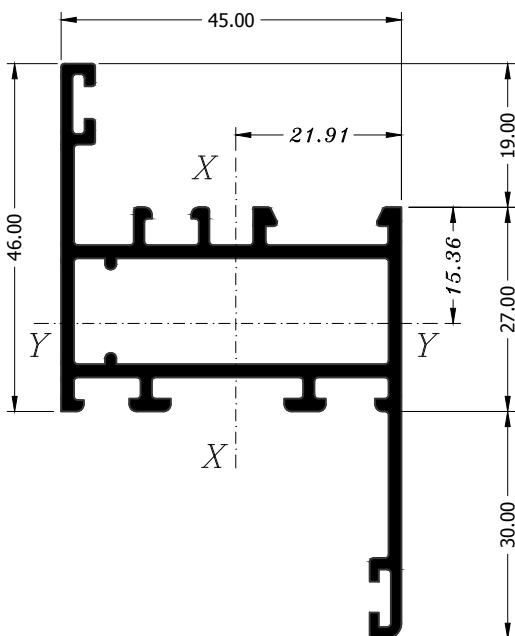
Section	Profile no.	Description	Weight kg/m	Perimeter mm	Inertia		Page No.
					I _x	I _y	
	10459920	Control Rod	0.113	41	0.09	0.00	43
	80451150	Frame Profile	1.215	418	13.70	24.91	44
	80451152	Frame Profile	1.353	433	19.42	28.82	44
	80451420	Frame Profile	1.123	346	12.83	8.35	44
	80451520	Frame Profile	1.311	387	17.78	23.42	44
	80452072	Frame Profile	1.506	417	30.01	8.51	45
	80452101	Frame Profile	1.833	444	68.70	7.67	45
	80454010	Leaf Profile	1.156	328	12.41	8.00	45
	80454112	Leaf Profile	1.046	321	13.15	7.87	46
	80454121	Leaf Profile	1.601	397	20.88	20.13	46
	80454122	Leaf Profile	1.280	354	17.10	18.13	46
	80454280	Leaf Profile	1.336	356	12.21	17.54	46



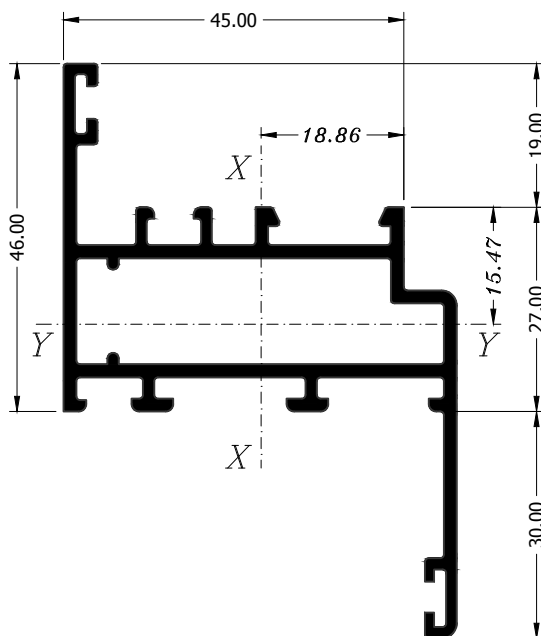
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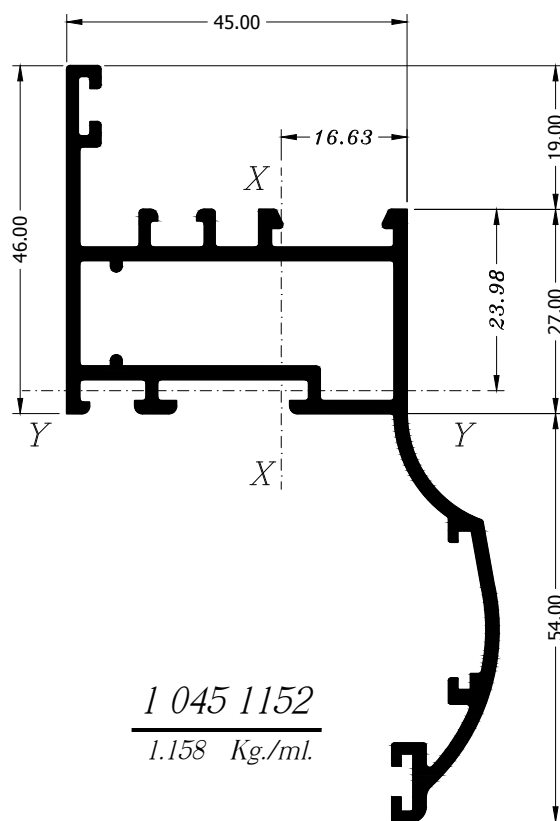
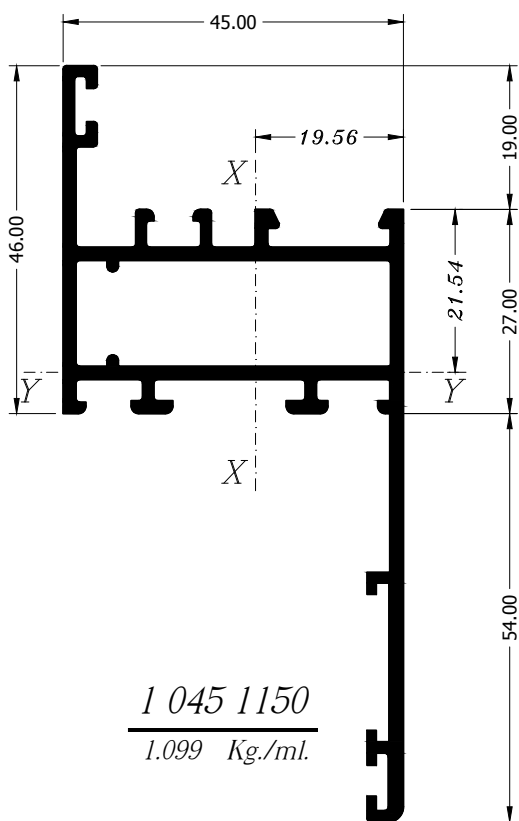
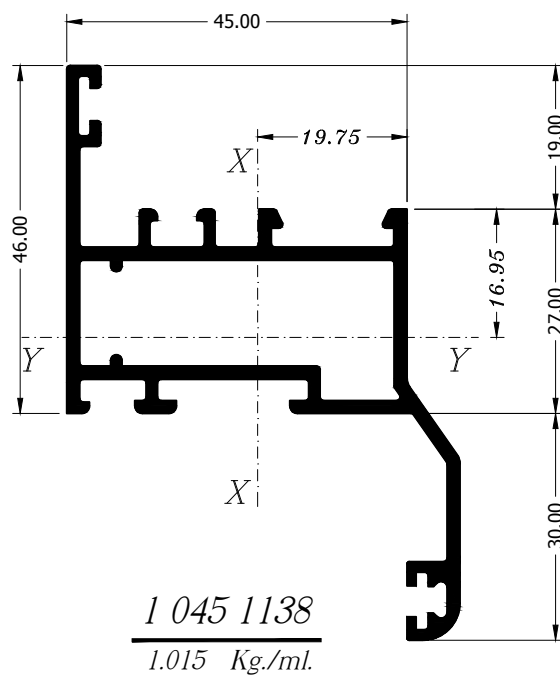
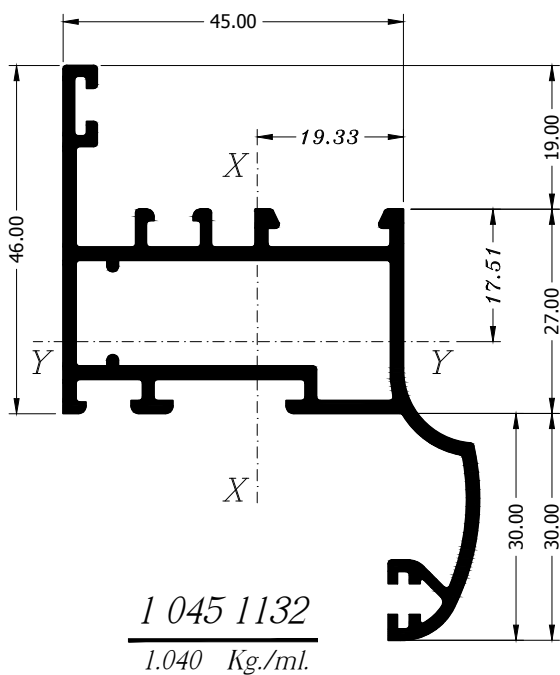
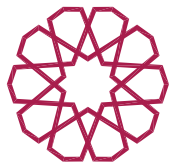
1 045 1110
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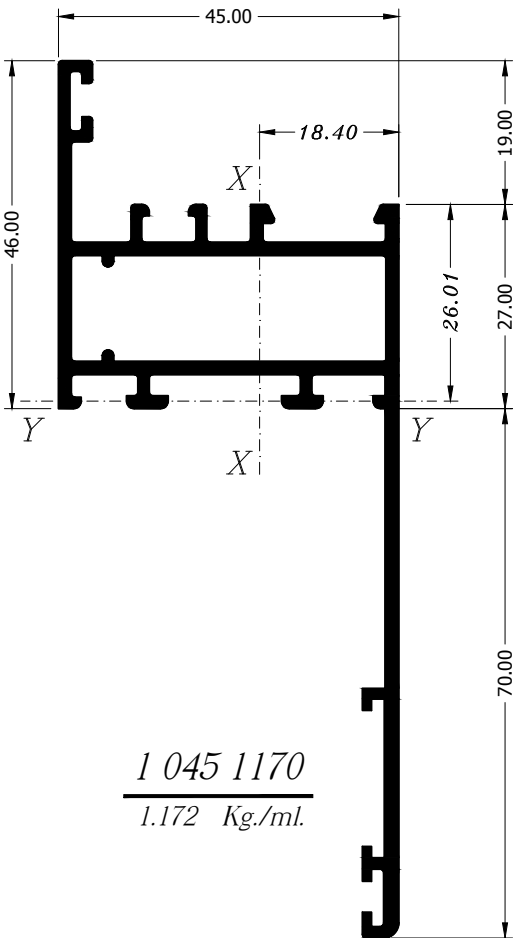
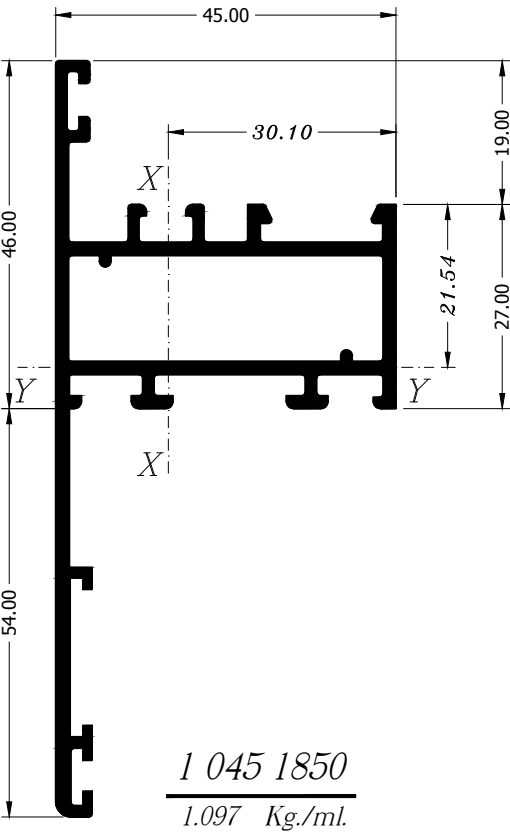
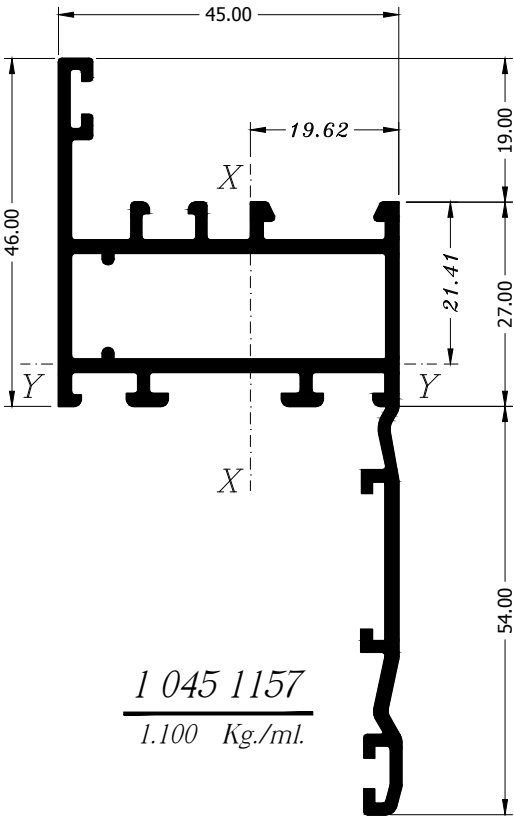
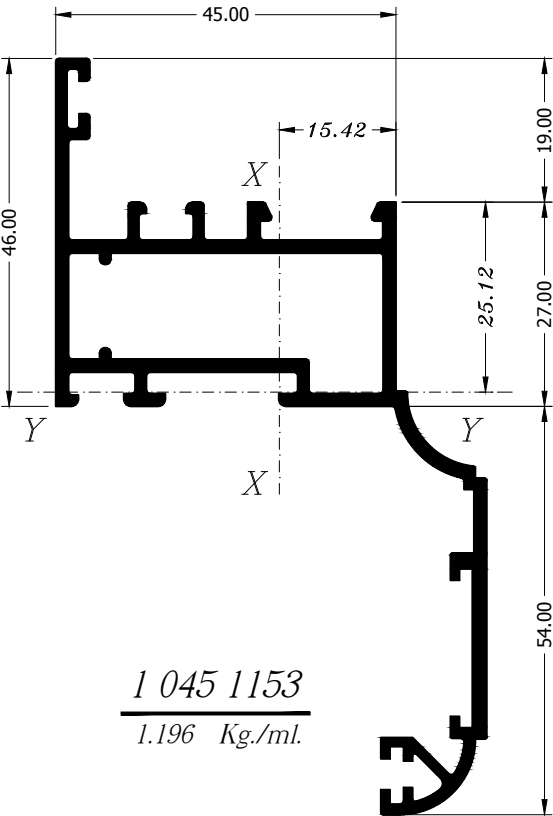
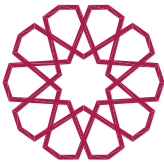


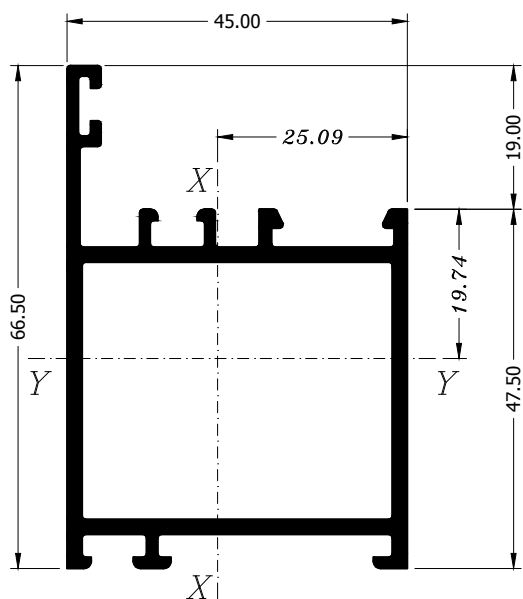
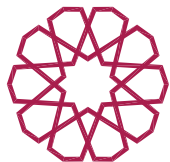
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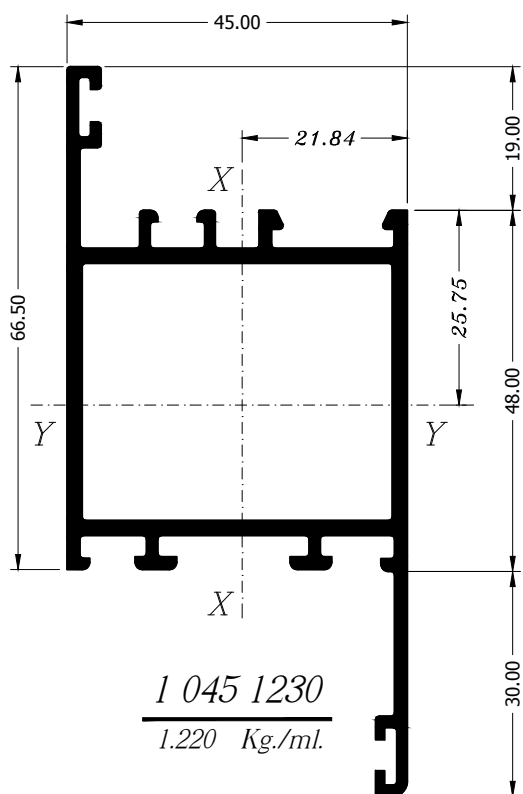
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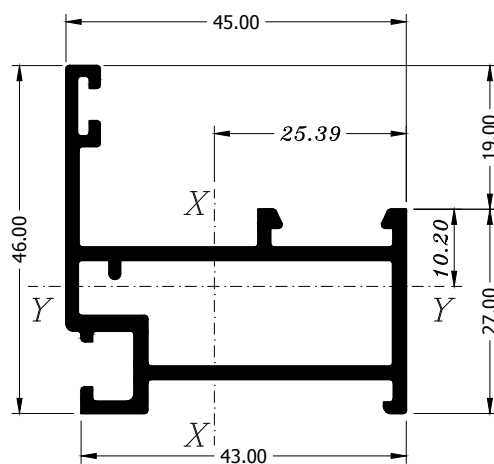


