Catálogo

2024/2025

# PERFIS

www.alpaaluminio.com.br

ALPA

ALUMÍNIO

ALPA
ALUMÍNIO

# ALPA
ALUMÍNIO

## A Empresa

A Alpa Alumínio, empresa localizada na cidade de Caxias do Sul, vem atuando desde 2002 nos serviços de distribuição e comercialização de perfis de Alumínio.

Possui em sua equipe profissionais técnicos e experientes com mais de 40 anos de atuação. Seu portifólio amplo atende os segmentos Metal-Mecânico e de Construção Civil.

Nos mais de 4000 $m^2$ de área de armazém encontra-se um estoque a pronta entrega nas cores branco, preto e amadeirado.

Hydro

# ALPA
ALUMÍNIO

## Soluções em Alumínio de Qualidade Mundial

## A Parceria

Seguindo o perfil de uma empresa inovadora, a Alpa Alumínio buscou parceria com a Hydro Extrusion Brasil S/A, uma empresa de atuação global, com mais de 100 anos de história e a responsabilidade de ser a maior fabricante mundial de perfis de alumínio.

A Parceria Hydro oferece ao mercado produtos desenvolvidos e produzidos com o mais alto padrão de qualidade e tecnologia, garantindo desempenho, segurança e total satisfação nos resultados.

Hydro

# ALPA
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## Vantagens

Os sistemas oferecidos pela Alpa Alumínio neste catálogo oferecem perfis inteligentes, cuidadosamente desenvolvidos para se obter os melhores resultados em todos os seus níveis com garantia da Hydro.

## Conheça algumas vantagens:

**Inovação:** design arrojado e moderno com formas arredondadas, tornando as linhas harmônicas, atendendo às diferentes exigências da arquitetura moderna.

**Desempenho:** perfis desenvolvidos com garantia de comportamento estrutural adequado a qualquer tipo de projeto, seja ele econômico ou de alto padrão.

**Conforto:** conjunto de vedações com comportamento superior em relação a permeabilidade do ar, estanqueidade da água e isolamento termoacústico acima das normas exigidas pela construção civil.

**Responsabilidade:** compromisso total com o cliente, atendendo às necessidade do mercado através de linhas homologadas e certificadas pelas normas da construção civil.

Hydro

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# BARRA CHATA
# CANTONEIRAS
# TUBOS E VERGALHÕES

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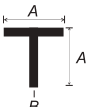
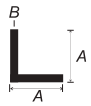
## PERFIS "T"




| Referência | Tamanho (mm) | Tamanho (polegadas) A | B | Espessura (mm) | Peso (kg/m) |
|---|---|---|---|---|---|
| PT 009 | 25,40 x 25,40 | 1" | 1/16" | 1,58 | 0,211 |

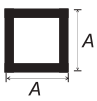
## CANTONEIRAS




| Referência | Tamanho (mm) | Tamanho (polegadas) A | B | Espessura (mm) | Peso (kg/m) |
|---|---|---|---|---|---|
| CT 001 | 12,70 x 12,70 | 1/2" | 1/16" | 1,59 | 0,102 |
| CT 063 | 12,70 x 12,70 | 1/2" | - | 1,00 | 0,065 |
| CT 005 | 15,88 x 15,88 | 3/4" | 1/16" | 1,59 | 0,130 |
| CT 007 | 19,05 x 19,05 | 3/4" | " 1/16" | 1,59 | 0,157 |
| CT 013 | 25,40 X25,40 | - | - | 1,20 | 0,175 |
| CT 016 | 25,40 x25,40 | 1" | 1/16" | 1,59 | 0,210 |
| CT 019 | 25,40 x25,40 | 1" | 1/8" | 3,18 | 0,410 |
| CT 022 | 31,75 x 31,75 | 1. ¼" | 1/8" | 3,18 | 0,519 |
| CT 047 | 38,10 x 38,10 | 1.½" | - | 1,57 | 0,318 |
| CT 032 | 50,80 x50,80 | 2" | 1/8" | 3,18 | 0,847 |
| Cantoneiras com abas desiguais | | | | | |
| CT 305 | 31,70 x 50,00 | - | - | 1,59 | 0,346 |
| CT 209 | 32,00 x16,20 | - | - | 1,20 | 0,153 |




## TUBOS QUADRADOS




| Referência | Tamanho (mm) | Tamanho (polegadas) A | B | Espessura (mm) | Peso (kg/m) |
|---|---|---|---|---|---|
| TQ 004 | 19,05 x 19,05 | 3/4" | - | 1,00 | 0,196 |
| TQ 006 | 19,00 x 19,00 | - | - | 0,80 | 0,948 |
| TQ 009 | 25,40 x25,40 | - | - | 1,58 | 2,640 |
| TQ 023 | 25,40 x 25,40 | 1" | - | 1,00 | 0,264 |
| TQ 013 | 38,10 x 38,10 | 1.½" | - | 1,10 | 0,480 |
| TQ 014 | 38,10 x 38,10 | 1.½" | 1/16" | 1,58 | 0,625 |
| PC 055 | 50,80 x 50,80 | - | - | 1,50 c/ reforço | 0,927 |
| TQ 017 | 50,80 x 50,80 | 2" | - | 1,98 | 1,048 |
| TQ 017P | 50,80 x 50,80 | 2" | - | 1,50 | 0,817 |
| PC 007 | 76,20 x 76,20 | 3" | - | 1,40 c/ reforço | 1,250 |
| 73034 | 80,00 x 80,00 | - | - | 1,80 | 1,522 |
| 73034P | 80,00 X 80,00 | - | - | 1,50 | 1,271 |
| TQ 034P | 100,00 x 100,00 | - | - | 1,60 | 1,706 |
| TQ 030 | 30,00 x 30,00 | - | - | 1 | 0,314 |
| TQ 034 | 101,60 x 101,60 | 4" | - | 2,50 | 2,686 |

## TUBOS RETANGULARES




| Referência | Tamanho (mm) | Tamanho (polegadas) A | B | Espessura (mm) | Peso (kg/m) |
|---|---|---|---|---|---|
| TG 074 | 25,40 X 12,70 | 1" | 1/2" | 1,59 | 0,299 |
| TG 074P | 25,40 X 12,70 | 1" | 1/2" | 1,00 | 0,195 |
| TG 004 | 50,80 X 12,70 | 2" | 1/2" | 1,58 | 0,517 |
| TG 073 | 50,80 X 25,40 | 2" | 1" | 1,00 | 0,402 |
| PC 002 | 50,80 X 25,40 | 2" | 1" | 1,20 c/reforço | 0,660 |
| PC 004 | 50,80 X 38,10 | 2" | 1. ½" | 1,50 c/reforço | 0,755 |
| PC 001 | 70,00 X 35,00 | - | - | 1,20 c/reforço | 0,727 |
| TG 013 | 76,20 X 25,40 | 3" | 1" | 1,70 | 0,905 |
| PC 003 | 76,20 X 38,10 | 3" | 1. ½" | 1,50 c/reforço | 1,105 |
| PC 003P | 76,20 X 38,10 | 3" | 1. ½" | 1,20 c/reforço | 0,967 |
| TG 014 | 76,20 X 38,10 | 3" | 1. ½" | 1,40 | 0,846 |
| TG 072P | 101,60 X 50,80 | 4" | 2" | 1,30 | 1,090 |
| PC 072 | 101,60 X 50,80 | 4" | 2" | 1,50 c/reforço | 1,345 |
| TG 072 | 101,60 X 50,80 | 4" | 2" | 2,00 | 1,609 |
| 74559 | 152,40 X 50,80 | 6" | 2" | 3,00 | 3,195 |
| 74559A | 152,40 X 50,80 | 6" | 2" | 1,50 | 1,628 |

## BARRAS CHATAS




| Referência | Tamanho (mm) | Tamanho (polegadas) A | B | Espessura (mm) | Peso (kg/m) |
|---|---|---|---|---|---|
| BC 002 | 12,70 | 1/2" | 1/8" | 3,17 | 0,109 |
| BC 006 | 15,87 | 5/8" | - | 2,00 | 0,096 |
| BC 008 | 15,87 | 5/8" | 1/8" | 3,18 | 0,137 |
| BC 326 | 15,87 | 5/8" | - | 2,40 | 0,618 |
| BC 015 | 19,05 | 3/4" | 1/8" | 3,18 | 0,164 |
| BC 017 | 19,05 | 3/4" | 1/4" | 6,35 | 0,328 |
| BC 025 | 25,40 | 1" | 1/8" | 3,18 | 0,219 |
| BC 027 | 25,40 | 1" | 1/4" | 6,35 | 0,437 |
| BC0 27A | 25,40 | 1" | 1/4" | 6,35 | 0,437 |
| BC 050 | 38,10 | 1 ½" | 1/8" | 3,18 | 0,328 |
| BC 060 | 50,80 | 2" | 1/8" | 3,18 | 0,438 |
| BC 124 | 101,6 | 4" | 3/4" | 19,05 | 5,225 |
| BC 160 | 152,4 | 6" | 1" | 25,4 | 10,451 |
| BC412 | 41,27 | 1.5/8" | 5/8" | 15,87 | 1,826 |
| BC 17E | 19,05 | 3/4" | 1/4" | 6,35 | 0,327 |
| BC 508 | 50,80 | 2" | 3/4" | 19,05 | 1,350 |
| BC 632 | 63,50 | 2 1/2" | 1/2" | 12,70 | 1,125 |
| BC 633 | 63,50 | 2 1/2" | 1" | 25,40 | 2,251 |
| BC 634 | 63,50 | 2 1/2" | 3/4" | 19,05 | 1,688 |

## PERFIS "U"




| Referência | Tamanho (mm) | Tamanho (polegadas) A | B | Espessura (mm) | Peso (kg/m) |
|---|---|---|---|---|---|
| 42402 | 11,00 X 22,00 | - | - | 1,00 | 0,154 |
| 42403 | 14,00 X 22,00 | - | - | 1,00 | 0,151 |
| PU 071 | 14,00 X 48,00 | - | - | 1,30 | 0,379 |
| PU 344 | 15,00 X 25,00 | - | - | 1,50 | 0,252 |
| PU 344P | 15,00 X 25,00 | - | - | 1,20 | 0,200 |
| PU 312 | 21,60 X 24,80 | - | - | 1,80 | 0,330 |
| PU 313 | 24,80 X 21,60 | - | - | 1,80 | 0,313 |
| PU 800 | 9,52 X 9,52 | 3/8" | 3/8" | 1,00 | 0,073 |
| PU 002 | 12,70 X 12,70 | 1/2" | 1/2" | 1,59 | 0,150 |
| PU 004 | 15,87 X 15,87 | 5/8" | 5/8" | 1,59 | 0,191 |

## TUBOS REDONDOS




Liga 6060 T6

| Referência | Tamanho (mm) | Tamanho (polegadas) A | Tamanho (polegadas) B | Espessura (mm) | Peso (kg/m) |
|---|---|---|---|---|---|
| TR 005 | 12,70 | 1/2" | 1/16" | 1,59 | 0,150 |
| TR 012 | 15,88 | 5/8" | - | 1,20 | 0,150 |
| TR 014 | 15,88 | 5/8" | 1/16" | 1,59 | 0,193 |
| TR 018 | 19,00 | - | - | 1,00 | 0,153 |
| TR 020 | 19,05 | 3/4" | 1/16" | 1,59 | 0,236 |
| TR 040 | 25,40 | 1" | 1/16" | 1,59 | 0,322 |
| TR 070 | 38,10 | 1 ½" | 1/16" | 1,59 | 0,493 |
| TR 098 | 38,10 | 2" | 1/16" | 1,59 | 0,665 |
| TR 135 | 76,20 | 3" | - | 2,00 | 1,263 |
| TR 161 | 101,60 | 4" | - | 2,00 | 1,694 |

Liga 6063 T64

| Referência | Tamanho (mm) | Tamanho (polegadas) | Espessura (mm) | Peso (Kg/m) |
|---|---|---|---|---|
| TRP020 | 19,05 | 3/4X1/16" | 1,58 | 0,234 |
| TRP021 | 22,23 | 7/8X1/16" | 1,58 | 0,277 |
| TRP022 | 38,10 | 1.1/2X1/16" | 1,58 | 0,489 |
| TRP033 | 25,40 | 1X1/16" | 1,58 | 0,321 |
| TRP034 | 31,75 | 1.1/4X1/16" | 1,58 | 0,406 |

## VERGALHÕES REDONDOS




Liga 6262E T6

| Referência | Tamanho (mm) | Tamanho (polegadas) | Peso (Kg/m) |
|---|---|---|---|
| VRP127 | 12,70 | 1/2" | 0,342 |
| VRP158 | 15,88 | 5/8" | 0,553 |
| VRP190 | 19,05 | 3/4" | 0,795 |
| VRP222 | 22,23 | 7/8" | 1,083 |
| VRP254 | 25,40 | 1" | 1,436 |
| VRP317 | 31,75 | 1.1/4" | 2,140 |
| VRP349 | 34,92 | 1.3/8" | 2,672 |
| VRP381 | 38,10 | 1.1/2" | 3,182 |
| VRP444 | 44,45 | 1.3/4" | 4,331 |
| VRP476 | 47,62 | 1.7/8" | 4,971 |
| VRP508 | 50,80 | 2" | 5,657 |
| VRP 825 | 82,55 | 3.1/4" | 14,451 |

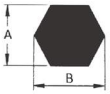
## VERGALHÕES REDONDOS




Liga 6351 T6

| Referência | Tamanho (mm) | Tamanho (polegadas) | Peso (Kg/m) |
|---|---|---|---|
| VR 001 | 4,55 | - | 0,044 |
| VR 002 | 6,35 | 1/4" | 0,066 |
| VR 002A | 6,35 | 1/4" | 0,066 |
| VR 004 | 7,93 | 5/16" | 0,133 |
| VR 004-D | 7,93 | 5/16" | 0,133 |
| VR 005 | 9,53 | 3/8" | 0,190 |
| VR 061 | 12,00 | 43/81" | 0,305 |
| VR 010 | 12,70 | 1/2" | 0,343 |
| VR 063 | 15,87 | 5/8" | 0,534 |
| VR 016 | 19,05 | 3/4" | 0,770 |
| VR 016-D | 19,05 | 3/4" | 0,770 |
| VR 018 | 22,22 | 7/8" | 1,047 |
| VR 020 | 25,40 | 1" | 1,368 |
| VR 023 | 31,75 | 1.1/4" | 2,138 |
| VR 024 | 34,92 | 1.3/8" | 2,586 |
| VR 025 | 38,10 | 1.1/2" | 3,078 |
| VR 027 | 41,28 | 1.5/8" | 3,610 |
| VR 028 | 44,45 | 1.3/4" | 4,190 |
| VR 029 | 50,80 | 2" | 5,472 |
| VR 033 | 63,50 | 2.1/2" | 8,551 |
| VR 035 | 69,85 | 2.3/4" | 10,346 |
| VR 036 | 76,20 | 3" | 12,312 |
| VR 043 | 82,55 | 1.3/4" | 14,450 |
| VR 038 | 101,60 | 4" | 21,889 |
| VR 040 | 127,00 | 5" | 34,203 |
| VR 045 | 152,40 | 6" | 49,252 |
| VR 150 | 203,20 | 8" | 89,500 |

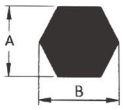
## VERGALHÕES SEXTAVADOS




Liga 6351 T6E

| Referência | Tamanho (mm) | Tamanho (polegadas) | Peso (Kg/m) |
|---|---|---|---|
| VSP 002 | 19,05 | 3/4" | 0,849 |
| VSP 003 | 22,23 | 7/8" | 1,155 |
| VSP 004 | 12,70 | 1/2" | 0,38 |
| VSP 005 | 25,40 | 1" | 1,509 |
| VSP 006 | 31,75 | 1.1/4" | 2,357 |
| VSP 112 | 11,11 | 7/16" | 0,300 |
| VSP 096 | 9,53 | 3/8" | 0,220 |

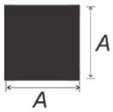
## VERGALHÕES SEXTAVADOS




Liga 6262E T6

| Referência | Tamanho (mm) | Tamanho (polegadas) | Peso (Kg/m) |
|---|---|---|---|
| VSP 095 | 9,53 | 3/8" | 0,220 |
| VSP 111 | 11,11 | 7/16" | 0,300 |
| VSP 127 | 12,70 | 1/2" | 0,391 |
| VSP 222 | 22,23 | 7/8" | 1,160 |
| VSP 254 | 25,40 | 1" | 1,559 |
| VSP 270 | 27,00 | 1.1/16" | 1,762 |
| VSP 317 | 31,75 | 1.1/4" | 2,356 |
| VSP 361 | 36,10 | 1.1/2" | 3,509 |
| VSP 476 | 47,62 | 1.7/8" | 5,481 |

## VERGALHÕES QUADRADOS




Liga 6262

| Referência | Tamanho (mm) | Tamanho (polegadas) | Peso (Kg/m) |
|---|---|---|---|
| VQ P222 | 22,23 | 7/8" | 1,378 |
| VQ P317 | 31,75 | 1.1/4" | 2,813 |
| | | | |

# CONTRAMARCOS
# ARREMATES
# CONEXÕES E CHUMBADOR

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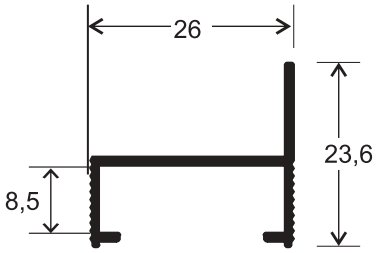
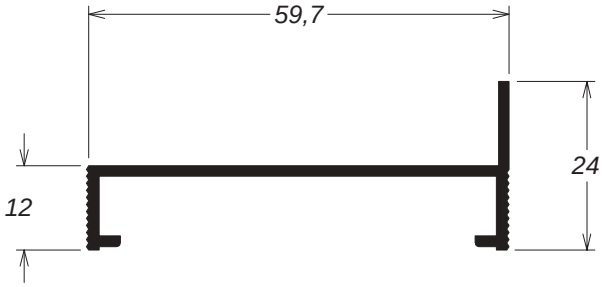
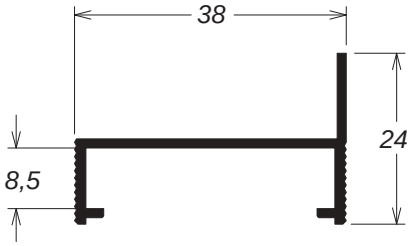


