



O máximo em qualidade, o máximo em alumínio



CATÁLOGO DE PRODUTOS

6° Edição





A ALUMAX

Com uma moderna planta industrial, possuímos extrusoras de 2200/1880 US TON, automatizadas, com tecnologia de última geração e com capacidade produtiva de aproximadamente 1200 Ton/mês.

Nossos equipamentos possuem mesas de transferência de 62 metros, forno de envelhecimento com capacidade de temperar perfis de até 15,5 metros e padrões que garantem as propriedades mecânicas estritamente conforme as normas ABNT, ASTM e ANSI.

Os tarugos que utilizamos são de altíssima qualidade nas ligas: 6005, 6060, 6063, 6101 e 6463. Também efetuamos a rastreabilidade total do processo produtivo, visando garantir a qualidade exigida por nossos clientes.

Nossas linhas abrangem produtos voltados para a construção civil e indústrias em geral.

Situada em Vila Nova Bonsucesso, Guarulhos-SP, convidamos todos os clientes a nos fazer uma visita.

Endereço:
Vila Urga, 604
Vila Nova Bonsucesso,
Guarulhos - SP
07175-332

Contato:
Fone: (11) 2436-8486
alumax@alumax.ind.br
www.alumax.ind.br

 /alumaxextrusao
 @alumaxextrusao
 linkedin.com/company/
alumaxextrusao/



CATÁLOGO ALUMAX

A Alumax se reserva o direito de a qualquer momento e sem aviso prévio, efetuar toda e qualquer modificação que julgar necessária neste catálogo.

Os pesos, espessuras e dimensões dos perfis apresentados neste catálogo, são indicativos e podem variar em função de tolerâncias previstas na norma ABNT ou indicadas no próprio catálogo.

O catálogo foi revisado, porém poderão ocorrer divergências devido a erros de digitação.

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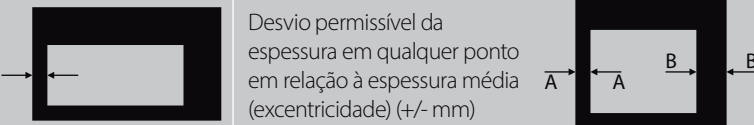
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NI-1291.....	137	NI-1727.....	175	SU-056.....	84
NI-1292.....	137	NI-1728.....	175	SU-057.....	84
NI-1296.....	116	NI-1848.....	25	SU-060.....	84
NI-1299.....	163	NI-3039.....	157	SU-061.....	84
NI-1300.....	163	NI-3100.....	157	SU-068.....	85
NI-1301.....	163	NI-4028.....	157	SU-069.....	85
NI-1302.....	27	NI-4058.....	158	SU-070.....	85
NI-1306.....	164	NI-4064.....	158	SU-071.....	85
NI-1307.....	164	NI-4065.....	158	SU-072.....	85
NI-1308.....	165	NI-4068.....	159	SU-073.....	85
NI-1309.....	165	NI-4077.....	159	SU-079.....	85
NI-1315.....	57	NI-4078.....	160	SU-080.....	85
NI-1323.....	166	NI-4098.....	160	SU-081.....	85
NI-1327.....	36	NI-7014.....	161	SU-082.....	86
NI-1328.....	36	NI-7034.....	161	SU-083.....	86
NI-1330.....	37	NI-7035.....	162	SU-086.....	86
NI-1333.....	156	P-140.....	61	SU-090.....	86
NI-1334.....	153	P-146.....	61	SU-091.....	86
NI-1335.....	153	P-147.....	62	SU-094.....	86
NI-1336.....	153	P-151.....	62	SU-096.....	87
NI-1344.....	166	P-152.....	62	SU-102.....	87
NI-1345.....	116	P-153.....	62	SU-103.....	87
NI-1346.....	166	P-166.....	62	SU-110.....	87
NI-1350.....	116	P-167.....	62	SU-111.....	87
NI-1369.....	55	P-227.....	63	SU-121.....	88
NI-1370.....	54	P-264.....	69	SU-122.....	88
NI-1372.....	167	P-270.....	69	SU-123.....	88
NI-1373.....	167	P-273.....	69	SU-186.....	89
NI-1375.....	168	P-318.....	63	SU-187.....	89
NI-1376.....	168	P-319.....	65	SU-188.....	89
NI-1377.....	169	P-412A.....	63	SU-190.....	89
NI-1379.....	33	P-414.....	63	SU-192.....	89
NI-1389.....	25	PC-026.....	100	SU-200.....	89
NI-1400.....	25	PC-027MA.....	101	SU-225.....	90
NI-1410.....	25	PT-008.....	38	SU-226.....	90
NI-1411.....	25	PU-639.....	33	SU-227.....	90

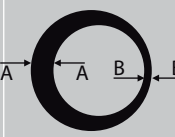
SU-230.....	90	TUB-4504.....	37	VER-032.....	26
SU-241.....	91	TUB-4513L.....	37	VER-040.....	26
SU-242.....	91	TUB-4536.....	37	VER-4008.....	29
SU-243.....	91	TUB-4543.....	37	VER-4017.....	29
SU-245.....	91	TUB-4545.....	37	VER-4022.....	29
SU-270.....	92	TUB-4560.....	37	VER-6005.....	28
SU-279.....	92	TUB-4563.....	37	VER-6007.....	28
SU-280.....	92	TUB-4576.....	37	VER-6009.....	28
SU-281.....	92	TUB-4598.....	101	VER-6011.....	28
T-095.....	38	TUB-4599.....	37	VER-6013.....	28
TUB-009.....	35	TUB-4599P.....	37	VZ-023.....	95
TUB-010.....	35	TUB-4600.....	37	VZ-024.....	94
TUB-018.....	35	TUB-4600L.....	37	VZ-051.....	94
TUB-026.....	35	U-044.....	32	VZ-060.....	94
TUB-027.....	35	U-397.....	42	XKS-01.....	130
TUB-028.....	35	U-398.....	43	XKS-02.....	130
TUB-036.....	35	U-399.....	43	XKS-03.....	130
TUB-038.....	35	U-425.....	63	XKS-04.....	130
TUB-045.....	35	U-482.....	69	Y-106.....	43
TUB-046.....	35	U-491.....	52	Y-107.....	43
TUB-060.....	35	U-495.....	111	Y-120.....	39
TUB-061.....	35	U-496.....	111	Y-140.....	69
TUB-069.....	36	U-522.....	63	Y-181.....	69
TUB-070.....	36	U-555A.....	52	Y-195.....	64
TUB-081.....	36	U-556.....	52	Y-260.....	64
TUB-222.....	36	U-615.....	147	Y-312.....	64
TUB-324.....	36	U-621.....	147	Y-335.....	105
TUB-326.....	36	U-653.....	40	Y-343.....	53
TUB-462.....	35	U-655.....	40	Y-343A.....	53
TUB-610.....	36	U-064L.....	32	Y-350.....	64
TUB-675.....	36	U-681.....	63	Y-355.....	105
TUB-4003.....	34	U-1002.....	40	Y-429MA.....	105
TUB-4003L.....	34	U-1014.....	53	Y-630.....	65
TUB-4008.....	34	U-1027.....	53	Z-073.....	93
TUB-4011L.....	34	U-1056.....	43	Z-114.....	65
TUB-4014.....	34	U-1108.....	53	Z-169A.....	95
TUB-4020L.....	34	U-1109.....	53	Z-175.....	65
TUB-4020P.....	34	U-2020.....	53	Z-201A.....	95
TUB-4046L.....	34	VER-011.....	26	Z-203.....	95
TUB-4054.....	34	VER-014.....	26	Z-248.....	93
TUB-4054L.....	34	VER-016.....	26		
TUB-4064L.....	34	VER-018.....	26		
TUB-4501.....	37	VER-021.....	26		

ESPESSURA DA PAREDE

Tubos quadrados, retangulares, sextavados e oitavados - extrudados

Espessura nominal da parede (mm)	Desvio permissível da espessura média AA+BB/2 em relação a espessura nominal		Desvio permissível da espessura em qualquer ponto em relação à espessura média (excentricidade) (+/- mm)	
				
	Diâmetro do círculo circunscrito (mm)			
	Menor que 127,0	Maior que 127,0	Menor que 127,0	Maior que 127,0
Até 1,19	0,13	0,20	0,13	10% da espessura média da parede Máximo: 1,52 Mínimo: 0,25
1,20 a 1,55	0,15	0,23	0,18	
1,56 a 1,95	0,18	0,25	0,25	
1,96 a 3,15	0,18	0,25	0,25	
3,16 a 6,34	0,20	0,38	0,36	
6,35 a 9,51	0,28	0,51	0,63	
9,52 a 12,69	0,36	0,76	0,76	
12,70 a 19,04	0,63	1,02	1,02	

Espessura de parede - Tubos treilados

Espessura nominal da parede (mm)	Desvio permissível da espessura média $AA+BB/2$ em relação a espessura nominal		Desvio permissível da espessura em qualquer ponto em relação à espessura média (excentricidade) (+/- mm)	
			Para tubo sem ligas não tratáveis termicamente	
0,25 a 0,89	0,05		0,05	10% da espessura nominal Mínimo: 0,08
0,90 a 1,24	0,08		0,08	
1,25 a 2,10	0,10		0,10	
2,11 a 3,05	0,13		0,15	
3,06 a 5,16	0,15		0,20	
5,17 a 7,62	0,20		0,30	
7,63 a 9,52	0,38		0,51	
9,53 a 12,70	0,51		0,76	

(1) Para tubos em rolos, deverão ser aplicados os valores para ligas tratáveis termicamente.

(2) Para liga 50M T8, a única tolerância de espessura de parede aplicável é o desvio permissível em qualquer ponto e este, é +/- 15% da espessura especificada.

Comprimento - Tubos treilados

Diâmetro externo ou Largura nominal (mm)	Desvios permissíveis em relação ao comprimento nominal (somente a mais, mm)				
	Comprimento nominal (mm)			Rolos	
	Até 3.360	3.661 a 9.150	9.151 a 15.150	Até 30m	30 a 75m
Até 6,34	6,4	9,5	12,7	5%	+/- 10%
6,35 a 31,74	3,2	6,4	9,5	5%	+/- 10%
31,75 a 76,19	3,2	6,4	9,5	-	-
76,20 a 203,20	4,8	7,9	11,1	-	-

Retilinearidade - Tubos treilados

Diâmetro externo ou largura (mm)	Desvio permissível por metro de comprimento ^{(1) (2)} (mm)
Abaixo de 9,52	38,75
9,53 a 152,390	,78
152,40 e acima	1,55

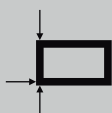
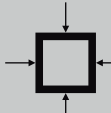
(1) Não aplicável em têmpera 0.

(2) Não aplicável para comprimentos abaixo de 3 metros.

TOLERÂNCIAS DIMENSIONAIS EM TUBOS

Altura e largura (Tubos quadrados, retangulares, sextavados e oitavados)

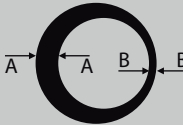
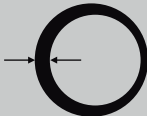
Desvio permissível da altura (ou) largura em relação à dimensão nominal (+/- mm)

	Nos cantos	Em lados opostos ⁽¹⁾	
Altura ou largura nominal (mm)	 Tubos quadrados e retangulares	 Tubos quadrados sextavados e oitavados	Tubos retangulares
	Tubos extrudados		
12,70 a 19,050	,300	,51	A tolerância para a largura é o valor da tolerância para uma dimensão igual à altura, e inversamente, mas em nenhum caso esta tolerância é menor for menor do que nos cantos ⁽²⁾
19,06 a 25,400	,360	,51	
25,41 a 50,80	0,46	0,63	
50,81 a 101,60	0,63	0,89	
101,60 a 126,70	0,89	1,14	
127,01 a 152,401	,141	40	
	Tubos treilados		
Até 12,700	,080	,15	A tolerância para a largura é o valor da tolerância para uma dimensão igual à altura, e inversamente, mas em nenhum caso esta tolerância é menor for menor do que nos cantos ⁽²⁾
12,71 a 25,400	,100	,20	
25,41 a 50,800	,130	,25	
50,81 a 76,200	,150	,30	
76,21 a 127,00	0,20	0,41	
127,01 a 152,400	,250	,51	
152,41 a 203,200	,380	,76	

(1) Não aplicável em têmpera 0, tubos em rolos ou tubos cuja espessura de parede for inferior a 0,5mm ou 2,5% do diâmetro externo da circunferência equivalente (diâmetro do círculo cuja circunferência mede o perímetro do tubo).

(2) Ex.: em um tubo retangular extrudado de 76,20 x 38,10 mm, a tolerância na largura (76,20) é de +/- 0,63 mm e na altura (38,10), é de +/- 0,89 mm.

Espessura de parede - Tubos extrudados

Tubos redondo extrudados						
Espessura nominal da parede (mm)	Desvio permissível da espessura média AA+BB/2 em relação à espessura nominal (+/- mm)					
	Diâmetro externo (mm)					
	Até 31,75	31,76 a 76,19	76,20 a 126,99	Acima de 127,00		
Até 1,19	0,15	--		-	10% da espessura média de parede Máximo: 1,52 Mínimo: 0,25	
1,20 a 1,55	0,18	0,200	,20	0,25		
1,56 a 1,950	,20	0,200	,23	0,30		
1,96 a 3,15	0,23	0,230	,25	0,38		
3,16 a 6,34	0,23	0,230	,33	0,51		
6,35 a 9,51	0,28	0,280	,41	0,63		
9,52 a 12,69-		0,380	,53	0,89		
12,70 a 19,04-		0,510	,71	1,14		

TOLERÂNCIAS DIMENSIONAIS EM PERFIS EXTRUDADOS

Comprimento			
Diâmetro externo ou largura nominal (mm) ⁽¹⁾	Desvio permissível em relação ao comprimento nominal (somente a mais) (mm)		
	Comprimento nominal (mm)		
	Até 3.6603	.661 a 9.1509	.151 a 15.250
Até 76,193	,2	6,49	,5
De 76,20 a 203,204	,8	7,91	1,1
Acima de 203,206	,4	9,51	2,7

Angularidade	
Angularidade de espessura mínima da aba (mm) ⁽³⁾	Desvio permissível em relação ângulo nominal (graus) ⁽⁴⁾
Até 4,75	+/- 2,0
De 4,76 a 19,04+	-/- 1,5
Acima de 19,05	+/- 1,0

Corte final
Desvio permissível do quadro $\neq 1^\circ$.
(1) Para vergalhões diâmetro nominal, para barras largura nominal.
(2) Para se obter o desvio permissível em barras de mais de 1 metro de comprimento, multiplica-se o valor do comprimento pelo valor do desvio por metro.
(3) Quando houver duas abas adjacentes, considera-se a de menor espessura.
(4) Quando o espaço limitado pelo ângulo é todo metal, considera-se a menor espessura de metal no vértice do ângulo

TOLERÂNCIAS DIMENSIONAIS EM TUBOS

ANSI – H35.2 (ABNT NBR 8116)

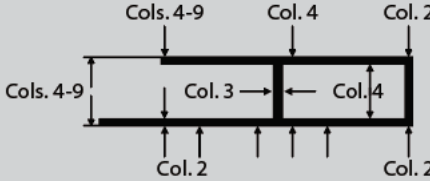
Diâmetros - Tubos redondos

Diâmetro nominal (mm)	Tolerâncias para mais e para menos ⁽²⁾		
	Desvio permissível do diâmetro médio AA+BB / 2 figura em relação ao diâmetro nominal (+/- mm)		Desvio permissível do diâmetro em qualquer ponto em relação ao diâmetro nominal (+/- mm) ⁽¹⁾
			
Tubos extrudados			
6,35 a 25,390	,25		0,51
25,40 a 50,79	0,30		0,64
50,80 a 101,590	,380		,76
101,60 a 152,39	0,64		1,27
152,40 a 203,19	0,88		1,90
203,20 a 253,99	1,14		2,54
	Tubos trefilados		
		Ligas não tratáveis termicamente	Ligas tratáveis termicamente
Até 12,730	,080	,080	,15
12,74 a 25,400	,100	,100	,20
25,41 a 50,80	0,13	0,13	0,25
50,81 a 76,20	0,15	0,15	0,30
76,21 a 127,00	0,20	0,20	0,41
127,01 a 152,40	0,25	0,25	0,51
152,41 a 203,20	0,38	0,38	0,76

TOLERÂNCIAS DIMENSIONAIS EM PERFIS EXTRUDADOS

ANSI – H35.2 (ABNT NBR 8116)

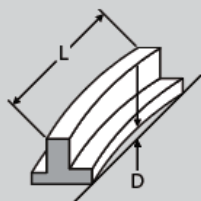
Tolerâncias na seção transversal

Dimensão Nominal (mm)	Tolerâncias – para mais ou a menos (mm)							
	Em dimensões de metal				Dimensões entre superfície metálica			
	Dimensão especificado incluindo mais de 75% de metal				Dimensão especificado incluindo mais de 25% de vazio ^{(4) (5)}			
								
	Todas as dimen- sões, exceto as especifi- cadas na coluna 3	Espessura de parede, de vazios fechados de mais de 70 mm (excentricidade) ⁽³⁾	Distância entre a dimensão especificada e a base mais próxima (mm)					
5 a 15			15 a 30	30 a 60	60 a 100	100 a 150	150 a 200	
Coluna 1	Coluna 2	Coluna 3	Coluna 4	Coluna 5	Coluna 6	Coluna 7	Coluna 8	Coluna 9
Até – 3,2	0,15	Mais ou menos 10% da espessura nominal (0,25mm mínimo) (1,50mm máximo)	0,25	0,30	-	-	-	-
3,2 – 6,3	0,18		0,36	0,36	0,41	-	-	-
6,3 – 12,5	0,20		0,41	0,41	0,46	0,50	-	-
12,5 - 20	0,23		0,46	0,46	0,50	0,56	-	-
20 – 25	0,25		0,50	0,50	0,56	0,64	0,76	-
25 – 40	0,30		0,58	0,58	0,66	0,76	0,88	-
40 – 50	0,36		0,66	0,66	0,78	0,92	1,05	1,25
50 – 100	0,60		0,96	0,96	1,20	1,45	1,70	2,05
100 – 150	0,86		1,25	1,25	1,65	2,00	2,40	2,80
150 – 200	1,10		1,55	1,55	2,40	2,50	3,05	3,55
200 – 250	1,35	1,90	1,90	2,50	3,05	3,70	4,30	

- (1) A variação permitida de uma dimensão composta de dois ou mais componentes é a soma das tolerâncias dos componentes se as dimensões dos componentes forem indicadas.
- (2) Quando uma tolerância for assimétrica, a tolerância simétrica é calculada considerando como dimensão nominal a média dos valores máximos e mínimos permitidos.
- (3) Quando a espessura de uma parede de um vazio fechado não for cotada, o desvio permitido é o da coluna 3, aplicado a espessura média de parede (a espessura é a média das duas medidas tomadas).
- (4) Em pontos situados a menos de 6,35mm da base mais próxima, são aplicadas as tolerâncias da coluna 2.
- (5) Adotam-se as seguintes tolerâncias em vazios fechados (perfis tubulares):
- 1) A tolerância para a largura é o valor indicado na coluna 4 para a altura.
 - 2) A tolerância para a altura é o valor indicado na coluna 4 para a largura.
- Em caso algum estas tolerâncias podem ser inferiores às dimensões metálicas correspondentes (coluna 2).

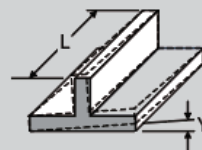
Nota: - (G) Nos pontos situados a 5 mm ou menos do início da aba, aplica-se as tolerâncias da coluna 2.

Retilinearidade



Diâmetro do menor círculo circunscrito (mm) ⁽¹⁾	Espessura mínima (mm)	Desvio (D) permissível por metro de comprimento (mm) ⁽²⁾
Até 38,09	Até 2,4	4,0
Até 38,10	Acima de 2,4	1,0
Acima de 38,10	Qualquer	1,0

Torção



Diâmetro do menor círculo circunscrito (mm) ⁽¹⁾	Desvio (Y) permissível (graus)		
	Por metro de comprimento	No comprimento total	Torção máxima
Até 38,09	3,3	3,3 x L (metros)	7%
De 38,09 a 76,19	1,6	1,6 x L (metros)	5%
Acima de 76,20	0,8	0,8 x L (metros)	3%

CARACTERÍSTICAS ESPECÍFICAS

CBA ASTM	Resistência à corrosão	Anodização		Solda MIG	Solda TIG	Usinagem	Deformabi- lidade a frio	Brasagem	Outras
		Decoração	Protetora						
1050	A	A	A	A	A	E	A	A	-
1100	A	A	A	A	A	E	A	A	-
1350	A	A	A	A	A	E	A	A	-
6005A	A	C	A	A	A	C	C	B	-
6060	A	A	A	A	A	D	B	A	-
6061	A	D	A	A	A	C	C	B	-
6063	A	A	A	A	A	D	B	A	-
6101	A	A	A	A	A	D	B	A	-
6261	A	C	A	A	A	C	C	B	-
6351	A	D	A	A	A	C	C	C	-
6463	A	A	A	A	A	D	B	A	-

Índices de "A até E" em ordem de mérito.

N- Não apropriado.

APLICAÇÕES TÍPICAS

CBA/ASTM	Aplicações
1050	Equipamentos e embalagens para indústrias alimentícias, químicas, bebidas e trocadores de calor.
1100	Equipamentos e embalagem para indústrias alimentícias, químicas e trocadores de calor, refletores de luz.
1350	Condutores elétricos.
6005A	Carrocerias de veículos, estruturas e equipamentos.
6060	Esquadrias em geral, ornamentos, divisórias, forros, reboques, vagões, oleodutos e rebites.
6061	Estruturas solicitadas, caminhão, móveis, reboques, vagões, oleodutos e rebites.
6063	Tubos de irrigação, acabamento de carrocerias, apropriado para anodização decorativa fosca (decoreção).
6101	Condutores e barramentos elétricos.
6261	Carrocerias de veículos, estruturas e equipamentos, vergalhões para usinagem.
6351	Estruturas solicitadas, coberturas, veículos e equipamentos, peças usinadas.
6463	Frisos brilhantes para autos e eletrodomésticos, perfis brilhantes para uso geral (alto brilho).

PROPRIEDADES MECÂNICAS				
CBA/ASTM		Limite de resistência à tração (MPa)	Limite de escoamento (MPa)	Alongamento (%) ⁽¹⁾
Liga	Têmpera			
1050	H12	70 (mín.)	30 (mín.)	-
	H14	85 (mín.)	70 (mín.)	18 (mín.)
	H18	110 (mín.)	90 (mín.)	8 (mín.)
	O	60 (max.)	15 (max.)	-
1100	H12	95 (mín.)	75 (mín.)	-
	H14	110 (mín.)	-	-
	H16	127 (mín.)	-	-
	H18	150 (mín.)	-	8 (mín.)
	O	105 (max.)	31 (max.)	-
1350	O	97 (max.)	-	25
6005A	T5	260 (mín.)	215 (mín.)	7 (mín.)
	T6	270 (mín.)	225 (mín.)	6 (mín.)
6060	T5	145 (mín.)	105 (mín.)	8 (mín.)
6063/6463	T4	130 (mín.)	70 (mín.)	13 (mín.)
	T5	145 (mín.)	105 (mín.)	8 (mín.)
	T6	205 (mín.)	170 (mín.)	8 (mín.)
	T6C	180 (mín.)	145 (mín.)	8 (mín.)
	O	117 (mín.)	35 (max.)	-
6061	T4	180 (mín.)	110 (mín.)	16 (mín.)
	T6	260 (mín.)	240 (mín.)	8 (mín.)
6082	T6	300 (mín.)	255 (mín.)	6 (mín.)
6101	T6	200 (mín.)	172 (mín.)	8 (mín.)
6261	T4	180 (mín.)	110 (mín.)	13 (mín.)
	T6	263 (mín.)	225 (mín.)	10 (mín.)
	T6C	230 (mín.)	200 (mín.)	7 (mín.)
6351	T4	220 (mín.)	130 (mín.)	16 (mín.)
	T6	290 (mín.)	260 (mín.)	8 (mín.)
	O	96 (mín.)	31 (max.)	25 (max.)

Obs.:

- 1) Perfis em quaisquer ligas podem ser fornecidos no estado "F", como fabricados, sem qualquer garantia quanto as características mecânicas.
- 2) As características mecânicas das ligas recozidas são valores máximos, de modo a garantir um completo recozimento.
- 3) Propriedades mecânicas de acordo com a norma ASTM-B221 (ABNT-NBR 7000).
- 4) Na liga 6101 têmpera T6 o valor da % IACS mínimo é de 55.
- 5) Para dobramentos especiais, a CBA poderá fornecer os produtos extrudados nas têmperas T52 (somente na liga 6063) e T6F (todas as ligas da série 6XXX).

COMPOSIÇÃO QUÍMICA											
CBA ASTM	Si	Fe	Cu	Mn	Mg	C	Zn	TL	Outros elementos		Alumínio (Mínimo)
									Cada	Total	
1050	0,25	0,40	0,05	0,05	0,05	-	0,05	0,03	0,03	-	99,50
1100	1,0	Si+Fe	0,05-0,20	0,05	-	-	0,10	-	0,05	0,15	99,00
1350	0,10	0,40	0,05	0,01	-	0,01	0,05	Ti+V 0,02	0,03	0,10	99,50
6005A	0,50-0,90	0,35	0,30	0,50	0,40-0,70	0,30	0,20	0,10	0,05	0,15	Restante
6060	0,30-0,6	0,10-0,30	0,10	0,10	0,35-0,60	0,05	0,15	0,10	0,05	0,15	Restante
6061	0,40-0,80	0,70	0,15-0,40	0,15	0,80-1,2	0,04-0,35	0,25	0,15	0,05	0,15	Restante
6063	0,20-0,60	0,35	0,10	0,10	0,45-0,90	0,10	0,10	0,10	0,05	0,15	Restante
6082	0,7-1,3	0,50	0,10	0,40-1,0	0,60-1,2	0,25	0,20	0,10	0,05	0,15	Restante
6101	0,30-0,70	0,50	0,10	0,03	0,35-0,8	0,03	0,10	-	0,03	0,10	Restante
6261	0,40-0,70	0,40	0,15-0,40	0,20-0,35	0,7-1,0	0,10	0,20	0,10	0,05	0,15	Restante
6351	0,7-1,3	0,50	0,10	0,40-0,8	0,40-0,8	-	0,20	0,20	0,05	0,15	Restante
6463	0,2-0,6	0,15	0,2	0,05	0,45-0,9	-	0,05	0,03	0,05	0,15	Restante

Os valores mencionados indidicam porcentagens em peso e representam limites máximos, salvo quando expresso intervalo.
A composição química é equivalente a norma ASTM-B221 (ABNT-NBR 6834)

EQUIVALÊNCIA ENTRE NORMAS					
ASTM CSA	ABNT/ BRASIL	Alemanha (DIN)	Inglaterra (BS)	Itália (UNI)	França (NF ou NR)
1050	1050	Al 99,5	1B	P-Al-P 99,5	A5
1100	1100	Al 99,0	1C	P-Al-P99,0	A4
1350	1350	E-Al99,5	1E	-	A5/L
6005A	6005A	Al Mg Si 0,7	-	-	-
6060	6060	Al Mg Si 0,5	H-9	P-Al Si 0,4 Mg	A-GS
6061	6061	Al Mg Si Cu	H-20	P-Al Mg1 Si Cu	A-GSUC
6063	6063	Al Mg Si 0,5	H-9	P-Al Mg Si	A-GS
6101	6101	E-Al Mg Si 0,5	91-E	P-Al Si 0,5 Mg	A-G S/L
6261	6261	-	-	-	-
6351	6351	Al Mg Si	H-30	P-Al Si Mg Mn	A-SGM
6463	6463	-	-	P-Al Mg Si/Cu	-

ESPECIFICAÇÕES TÉCNICAS

TIPOS DE PRODUTOS/LIGAS E TÊMPERAS DISPONÍVEIS

CBA ASTM	Perfis		Tubos			Arames	Vergalhão	
	Solidos	Tubulares	Redondos		Outros Extrudados		Extrudados	Trefilados
			Extrudados	Trefilados				
1050	O	O	O	O H12 H14 H18	O	O	O	O
	F	F	F	F	F	H14 H24 F	F	H14 H24 F
	O	O	O	O H12 H14 H16 H18	O	O	O	O
1100	F	F	F	F		H14 H18 H24 F		H14 H18 H24 F
	O	O	O	O	O	O	O	O
	F	F	F	F	F	F	F	F
1350	O	O	O	O	O	O	O	O
	F	F	F	F	F	F	F	F
6005A	T5 T6 e F	T5 T6 e F	T5 T6 e F		T5 T6 e F		T5 T6 e F	
6060	O	O	O	O	O	O	O	O
	T5	T5	T5	F	T5	F	T5	F
	F	F	F		F		F	F
6061	O	O				T9		T9
	T4	T4						
	T6 F	T6 F						
6063 6463	O	O	O	O	O	O	O	O
	T4 5	T4 T5	T4 T5		T4 T5		T4 T5	
	T6C T6 F	T6C T6 F	T6C T6 F	F	T6C T6 F	F	T6C T6 F	F
6101	T6		T6				T6	
6261	T4	T4	T4		T4		T4	O
	T6C	T6C	T6C		T6C		T6C	
	T6	T6	T6		T6		T6	F
6351	O	O	O		O	O	O	O
	T4	T4	T4		T4		T4	
	T6 F	T6 F	T6 F		T6 F	F	T6 F	F

CARACTERÍSTICAS FÍSICAS DO ALUMÍNIO E OUTROS MATERIAIS

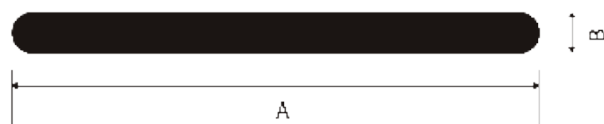
Propriedades físicas	Alumínio (1100)	Aço (1020)	Cobre (Puro)
Peso específico (kg/m³) x 10³	2,71	7,86	8,96
Temperatura de fusão (°C)	657	1500	1083
Módulo de elasticidade (kg/mm²)	7.000	21.000	11.250
Coefficiente de dilatação térmica linear 20 ° a 100 ° C (M/M.K.)	23,6x10 ⁻⁶	11,7.10 ⁻⁶	16,5.10 ⁻⁶
Condutibilidade térmica a 25 °C (W/M.K)	222	52	394
Condutibilidade elétrica (%IACS) à 20 °C	59	14,5	100



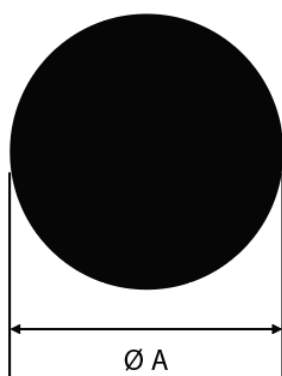
PRODUTOS



n° perfil	peso linear (kg/m)	A	B
NI-1133	0,100	15,88	2,38
NI-573	0,386	25,00	6,00
NI-338	0,499	32,00	6,00
NI-960	0,596	38,00	6,00
NI-341	0,629	40,00	6,00
NI-180	0,966	50,00	6,00
NI-902	1,296	50,00	10,00
NI-181	1,035	65,00	6,00
NI-903	1,703	65,00	10,00
NI-1011	1,287	75,00	6,45
NI-788	1,247	78,00	6,00
NI-156	1,279	80,00	6,00
NI-898	2,109	80,00	10,00
NI-878	1,249	85,00	5,50
NI-1012	1,462	85,00	6,45
NI-340	1,442	90,00	6,00
NI-157	1,605	100,00	6,00
NI-899	2,651	100,00	10,00
NI-369	1,768	110,00	6,00
NI-901	2,922	110,00	10,00
NI-1013	1,916	111,00	6,45
NI-158	1,930	120,00	6,00
NI-160	1,163	120,00	3,60
NI-617	4,992	120,00	15,80
NI-900	3,193	120,00	10,00
NI-743	0,975	120,00	3,00
NI-835	2,011	125,00	6,00
NI-846	2,672	125,00	8,00
NI-612	2,162	127,00	6,35
NI-182	2,092	130,00	6,00
NI-883	1,920	130,00	5,50
NI-1000	3,523	130,00	10,00
NI-1014	2,248	130,00	6,45
NI-866	0,715	132,00	2,00
NI-159	2,255	140,00	6,00
NI-339	2,418	150,00	6,00
NI-836	2,418	150,00	6,00
NI-1015	2,598	150,00	6,45
NI-808	2,592	152,00	6,35
NI-1016	3,035	175,00	6,45
NI-879	2,761	180,00	5,70
NI-880	3,050	180,00	6,30
NI-886	1,458	180,00	3,00
NI-1017	3,385	195,00	6,45
NI-945	3,231	200,00	6,00

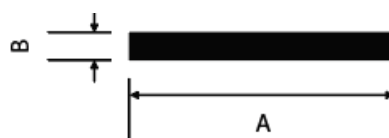


n° perfil	peso linear (kg/m)	A	B
NI-1440	0,131	15,87	3,17
NI-1559	0,532	50,00	4,00
NI-1411	0,662	50,00	5,00
NI-1474	0,954	60,00	6,00
NI-1410	1,028	77,00	5,00
NI-1389	0,866	80,00	4,00
NI-1012	1,462	85,00	6,45
NI-1508	0,772	95,00	3,00
NI-1572	1,737	100,00	6,50
NI-1554	2,265	130,00	6,50
NI-1400	4,006	150,00	10,00
NI-1453	5,966	150,00	15,00
NI-1583	2,793	160,00	6,50
NI-1584	3,146	180,00	6,50
NI-1556	3,945	240,00	6,10
NI-1848	2,797	130,00	8,00

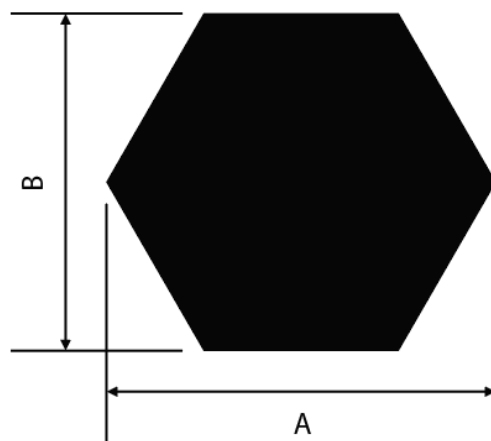


nº perfil	peso linear (kg/m)	A
VER-011	0,343	12,70
VER-014	0,536	15,87
VER-016	0,772	19,05
VER-018	1,050	22,22
NI-1055	1,330	25,00
VER-021	1,373	25,40
VER-032	3,089	38,10
VER-040	5,492	50,80

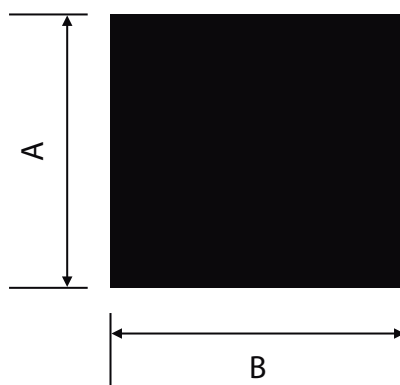
TABELADOS | BARRAS RETANGULARES



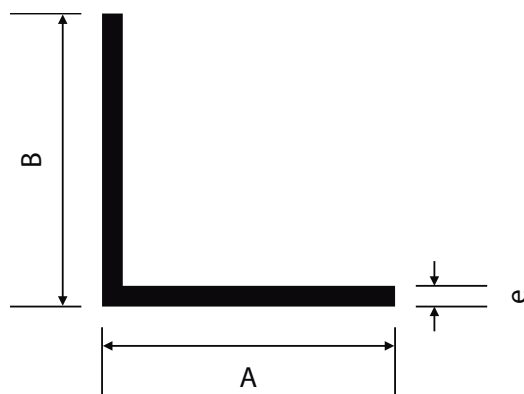
n° perfil	peso linear (kg/m)	A	B
BAR-012	0,109	12,70	3,18
NI-187	0,109	15,60	2,60
BAR-049	0,204	15,87	4,76
BAR-013	0,137	15,88	3,18
NI-1132	0,086	15,88	2,00
BAR-158	0,655	19,05	12,70
BAR-014	0,163	19,05	3,17
BAR-016	0,218	25,40	3,17
BAR-091	0,437	25,40	6,35
BAR-160	0,873	25,40	12,70
BAR-129	0,655	25,40	9,52
BAR-019	0,275	31,75	3,18
BAR-054	0,409	31,75	4,76
BAR-093	0,546	31,75	6,35
BAR-132	0,818	31,75	9,52
BAR-022	0,328	38,10	3,18
BAR-134	0,982	38,10	9,52
BAR-027	0,437	50,80	3,18
BAR-168	1,748	50,80	12,70
BAR-100	0,873	50,80	6,35
BAR-137	1,310	50,80	9,52
BAR-061	0,655	50,80	4,76
NI-018	0,411	101,50	1,50
BAR-196	8,744	203,20	15,88
BAR-096	0,665	38,10	6,35
BAR-030	0,545	63,50	3,17
NI-1232	0,085	21,00	1,50
NI-1235	0,108	20,00	2,00
NI-1269	0,081	20,00	1,50
NI-1302	5,506	160,00	12,70



n° perfil	peso linear (kg/m)	A	B
VER-6005	0,378	14,66	12,70
VER-6007	0,591	18,33	15,87
VER-6009	0,851	22,00	19,05
VER-6011	1,158	25,66	22,22
VER-6013	1,514	29,33	25,40



nº perfil	peso linear (kg/m)	A=B (mm)
VER-4008	0,435	12,70
VER-4017	1,748	25,40
VER-4022	3,933	38,10

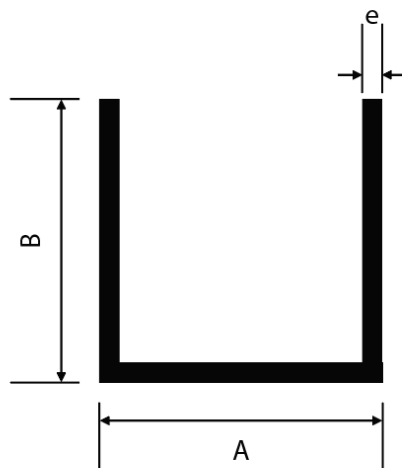


n° perfil	peso linear (kg/m)	A=B (mm)	e (espessura)
L-002	0,084	12,70	1,30
L-585	0,128	15,87	1,58
L-405	0,107	15,88	1,30
L-009	0,129	19,05	1,30
L-586	0,156	19,05	1,58
L-013	0,210	25,40	1,58
L-014	0,409	25,40	3,17
L-741	0,160	25,40	1,20
NI-1462	0,314	30,00	2,00
L-018	0,519	31,75	3,18
L-019	0,758	31,75	4,76
L-022	0,629	38,10	3,18
L-023	0,921	38,10	4,76
L-025	0,801	50,80	3,00
L-612	0,486	50,80	1,80
L-026	1,249	50,80	4,76
L-027	1,638	50,80	6,35
NI-1461	1,276	80,00	3,00

TABELADOS | CANTONEIRAS DE ABAS DESIGUAIS

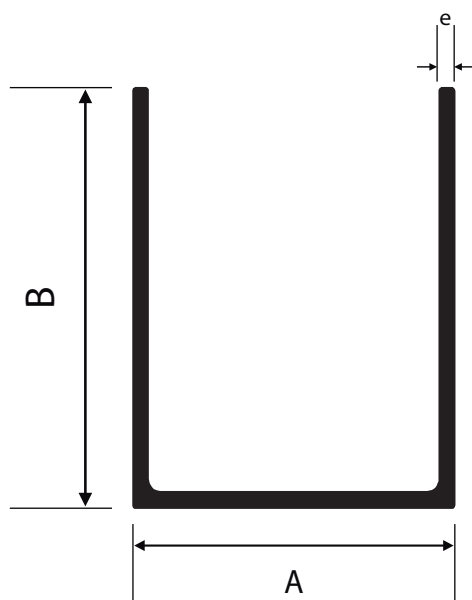


n° perfil	peso linear (kg/m)	A	B	e (espessura)
NI-930	0,209	22,22	19,70	2,38
L-668A	0,220	50,80	31,75	1,00

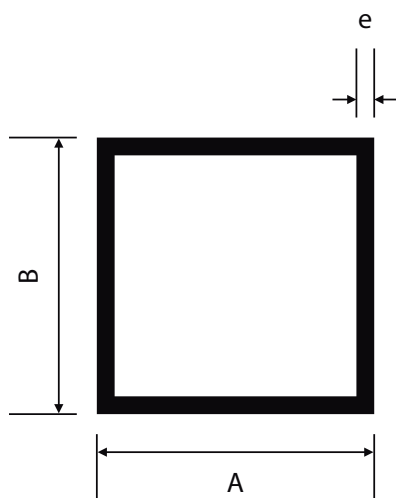


n° perfil	peso linear (kg/m)	A=B (mm)	e (espessura)
U-044	0,1591	2,70	1,70
U-064L	0,272	22,31	,58

TABELADOS | PERFIL COM ABAS DESIGUAIS

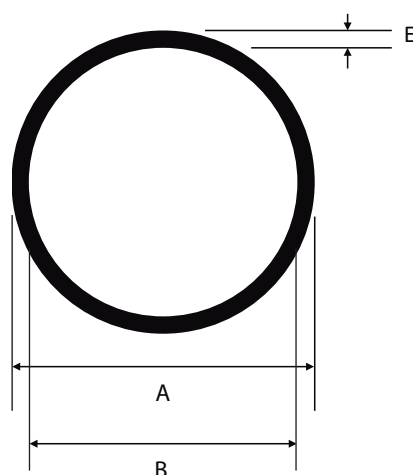


n° perfil	peso linear (kg/m)	A	B	e (espessura)
NI-1286	0,255	19,05	12,70	2,38
NI-1379	0,181	25,00	22,00	1,00
NI-1185	0,284	26,00	32,00	1,20
PU-639	0,391	29,00	35,00	1,50



n° perfil	peso linear (kg/m)	A=B (mm)	e (espessura)
TUB-4003L	0,195	19,05	1,00
TUB-4003	0,285	19,05	1,50
NI-401	0,264	25,40	1,00
TUB-4008	0,289	25,40	1,10
NI-1255	0,314	25,40	1,20
TUB-4046L	0,314	30,00	1,00
TUB-4011L	0,397	31,75	1,20
TUB-4064L	0,402	38,10	1,00
TUB-4014	0,594	38,10	1,50
NI-606	0,644	50,80	1,20
TUB-4020L	0,749	50,80	1,40
TUB-4020P	0,956	50,80	1,80
TUB-4054	2,685	101,60	2,50
TUB-4054L	2,159	101,60	2,00

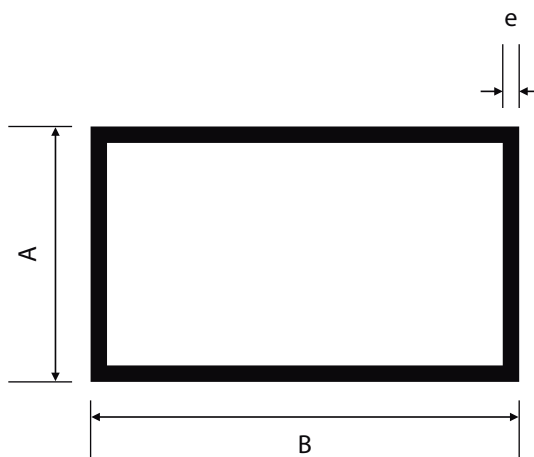
TABELADOS | TUBOS REDONDOS



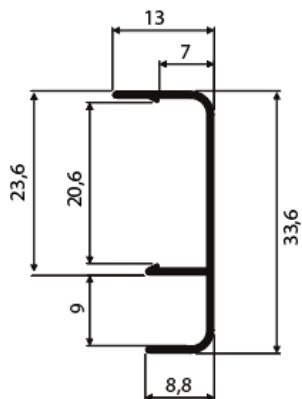
n° perfil	peso linear (kg/m)	A	B	e (espessura)
TUB-009	0,117	12,70	10,30	1,20
TUB-010	0,149	12,70	9,54	1,58
NI-1212	0,099	12,70	10,70	1,00
NI-402	0,126	15,87	13,87	1,00
TUB-018	0,138	15,87	13,67	1,10
NI-1211	0,138	15,87	13,67	1,10
TUB-026	0,133	16,70	14,70	1,00
TUB-027	0,188	19,05	16,57	1,24
TUB-028	0,234	19,05	15,89	1,58
NI-1565	0,213	21,50	19,20	1,24
NI-1566	0,255	21,50	19,20	1,24
NI-1564	0,261	22,22	19,26	1,48
TUB-036	0,180	22,22	20,22	1,00
TUB-038	0,278	22,22	19,06	1,58
NI-170	0,300	25,00	22,00	1,50
NI-374	0,397	25,40	21,40	2,00
NI-403	0,207	25,40	23,40	1,00
TUB-045	0,247	25,40	22,92	1,24
TUB-046	0,304	25,40	22,40	1,50
NI-1272	0,420	26,70	22,70	1,00
NI-022	0,362	28,58	25,42	1,58
TUB-462	0,234	28,58	26,58	1,00
TUB-060	0,563	31,75	27,25	2,25
TUB-061	0,771	31,75	25,40	3,17

n° perfil	peso linear (kg/m)	A	B	e (espessura)
NI-1273	0,584	33,40	29,00	2,20
NI-737	0,436	34,00	30,84	1,58
NI-704	0,612	38,01	34,01	2,00
NI-501	0,316	38,10	36,10	1,00
TUB-675	0,489	38,10	34,94	1,58
TUB-070	0,943	38,10	31,75	3,17
TUB-069	0,452	38,10	35,20	1,45
NI-492	0,447	39,00	36,20	1,40
NI-172	0,491	40,00	37,00	1,50
NI-193	1,376	42,00	33,40	4,30
NI-024	1,471	44,00	33,40	5,30
TUB-081	0,576	44,45	41,29	1,58
NI-1327	0,919	48,30	43,60	2,35
NI-524	1,285	50,80	44,44	3,18
TUB-610	0,662	50,80	47,64	1,58
NI-709	0,536	50,80	48,26	1,27
TUB-222	0,830	50,80	46,80	2,00
NI-1262	1,592	50,80	42,80	4,00
NI-025	1,952	51,00	41,00	5,00
NI-174	1,036	63,00	59,00	2,00
NI-167	4,154	68,00	53,00	7,50
NI-166	4,154	69,00	53,00	8,00
NI-165	4,750	71,00	53,00	9,00
NI-333	5,677	74,00	53,00	10,50
NI-337	1,202	76,20	72,40	1,90
TUB-324	0,807	76,20	73,66	1,27
TUB-326	1,085	101,60	99,06	1,27
NI-175	2,288	110,00	105,00	2,50
NI-1568	0,213	18,40	15,44	1,80

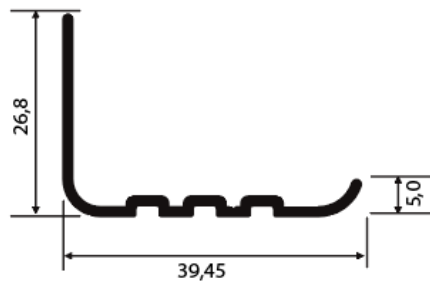
TABELADOS | TUBOS RETANGULARES



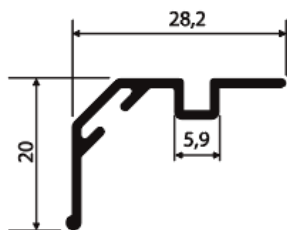
n° perfil	peso linear (kg/m)	A	B	e (espessura)
NI-664	0,195	12,70	25,40	1,00
TUB-4536	0,461	12,70	50,80	1,40
TUB-4501	0,275	12,70	25,40	1,40
NI-736	0,177	12,70	22,00	1,00
NI-1060	0,352	12,70	48,50	1,10
NI-1330	0,397	19,60	24,80	1,80
NI-839	1,095	25,00	80,00	2,00
NI-385	0,557	25,40	50,80	1,40
NI-663	0,333	25,40	38,10	1,00
TUB-4576	0,479	25,40	50,80	1,20
TUB-4563	0,439	25,40	50,80	1,10
TUB-4504	0,782	25,40	50,80	2,00
TUB-4560	0,625	25,40	50,80	1,58
TUB-4545	0,492	25,40	38,10	1,50
TUB-4543	0,649	38,10	60,30	1,25
TUB-4513L	0,698	38,10	50,80	1,50
TUB-4600	0,904	38,10	76,20	1,50
TUB-4600L	0,728	38,10	76,20	1,20
NI-384	1,135	50,80	101,60	1,40
TUB-4599	1,452	50,80	101,60	1,80
TUB-4599P	1,764	50,80	101,60	2,20



CM-130
0,161 kg/m



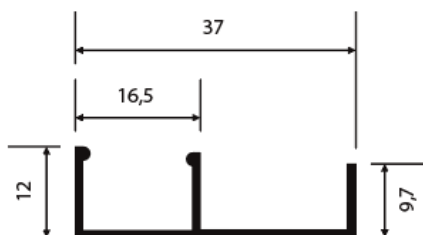
ME-013
0,271 kg/m



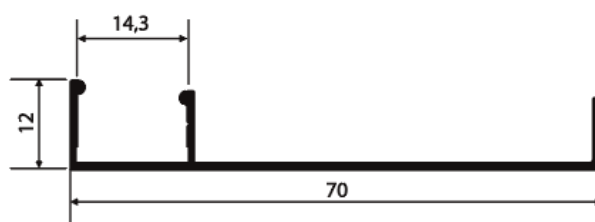
ME-056
0,197 kg/m



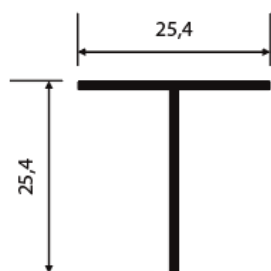
ME-092
0,173 kg/m



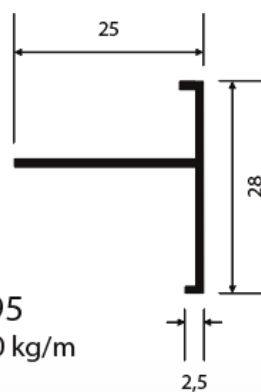
MP-347
0,203 kg/m



NI-944
0,301 kg/m

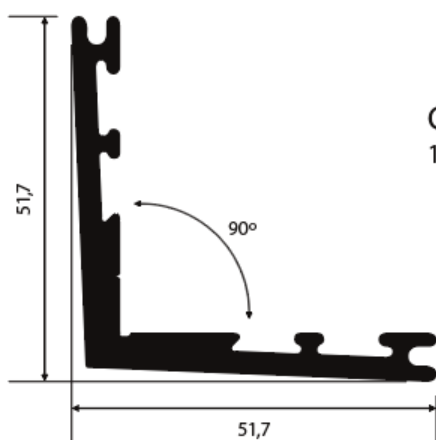


PT-008
0,161 kg/m

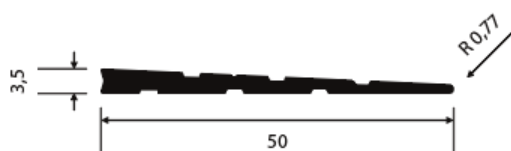


T-095
0,190 kg/m

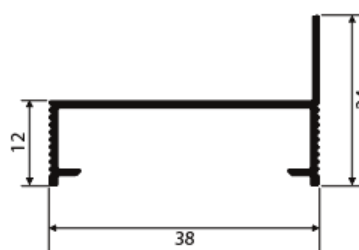
CONTRA MARCO / MACHO E CUNHA



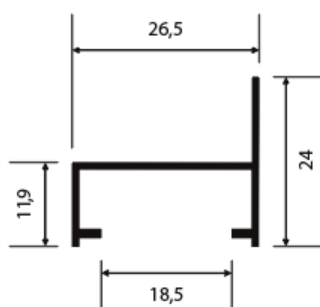
CL-006
1,112 kg/m



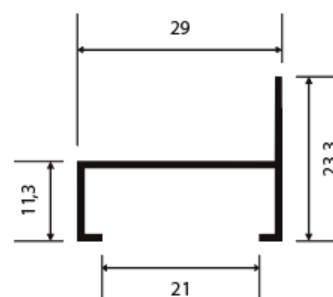
CL-011
0,319 kg/m



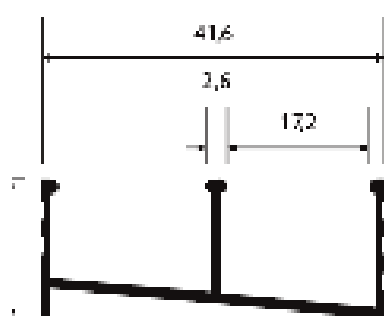
CM-060
0,230 kg/m



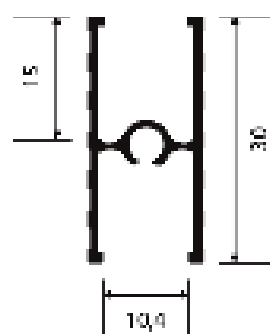
CM-063
0,180 kg/m



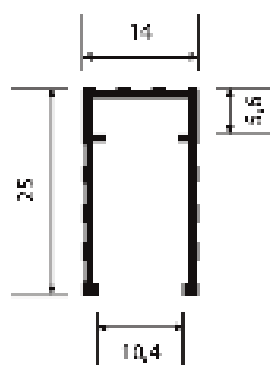
Y-120
0,250 kg/m



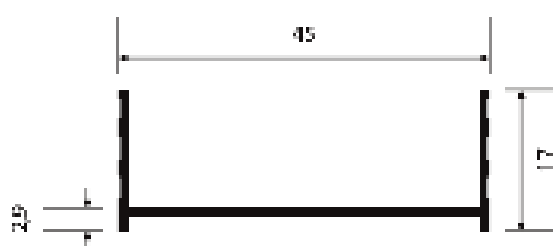
E-256
0,233 kg/m



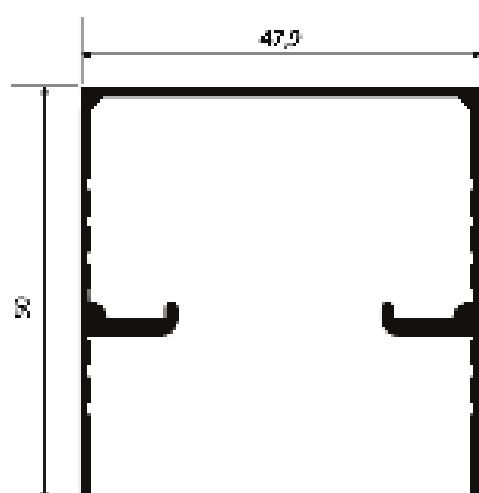
I-154
0,233 kg/m



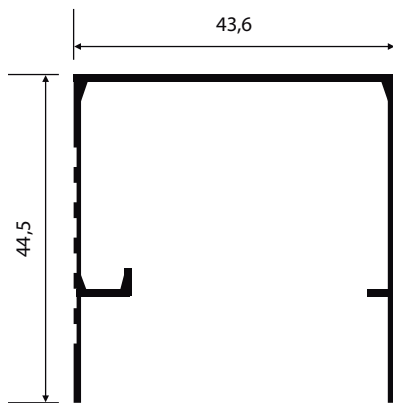
U-1002
0,188 kg/m



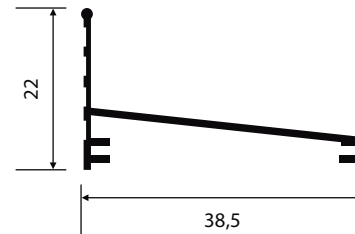
U-653
0,180 kg/m



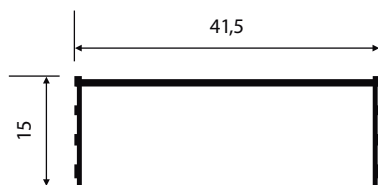
U-655
0,601 kg/m



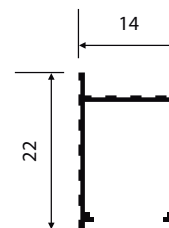
NI-150
0,421 kg/m



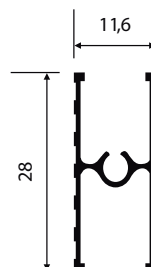
NI-151
0,251 kg/m



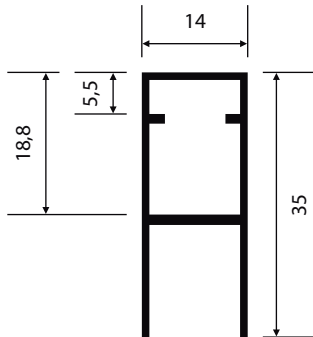
NI-152
0,179 kg/m



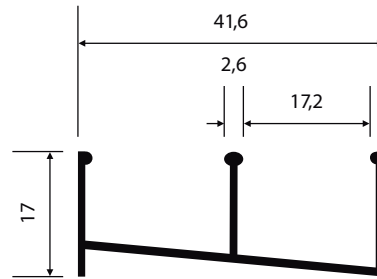
NI-153
0,154 kg/m



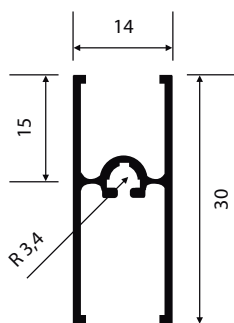
NI-154
0,210 kg/m



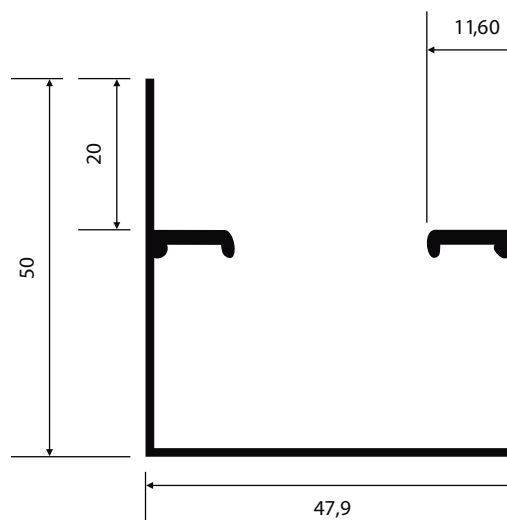
A-022
0,318 kg/m



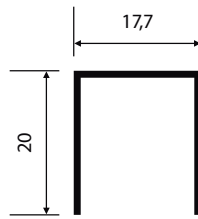
E-117
0,240 kg/m



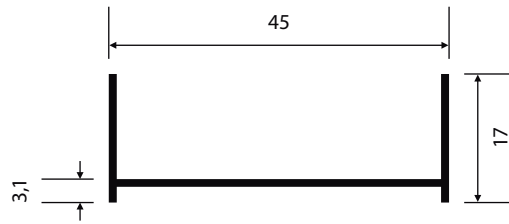
I-083
0,272 kg/m



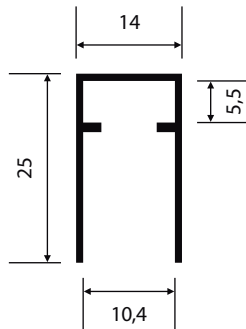
U-397
0,580 kg/m



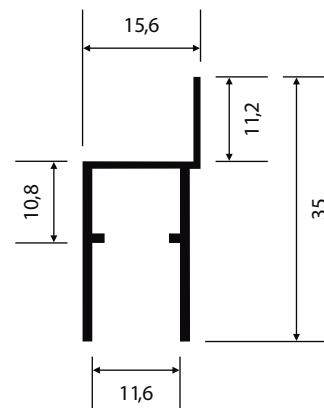
U-398
0,192 kg/m



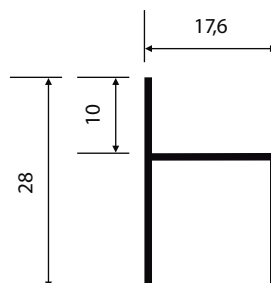
U-399
0,228 kg/m



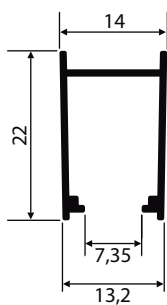
U-1056
0,183 kg/m



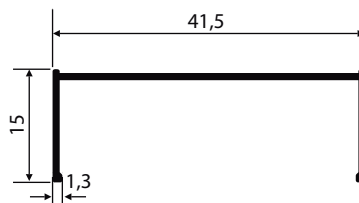
Y-106
0,245 kg/m



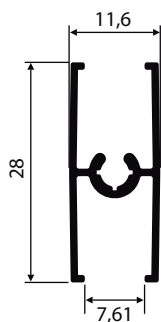
Y-107
0,175 kg/m



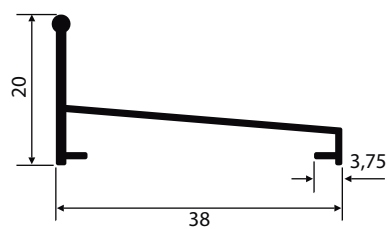
NI-649
0,162 kg/m



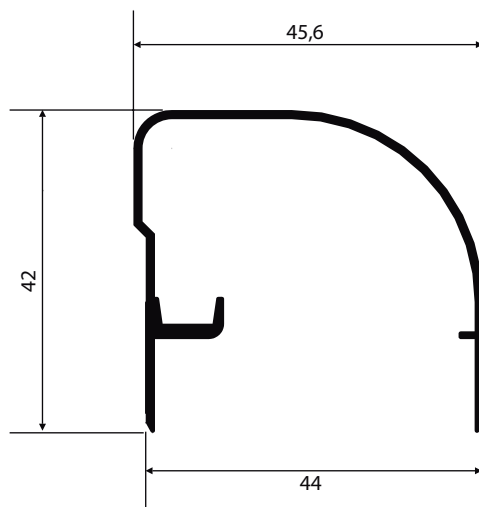
NI-650
0,181 kg/m



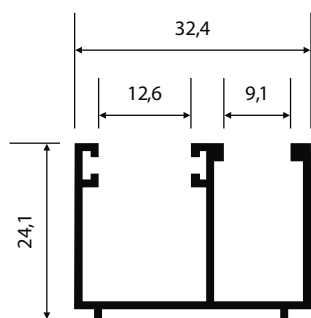
NI-651
0,211 kg/m



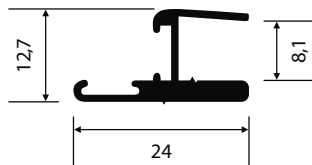
NI-652
0,198 kg/m



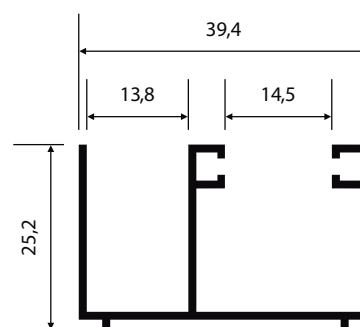
NI-653
0,443 kg/m



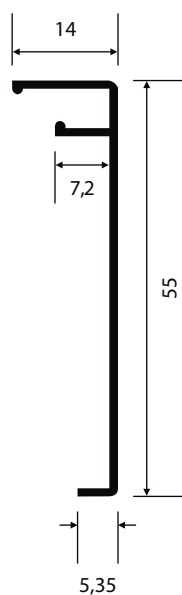
BX-070
0,418 kg/m



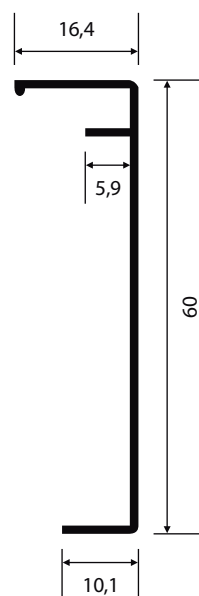
CB-266
0,223 kg/m



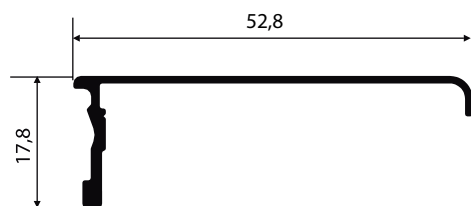
E-306
0,390 kg/m



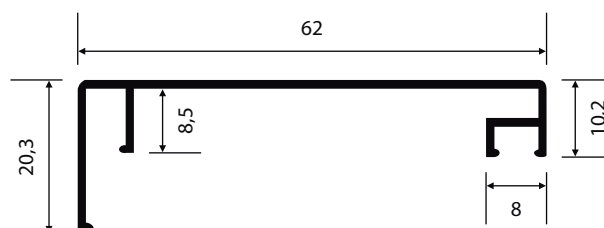
E-1050
0,240 kg/m



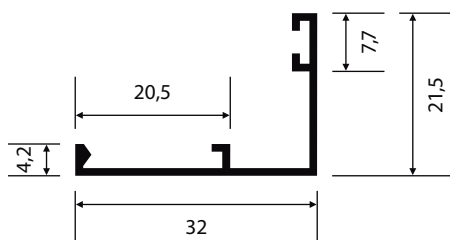
E-1052
0,263 kg/m



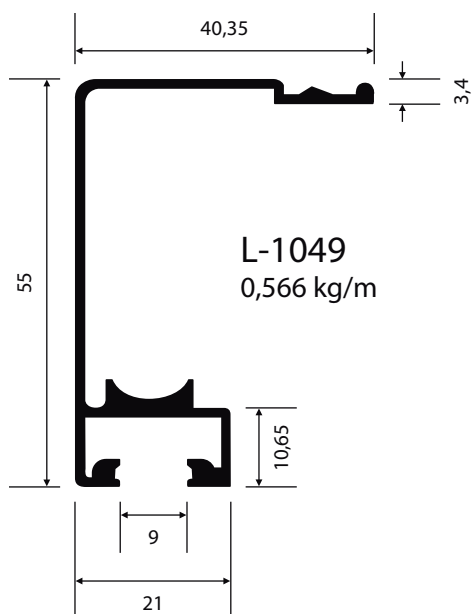
E-1050E
0,238 kg/m



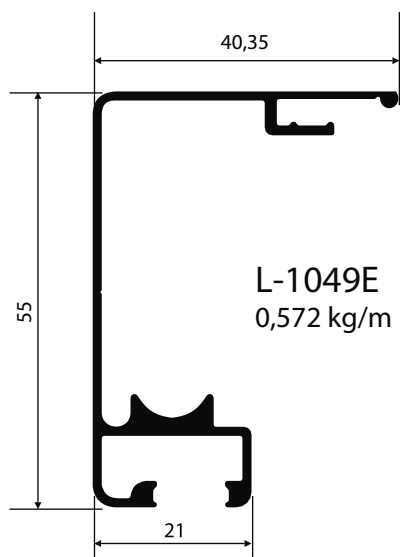
E-512A
0,427 kg/m



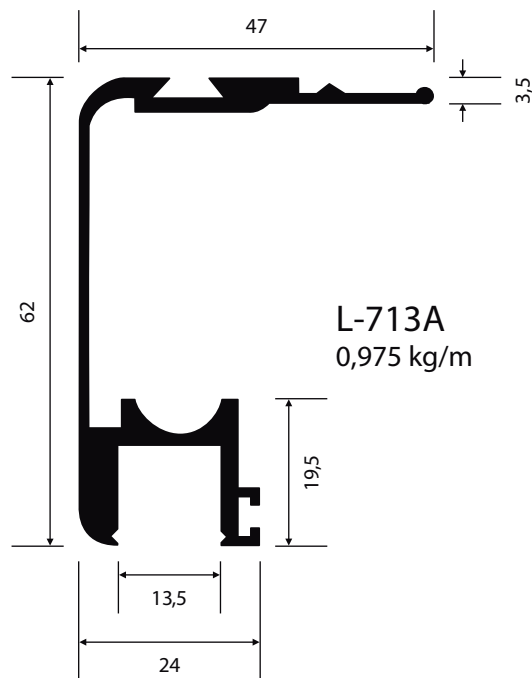
L-1026
0,227 kg/m



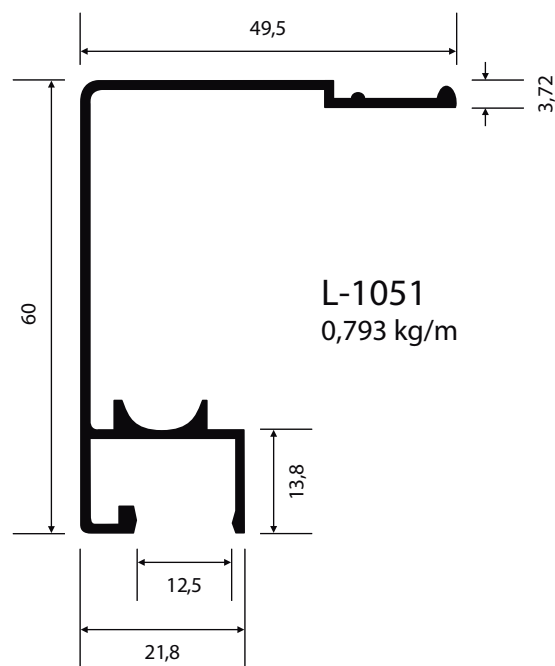
L-1049
0,566 kg/m



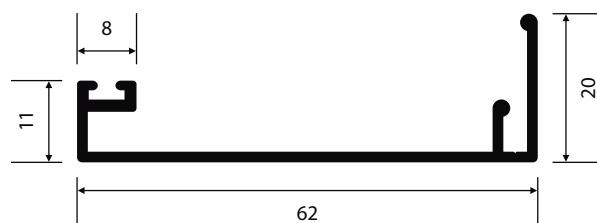
L-1049E
0,572 kg/m



L-713A
0,975 kg/m

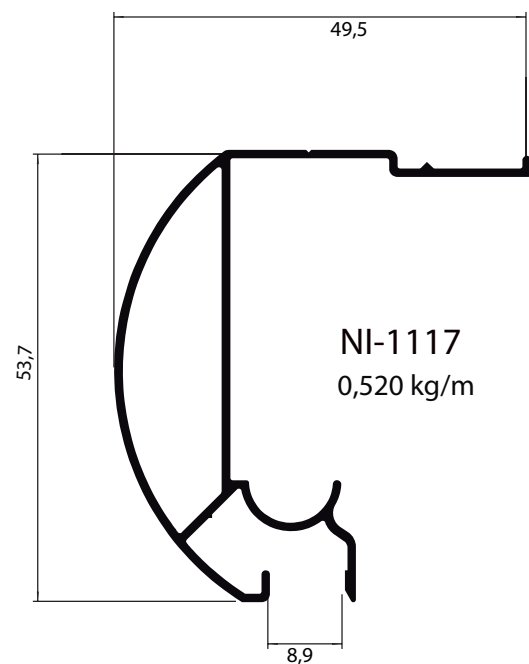
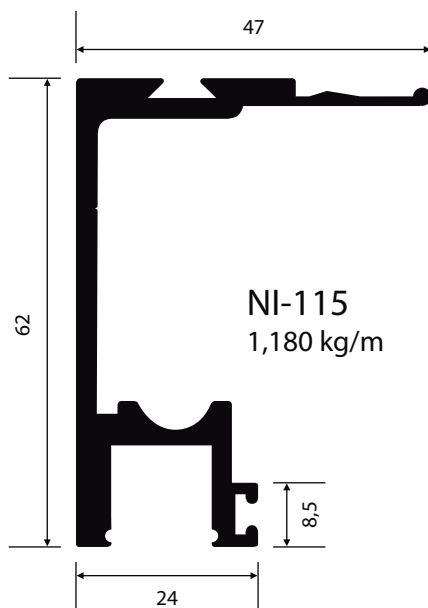
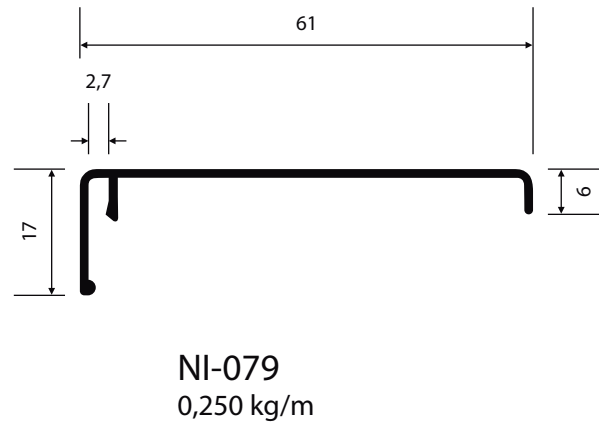
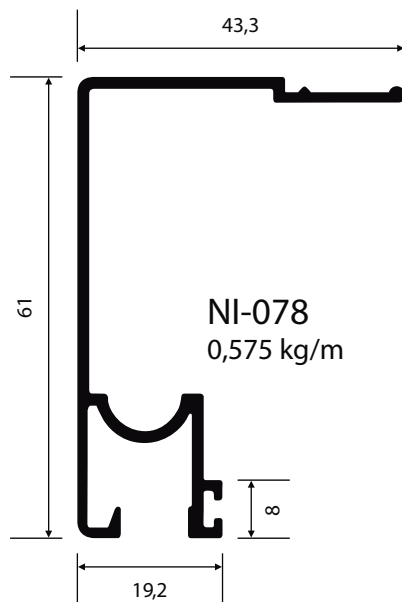
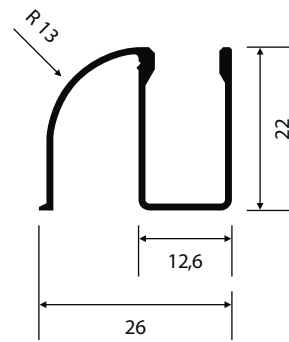
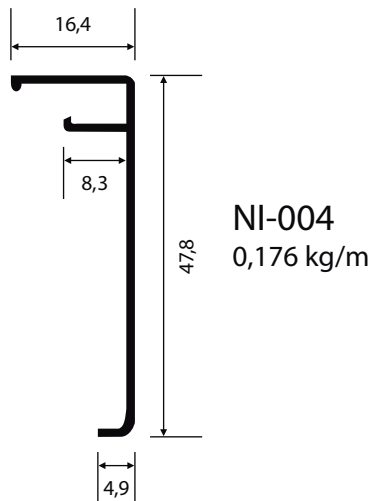