1 045 1200
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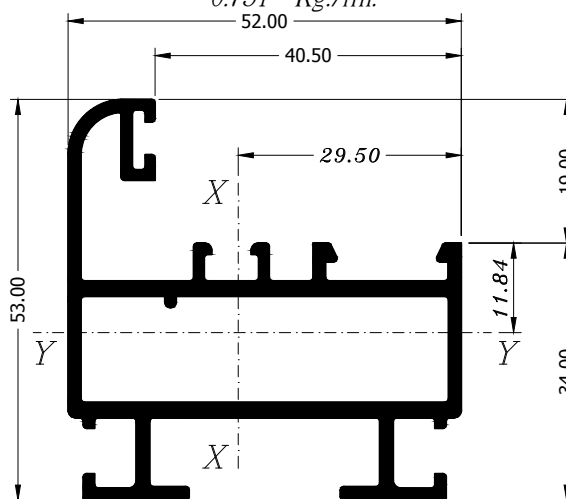


1 045 1230
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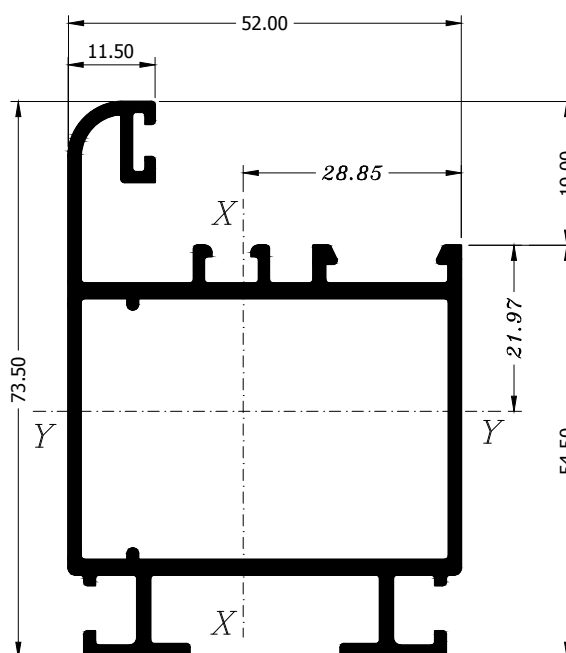
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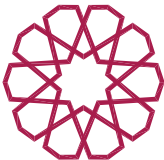


1 045 1810
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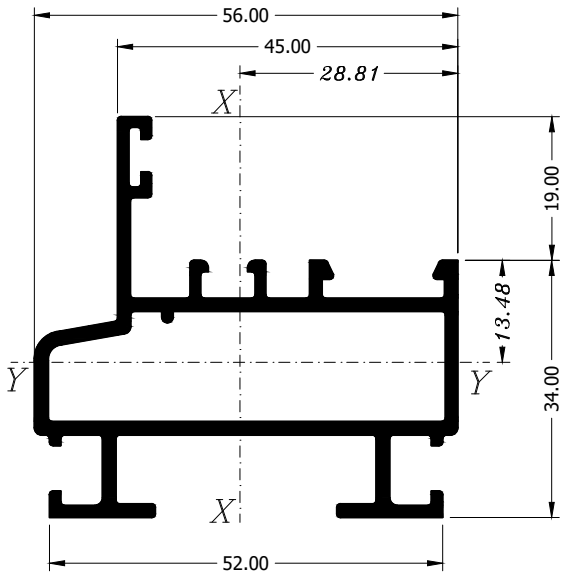


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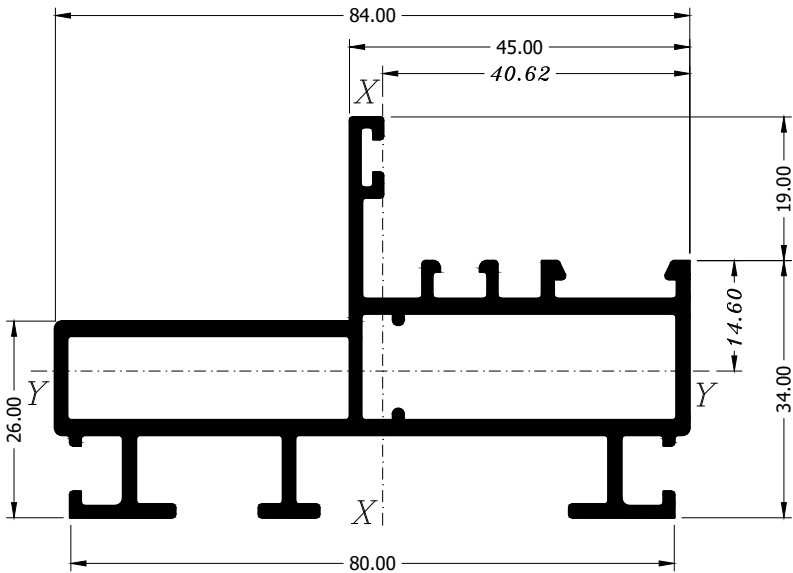




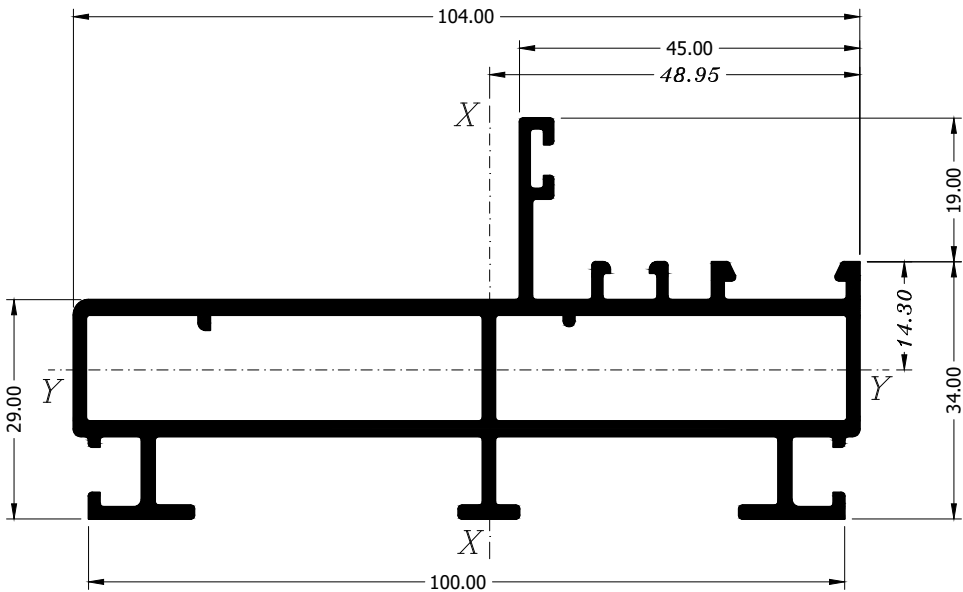
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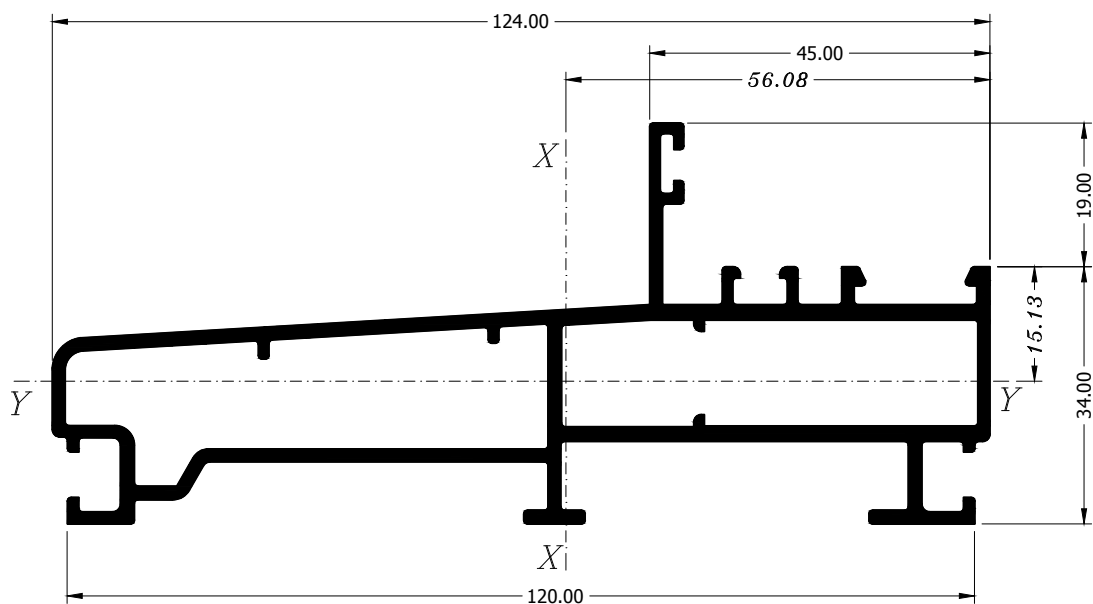
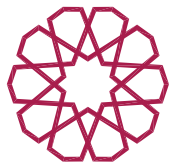


1 045 2082
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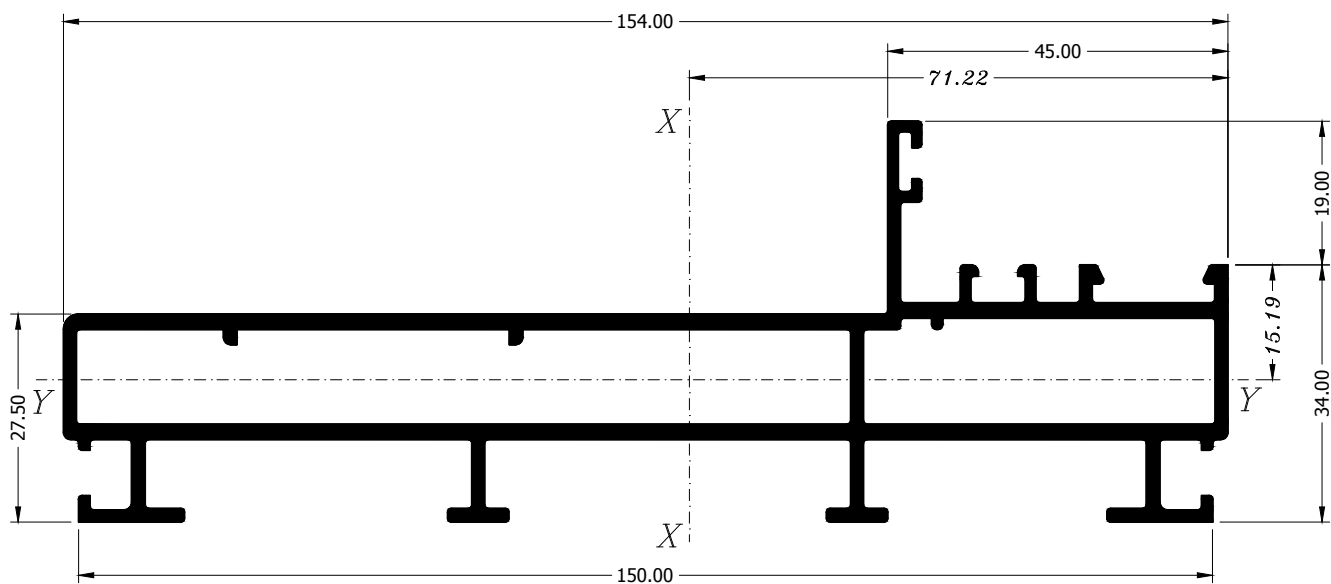
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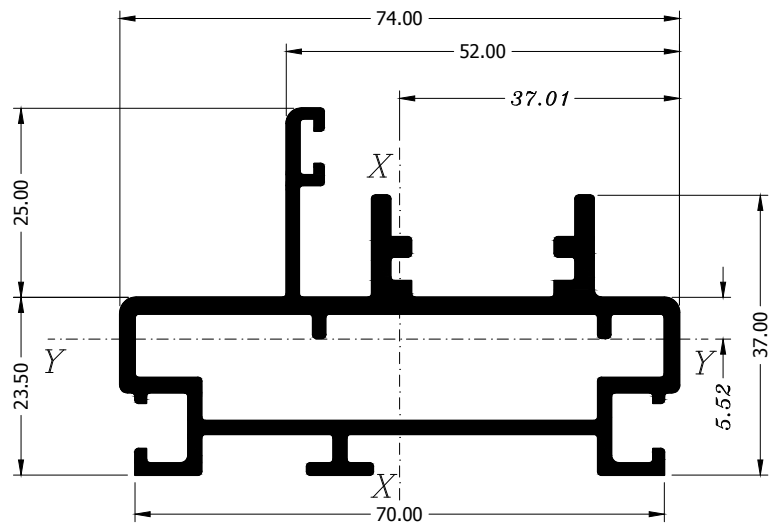
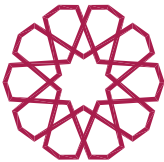
1 045 2122