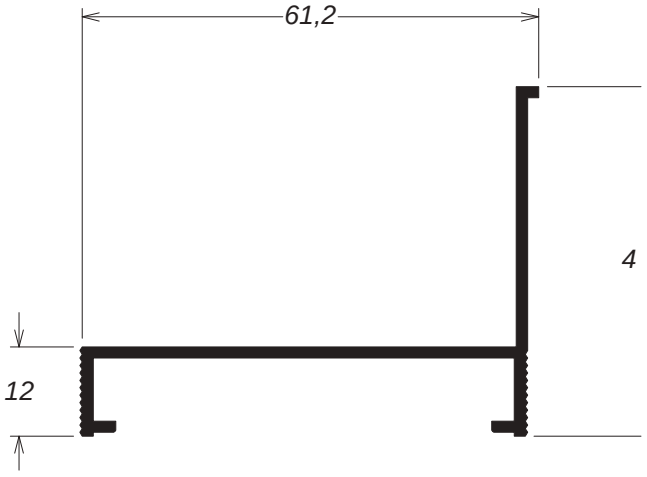

CM-200 - 0,198kg/m



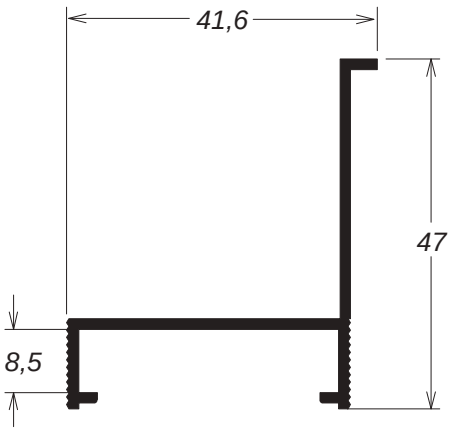

CM-174 - 0,409kg/m



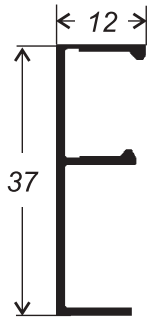

CM-060 - 0,276kg/m



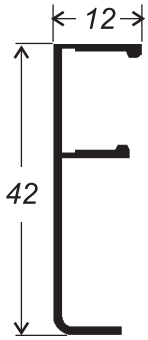

CM-173 - 0,509kg/m



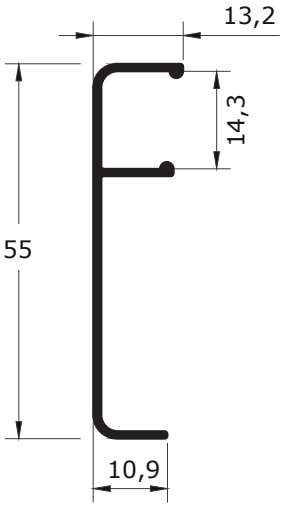

CM-098 - 0,380kg/m



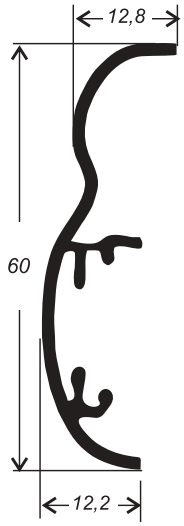

MP-347 - 0,202kg/m



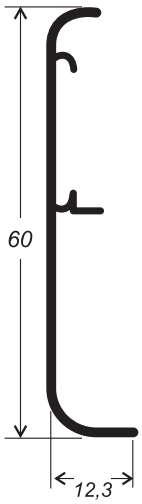

MN-014 - 0,214kg/m



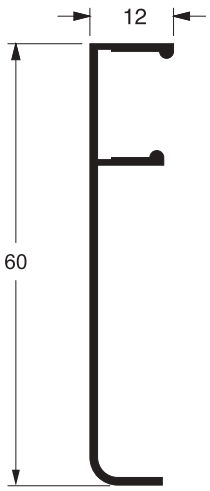

13-1049 - 0,282kg/m



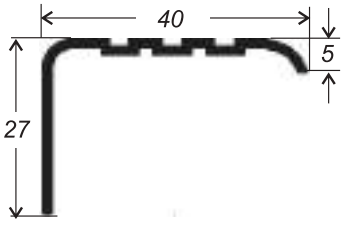

13-1045 - 0,334kg/m



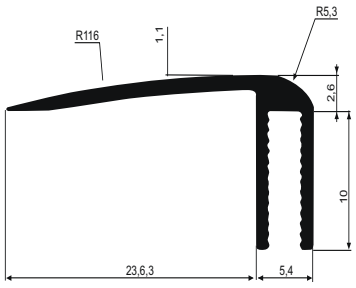

13-1046 - 0,292kg/m



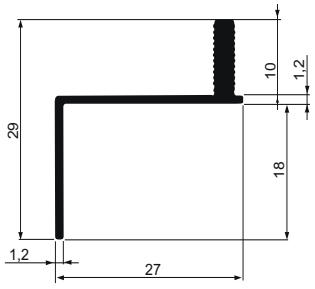

13-1047 - 0,288kg/m



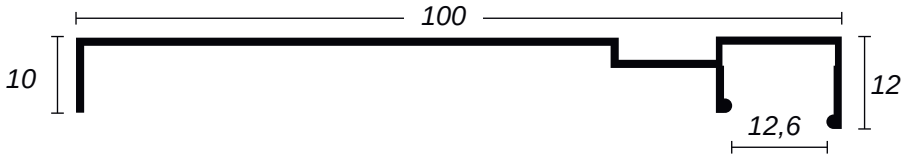

ME-013 - 0,267kg/m



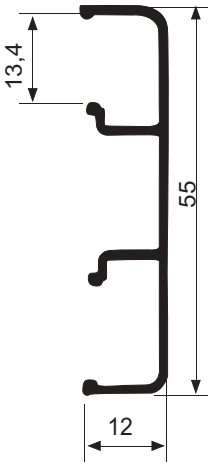

ALP-1022 - 0,168 Kg/m



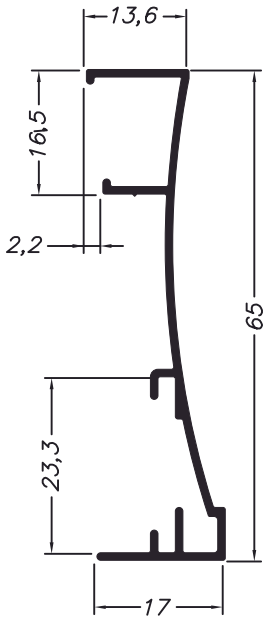

ALP-1023 - 0,239 Kg/m



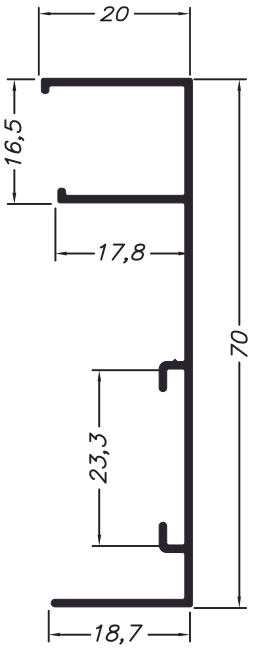

13-1048 - 0,430kg/m
Arremate / Rodapé



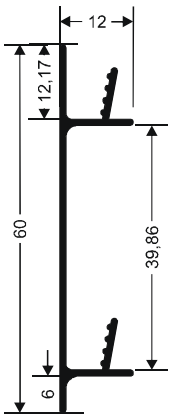

ALP-349 - 0,326 Kg/m



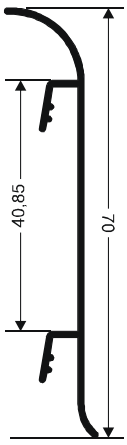

13-1050 - 0,332kg/m



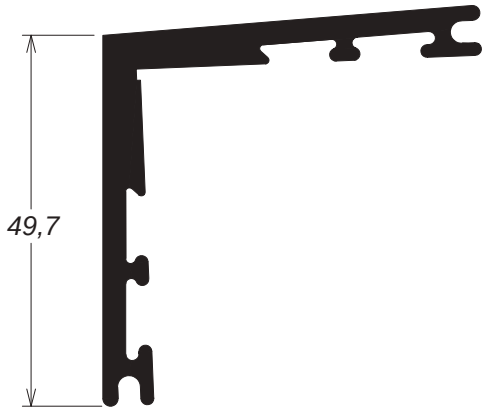

13-1051 - 0,395kg/m



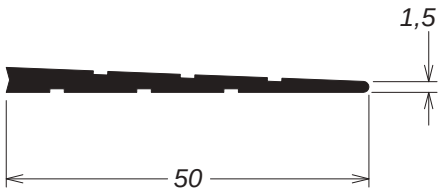

ROD-002 - Chumbador para rodapé. Unitário.



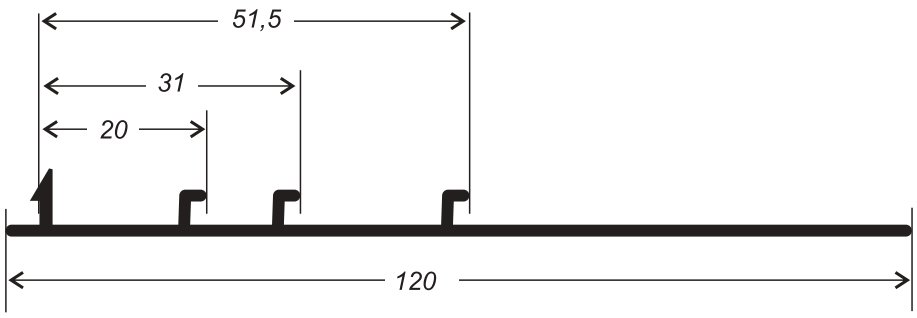

ROD-001 - 0,305kg/m
Rodapé.



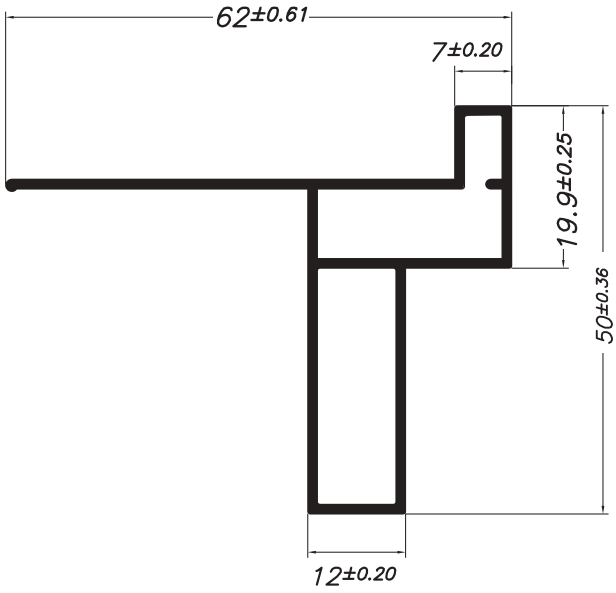

CL-006 - 1,112kg/m



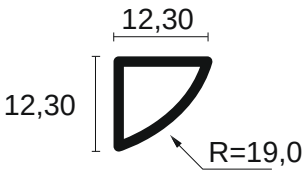

CL-011 - 0,319kg/m



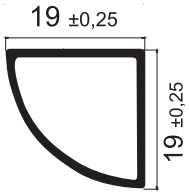

CM-095 - 0,590kg/m



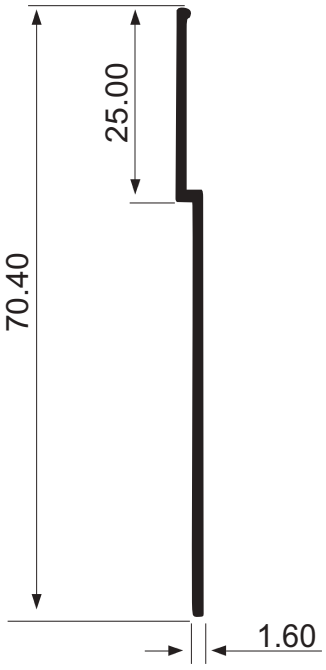

SU-051 - 0,631kg/m



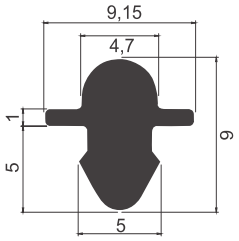

AC-001 - 0,114kg/m



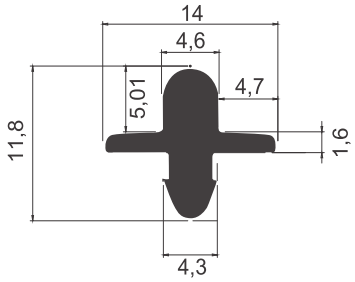

AC-002 - 0,190kg/m



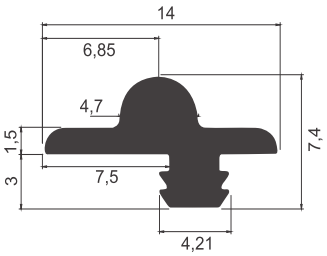

MD-0522 - 0,327kg/m



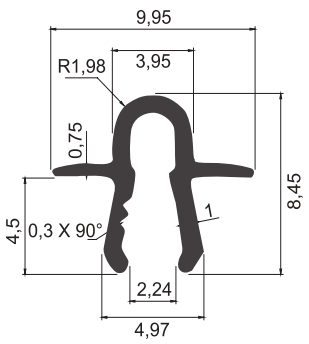

ALP-01 - 0,160kg/m




ALP-02 - 0,106kg/m




ALP-03 - 0,114kg/m

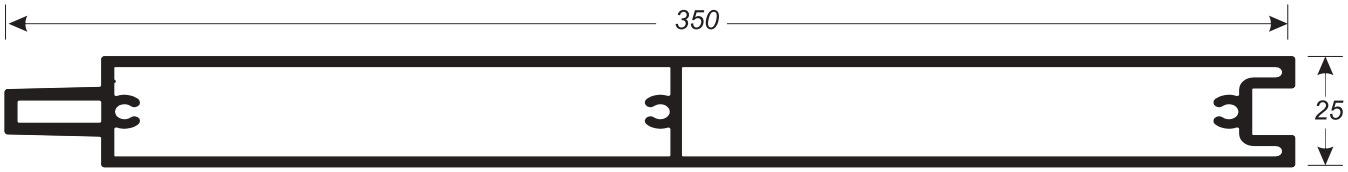



ALP-04 - 0,058kg/m

# LAMBRIS E CONTORNOS

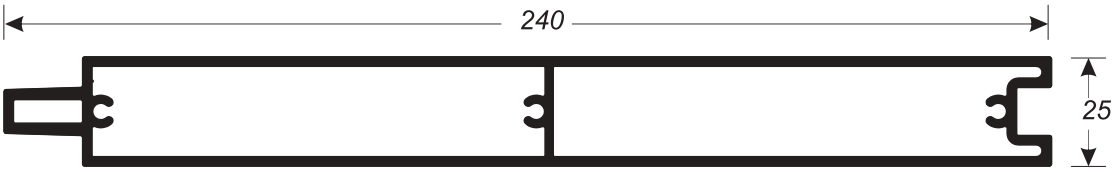
ALPA
ALUMÍNIO

### *Lambri Imperial*




781349 - 6,896kg/m

### *Lambri Master*




781348 - 3,778kg/m

### *Lambri Classic*



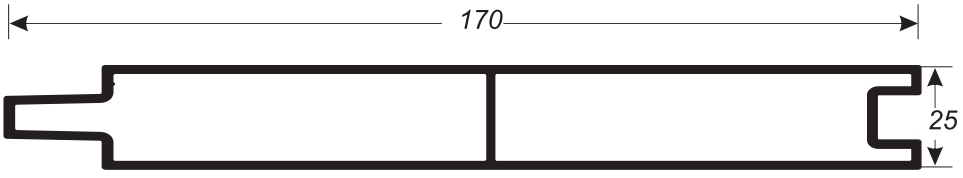

781344 - 2,575kg/m

### *Lambri Standart*



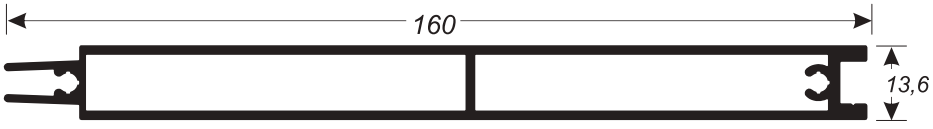

781381 - 1,894kg/m

### *Lambri Câmara*



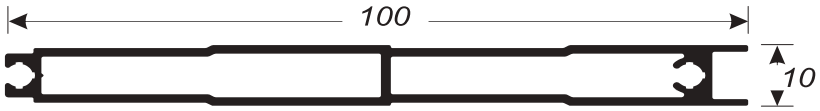

781347 - 2,116kg/m

### *Lambri Elegance*



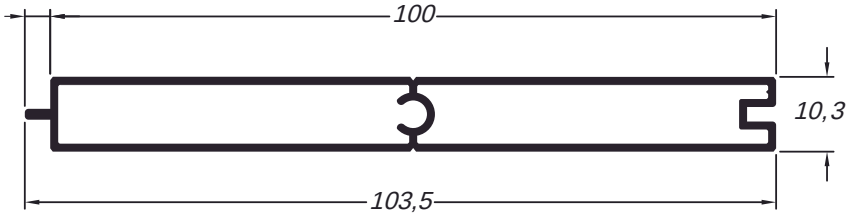

781346 - 1,533kg/m

### *Lambri Slim*



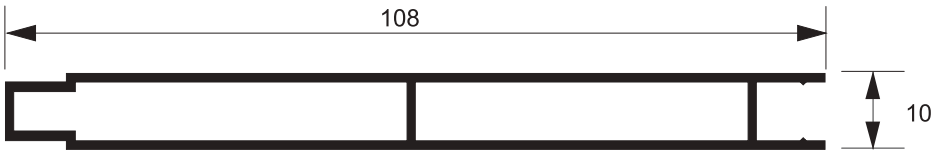

781345 - 0,905kg/m

### *Lambri Clean*

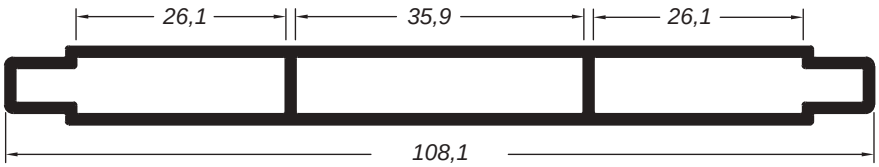



781384 - 0,723kg/m

### *Lambri Fit*

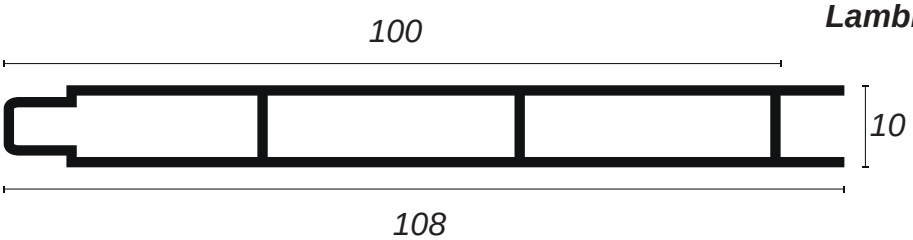



781343 - 0,843kg/m



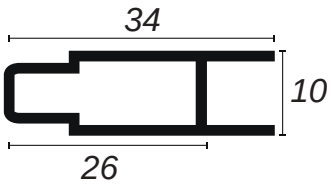

781385 - 0,795kg/m

### *Lambri Premium*

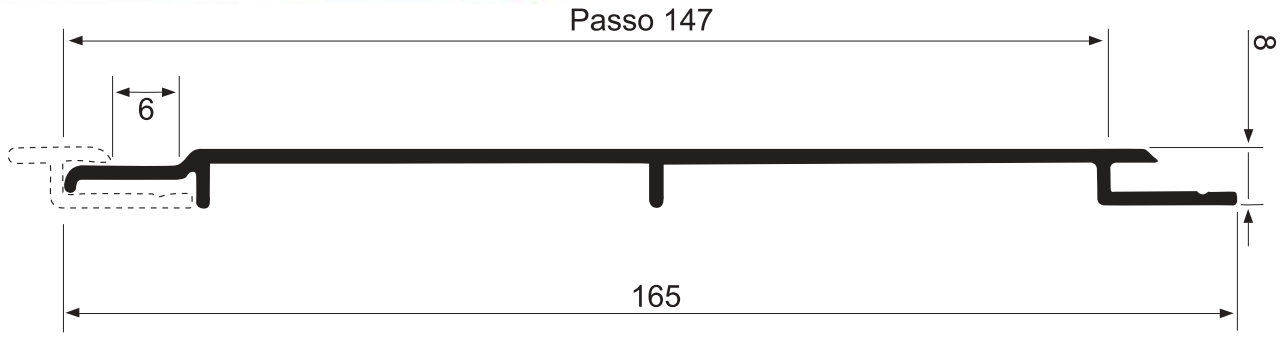



781373 - 0,725kg/m

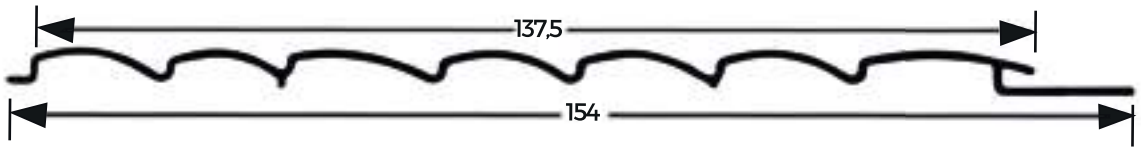
### *Mini Lambri*
***Apenas para o 781373***