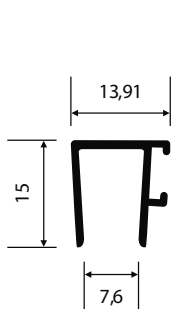
L-1051
0,793 kg/m



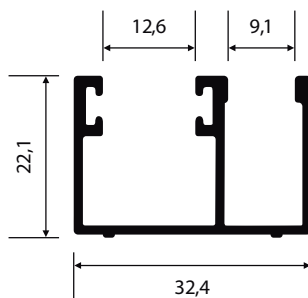
NI-117
0,327 kg/m

BOX TEMPERADO

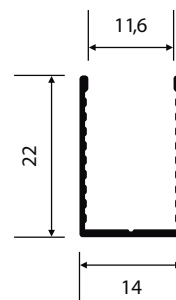




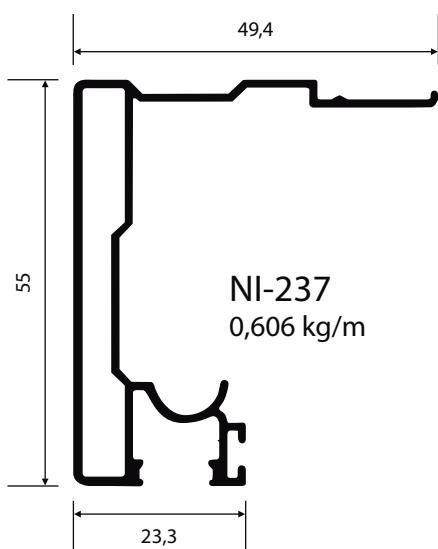
NI-119
0,134 kg/m



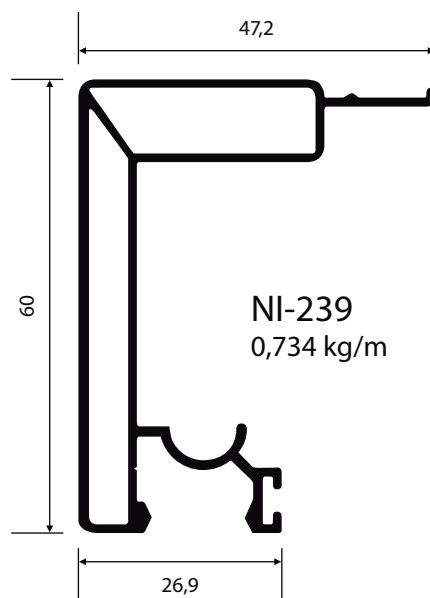
NI-120
0,357 kg/m



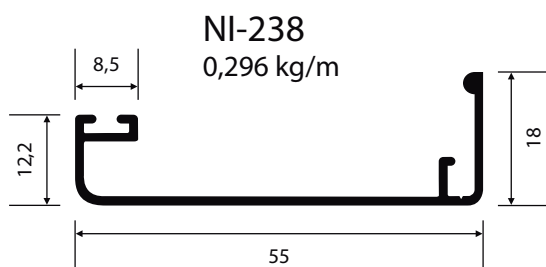
NI-121
0,135 kg/m



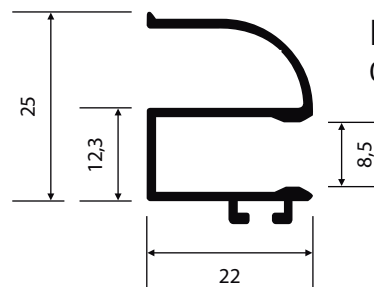
NI-237
0,606 kg/m



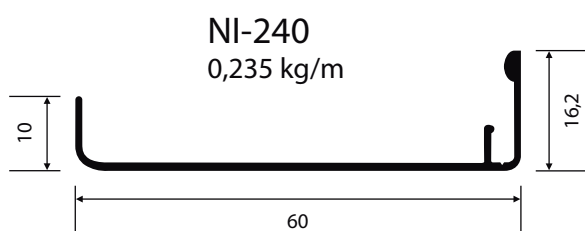
NI-239
0,734 kg/m



NI-238
0,296 kg/m



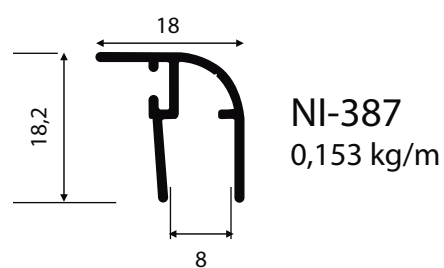
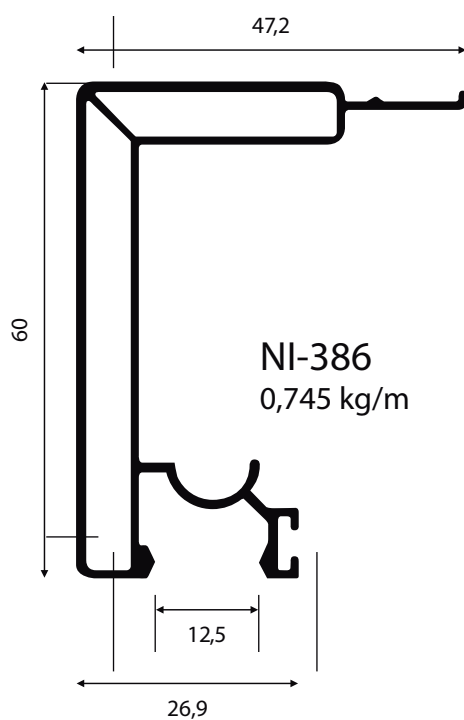
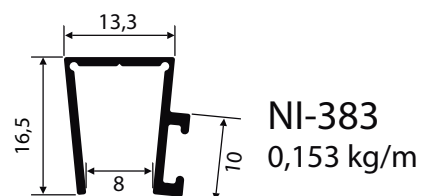
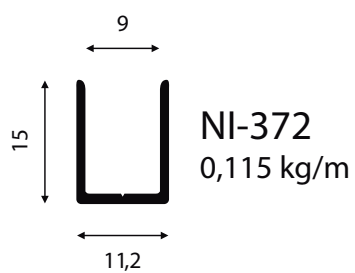
NI-282
0,269 kg/m

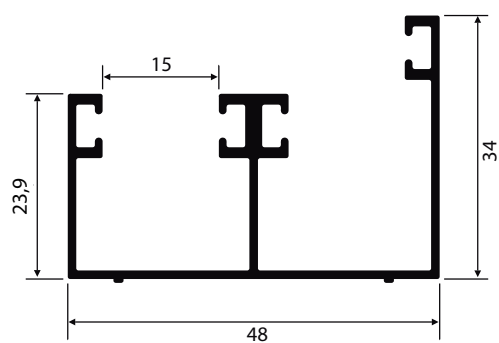
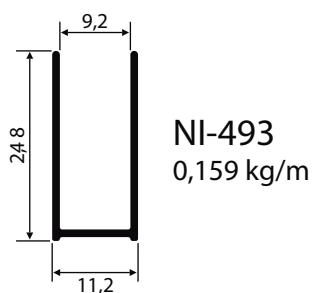
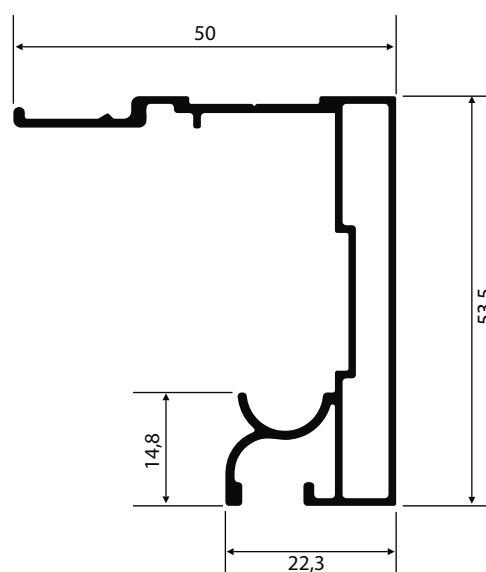
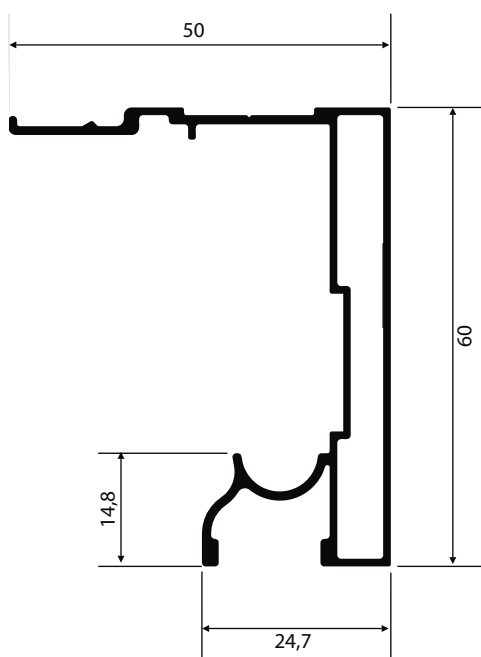
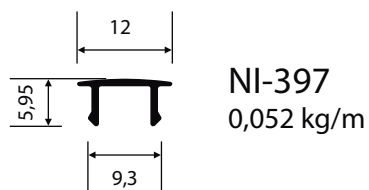
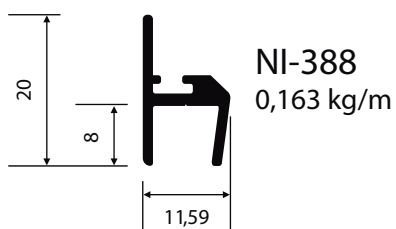


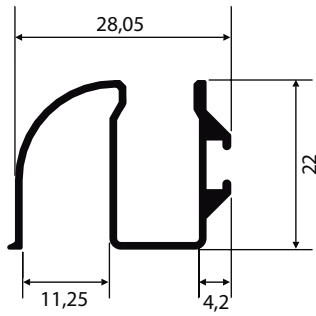
NI-240
0,235 kg/m



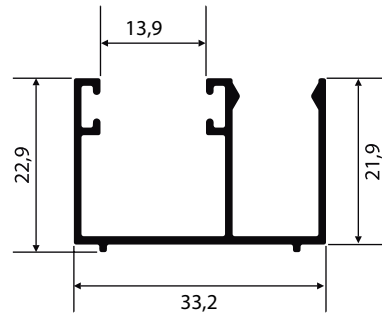
NI-283
0,220 kg/m



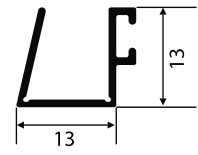




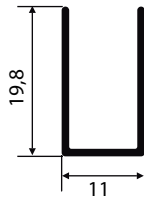
NI-611
0,281 kg/m



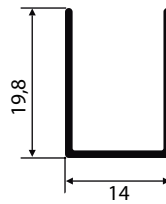
NI-714
0,322 kg/m



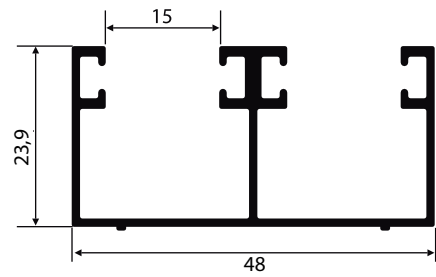
NI-715
0,119 kg/m



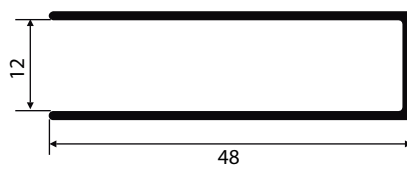
NI-716
0,130 kg/m



NI-717
0,139 kg/m



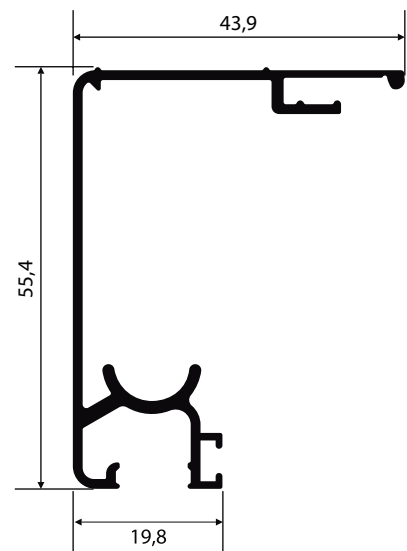
NI-833
0,503 kg/m



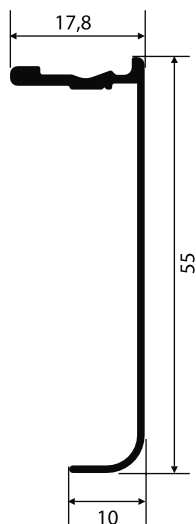
NI-841
0,350 kg/m



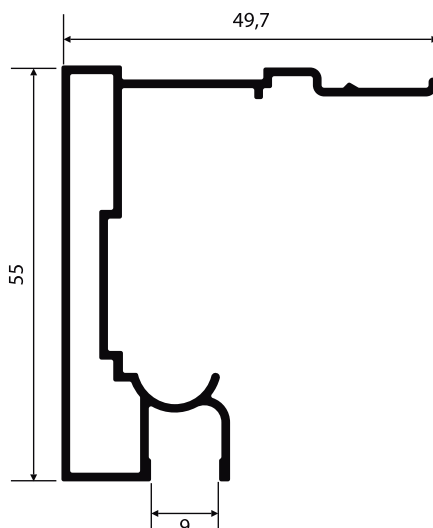
NI-1088
0,222 kg/m



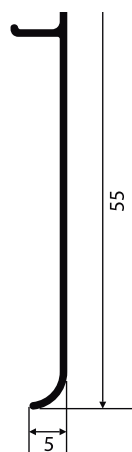
NI-939
0,579 kg/m



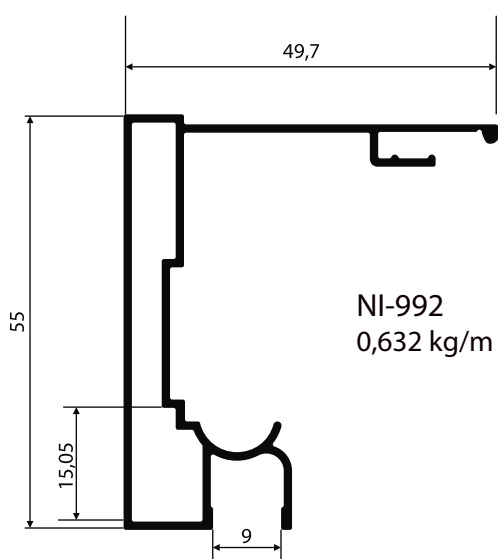
NI-940
0,235 kg/m



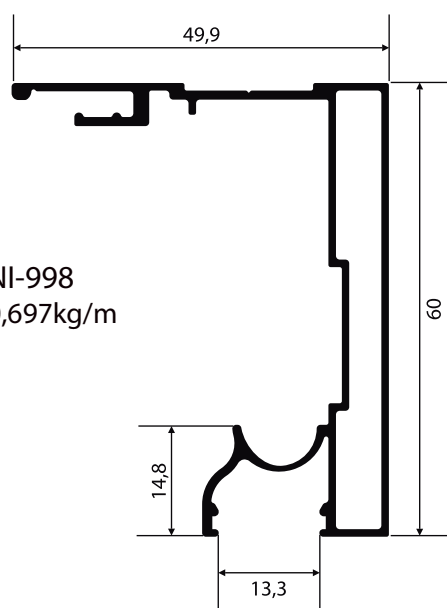
NI-952
0,638 kg/m



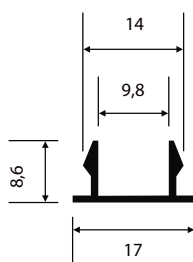
NI-953
0,220 kg/m



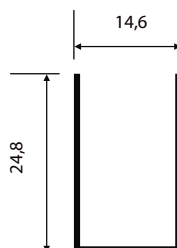
NI-992
0,632 kg/m



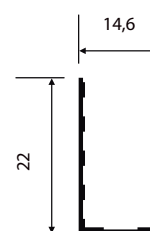
NI-998
0,697kg/m



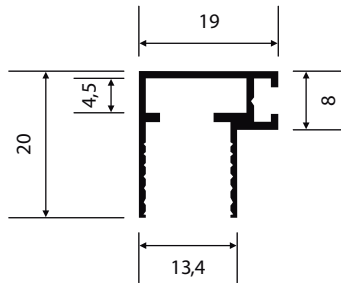
U-491
0,103kg/m



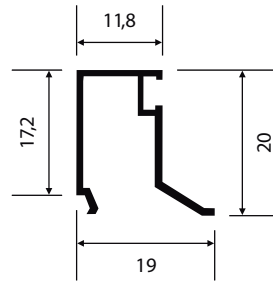
U-555A
0,168 kg/m



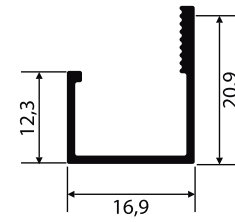
U-556
0,142 kg/m



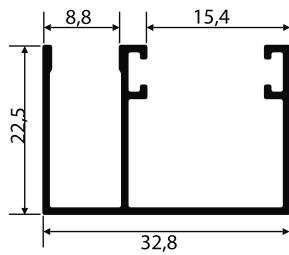
U-1014
0,226 kg/m



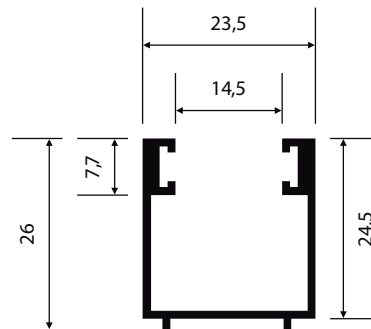
U-1027
0,162 kg/m



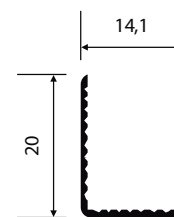
NI-1105
0,165 kg/m



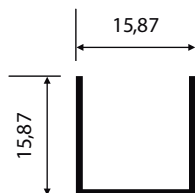
NI-1089
0,307 kg/m



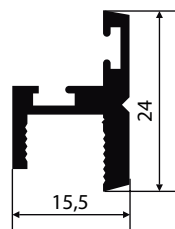
U-1108
0,300 kg/m



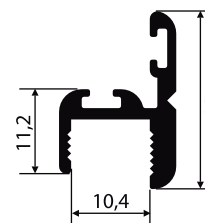
U-1109
0,163 kg/m



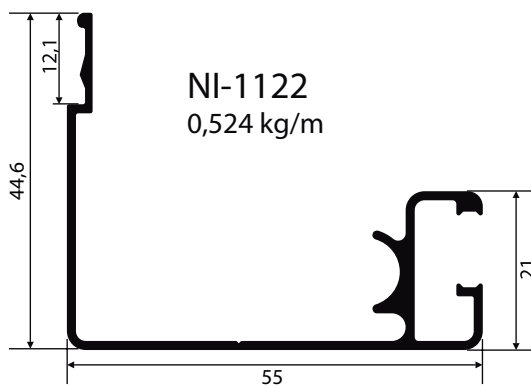
U-2020
0,158 kg/m



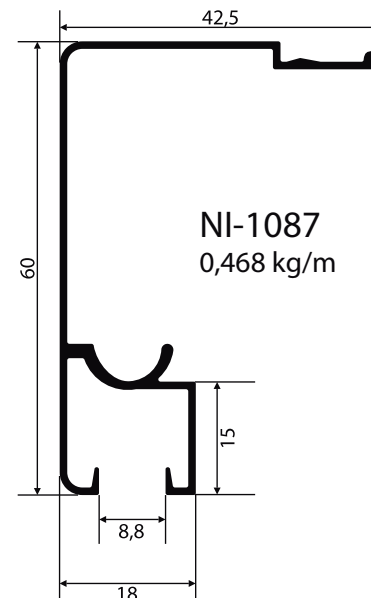
Y-343
0,314 kg/m



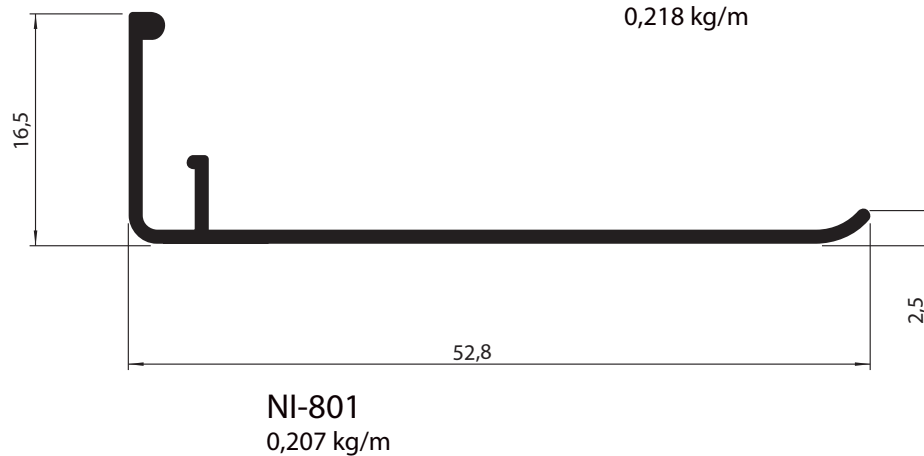
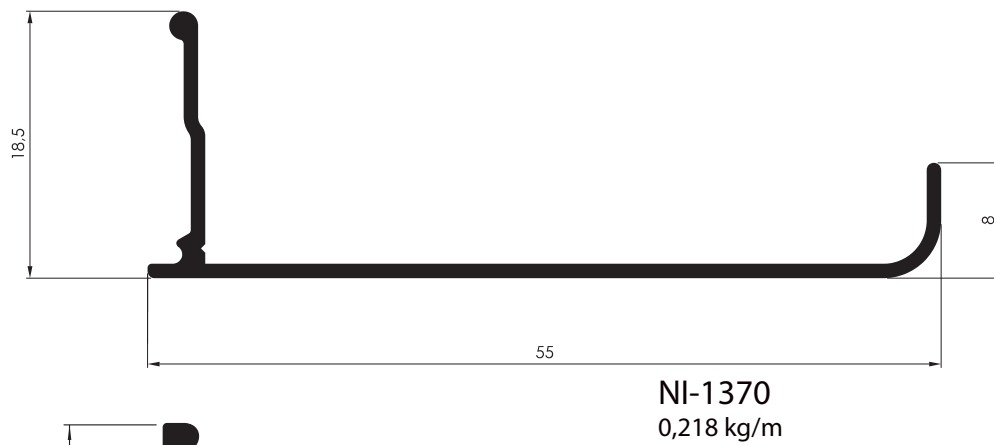
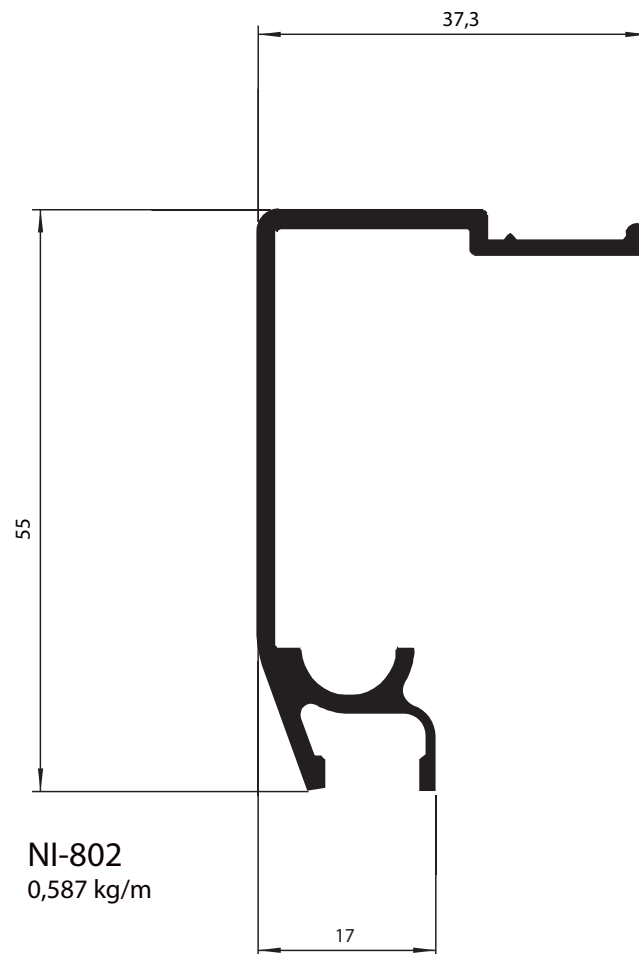
Y-343A
0,279 kg/m

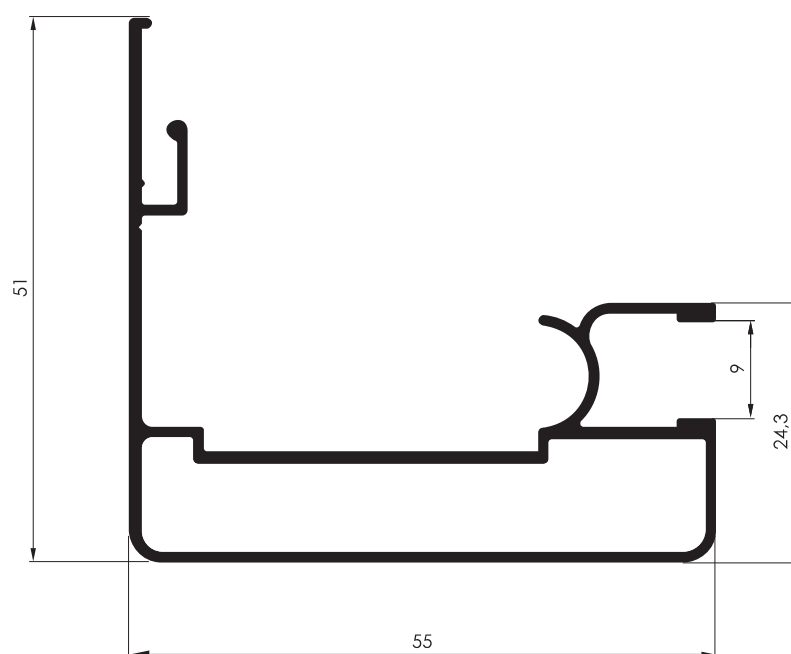


NI-1122
0,524 kg/m

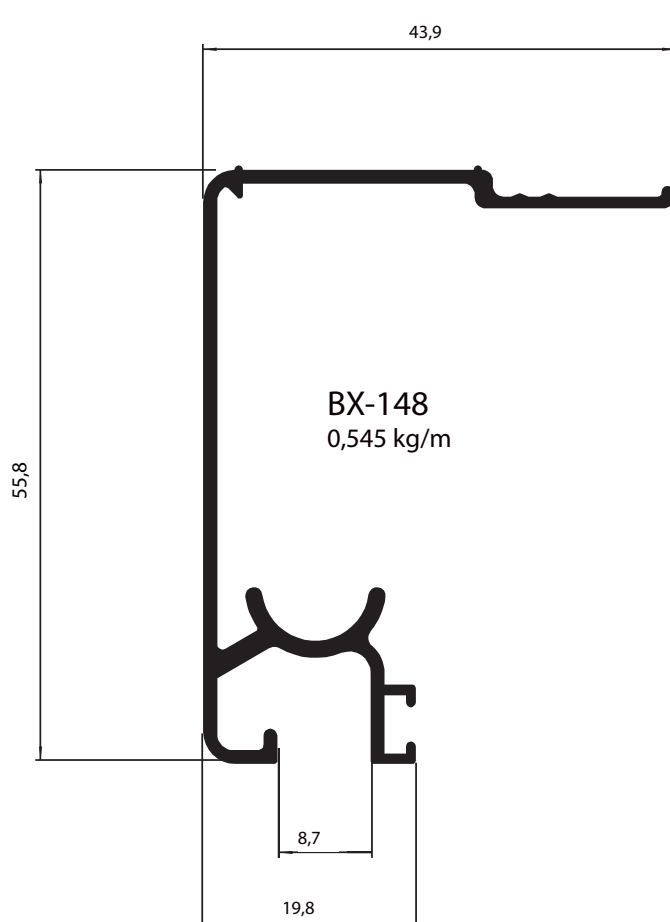


NI-1087
0,468 kg/m

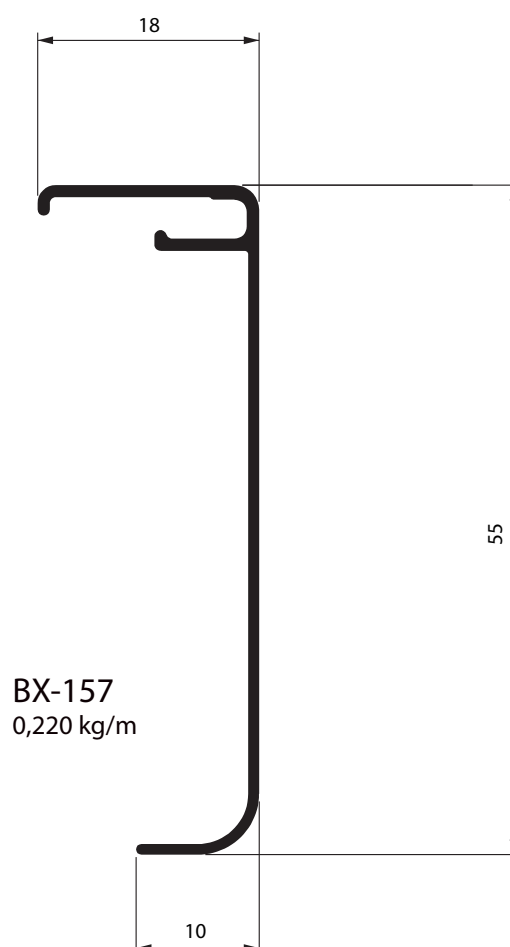




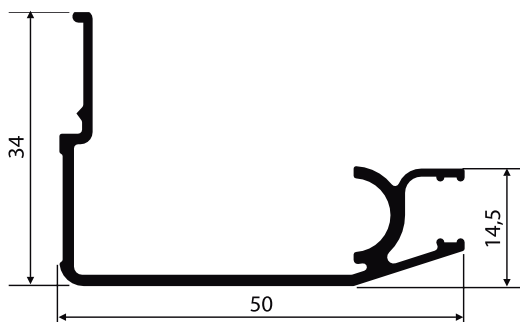
NI-1369
0,651 kg/m



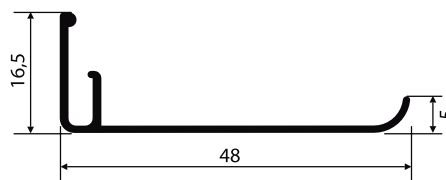
BX-148
0,545 kg/m



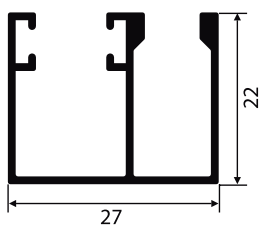
BX-157
0,220 kg/m



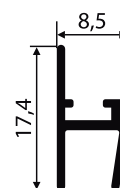
NI-891
0,430 kg/m



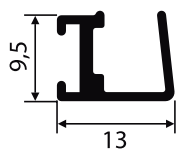
NI-892
0,214 kg/m



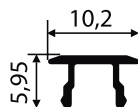
NI-893
0,316 kg/m



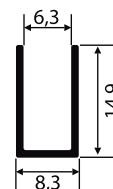
NI-894
0,108 kg/m



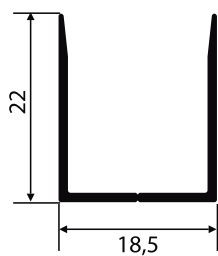
NI-895
0,118 kg/m



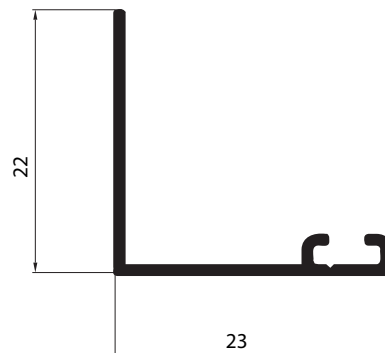
NI-896
0,049 kg/m



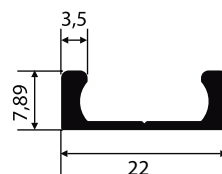
NI-1054
0,098 kg/m



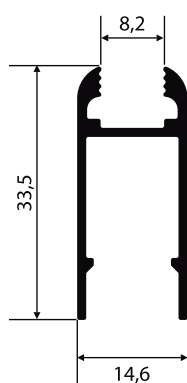
NI-964
0,172 kg/m



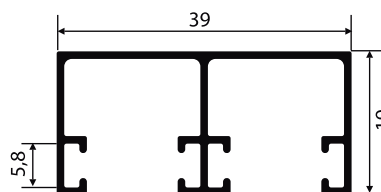
NI-1315
0,137 kg/m



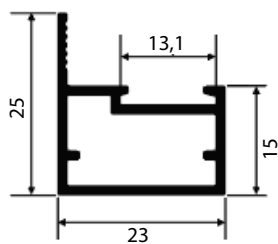
NI-969
0,176 kg/m



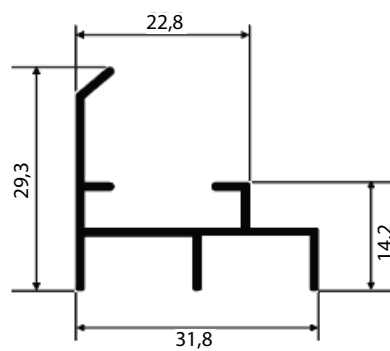
NI-970
0,305 kg/m



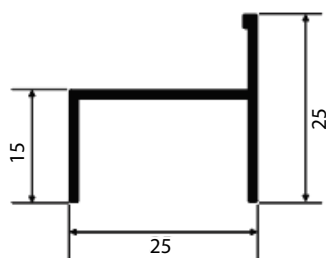
NI-971
0,344 kg/m



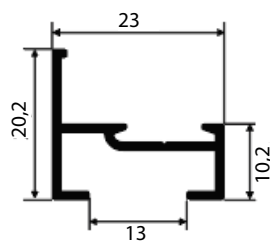
NI-559
0,312 kg/m



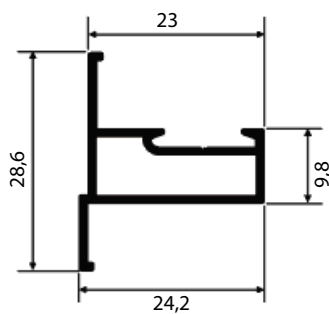
NI-624
0,266 kg/m



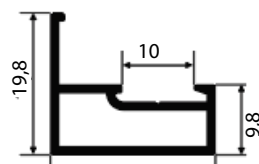
NI-625
0,223 kg/m



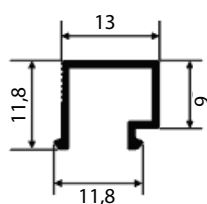
NI-626
0,208 kg/m



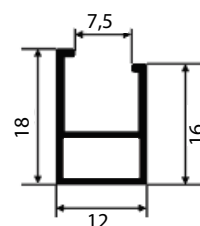
NI-627
0,282 kg/m



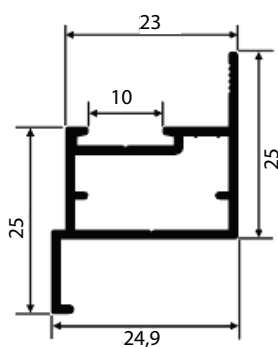
NI-628
0,245 kg/m



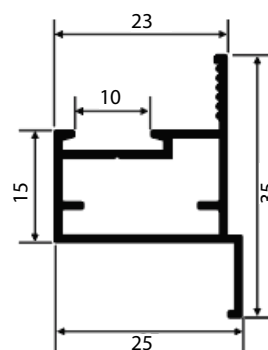
NI-629
0,106 kg/m



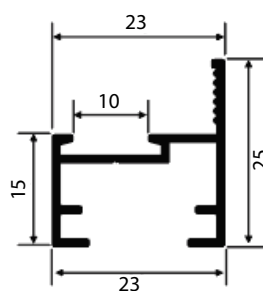
NI-630
0,155 kg/m



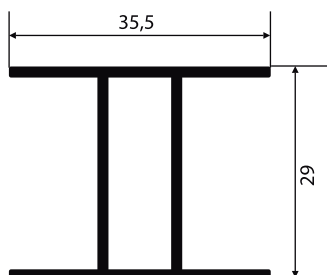
NI-757
0,334 kg/m



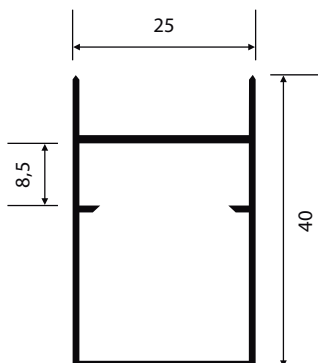
NI-759
0,326 kg/m



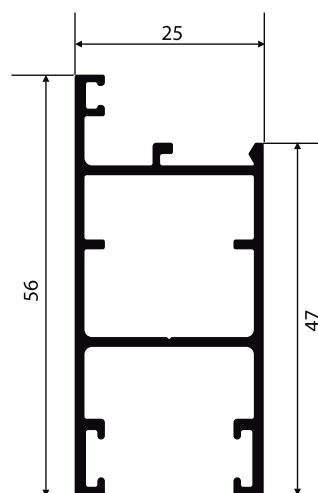
NI-760
0,249 kg/m



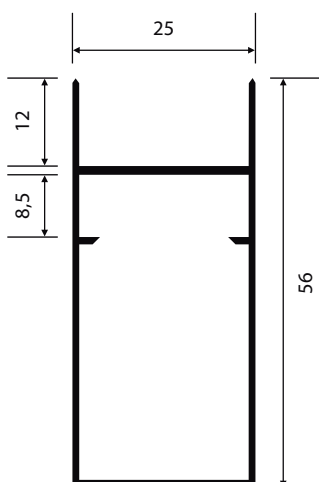
A-034
0,499 kg/m



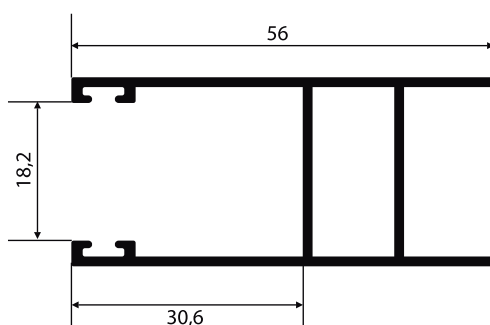
A-055
0,434 kg/m



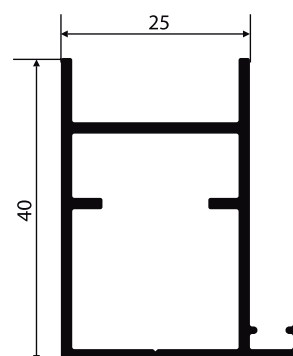
A-048
0,645 kg/m



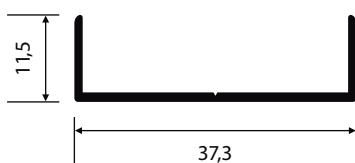
A-194
0,571 kg/m



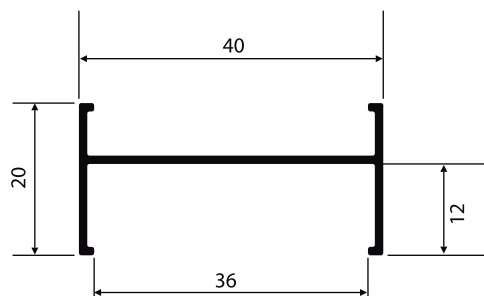
A-195
0,599 kg/m



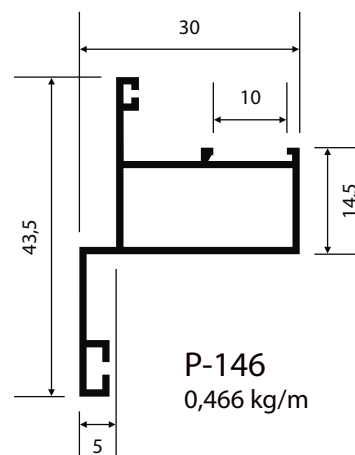
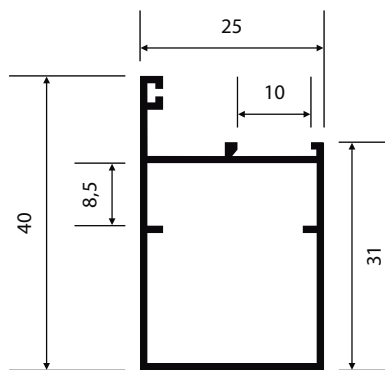
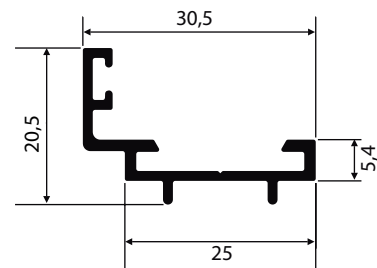
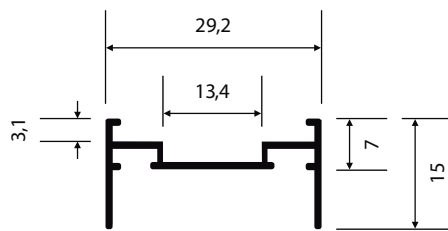
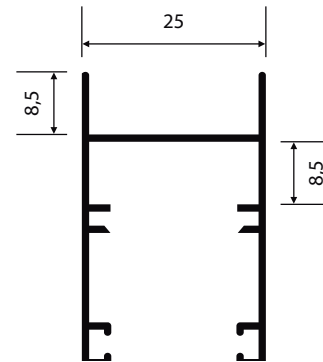
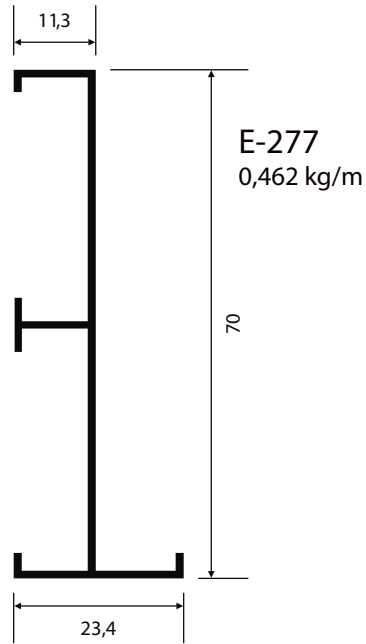
A-202E
0,611 kg/m

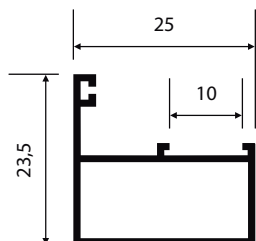


DV-111
0,171 kg/m

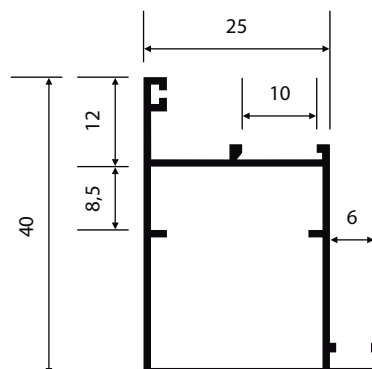


DV-029
0,242 kg/m

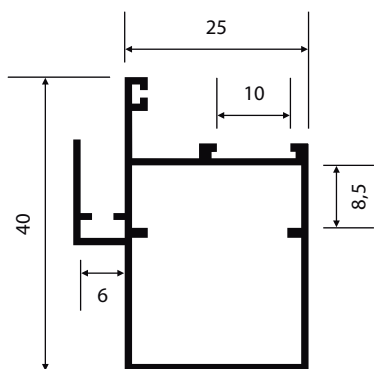




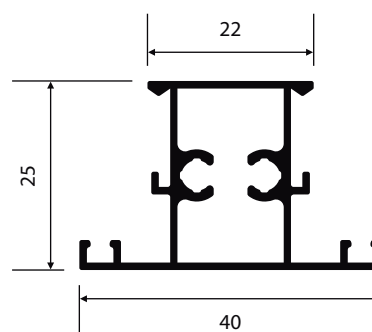
P-147
0,351 kg/m



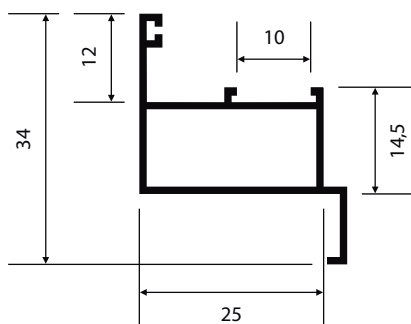
P-151
0,496 kg/m



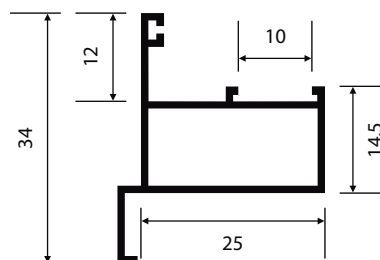
P-152
0,523 kg/m



P-153
0,455 kg/m

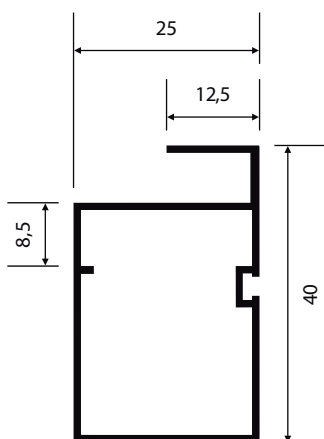


P-166
0,406 kg/m



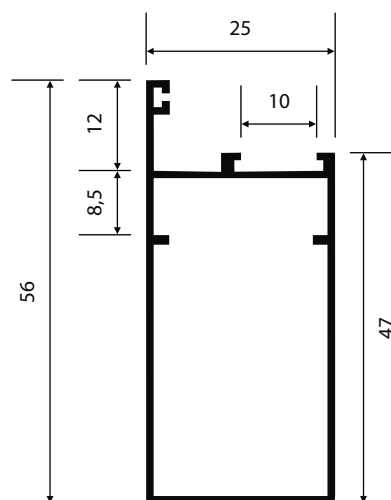
P-167
0,406 kg/m

LINHA 25



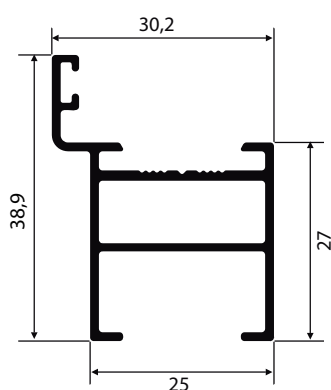
P-227

0,492 kg/m



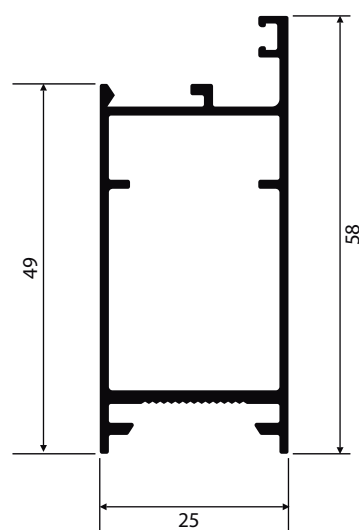
P-318

0,553 kg/m



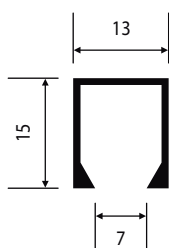
P-412A

0,439 kg/m



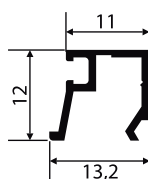
P-414

0,611 kg/m



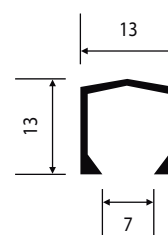
U-425

0,155 kg/m



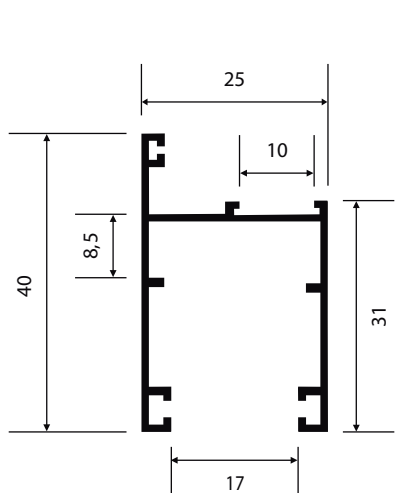
U-522

0,107 kg/m

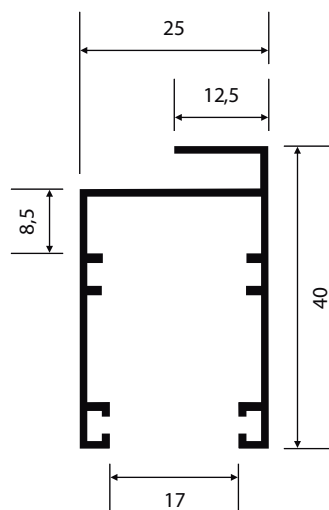


U-681

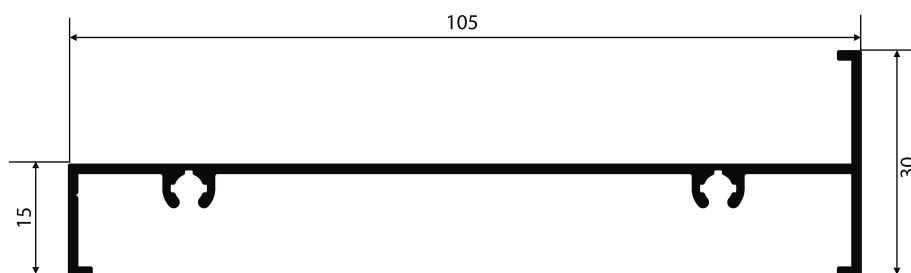
0,126 kg/m



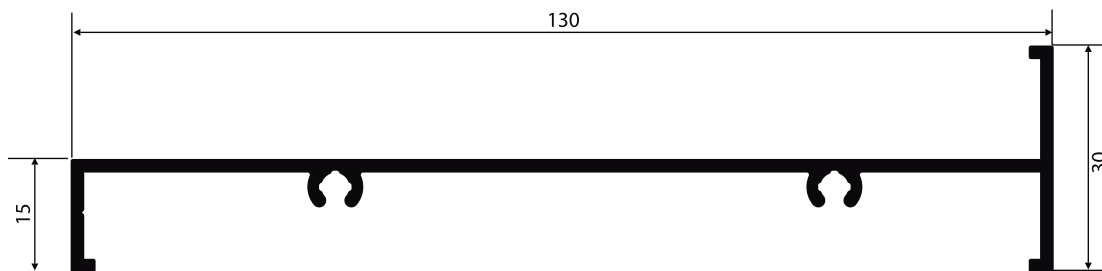
Y-195
0,432 kg/m



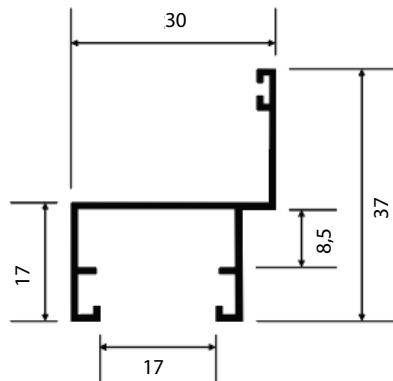
Y-312
0,475 kg/m



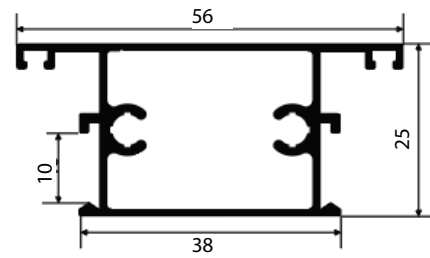
Y-260
0,658 kg/m



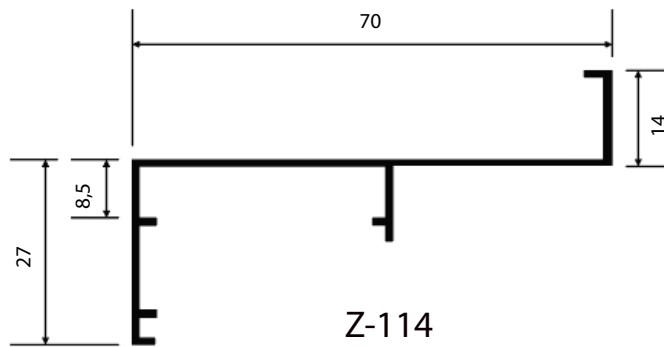
Y-350
0,950 kg/m



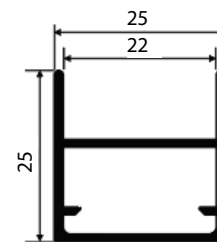
Y-630
0,334 kg/m



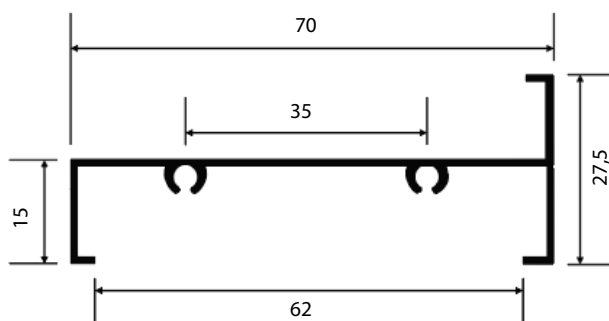
P-319
0,603 kg/m



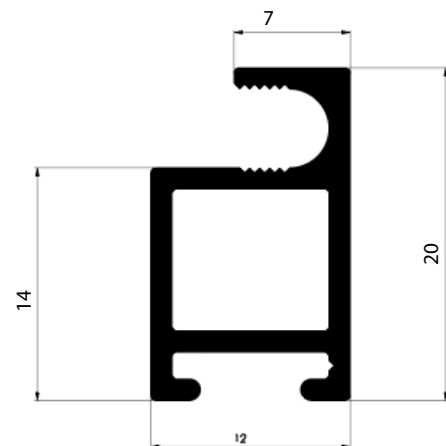
Z-114
0,519 kg/m



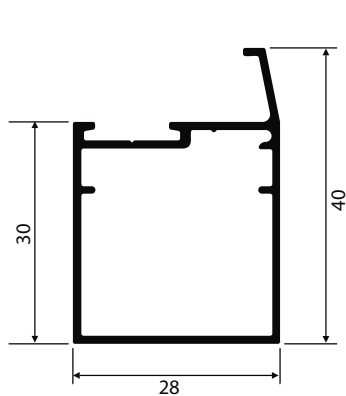
A-056
0,373 kg/m



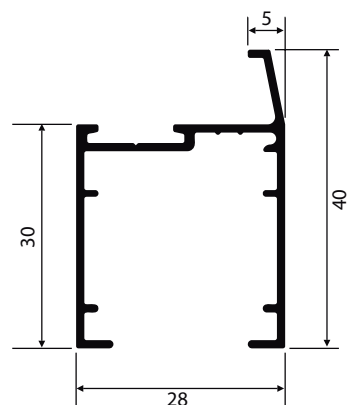
Z-175
0,533 kg/m



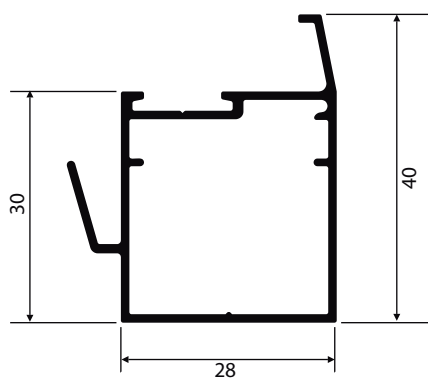
A-058
0,220 kg/m



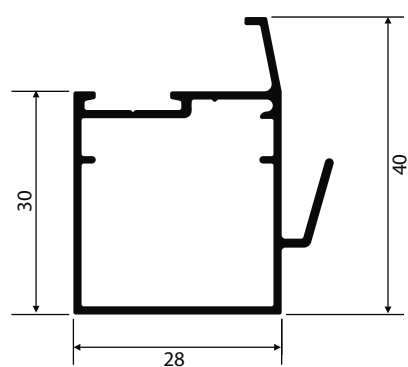
NI-560
0,406 kg/m



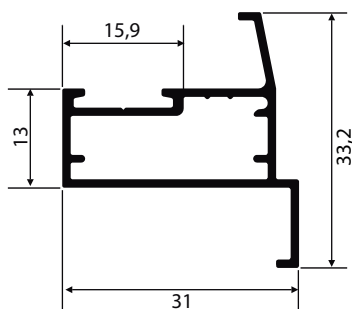
NI-561
0,362 kg/m



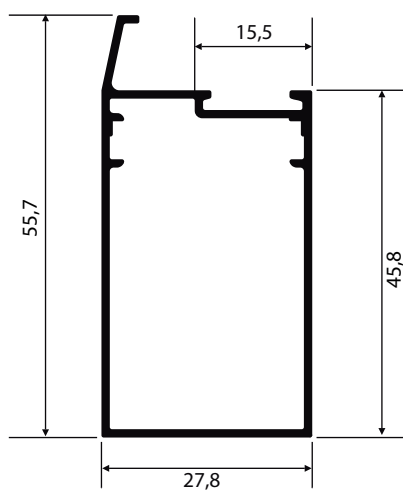
NI-562
0,453 kg/m



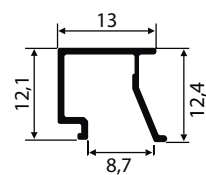
NI-563
0,455 kg/m



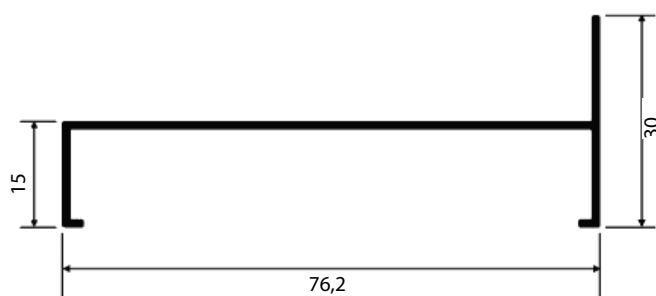
NI-564
0,351 kg/m



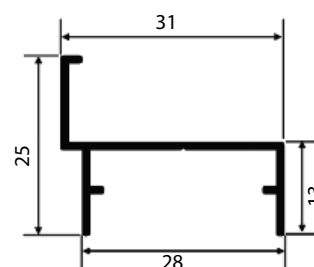
NI-565
0,502 kg/m



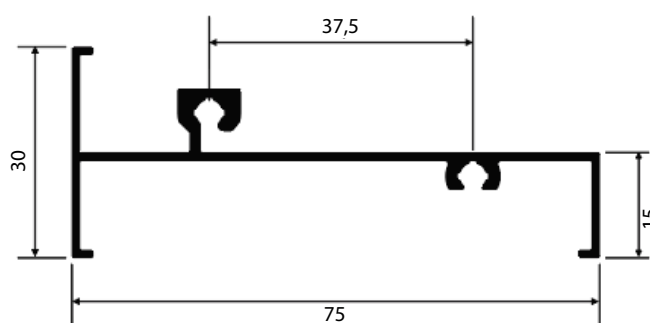
NI-566
0,096 kg/m



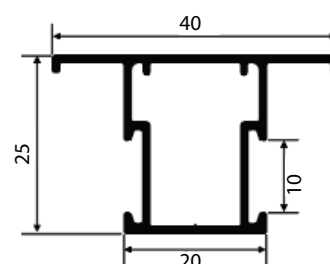
NI-567
0,366 kg/m



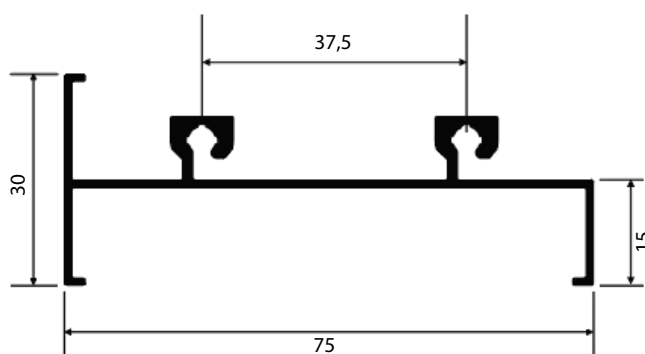
NI-558
0,215 kg/m



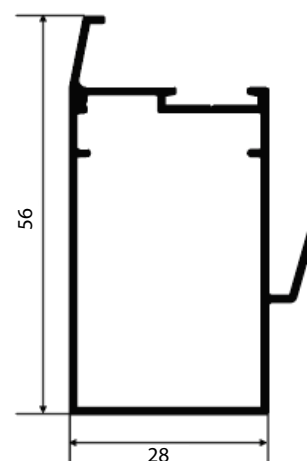
NI-568
0,549 kg/m



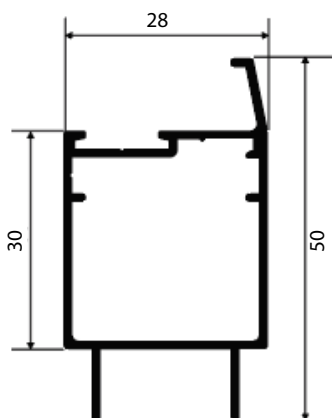
NI-572
0,376 kg/m



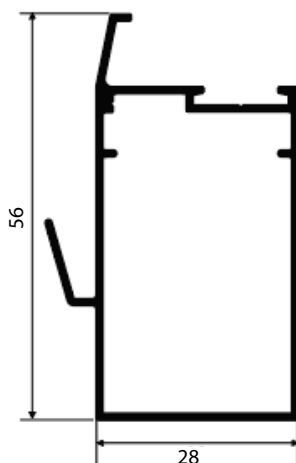
NI-569
0,613 kg/m



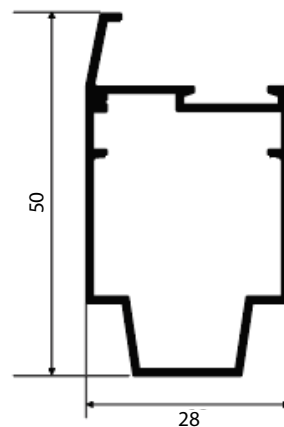
NI-852
0,549 kg/m



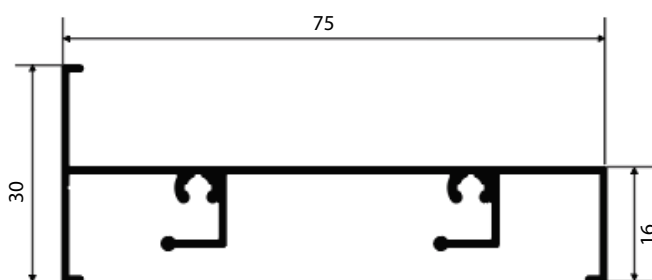
NI-853
0,467 kg/m



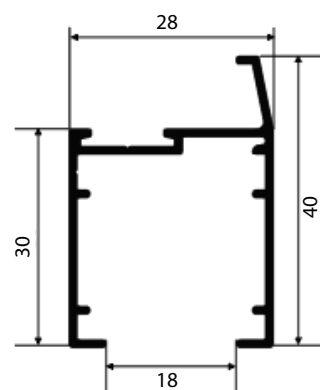
NI-856
0,459 kg/m



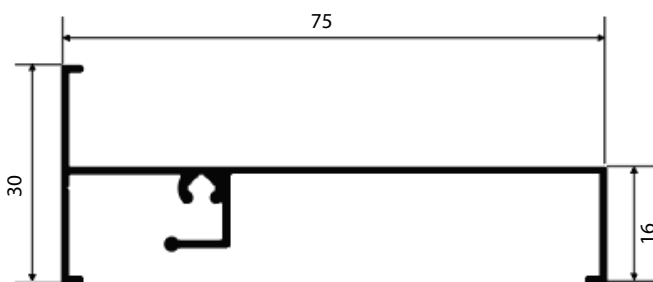
NI-858
0,468 kg/m



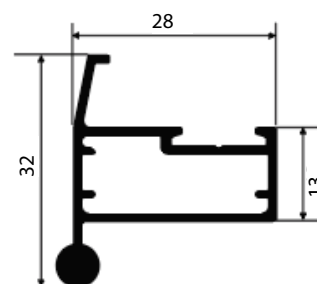
NI-854
0,511 kg/m



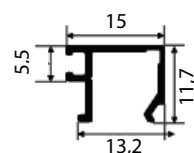
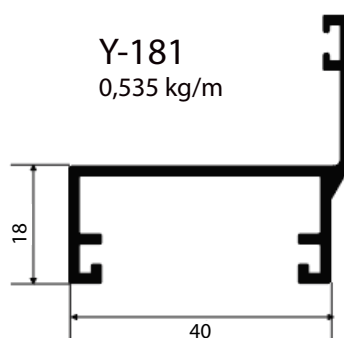
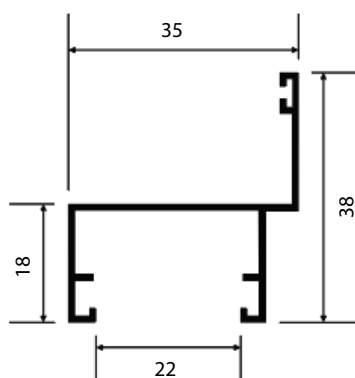
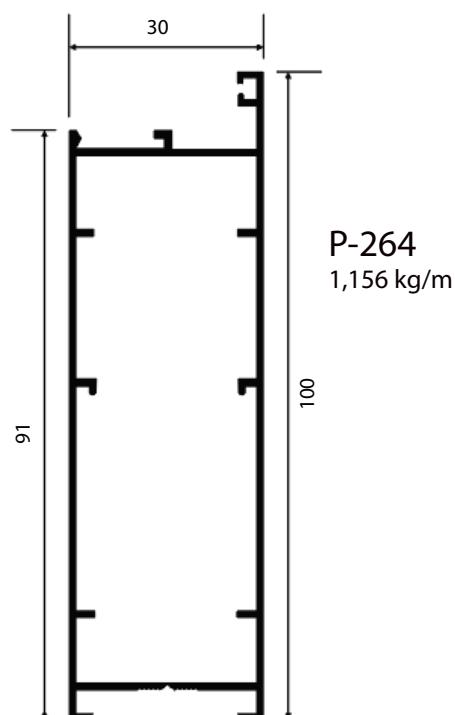
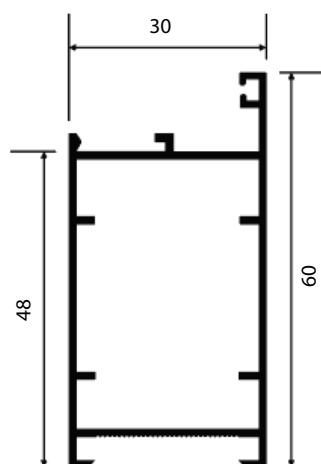
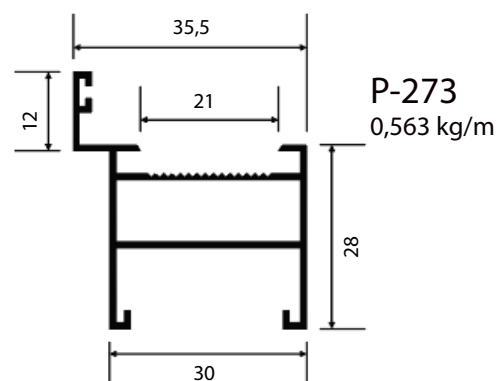
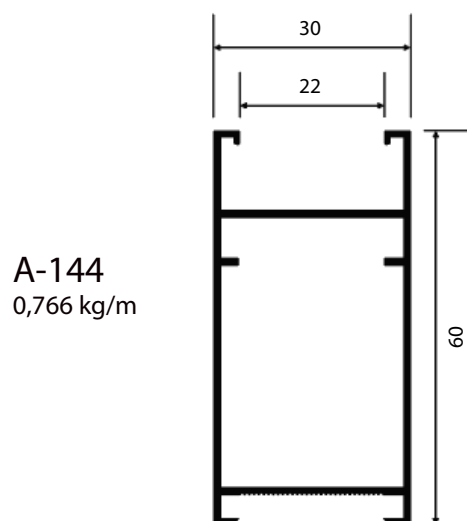
NI-859
0,331 kg/m