1.612 Kg./ml.

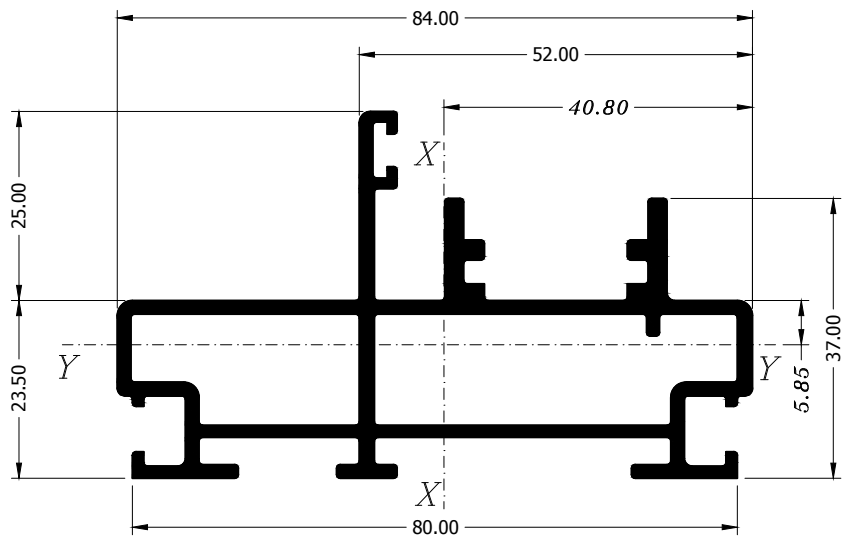


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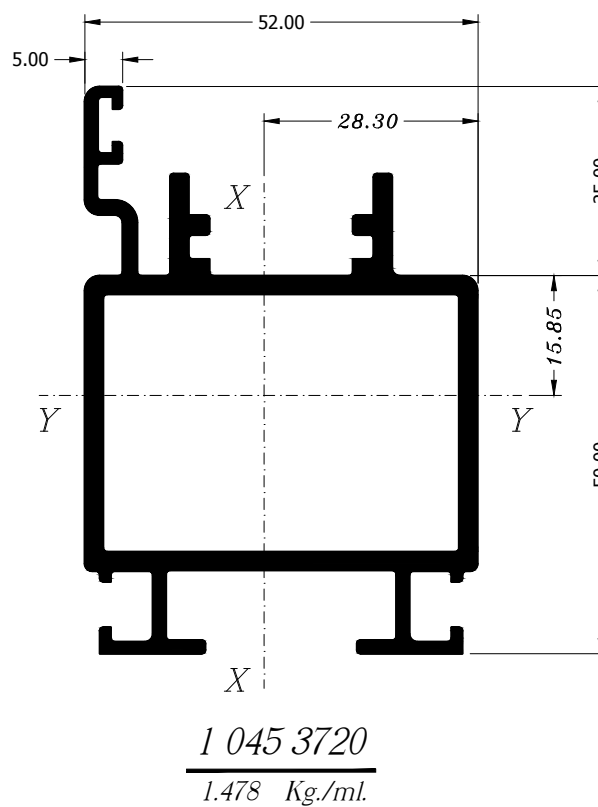
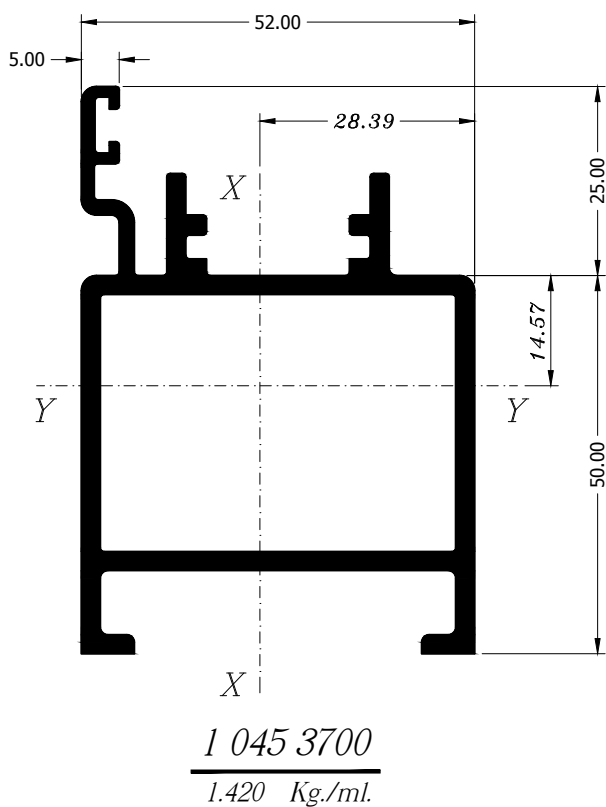
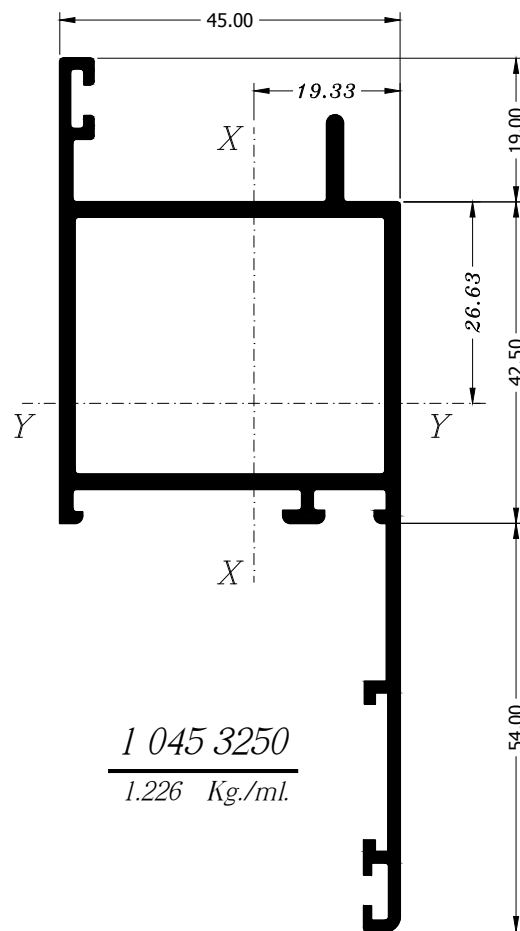
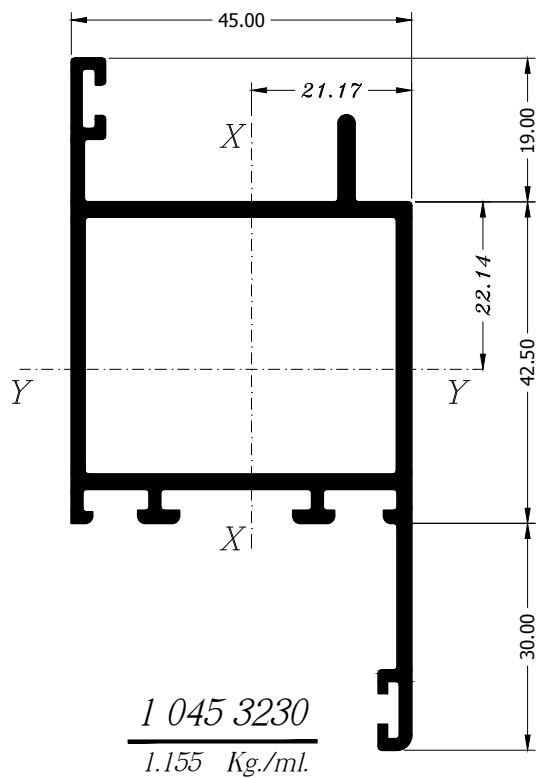
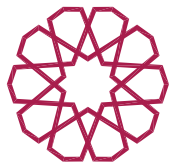
2.100 Kg./ml.

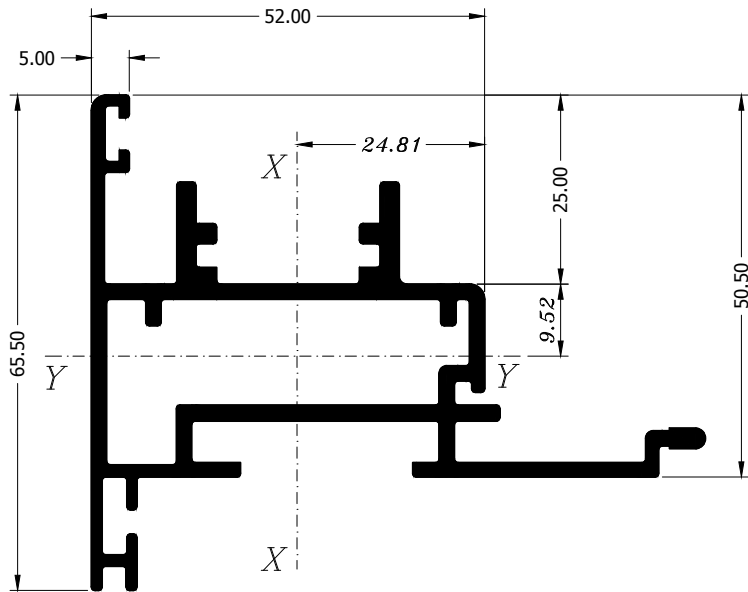
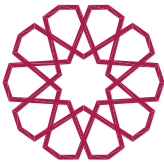


1 045 2672
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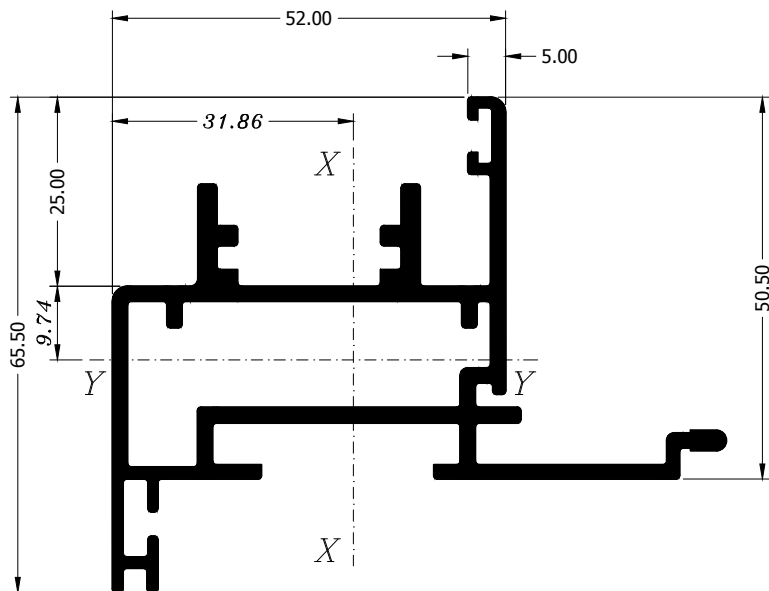


1 045 2682
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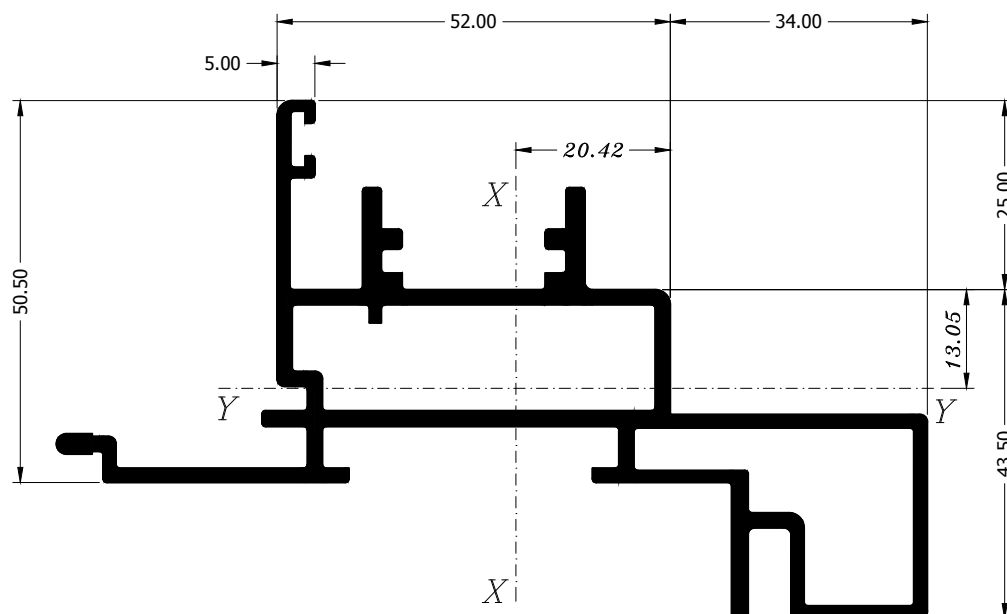
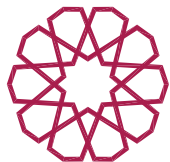




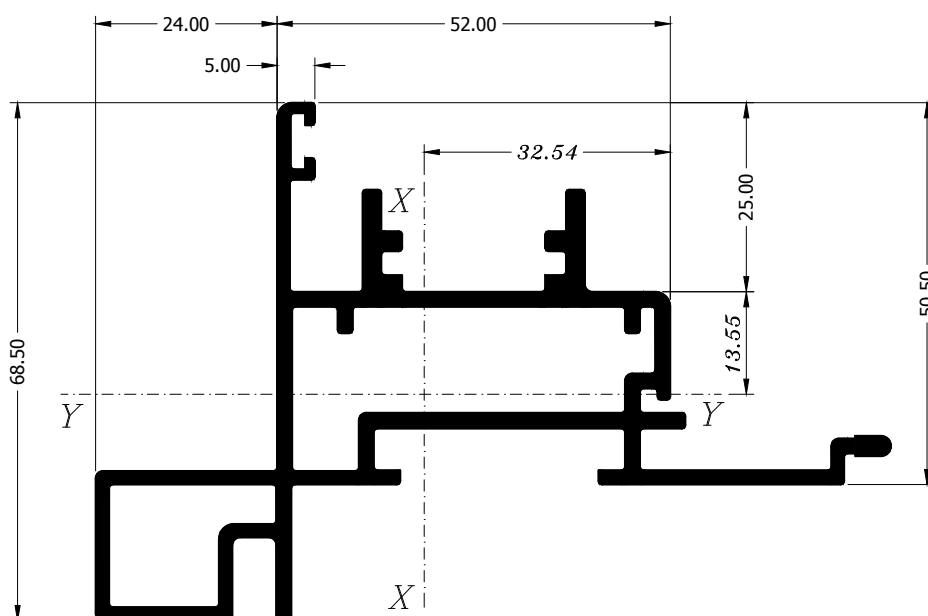
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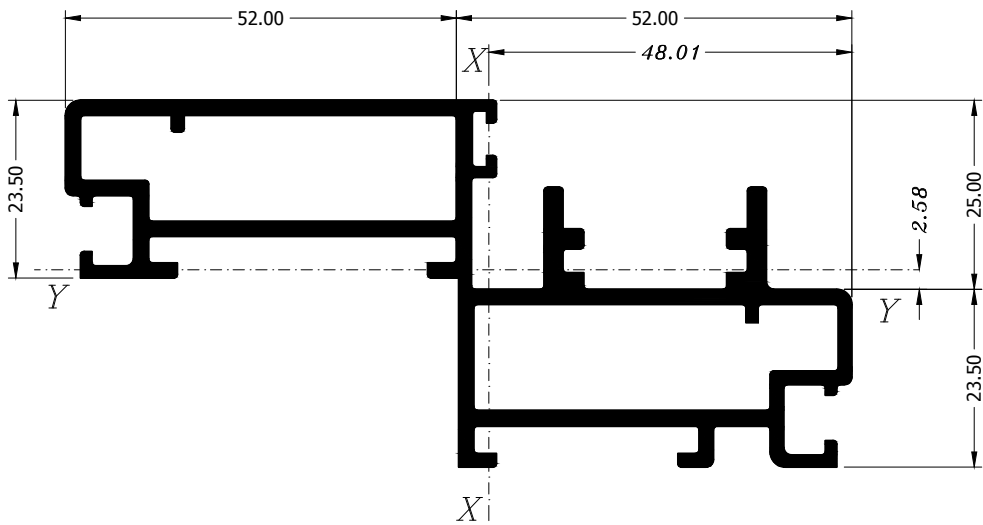
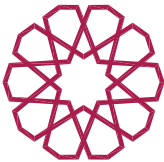
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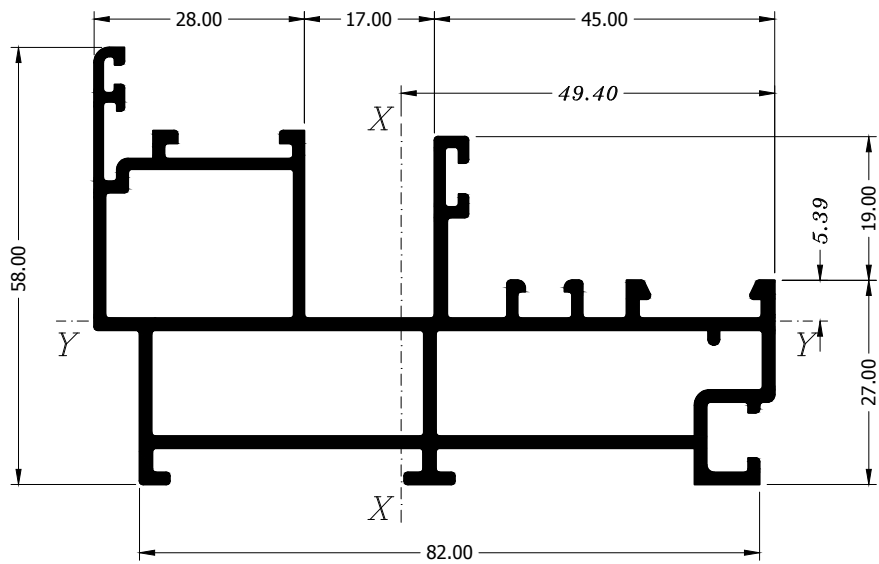
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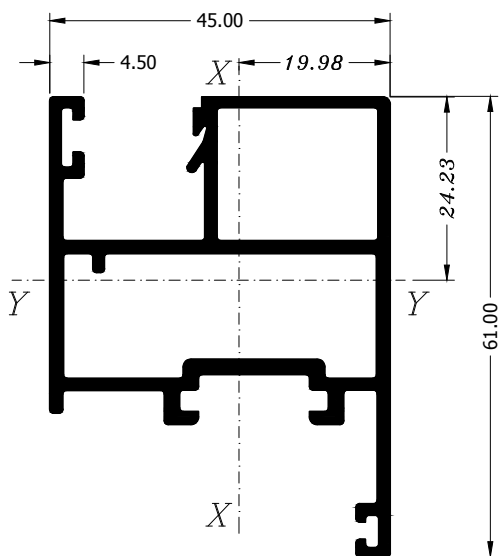
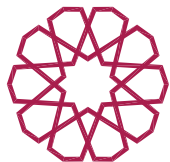
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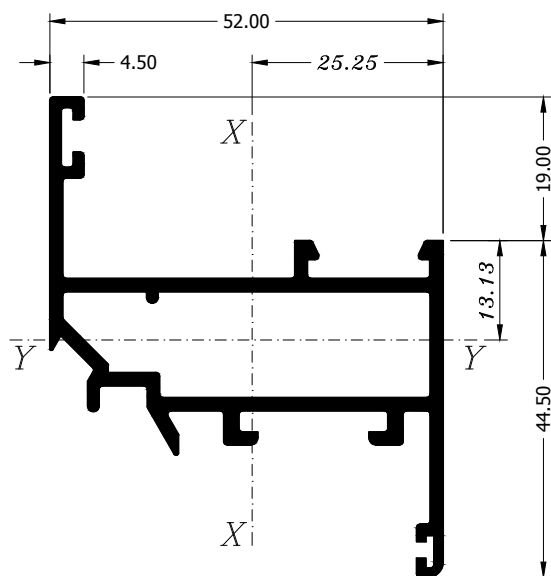
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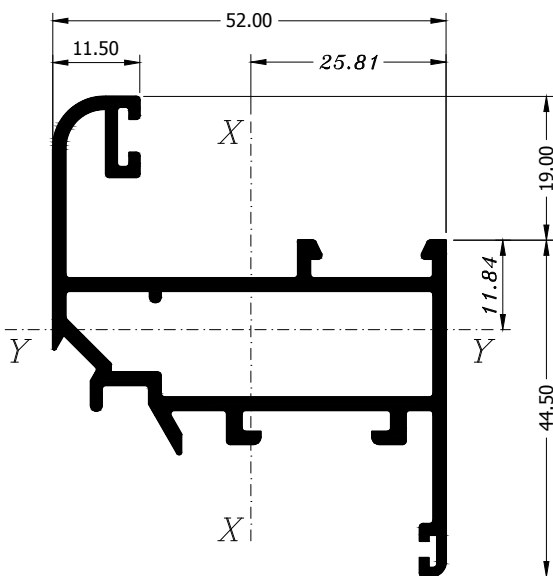
$$\frac{1\,045\,7181}{1.515\text{ Kg./ml.}}$$