781374 - 0,225kg/m



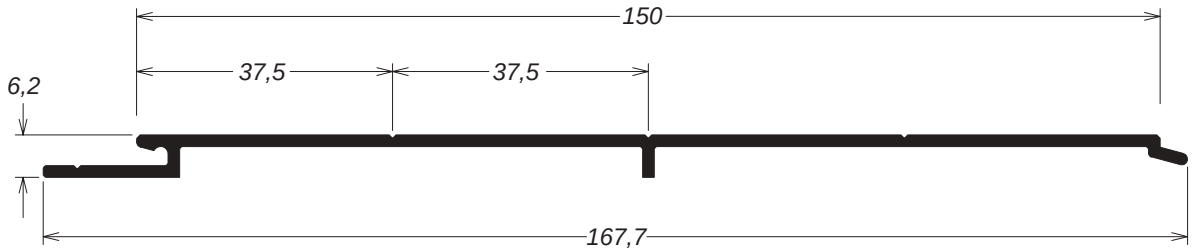

ALP-2510 - 0,937kg/m



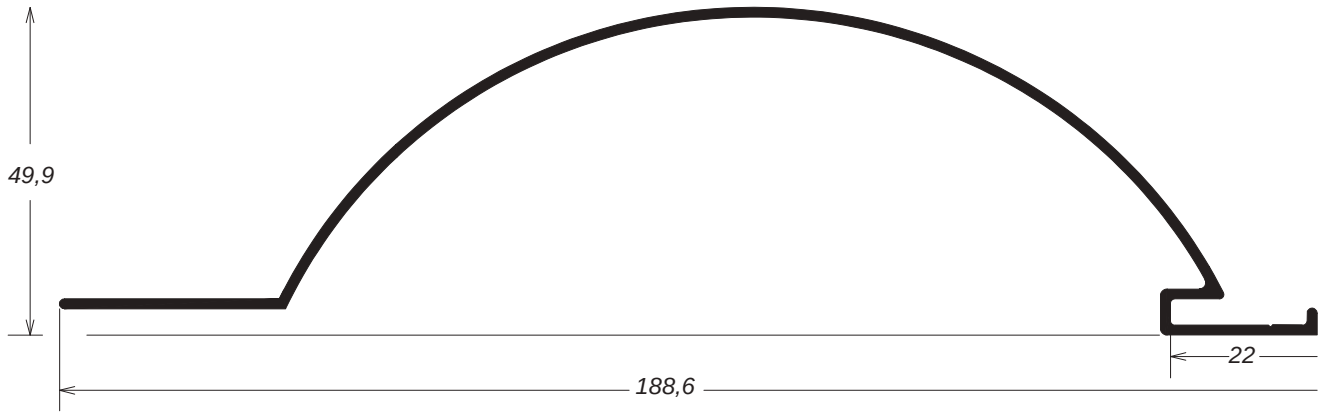

LB-005 - 0,491kg/m



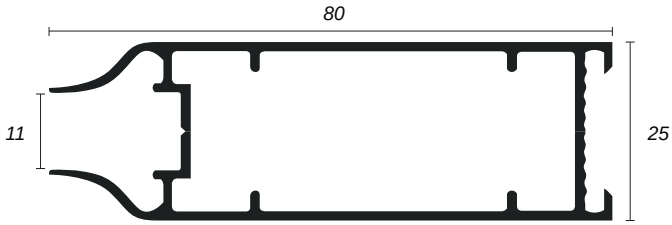

LB-050 - 0,630kg/m



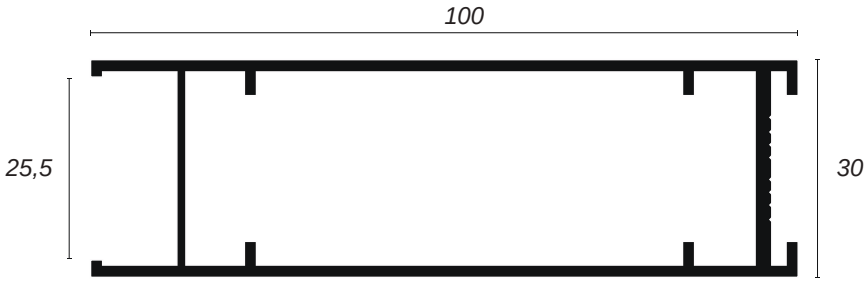

LB-036 - 0,841kg/m



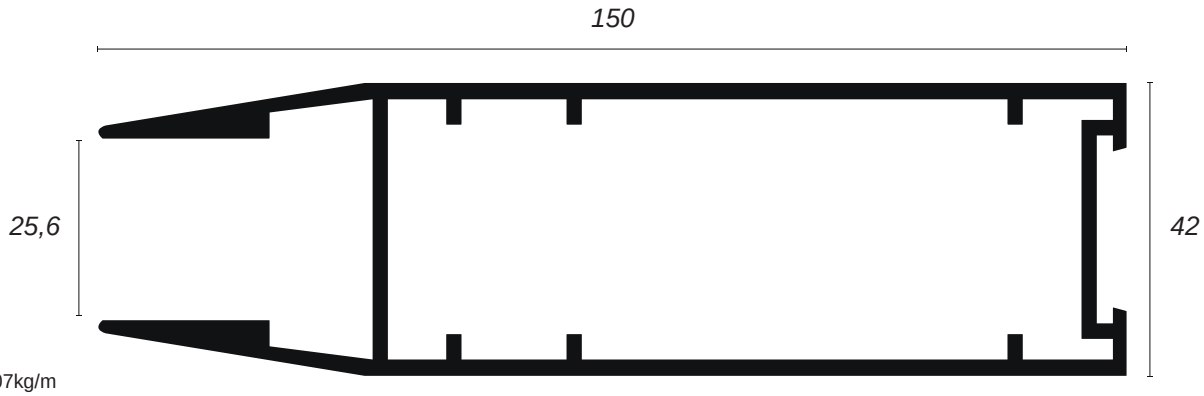

LB-038 - 1,000kg/m



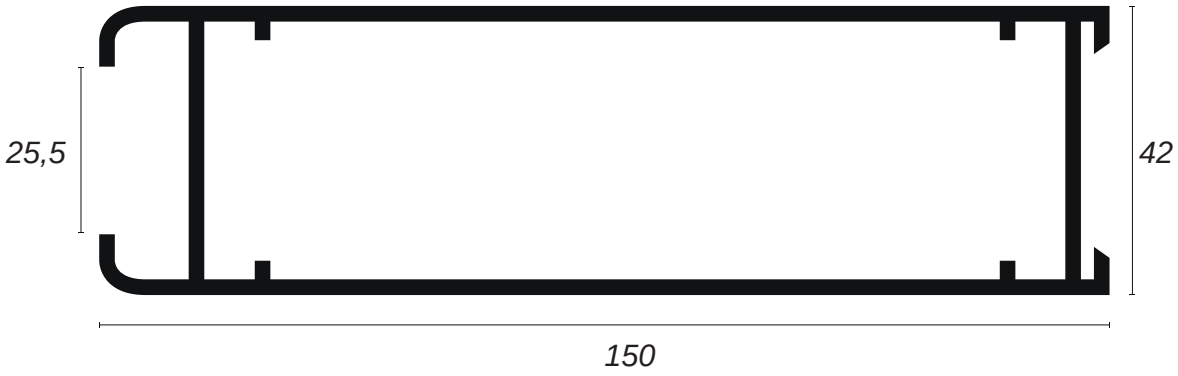

781306 - 0,768kg/m




781304 - 1,135kg/m




781307 - 2,507kg/m




781305 - 1,970kg/m

# LAMBRI AMERICANO

ALPA
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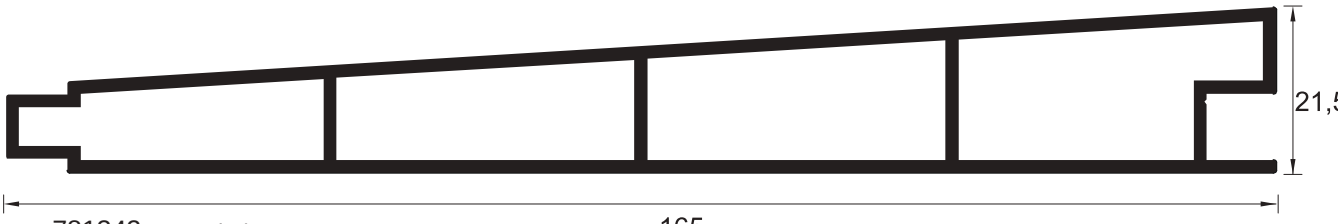
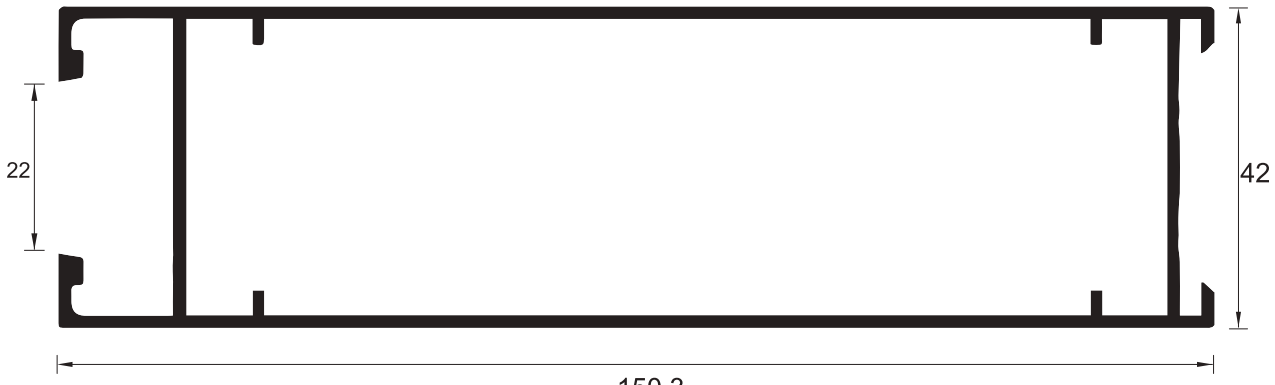
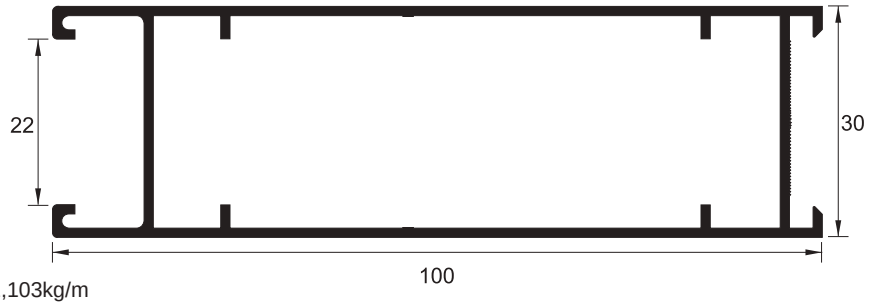