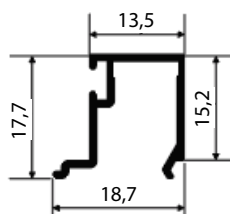


NI-855
0,424 kg/m

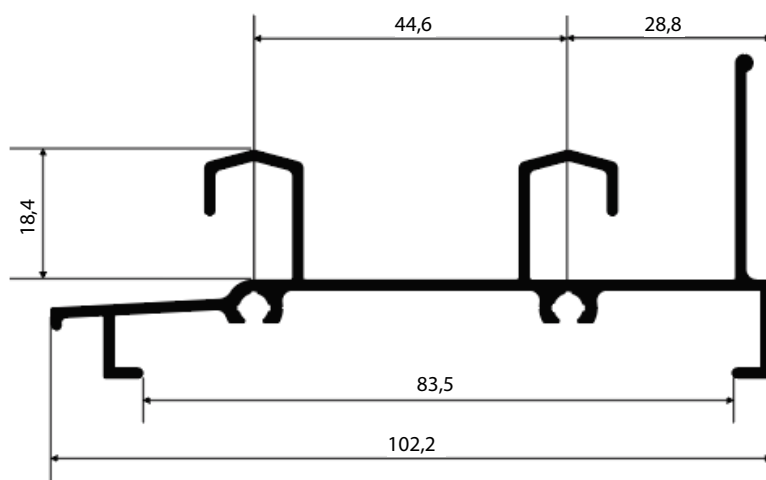


NI-946
0,413 kg/m

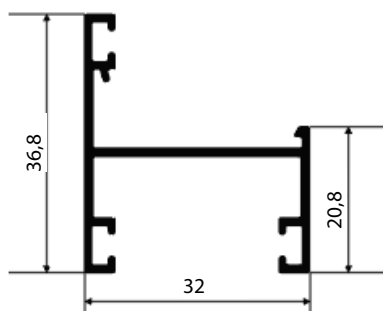




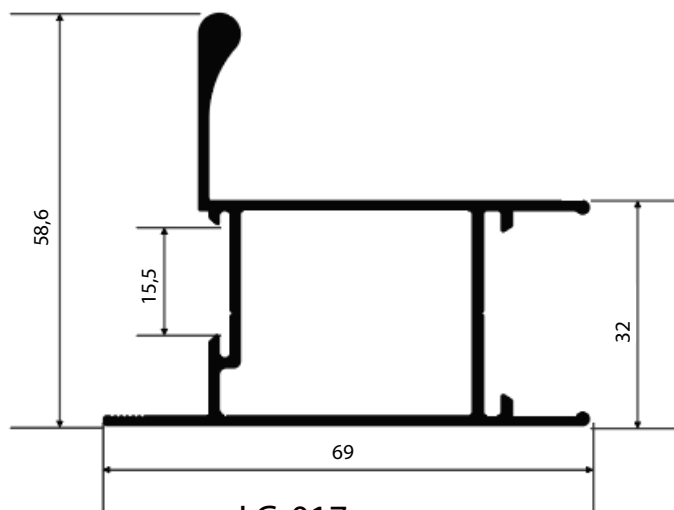
BG-057
1,166 kg/m



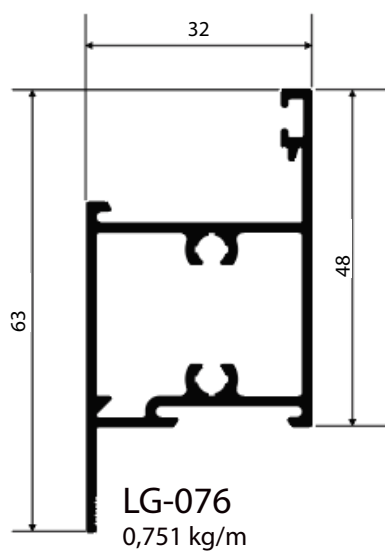
LG-047
1,133 kg/m



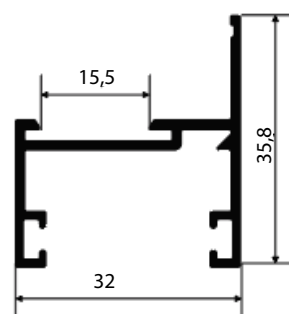
LG-068
0,383 kg/m



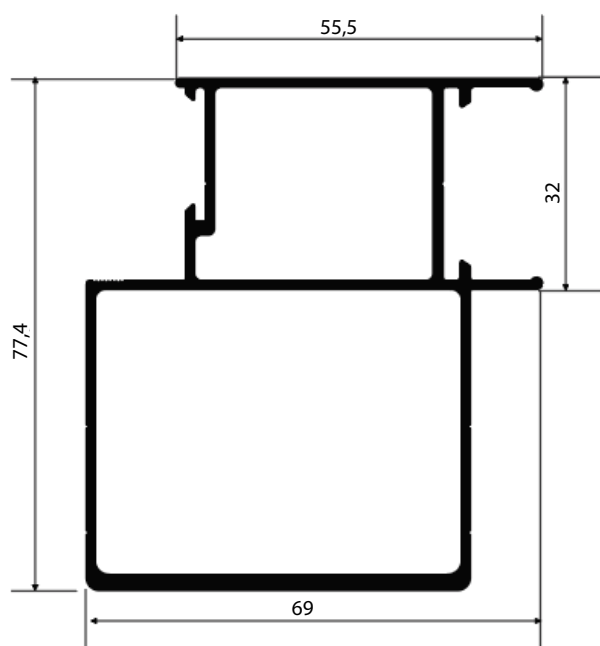
LG-017
1,004 kg/m



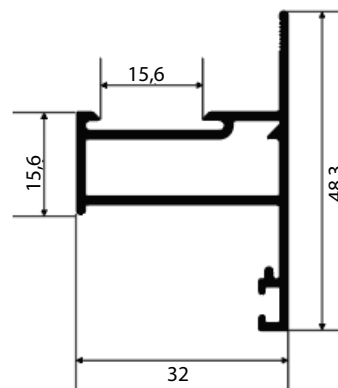
LG-076
0,751 kg/m



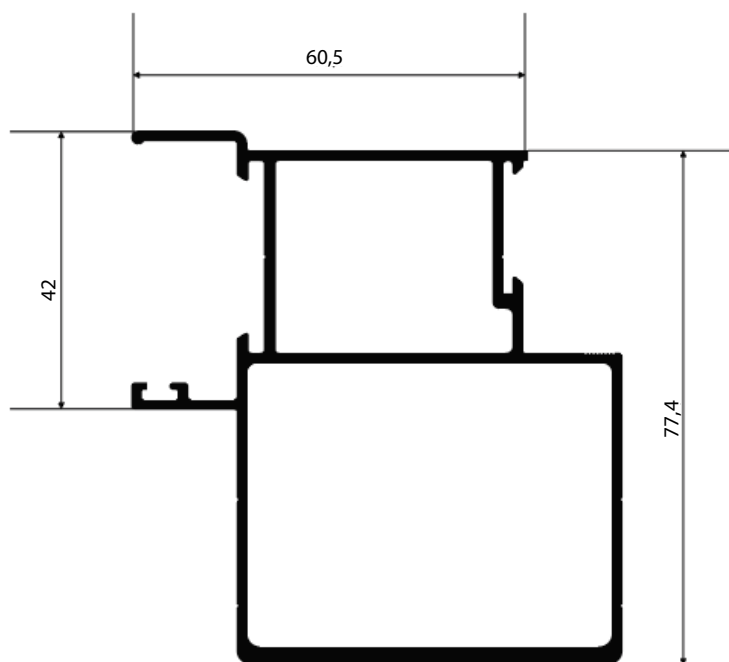
LG-083
0,411 kg/m



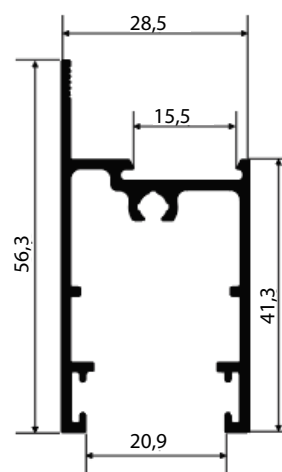
LG-054
1,577 kg/m



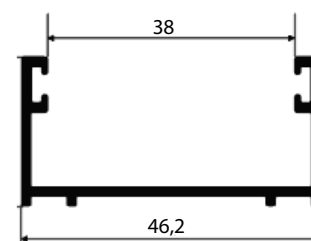
LG-085
0,527 kg/m



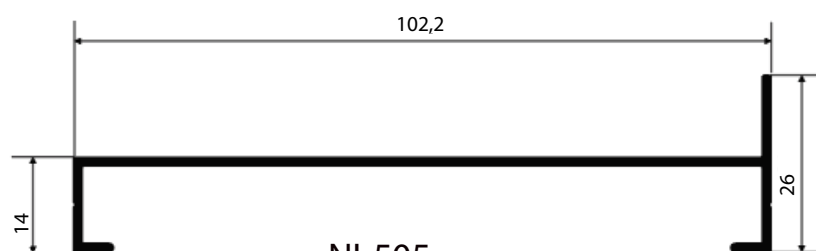
LG-053
1,650 kg/m



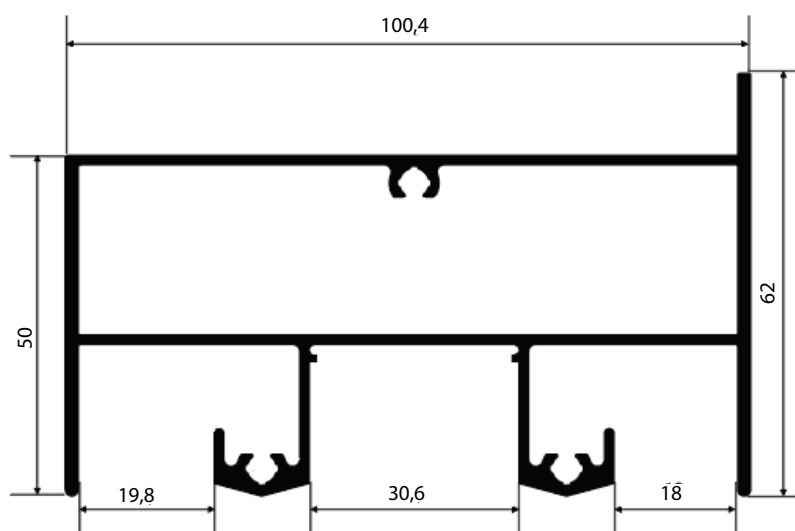
NI-507
0,655 kg/m



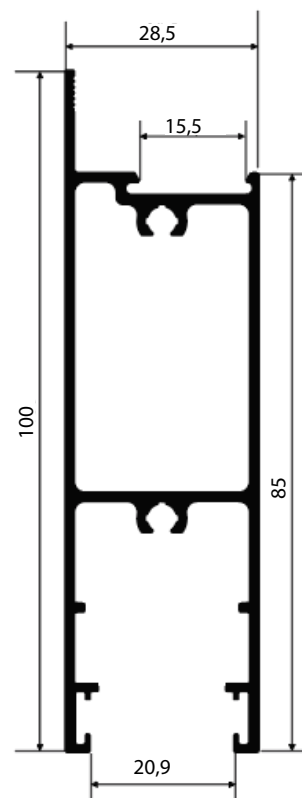
NI-509
0,436 kg/m



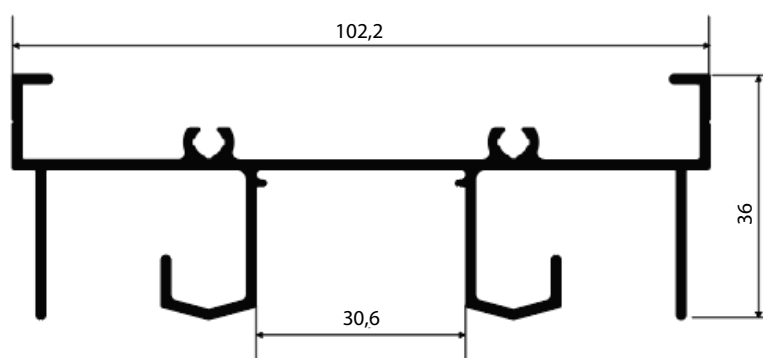
NI-505
0,562 kg/m



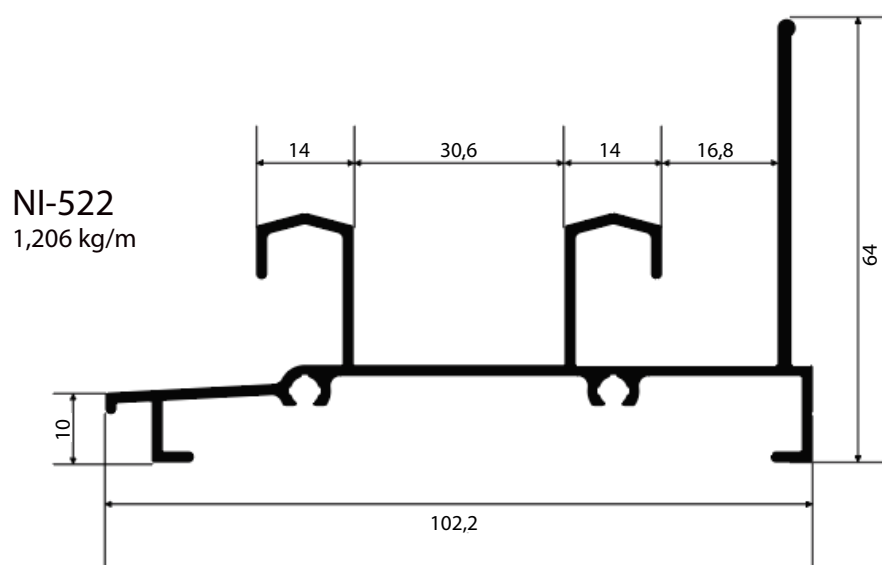
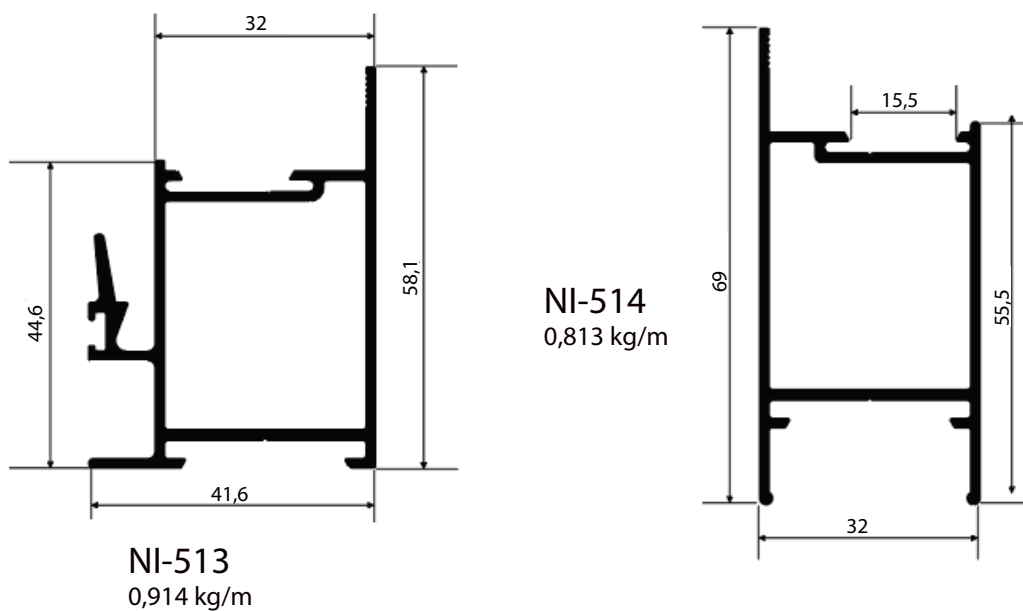
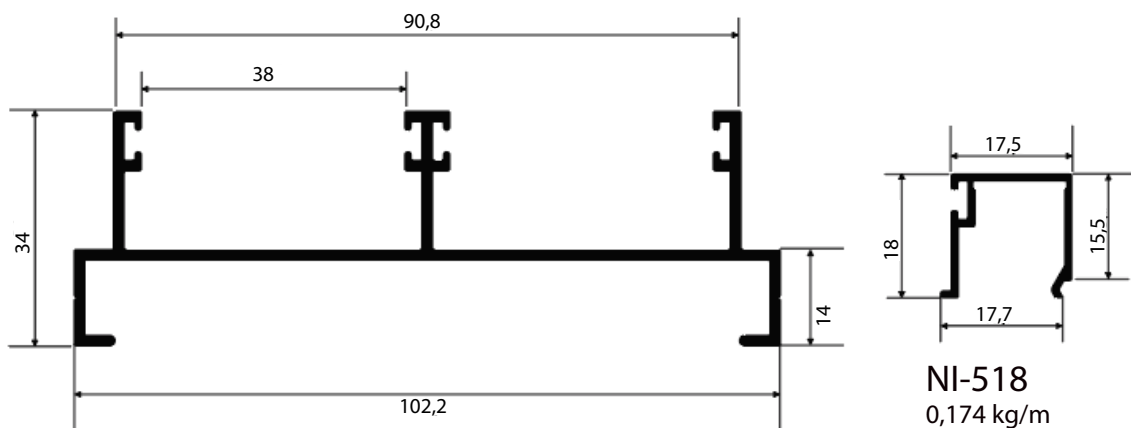
NI-506
1,892 kg/m

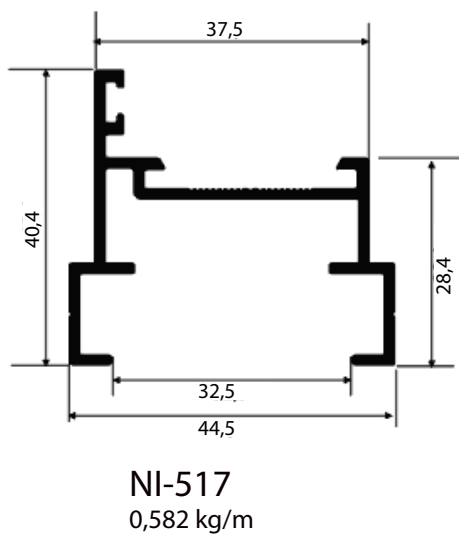
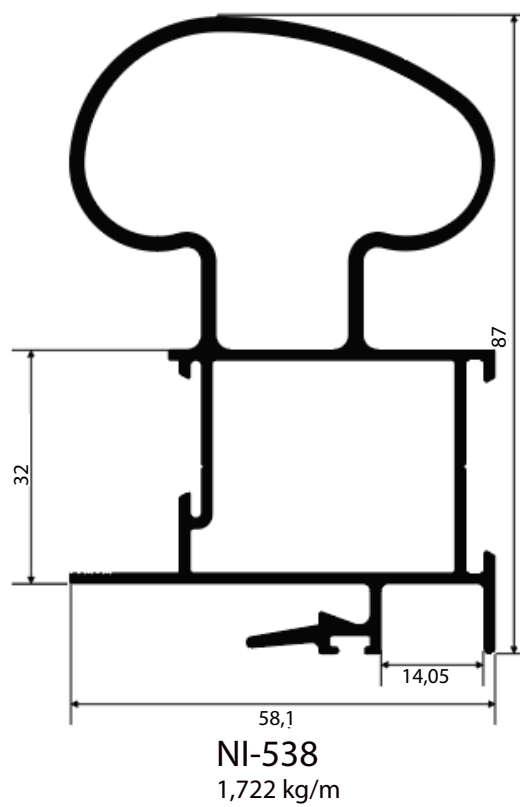
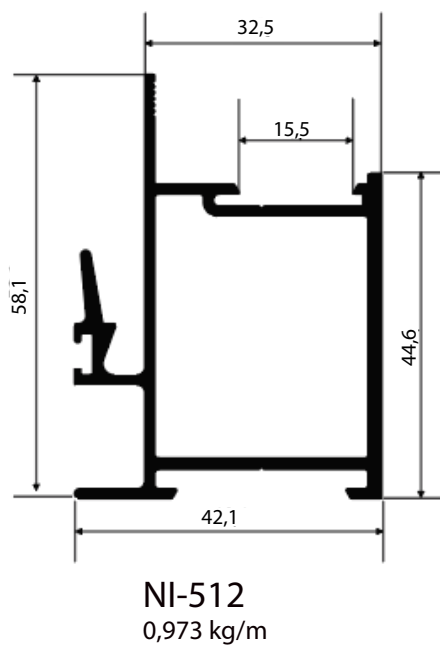
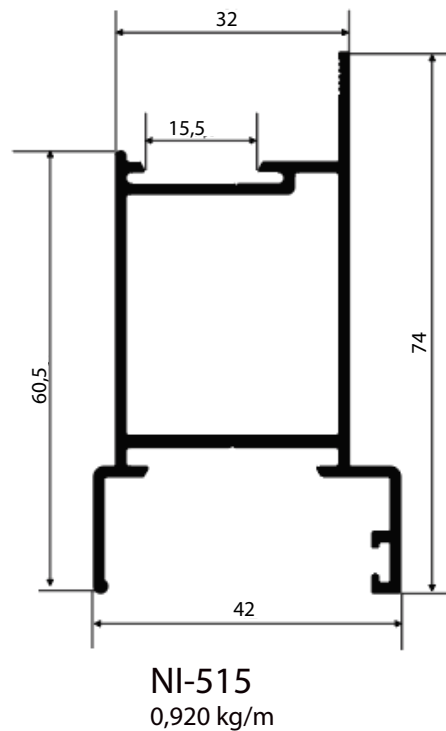
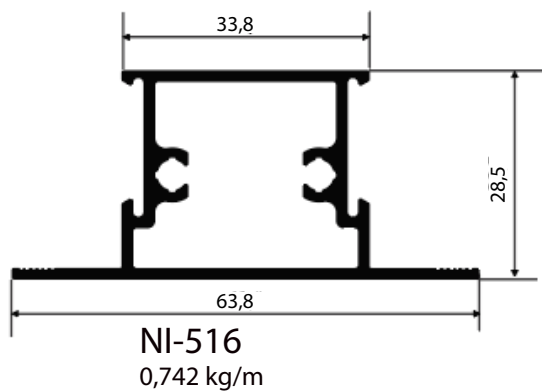


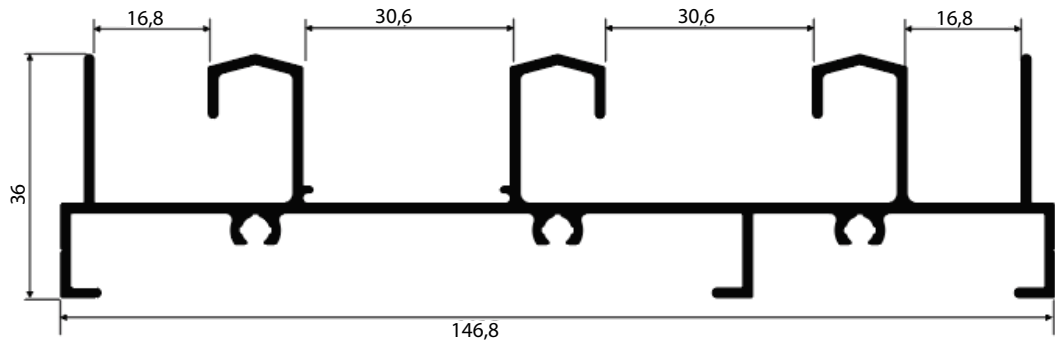
NI-508
1,159 kg/m



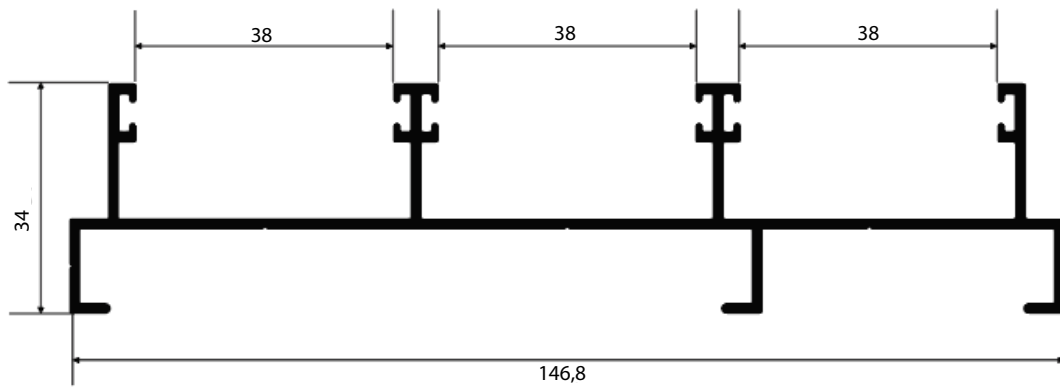
NI-510
1,159 kg/m



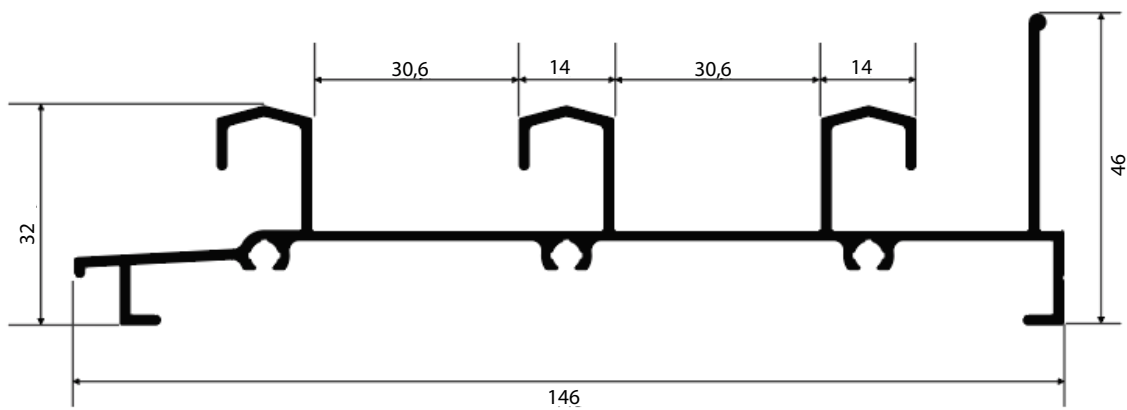




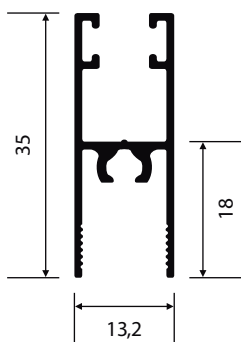
NI-519
1,620 kg/m



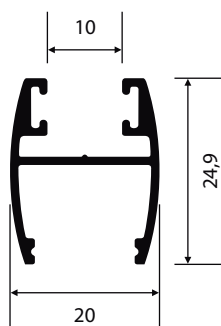
NI-520
1,304 kg/m



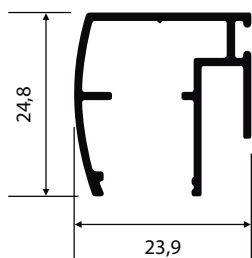
NI-521
1,422 kg/m



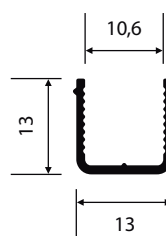
LE-1604
1,304 kg/m



LE-1610
0,283 kg/m

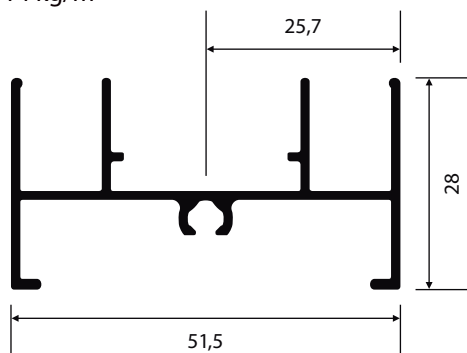


LE-1611
0,287 kg/m

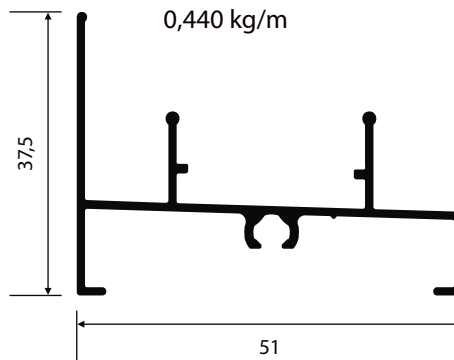


LE-1612
0,109 kg/m

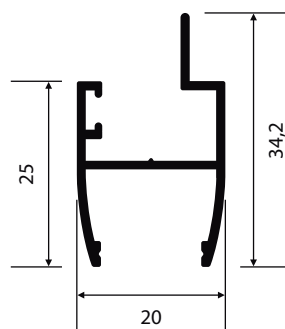
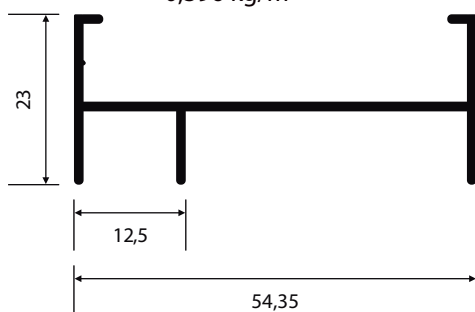
LE-1614
0,514 kg/m



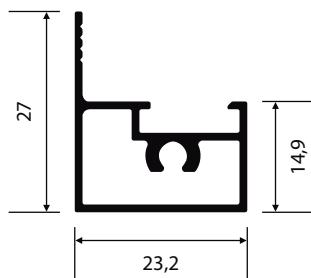
LE-1615
0,440 kg/m



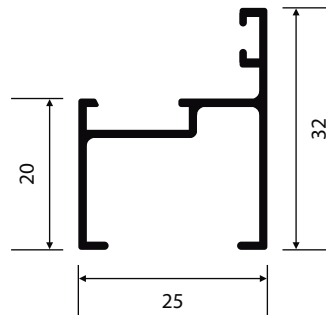
LE-1616
0,396 kg/m



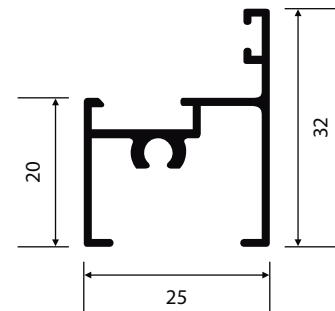
LE-1628
0,295 kg/m



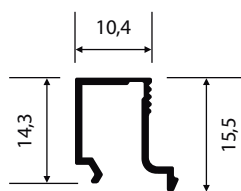
25-301
0,306 kg/m



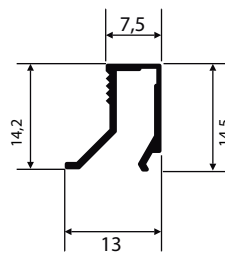
25-311
0,287 kg/m



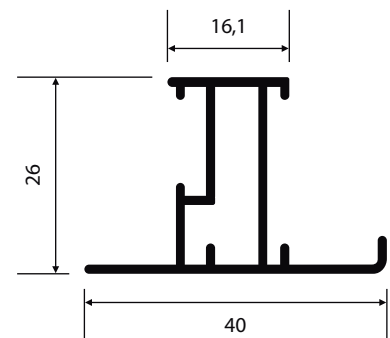
25-312
0,321 kg/m



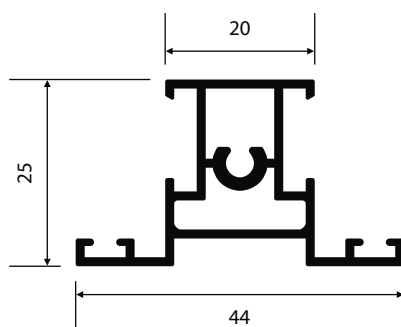
BG-035
0,117 kg/m



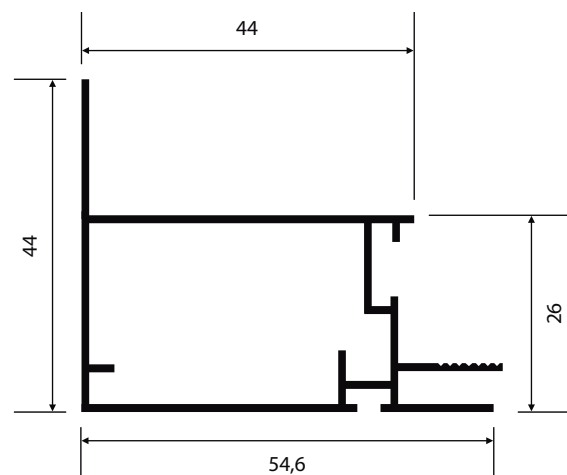
BG-202
0,106 Kg/m



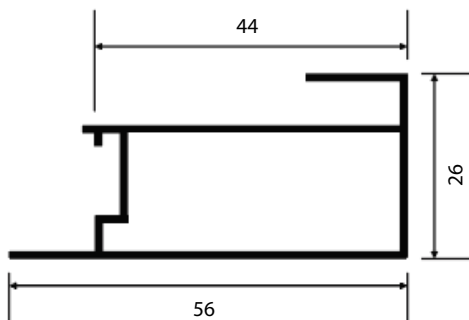
MM-375
0,393 kg/m



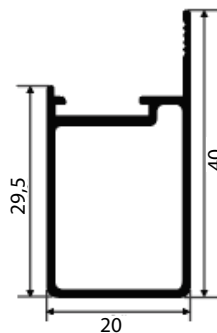
MM-376
0,521 kg/m



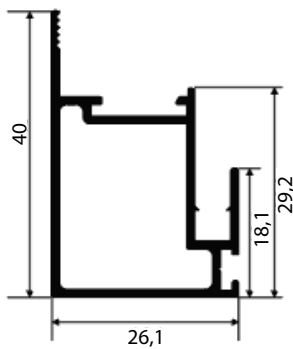
MP-069
0,602 kg/m



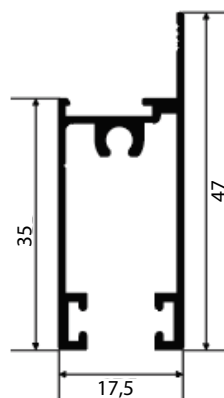
MP-070
0,497 kg/m



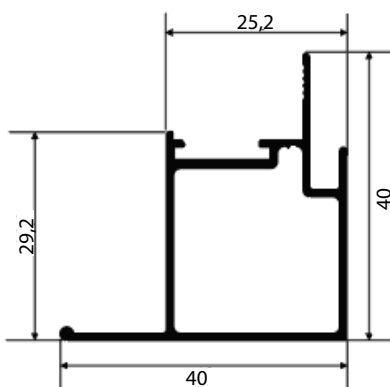
MP-300
0,334 kg/m



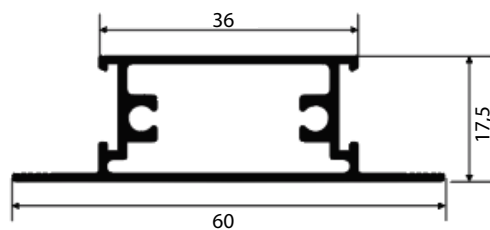
MP-302
0,434 kg/m



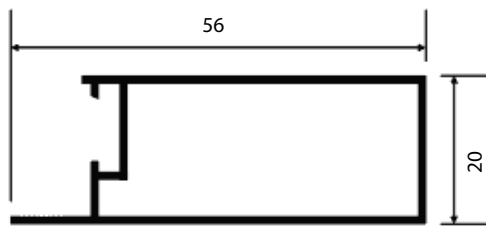
MP-309
0,387 kg/m



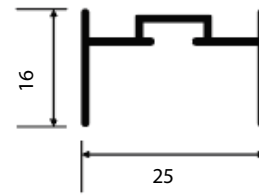
MP-321
0,428 kg/m



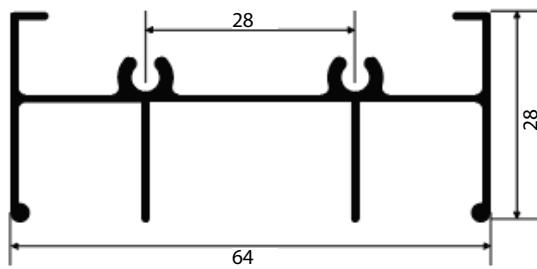
MP-332
0,489 kg/m



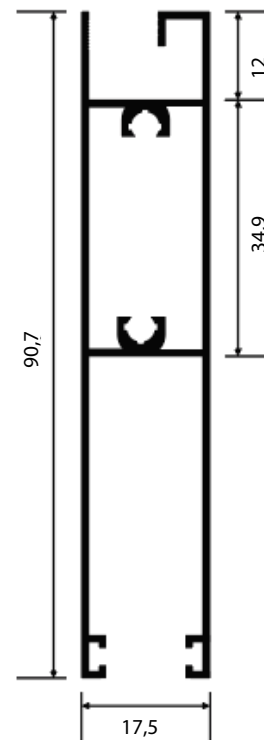
MP-336
0,424 kg/m



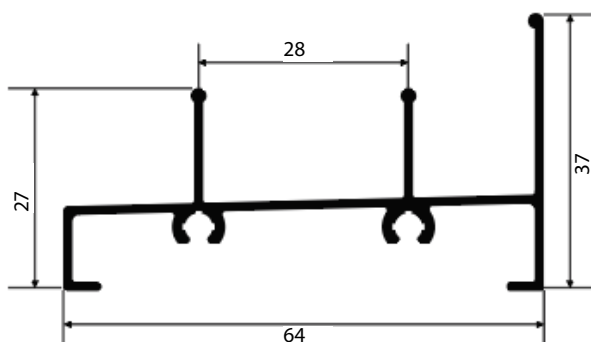
MP-352
0,165 kg/m



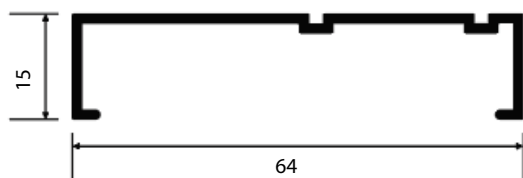
MP-357
0,558 kg/m



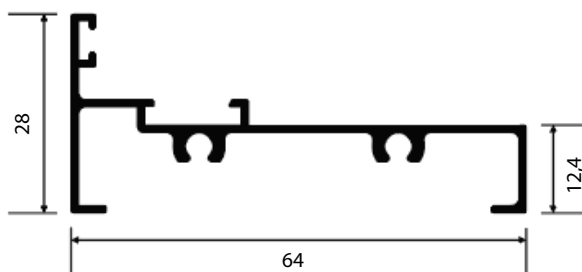
MP-354
0,895 kg/m



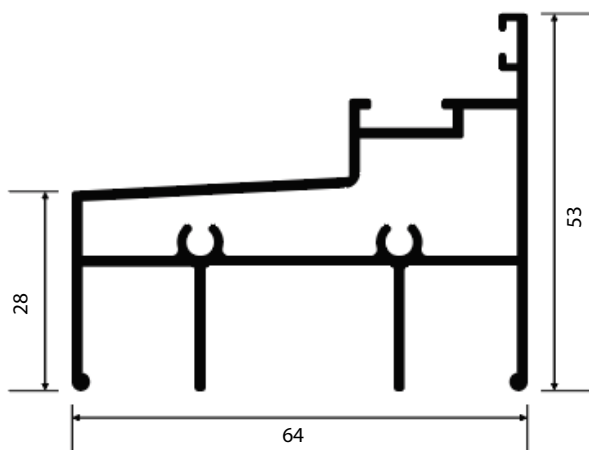
MP-358
0,539 kg/m



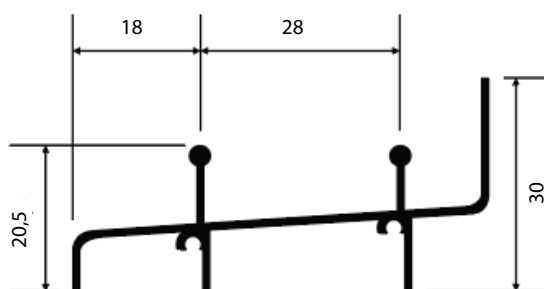
MP-359
0,385 kg/m



MP-363
0,468 kg/m

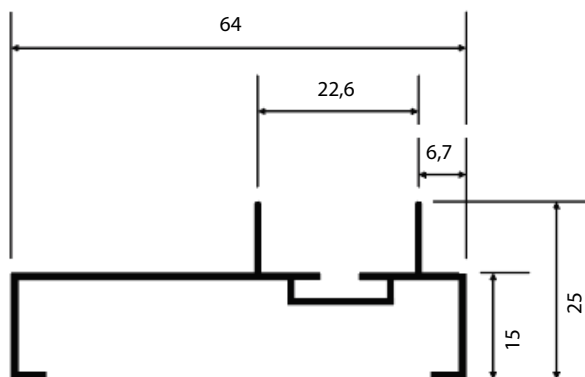


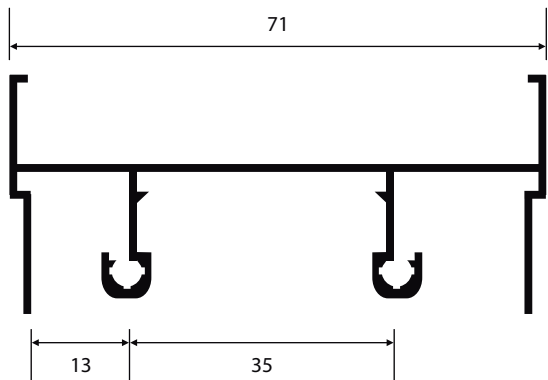
MP-361
1,074 kg/m



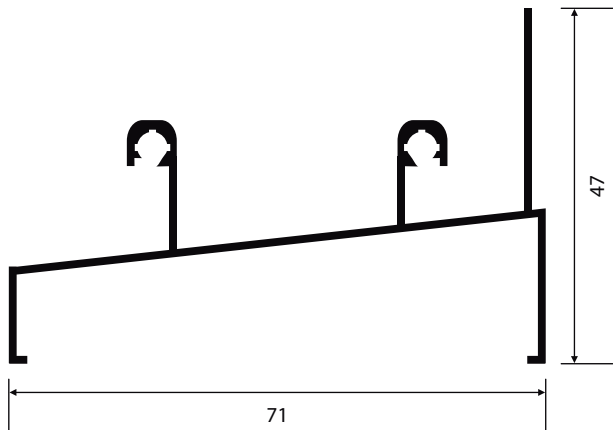
MP-370
0,565 kg/m

MP-360
0,344 kg/m

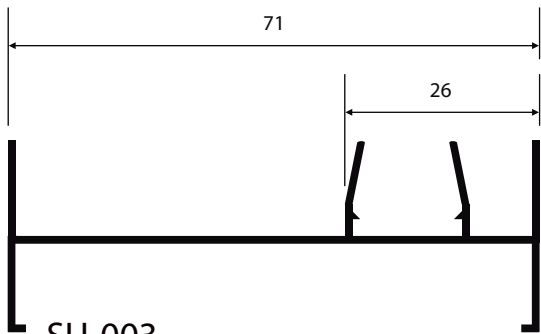




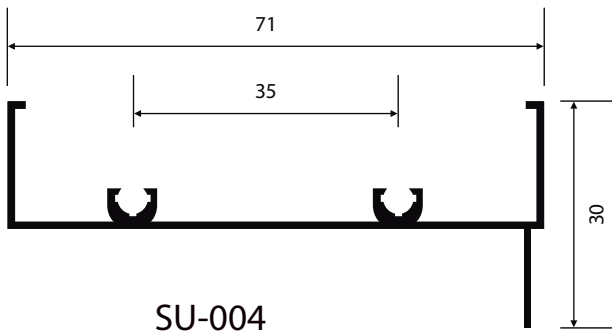
SU-001
0,713 kg/m



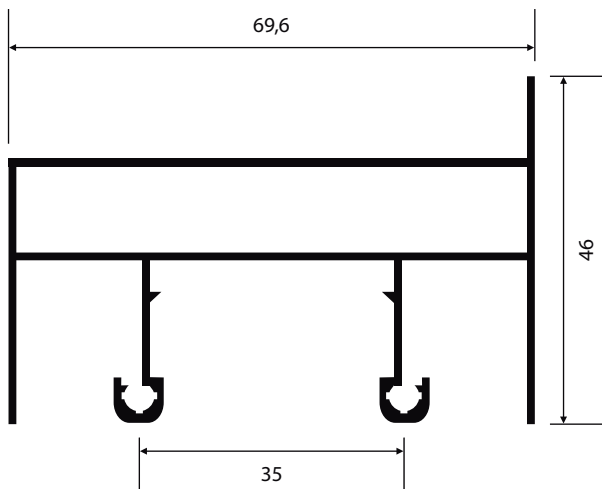
SU-002
0,692 kg/m



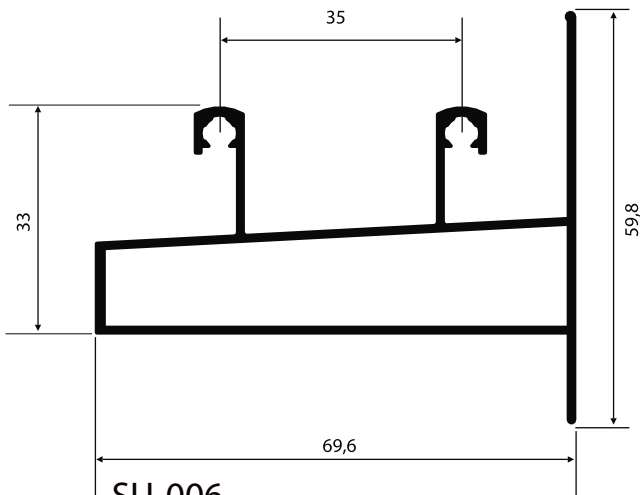
SU-003
0,494 kg/m



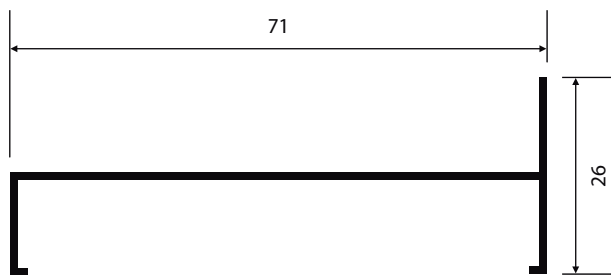
SU-004
0,502 kg/m



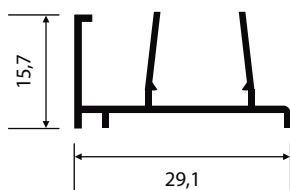
SU-005
0,974 kg/m



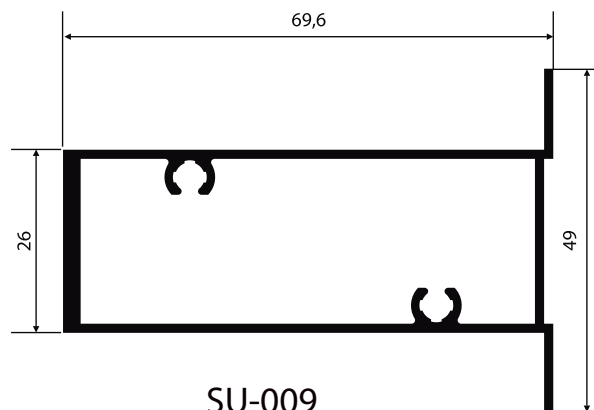
SU-006
0,982 kg/m



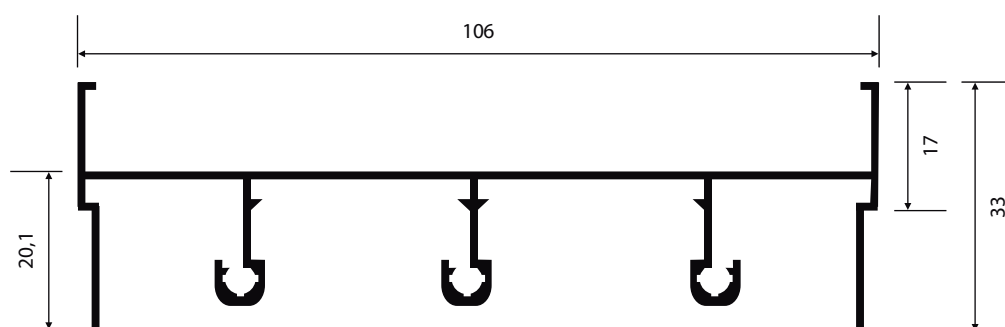
SU-007
0,385 kg/m



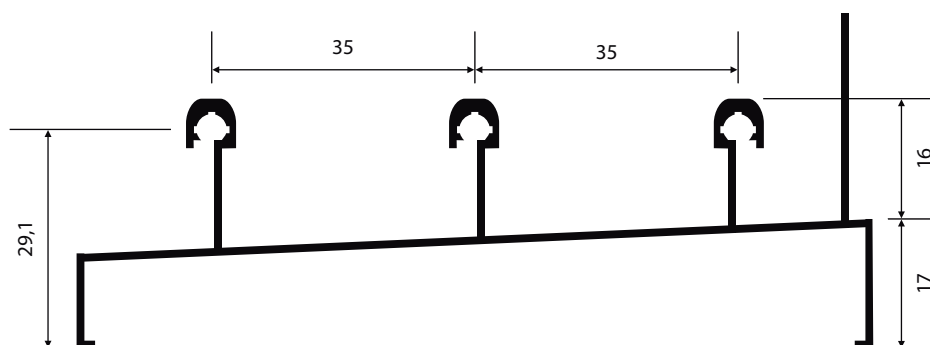
SU-008
0,246 kg/m



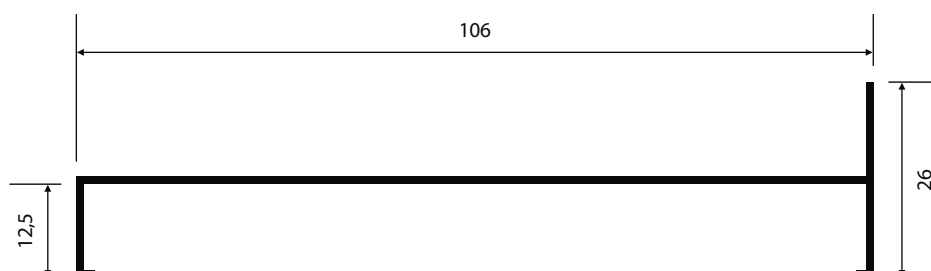
SU-009
0,906 kg/m



SU-010
0,960 kg/m

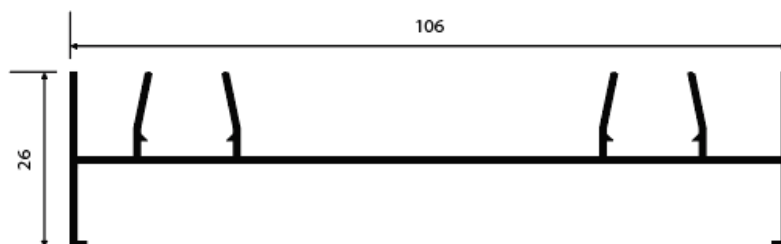


SU-011
0,973 kg/m

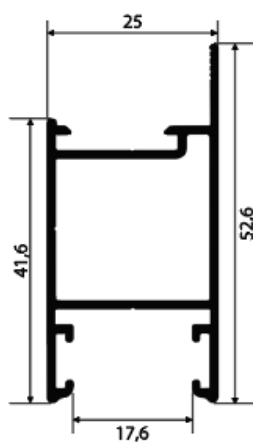
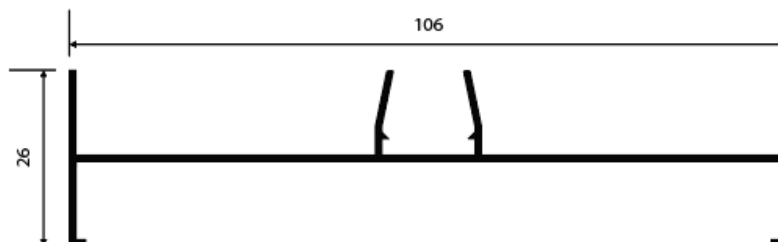