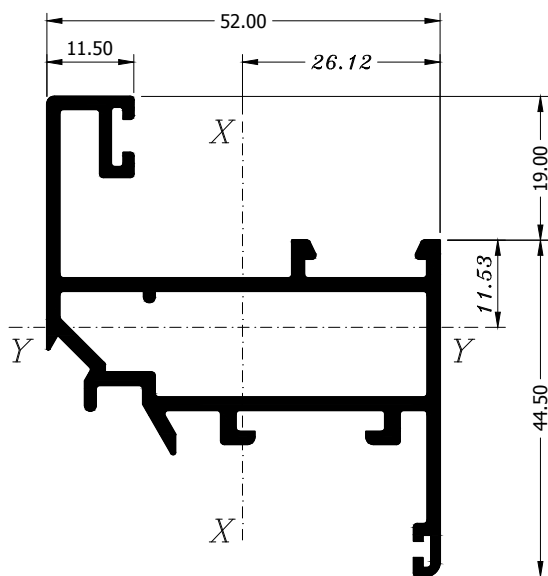
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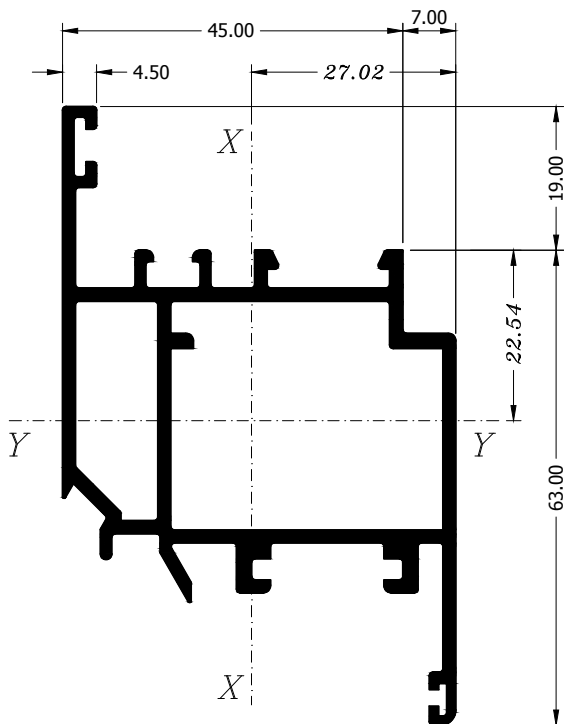
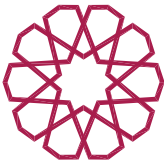
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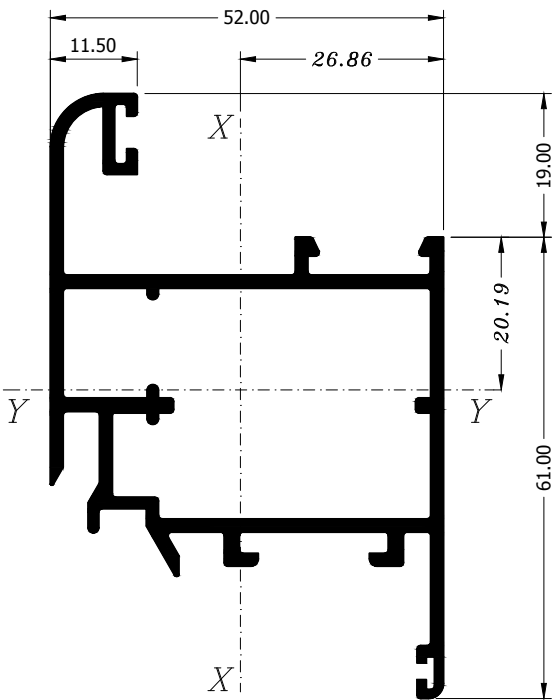
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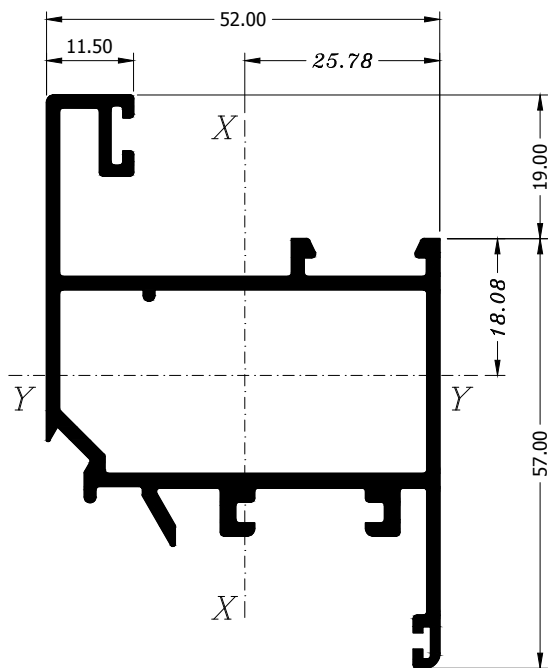
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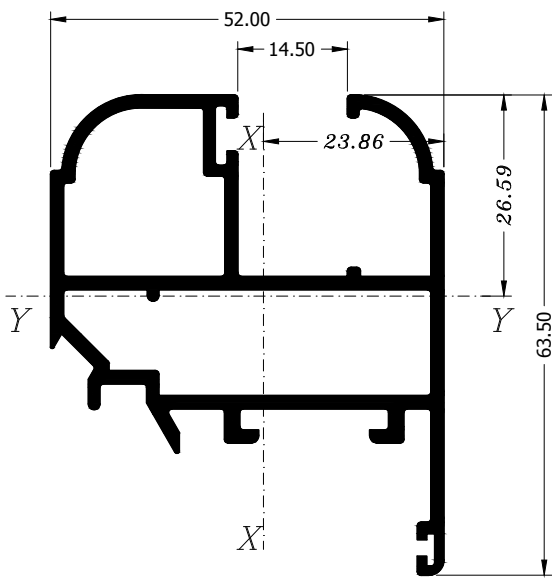
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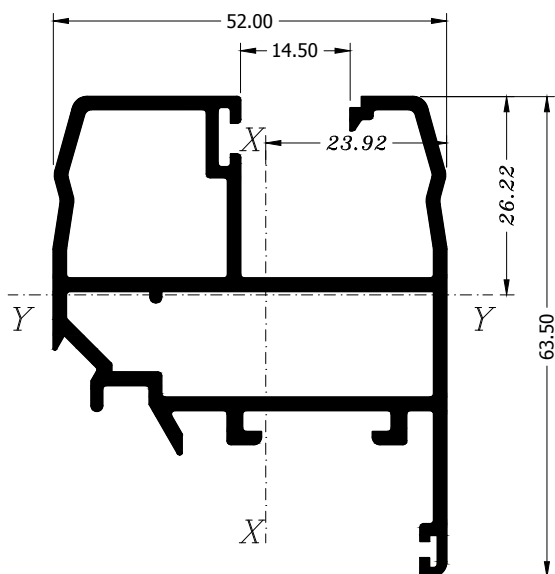
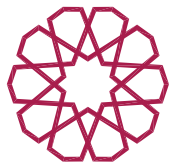
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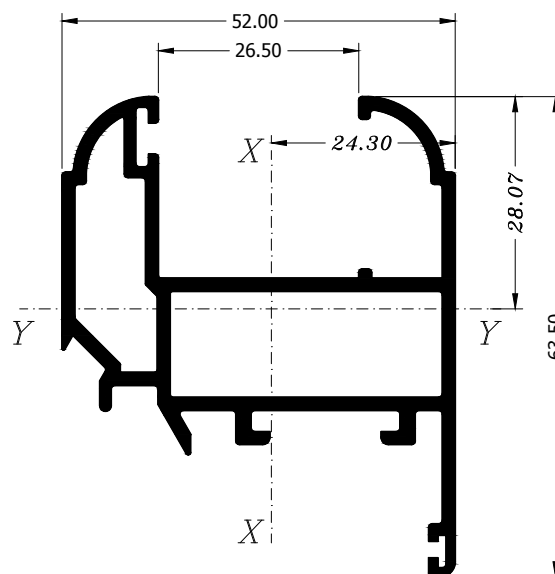
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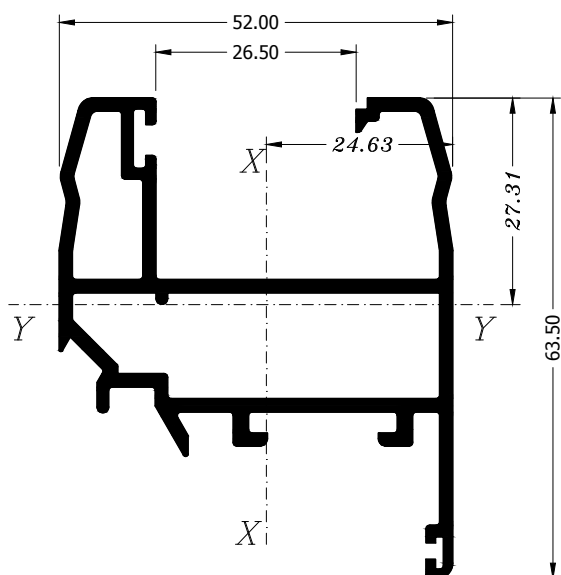
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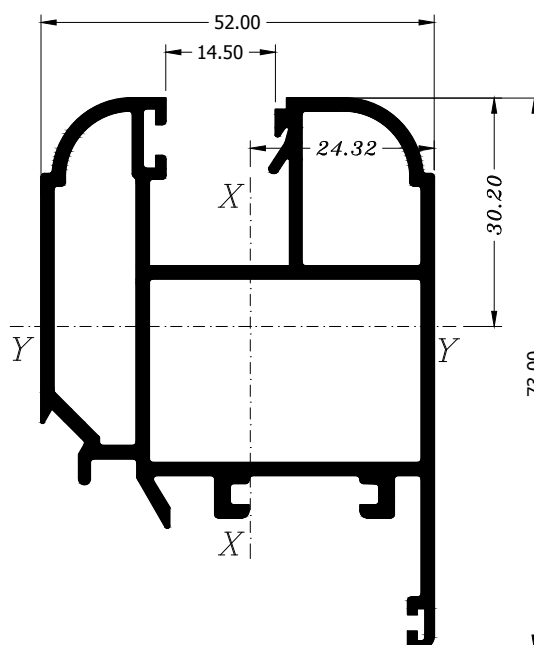
1 045 4147
1.187 Kg./ml.



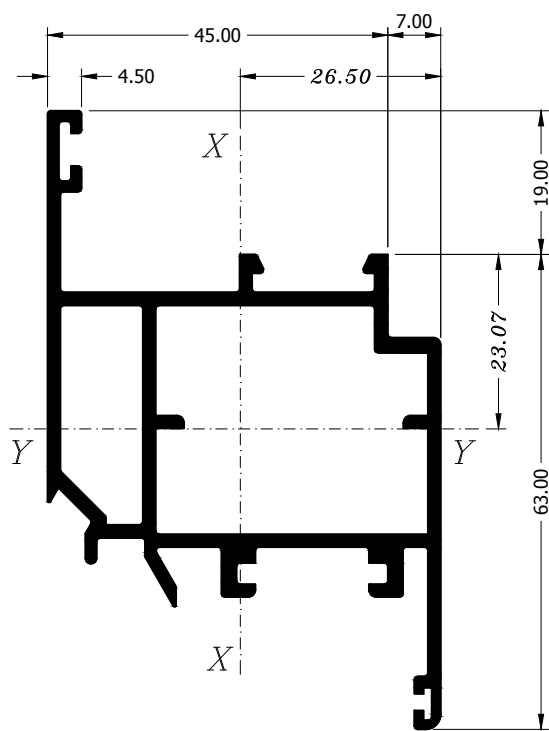
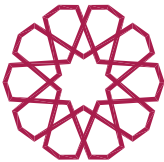
1 045 4153
1.126 Kg./ml.



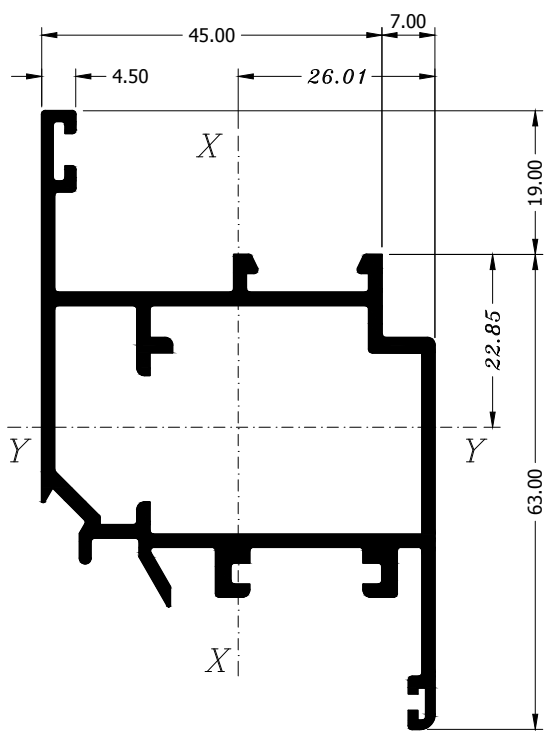
1 045 4157
1.144 Kg./ml.



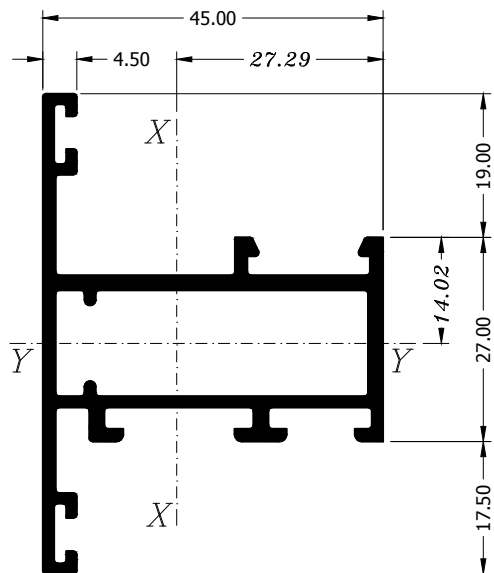
1 045 4163
1.395 Kg./ml.



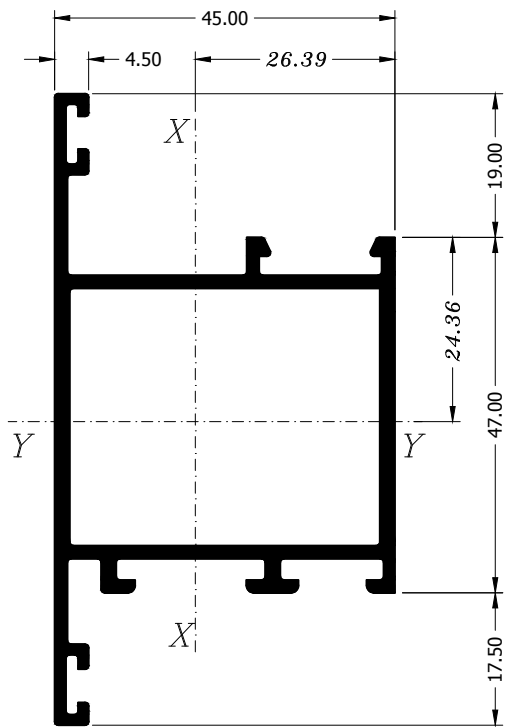
1 045 4181
1.253 Kg./ml.



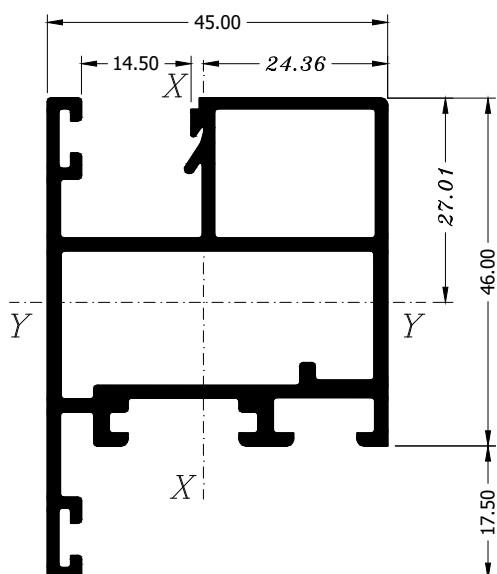
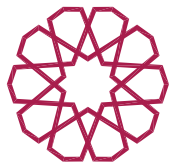
1 045 4182
1.167 Kg./ml.



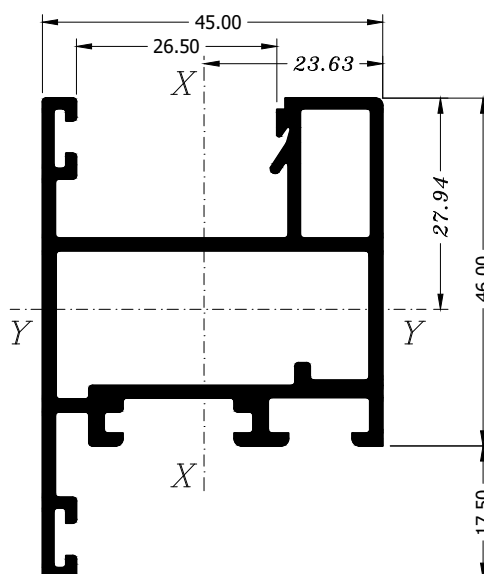
1 045 4210
0.906 Kg./ml.



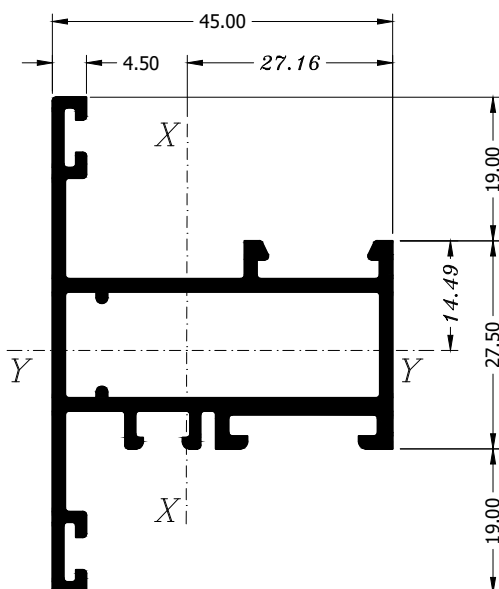
1 045 4220
1.064 Kg./ml.