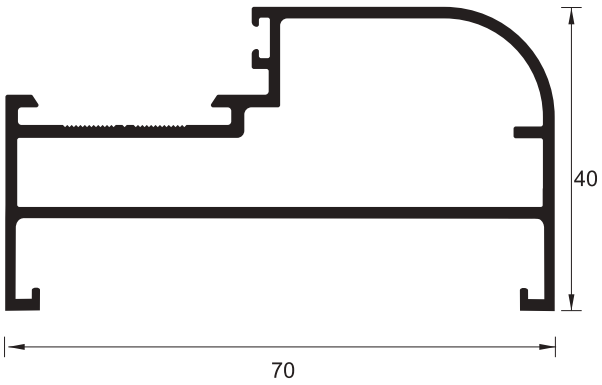

781342 - 1,864kg/m




781302 - 1,946kg/m



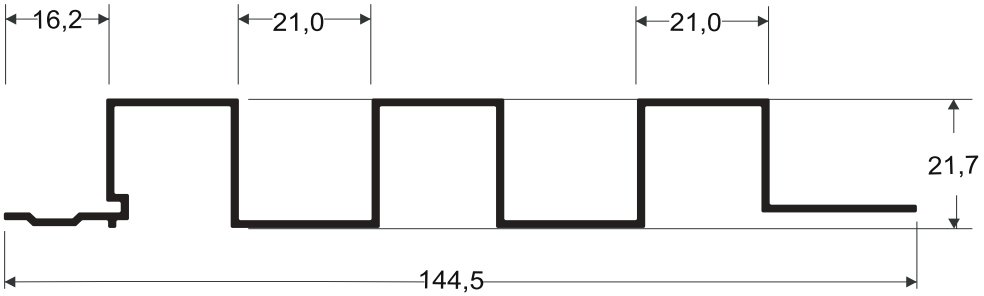

781303 - 1,103kg/m



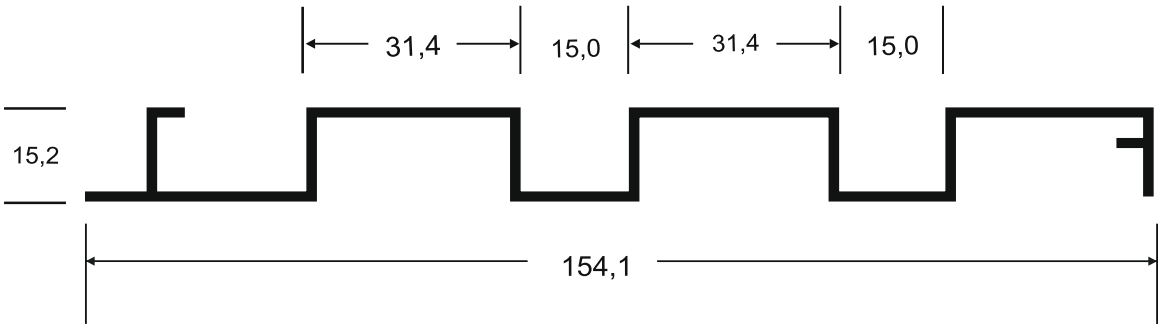

781341 - 0,966kg/m

# LAMBRIS RIPADOS

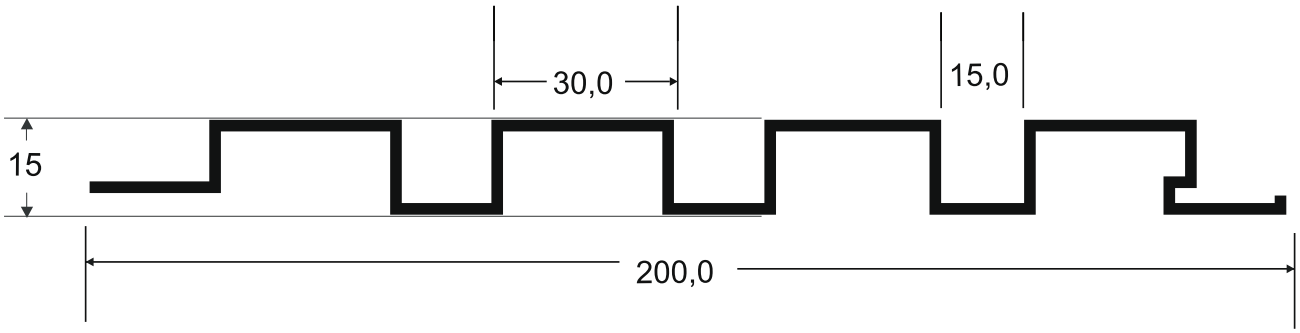
ALPA
ALUMÍNIO



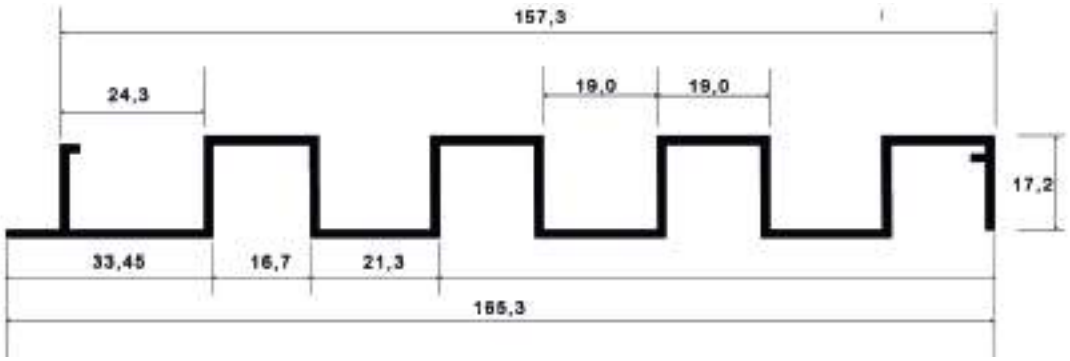

781366 - 0,986kg/m



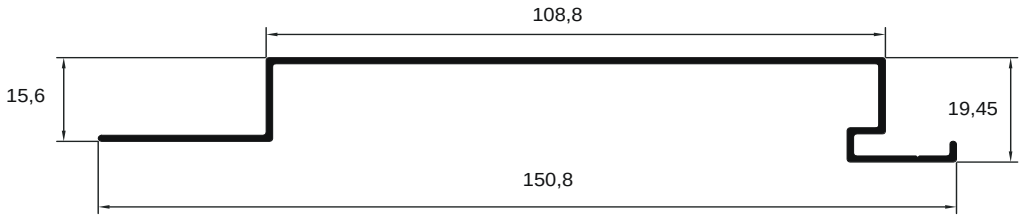

781368 - 1,022kg/m



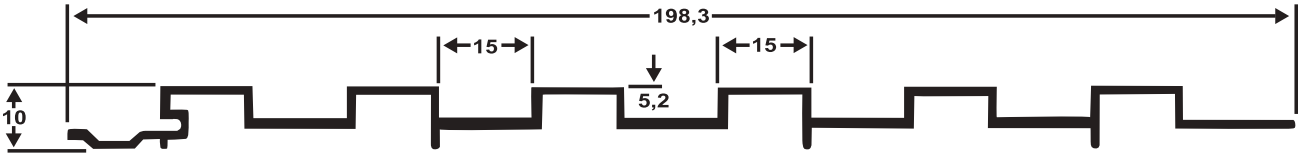

781365 - 1,149kg/m



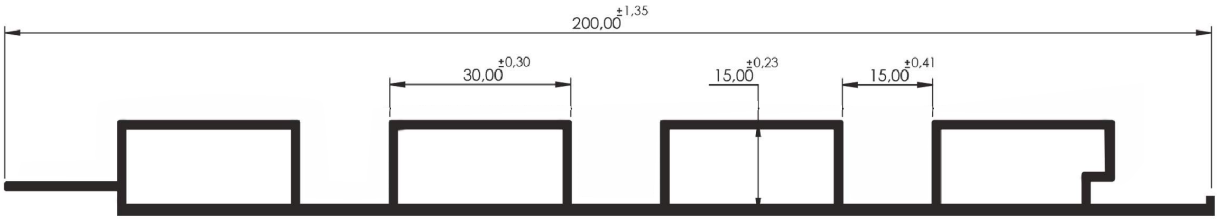

MX 055 - 1,020kg/m



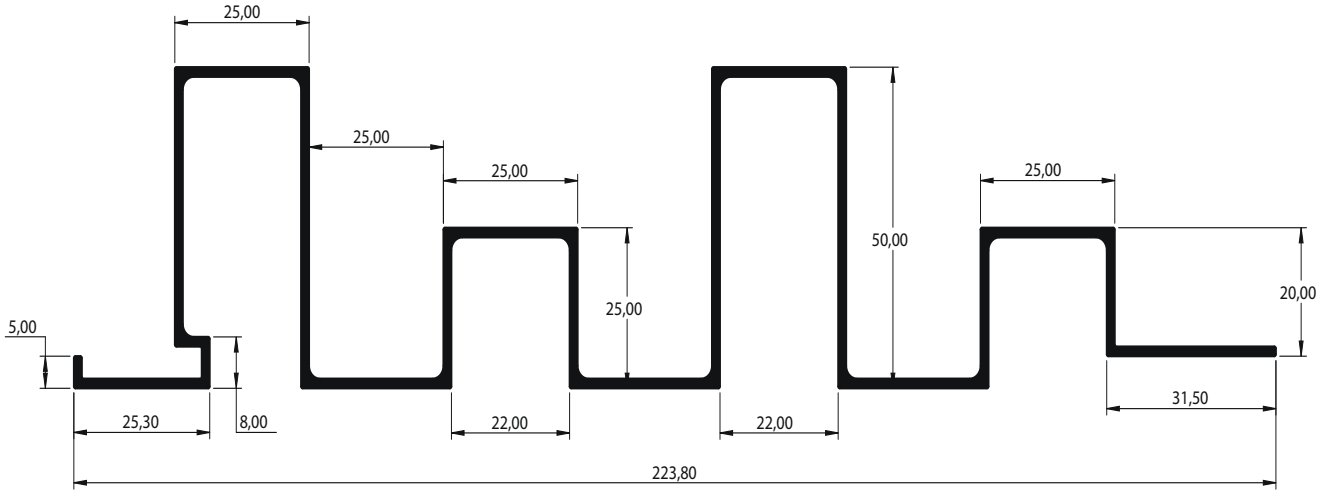

781395 - 0,635kg/m



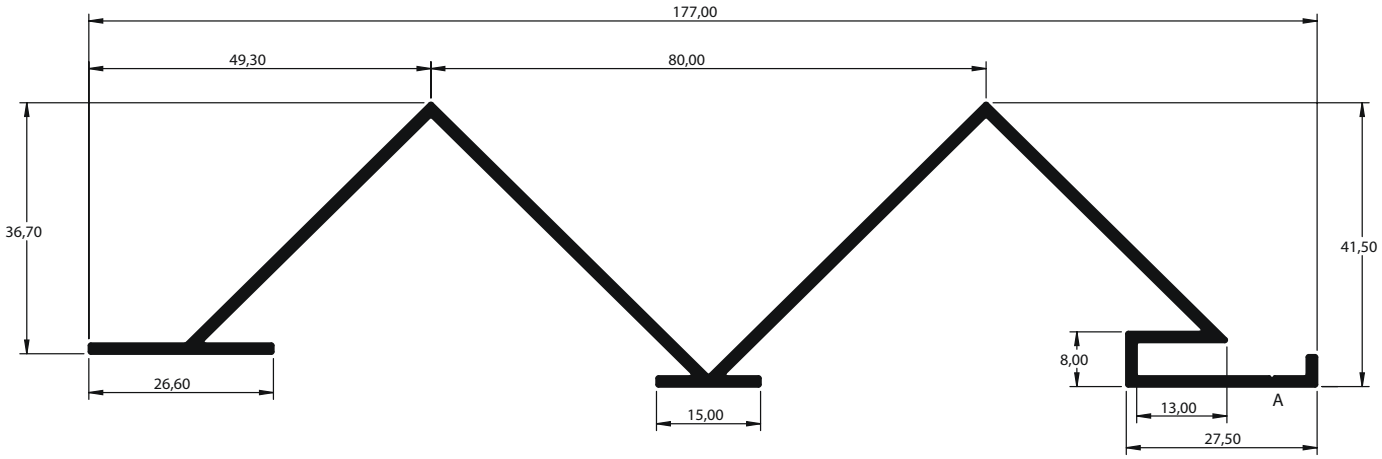

LB-090 - 1,077kg/m



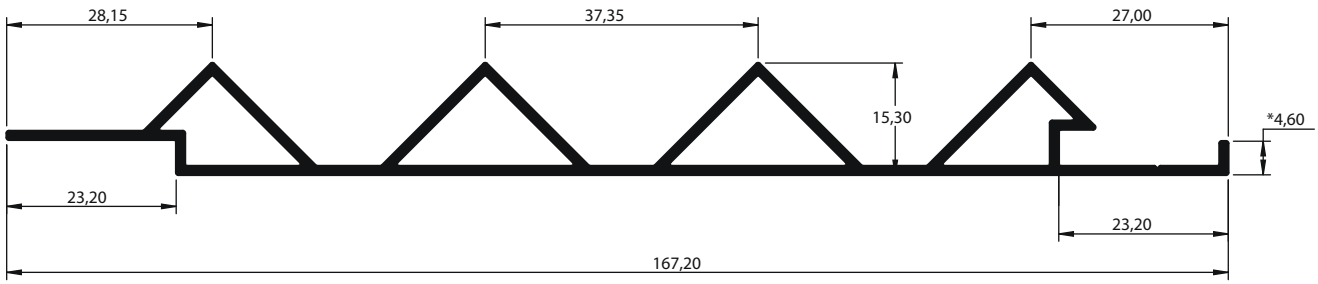

781365F - 1,548kg/m



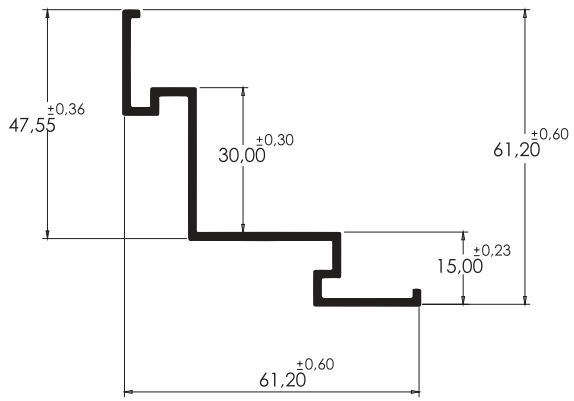

781397 - 2,141kg/m



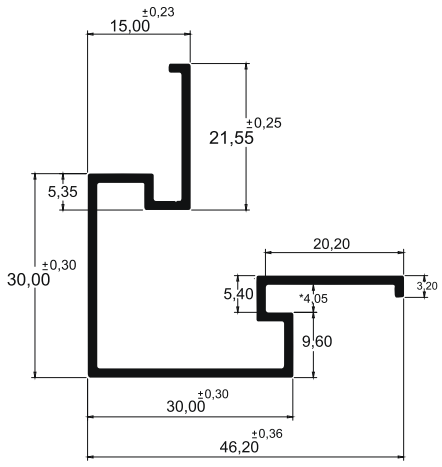

781393 - 1,200kg/m




781394 - 1,046kg/m

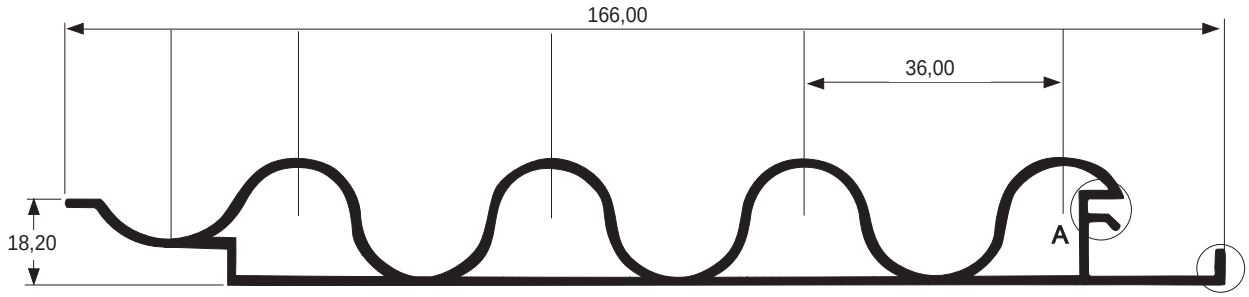



AC 1065 - 0,513kg/m

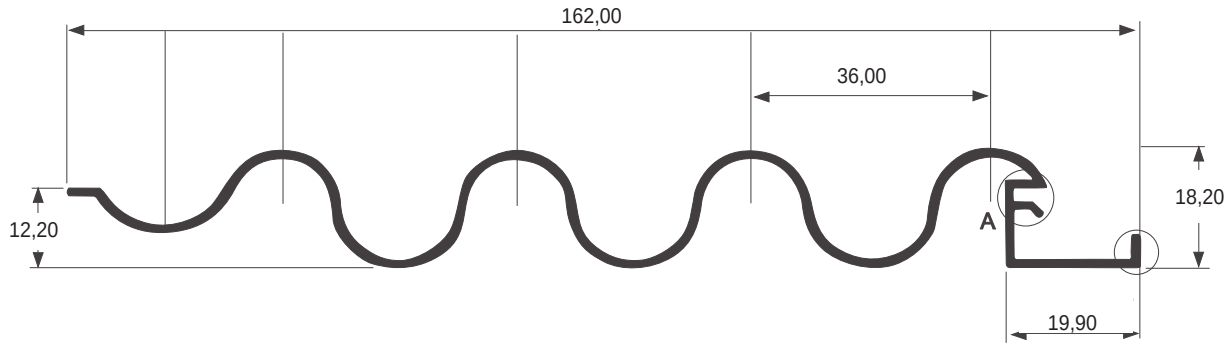



AC 1066 - 0,503kg/m

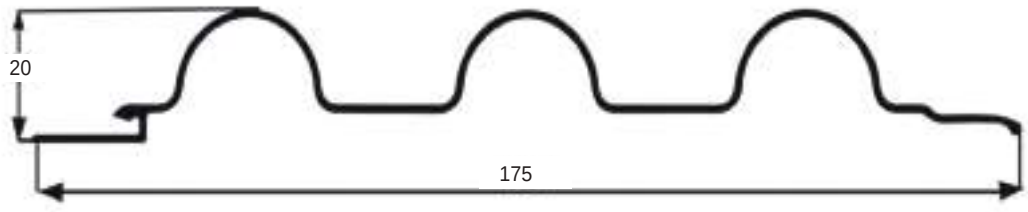
**Acabamento para canto Lambri 781365**



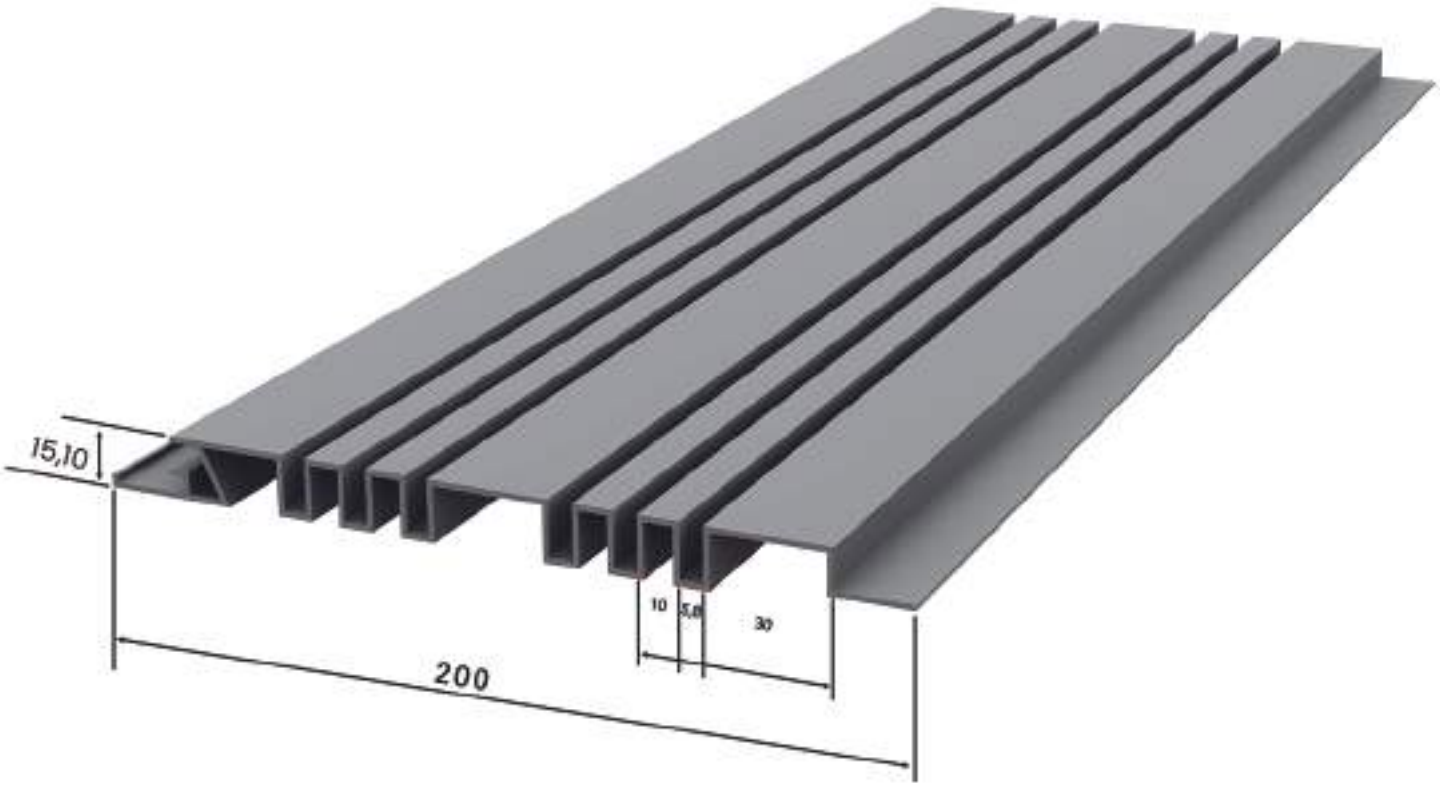

781300 - 1,200kg/m




78152 - 0,832kg/m

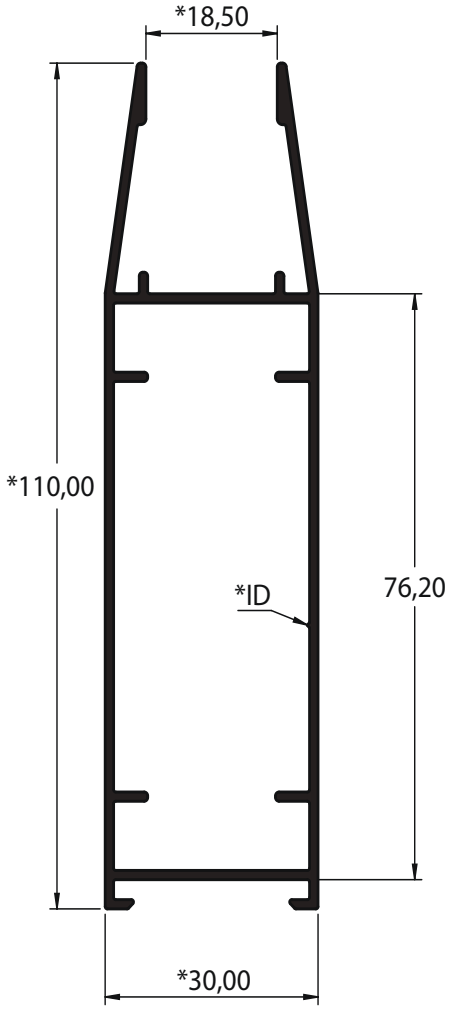