SU-012
0,542 kg/m

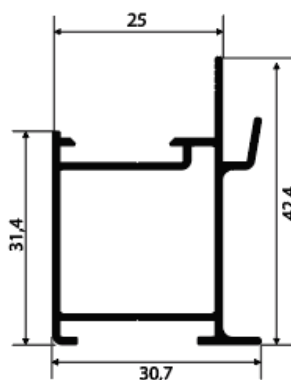
SU-013
0,707 kg/m



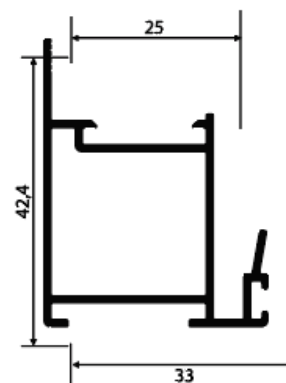
SU-014
0,648 kg/m



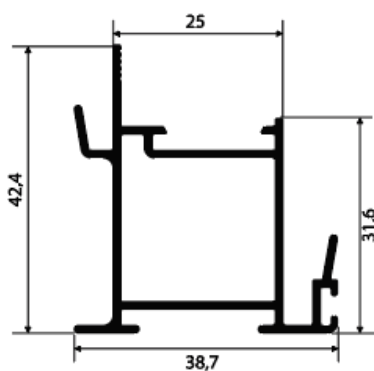
SU-039
0,476 kg/m



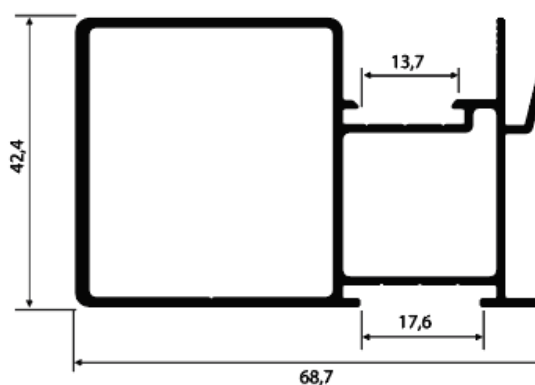
SU-040
0,973 kg/m



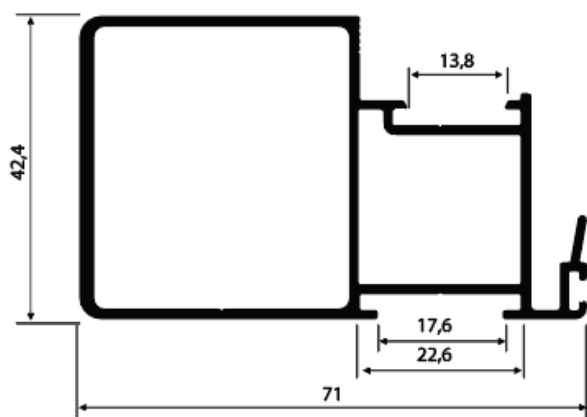
SU-041
0,508 kg/m



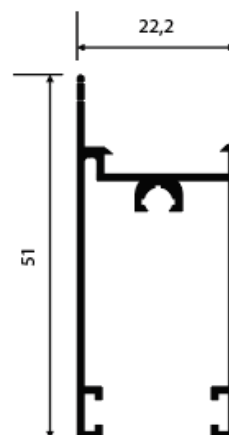
SU-042
0,563 kg/m



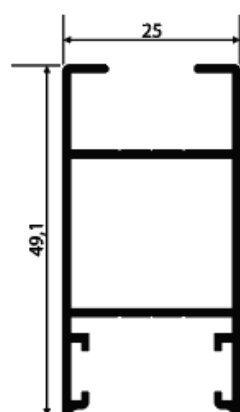
SU-047
1,041 kg/m



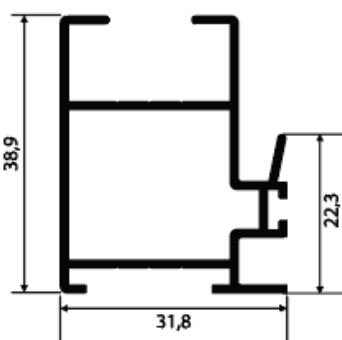
SU-049
1,042 kg/m



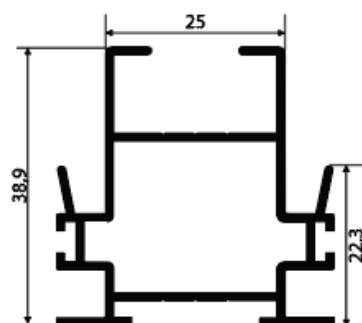
SU-053
0,470 kg/m



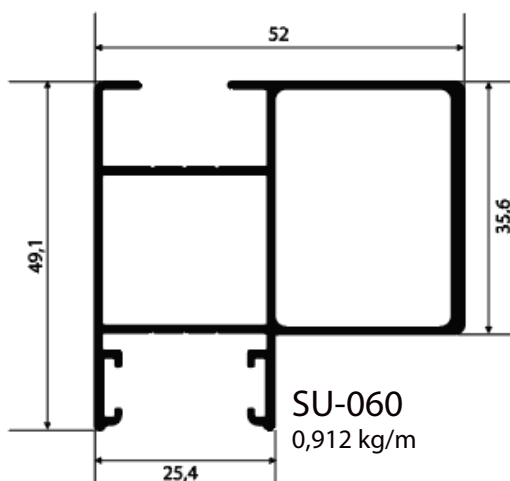
SU-055
0,543 kg/m



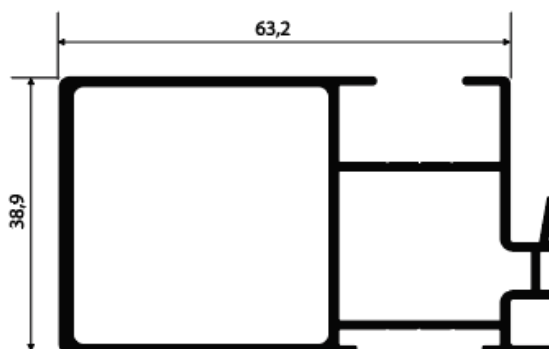
SU-056
0,541 kg/m



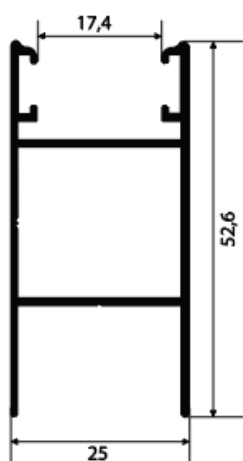
SU-057
0,636 kg/m



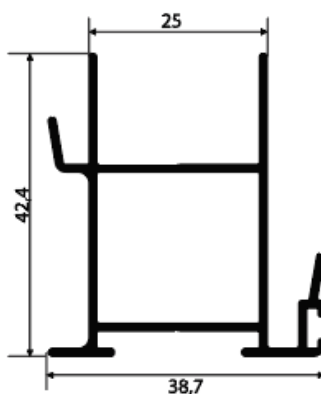
SU-060
0,912 kg/m



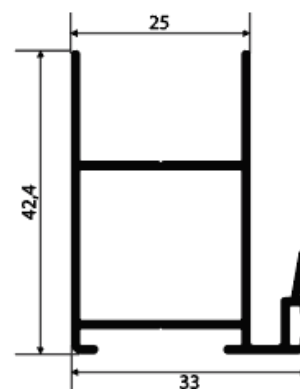
SU-061
1,062 kg/m



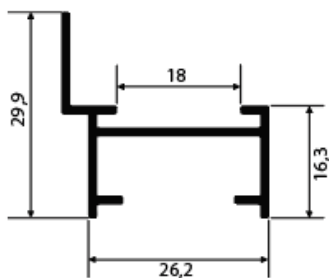
SU-068
0,490 kg/m



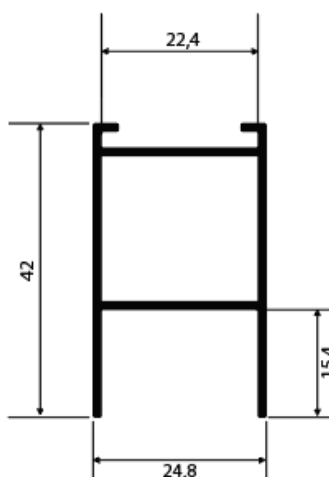
SU-069
0,576 kg/m



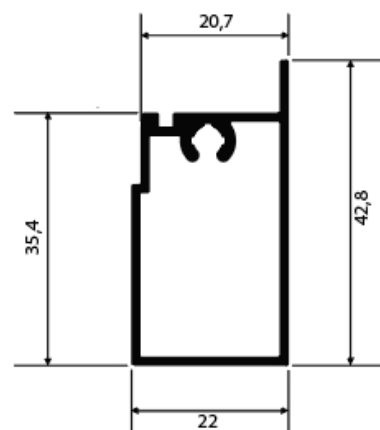
SU-070
0,518 kg/m



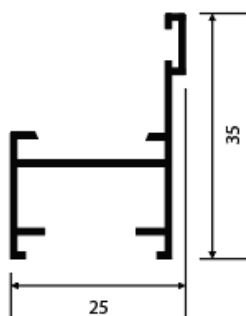
SU-071
0,283 kg/m



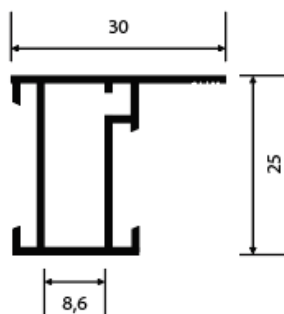
SU-072
0,435 kg/m



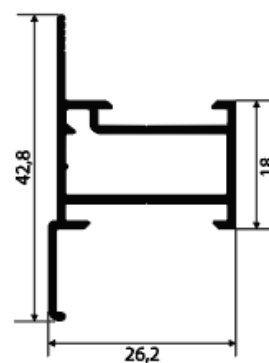
SU-073
0,457 kg/m



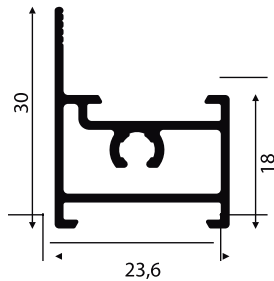
SU-079
0,332 kg/m



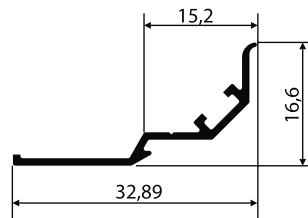
SU-080
0,355 kg/m



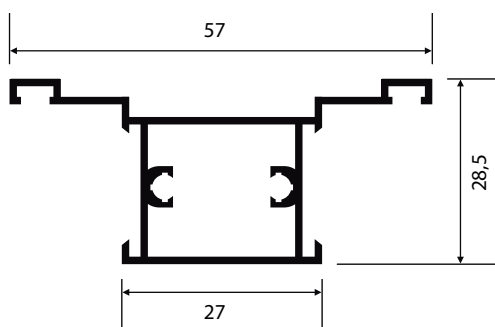
SU-081
0,397 kg/m



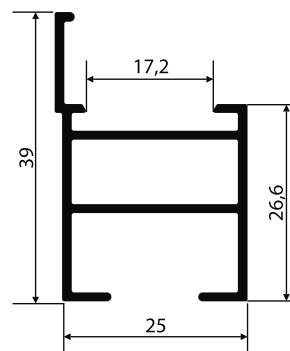
SU-082
0,377 kg/m



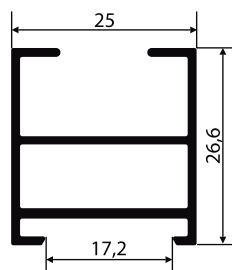
SU-083
0,143 kg/m



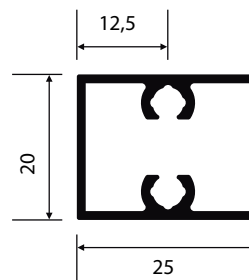
SU-086
0,596 kg/m



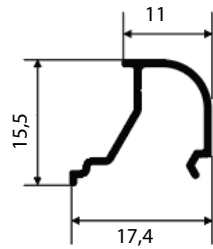
SU-090
0,435 kg/m



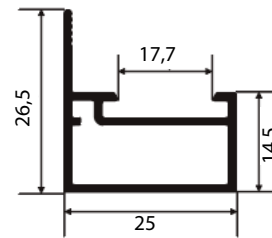
SU-091
0,378 kg/m



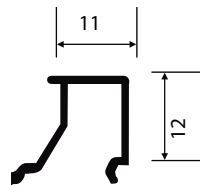
SU-094
0,378 kg/m



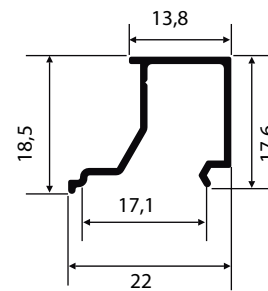
NI-943
0,104 kg/m



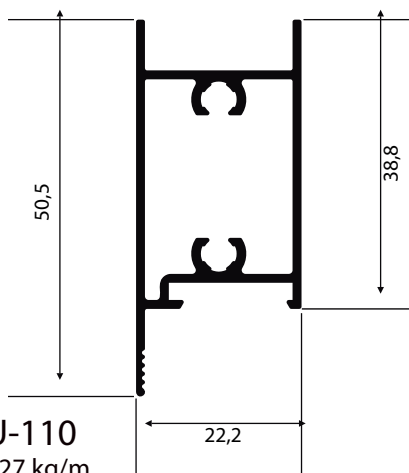
SU-096
0,309 kg/m



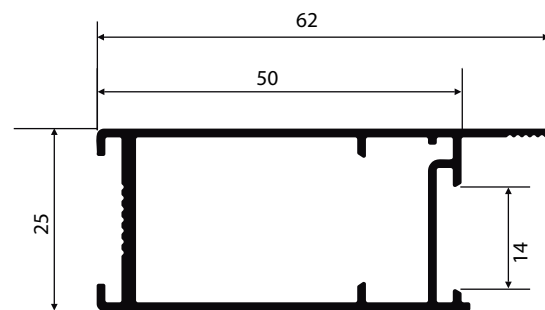
SU-102
0,110 kg/m



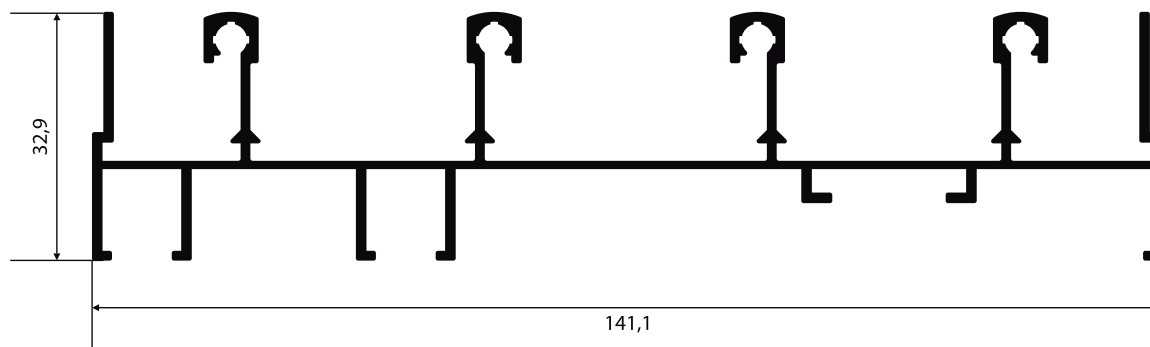
SU-103
0,154 kg/m



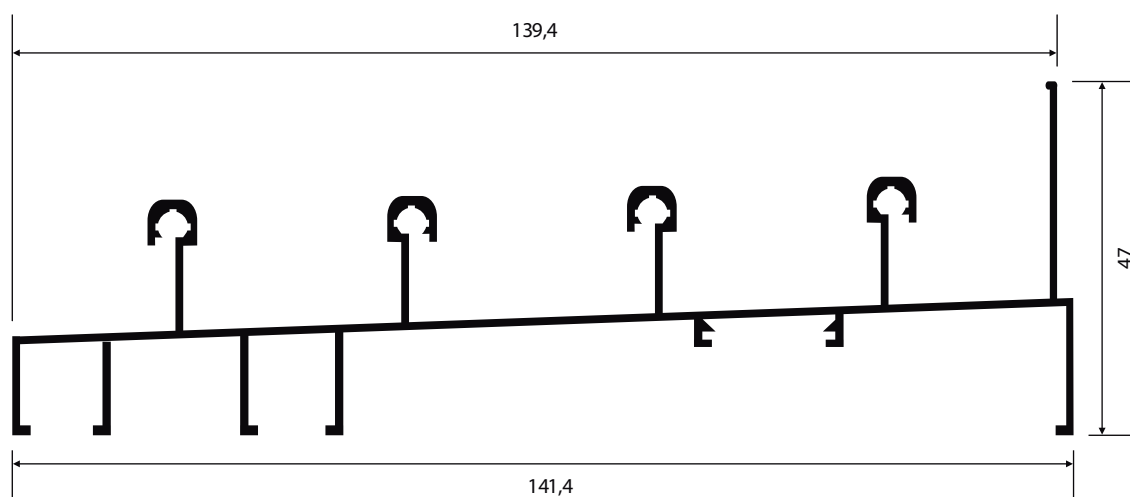
SU-110
0,527 kg/m



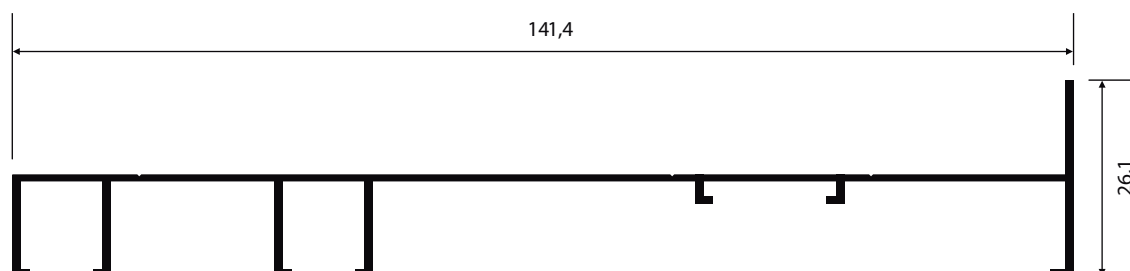
SU-111
0,617 kg/m



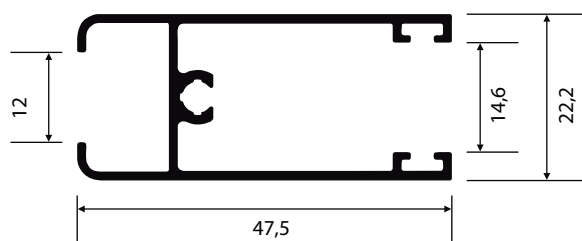
SU-121
01,415 kg/m



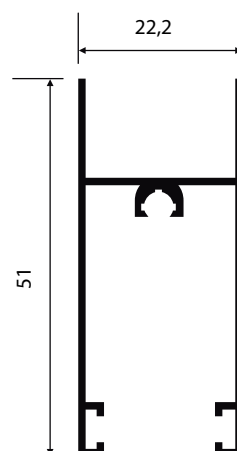
SU-122
01,413 kg/m



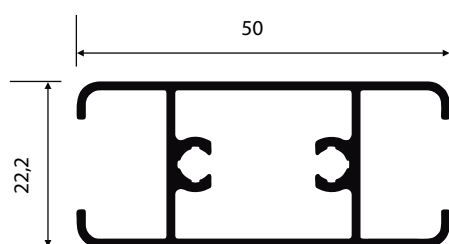
SU-123
0,969 kg/m



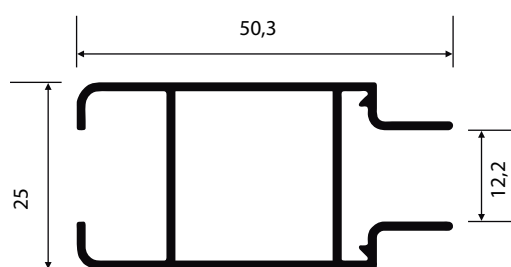
SU-186
0,507 kg/m



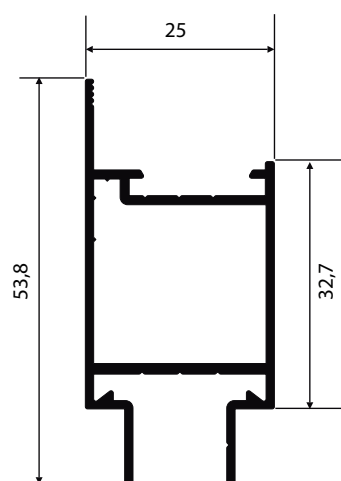
SU-187
0,492 kg/m



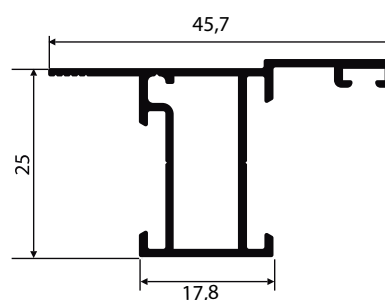
SU-188
0,591 kg/m



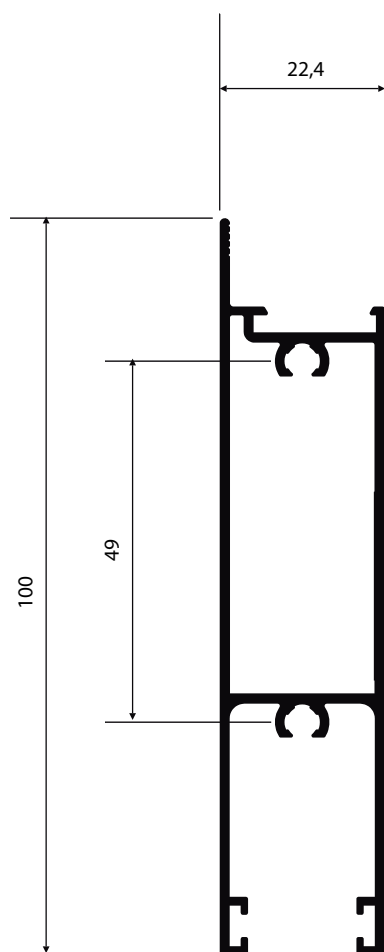
SU-190
0,537 kg/m



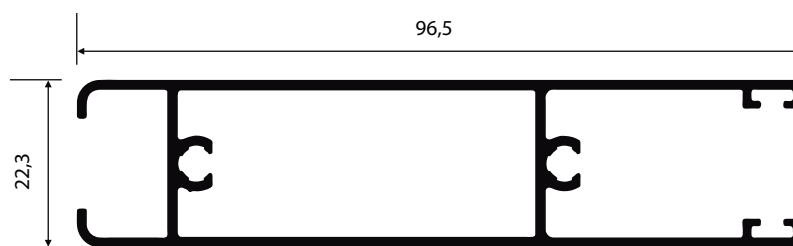
SU-192
0,507 kg/m



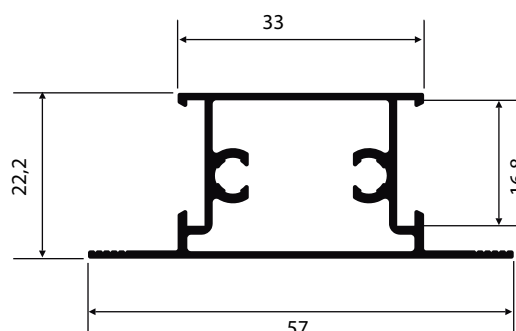
SU-200
0,404 kg/m



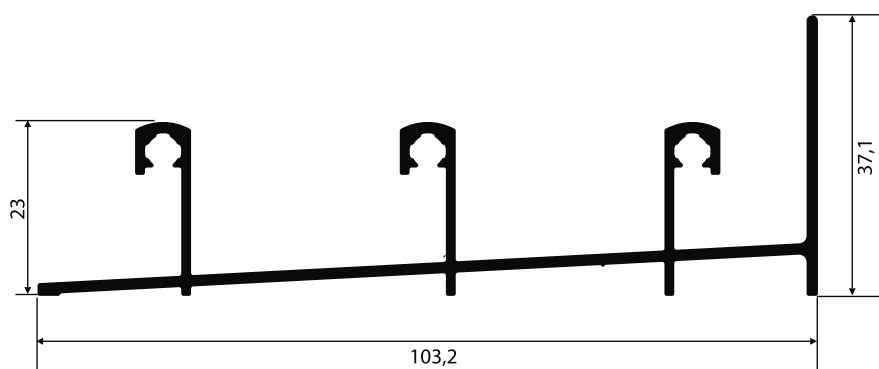
SU-225
1,003 kg/m



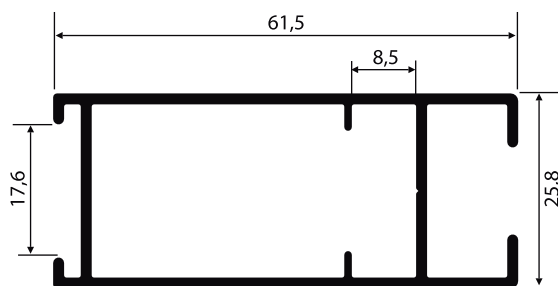
SU-226
1,009 kg/m



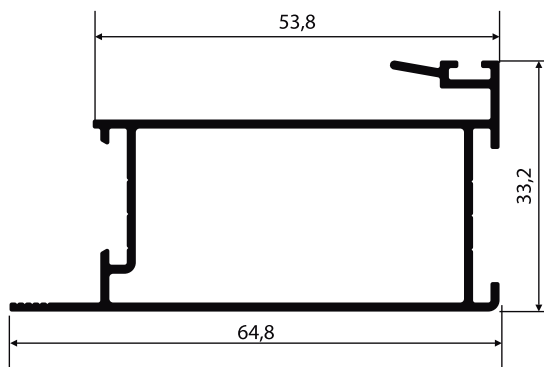
SU-227
0,504 kg/m



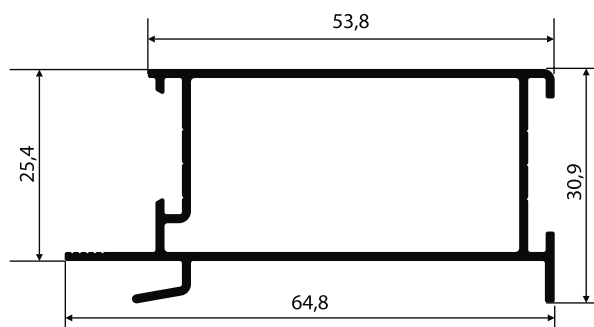
SU-230
0,955 kg/m



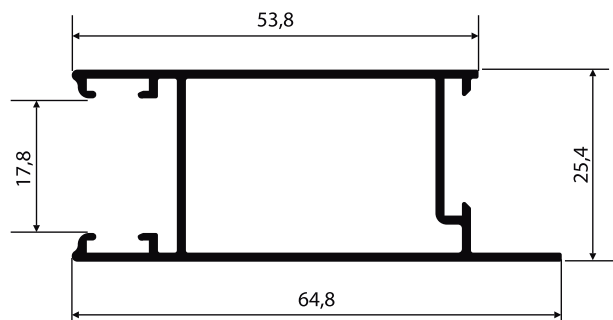
SU-241
0,743 kg/m



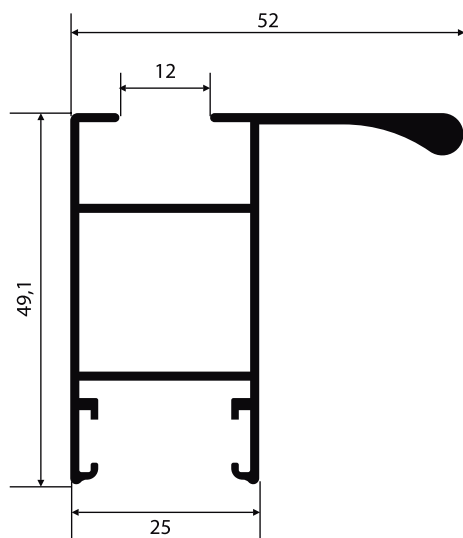
SU-242
0,657 kg/m



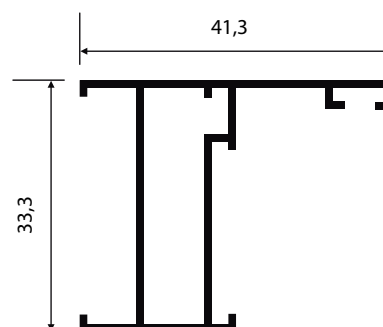
SU-243
0,628 kg/m



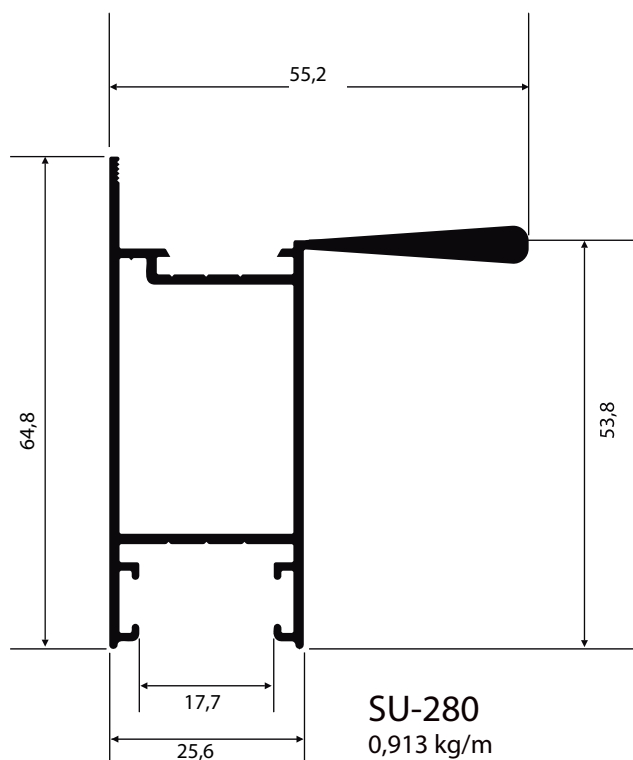
SU-245
0,601 kg/m



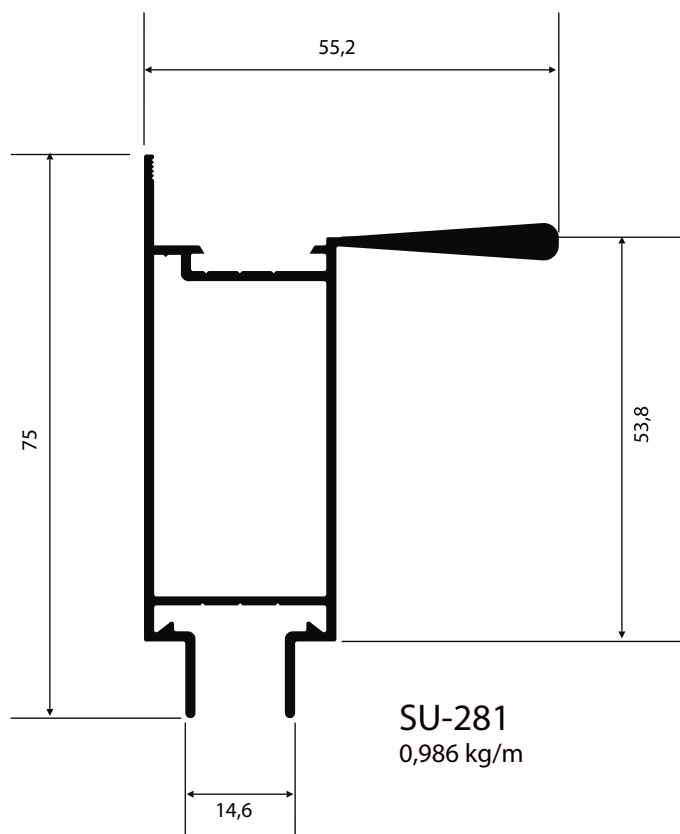
SU-270
0,730 kg/m



SU-279
0,545 kg/m

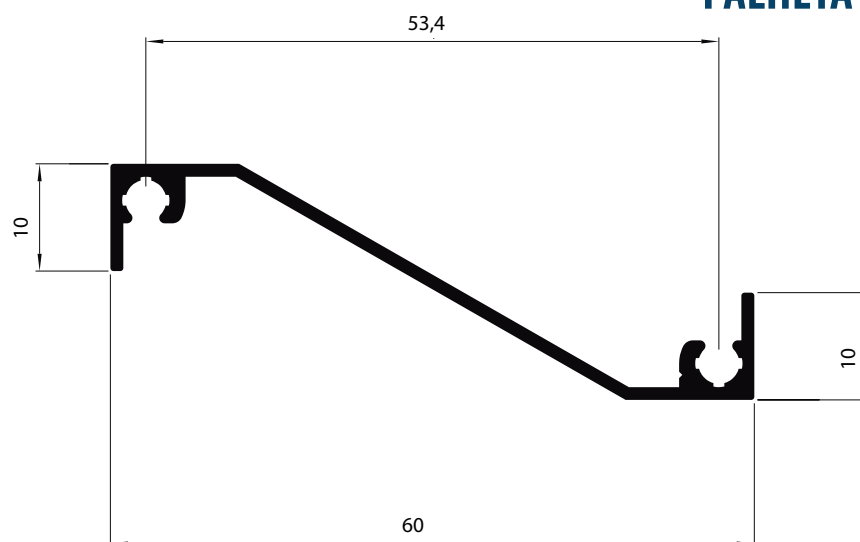


SU-280
0,913 kg/m

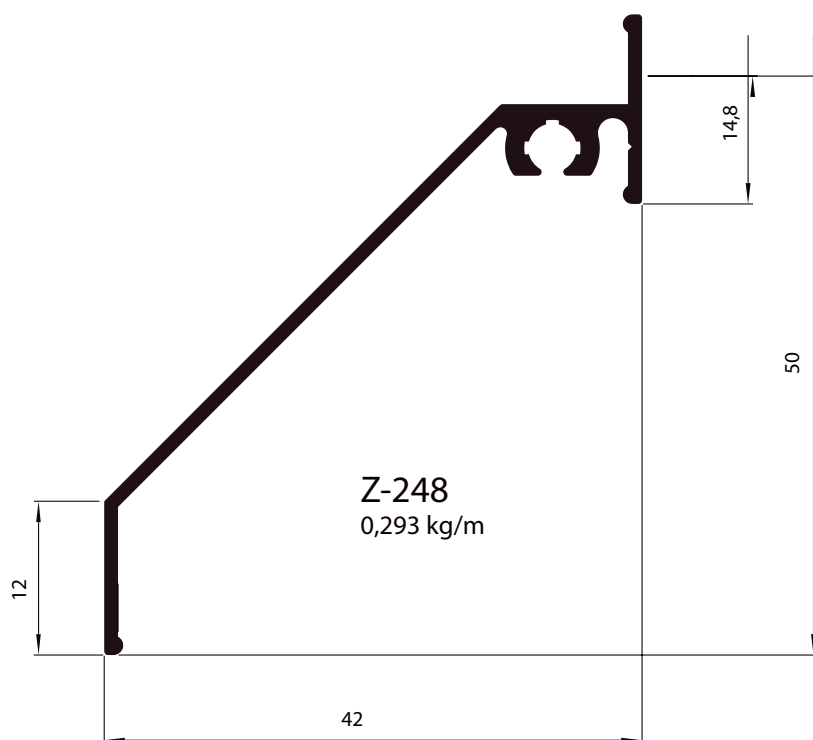


SU-281
0,986 kg/m

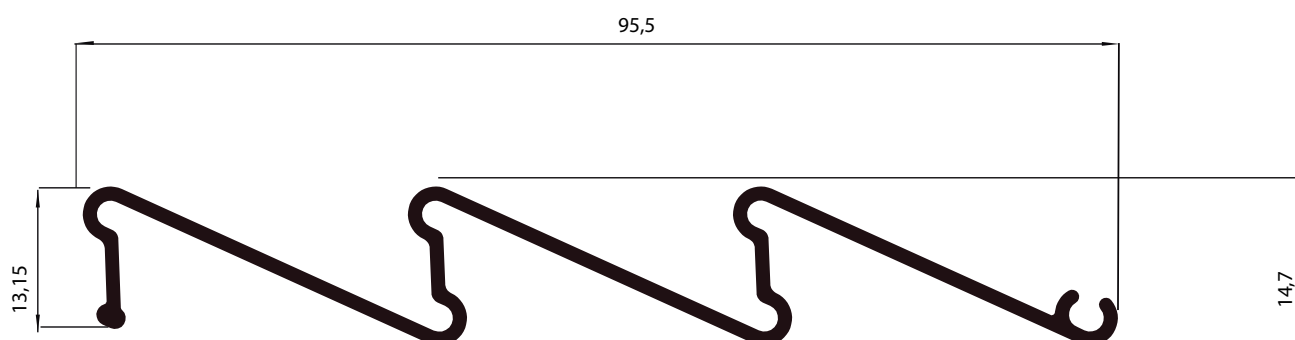
PALHETA



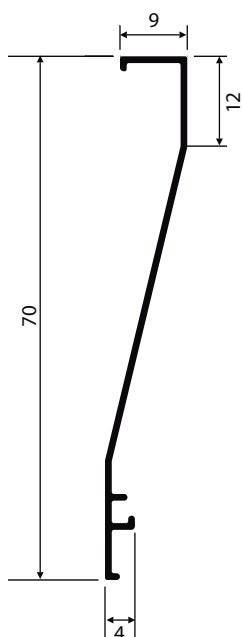
Z-073
0,331 kg/m



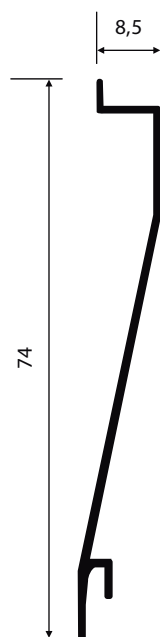
Z-248
0,293 kg/m



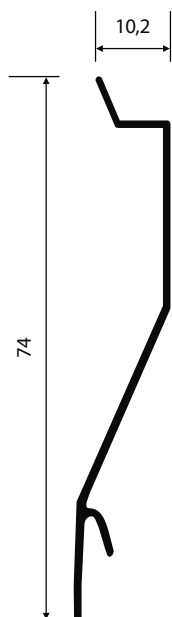
NI-947
0,559 kg/m



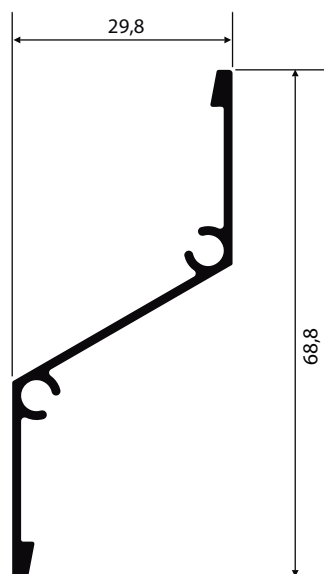
NI-570
0,213 kg/m



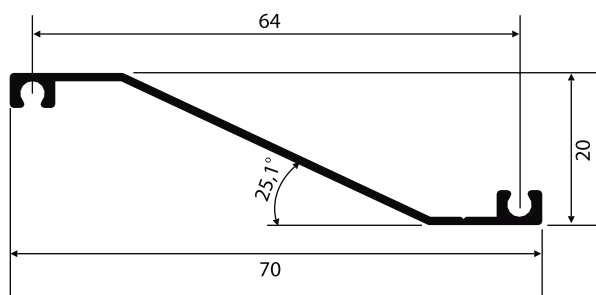
VZ-024
0,271 kg/m



VZ-051
0,269 kg/m



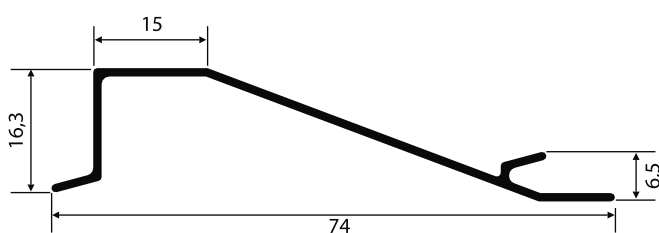
VZ-060
0,369 kg/m



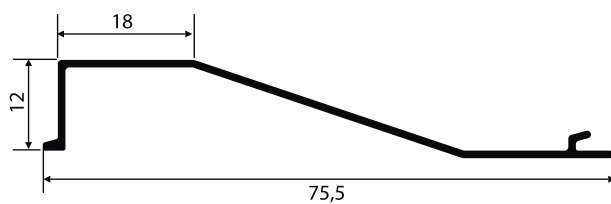
NI-756
0,284 kg/m



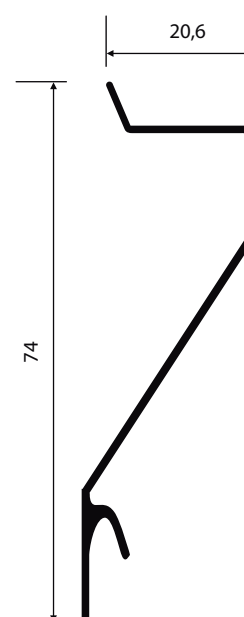
Z-201A
0,253 kg/m



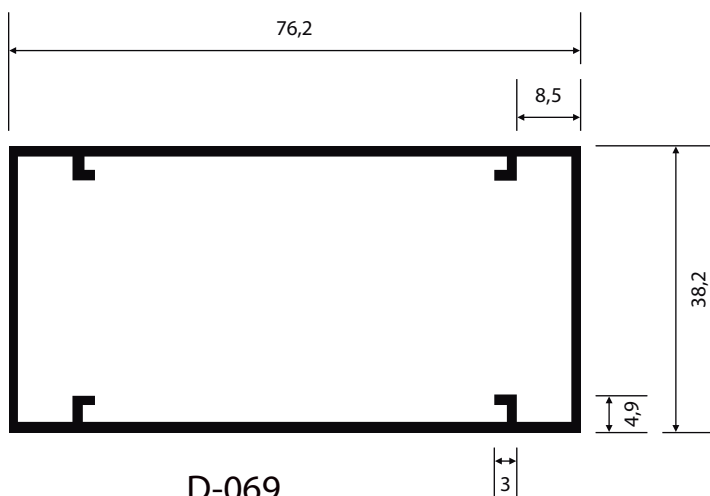
VZ-023
0,293 kg/m



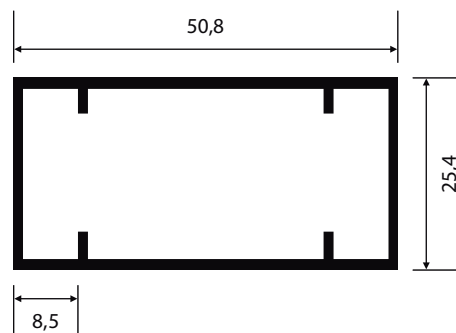
Z-169A
0,252 kg/m



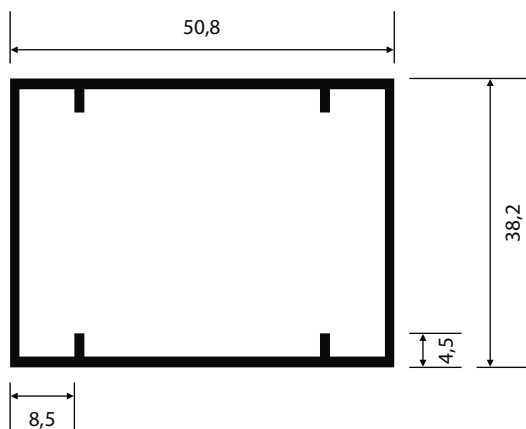
Z-203
0,296 kg/m



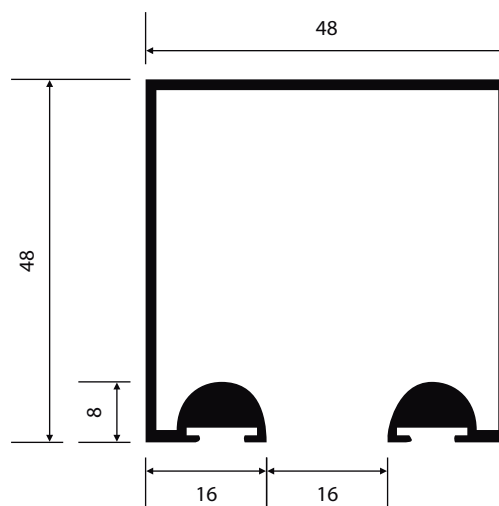
D-069
0,954 kg/m



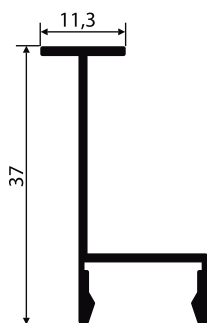
D-079
0,562 kg/m



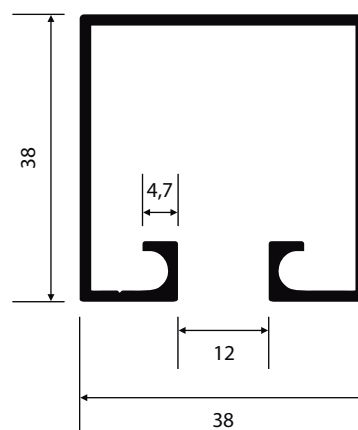
D-078
0,653 kg/m



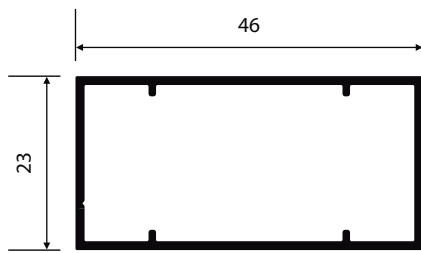
NI-003
1,351 kg/m



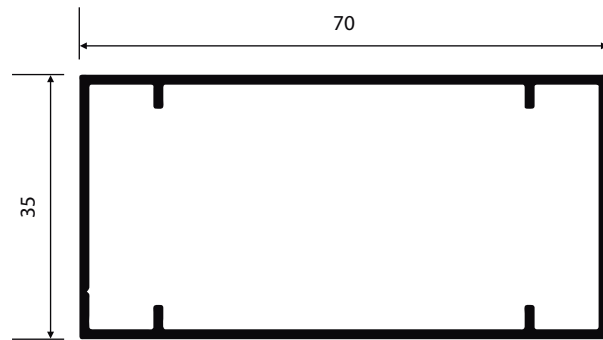
NI-019
0,247 kg/m



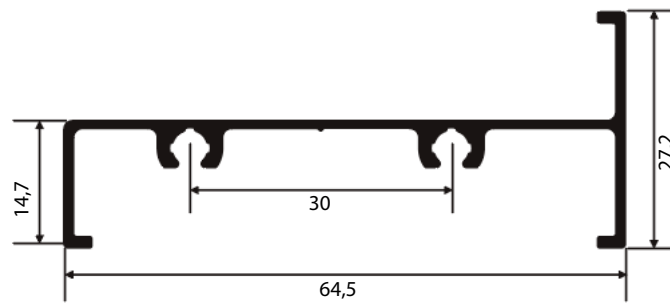
NI-116
0,631 kg/m



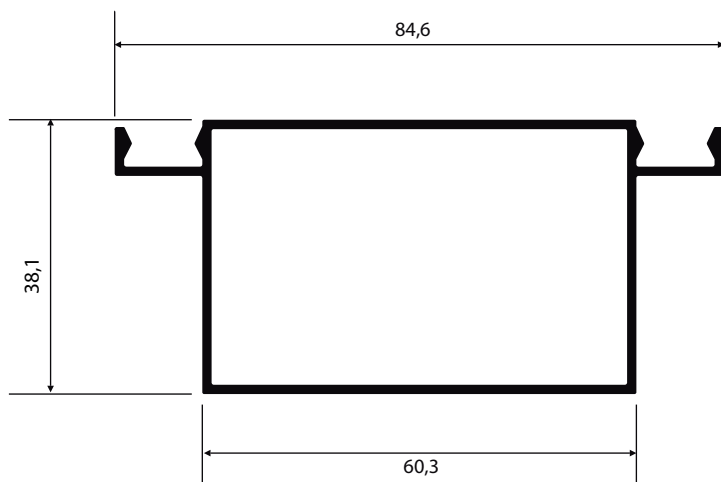
NI-262
0,450 kg/m



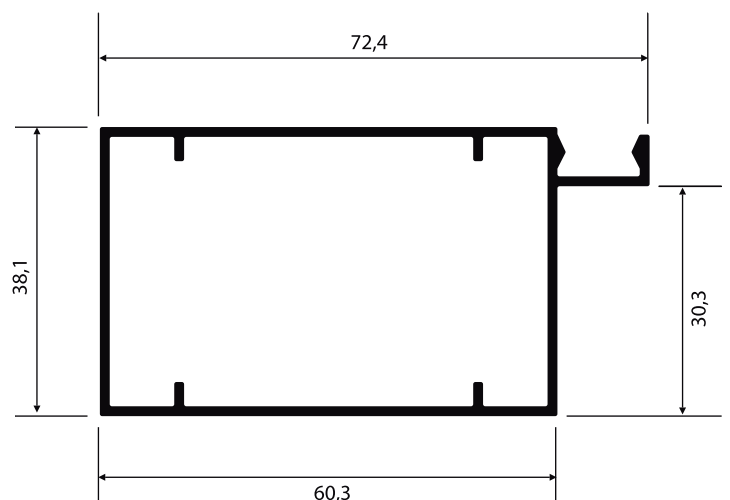
NI-263
0,767 kg/m



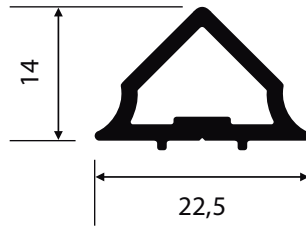
NI-310
0,430 kg/m



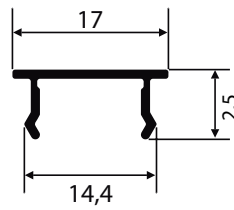
NI-404
0,823 kg/m



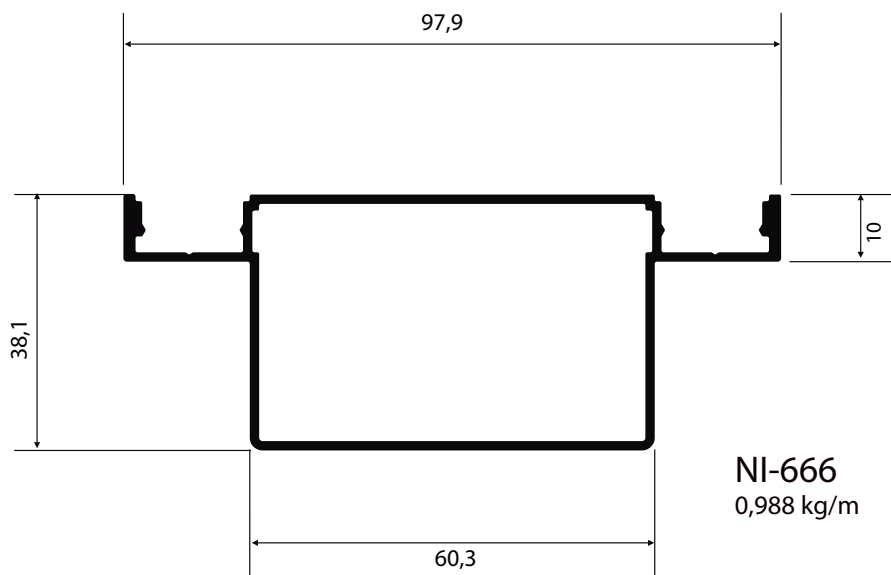
NI-405
0,795 kg/m



NI-460
0,255 kg/m

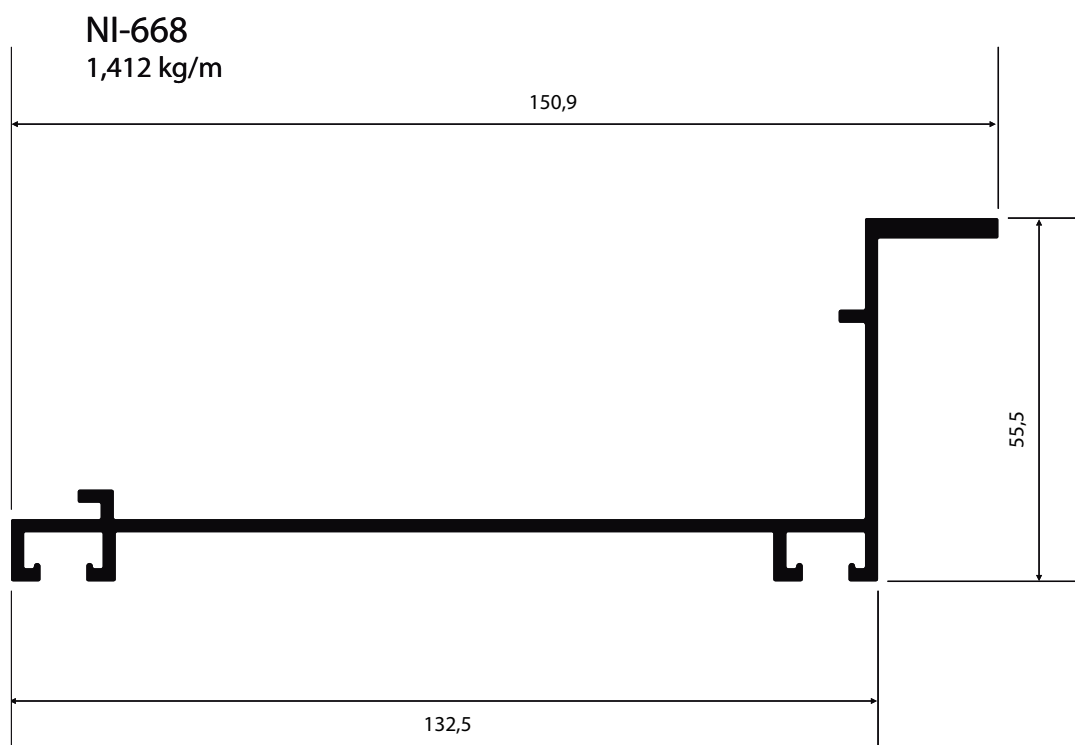
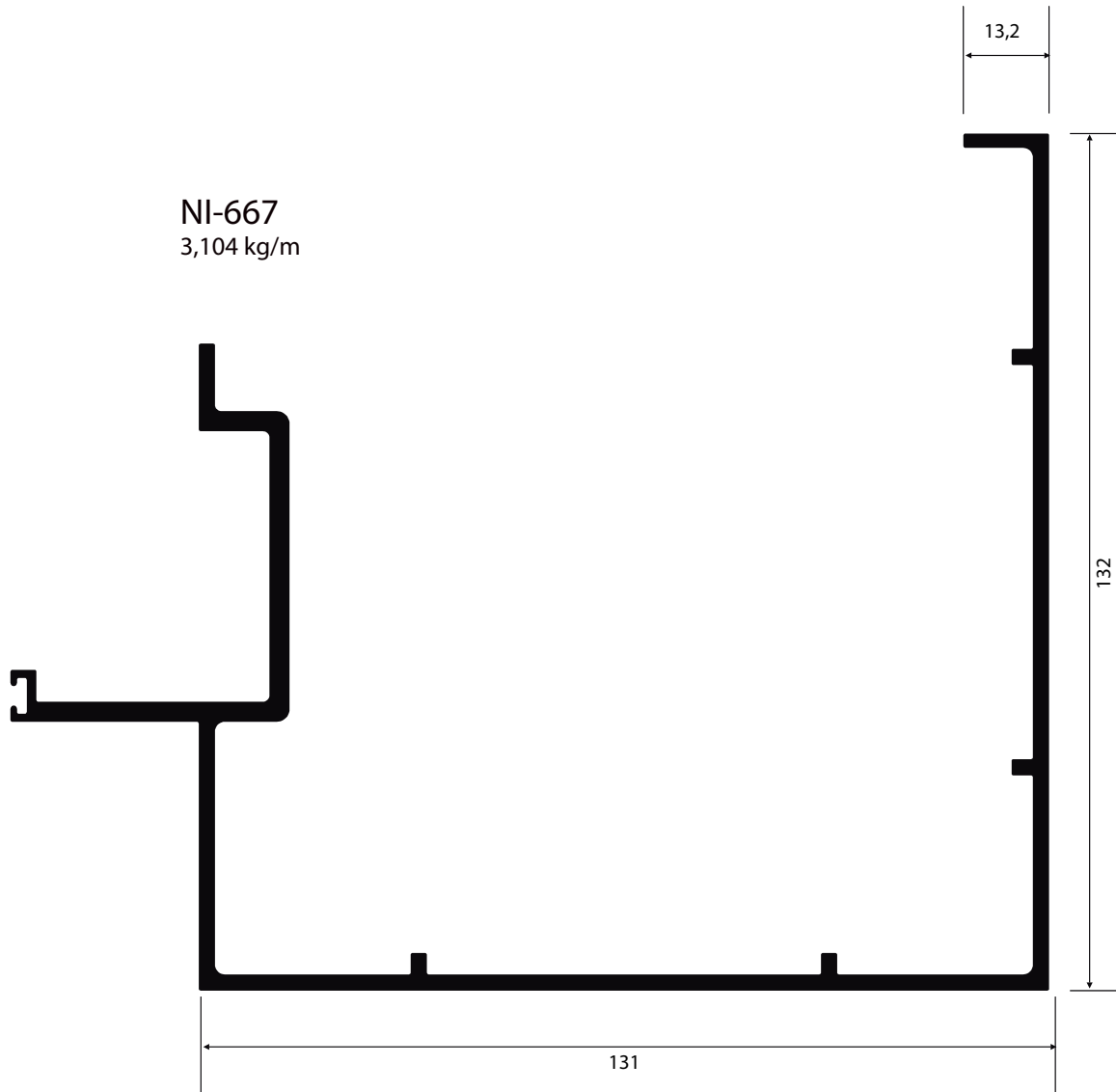


NI-665
0,081 kg/m

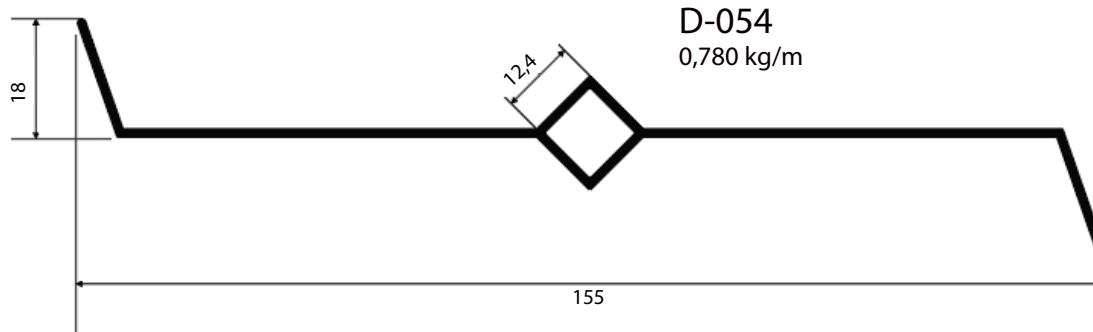
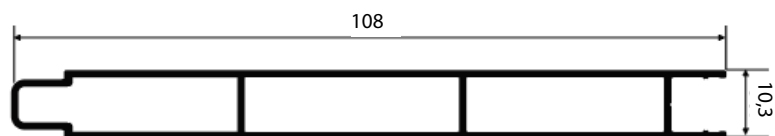


NI-666
0,988 kg/m

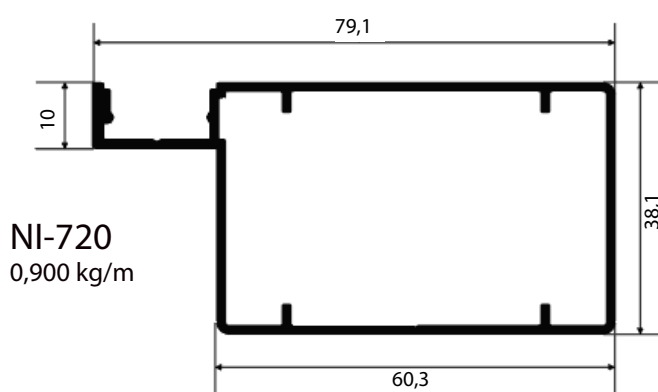
PORTÃO



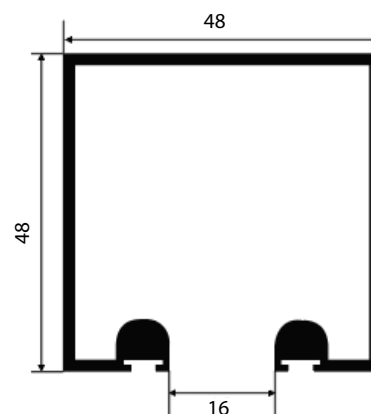
NI-767
0,793 kg/m



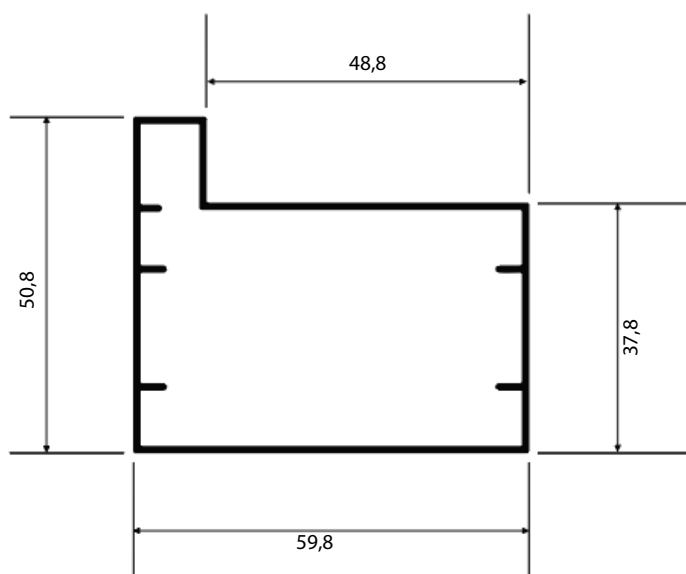
D-054
0,780 kg/m



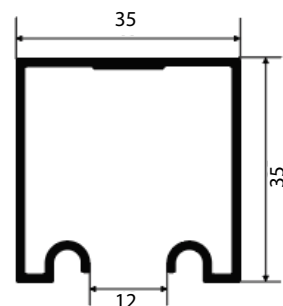
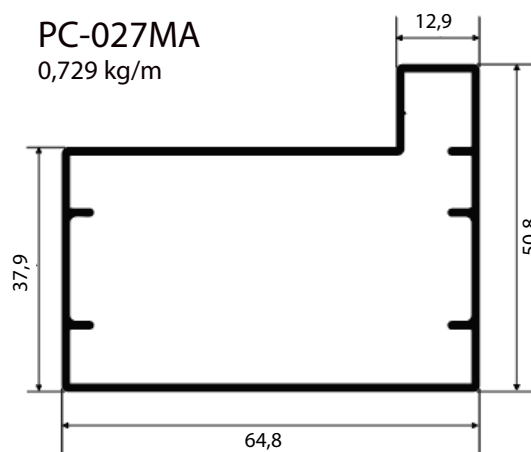
NI-720
0,900 kg/m



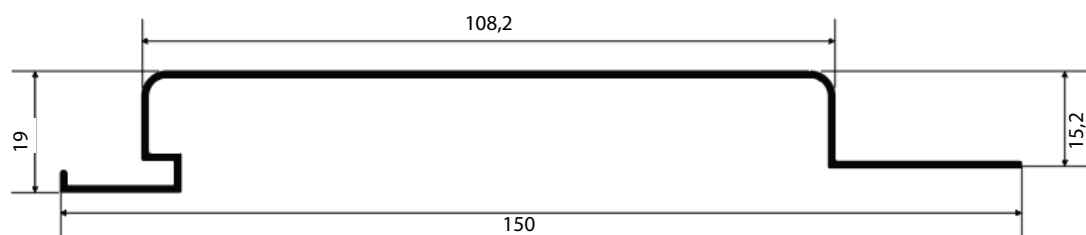
NI-1020
0,963 kg/m



PC-026
0,685 kg/m



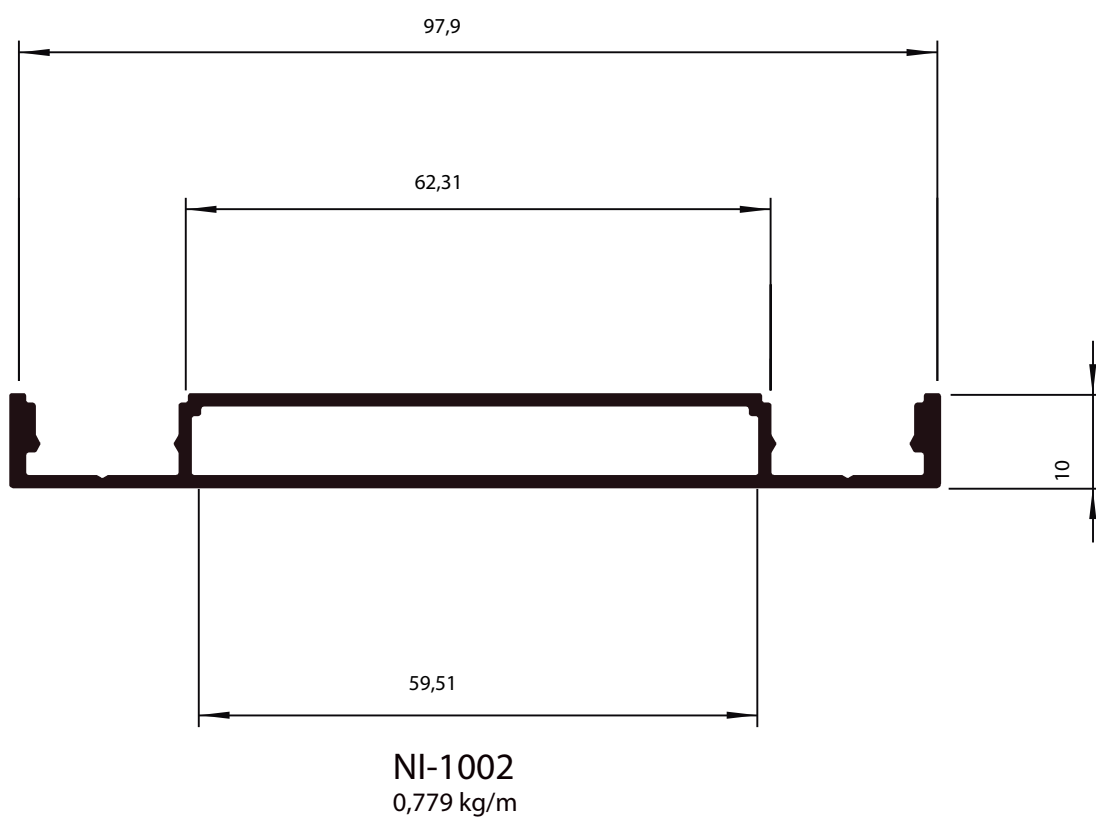
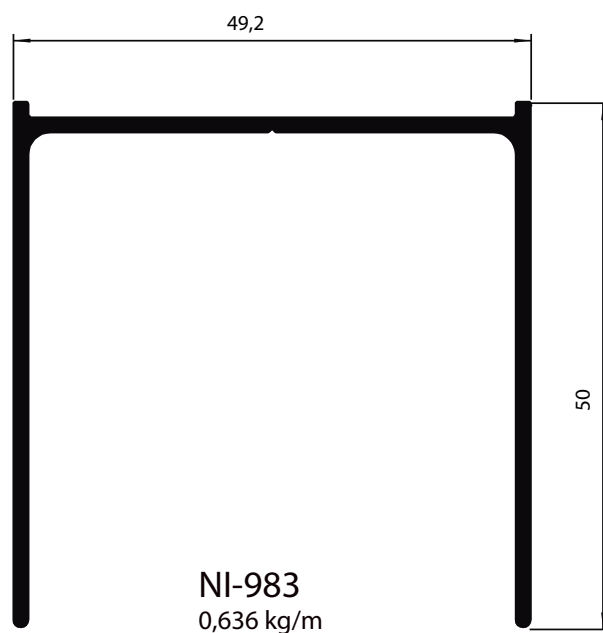
NI-047
0,507 kg/m

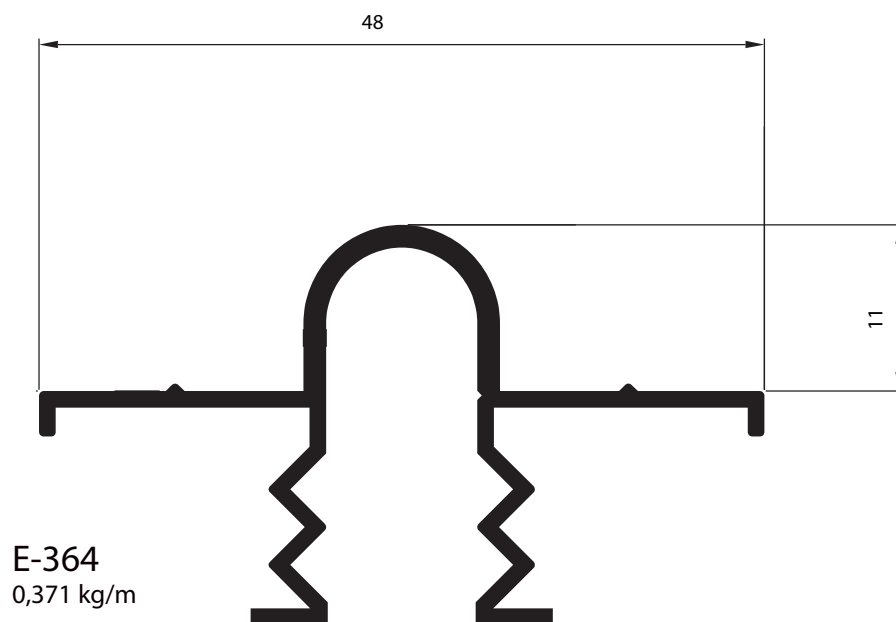
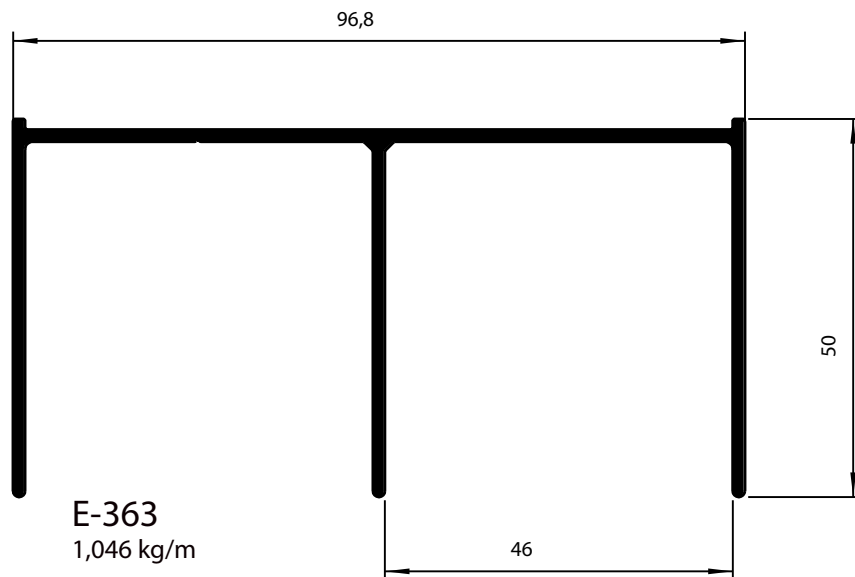


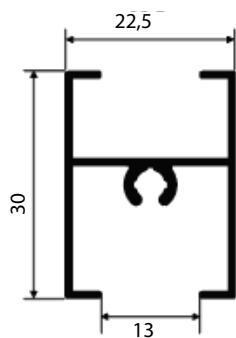
NI-1010
0,571kg/m



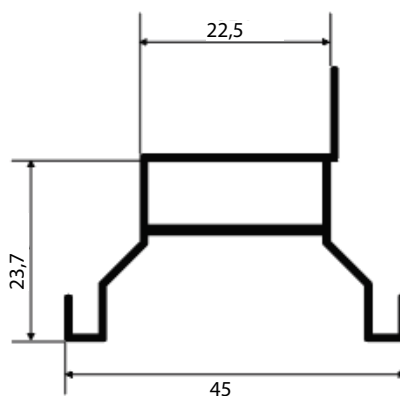
TUB-4598
1,385 kg/m







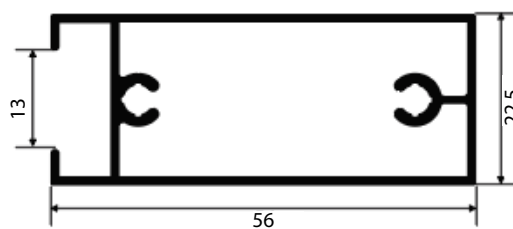
NI-009
0,308 kg/m



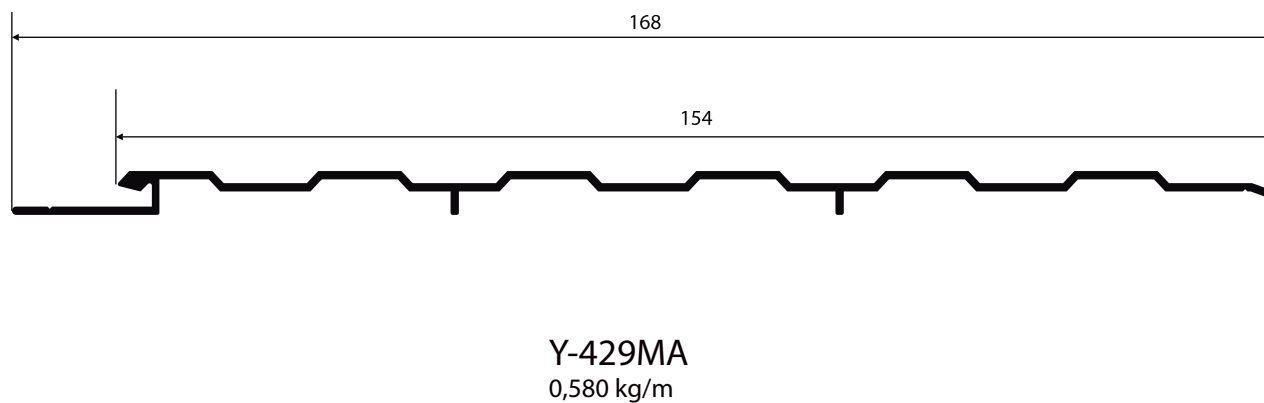
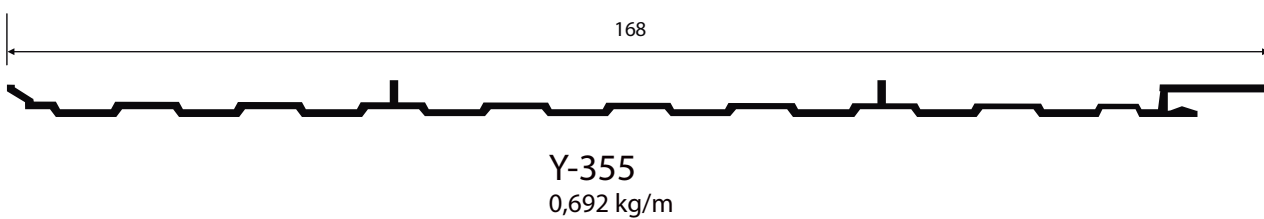
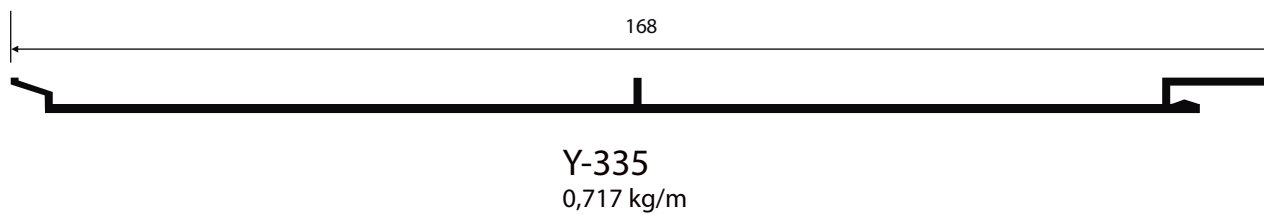
NI-013
0,349 kg/m