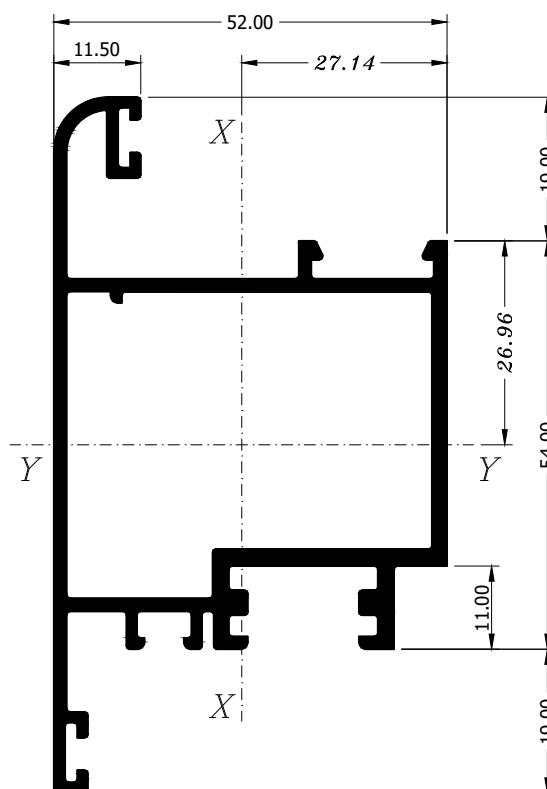
1 045 4240
1.129 Kg./ml.



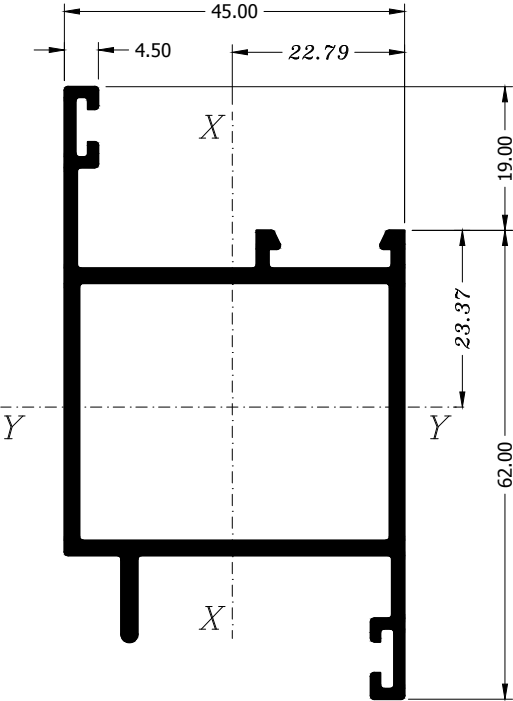
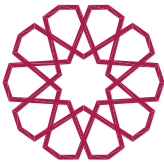
1 045 4250
1.090 Kg./ml.



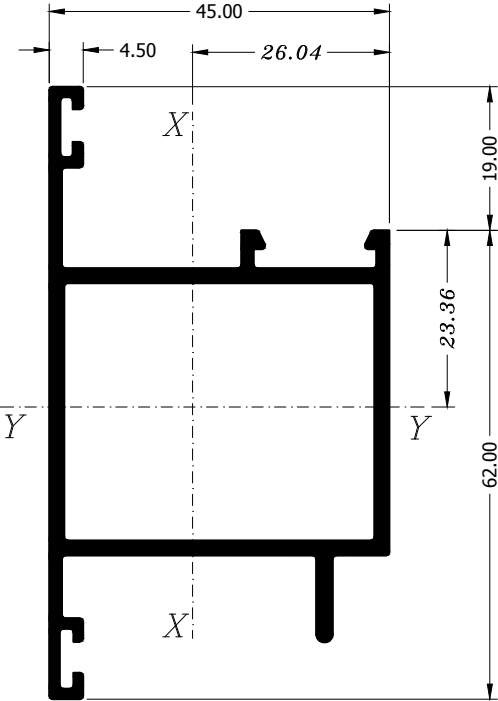
1 045 4370
0.918 Kg./ml.



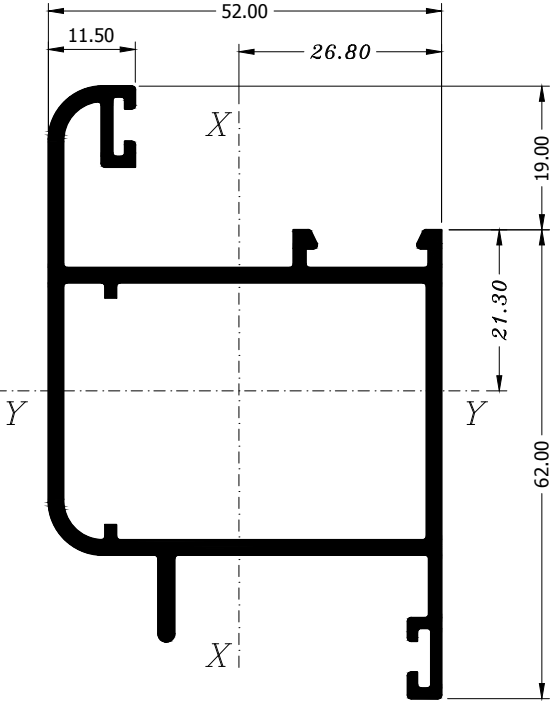
1 045 4320
1.438 Kg./ml.



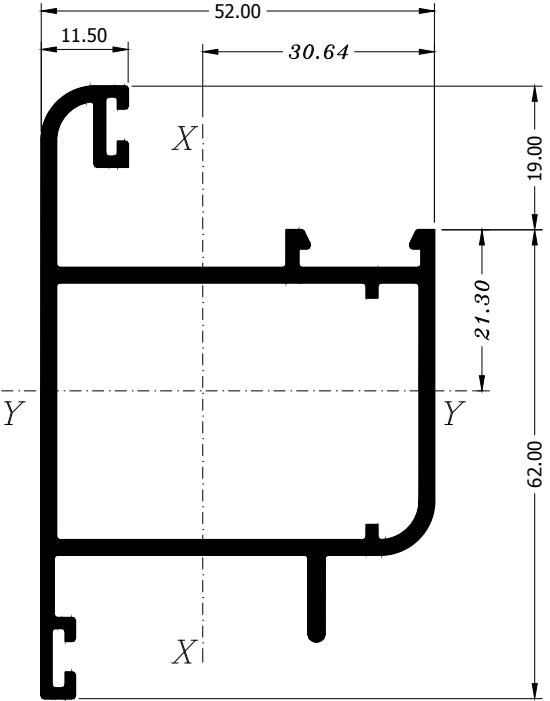
1 045 4610
1.080 Kg./ml.



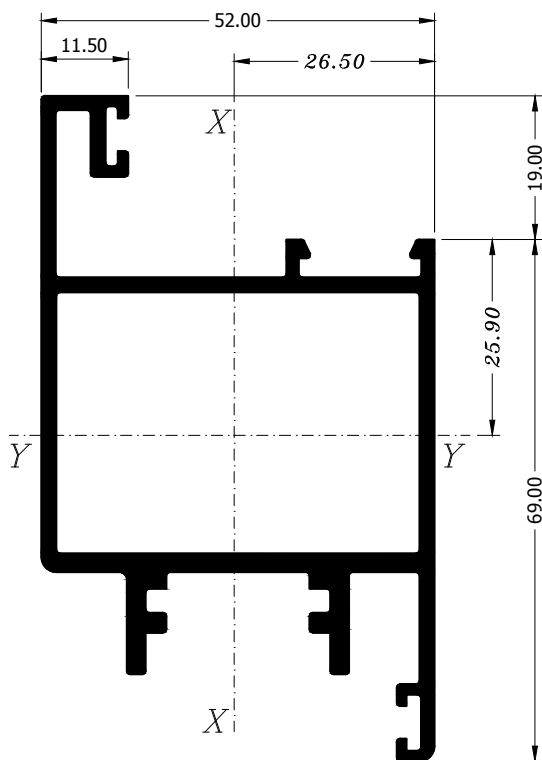
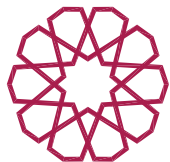
1 045 4620
1.080 Kg./ml.



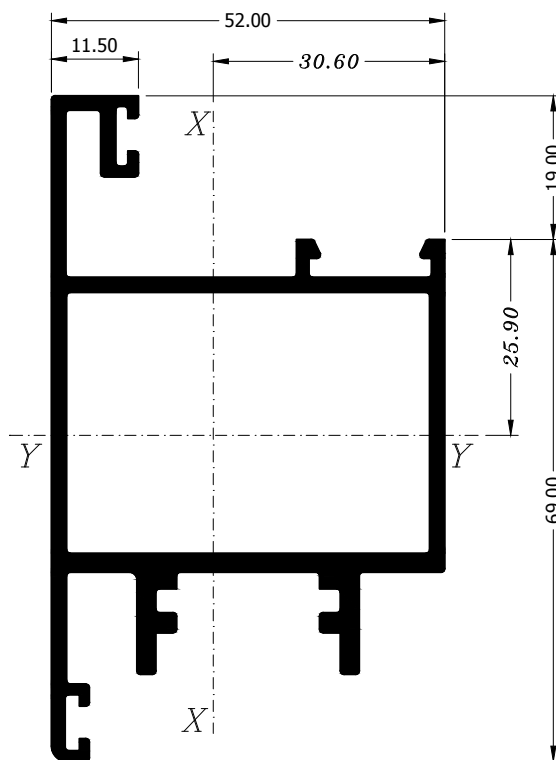
1 045 4652
1.210 Kg./ml.



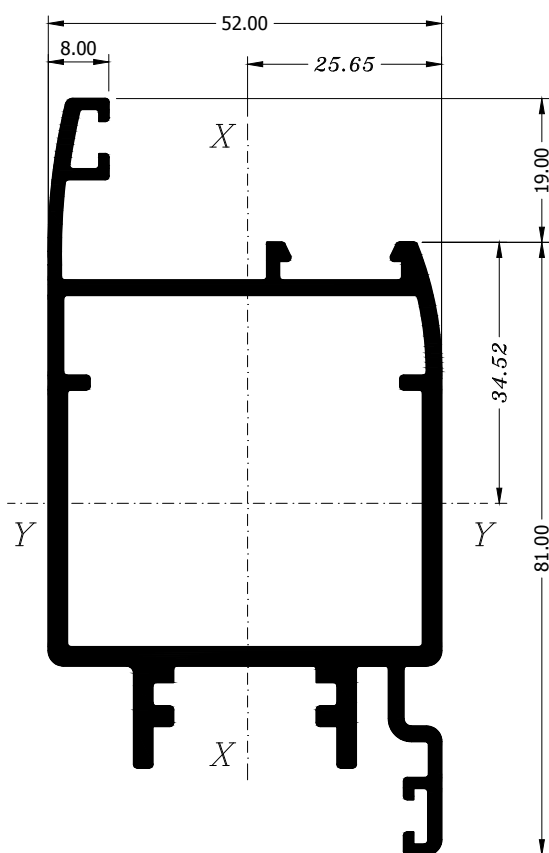
1 045 4662
1.209 Kg./ml.



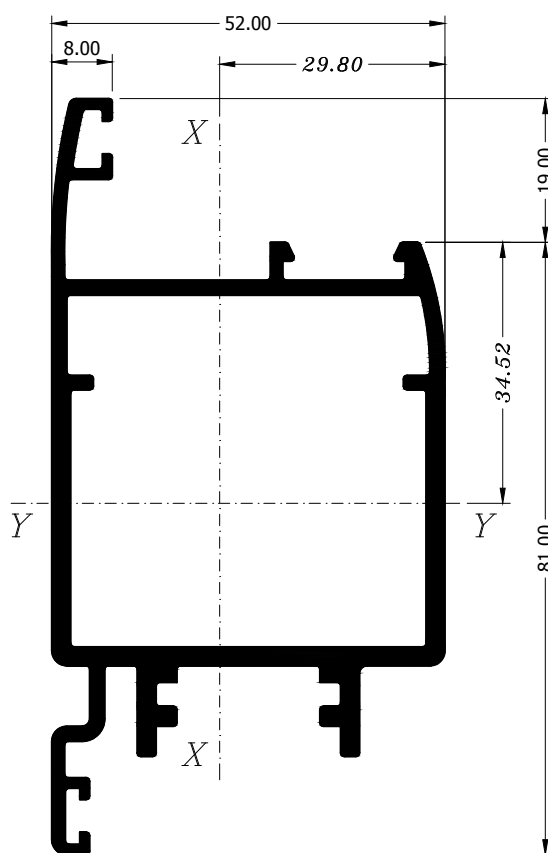
1 045 4750
1.570 Kg./ml.



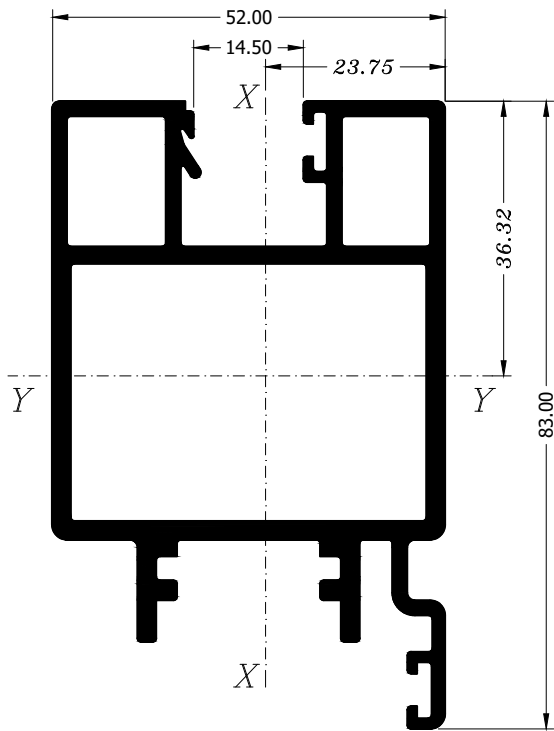
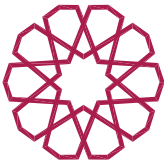
1 045 4760
1.570 Kg./ml.



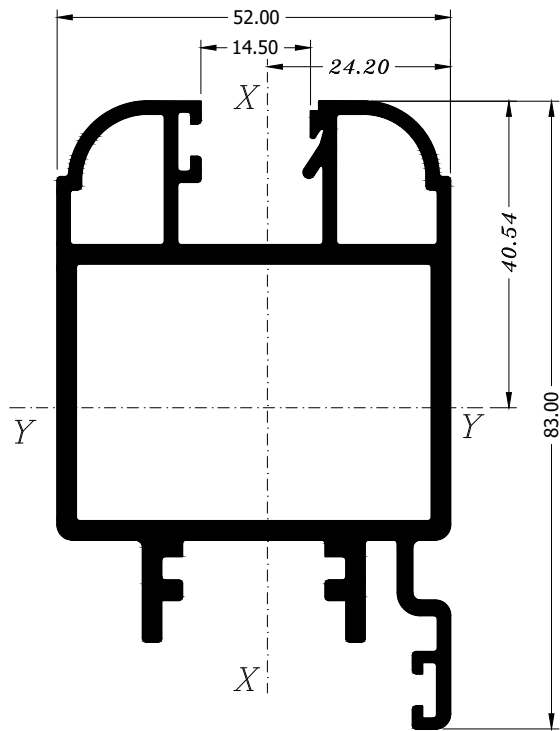
1 045 4754
1.638 Kg./ml.



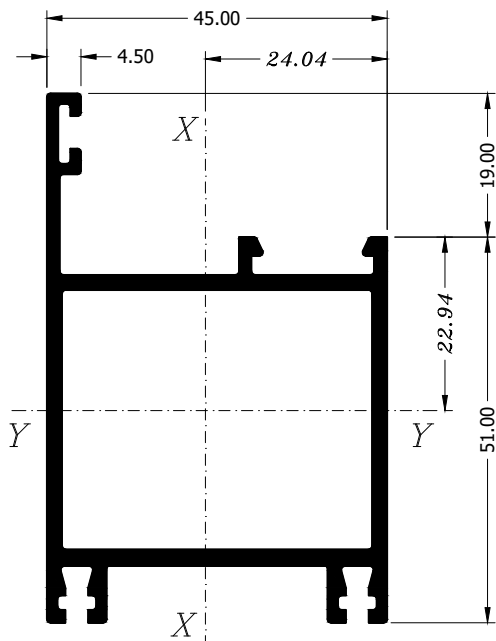
1 045 4764
1.639 Kg./ml.



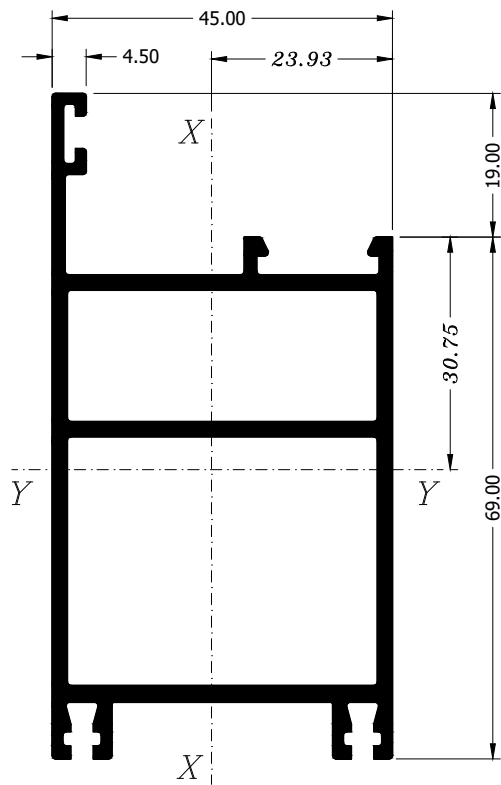
1 045 4790
1.778 Kg./ml.