LB-602 - 0,637kg/m

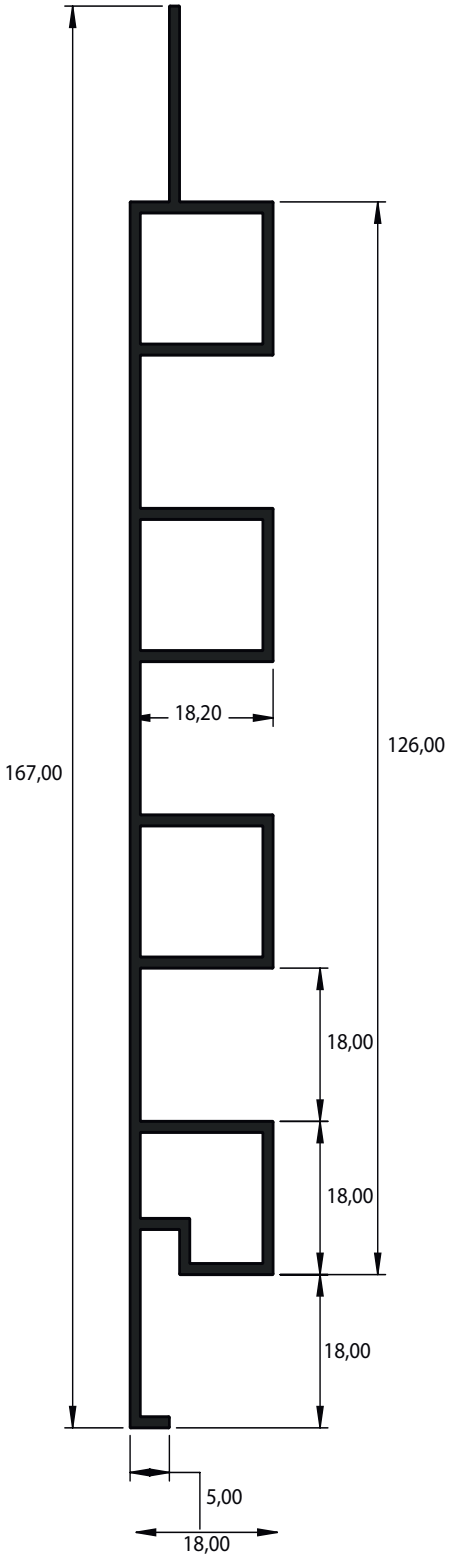



ALP - 781399
Peso: 1,571 kg/m

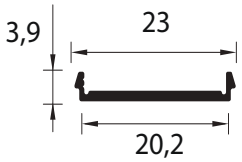
781387 - 1,015kg/m



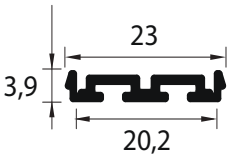

Lambri
781386 - 1,309kg/m



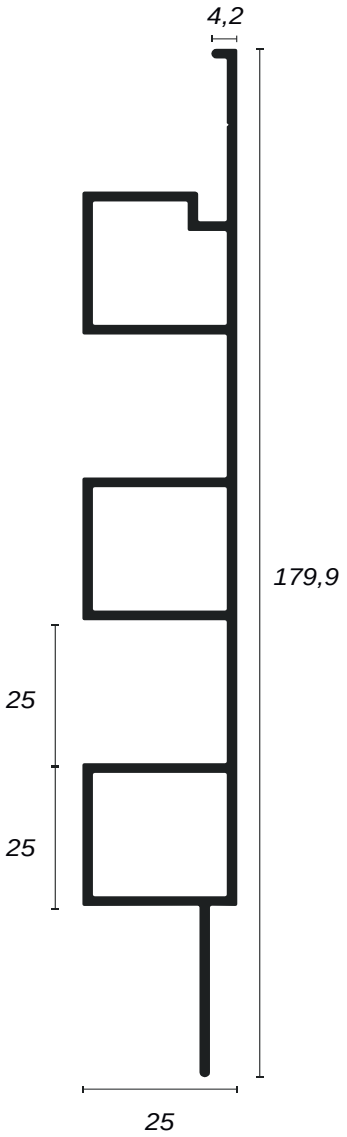

Click acabamento
781352 - 0,094kg/m



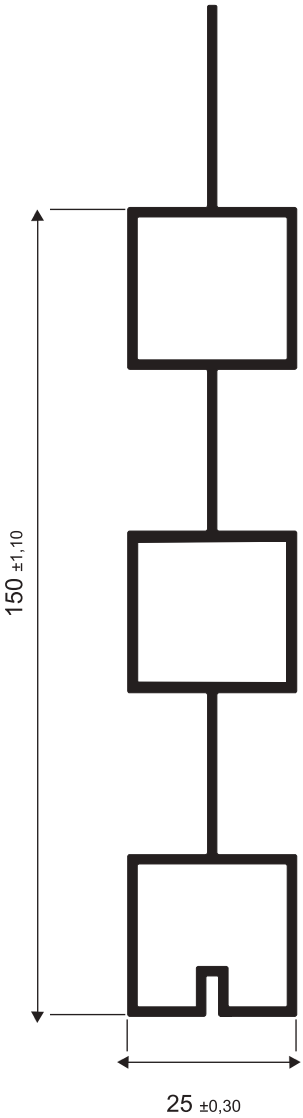

Click para vedação
VS-2004 - 0,117kg/m



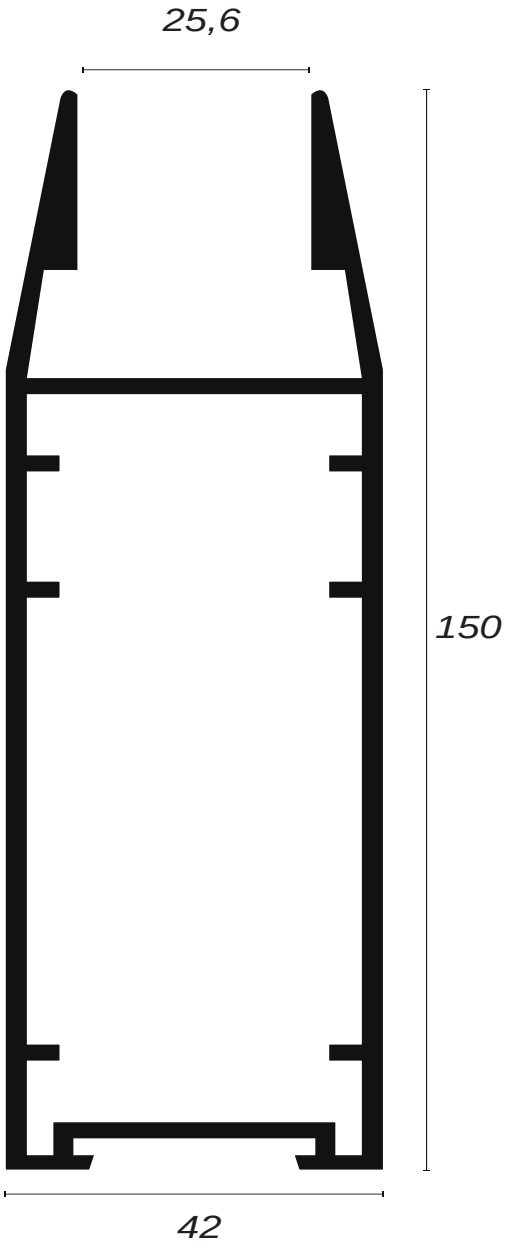
781370 - 1,808kg/m



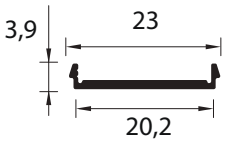

781328 - 1,388kg/m



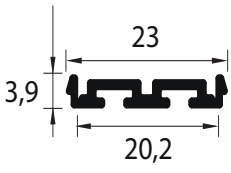

Contorno
781307 - 2,507kg/m

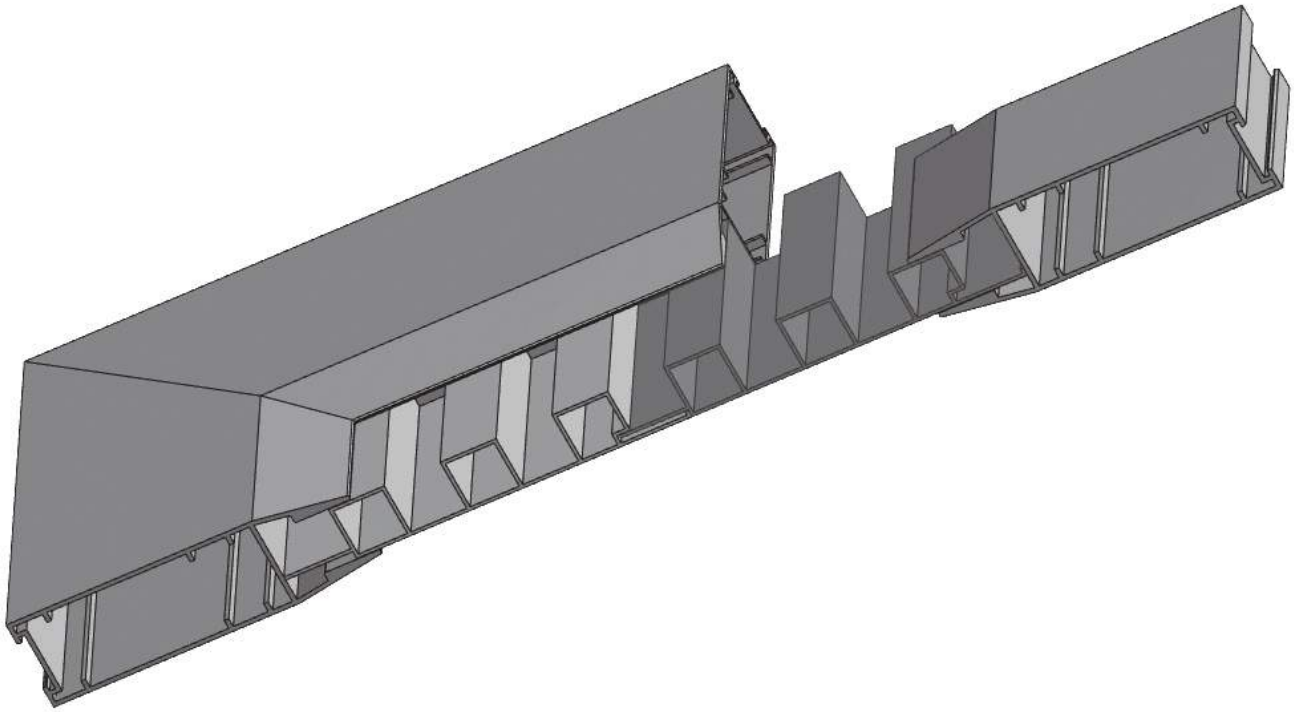


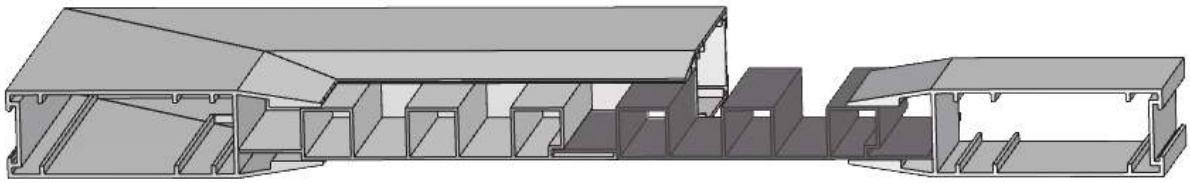

Click Acabamento
781352 - 0,094kg/m



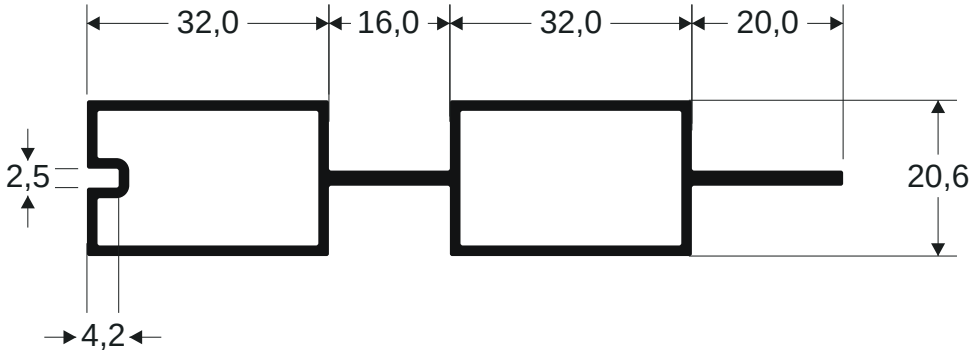

Click para vedação
VS-2004 - 0,117kg/m







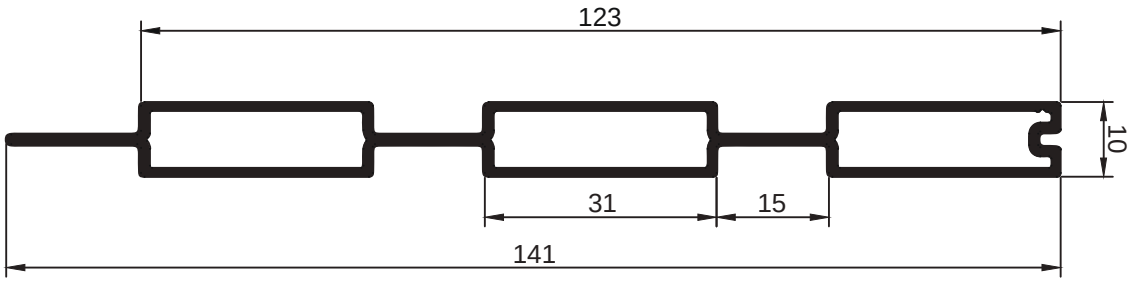
Página com a ilustração



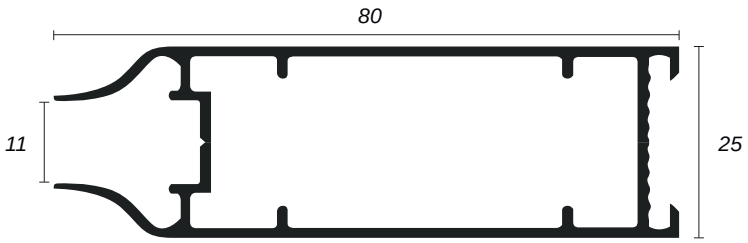

781388 - 0,981kg/m



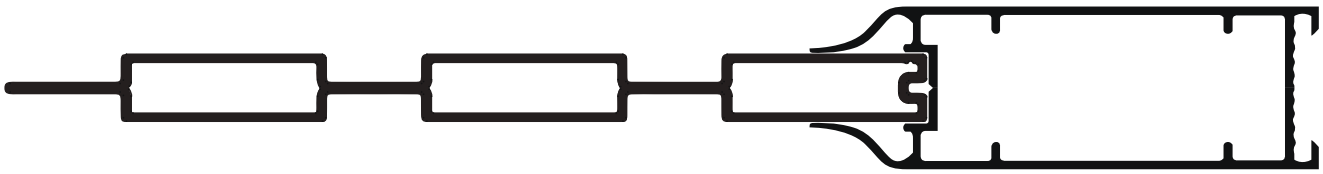

781362 - 1,081kg/m




Lambri
781369 - 0,933kg/m




781306 - 0,768kg/m



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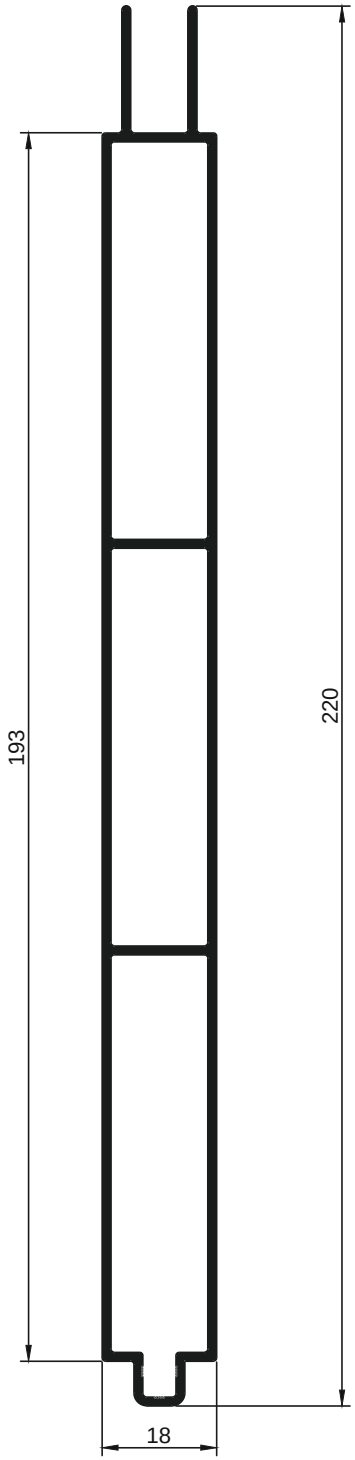
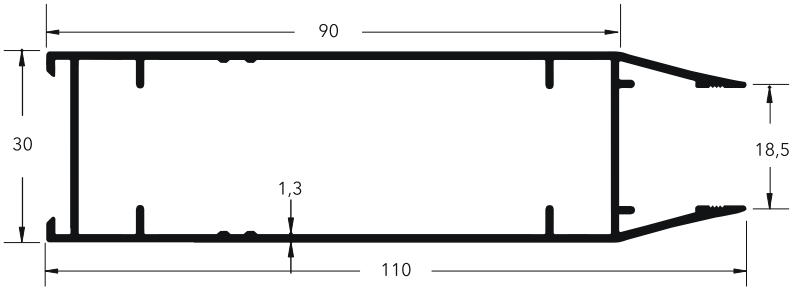
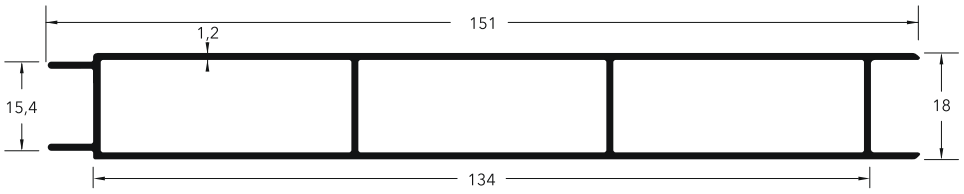