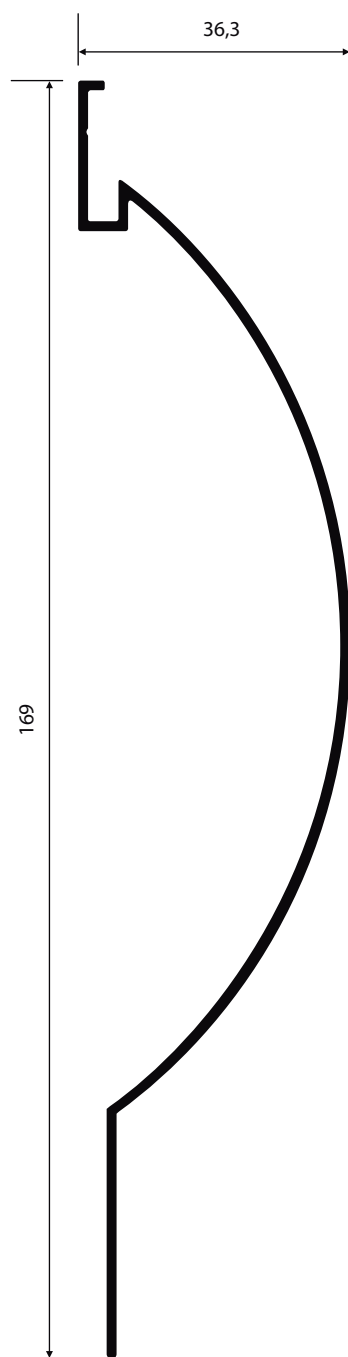


NI-011
0,503 kg/m

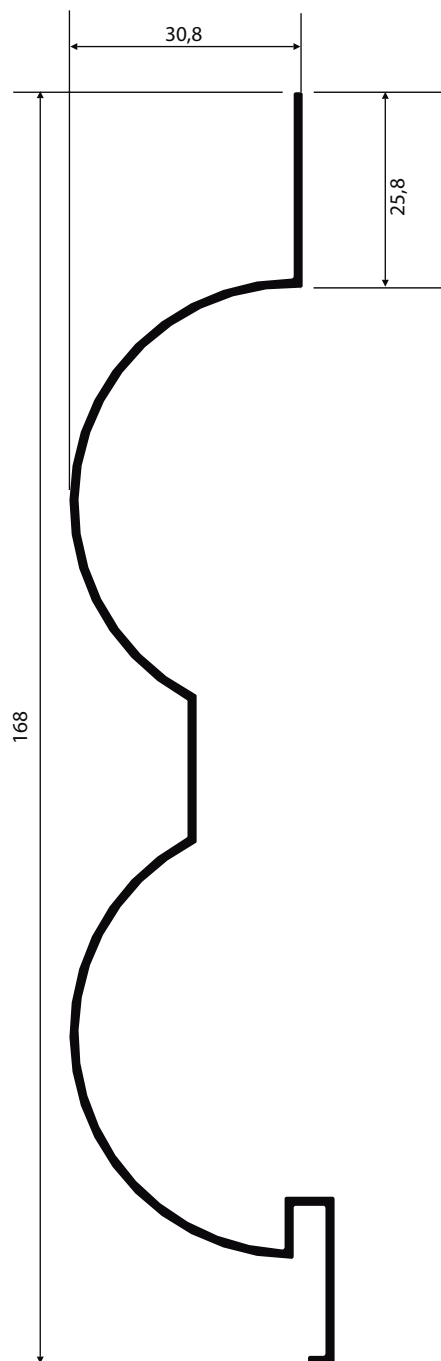


NI-012
0,593 kg/m

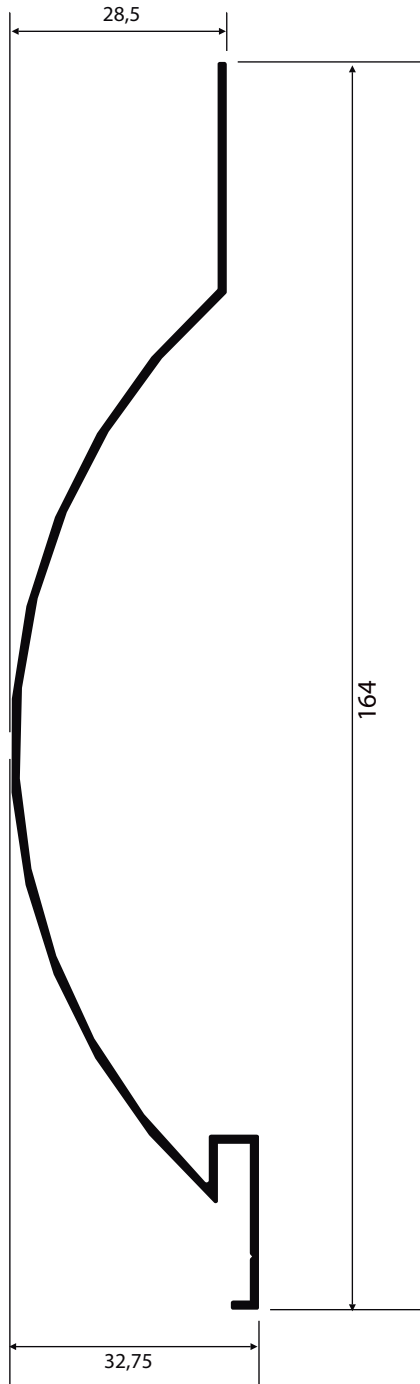




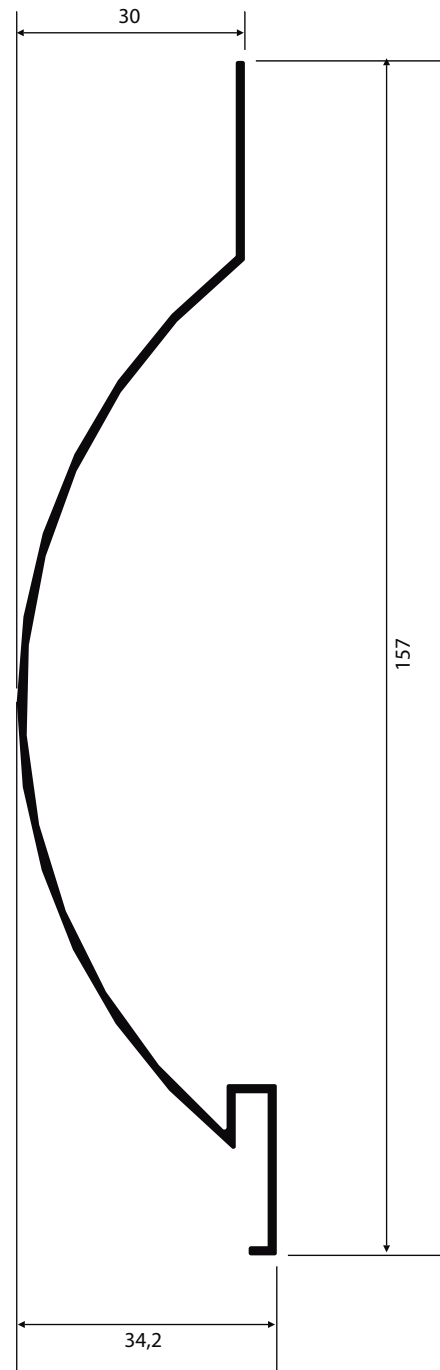
LB-069
0,724 kg/m



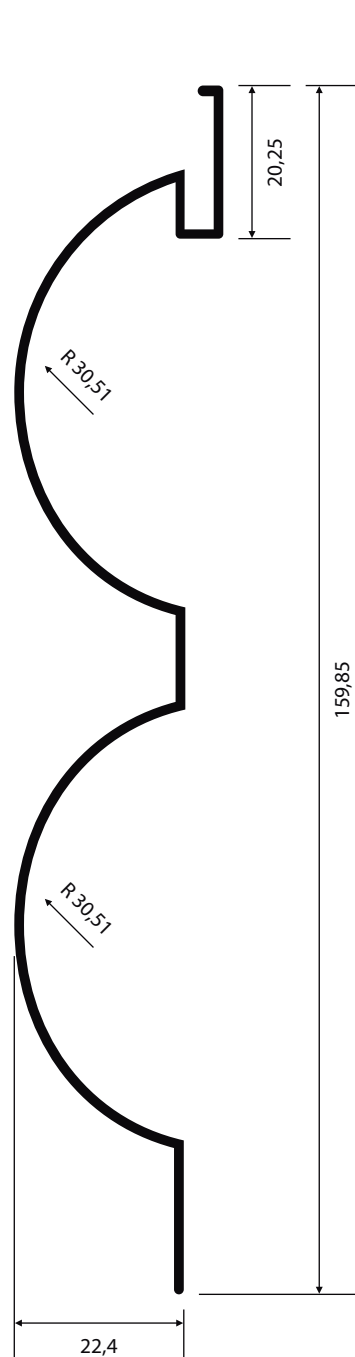
LB-070
0,763 kg/m



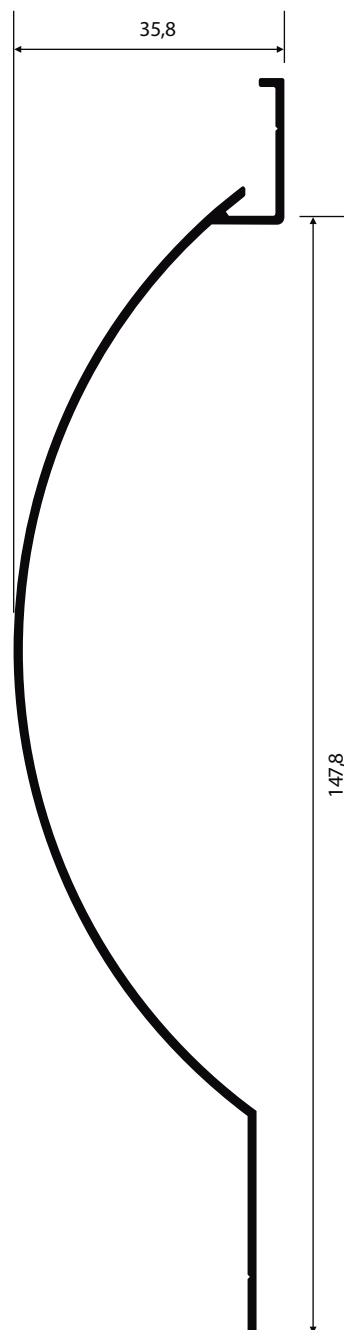
LB-072
0,164 kg/m



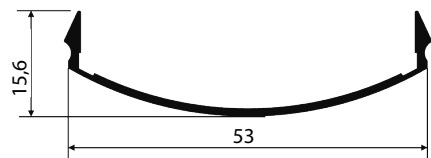
LB-077
0,638 kg/m



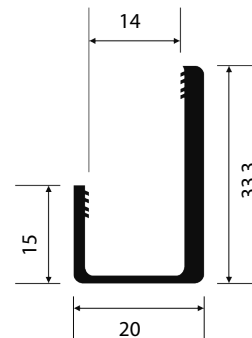
NI-109
0,739 kg/m



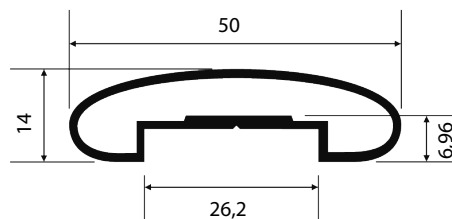
NI-110
0,668 kg/m



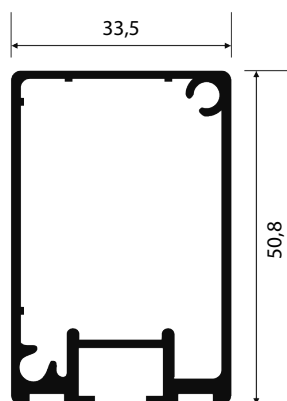
CG-074
0,239 kg/m



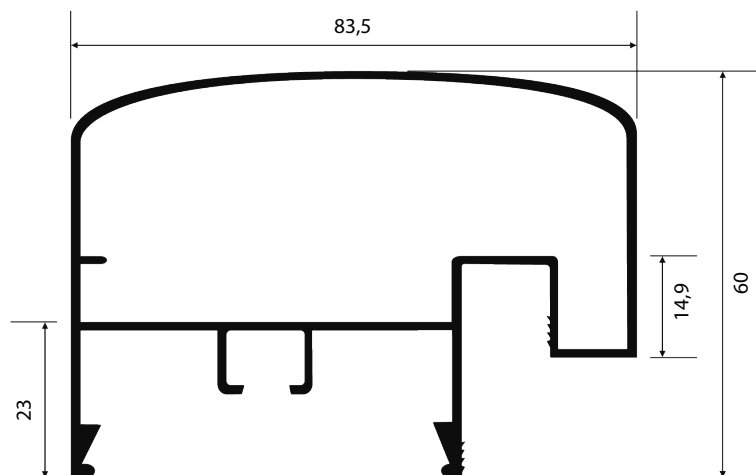
CG-075
0,521 kg/m



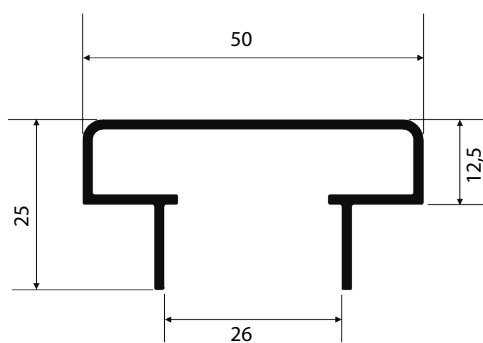
D-095
0,507 kg/m



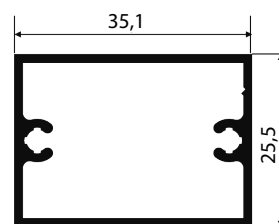
CG-077
0,723 kg/m



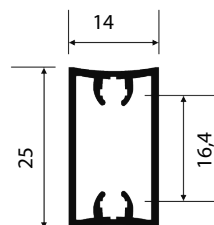
CG-083
1,332 kg/m



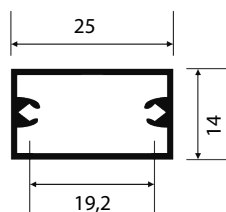
CG-731
0,487 kg/m



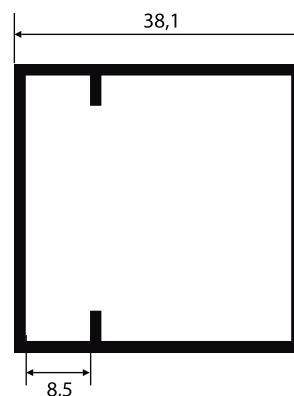
D-055
0,494 kg/m



D-056
0,321 kg/m

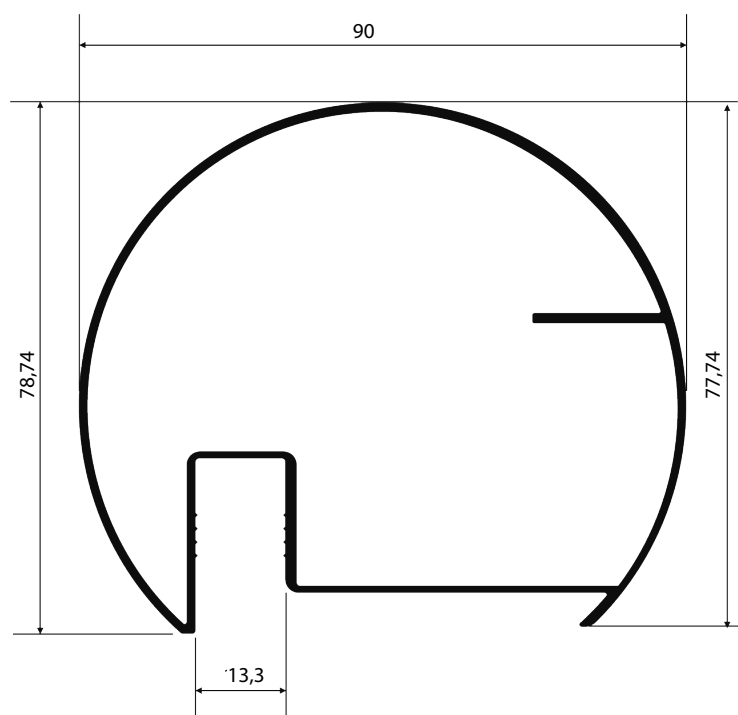


D-082
0,323 kg/m

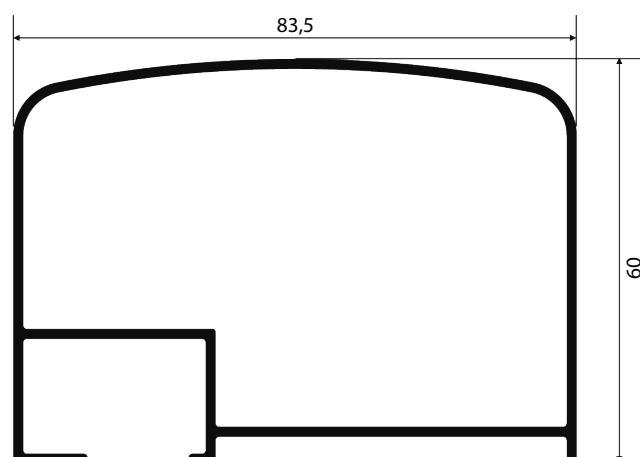


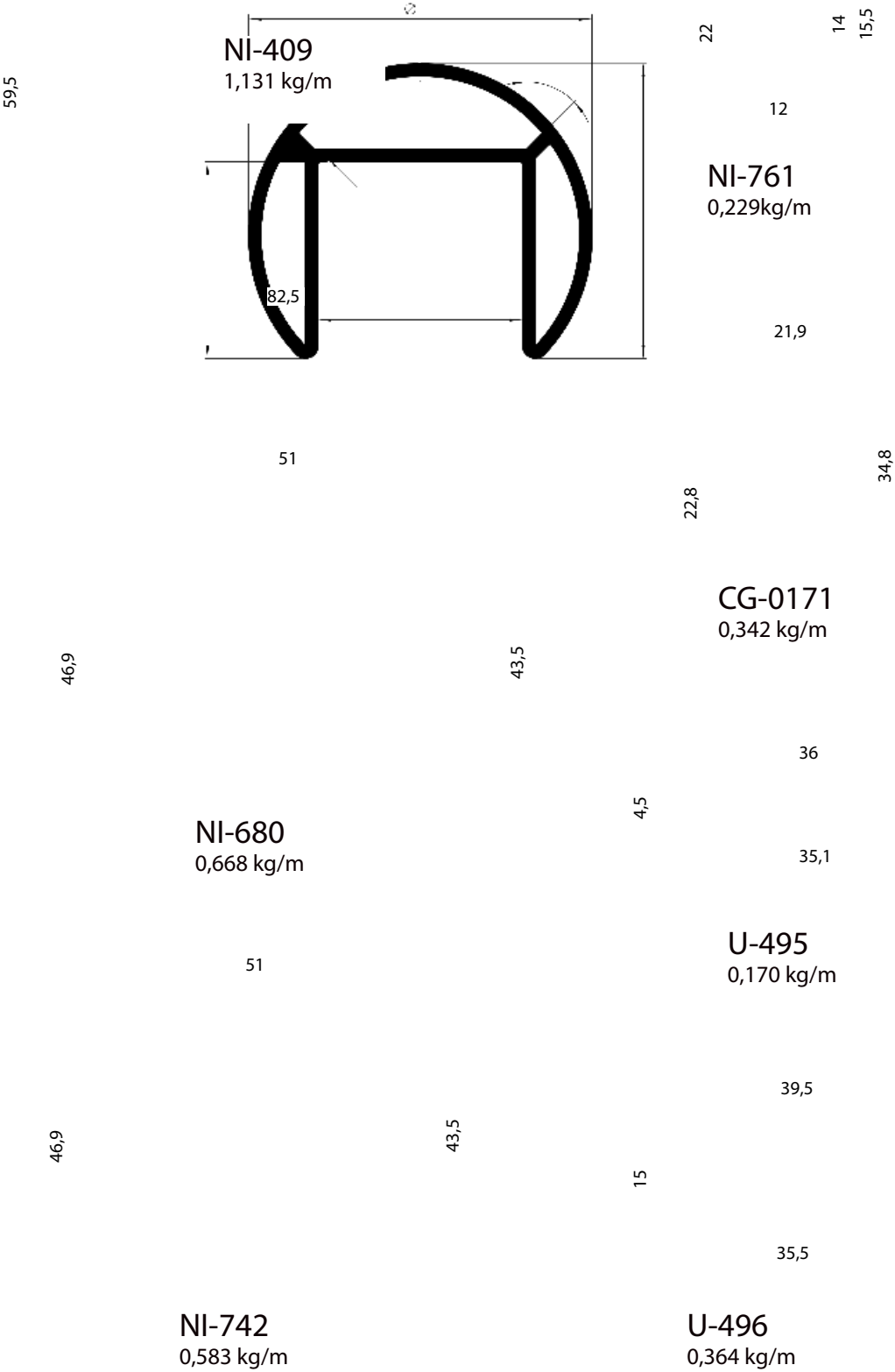
D-102
0,627 kg/m

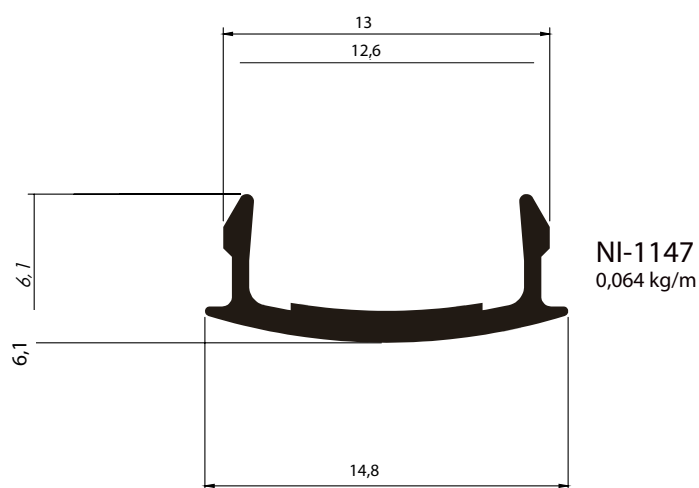
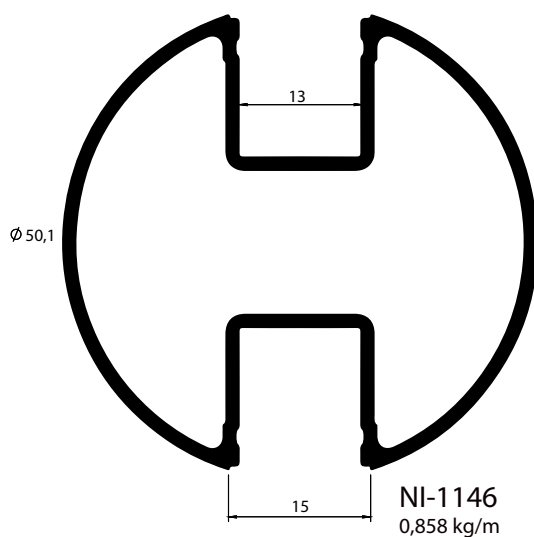
NI-1103
1,385 kg/m

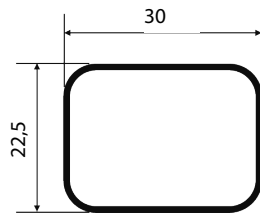


NI-046
1,218 kg/m

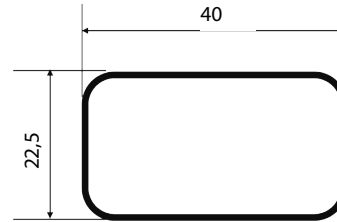








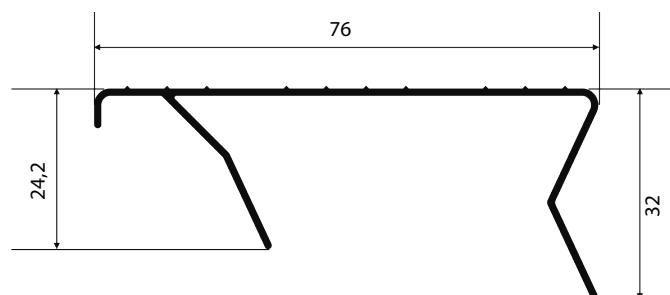
NI-872
0,252 kg/m



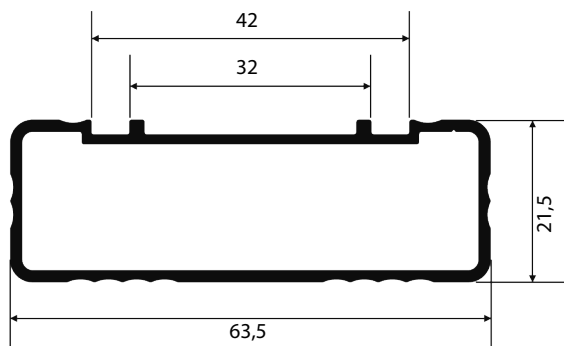
NI-873
0,336 kg/m



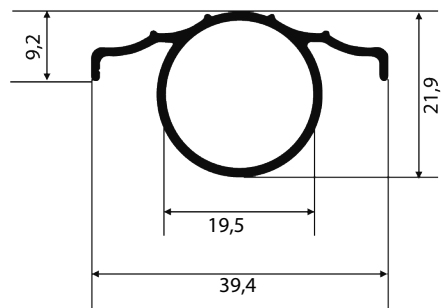
NI-1135
1,416 kg/m



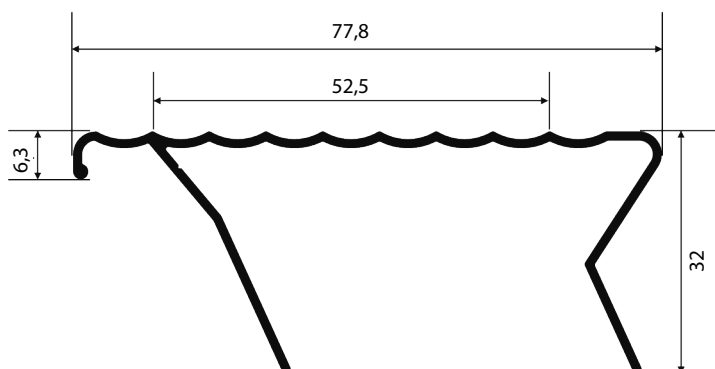
NI-874
0,424 kg/m



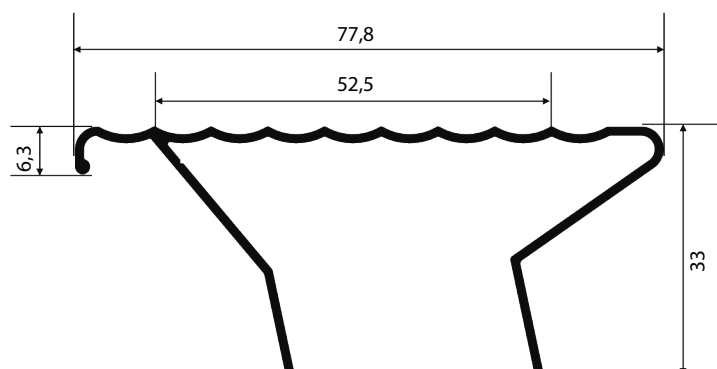
NI-1134
0,654 kg/m



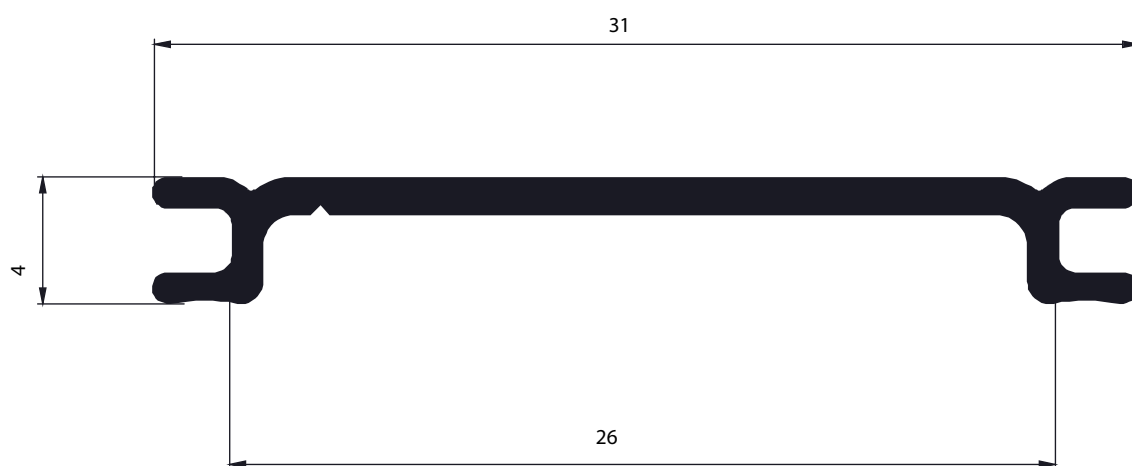
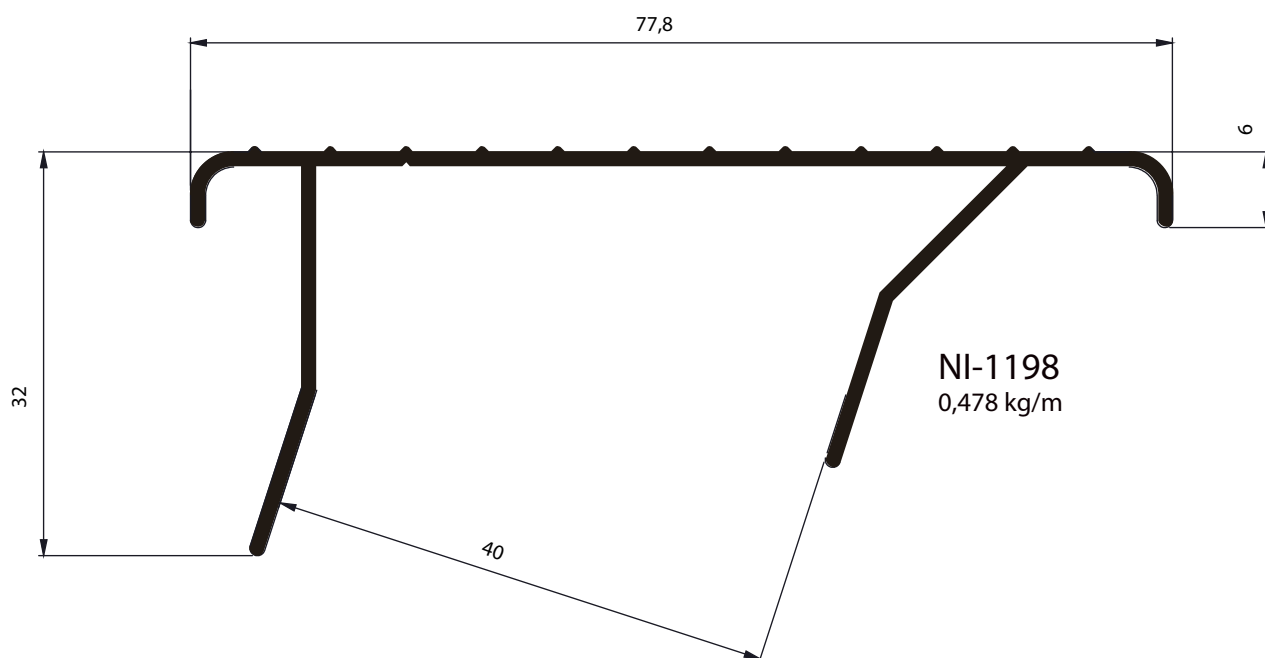
NI-1136
0,319 kg/m

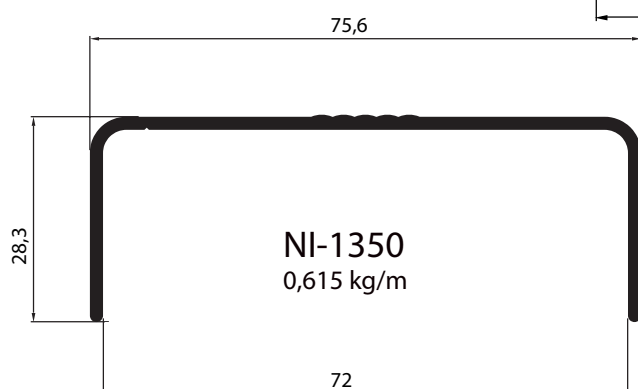
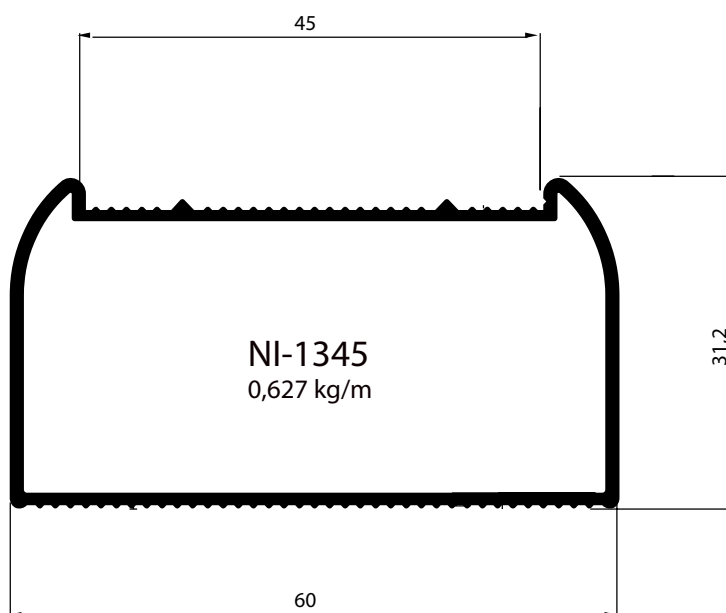
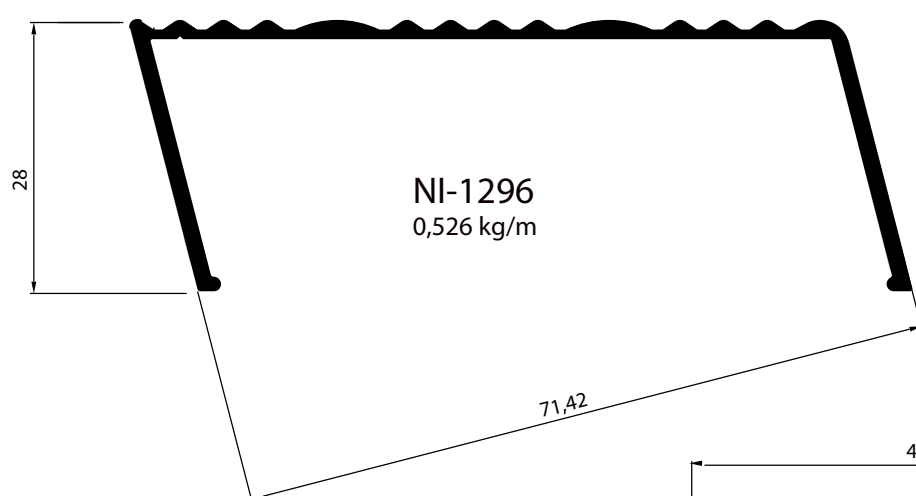
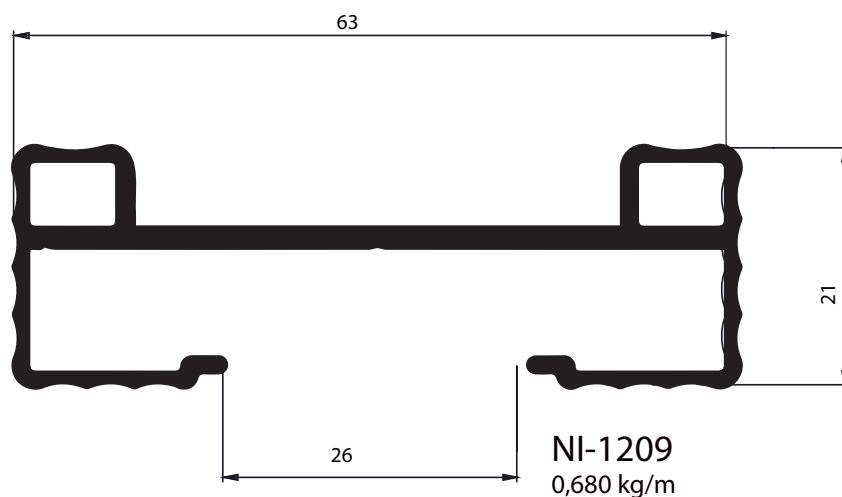


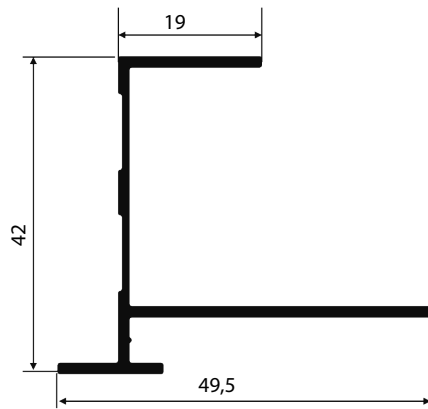
NI-1137
0,504 kg/m



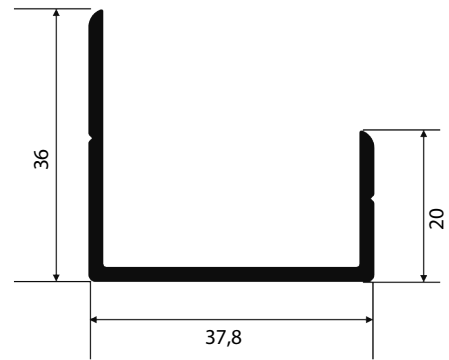
NI-1138
0,532 kg/m



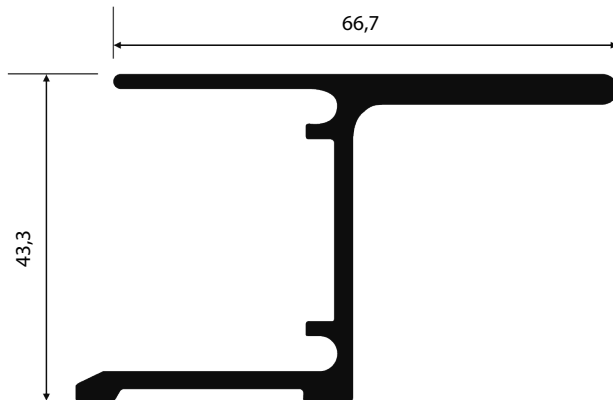




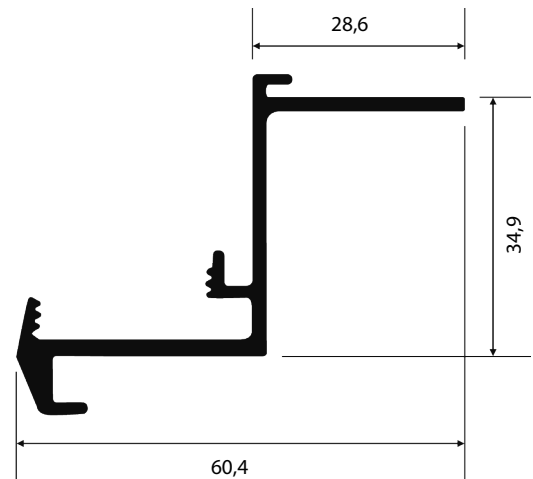
NI-366
0,428 kg/m



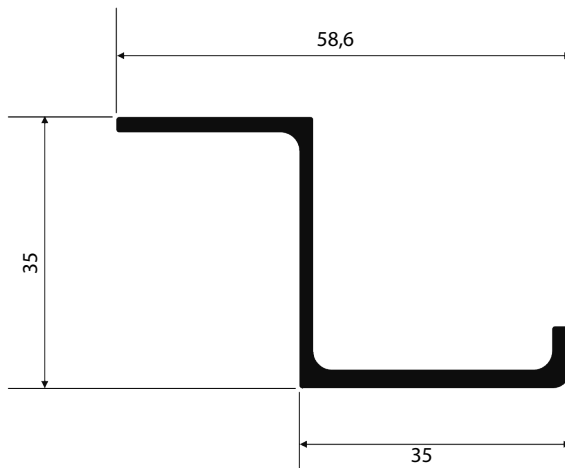
NI-1022
0,478 kg/m



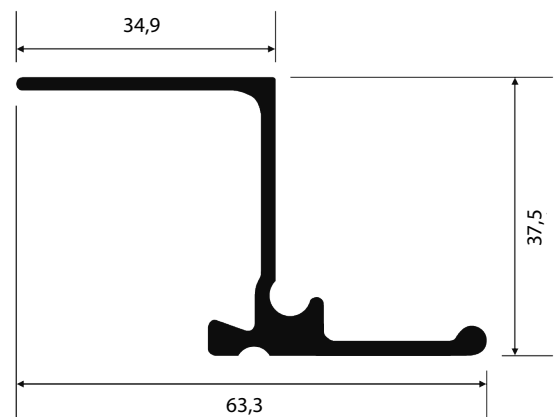
NI-212
1,149 kg/m



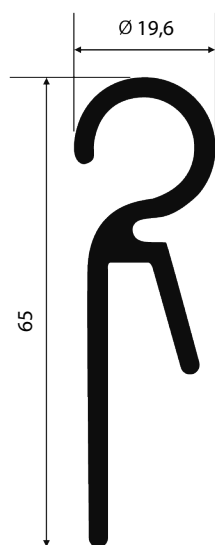
NI-064
0,733 kg/m



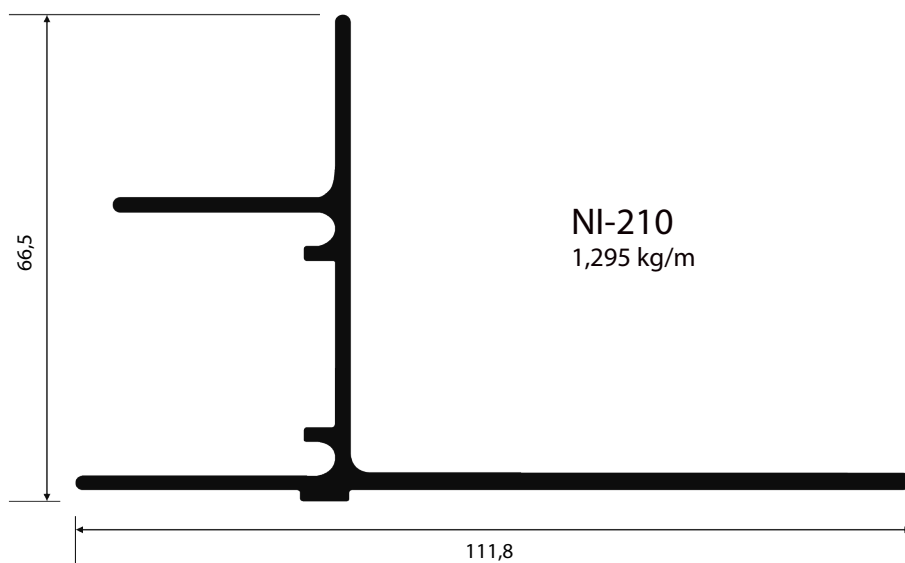
NI-031
0,557 kg/m



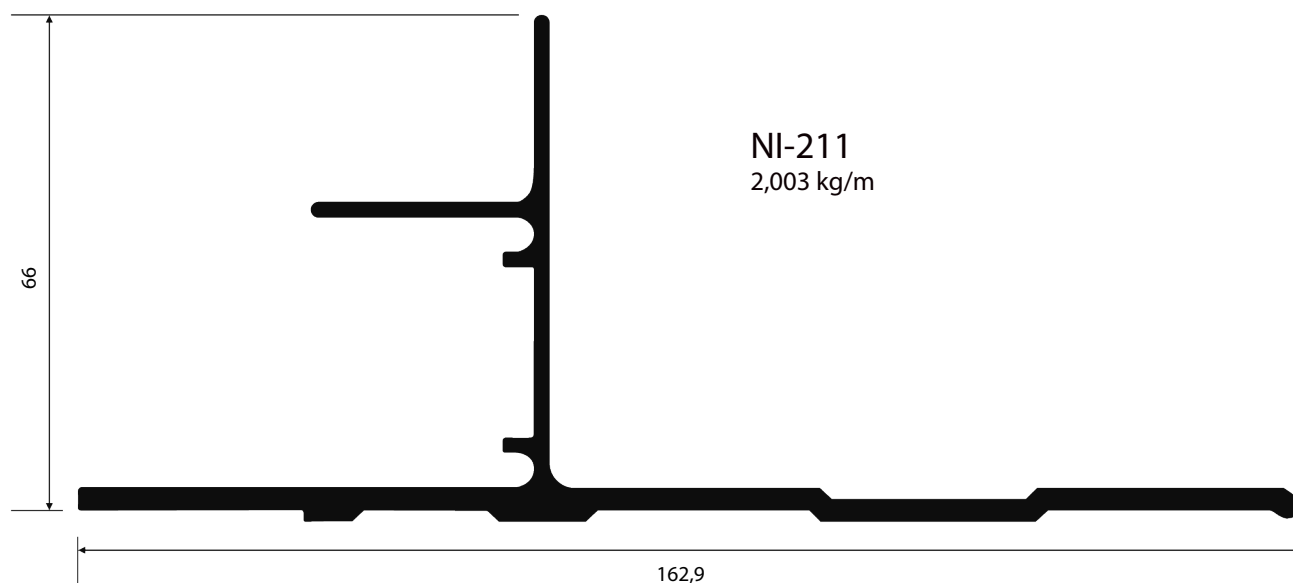
NI-207
0,706 kg/m



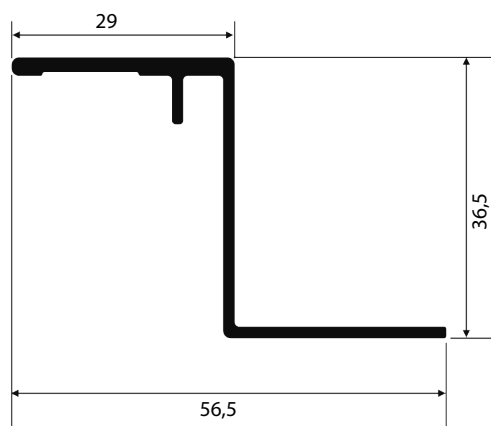
NI-060
0,888 kg/m



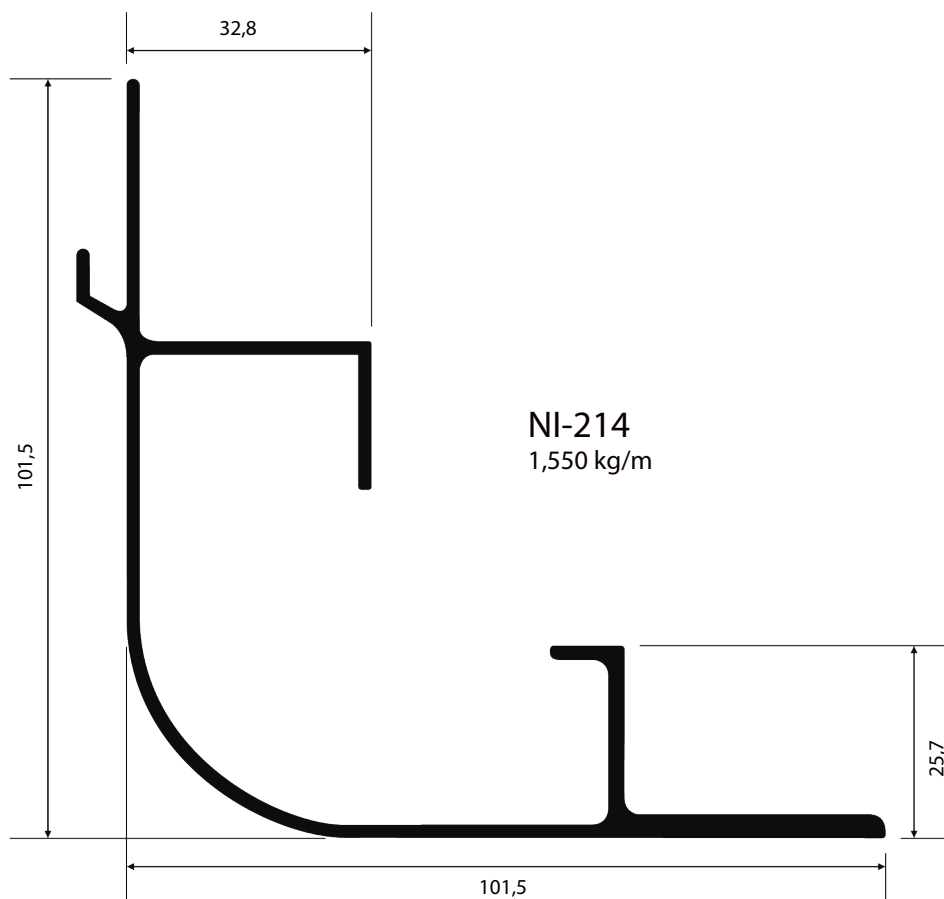
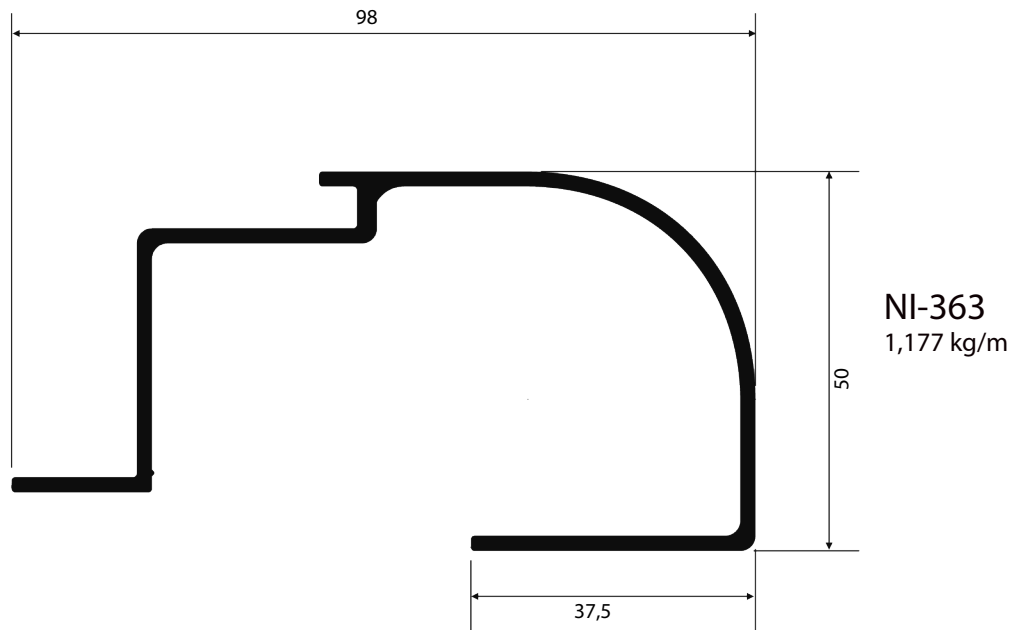
NI-210
1,295 kg/m

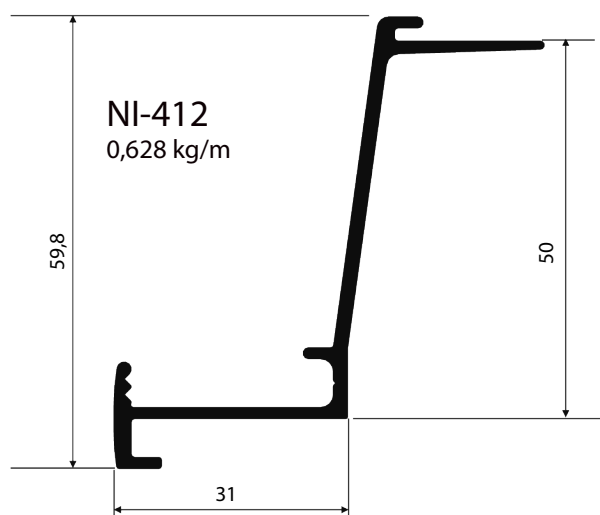
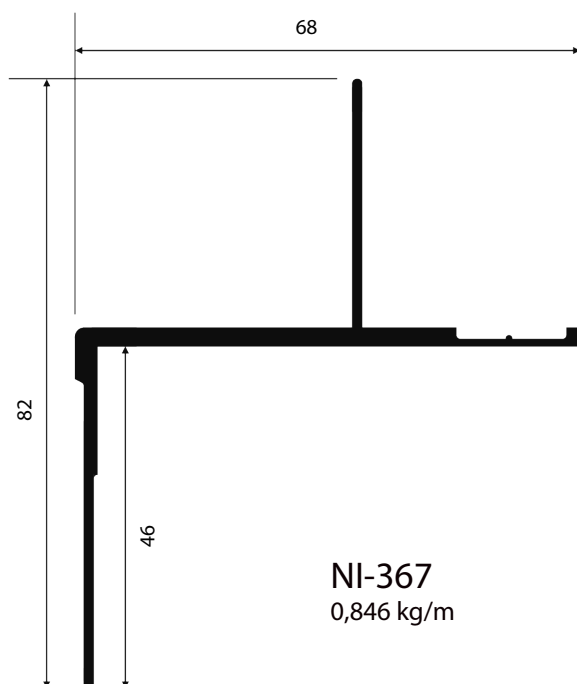
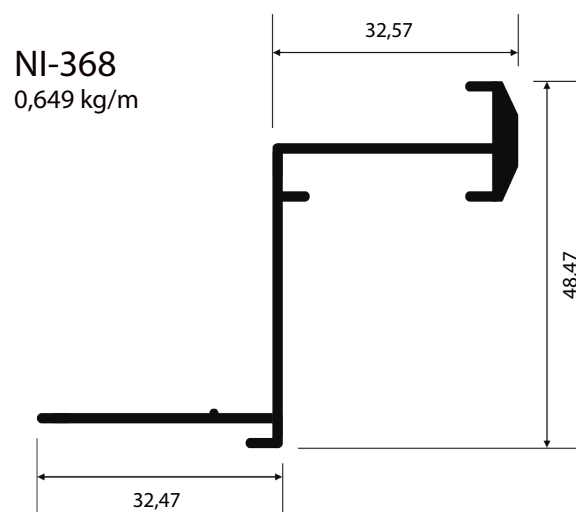
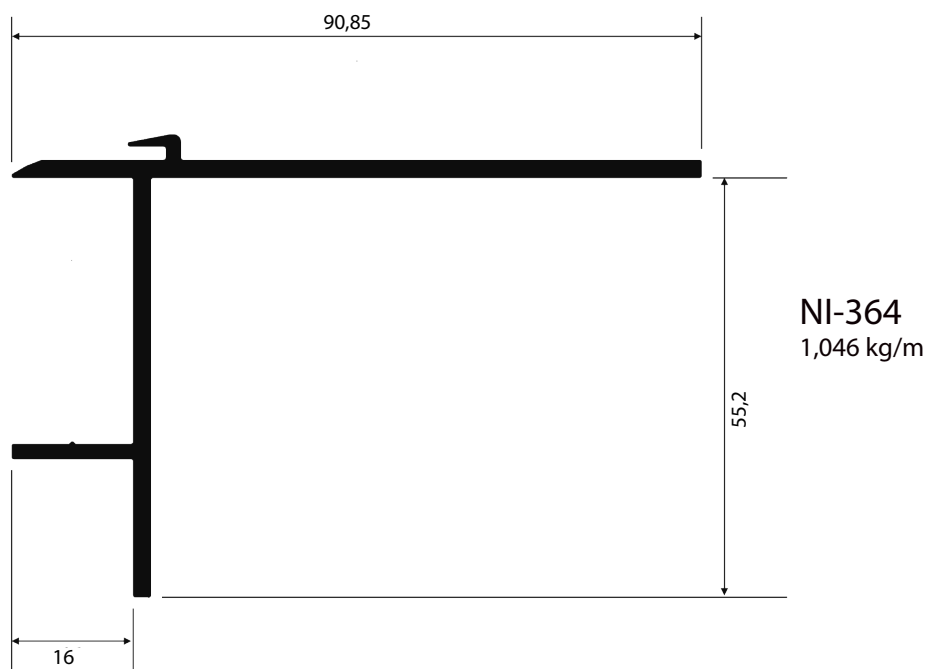


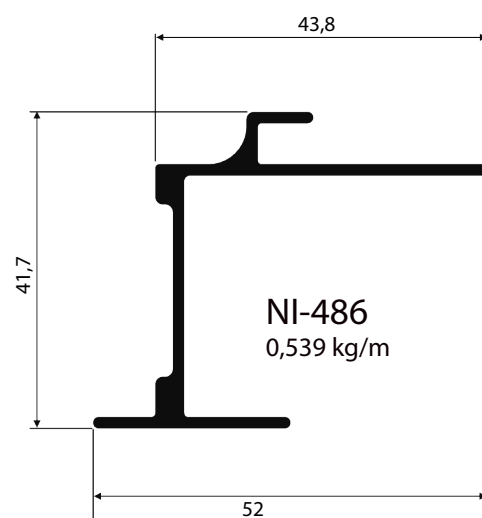
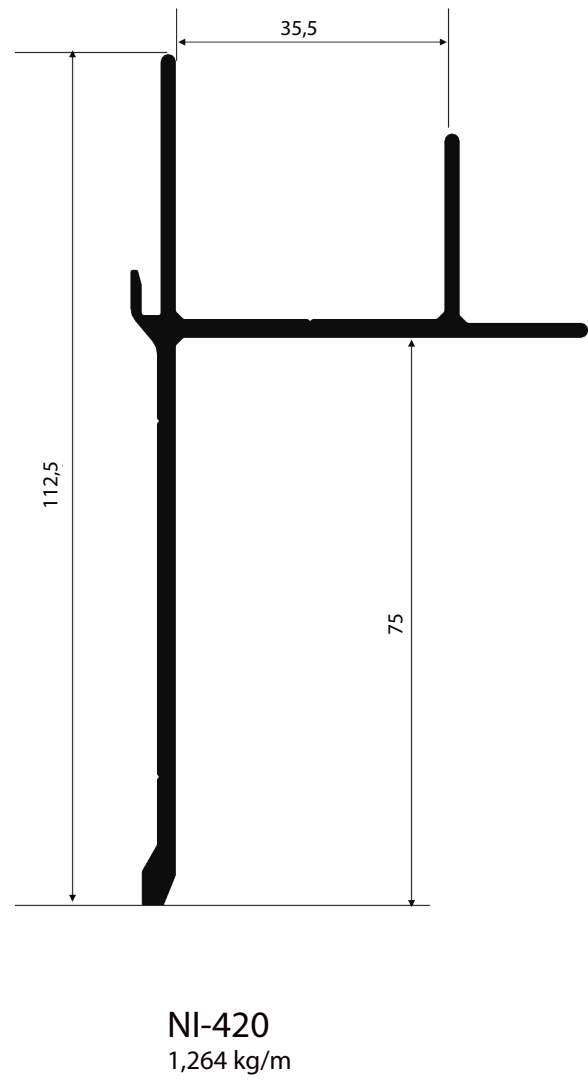
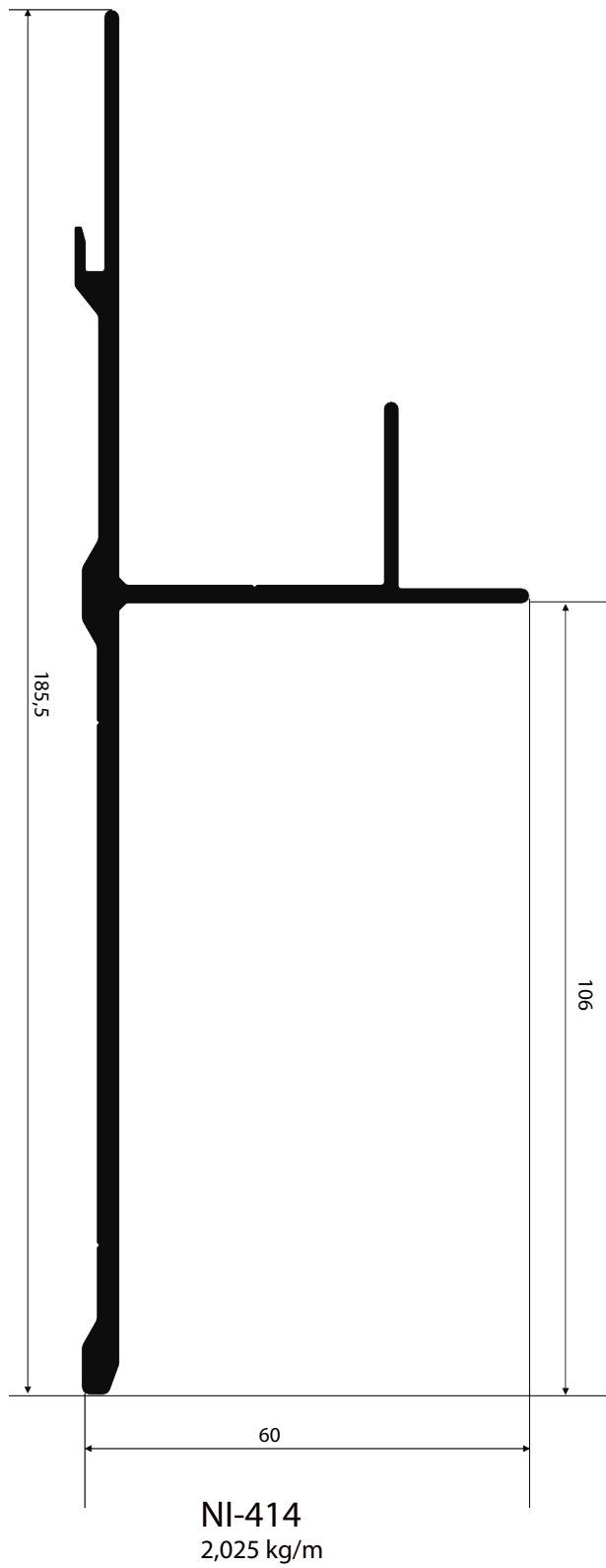
NI-211
2,003 kg/m

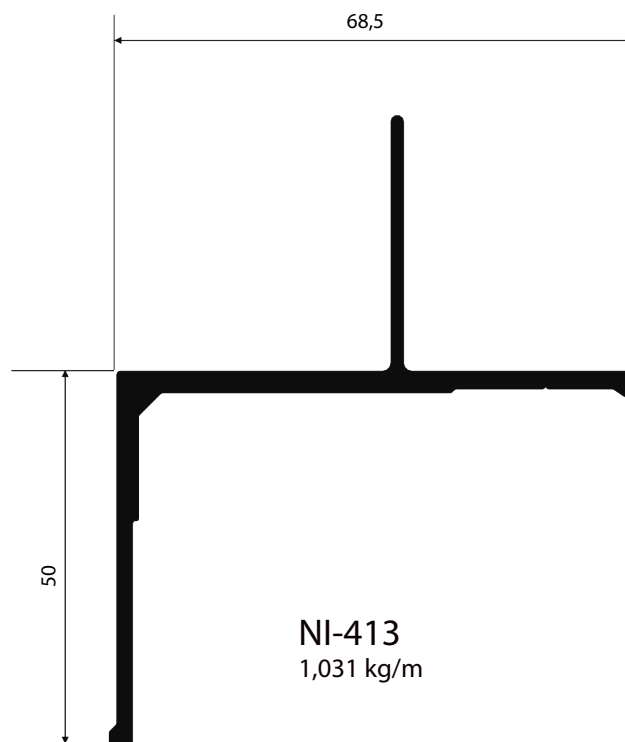


NI-365
0,445 kg/m

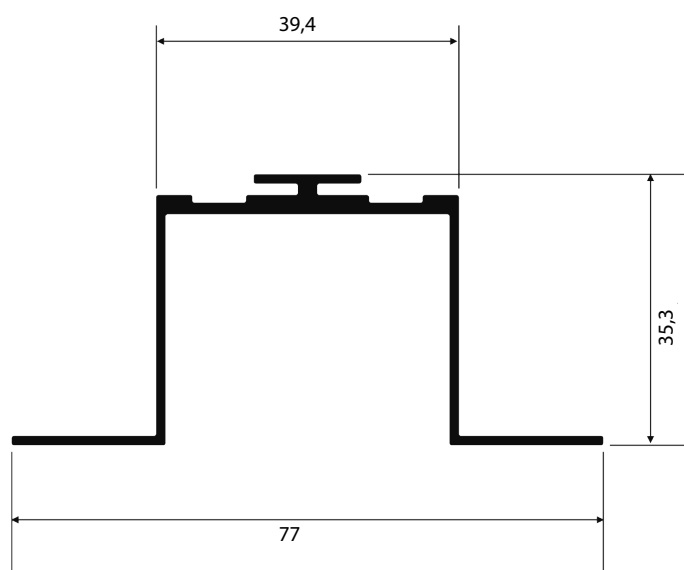




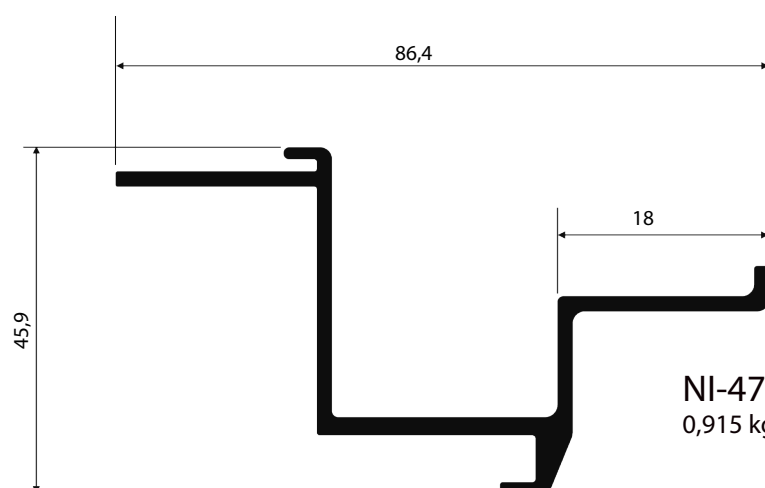




NI-413
1,031 kg/m

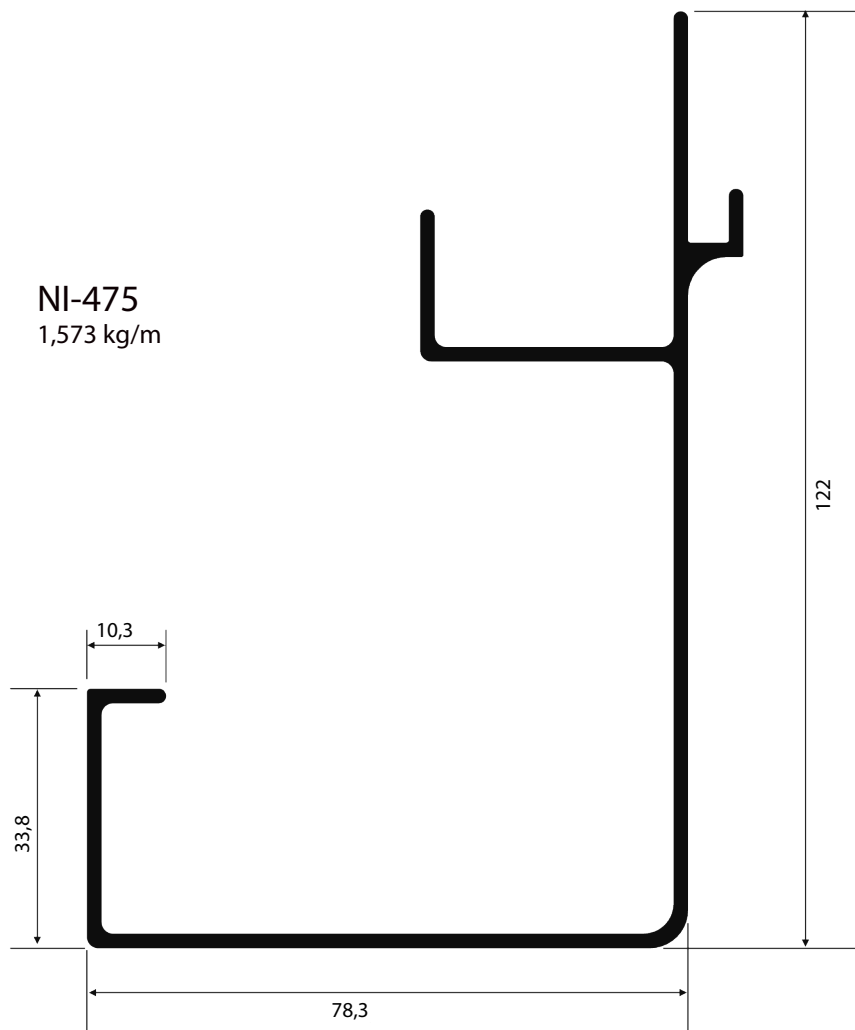


NI-430
0,602 kg/m

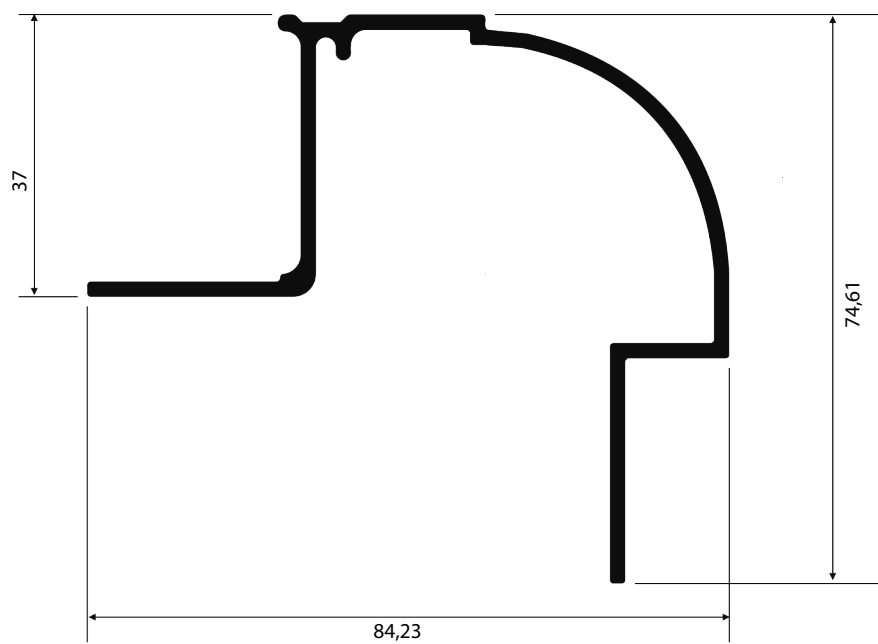


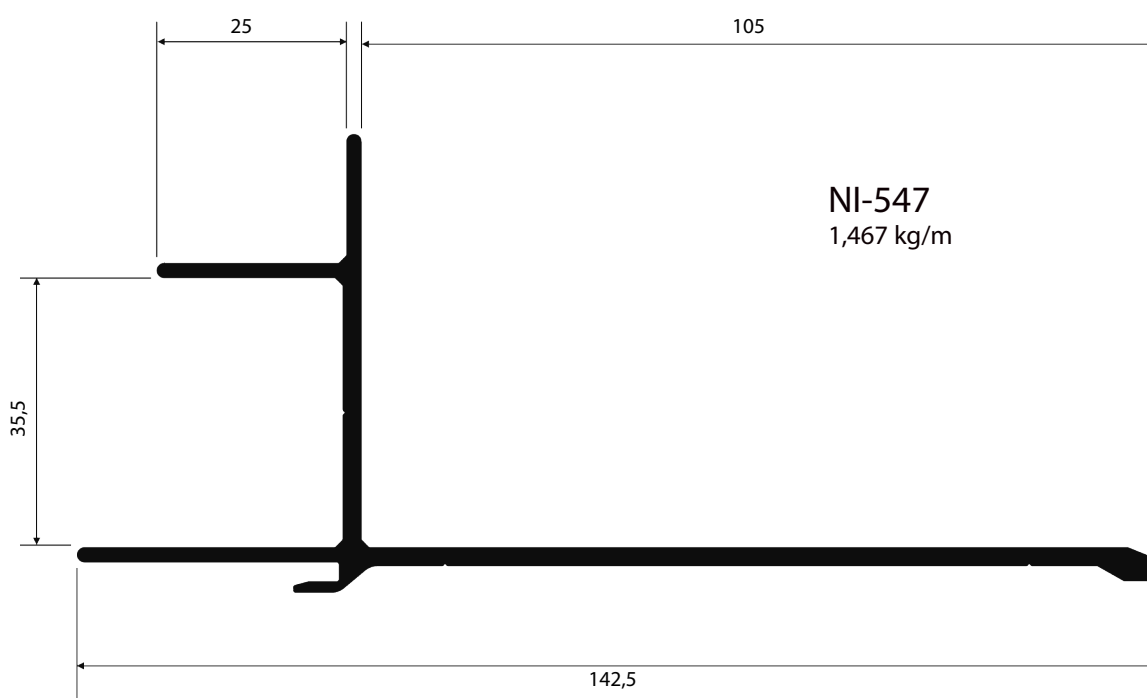
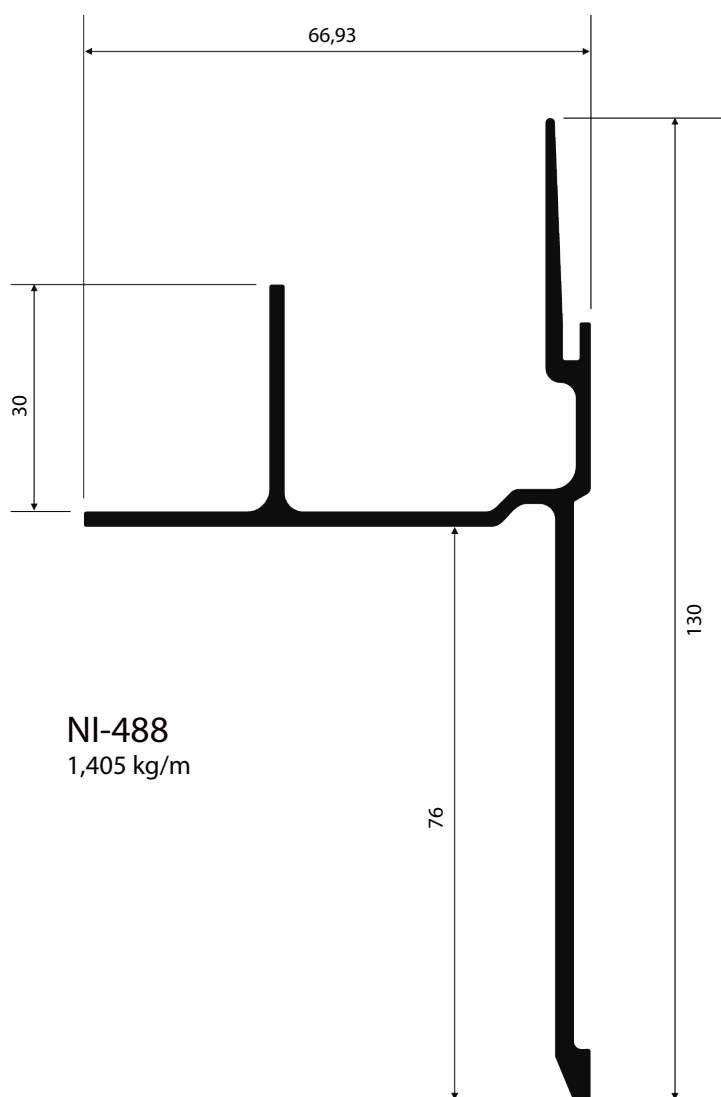
NI-473
0,915 kg/m