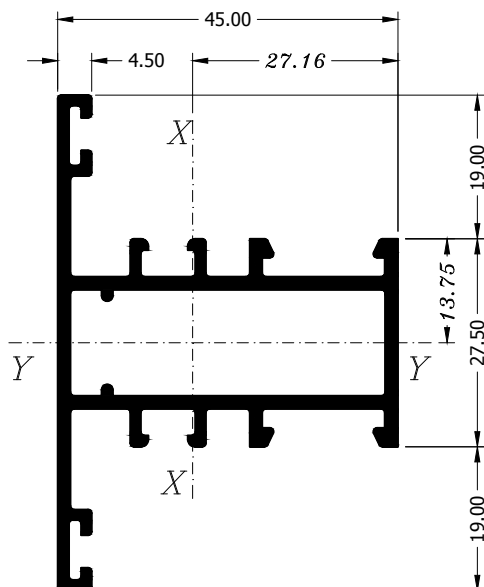
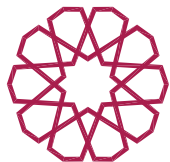
1 045 4793
1.754 Kg./ml.



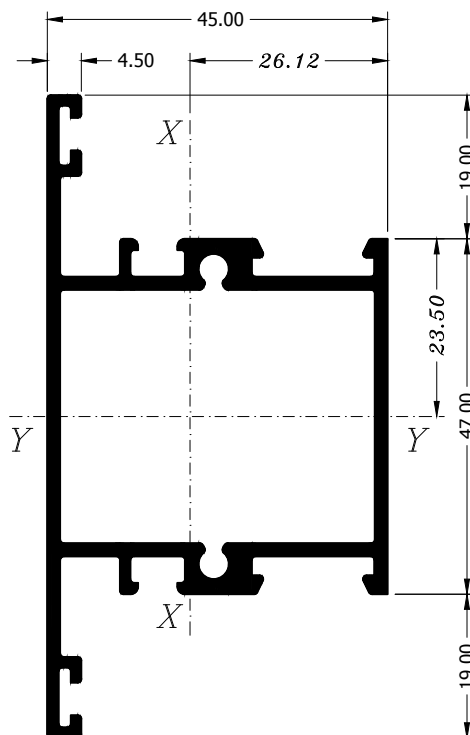
1 045 4810
1.086 Kg./ml.



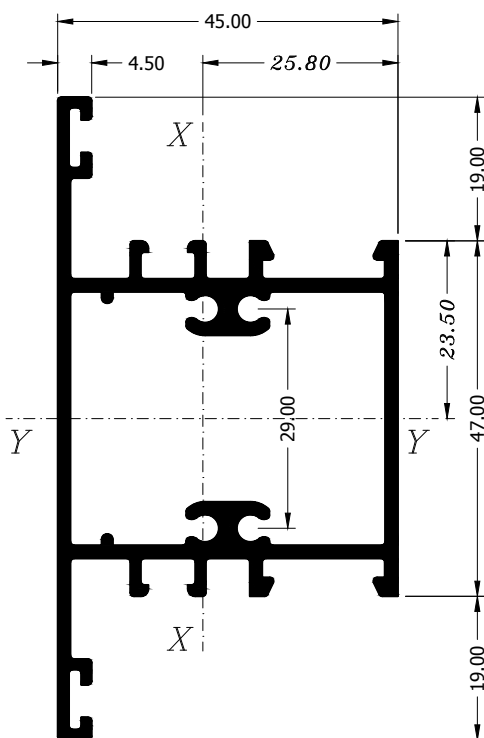
1 045 4820
1.491 Kg./ml.



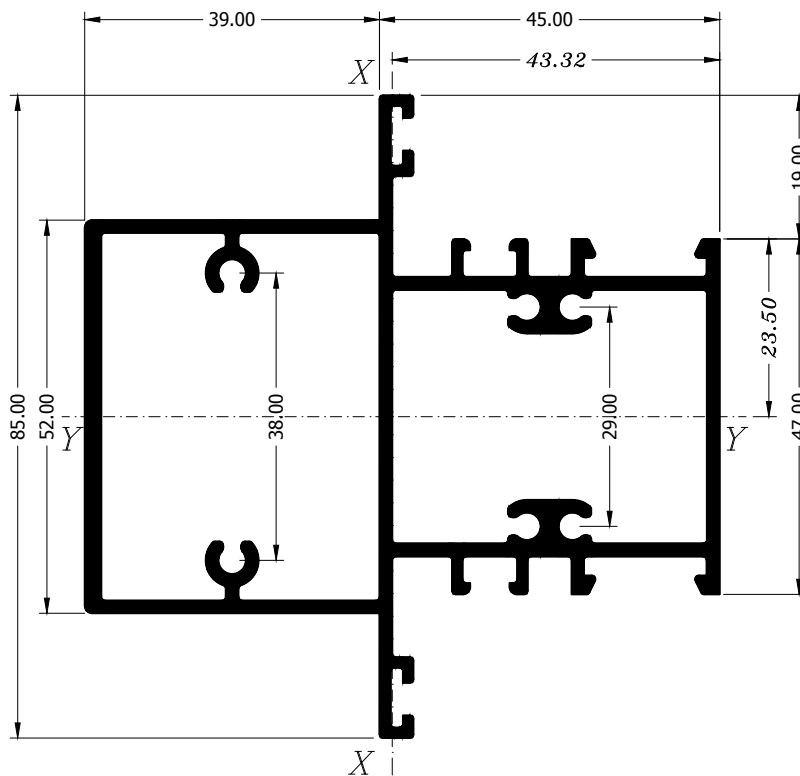
1 045 5010
0.926 Kg./ml.



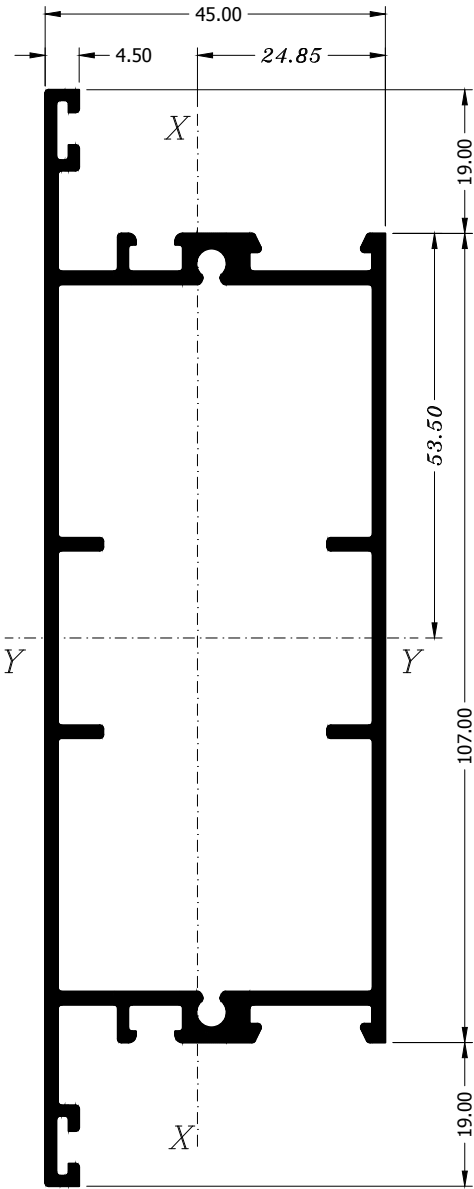
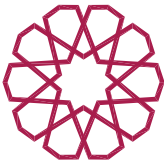
1 045 5020
1.144 Kg./ml.



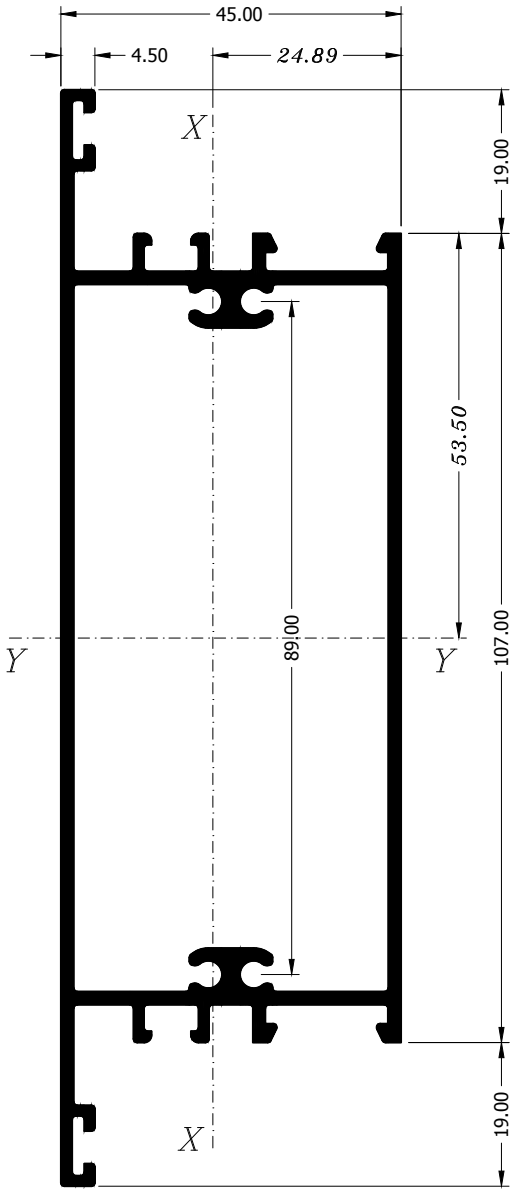
1 045 5120
1.242 Kg./ml.



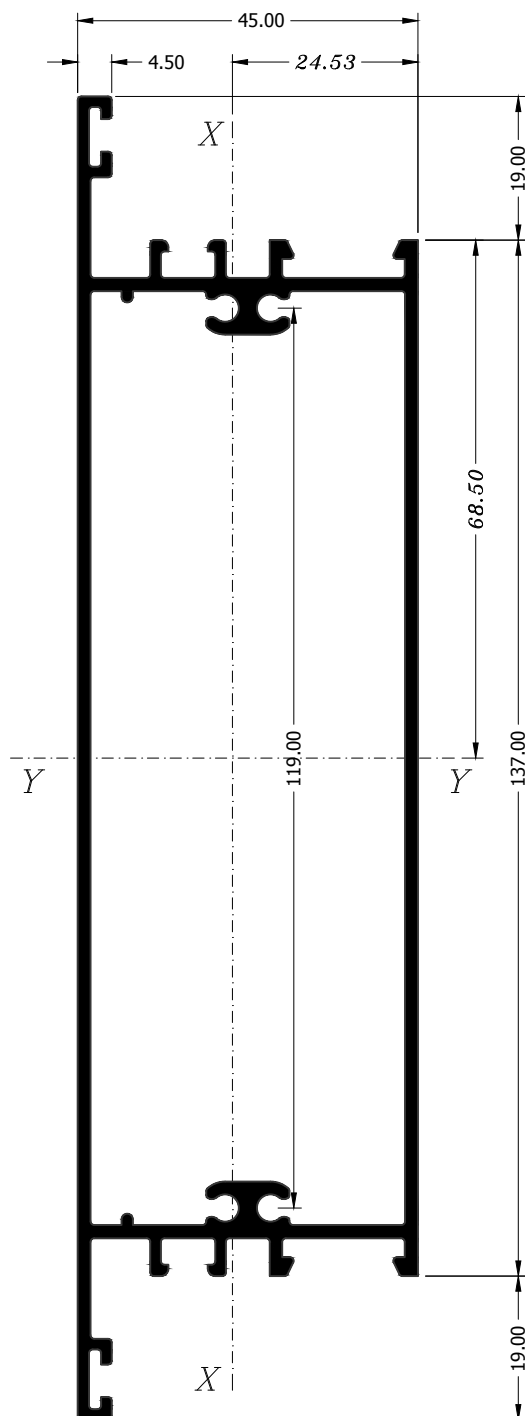
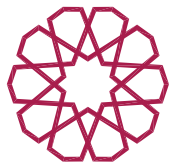
1 045 5520
1.768 Kg./ml.



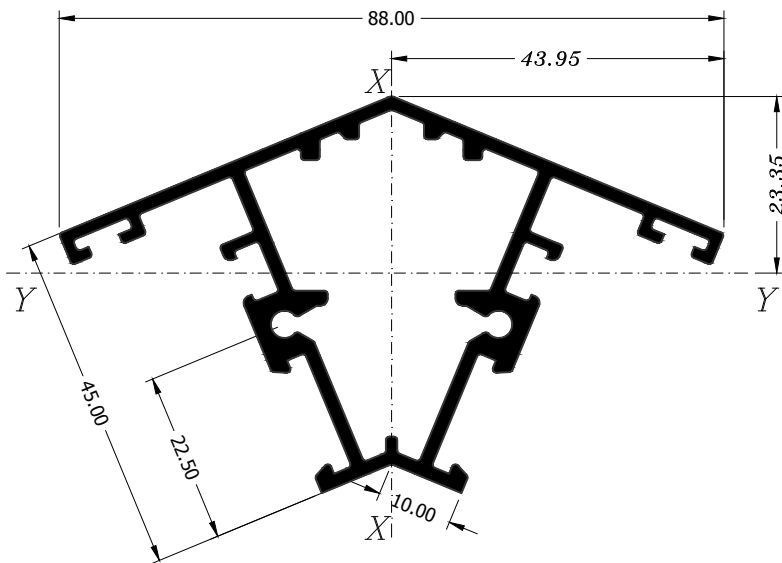
1 045 5030
1.785 Kg./ml.



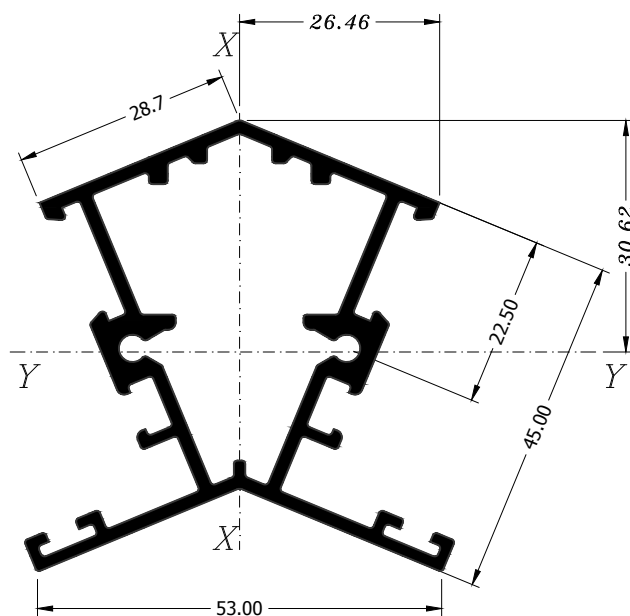
1 045 5130
1.890 Kg./ml.



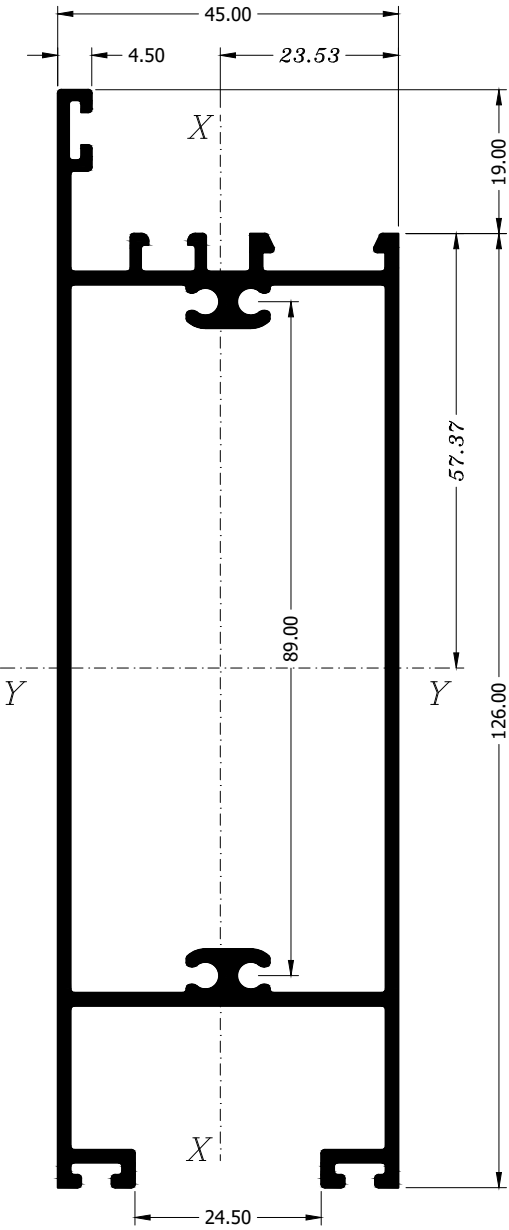
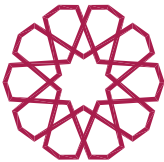
1 045 5140
2.163 Kg./ml.