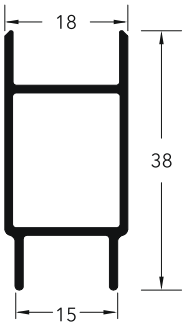

Lambri
781381 - 1,894kg/m



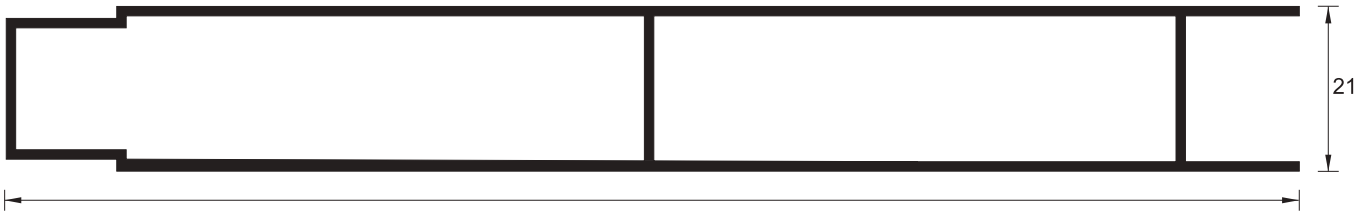

Lambri
781380 - 1,097kg/m



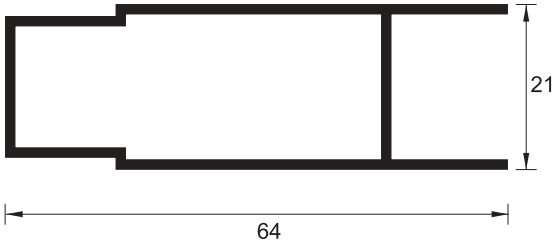

Lambri
781382 - 1,170kg/m



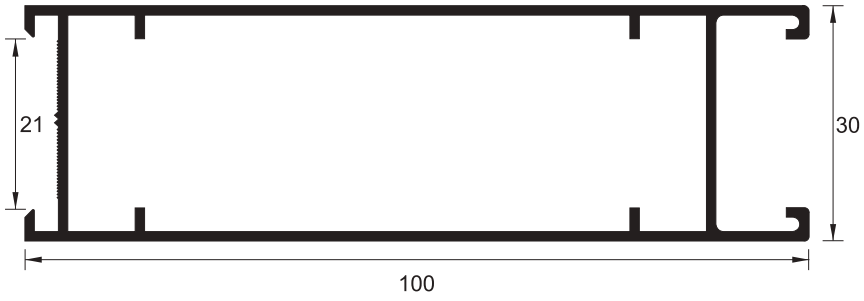

Mini Lambri
781383 - 0,347kg/m



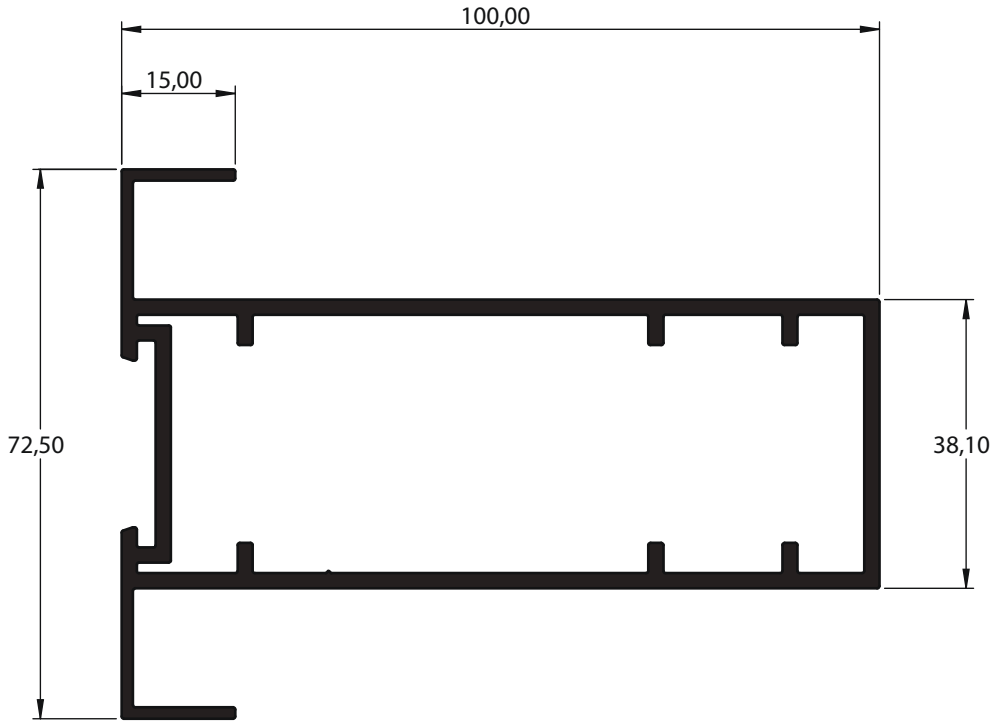

Lambri
781361 - 1,354kg/m



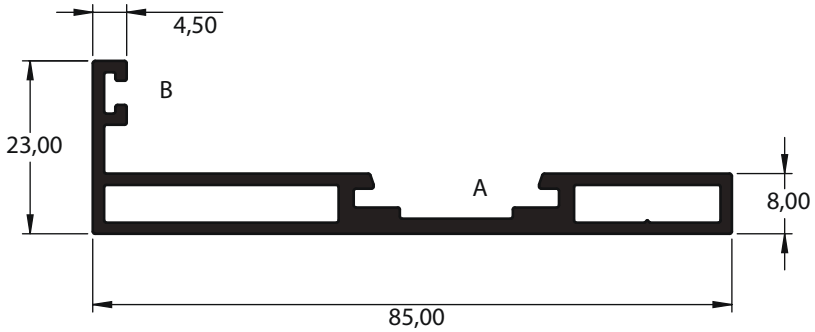

Mini Lambri
781363 - 0,583kg/m



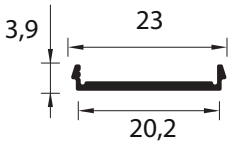

Montante Porta Giro
781362 - 1,081kg/m



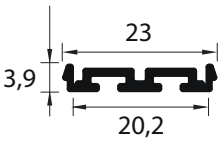

781308 - 1,902kg/m



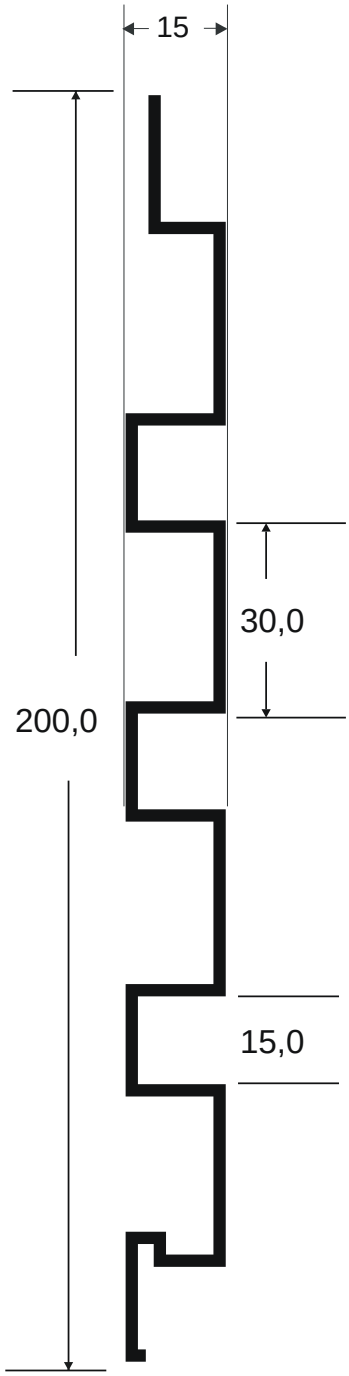

781309 - 0,880kg/m



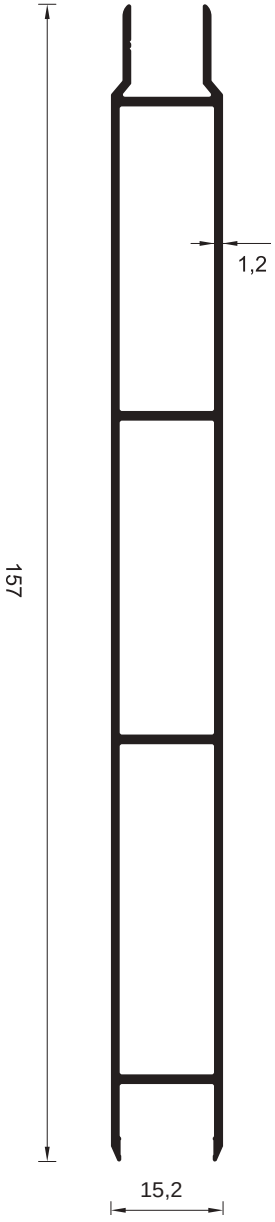

Click acabamento
781352 - 0,094kg/m



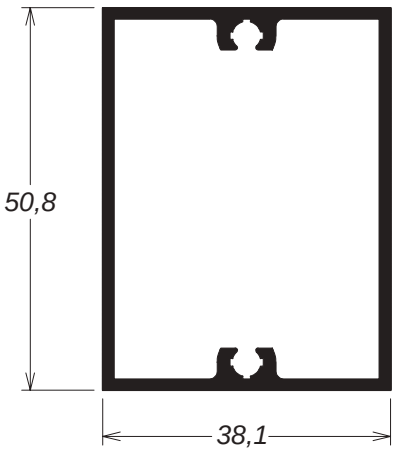

Click para vedação
VS-2004 - 0,117kg/m




Lambri
781365 - 1,149kg/m

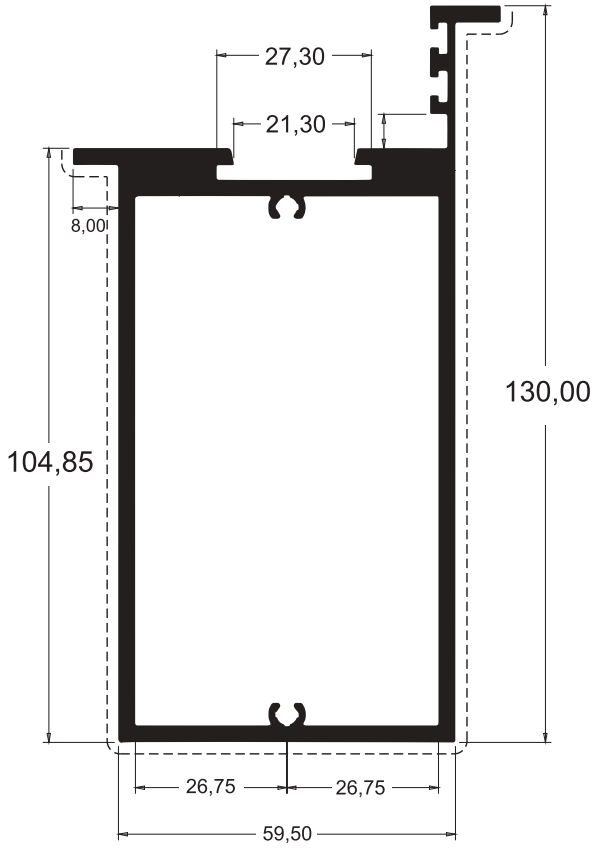



781350 - 1,201kg/m



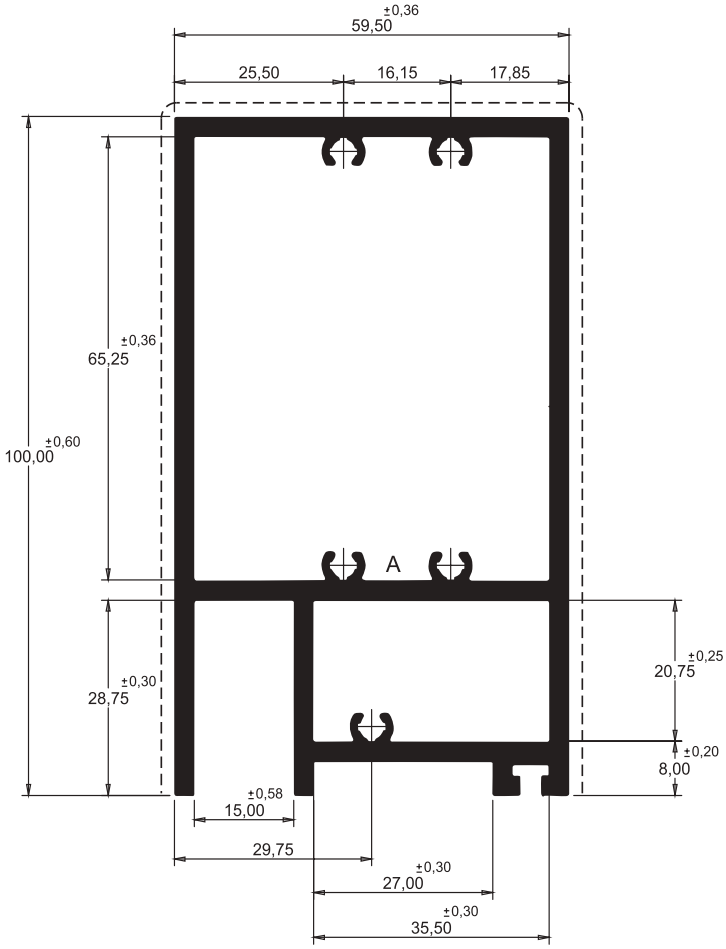

CG-104 - 0,802kg/m
Travessa para perfil 781308.