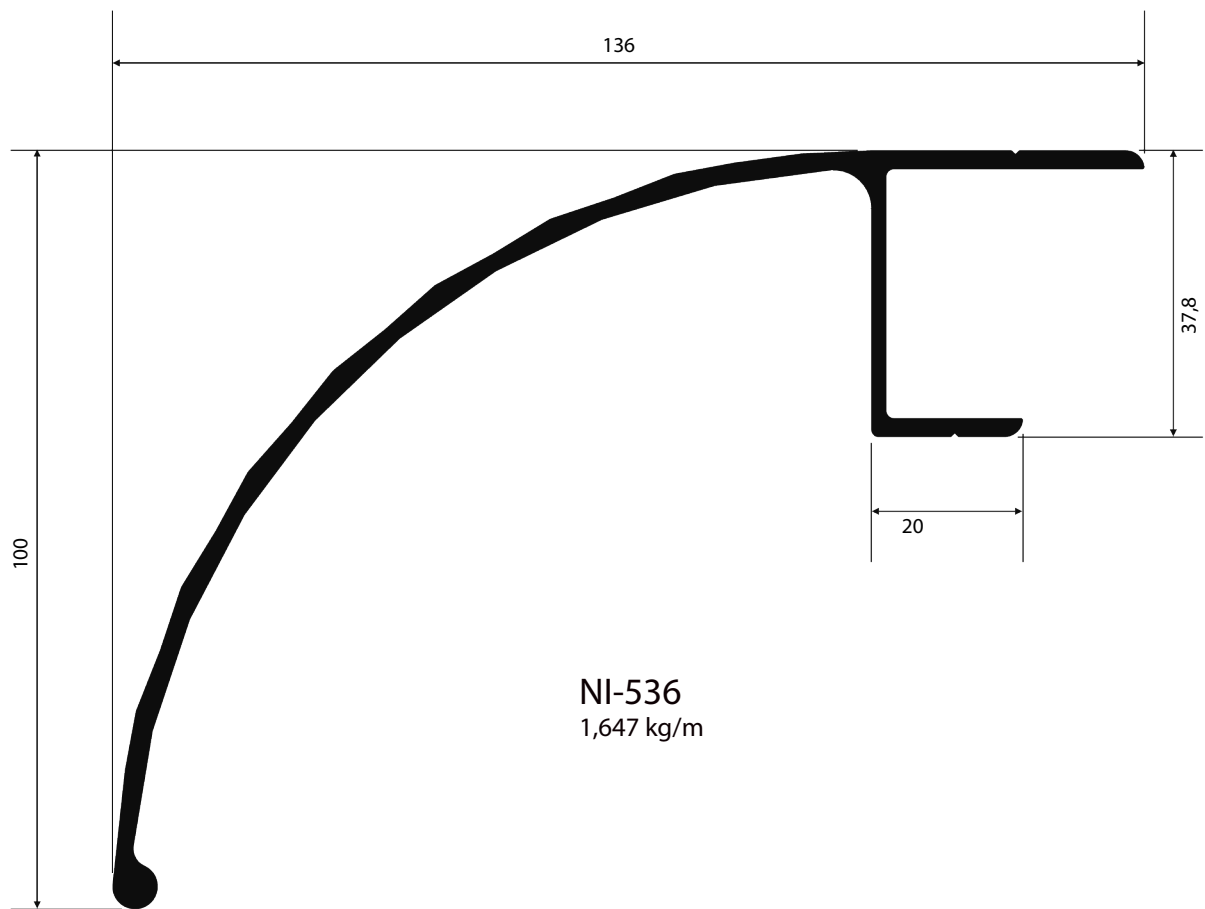
NI-475
1,573 kg/m



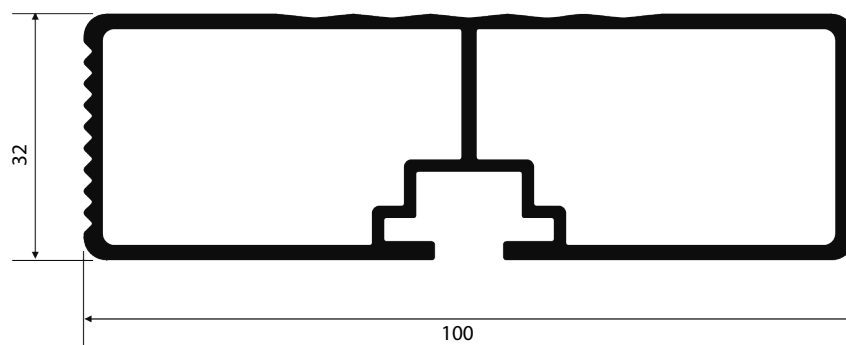
NI-491
1,082 kg/m

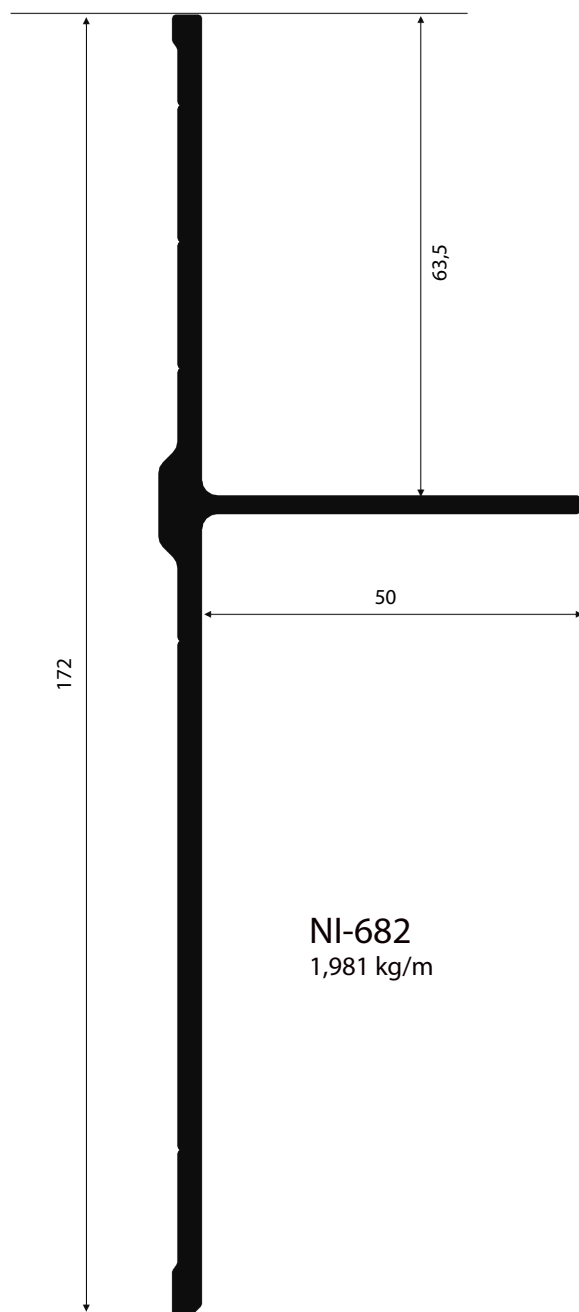




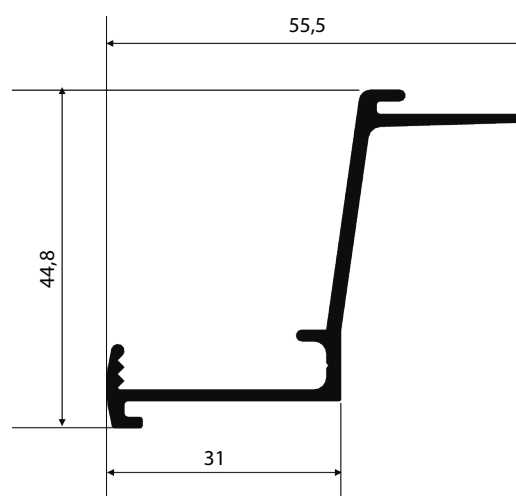


NI-537
1,353 kg/m

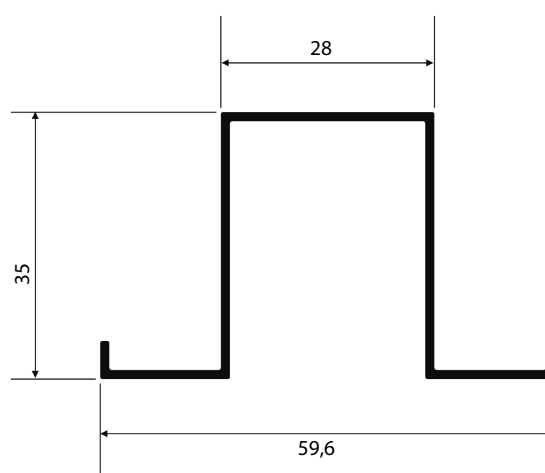




NI-682
1,981 kg/m

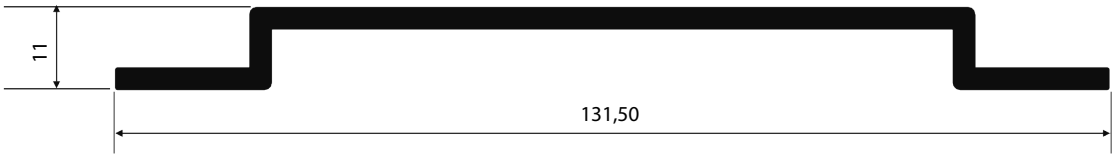
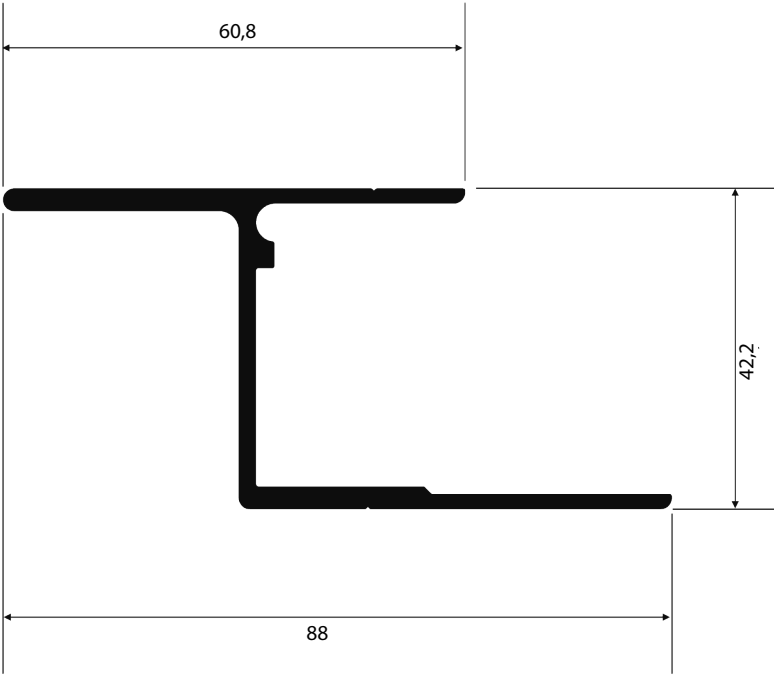


NI-695
0,530 kg/m

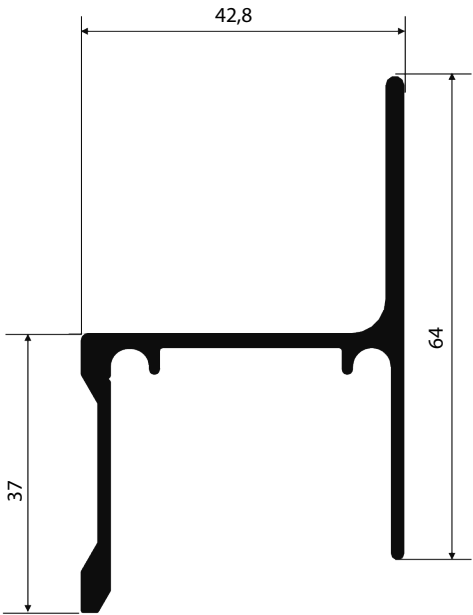


NI-699
0,438 kg/m

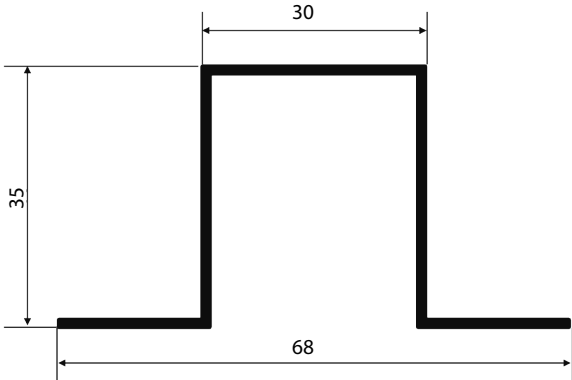
NI-687
1,048 kg/m



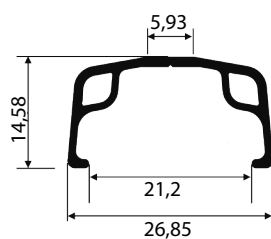
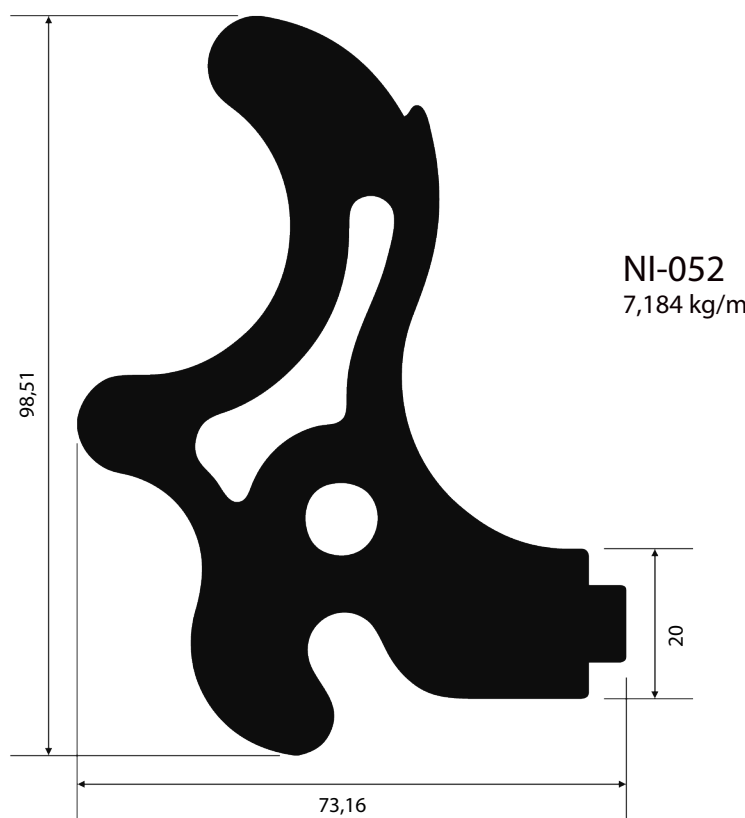
NI-791
1,196 kg/m



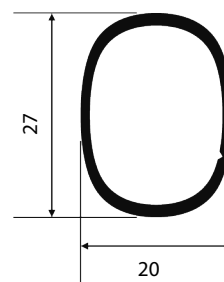
NI-887
0,889 kg/m



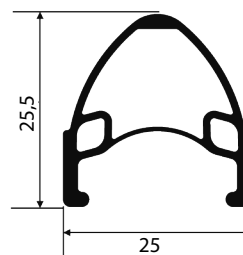
NI-888
0,548 kg/m



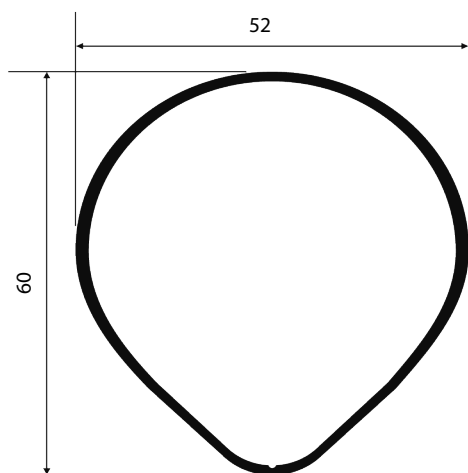
NI-131
0,210 kg/m



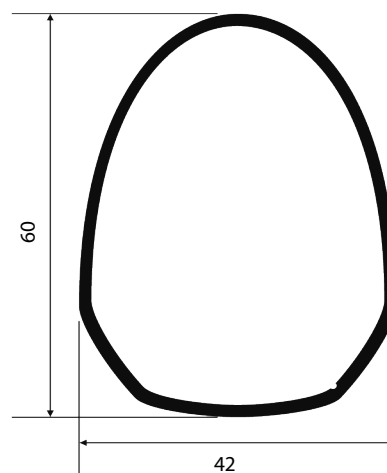
NI-232
0,296 kg/m



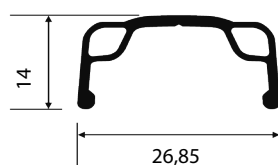
NI-840
0,309kg/m



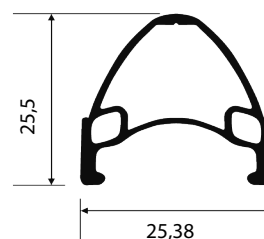
NI-233
0,680 kg/m



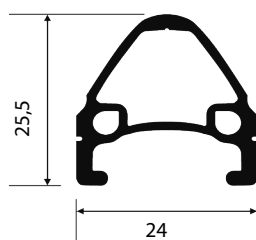
NI-248
0,695 kg/m



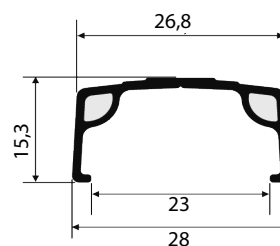
NI-306
0,202 kg/m



NI-342
0,314 kg/m

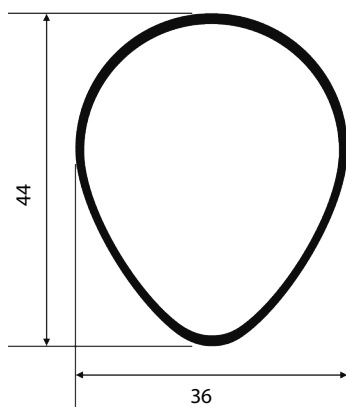
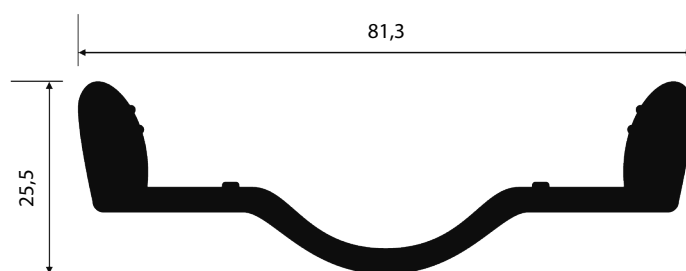


NI-377
0,329 kg/m

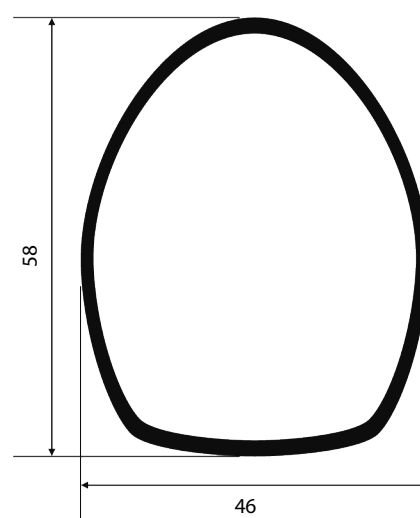


NI-381
0,219 kg/m

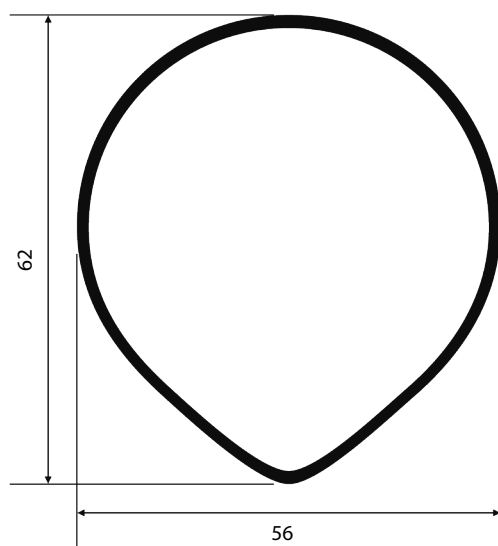
NI-378
1,324 kg/m



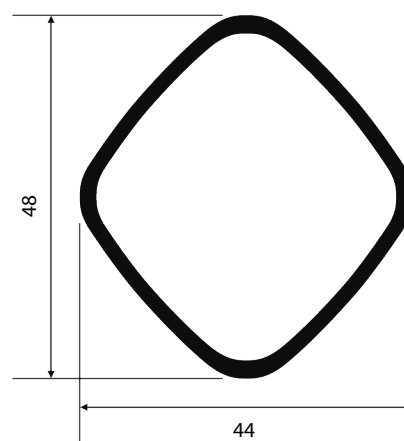
XKS-01
0,530 kg/m



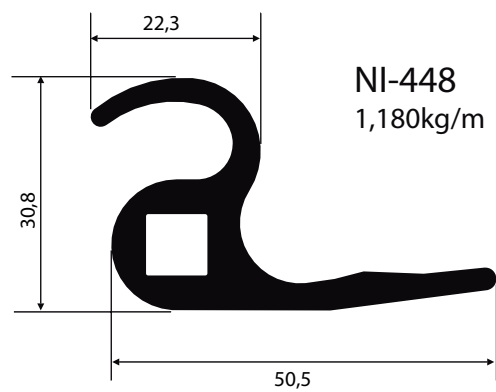
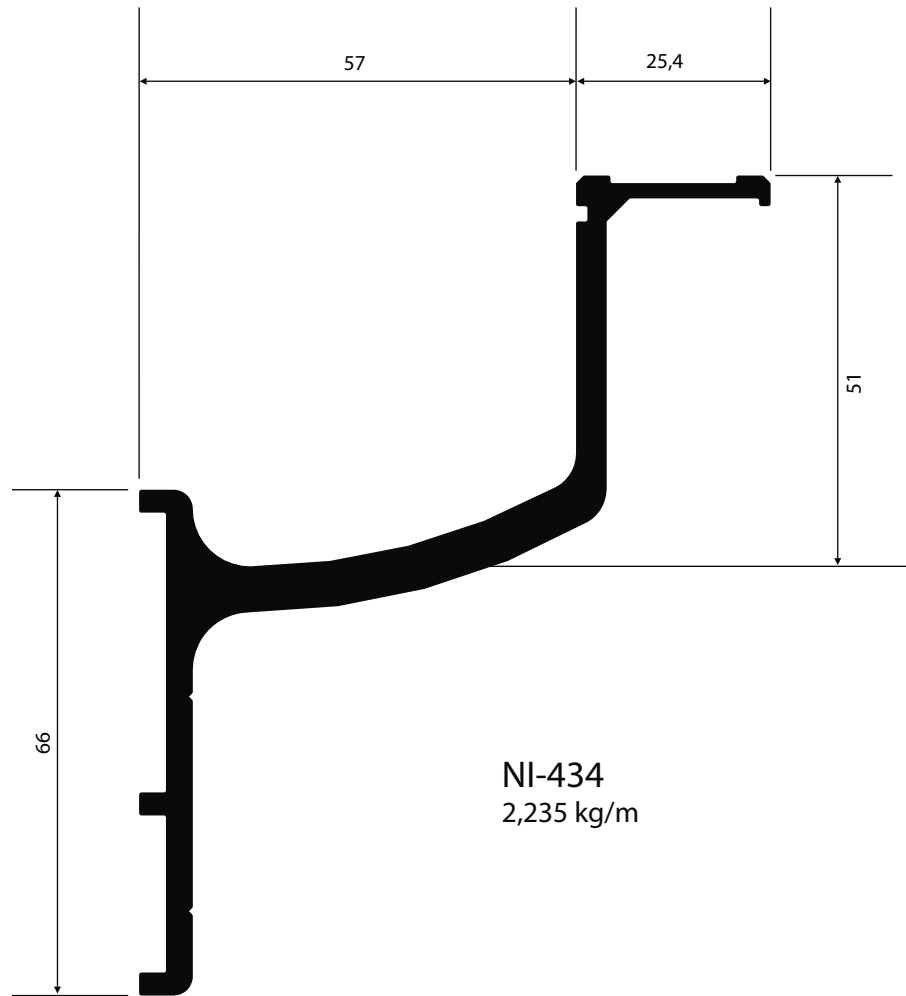
XKS-02
0,747 kg/m

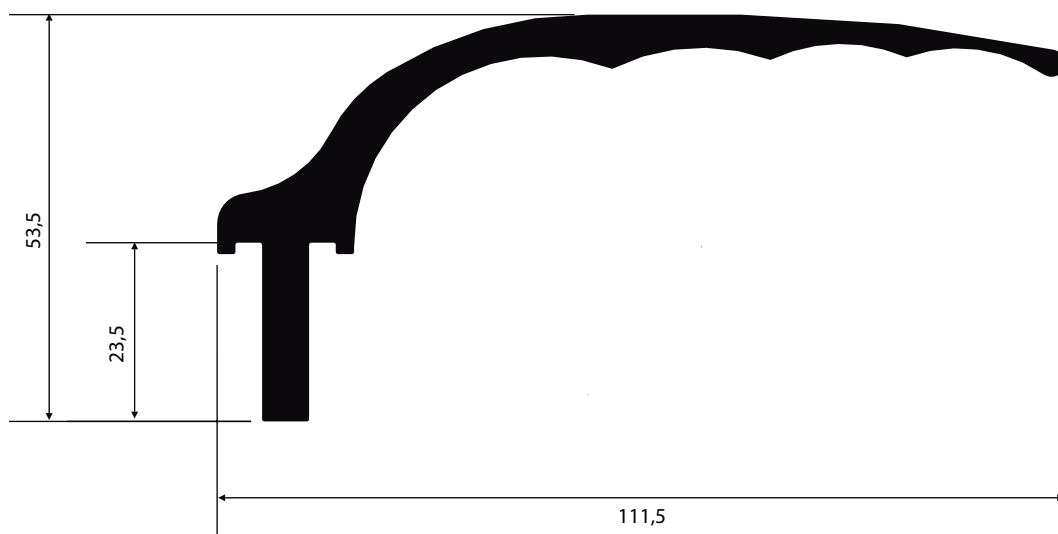


XKS-03
0,762 kg/m

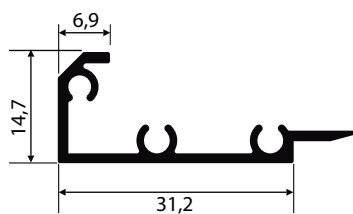


XKS-04
0,766 kg/m

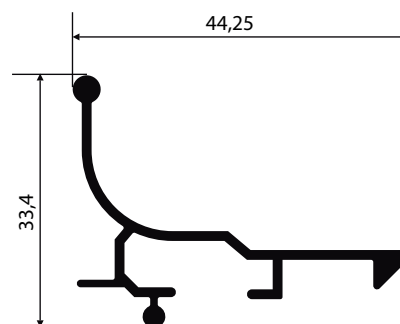




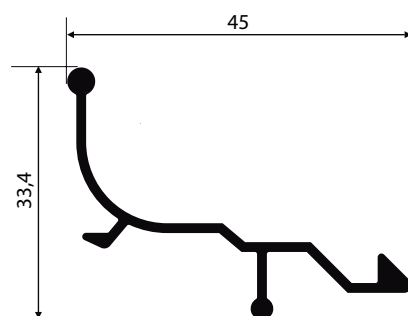
NI-478
2,114 kg/m



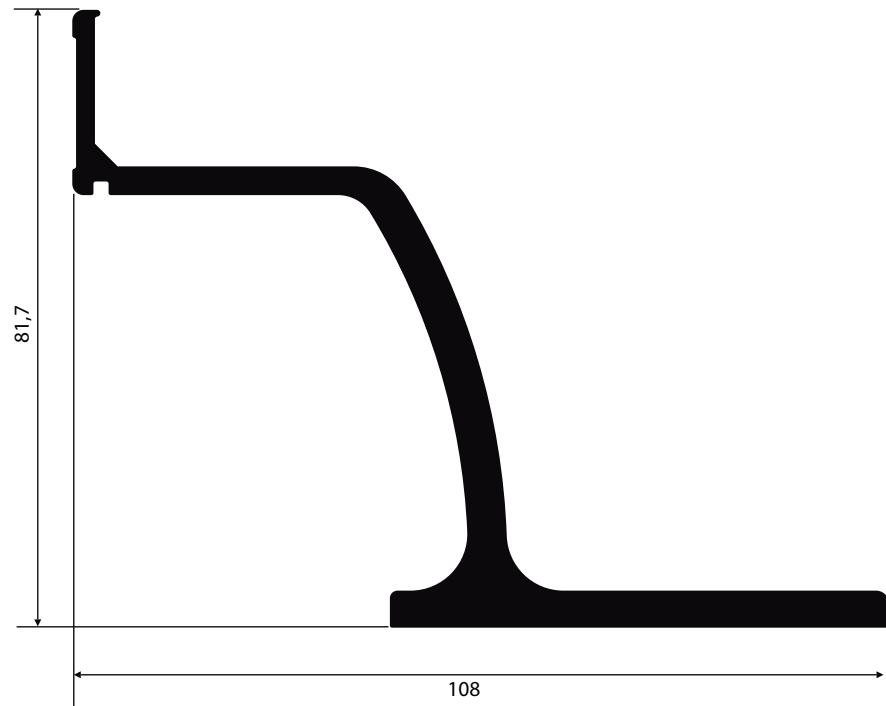
NI-842
0,268 kg/m



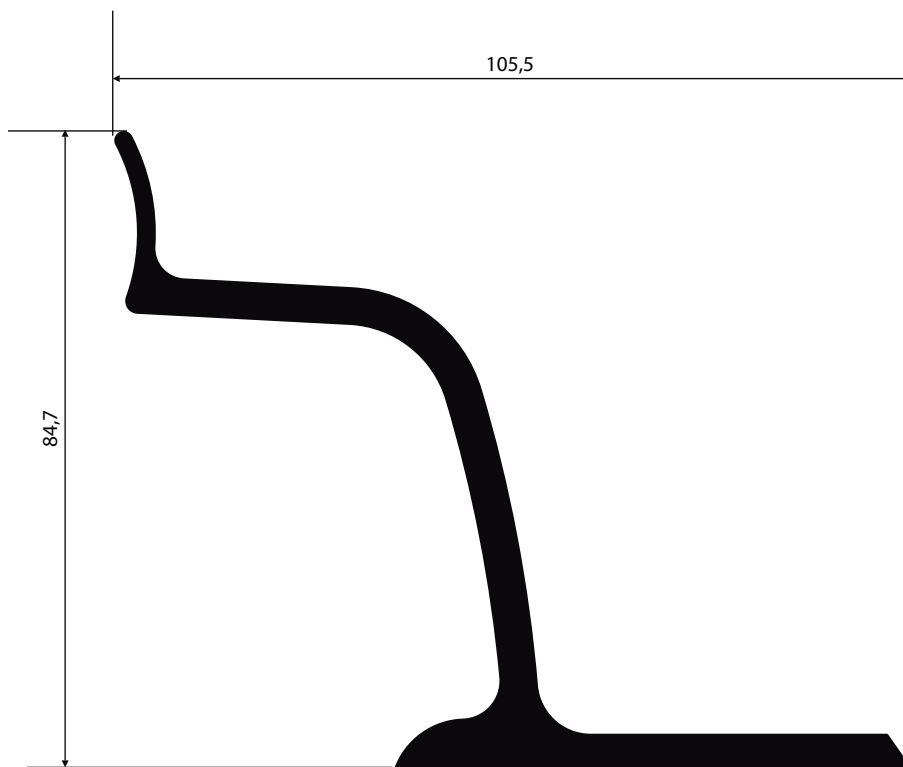
NI-843
0,373 kg/m



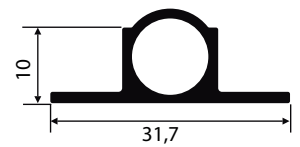
NI-844
0,332 kg/m



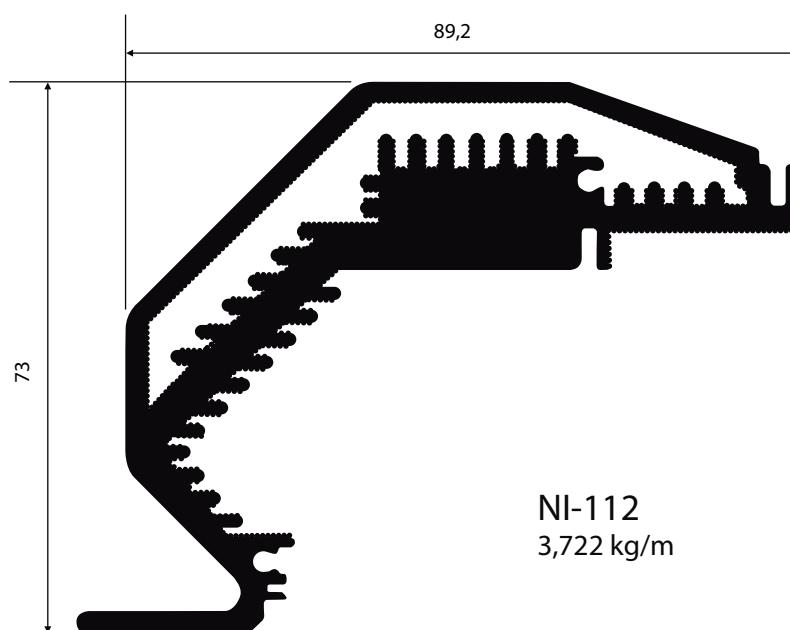
NI-937
2,296 kg/m



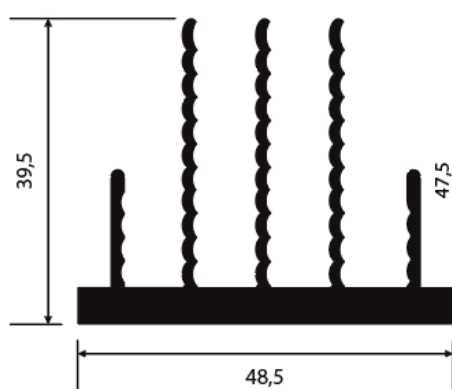
NI-938
2,415 kg/m



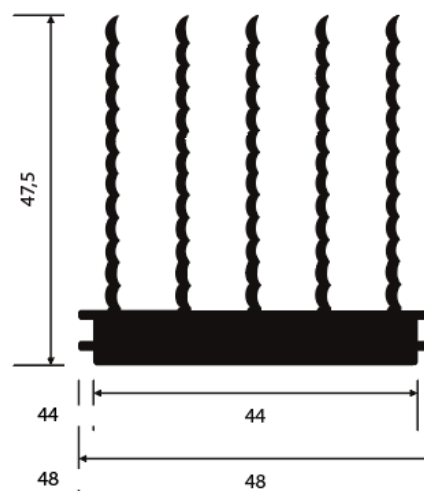
NI-933
0,252 kg/m



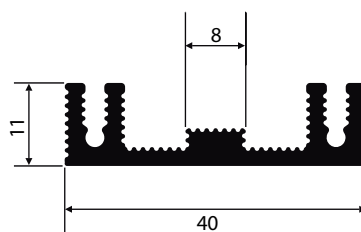
NI-112
3,722 kg/m



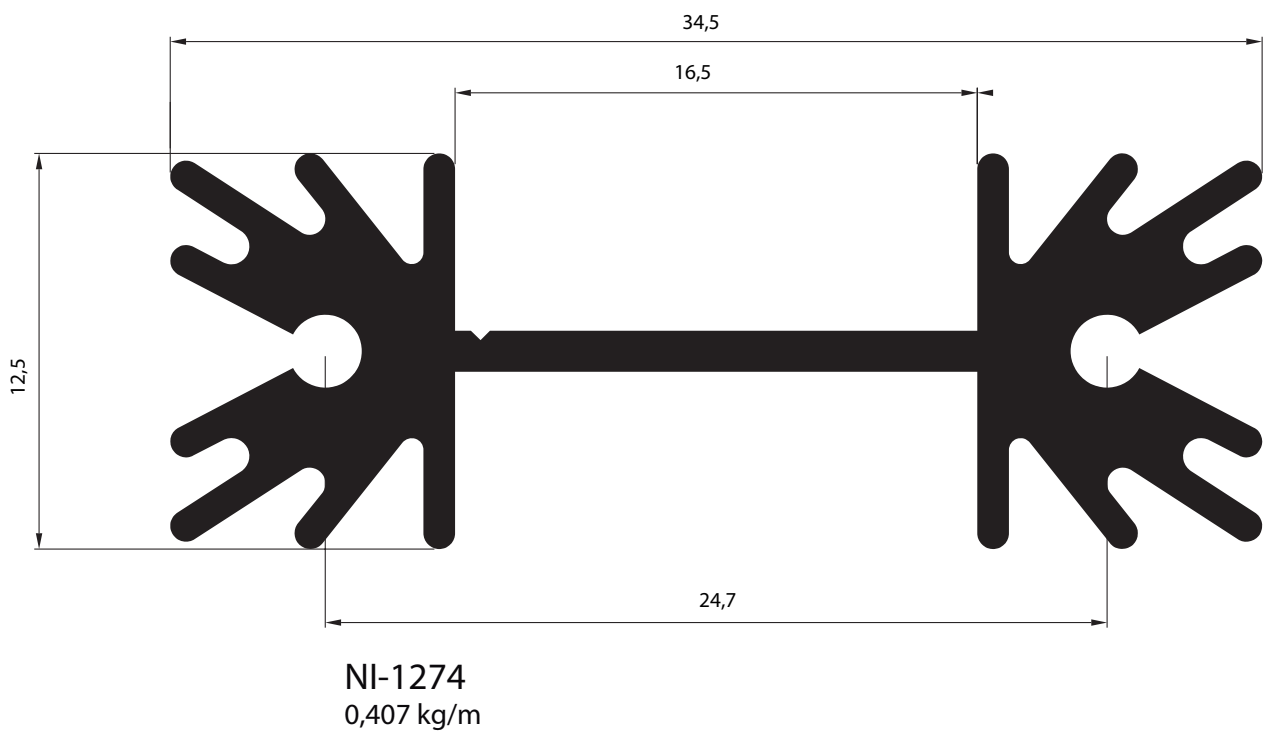
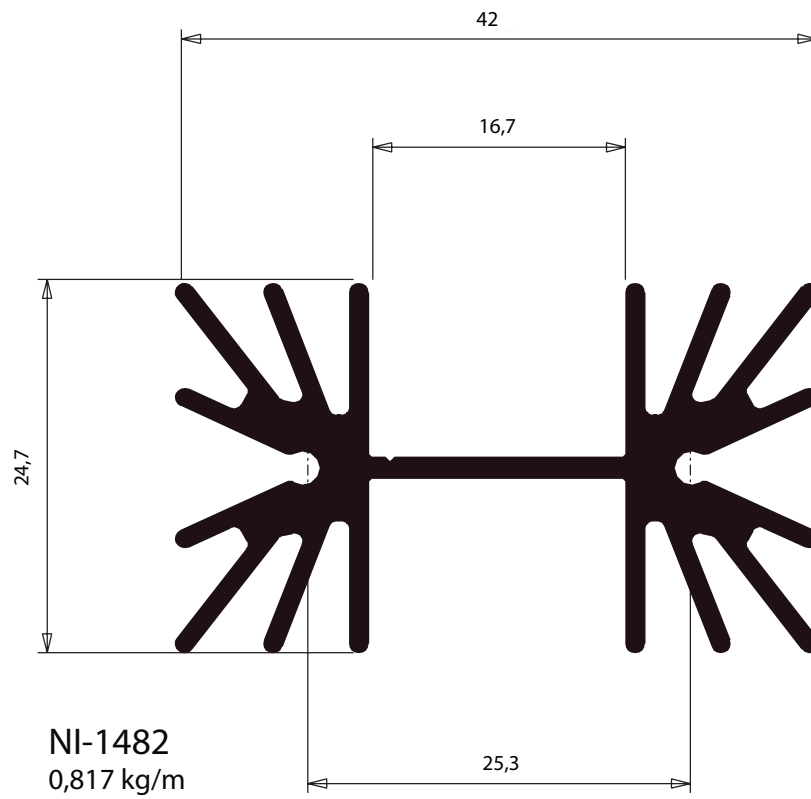
NI-068
1,158 kg/m

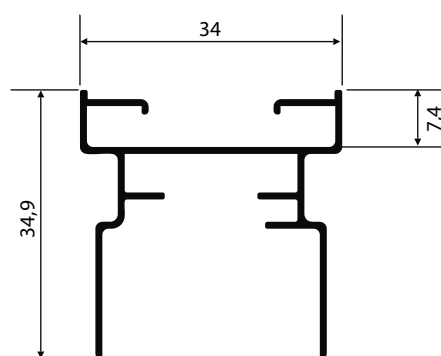
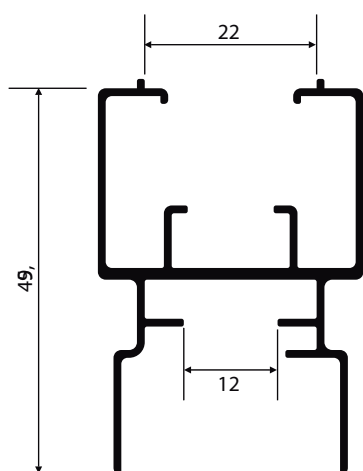
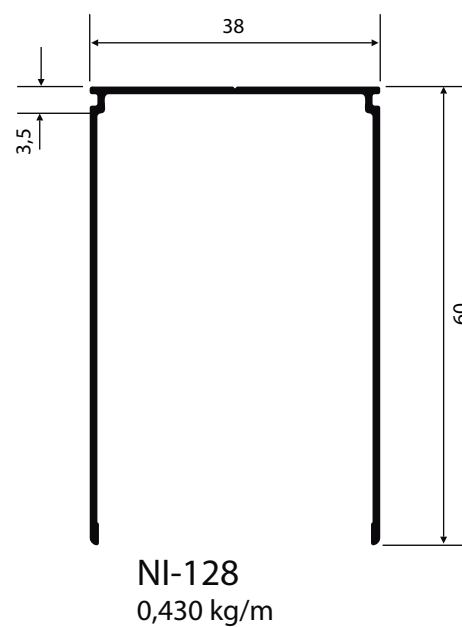
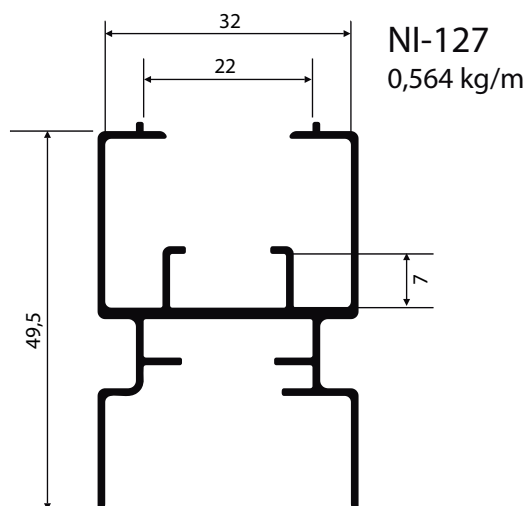
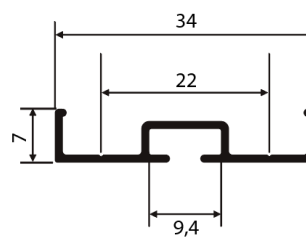
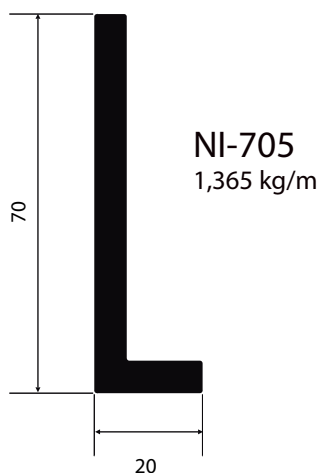


NI-123
1,726 kg/m

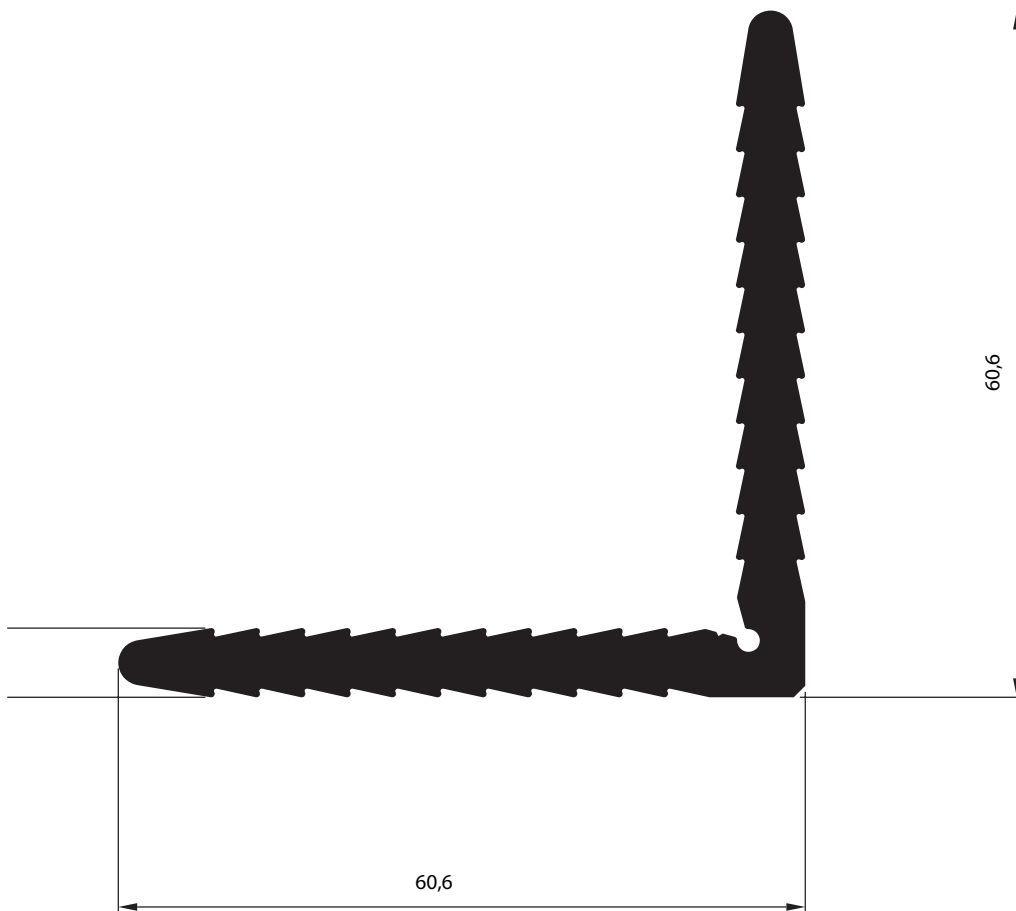


NI-710
0,529 kg/m

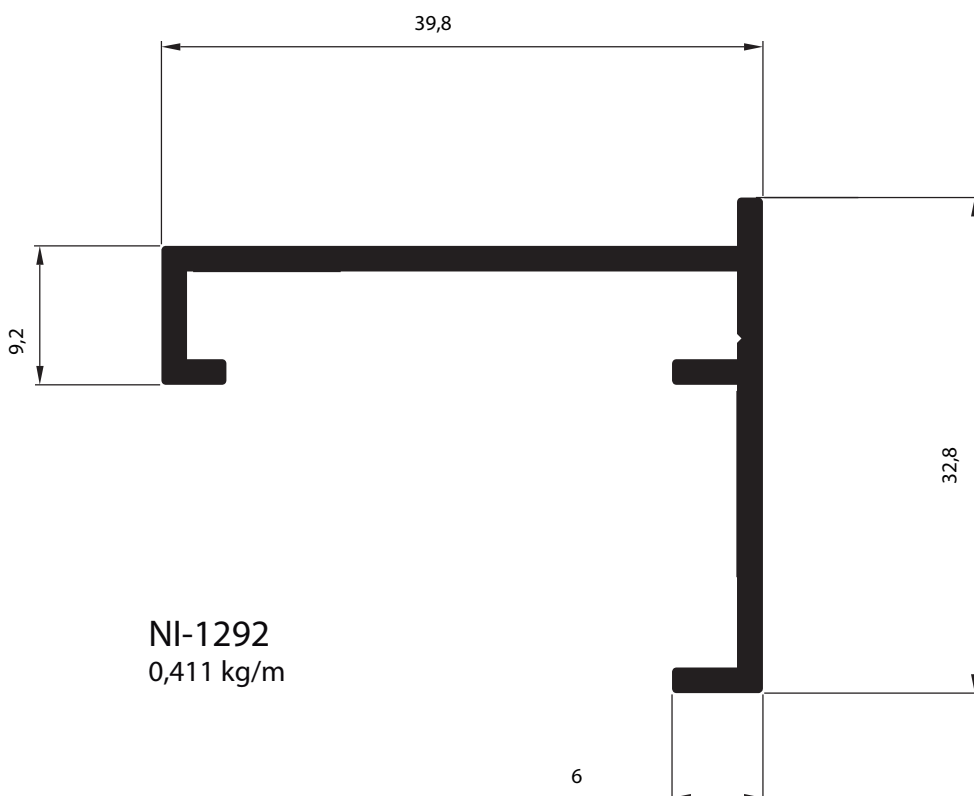




MACHO E CUNHA

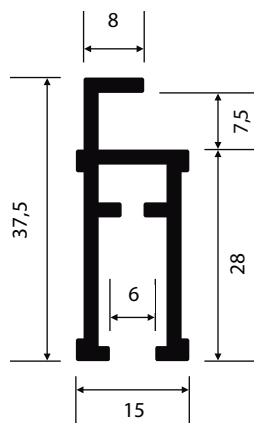


NI-1291
1,644 kg/m



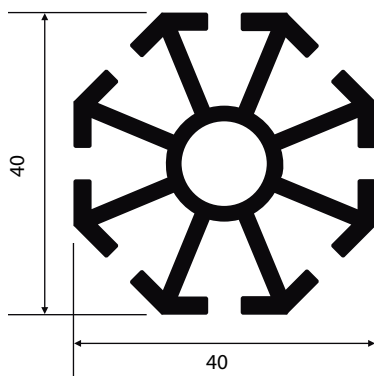
NI-1292
0,411 kg/m

TOLDOS



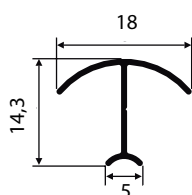
NI-034
0,516 kg/m

ESTRUTURA DE STANDS



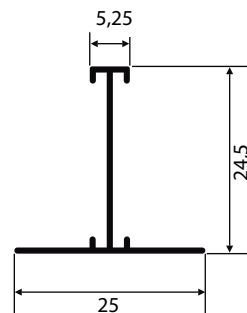
NI-090
1,356 kg/m

CANTO DE AZULEJO



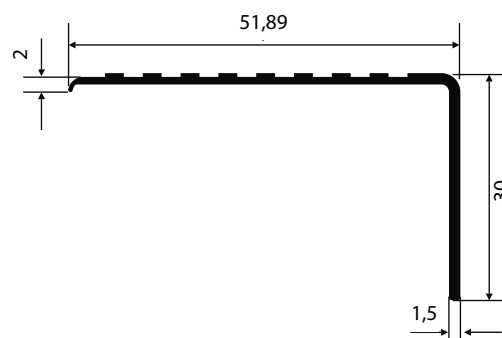
NI-408
0,081 kg/m

DIVISÓRIA DE AMBIENTES



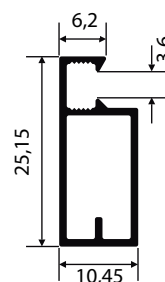
NI-730
0,126 kg/m

ARREIMATE DE ESCADA



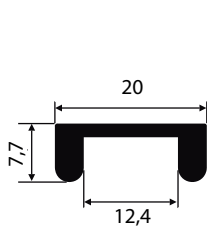
NI-1069
0,289 kg/m

TELA MOSQUETEIRA

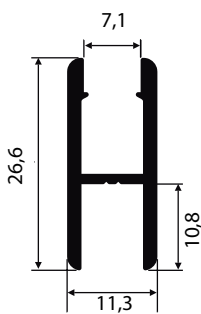


NI-1095
0,189 kg/m

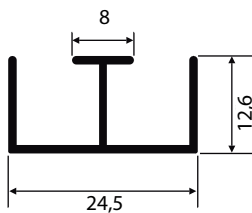
VITRINE



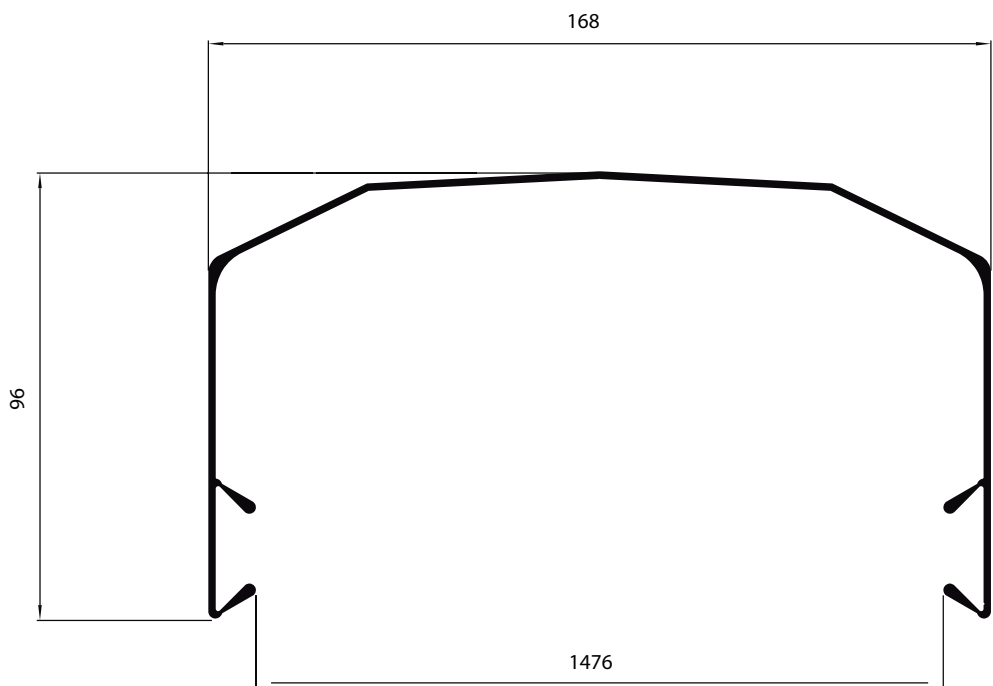
NI-587
0,210 kg/m



NI-588
0,289 kg/m



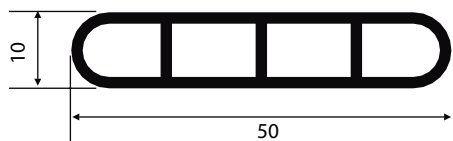
NI-589
0,192 kg/m



NI-1504
1,646 kg/m

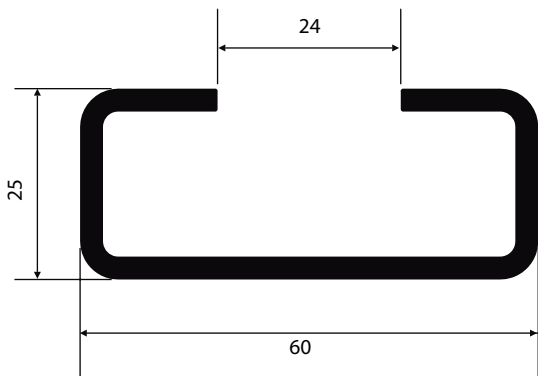
SEPARADORES

SEPARADORES



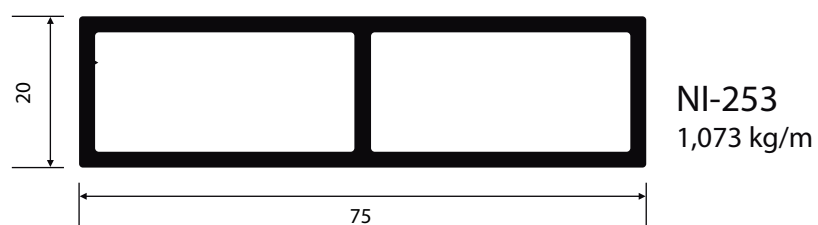
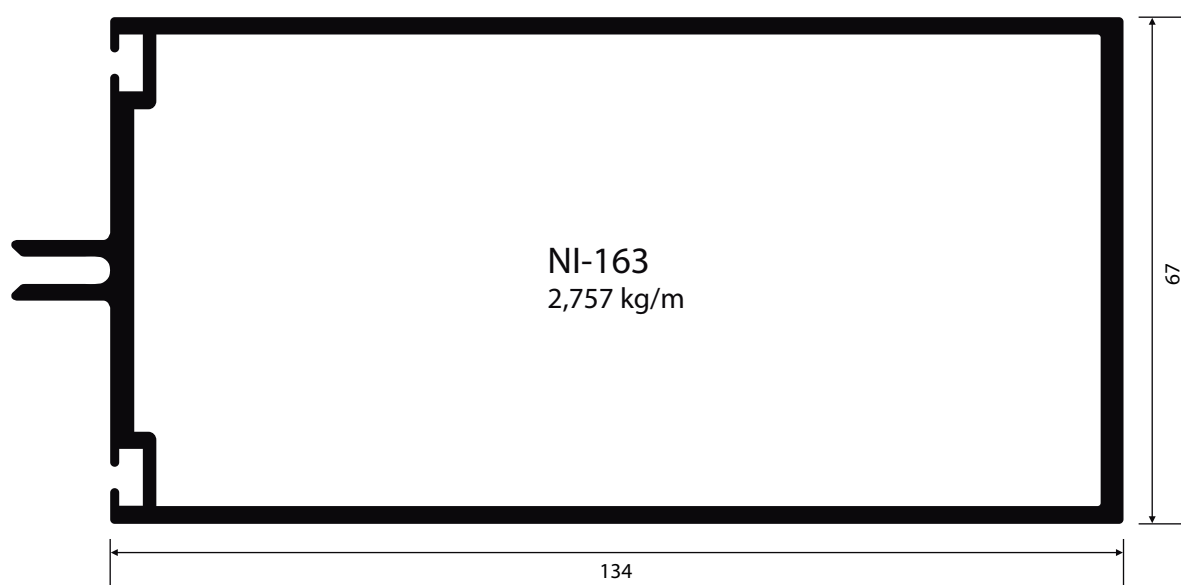
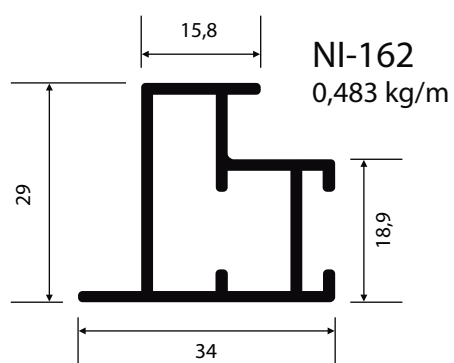
NI-790
0,519 kg/m

PAINEL ELÉTRICO

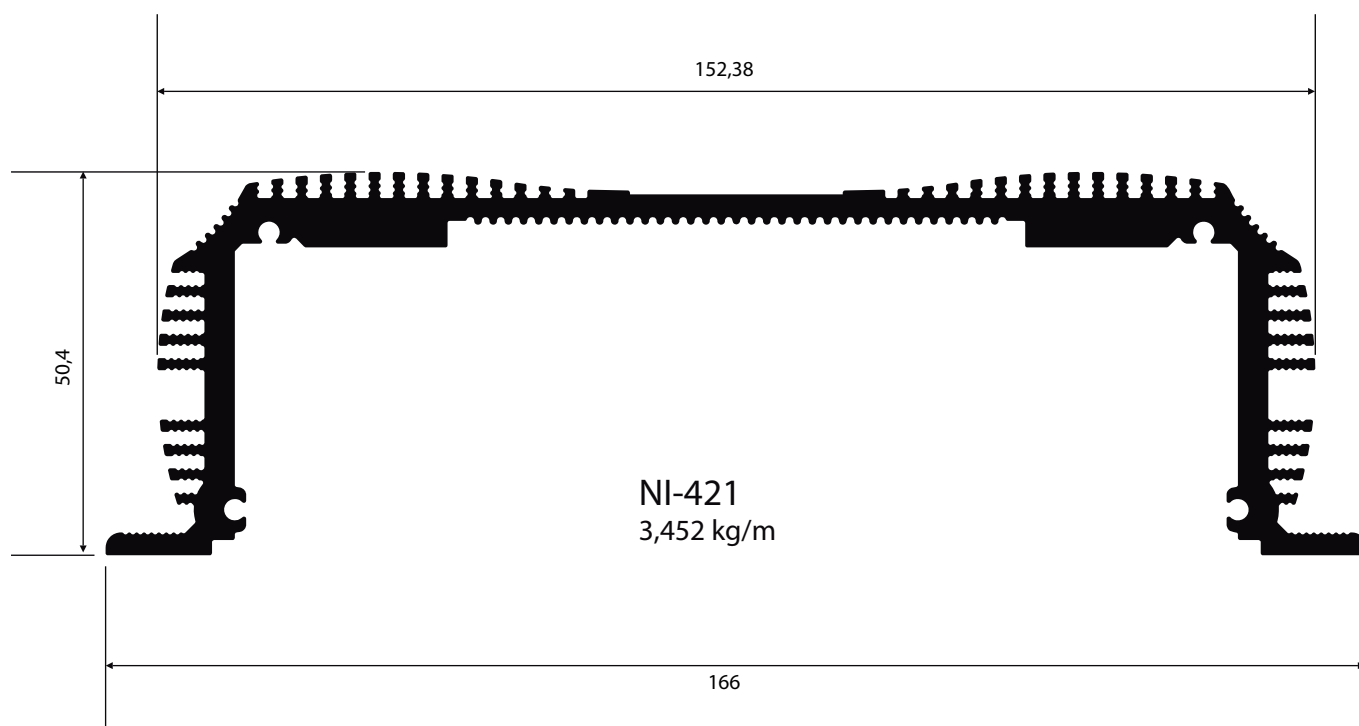


NI-646
1,040 kg/m

FACHADAS

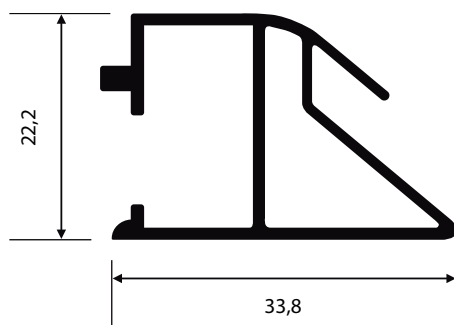


MÓDULO DE SOM



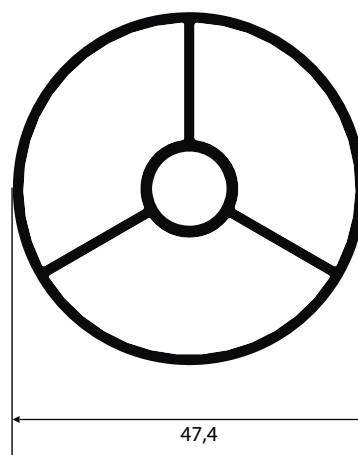
CAPOTA MARÍTIMA

NI-196
0,499 kg/m

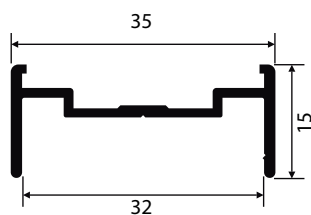


PÉ DE MESA

NI-467
0,882 kg/m

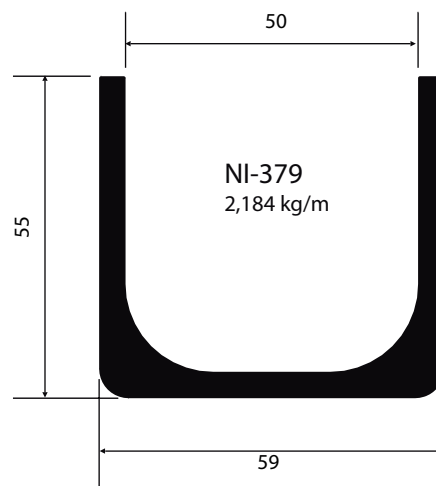


LINHA 30

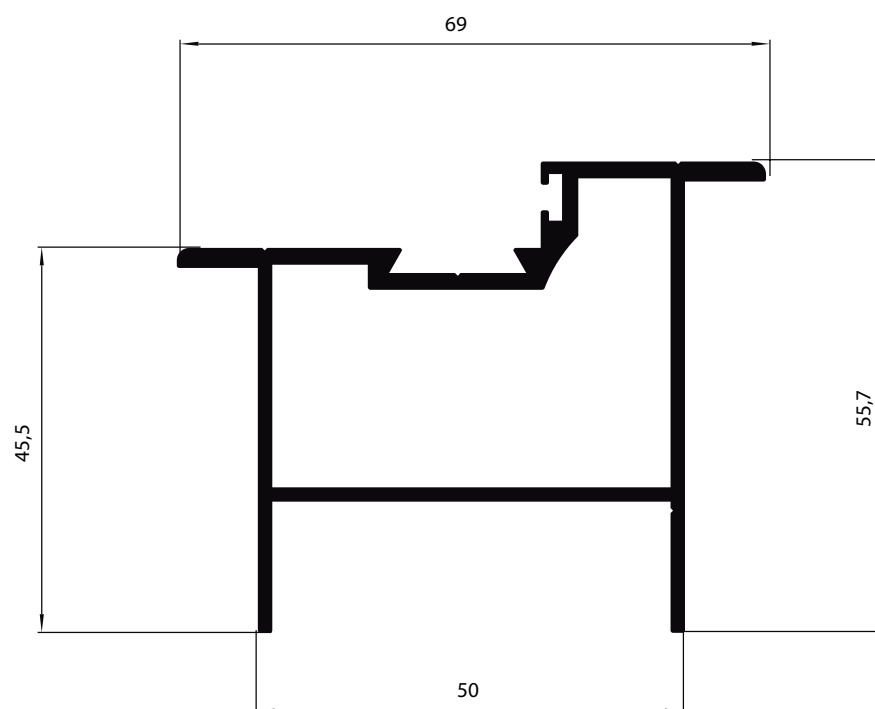
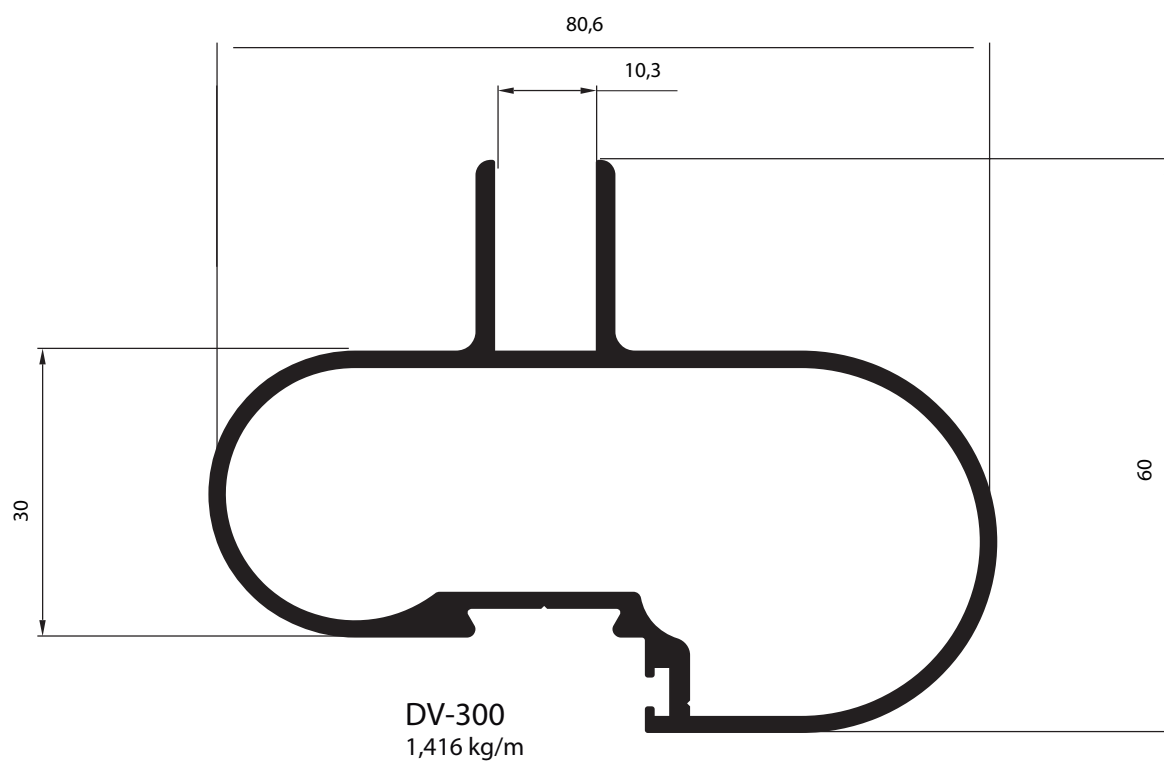


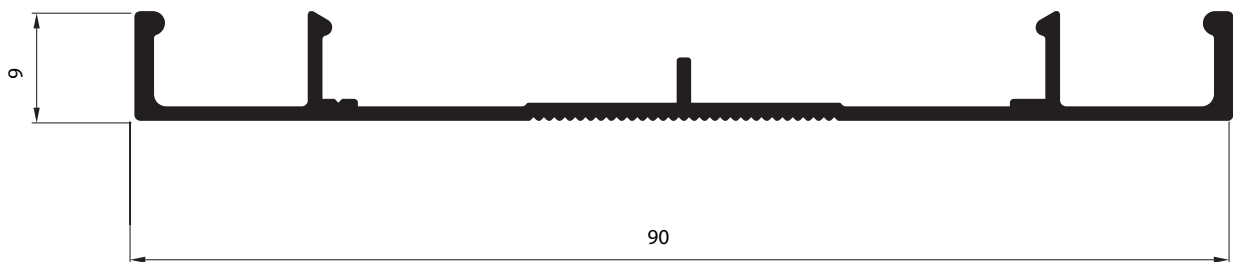
NI-1021
0,256 kg/m

RADIADOR

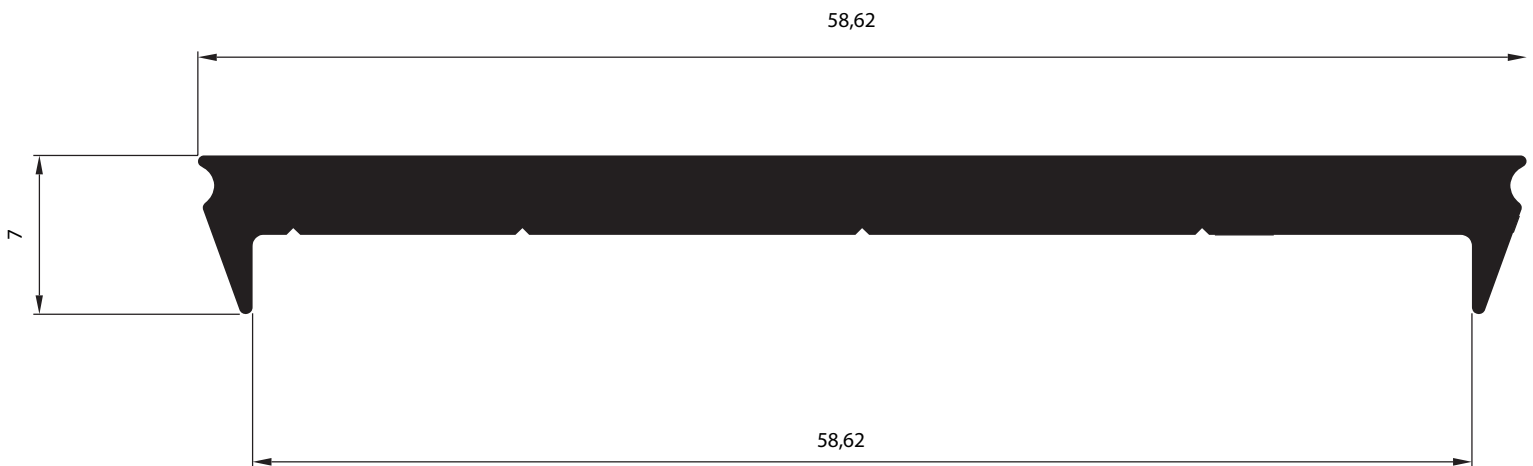


DIVISÓRIA SANITÁRIA

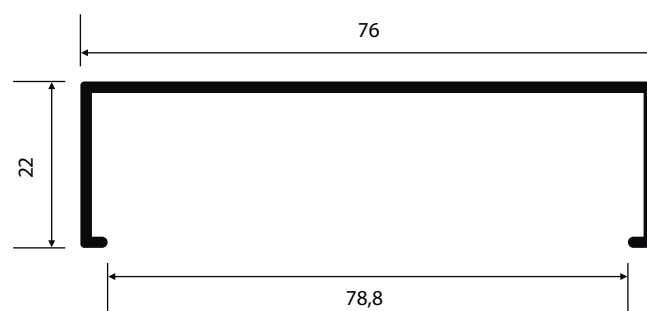




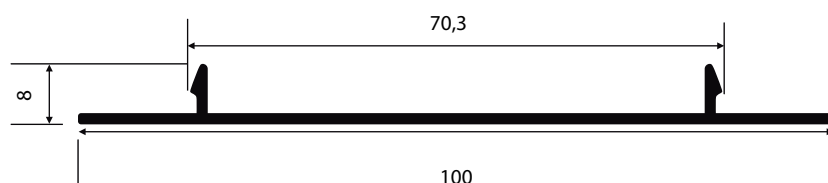
NI-1257
0,458 kg/m



NI-1258
0,569 kg/m



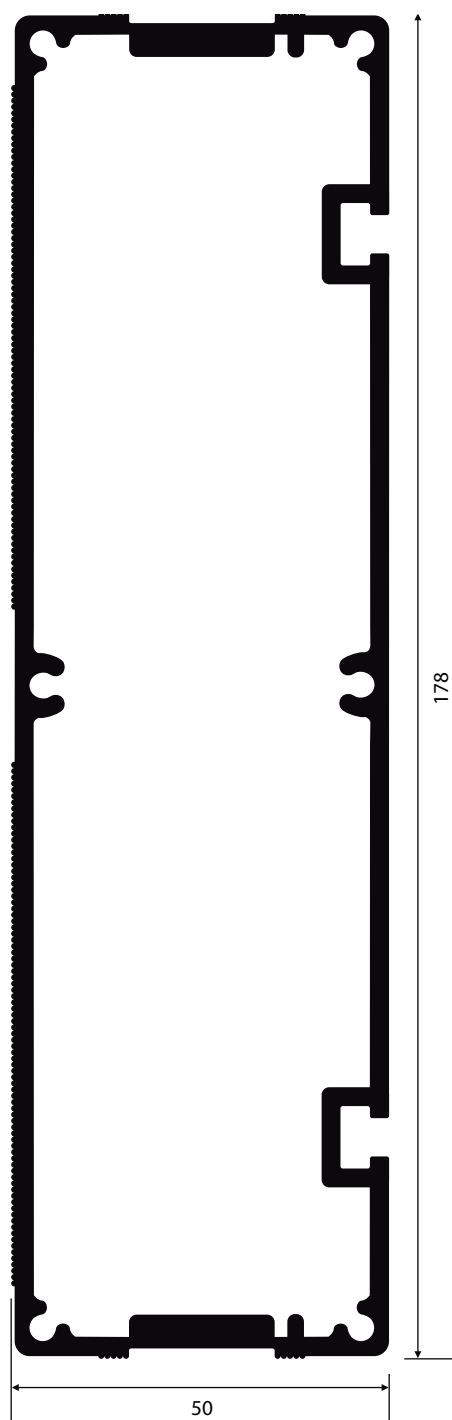
NI-194
0,491 kg/m



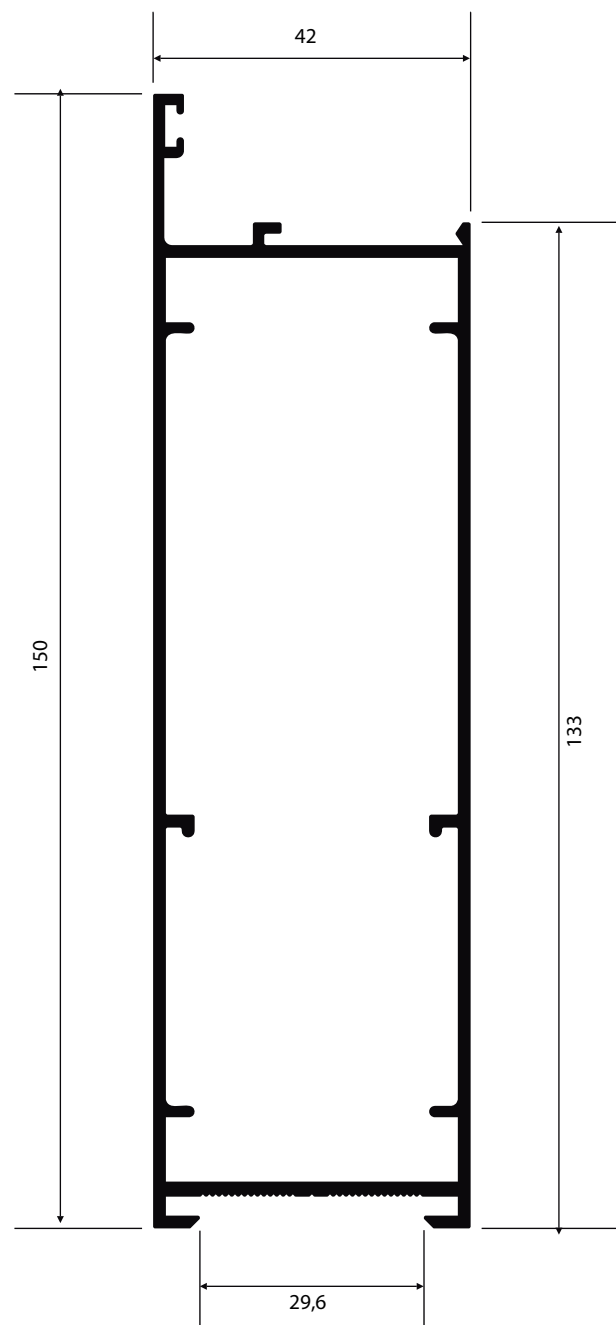
NI-195
0,457 kg/m

GIROFLEX

LINHA 42

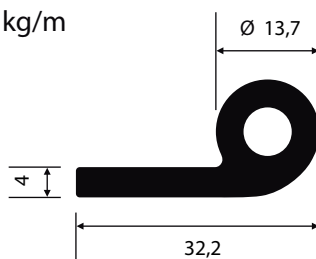


NI-122
3,573 kg/m

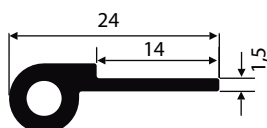
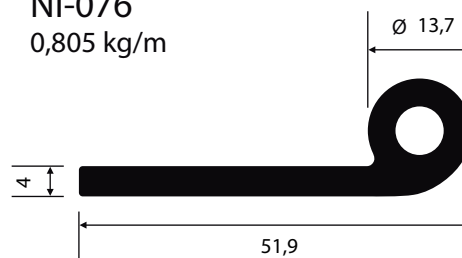