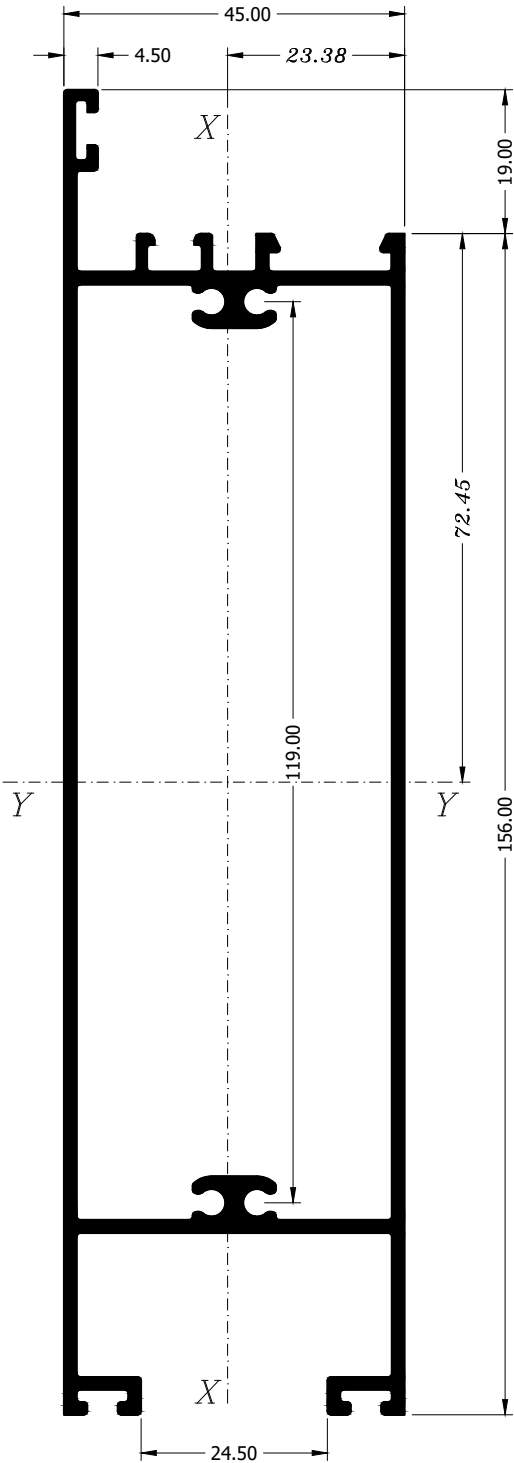
1 045 5170
1.204 Kg./ml.



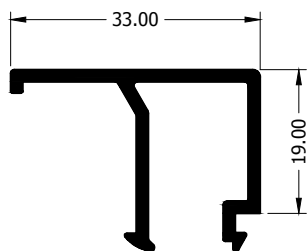
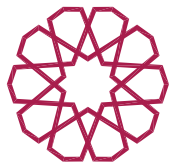
1 045 5190
1.204 Kg./ml.



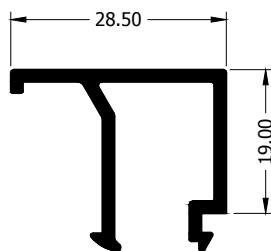
1 045 5330
1.987 Kg./ml.



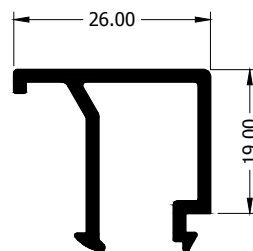
1 045 5340
2.268 Kg./ml.



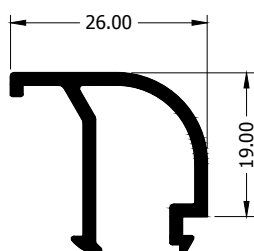
1 045 6110
0.289 Kg./ml.



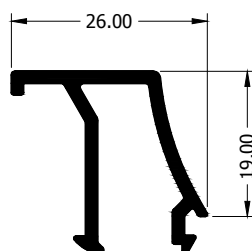
1 045 6130
0.270 Kg./ml.



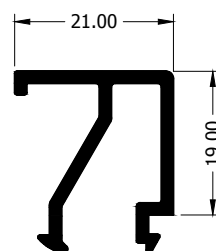
1 045 6140
0.262 Kg./ml.



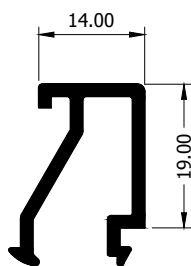
1 045 6142
0.246 Kg./ml.



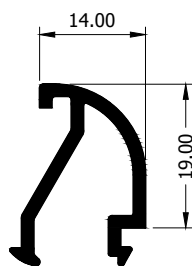
1 045 6145
0.240 Kg./ml.



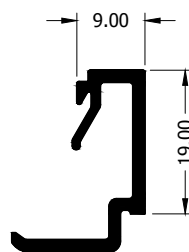
1 045 6160
0.251 Kg./ml.



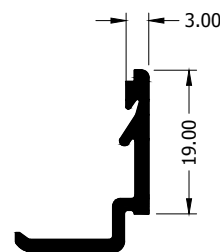
1 045 6180
0.211 Kg./ml.



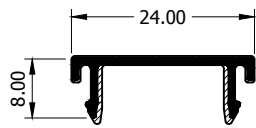
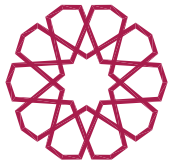
1 045 6182
0.206 Kg./ml.



1 045 6290
0.227 Kg./ml.

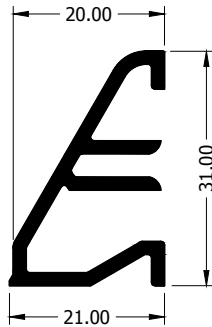


1 045 6292
0.186 Kg./ml.



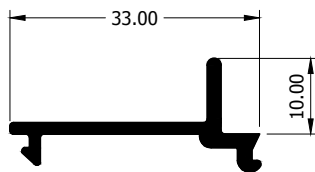
1 045 9010

0.116 Kg./ml.



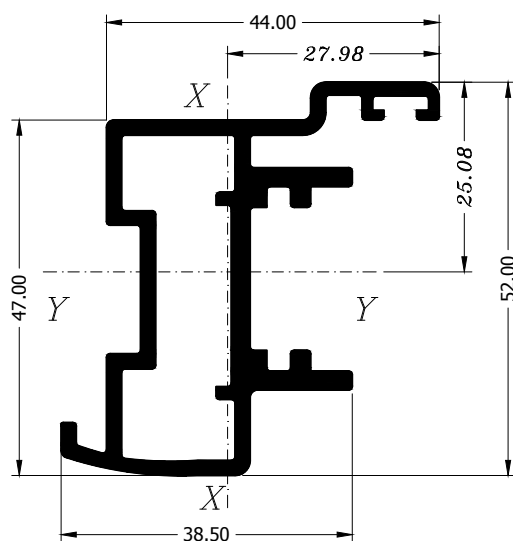
1 045 9120

0.356 Kg./ml.



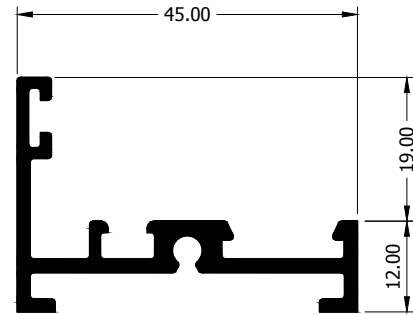
1 045 9210

0.221 Kg./ml.



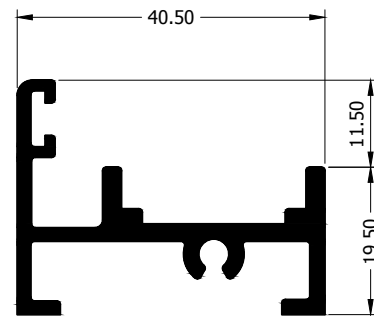
1 045 9240

1.031 Kg./ml.



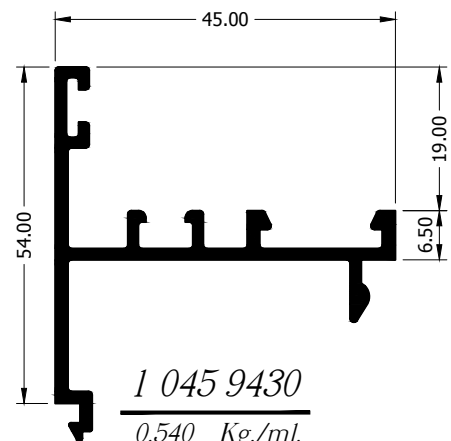
1 045 9110

0.540 Kg./ml.



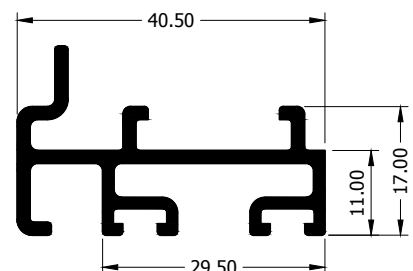
1 045 9140

0.629 Kg./ml.



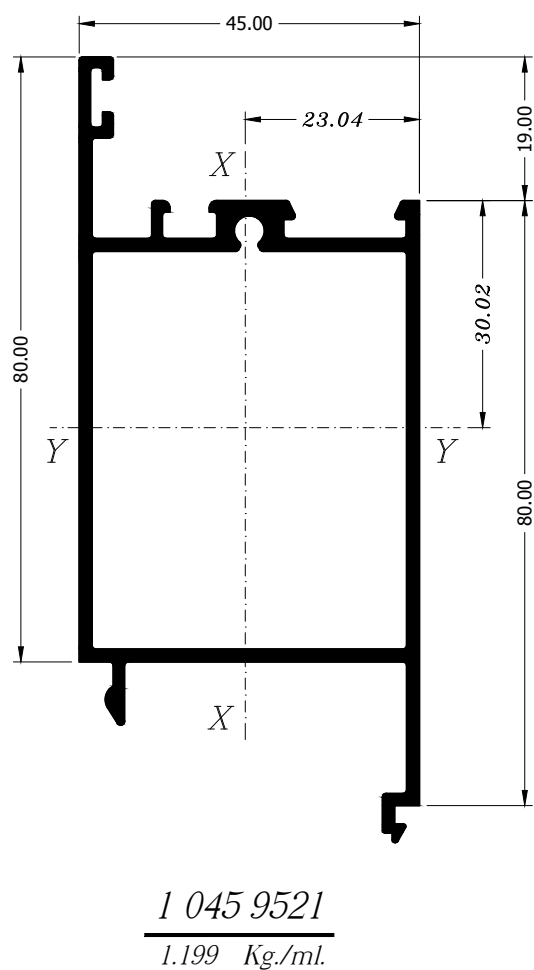
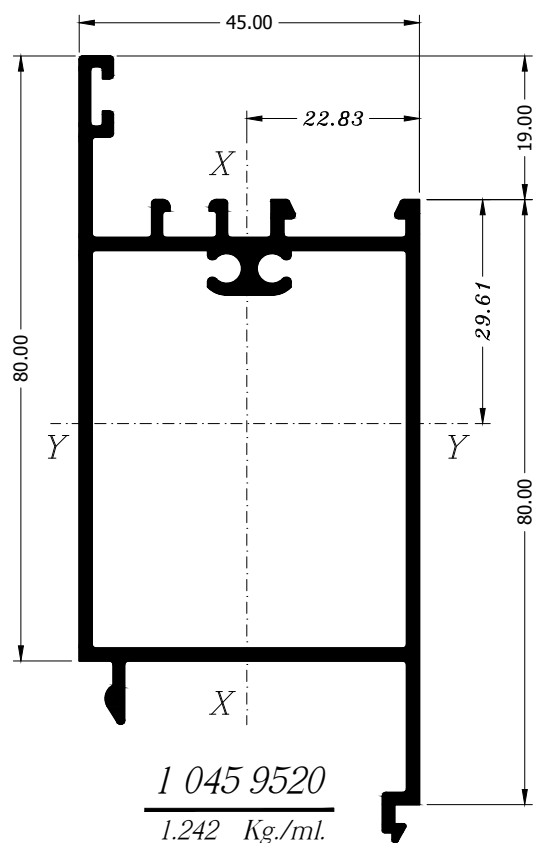
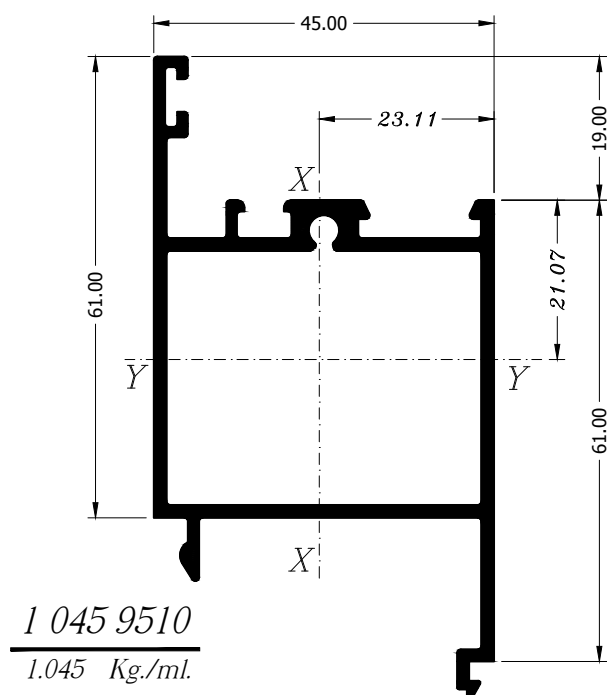
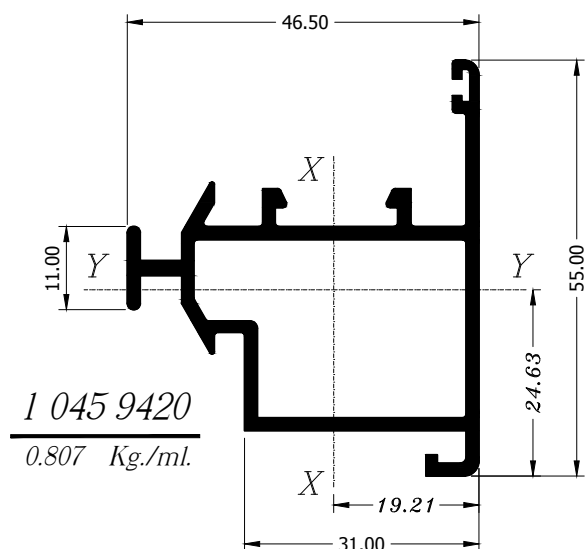
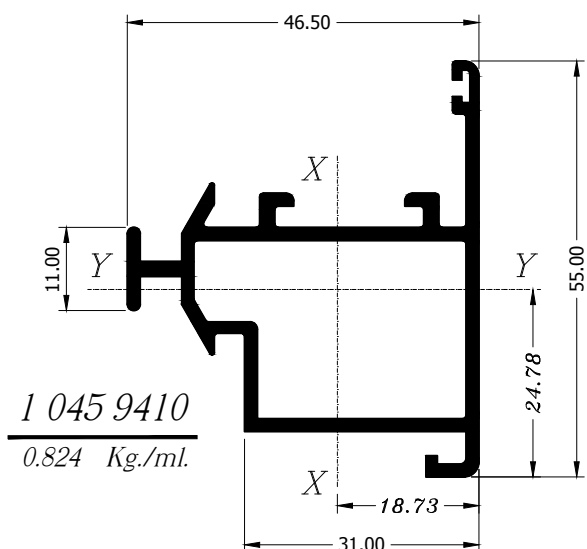
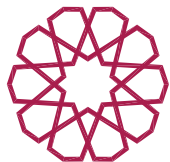
1 045 9430

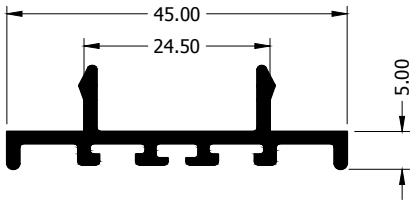
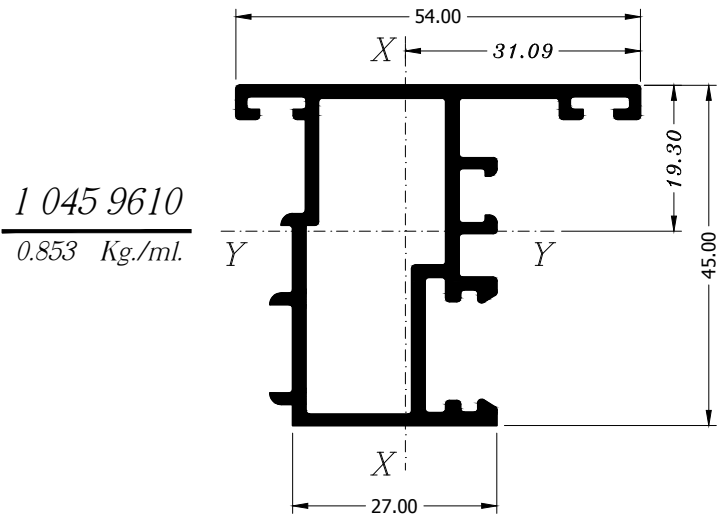
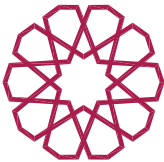
0.540 Kg./ml.