## MONTANTE VERTICAL



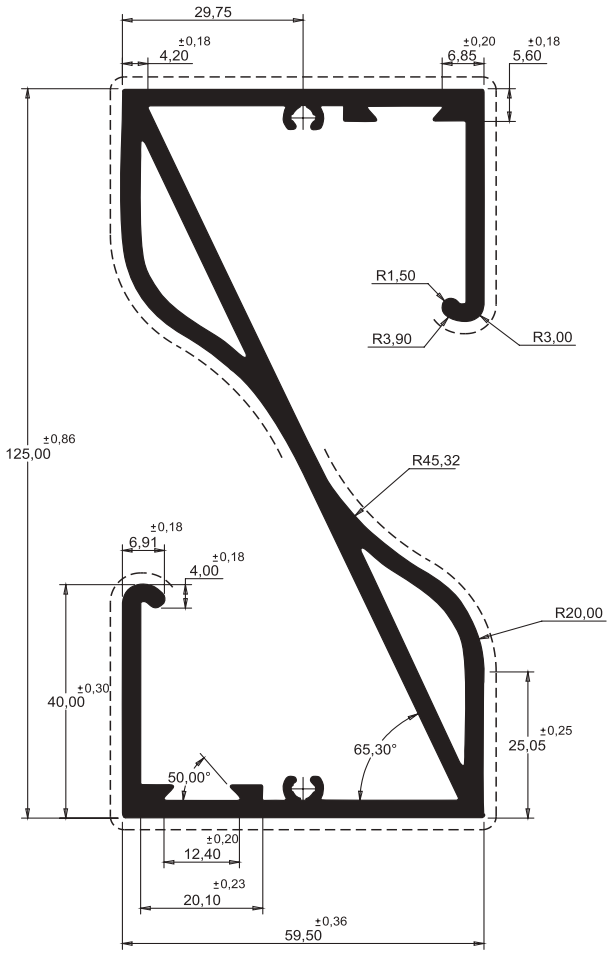

DV - 1044 - 3,382kg/m

## MONTANTE HORIZONTAL



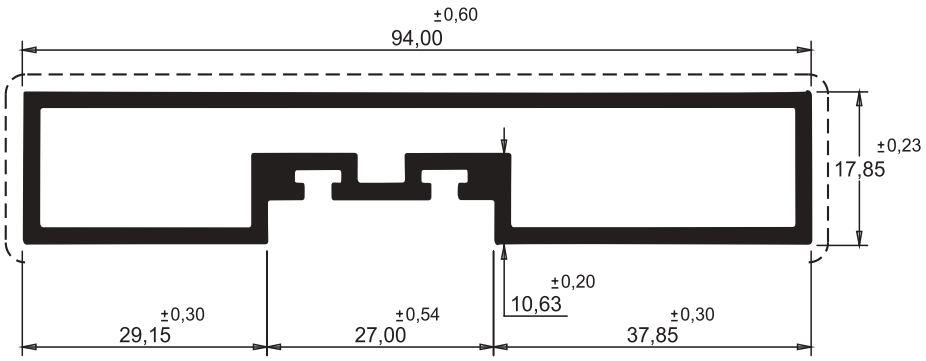

DV - 1046 - 3,344kg/m

# PUXADOR CAVA/TRAVESSA



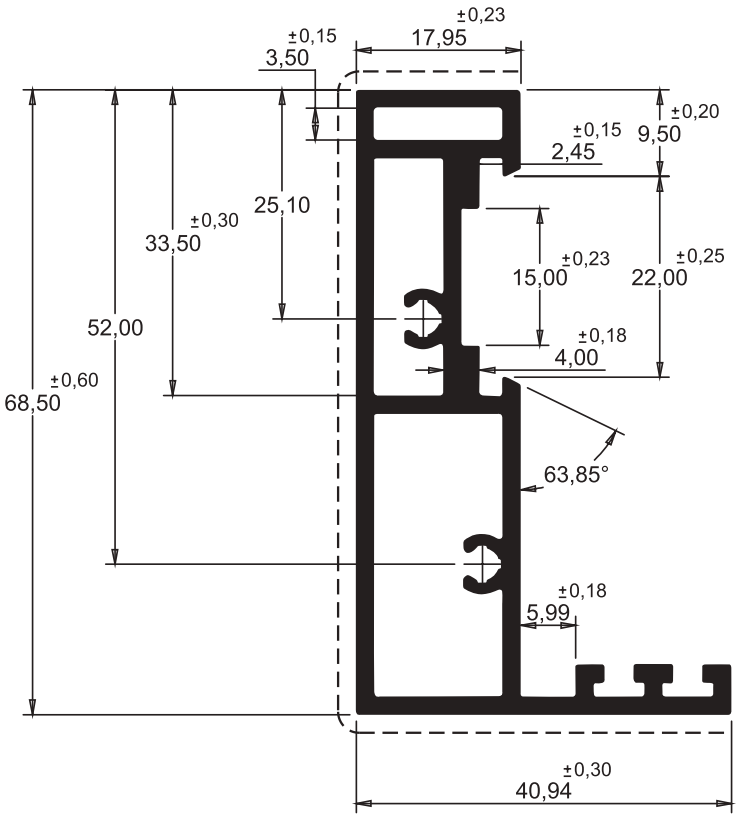

DV - 1045 - 3,798kg/m

## LARGURA SUPERIOR MARCO

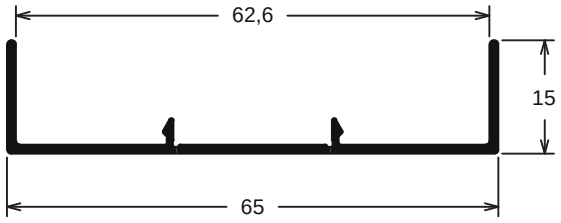



DV-1042 - 1,361kg/m

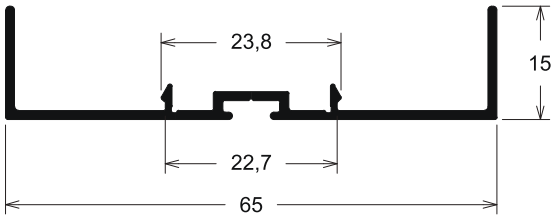
## MARCO ALTURA/BATENTE



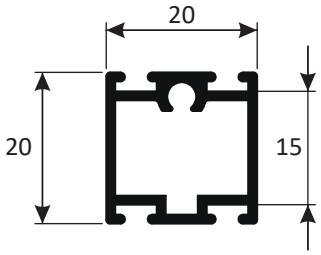

DV-1043 - 1,400kg/m



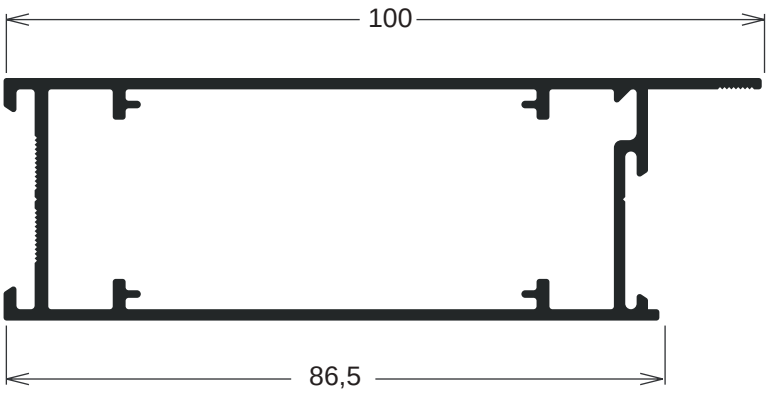

781310 - 0,318kg/m



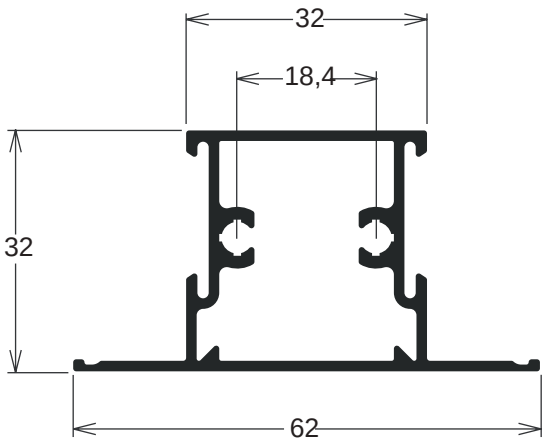

781311 - 0,342kg/m



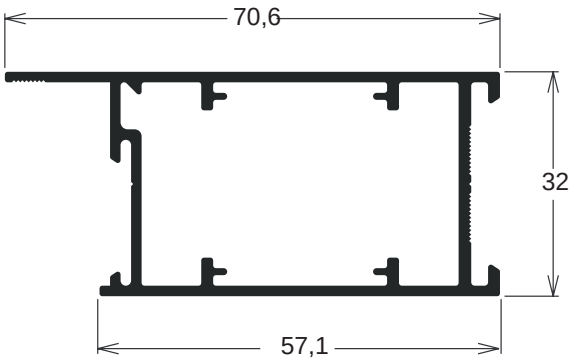

VS-2005 - 0,325kg/m



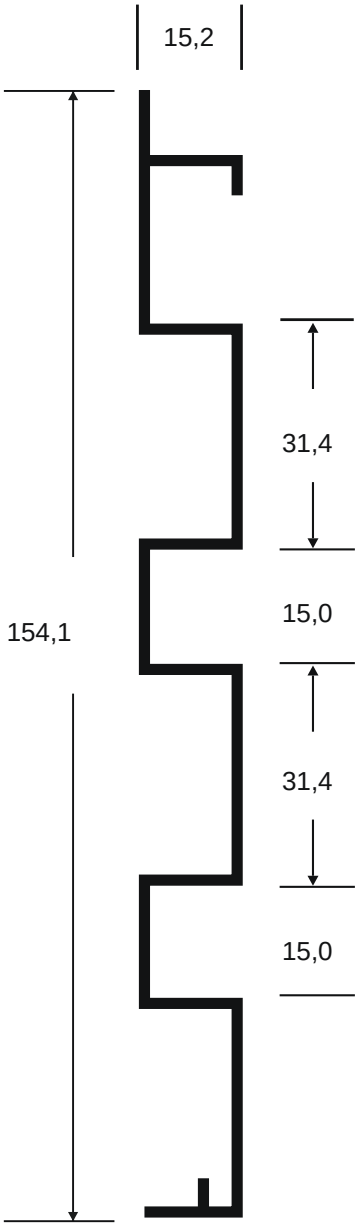

LG-042 - 1,169kg/m



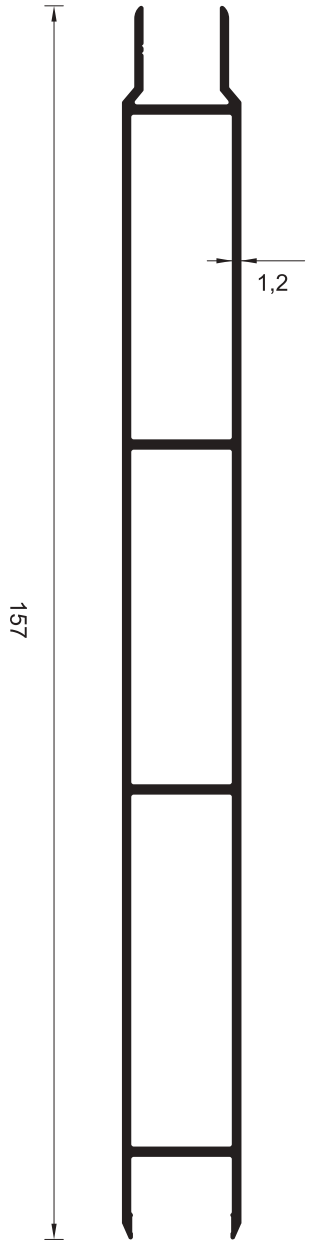

LG-079 - 0,770kg/m



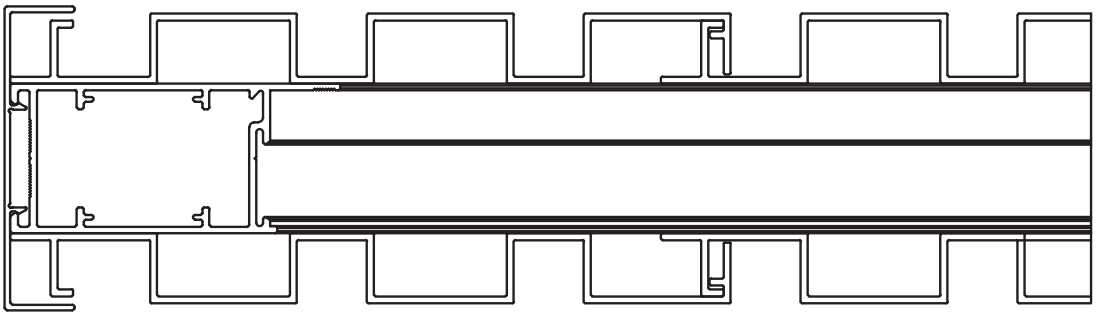

LG-043 - 0,930kg/m



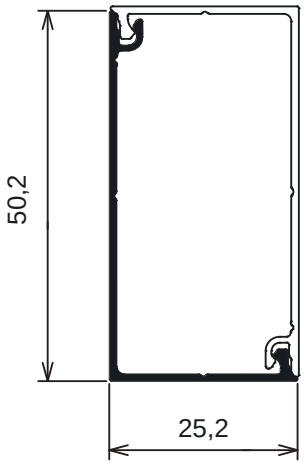

Lambri
781368 - 1,022kg/m



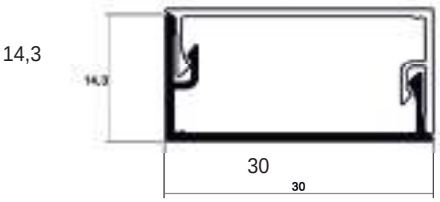

Lambri
781350 - 1,201kg/m



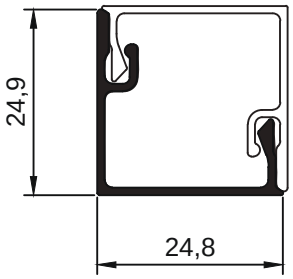
Montagem



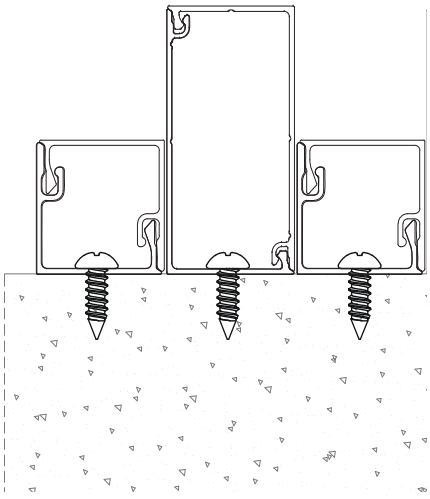

781371 - 0,231kg/m




78-187 - 0,146kg/m




781372 - 0,198kg/m



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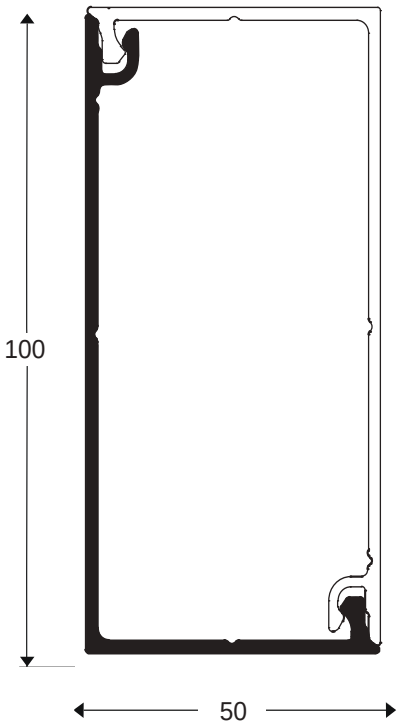
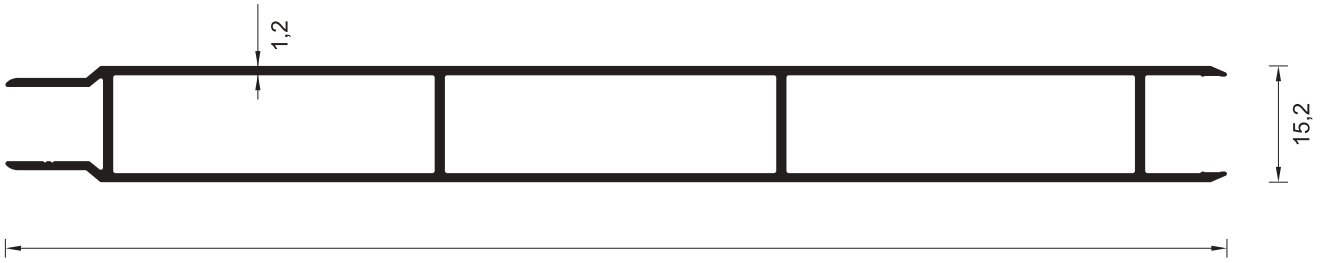