NI-580
1,861 kg/m

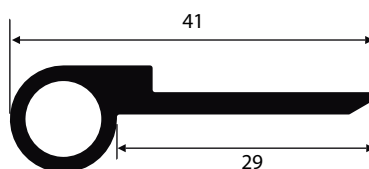
NI-075
0,578 kg/m



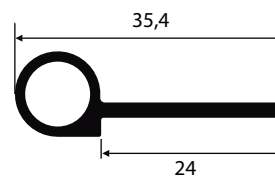
NI-076
0,805 kg/m



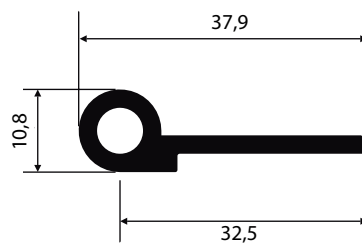
NI-431
0,185 kg/m



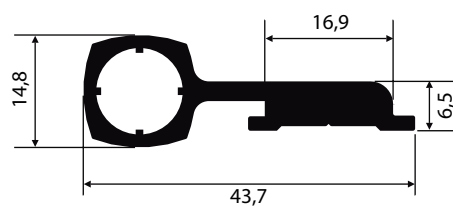
NI-432
0,395 kg/m



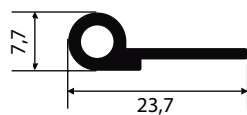
NI-433
0,305 kg/m



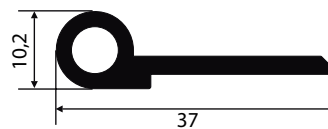
NI-674
0,377 kg/m



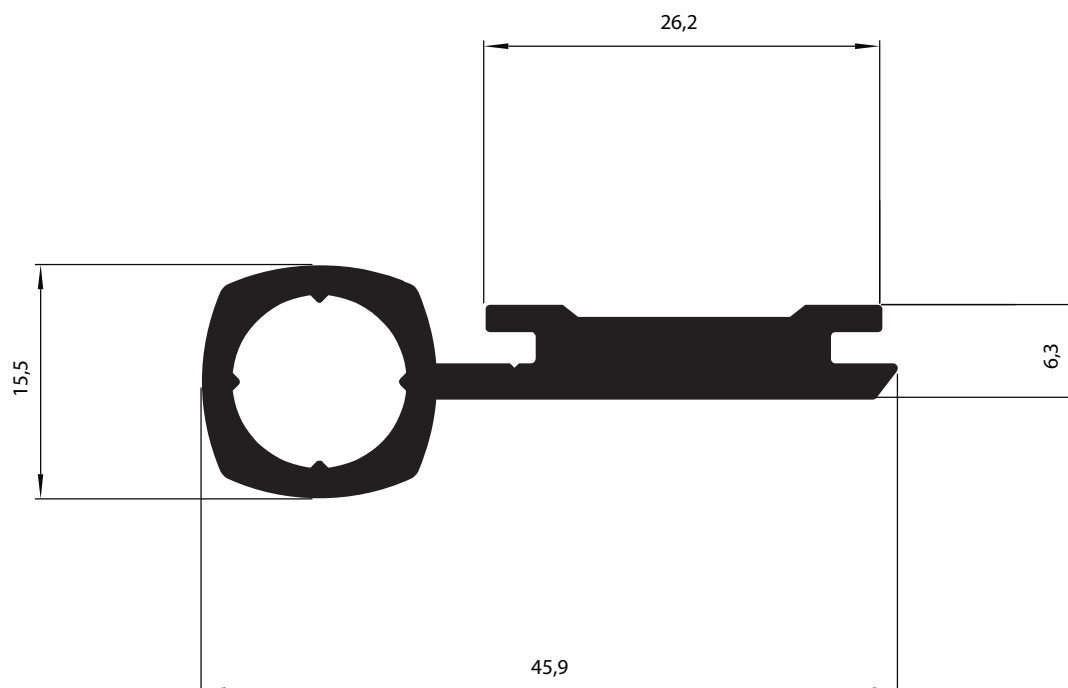
NI-690
0,623 kg/m



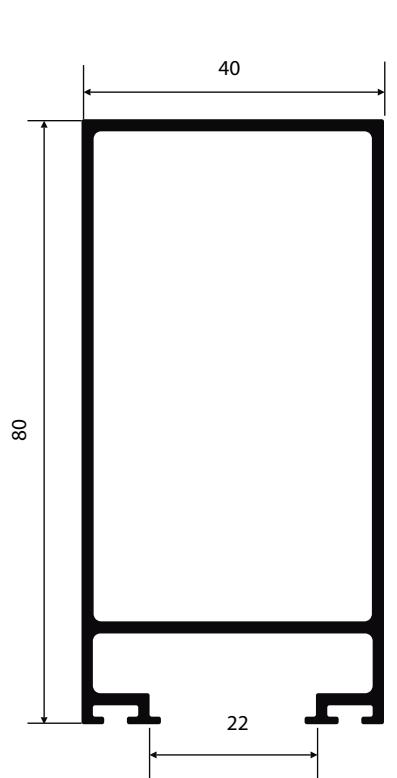
NI-941
0,168 kg/m



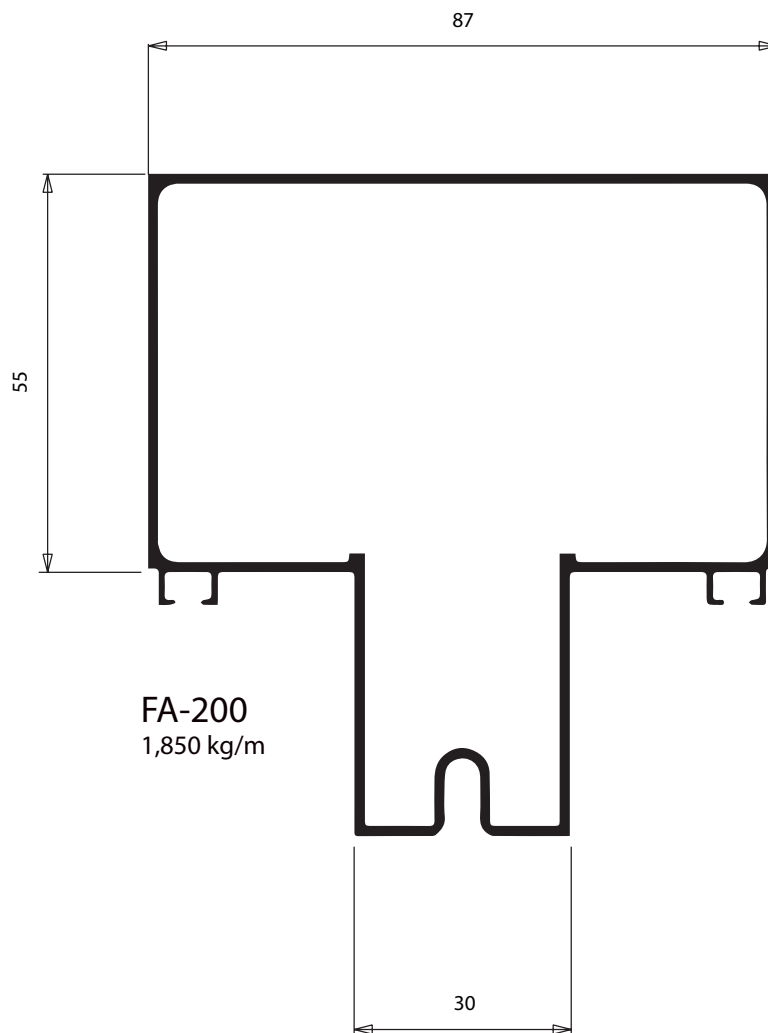
NI-942
0,340 kg/m



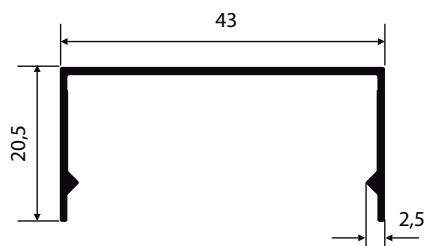
NI-1507
0,688 kg/m



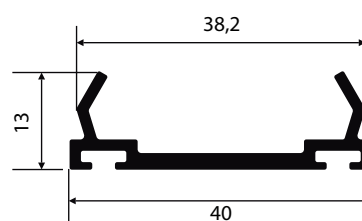
A-072
1,120 kg/m



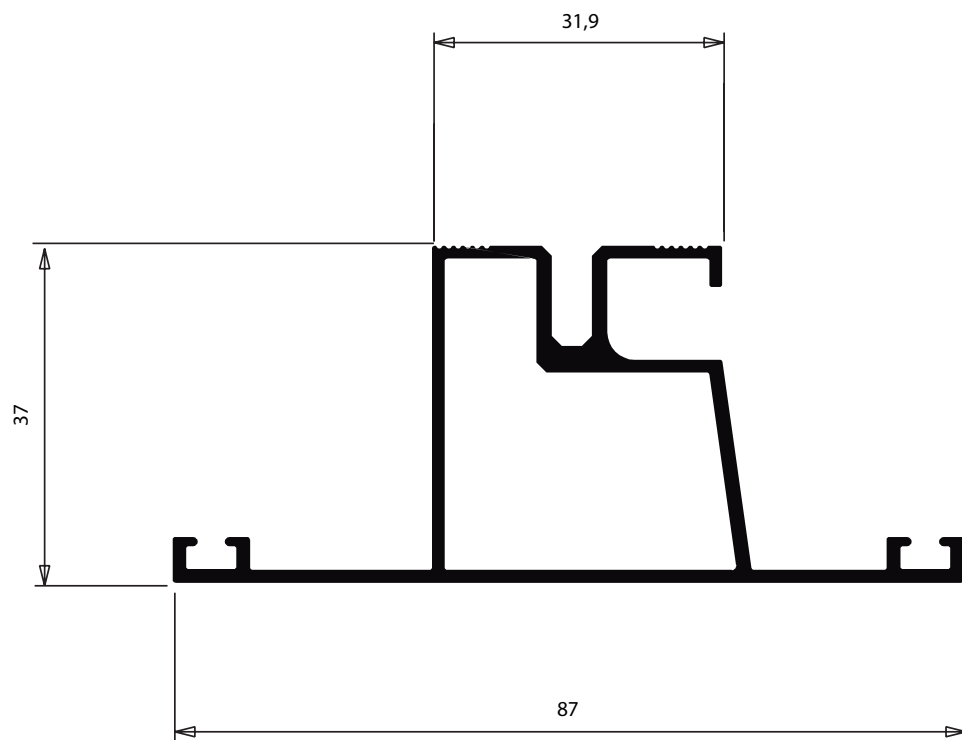
FA-200
1,850 kg/m



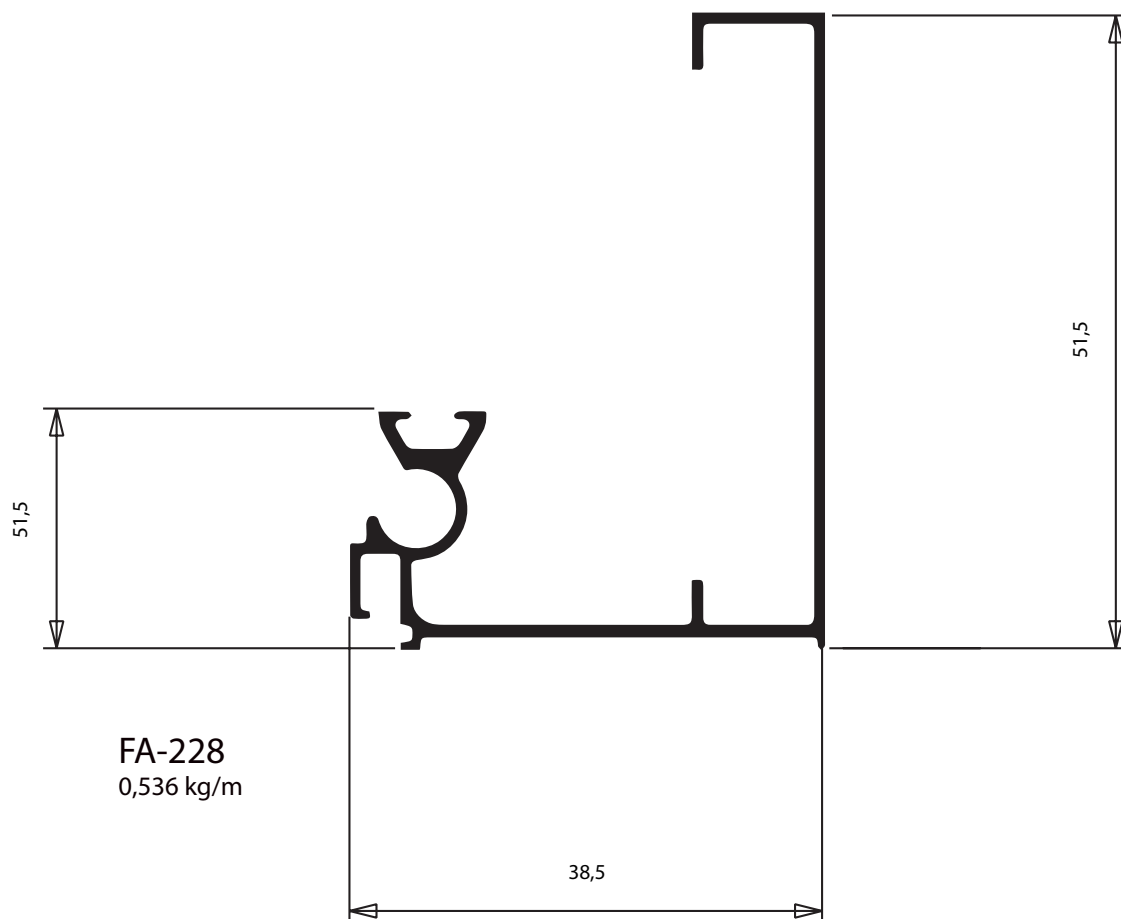
U-261
0,252 kg/m



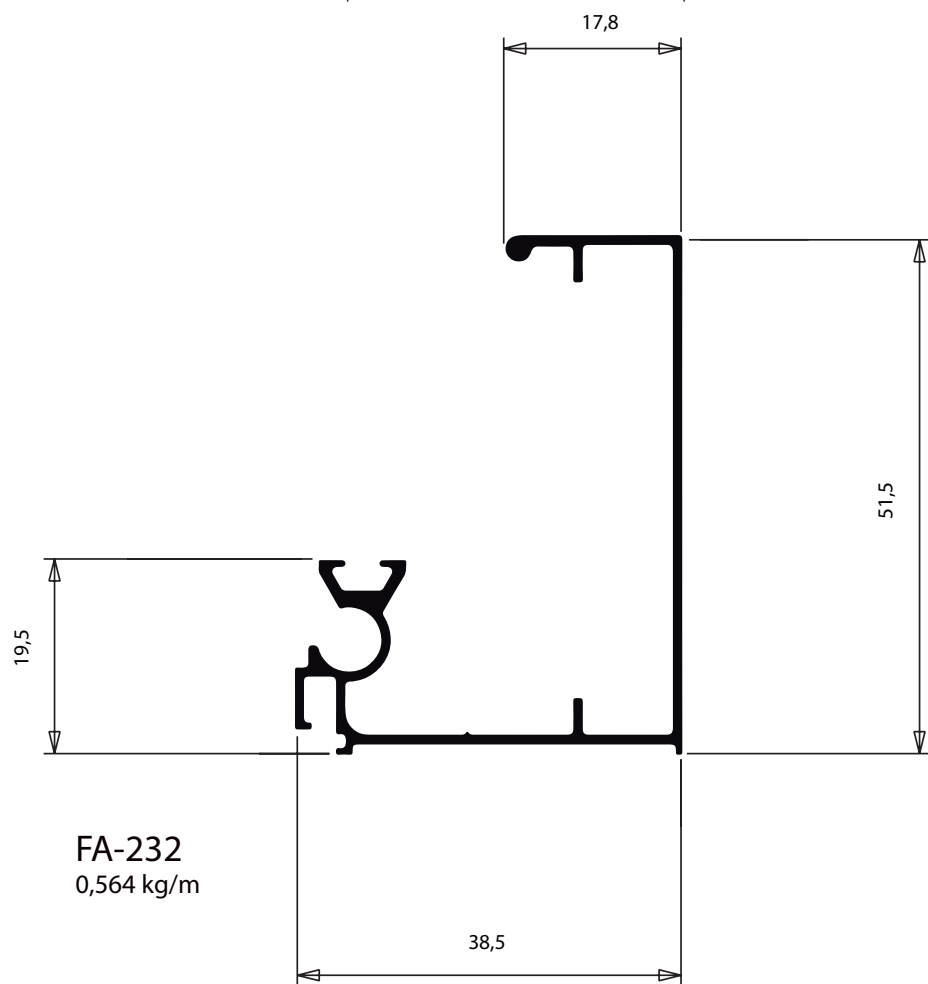
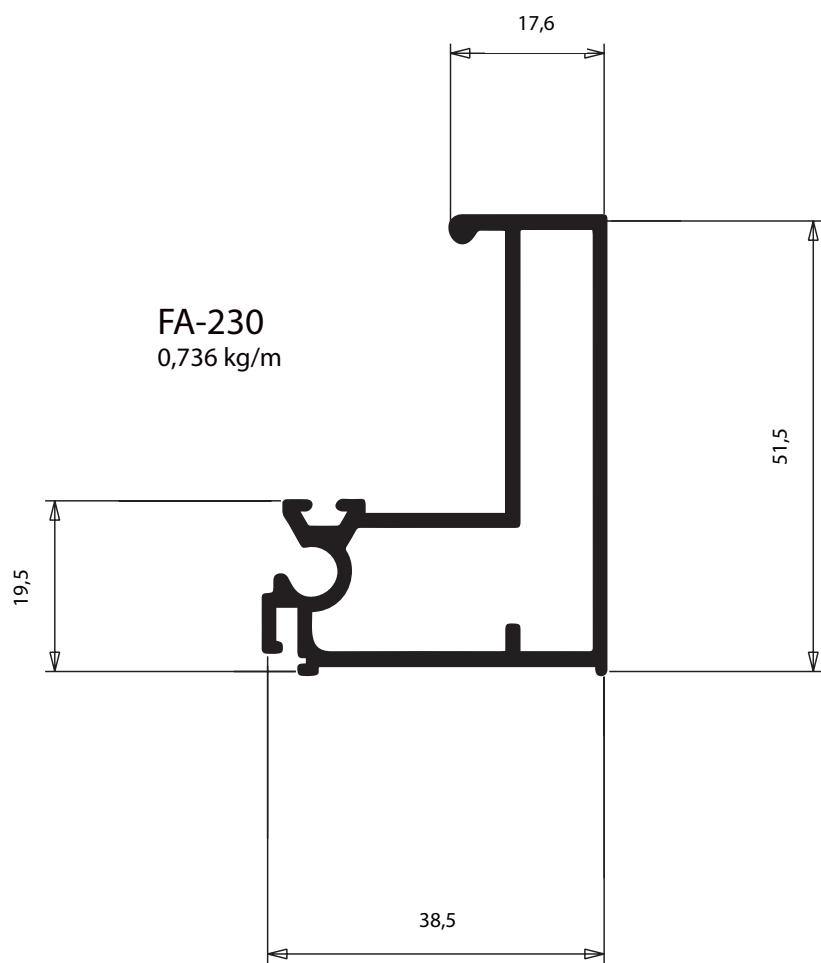
U-615
0,340 kg/m

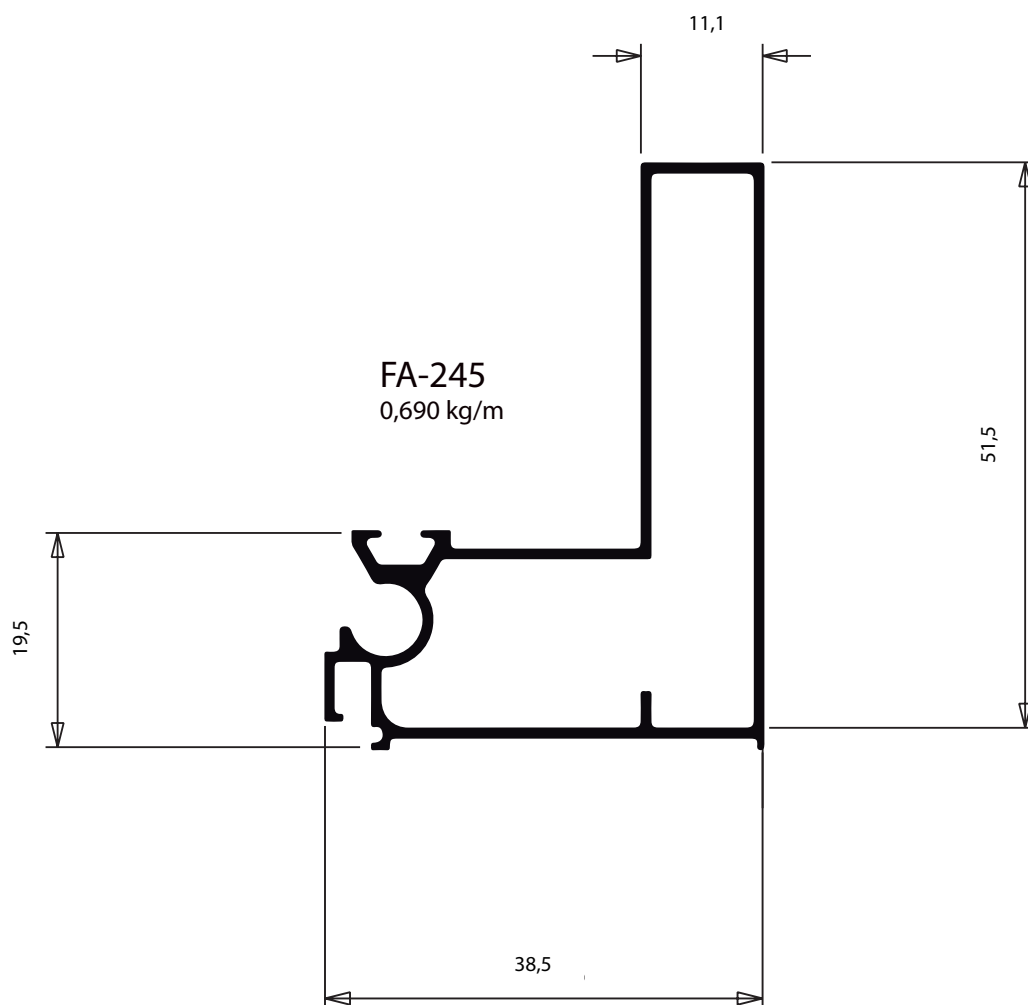
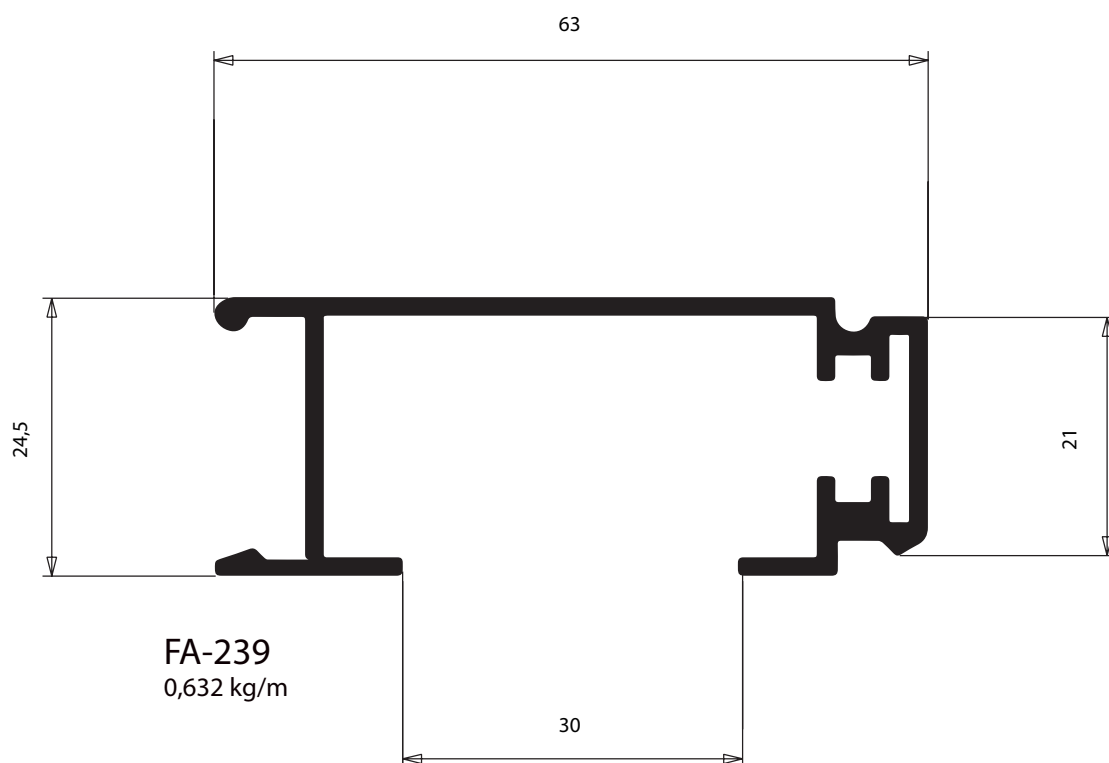


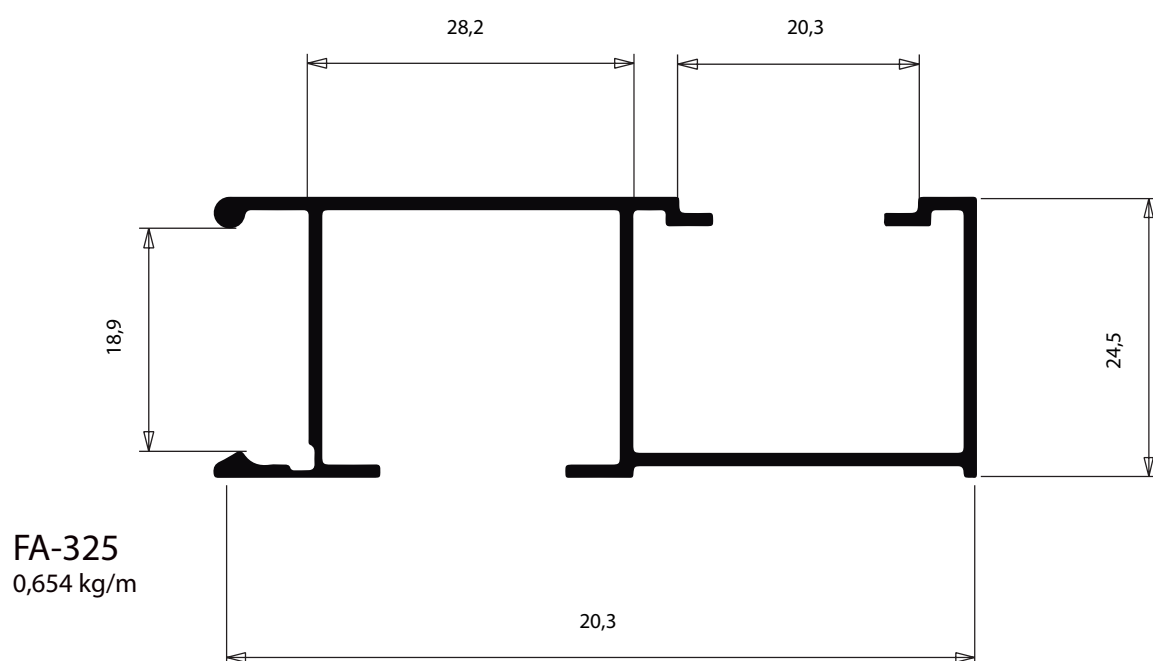
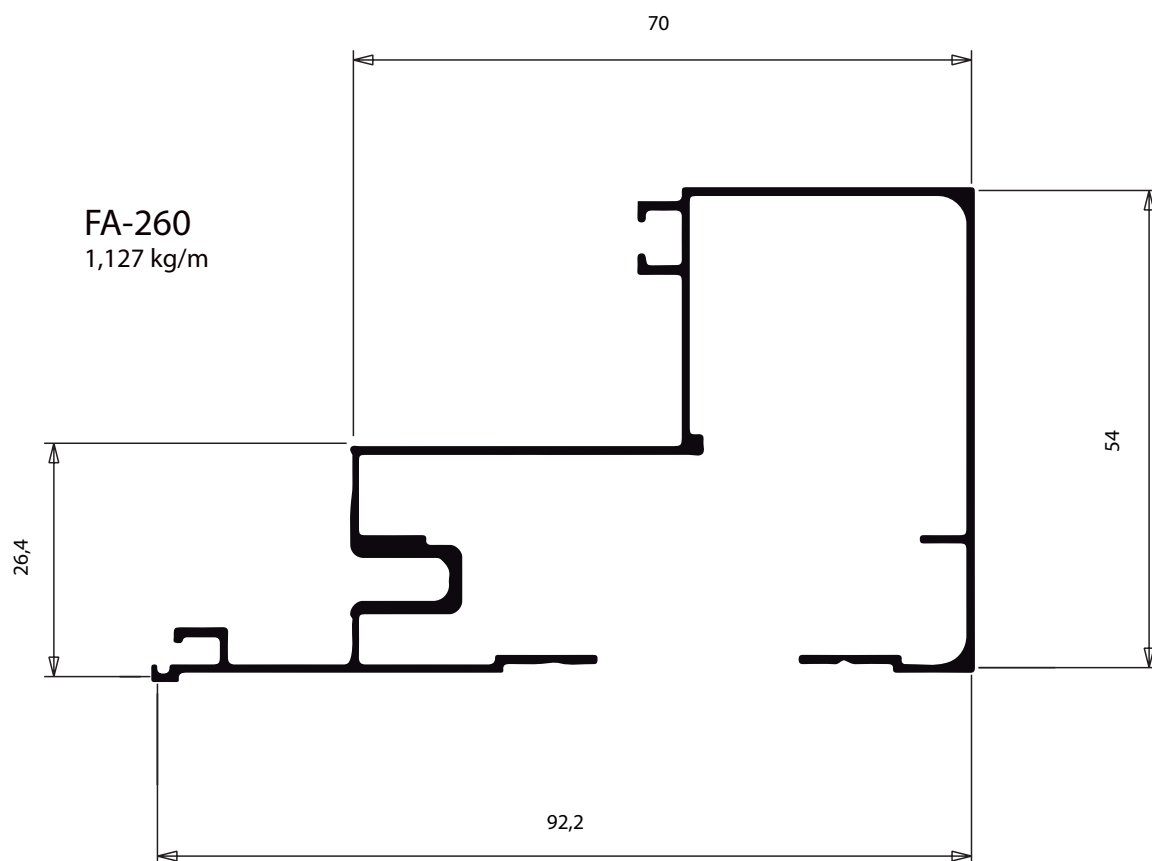
FA-211
0,941 kg/m

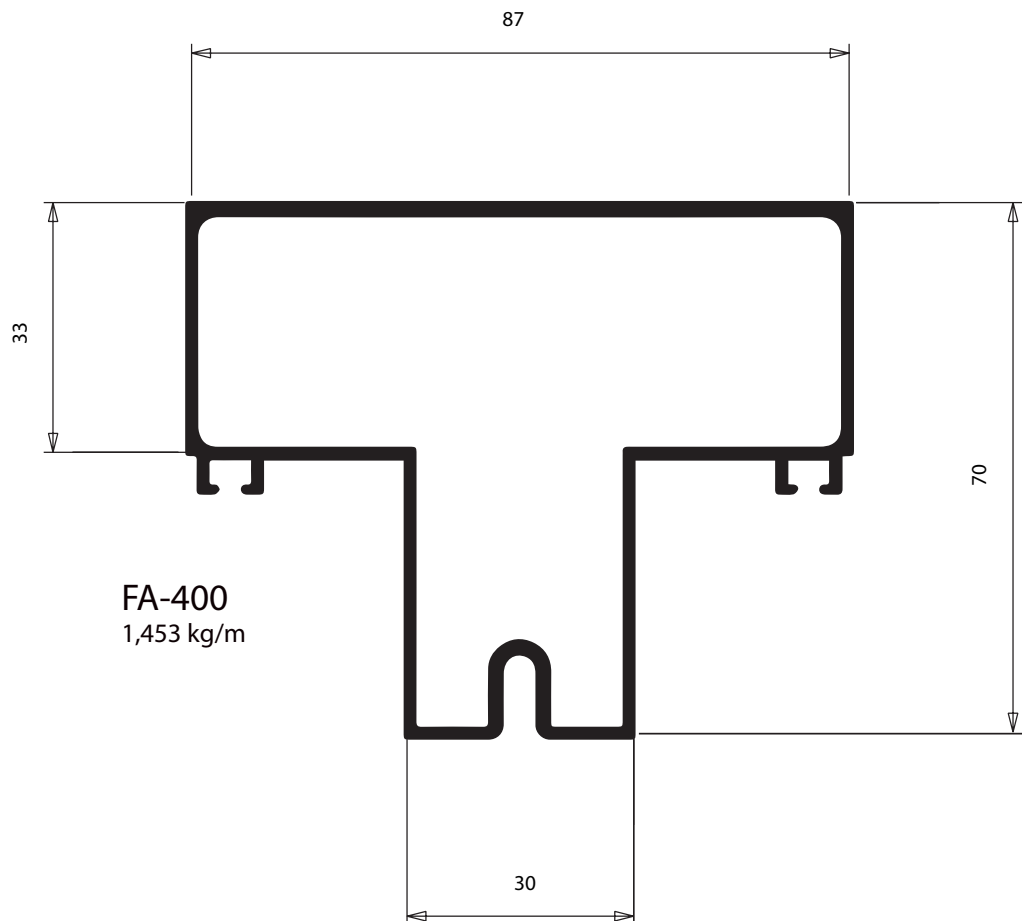
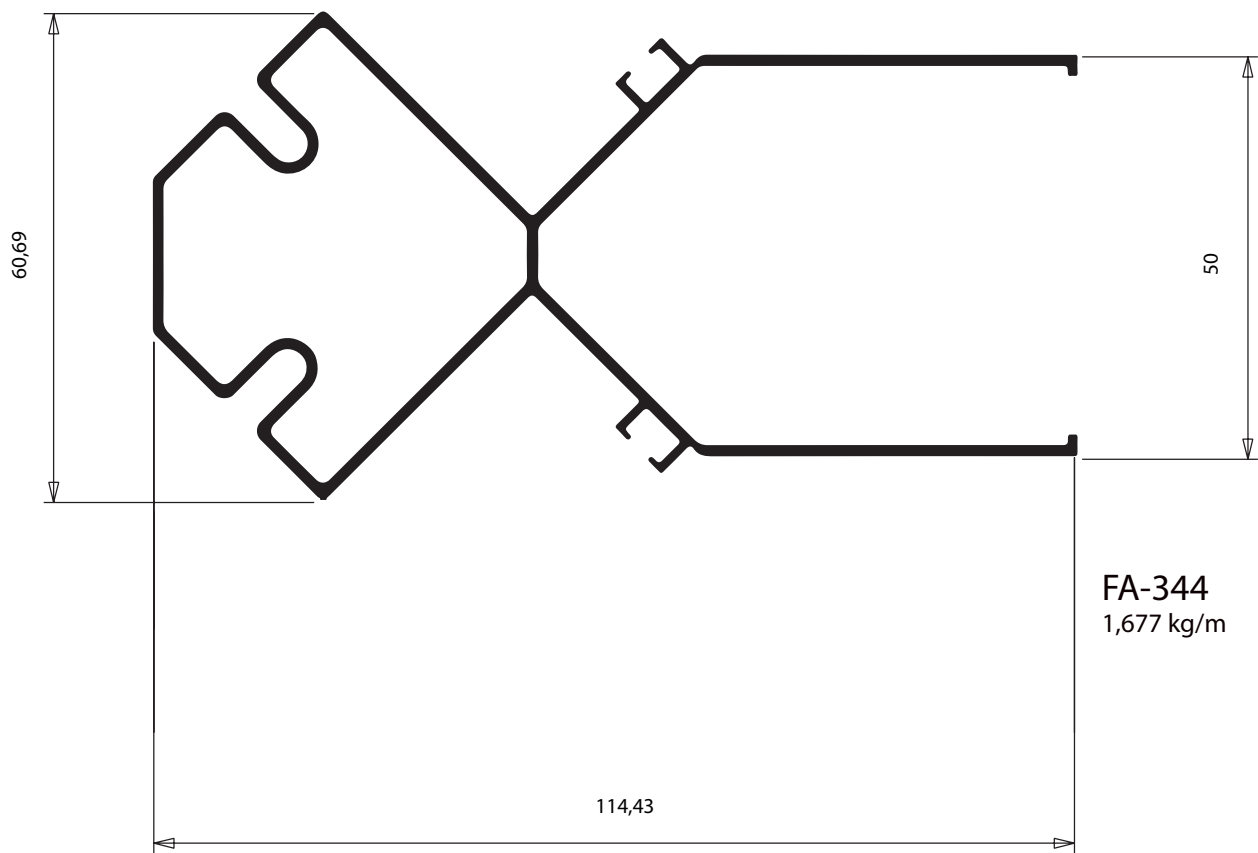


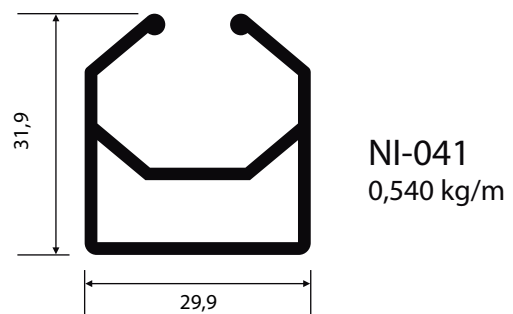
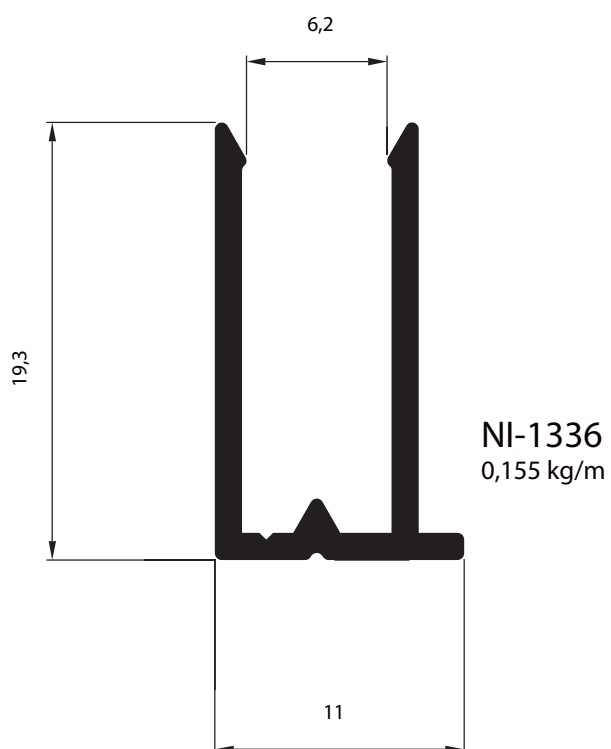
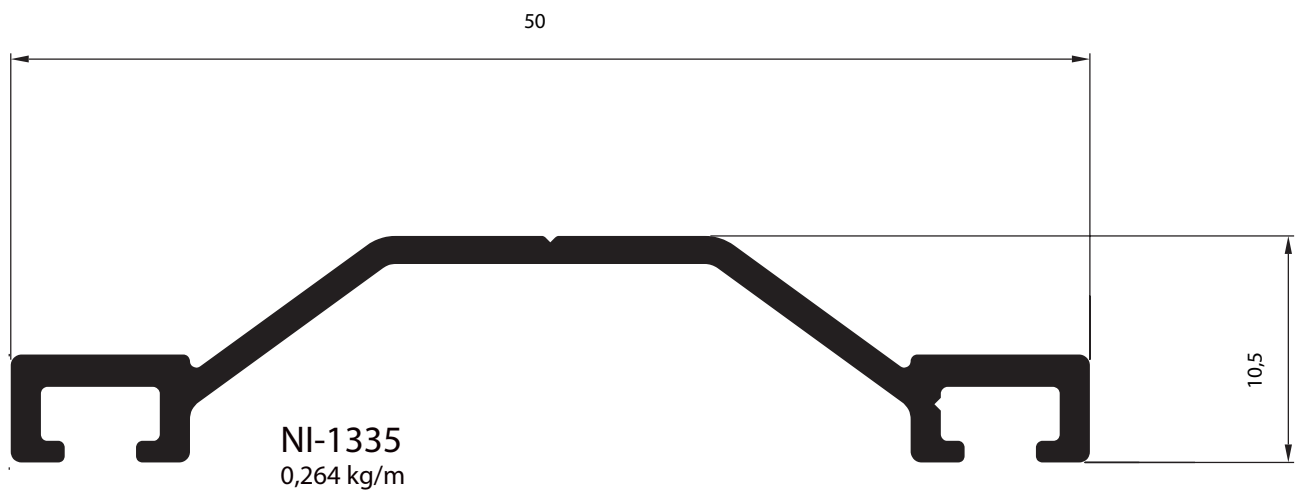
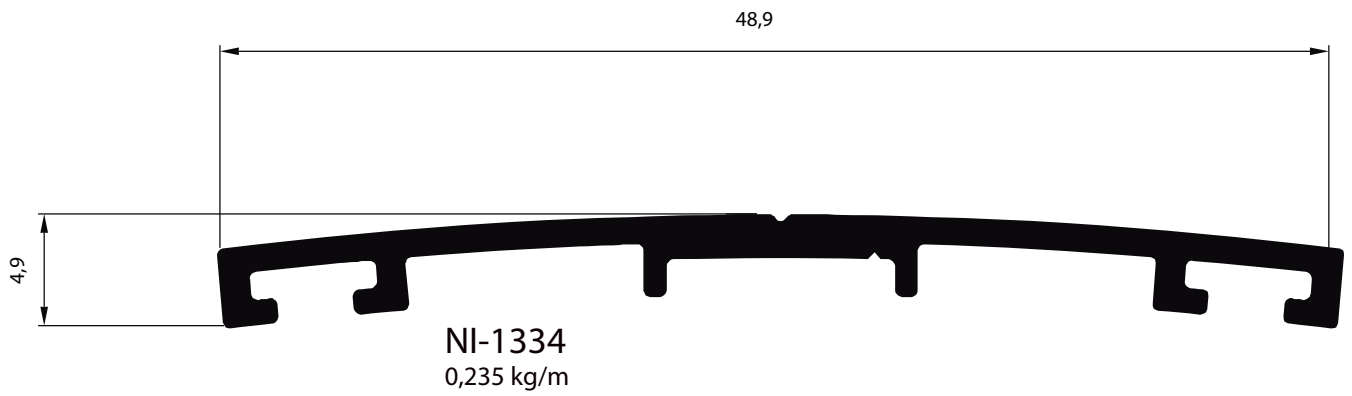
FA-228
0,536 kg/m

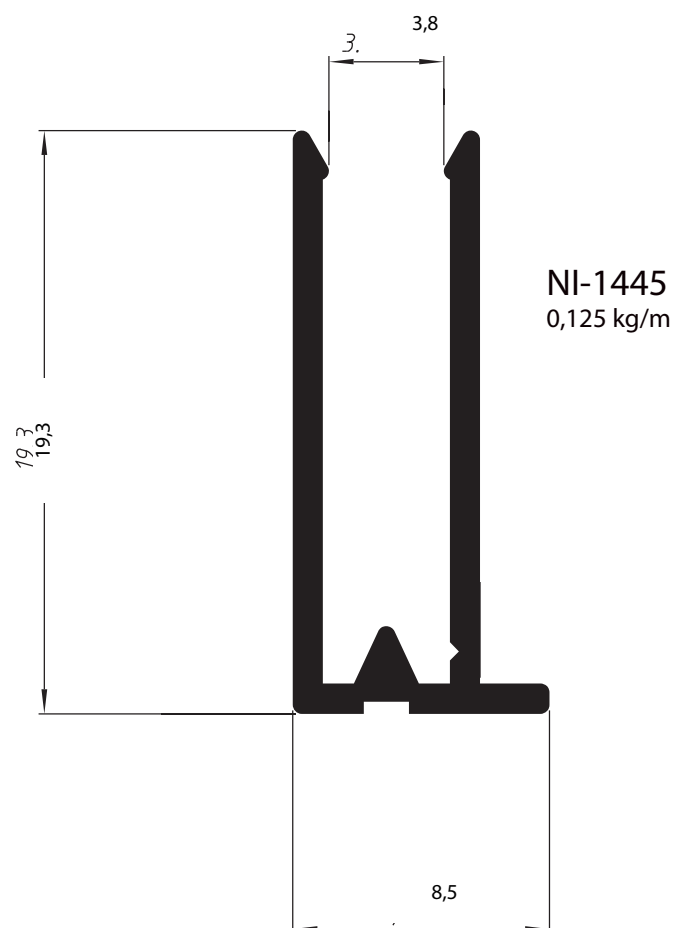
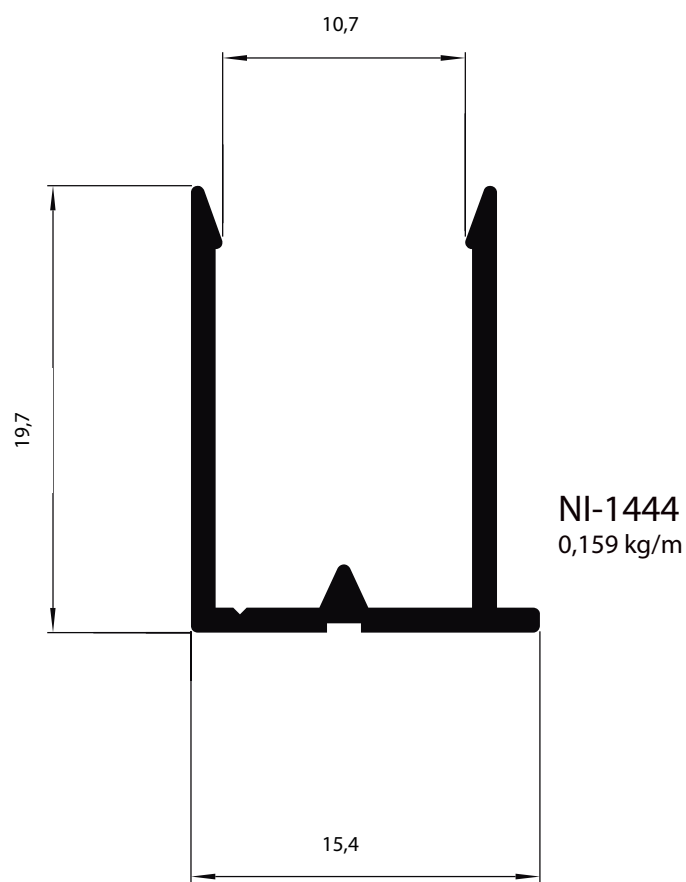


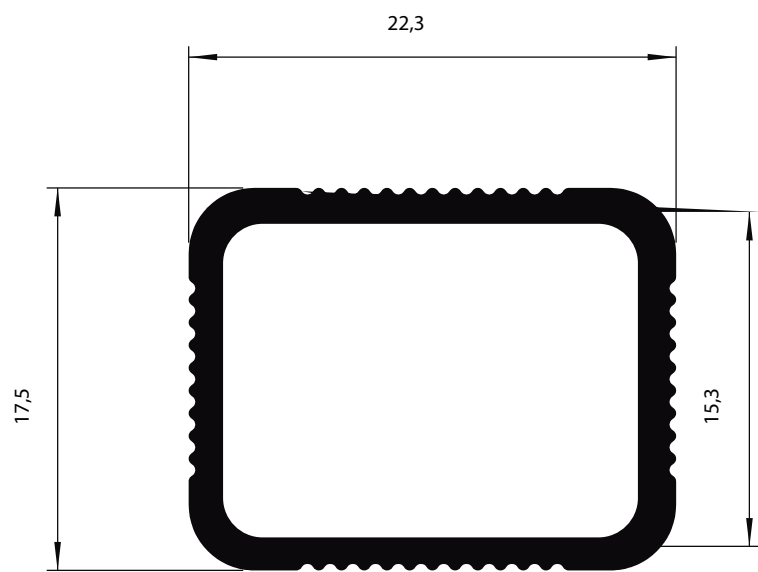




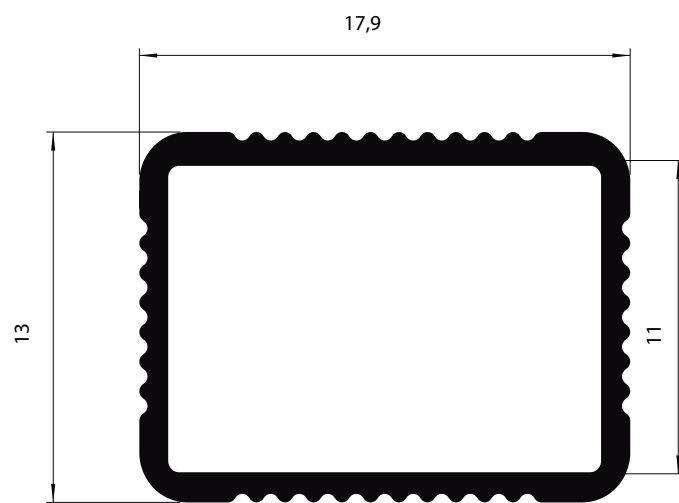




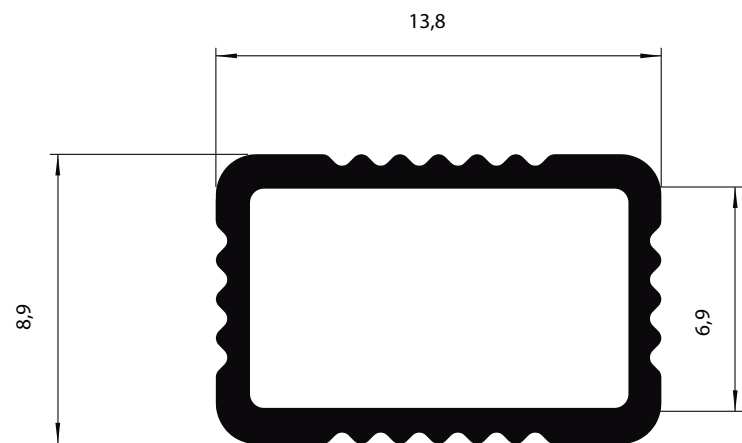




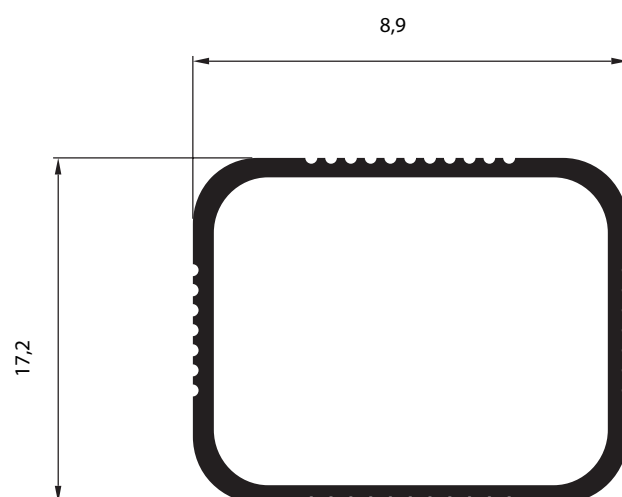
NI-1106
0,194 kg/m



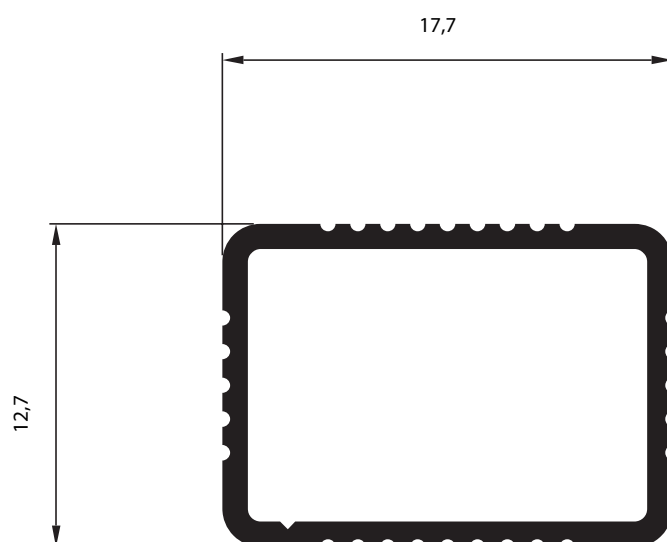
NI-1107
0,136 kg/m



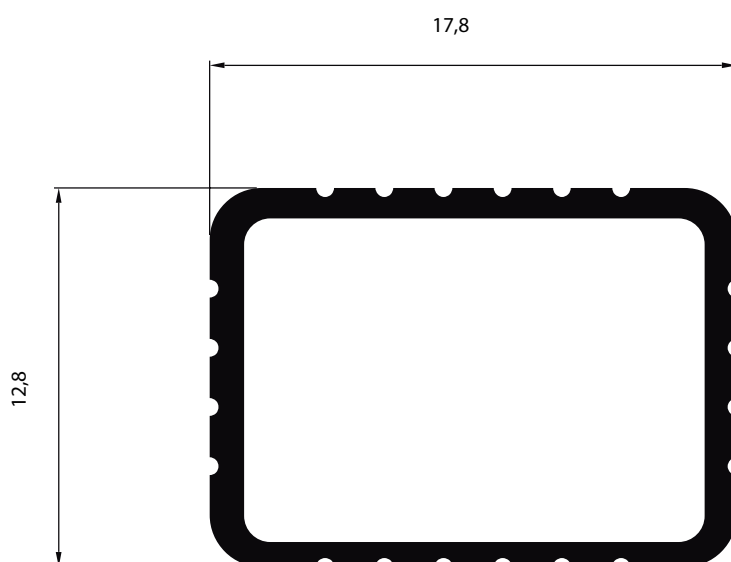
NI-1108
0,097kg/m



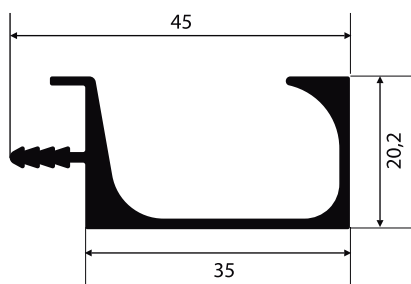
NI-1260
0,175 kg/m



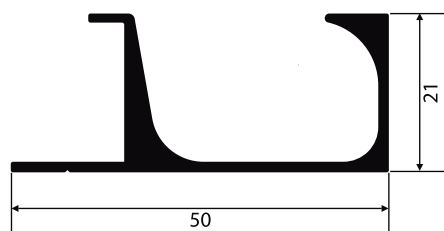
NI-1261
0,138 kg/m



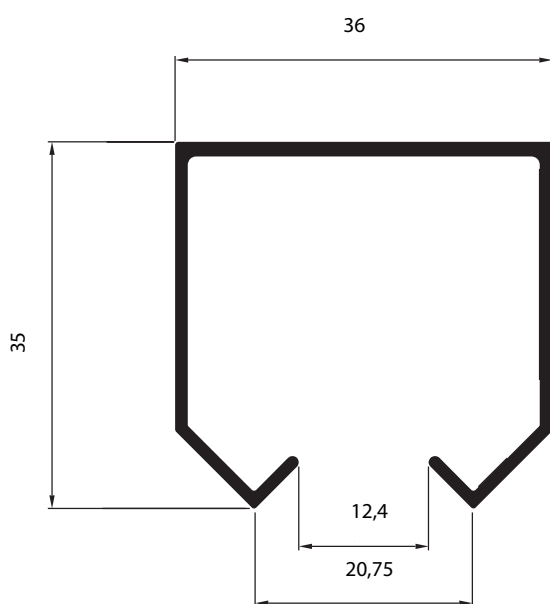
NI-1333
0,141 kg/m



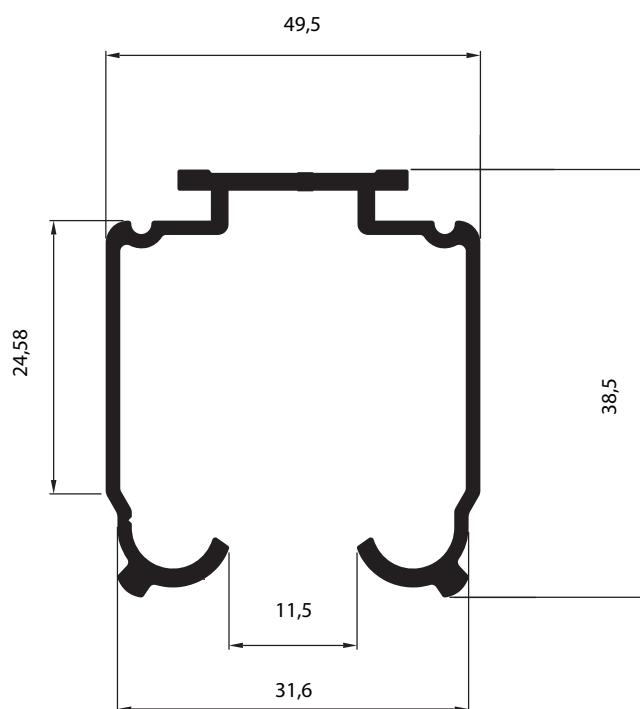
NI-015
0,517 kg/m



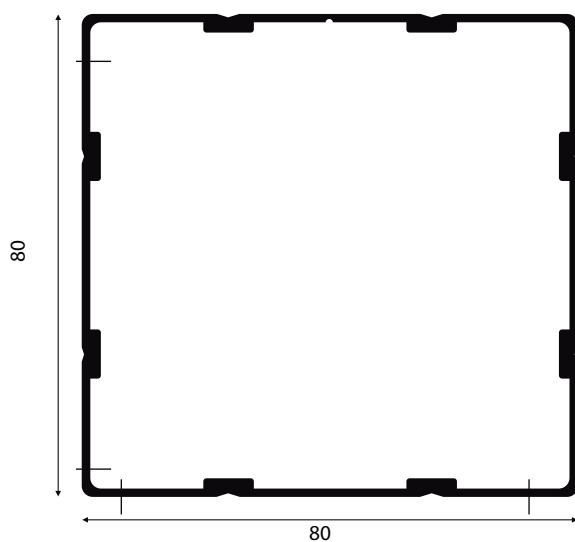
NI-017
0,528 kg/m



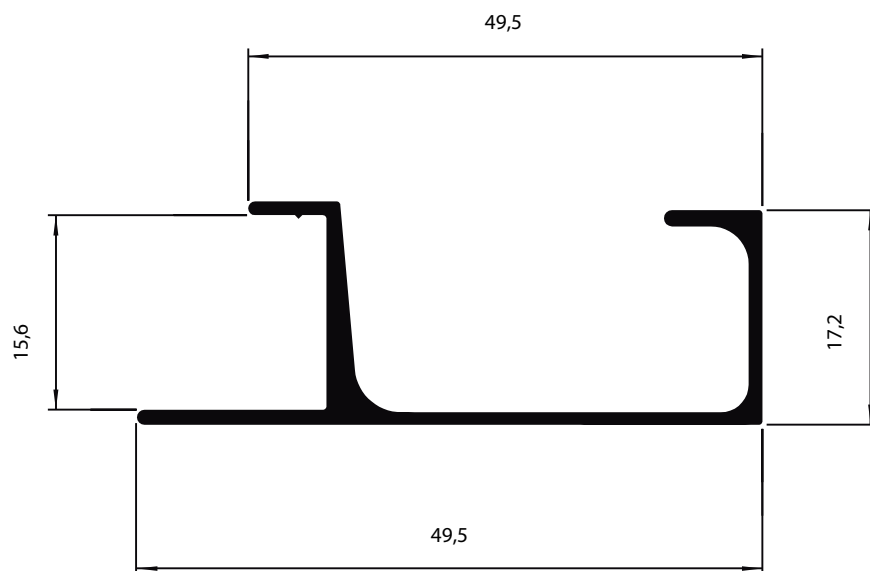
NI-3039
0,406 kg/m



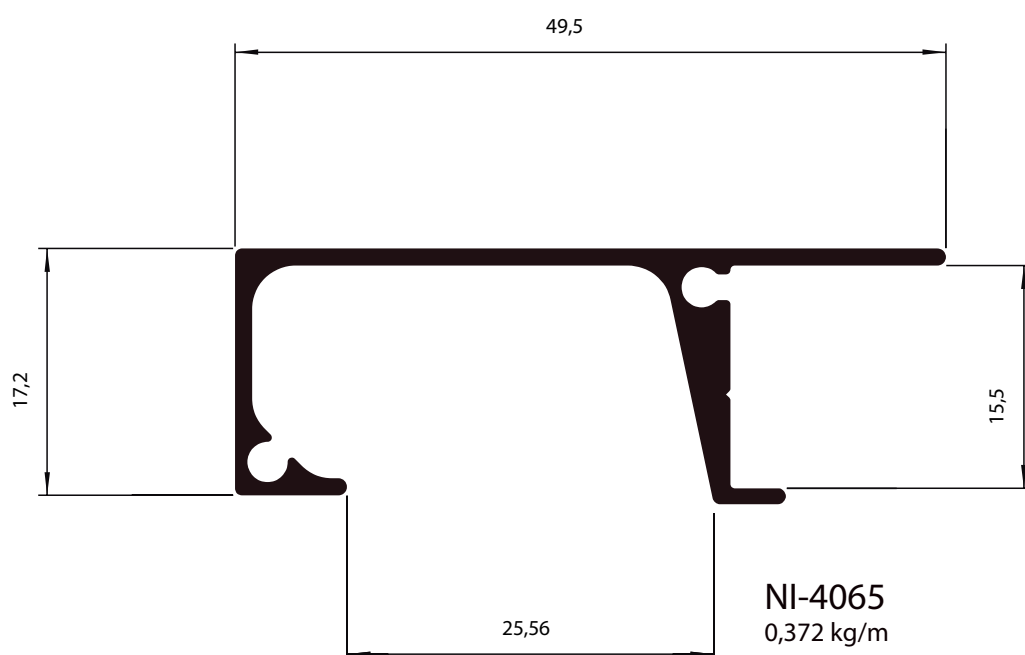
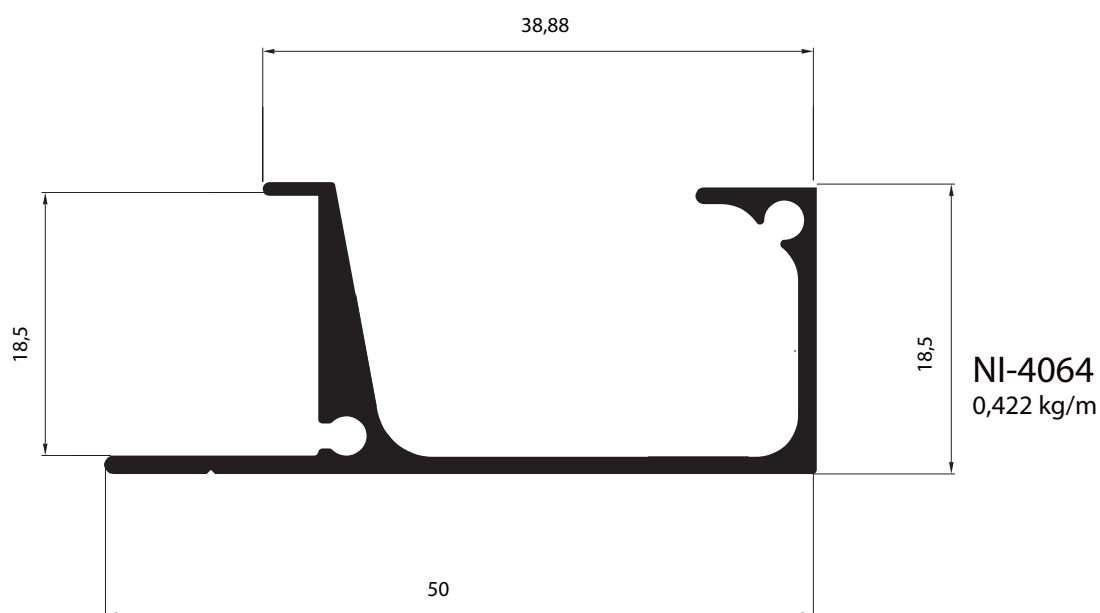
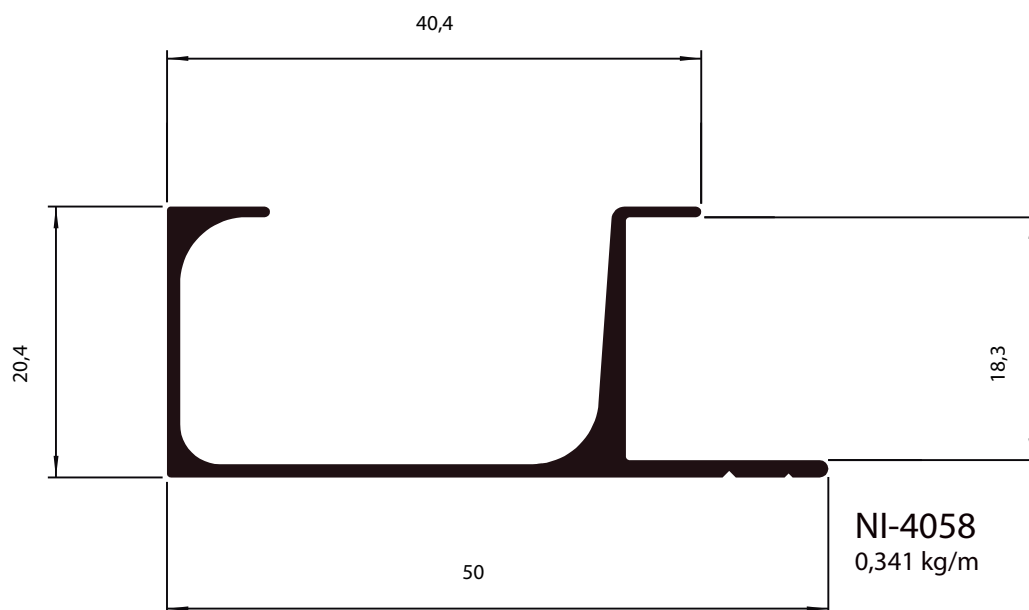
NI-3100
0,525 kg/m