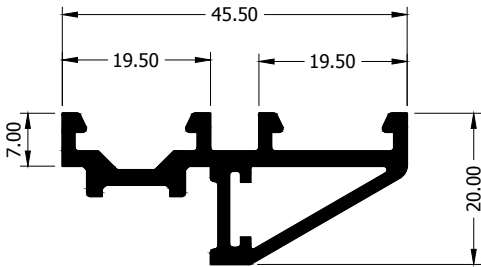
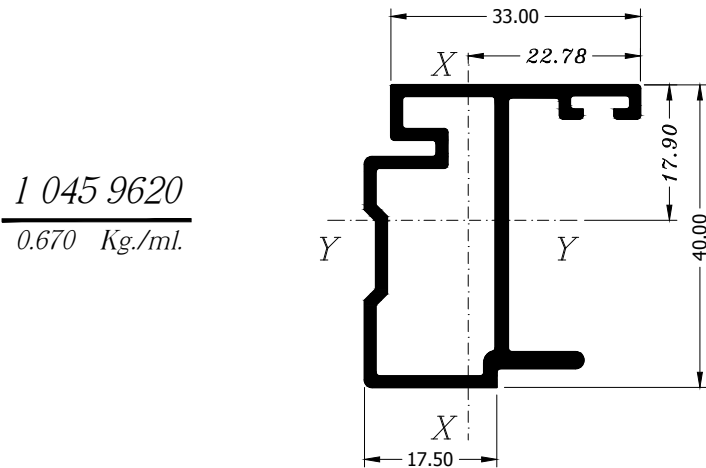
1 045 9440

0.541 Kg./ml.

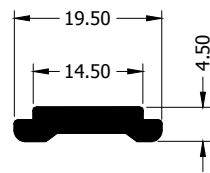
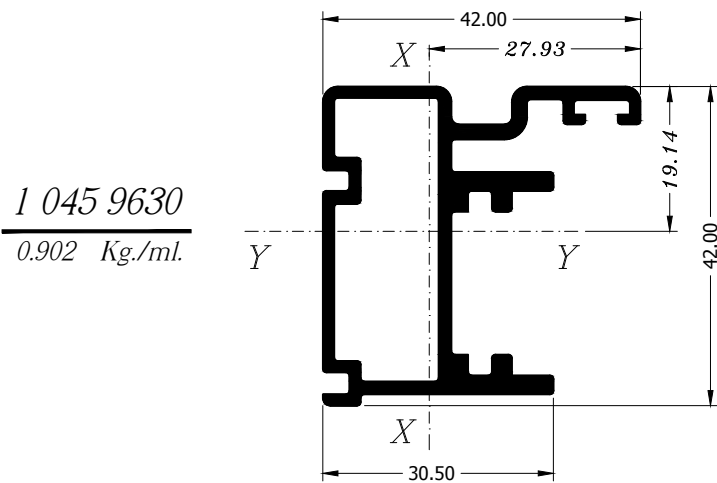




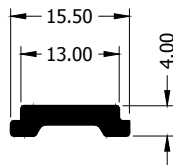
1 045 9570
0.359 Kg./ml.



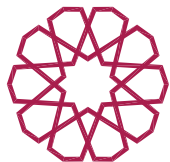
1 045 9810
0.591 Kg./ml.



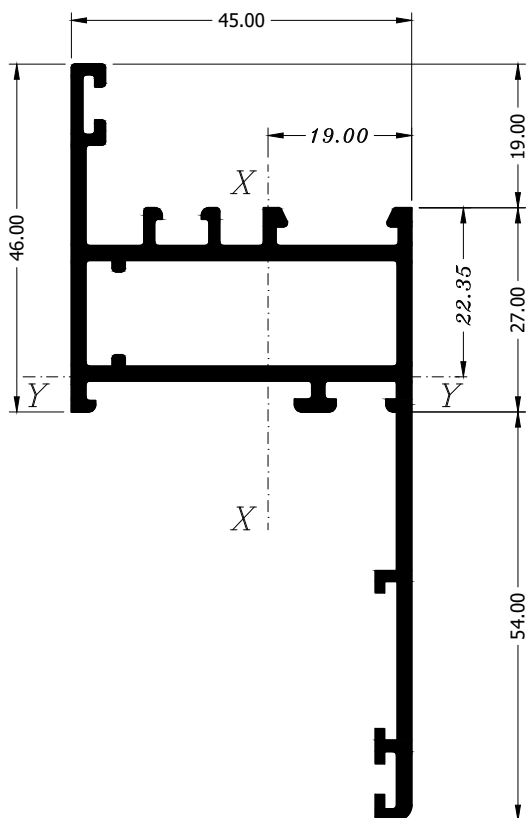
1 045 9910
0.146 Kg./ml.



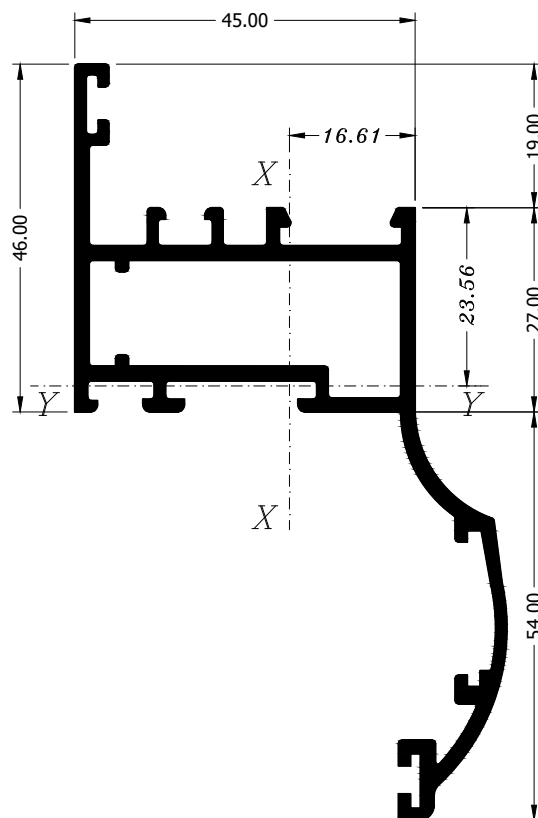
1 045 9920
0.113 Kg./ml.



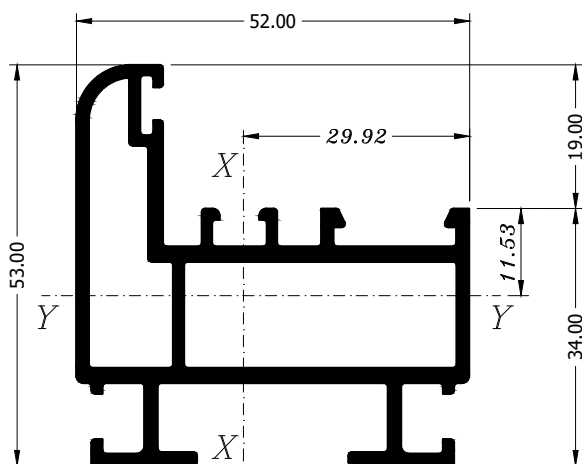
These profiles are specially produced for rolling machines



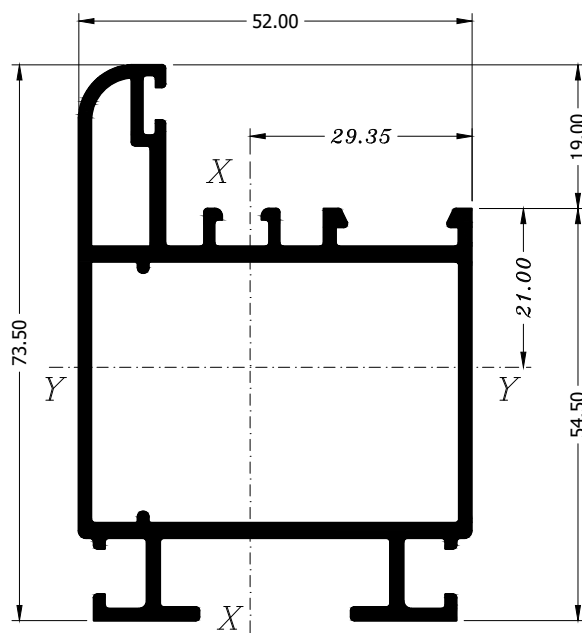
8 045 1150
1.215 Kg./ml.



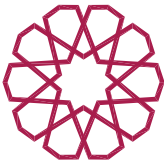
8 045 1152
1.353 Kg./ml.



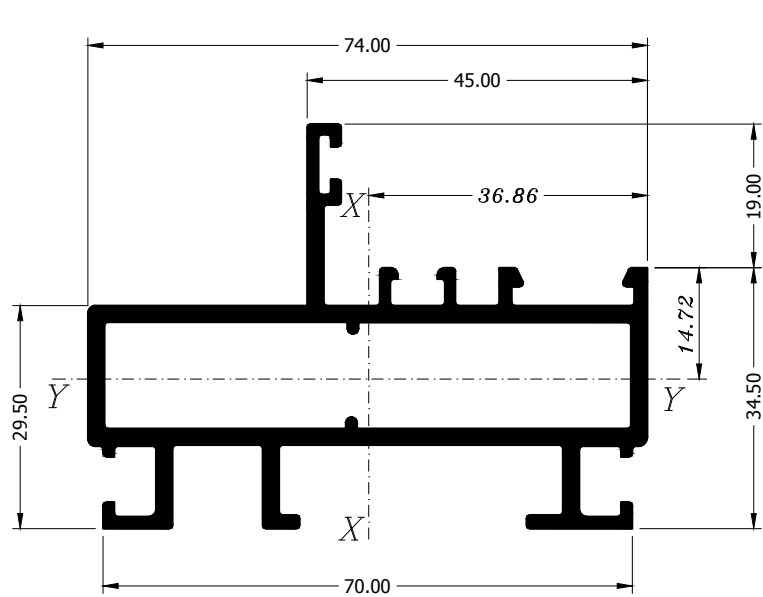
8 045 1420
1.123 Kg./ml.



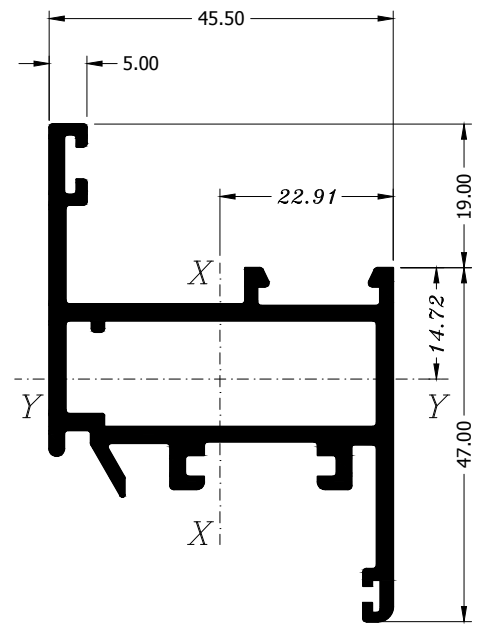
8 045 1520
1.311 Kg./ml.



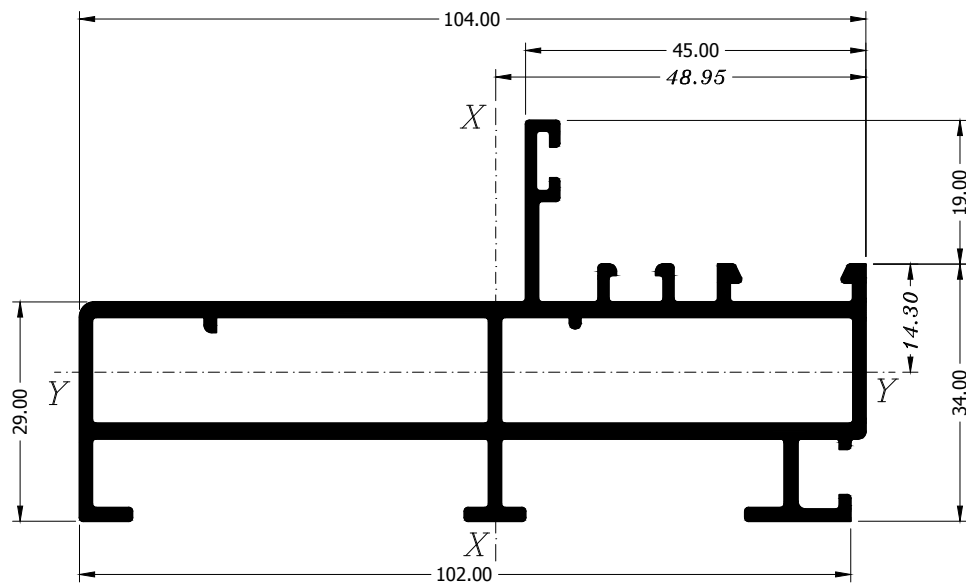
These profiles are specially produced for rolling machines



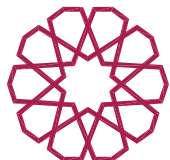
8 045 2072
1.506 Kg./ml.



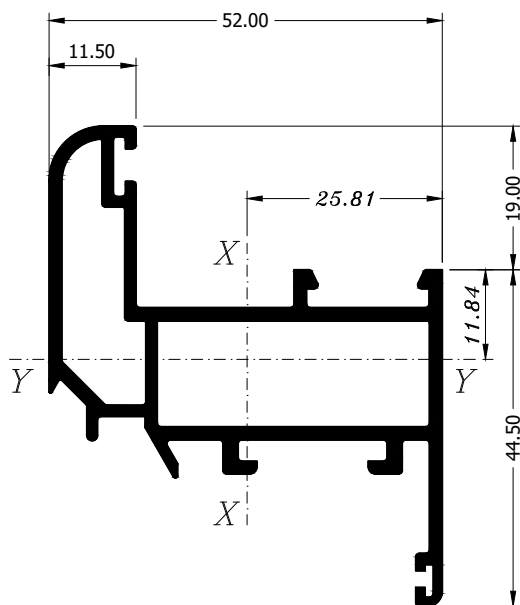
8 045 4010
1.156 Kg./ml.



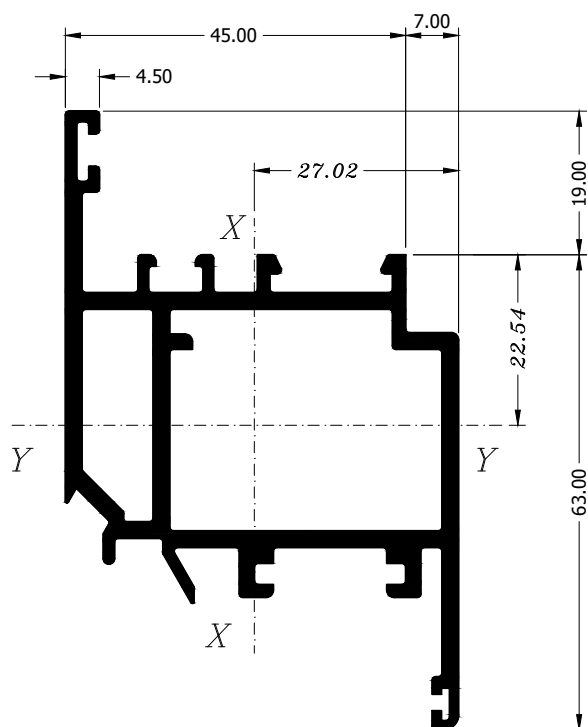
8 045 2101
1.833 Kg./ml.



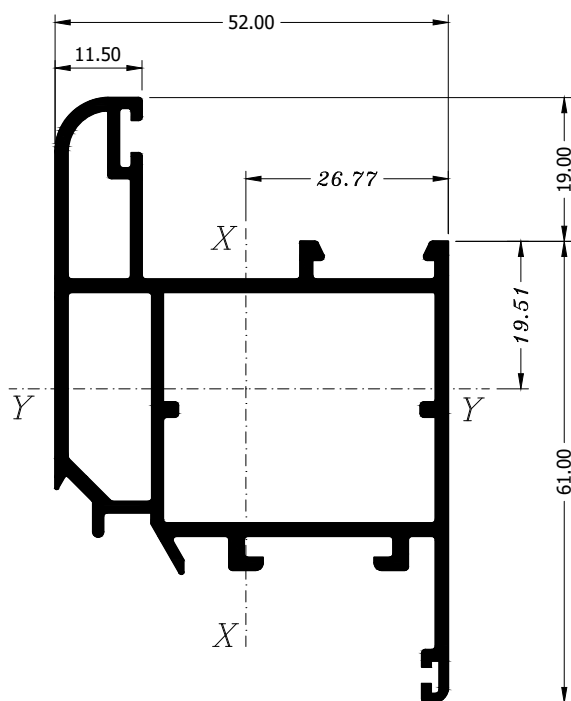
These profiles are specially produced for rolling machines



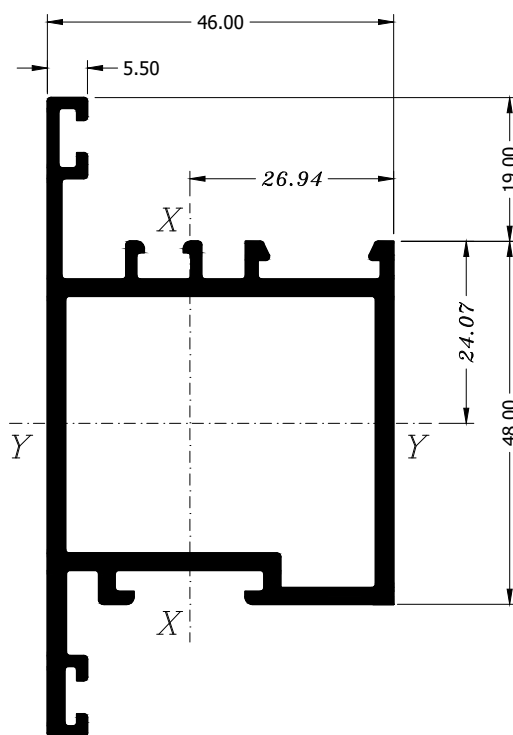
8 045 4112
1.046 Kg./ml.



8 045 4121
1.601 Kg./ml.



8 045 4122
1.280 Kg./ml.



8 045 4280
1.336 Kg./ml.

All profiles are registered as the property of

Machines & Aluminium Center - 2026

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