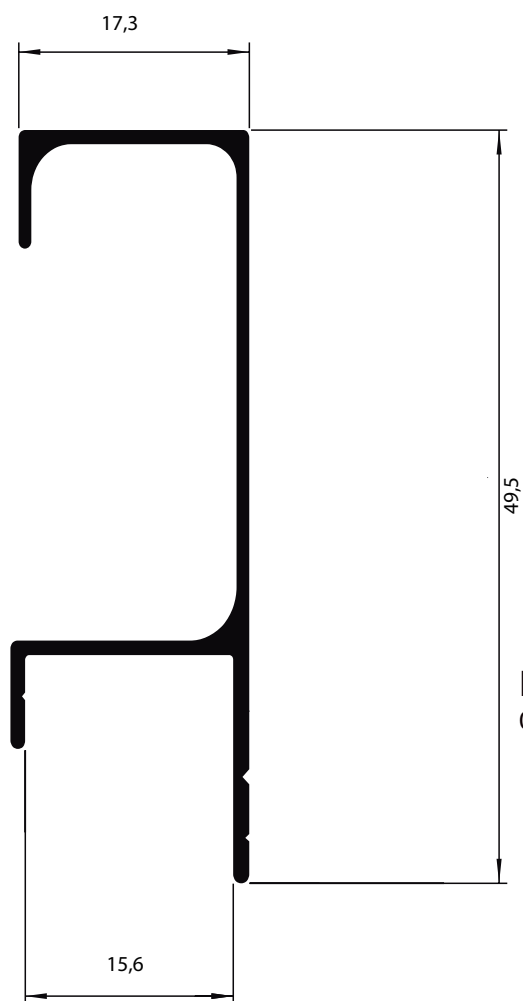


NI-394
1,171 kg/m

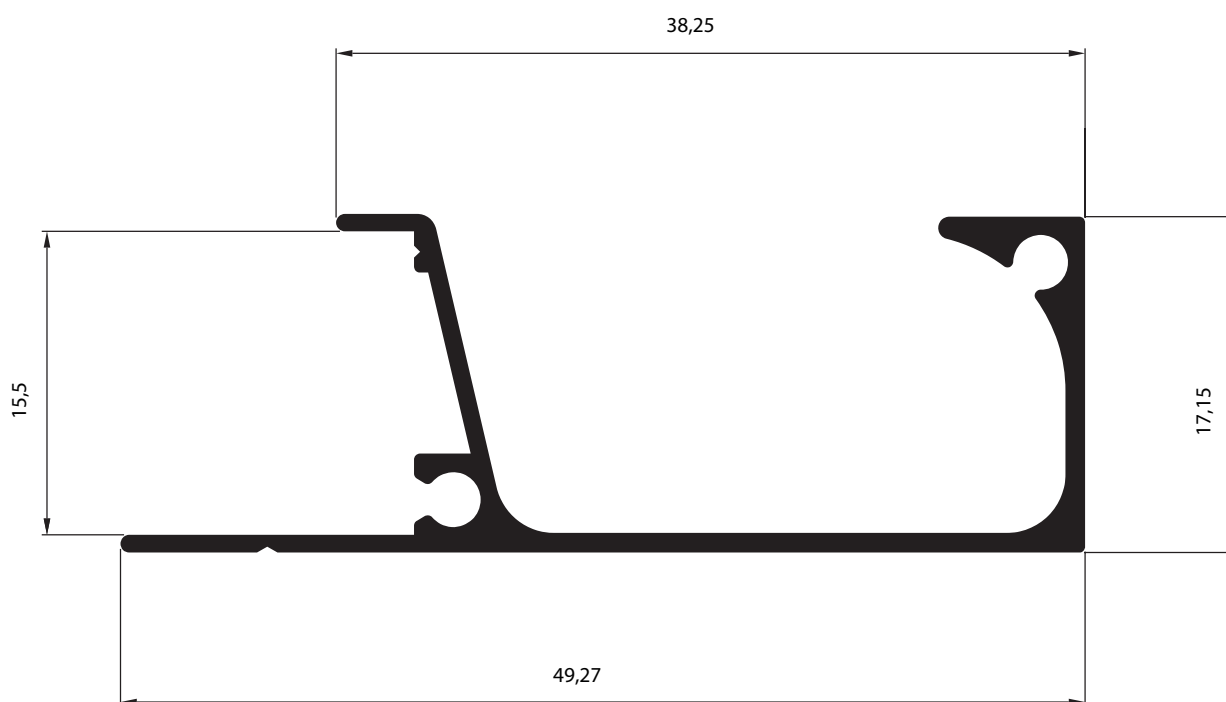


NI-4028
0,322 kg/m

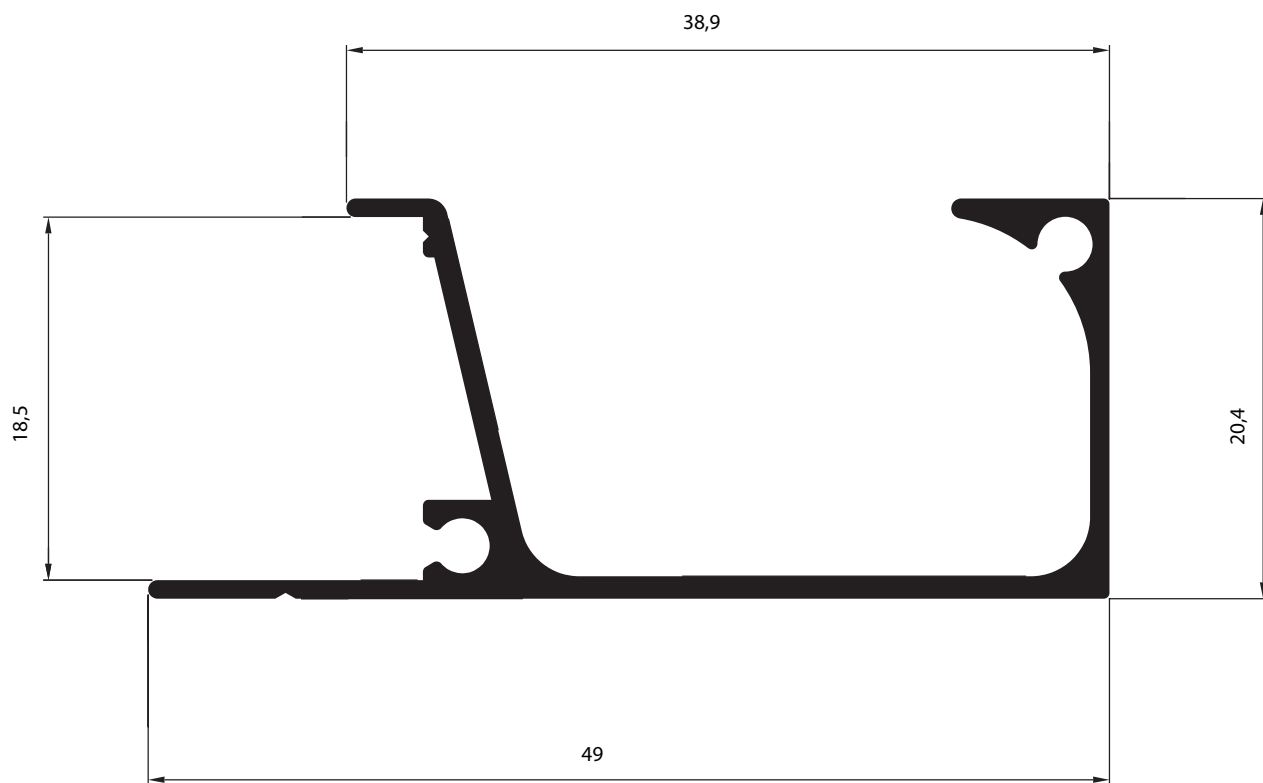




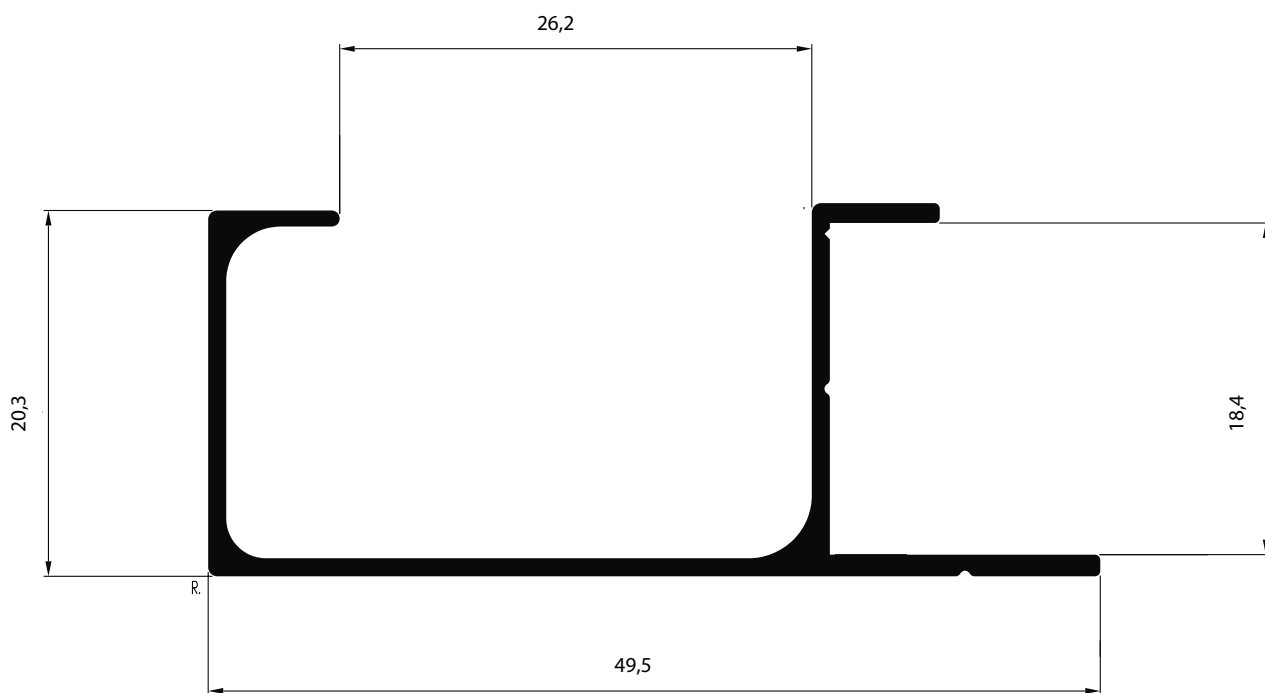
NI-4068
0,272 kg/m



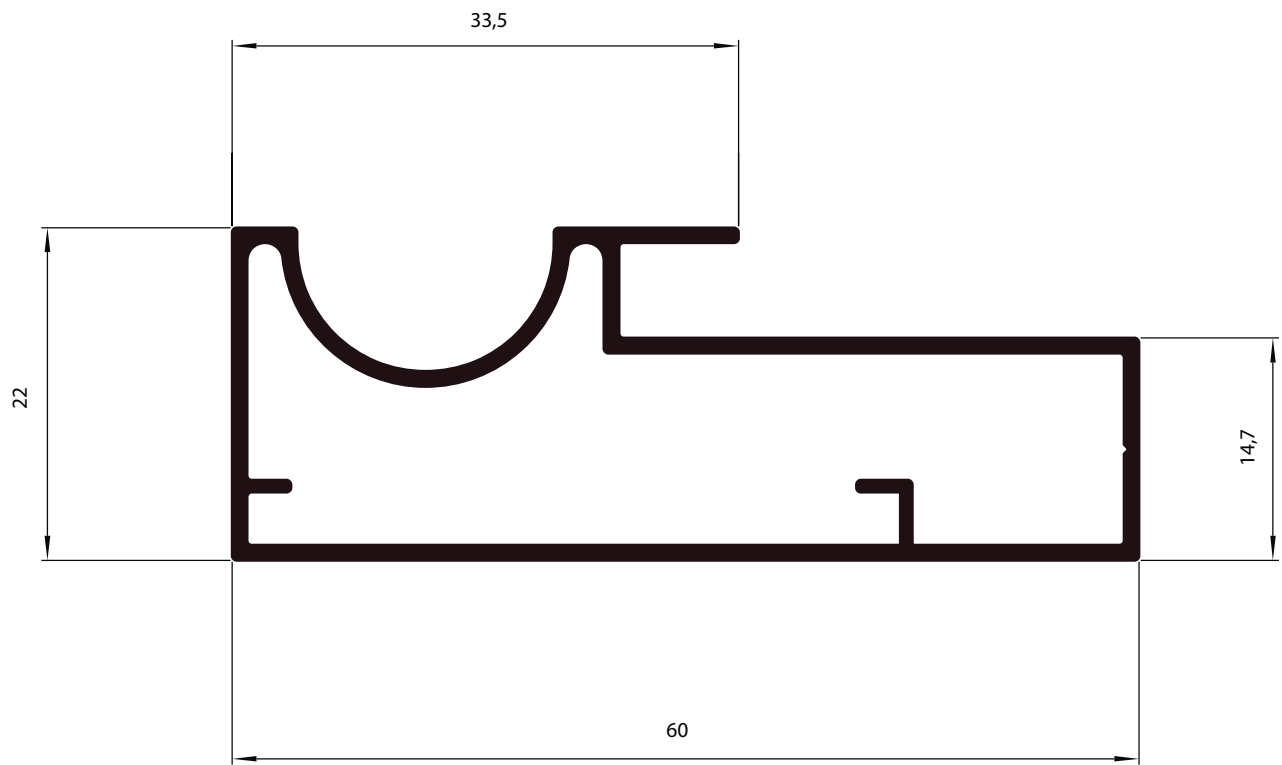
NI-4077
0,284 kg/m



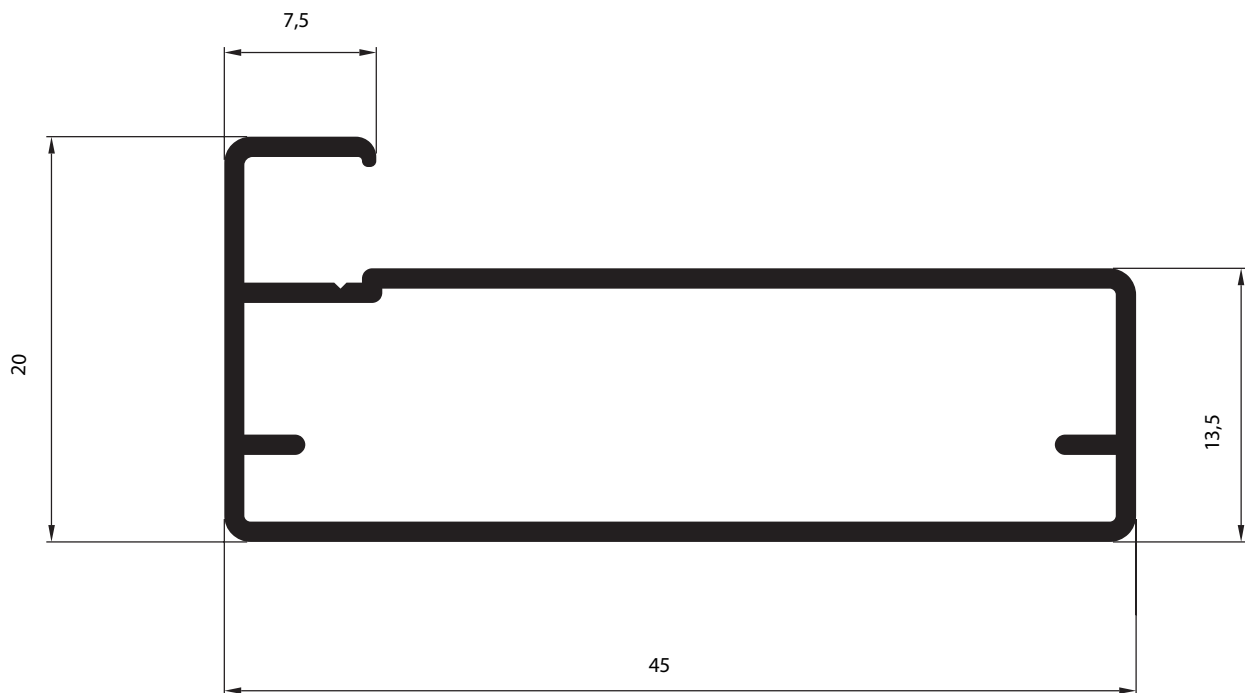
NI-4078
0,335 kg/m



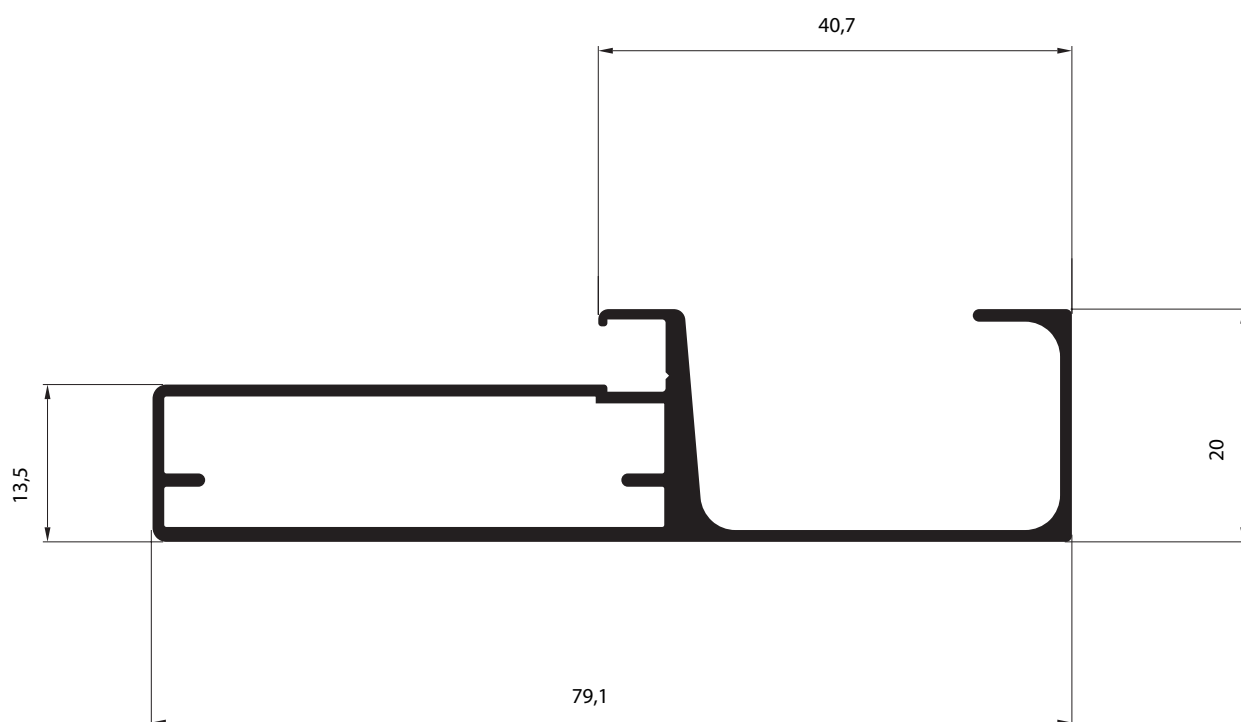
NI-4098
0,294 kg/m



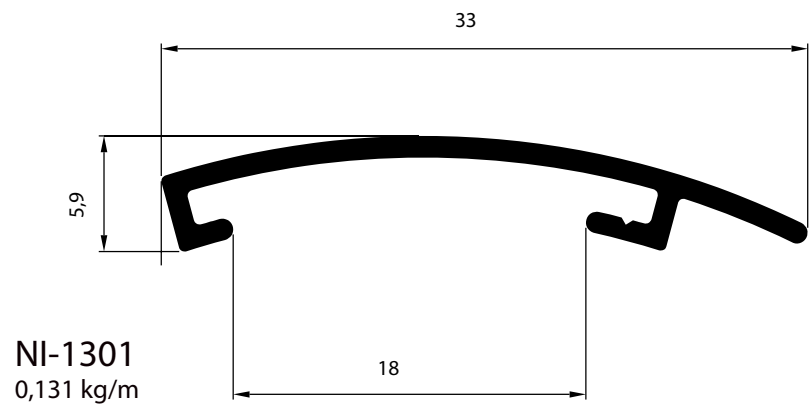
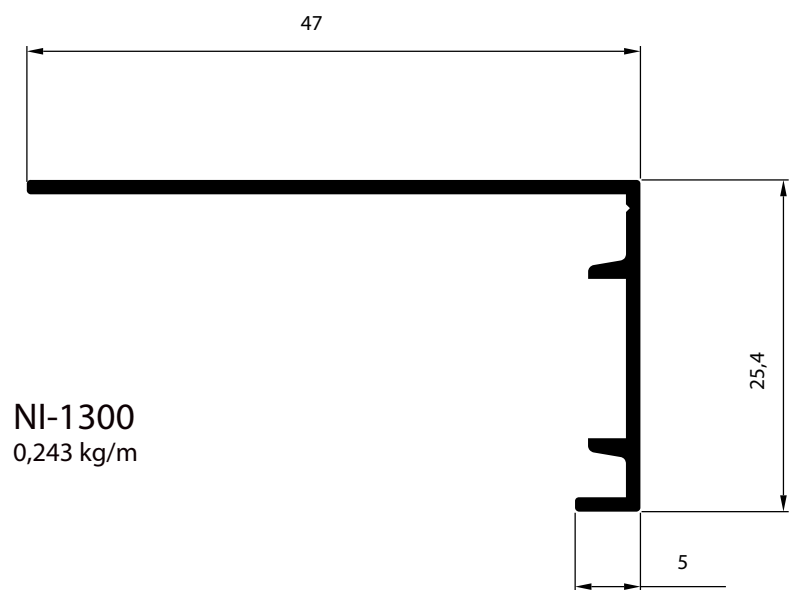
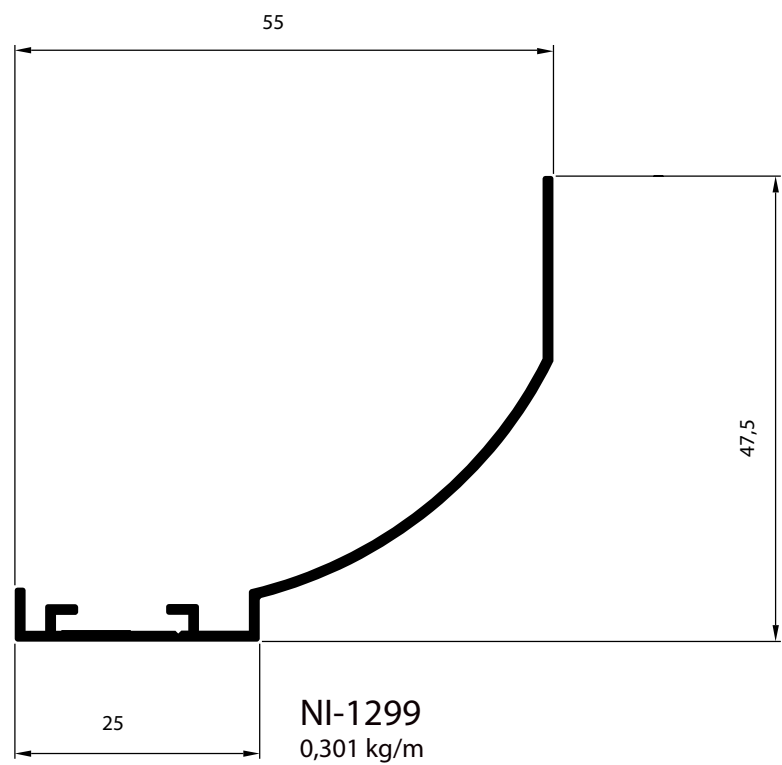
NI-7014
0,509 kg/m

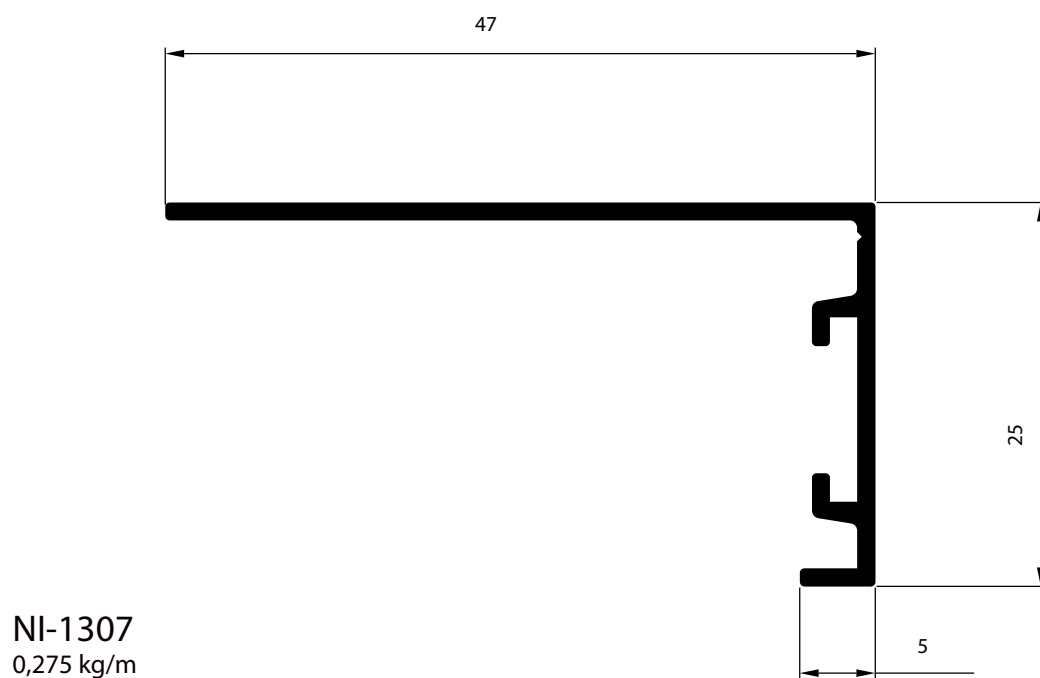
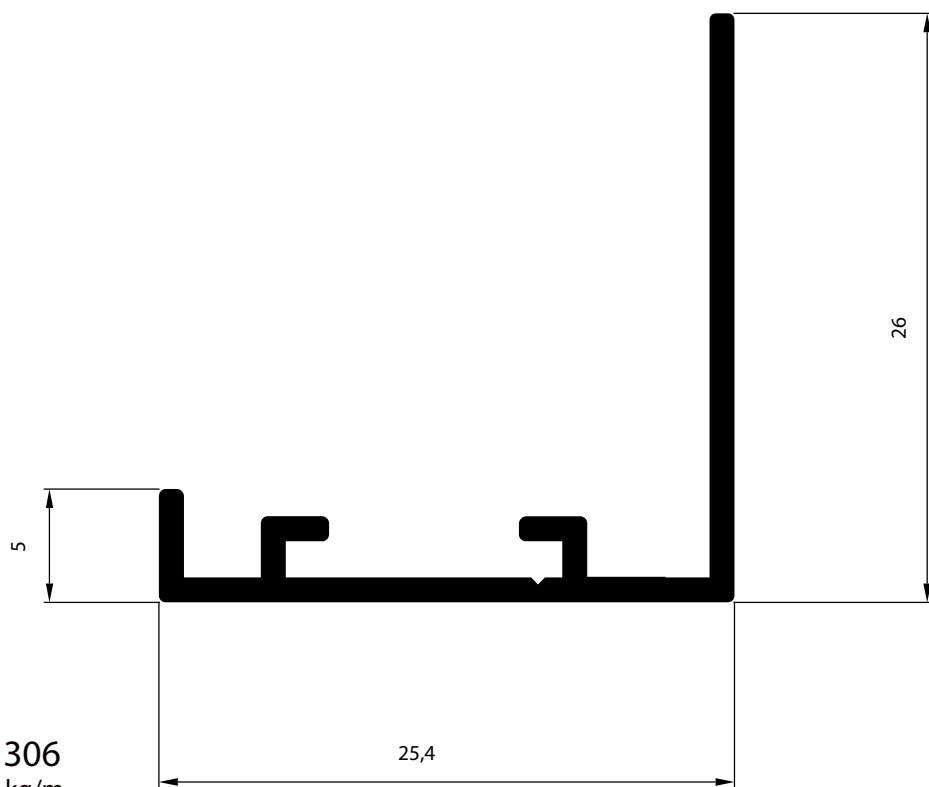


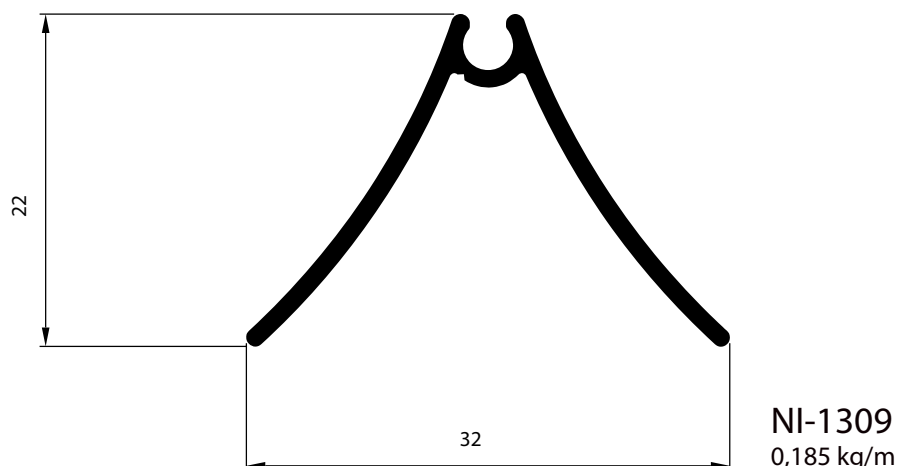
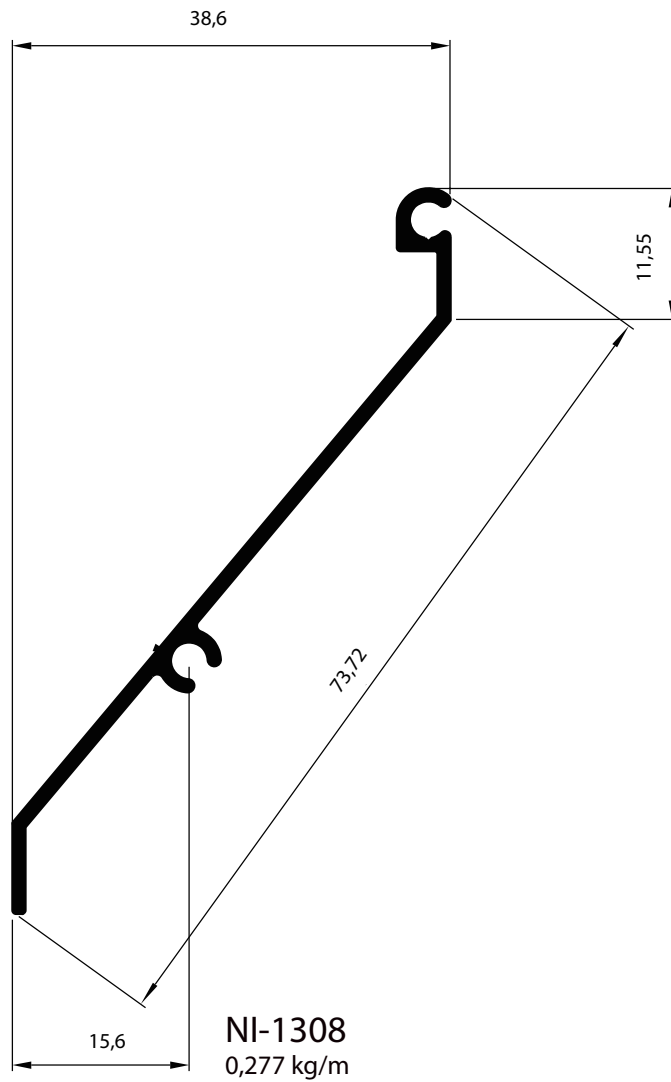
NI-7034
0,355 kg/m

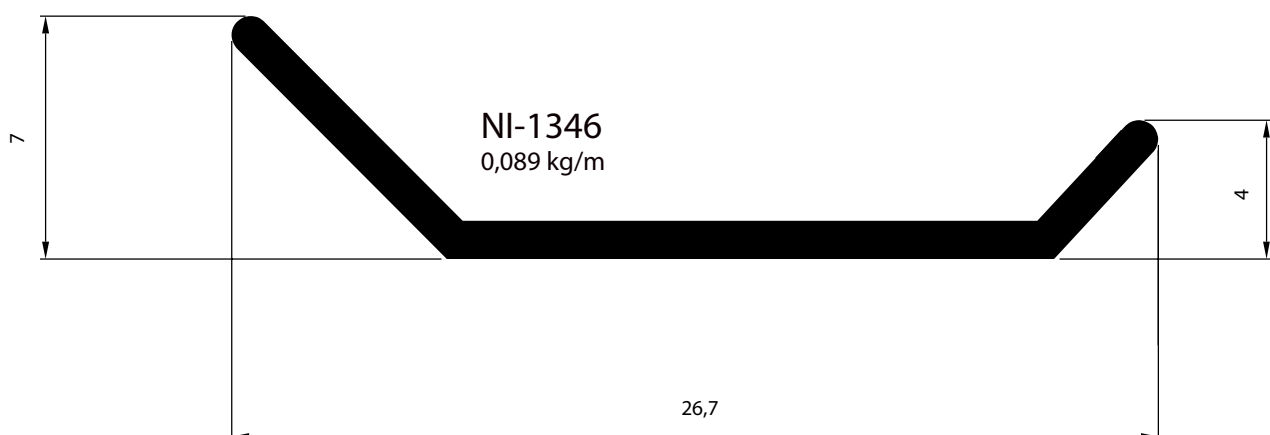
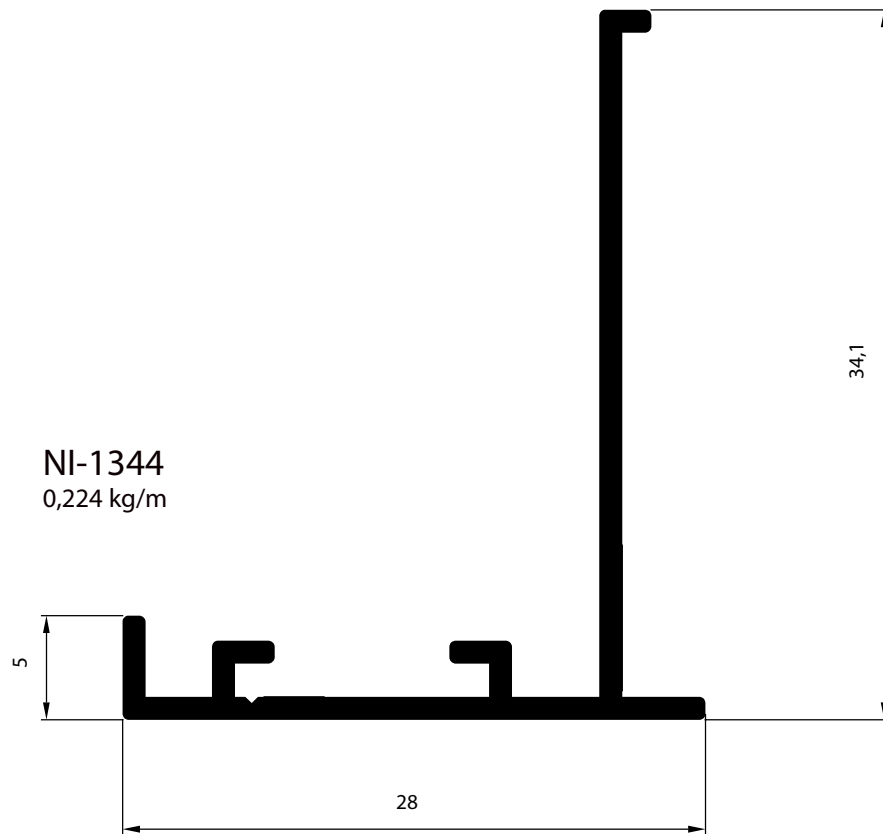
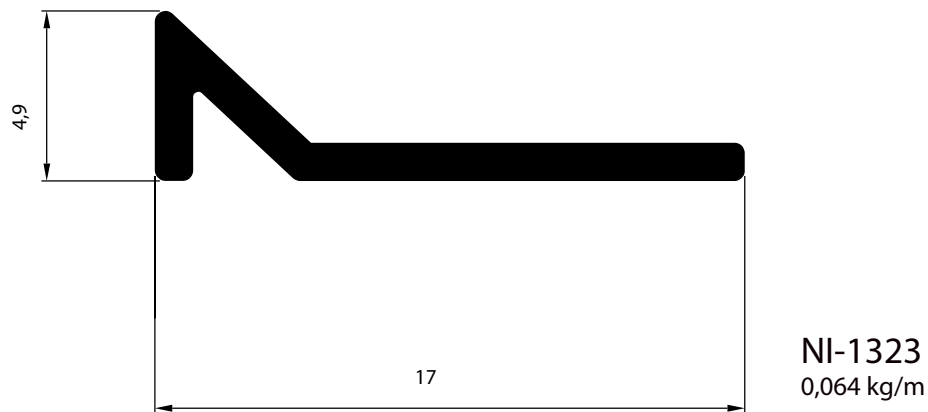


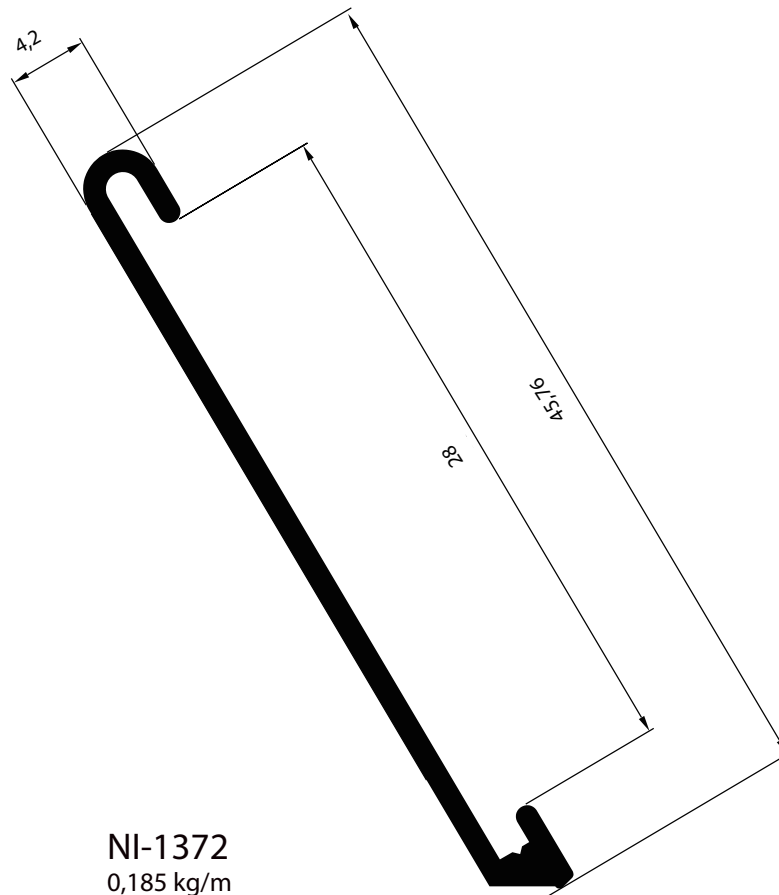
NI-7035
0,612 kg/m



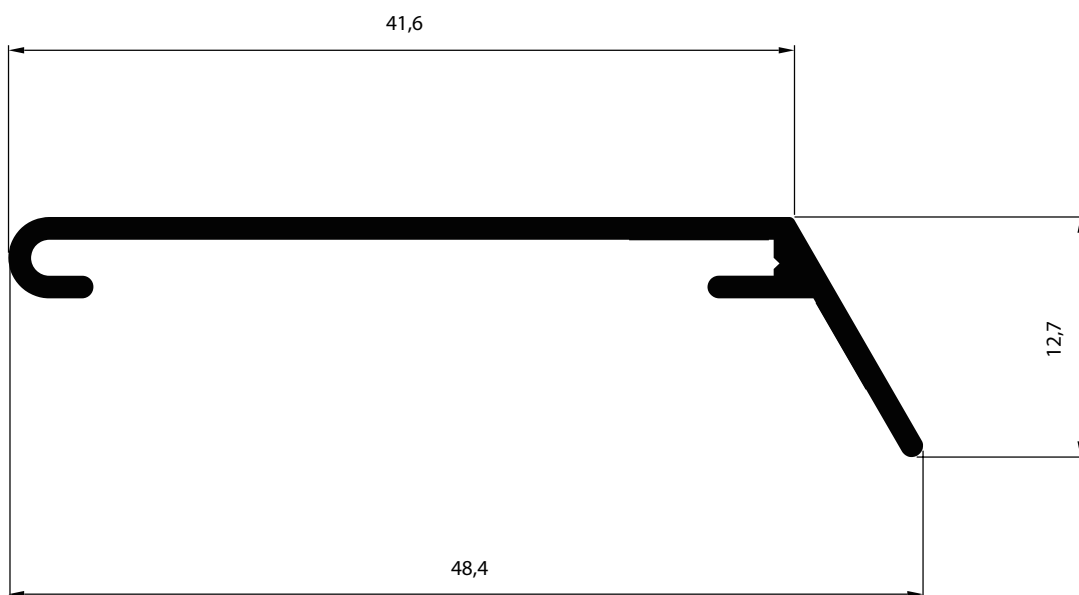




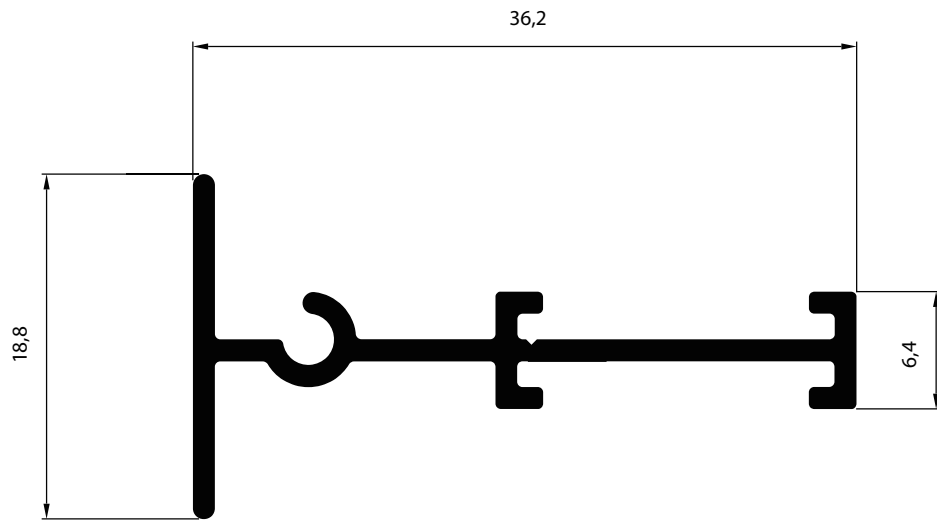




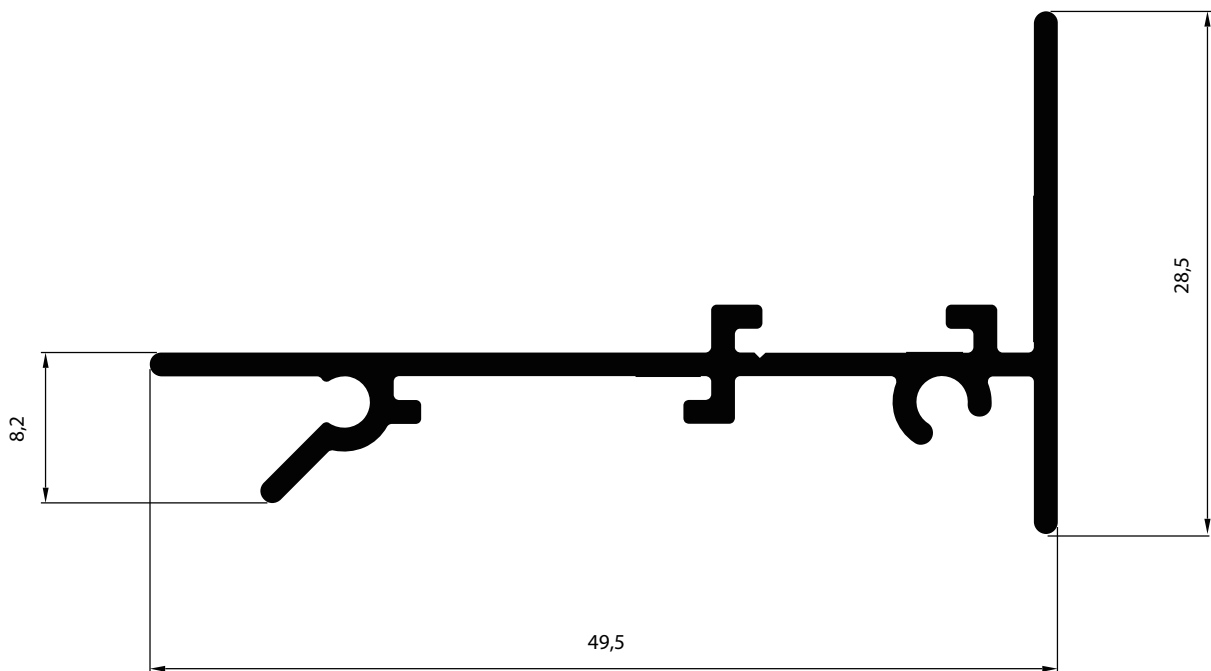
NI-1372
0,185 kg/m



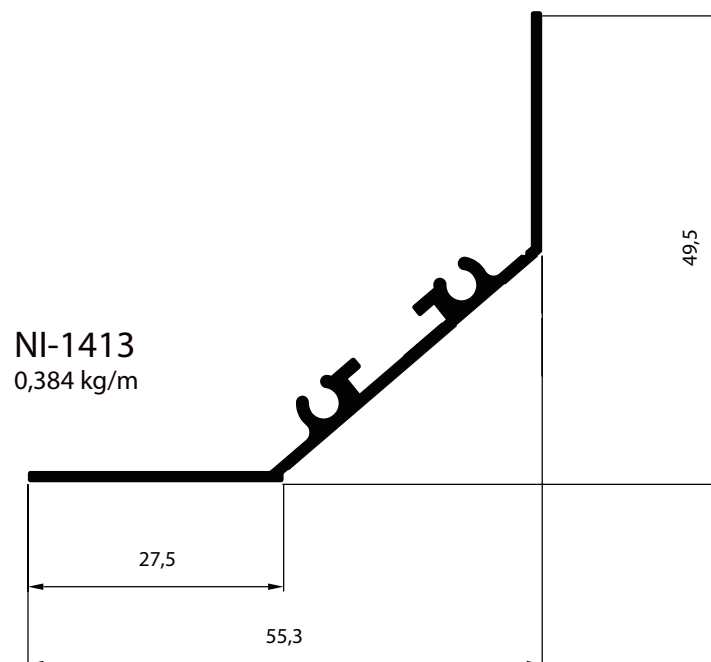
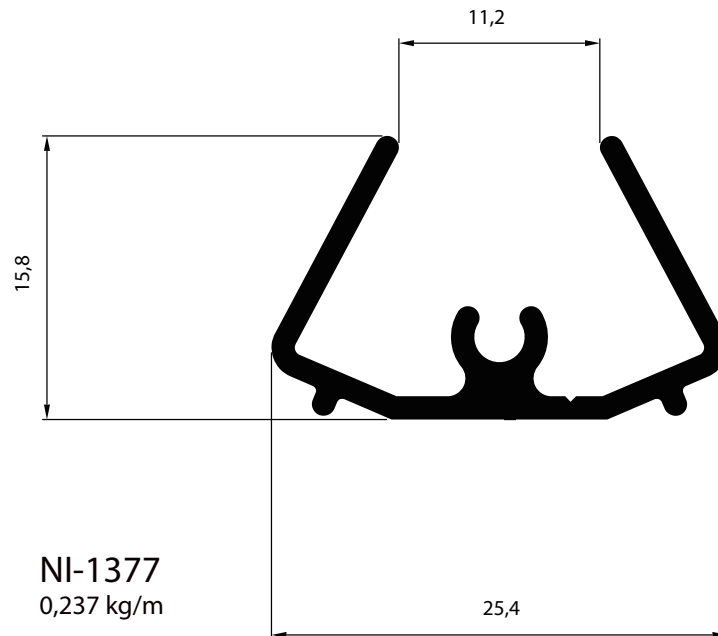
NI-1373
0,215 kg/m

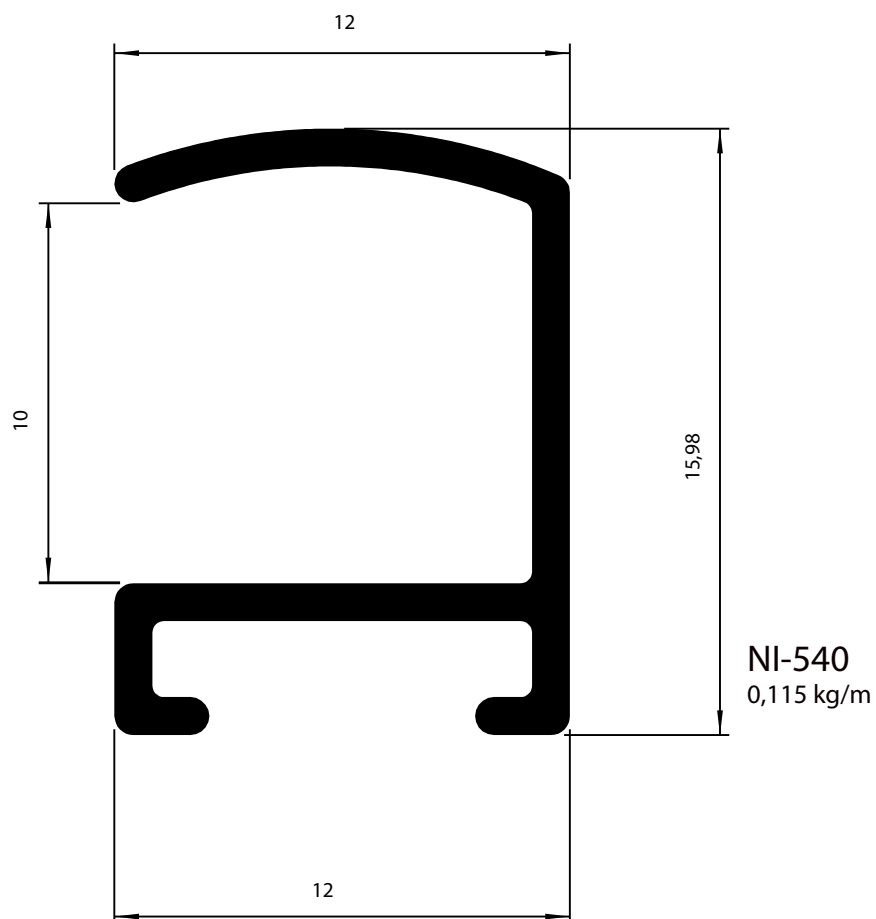
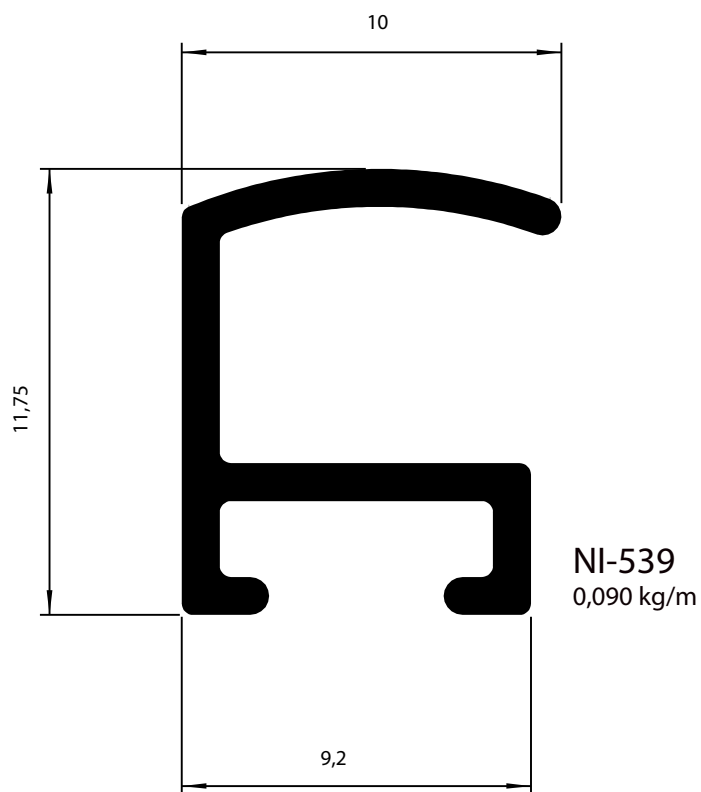


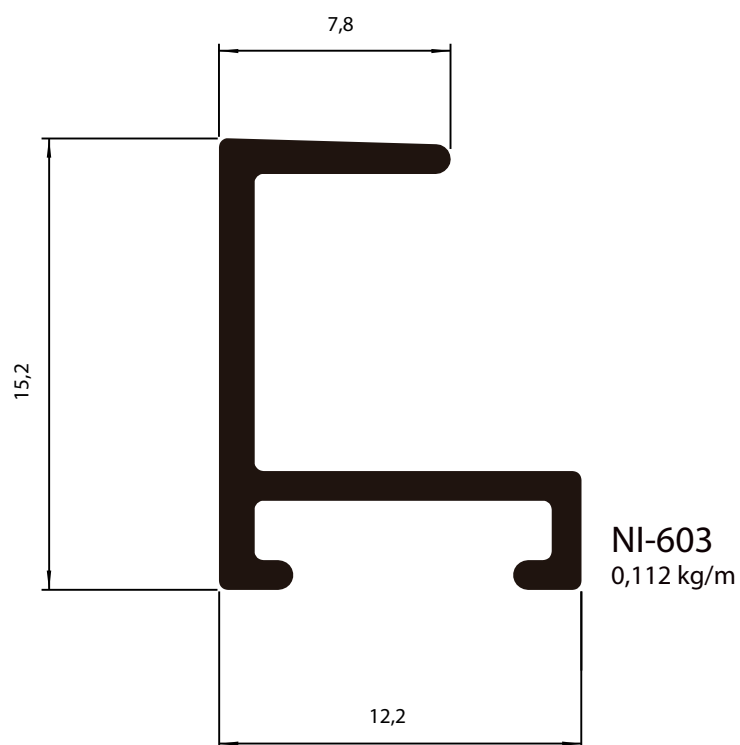
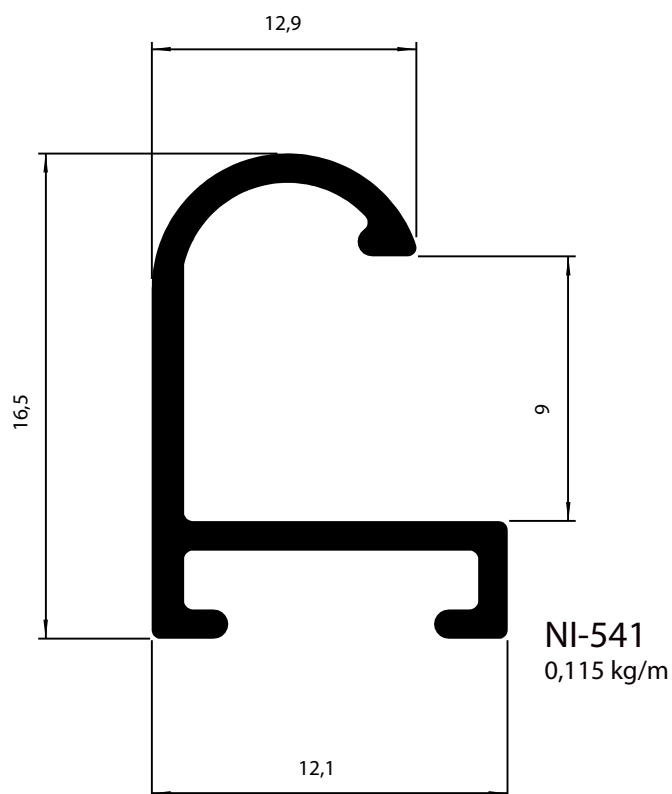
NI-1375
0,240 kg/m

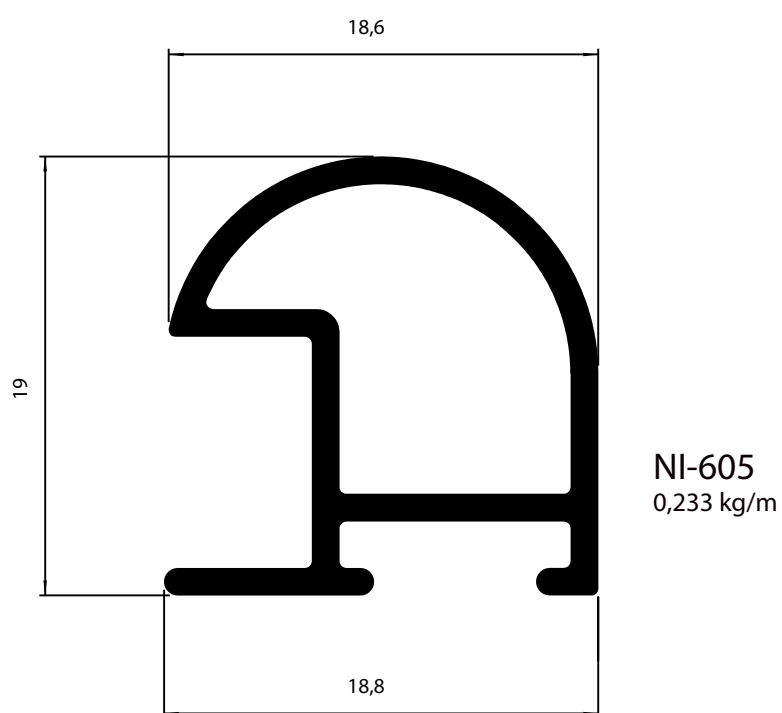
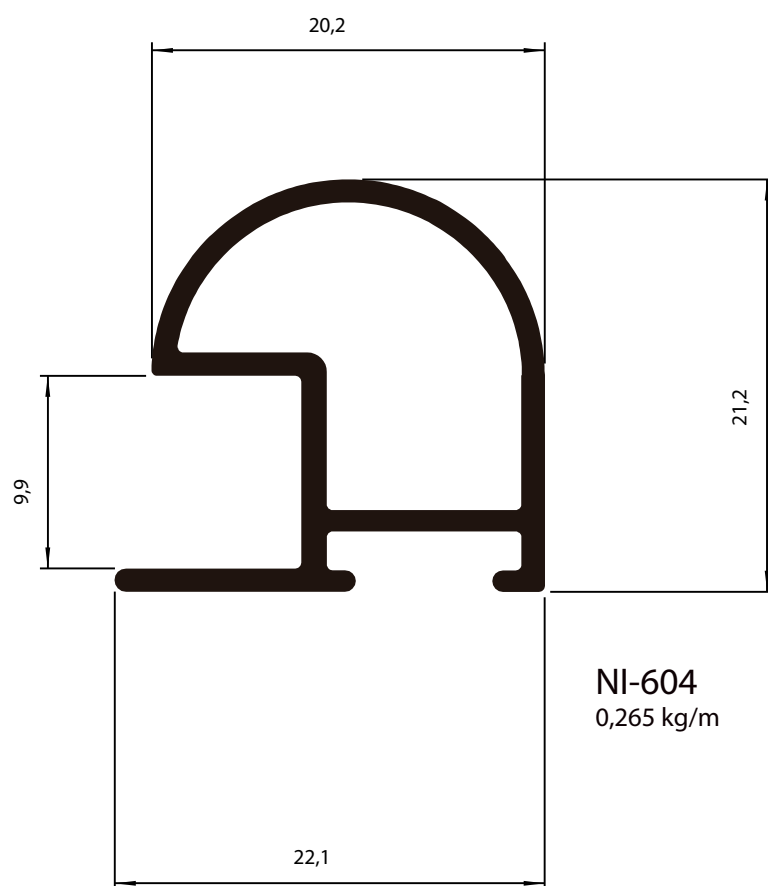


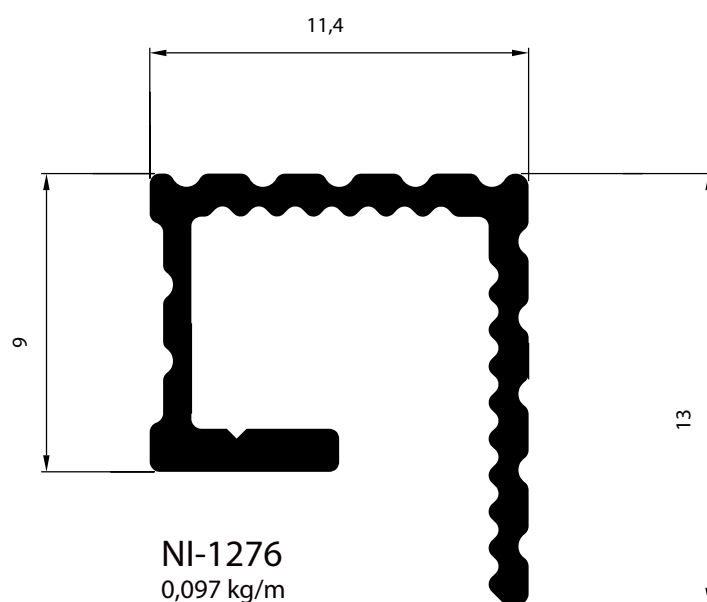
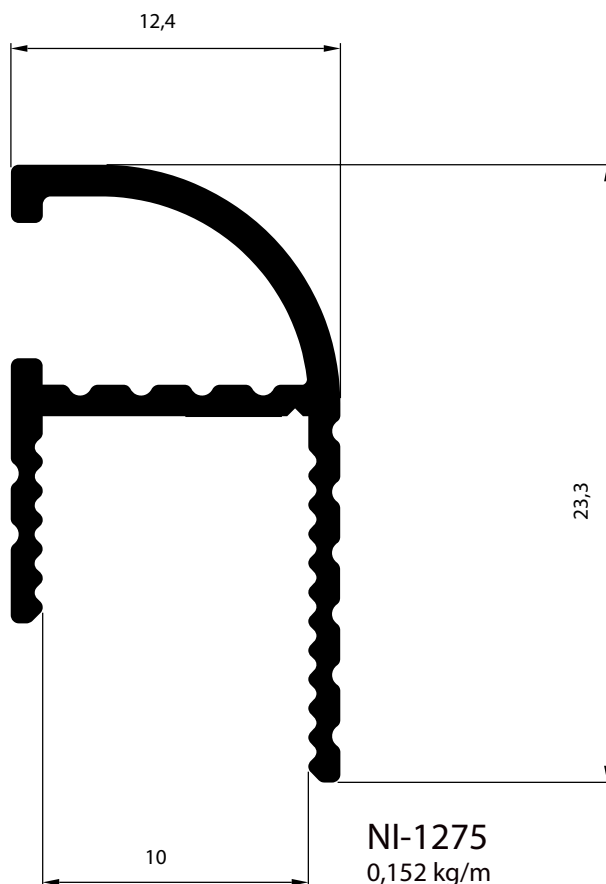
NI-1376
0,378 kg/m

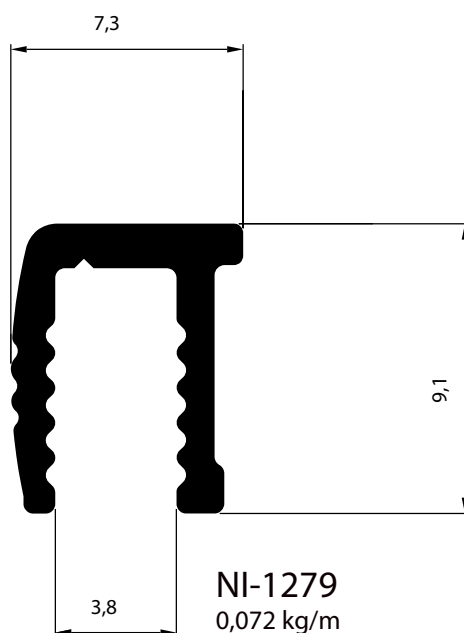
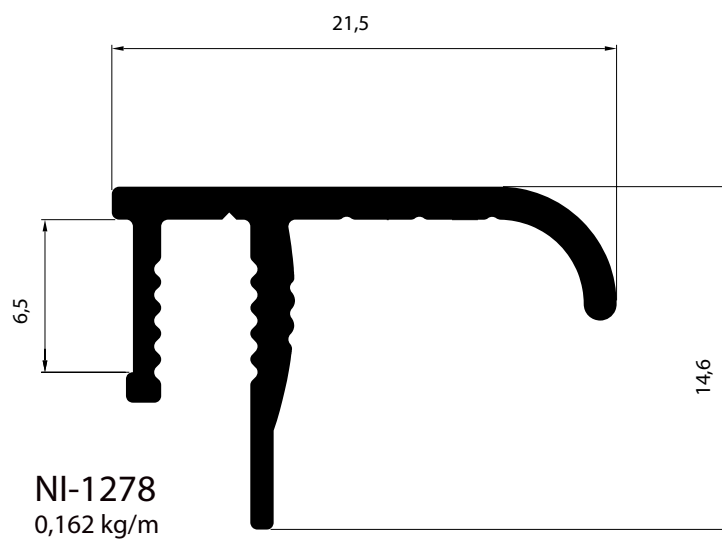
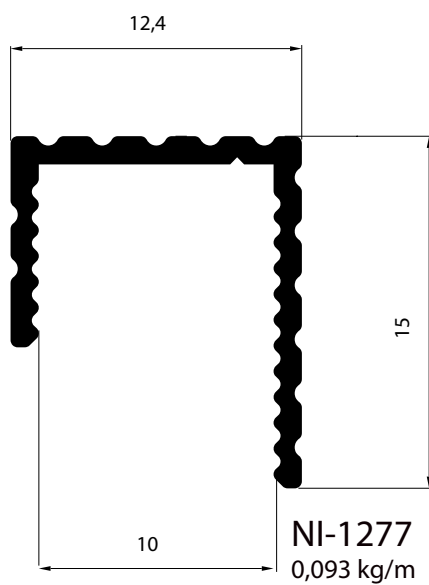


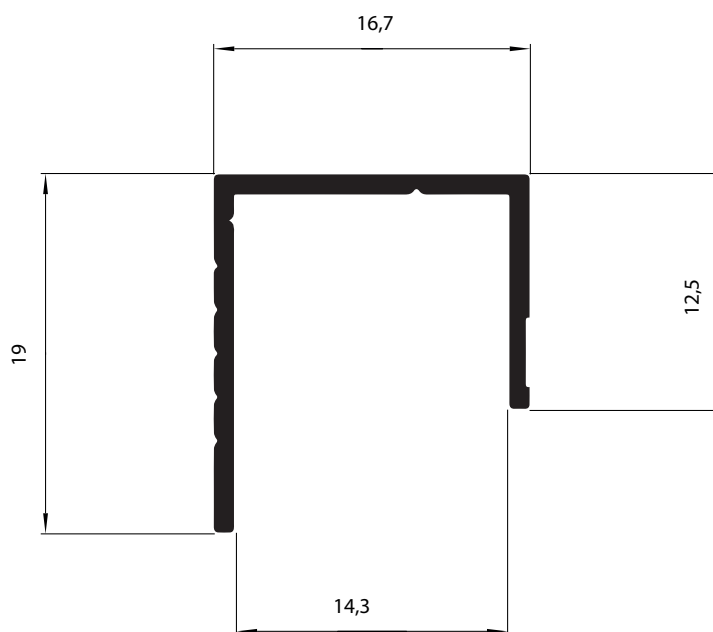




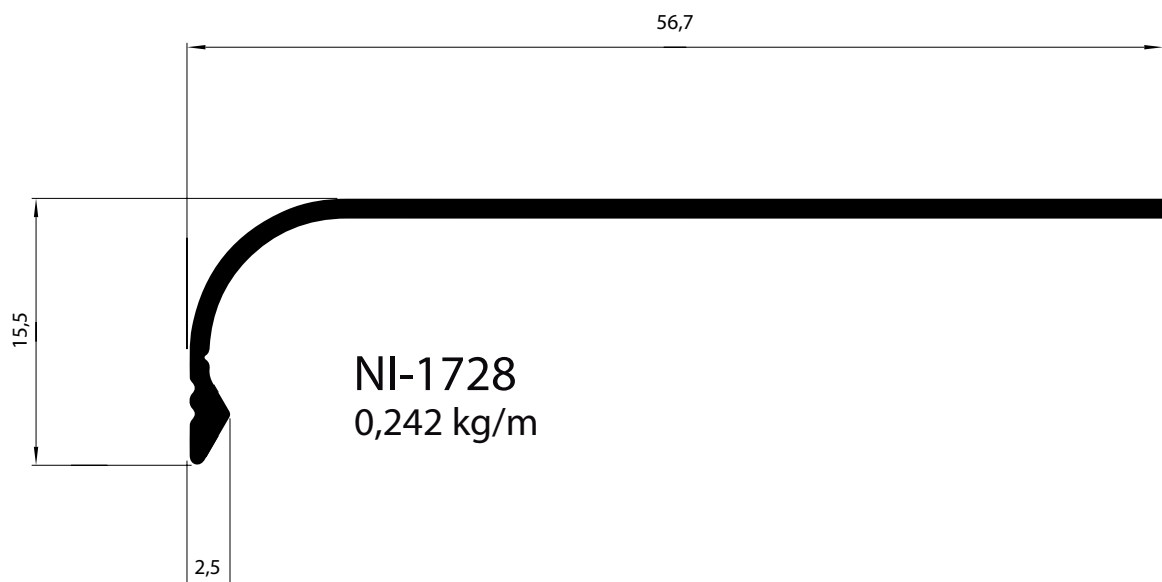








NI-1727
0,145 kg/m



NI-1728
0,242 kg/m



Vila Urga, 604, Vila Nova Bonsucesso, Guarulhos - SP
Fone: (11) 2436-8486 | alumax@alumax.ind.br | www.alumax.ind.br