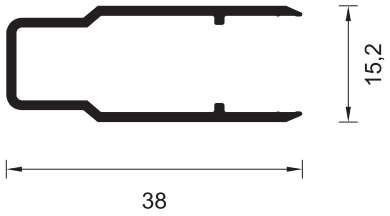

78864
0,659kg/m

# LINHA EXCLUSIVE

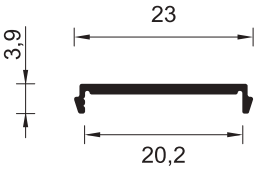
ALPA ALUMÍNIO



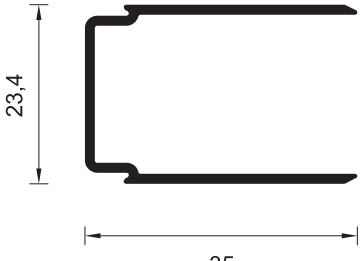

Lambri
781350 - 1,201kg/m



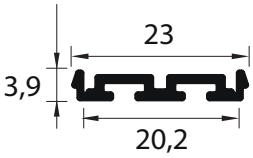

Mini Lambri
781351 - 0,305kg/m



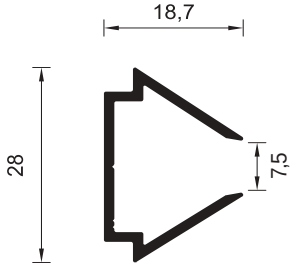

Click Acabamento
781352 - 0,094kg/m



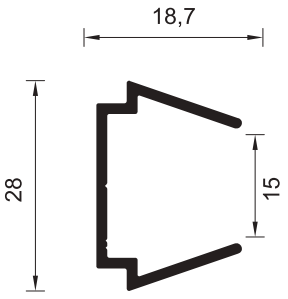

Prolongador Batente
781353 - 0,312kg/m



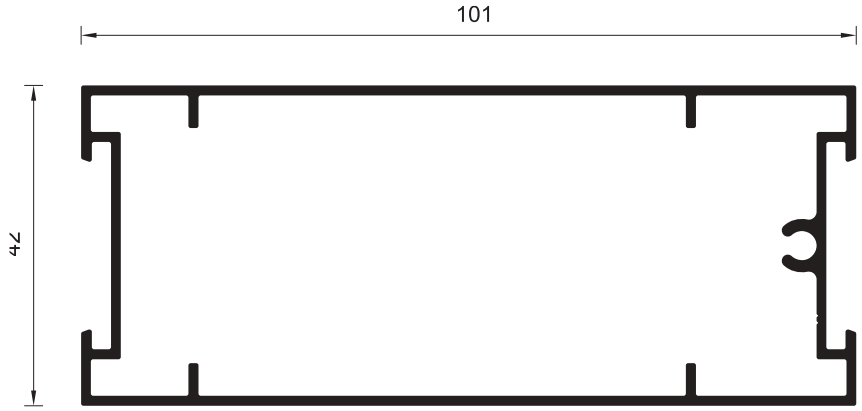

Click para vedação
VS-2004 - 0,117kg/m



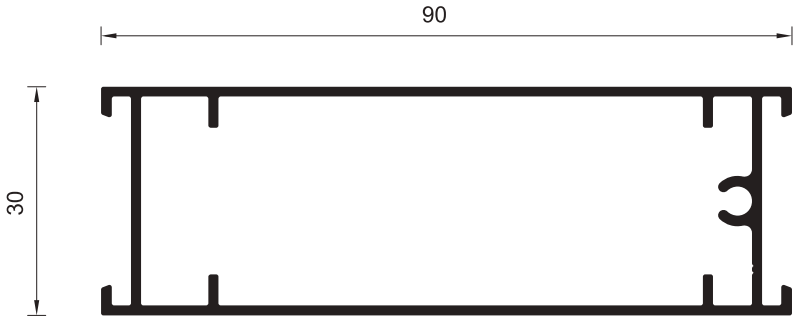

Baguete Vidro
781364 - 0,248kg/m




Baguete Lambri
781356 - 0,238kg/m

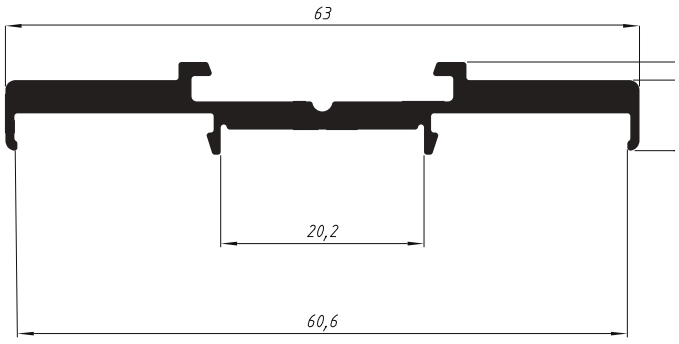


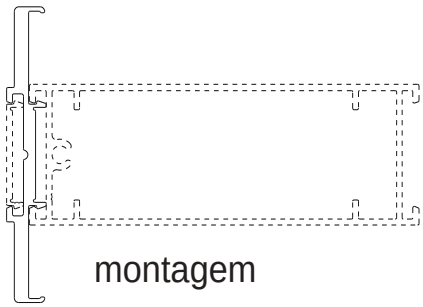

Montante Porta Pivotante
781354 - 1,186kg/m



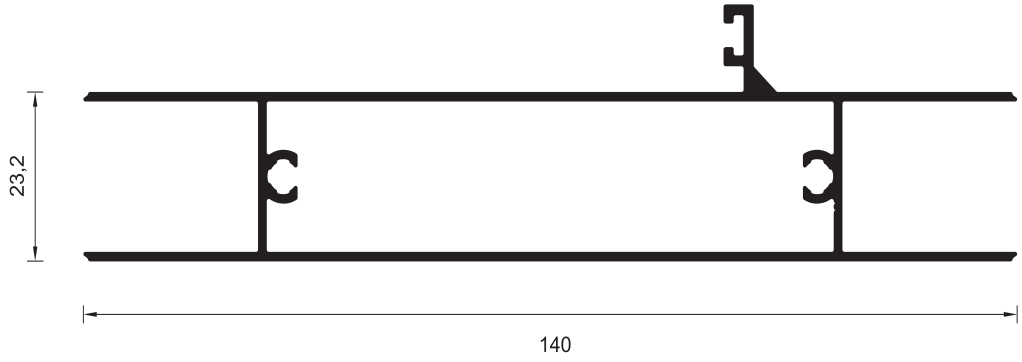

Montante Porta Giro
781355 - 0,962kg/m

ALP-253 - 0,562kg/m

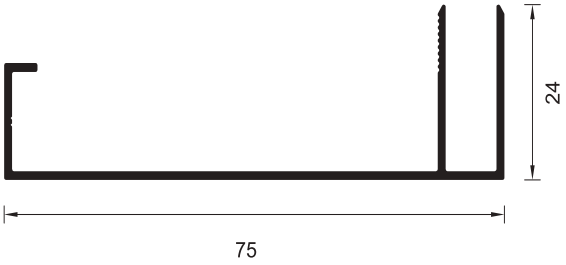


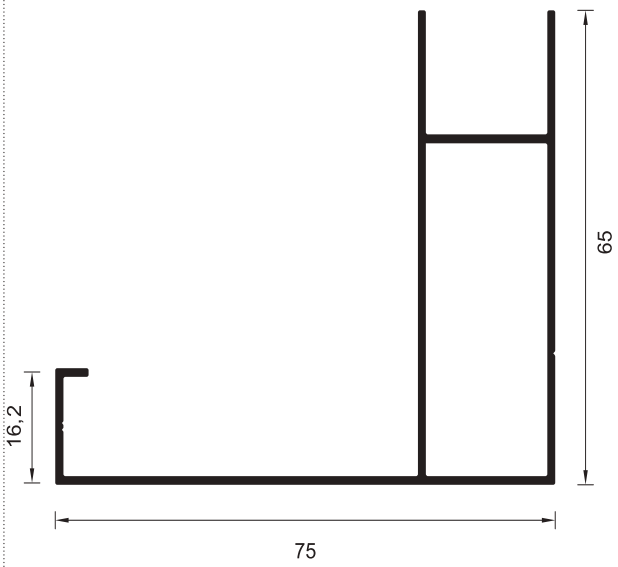
montagem



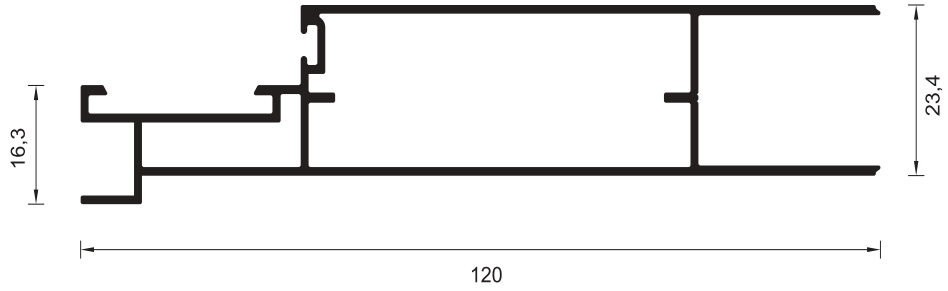

Montante Porta Pivotante
781357 - 1,312kg/m



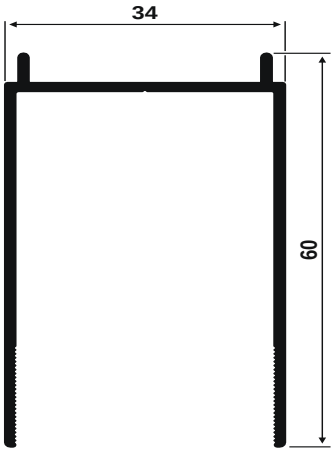

Arremate Interno para Porta de Giro
781358 - 0,447kg/m



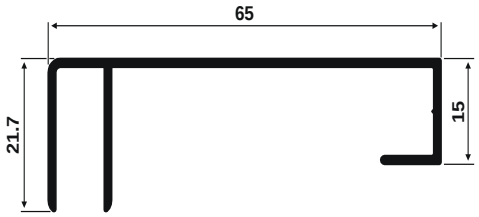

Arremate Interno e Externo para Porta Pivotante e Giro
781359 - 0,777kg/m



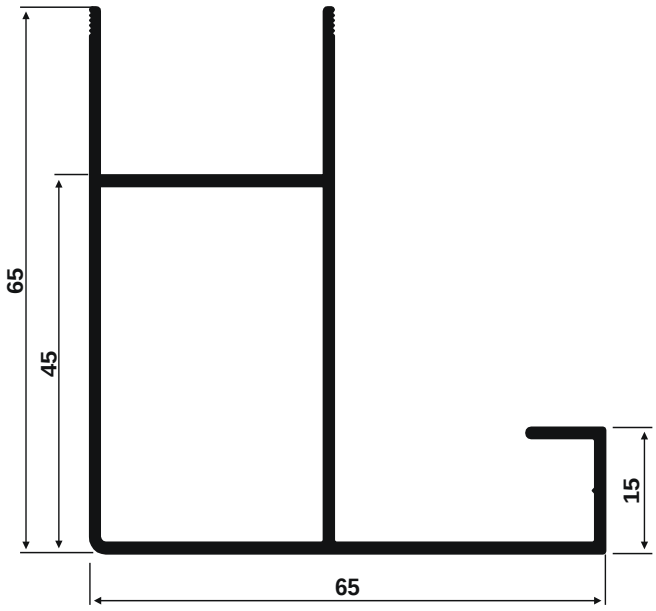

Batente Porta Giro
781360 - 1,074kg/m



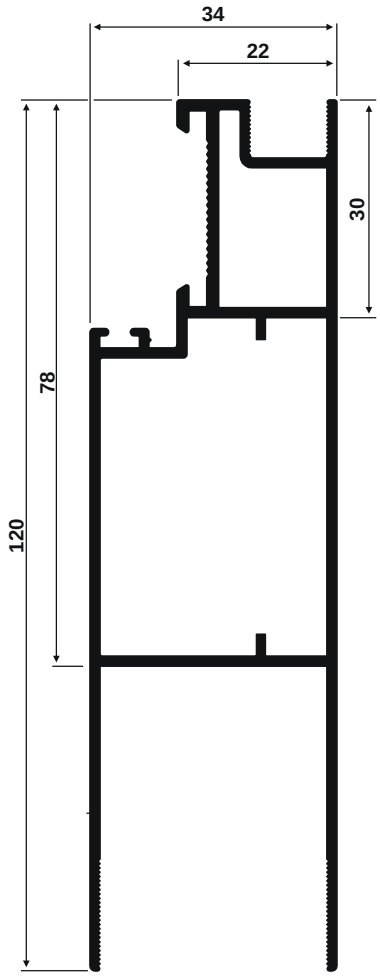

781376 - 0,542kg/m




781377 - 0,448kg/m

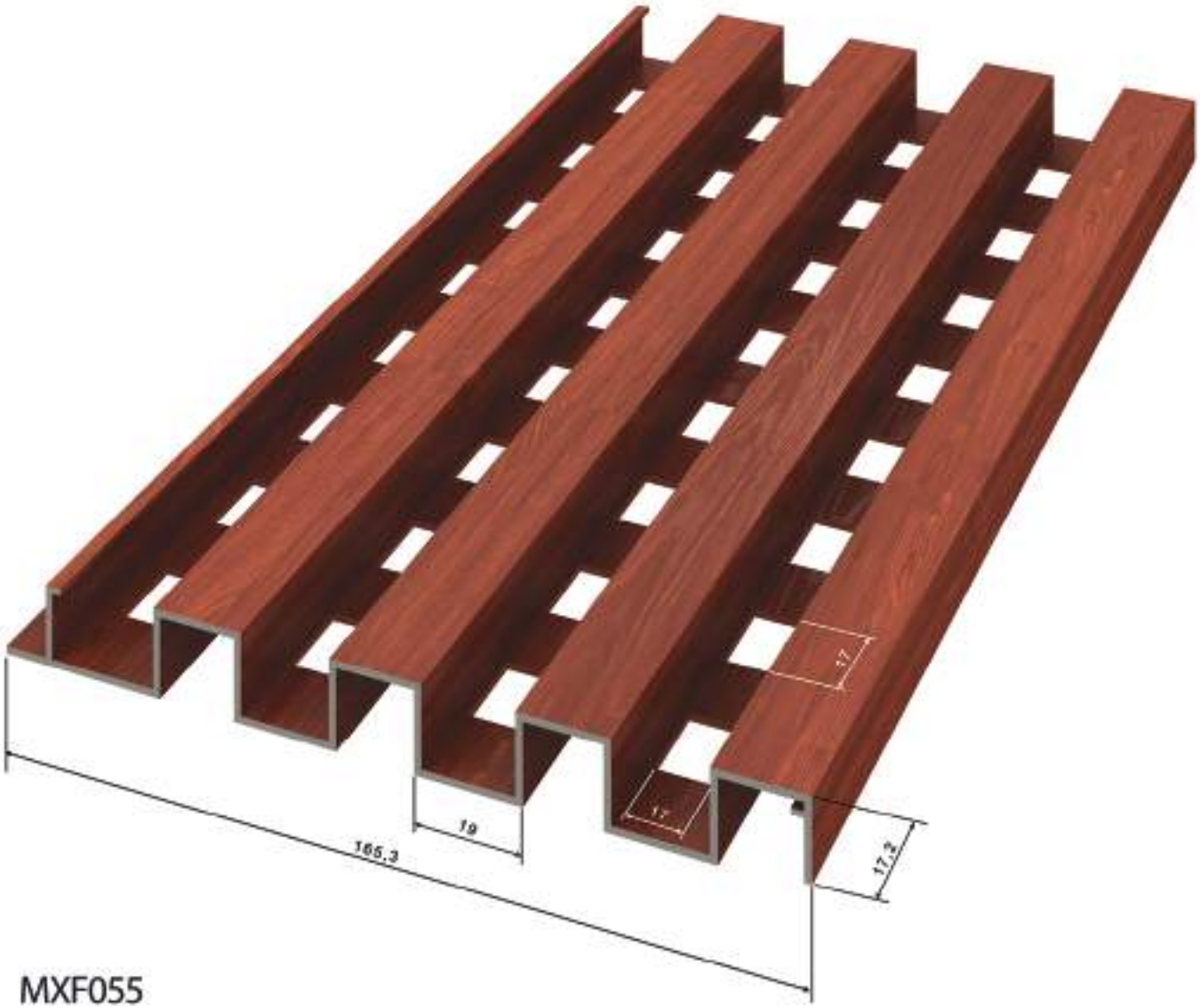



781378 - 0,885kg/m



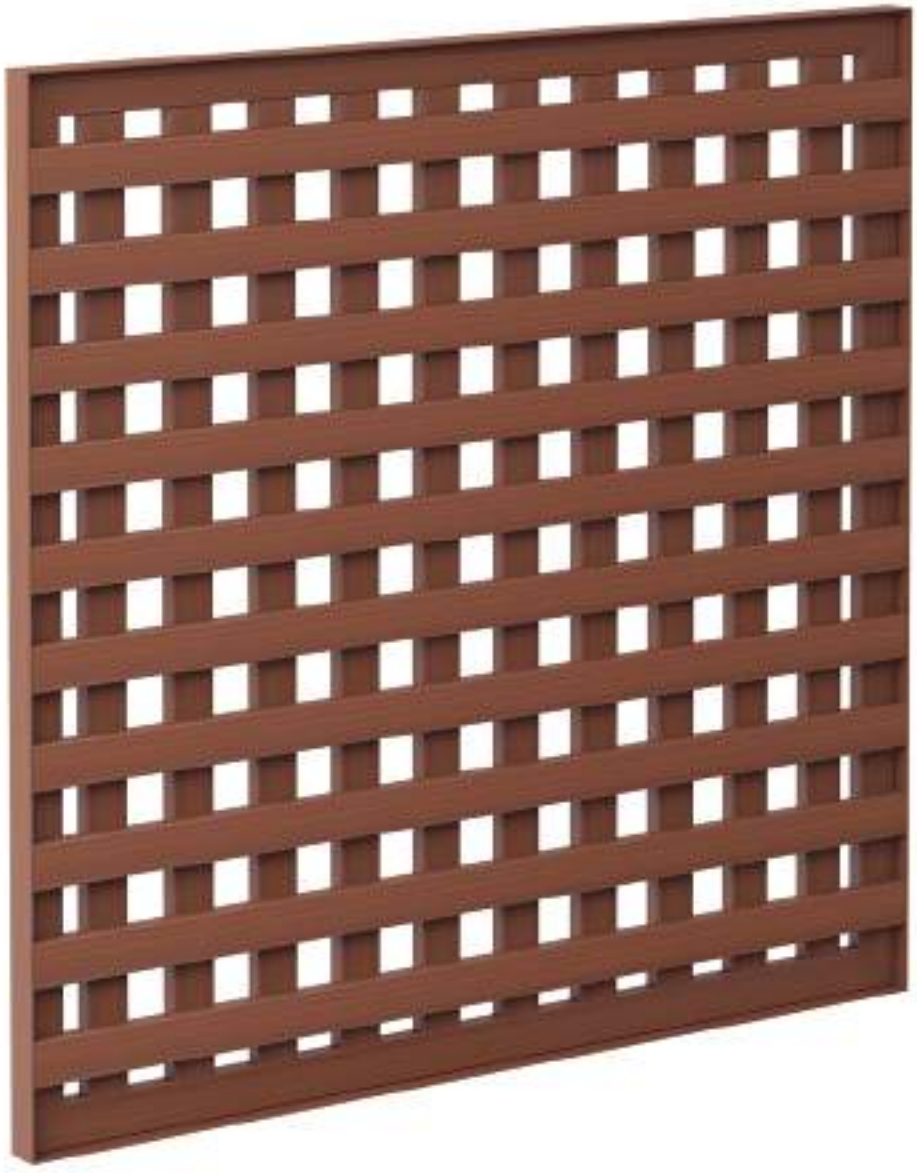

781379 - 1,322g/m

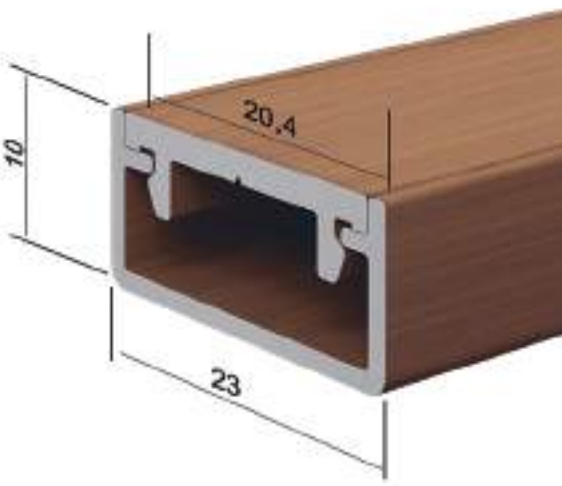
# MUXARABI




MXF055
Peso: 1,020 kg/m

# CLICK PARA MUXARABI EM ALUMÍNIO

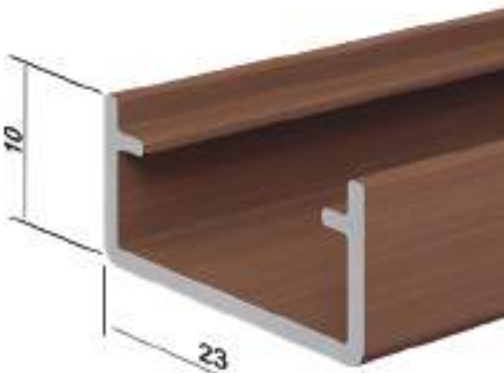






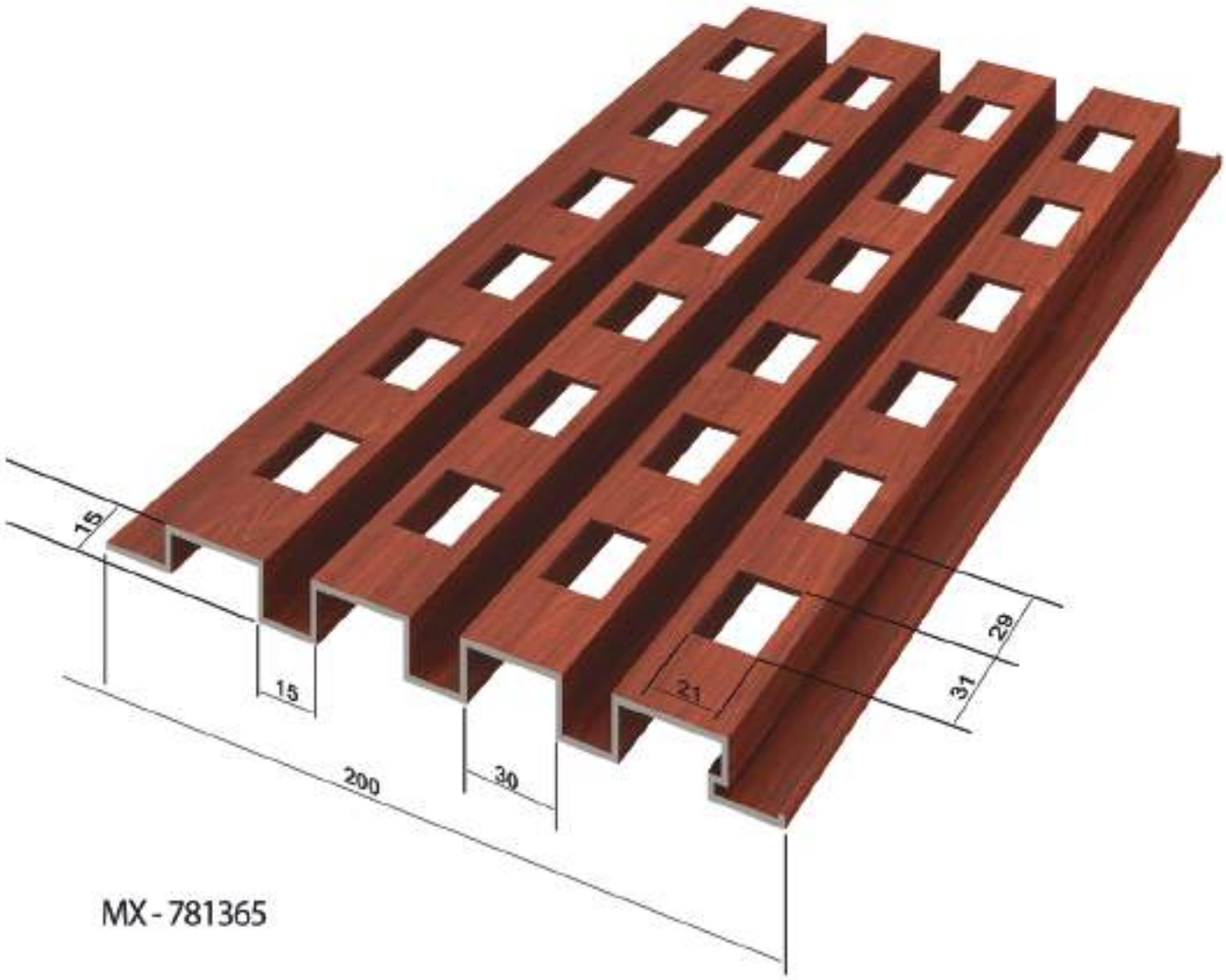


COD: 19-111a
0,100 kg/m



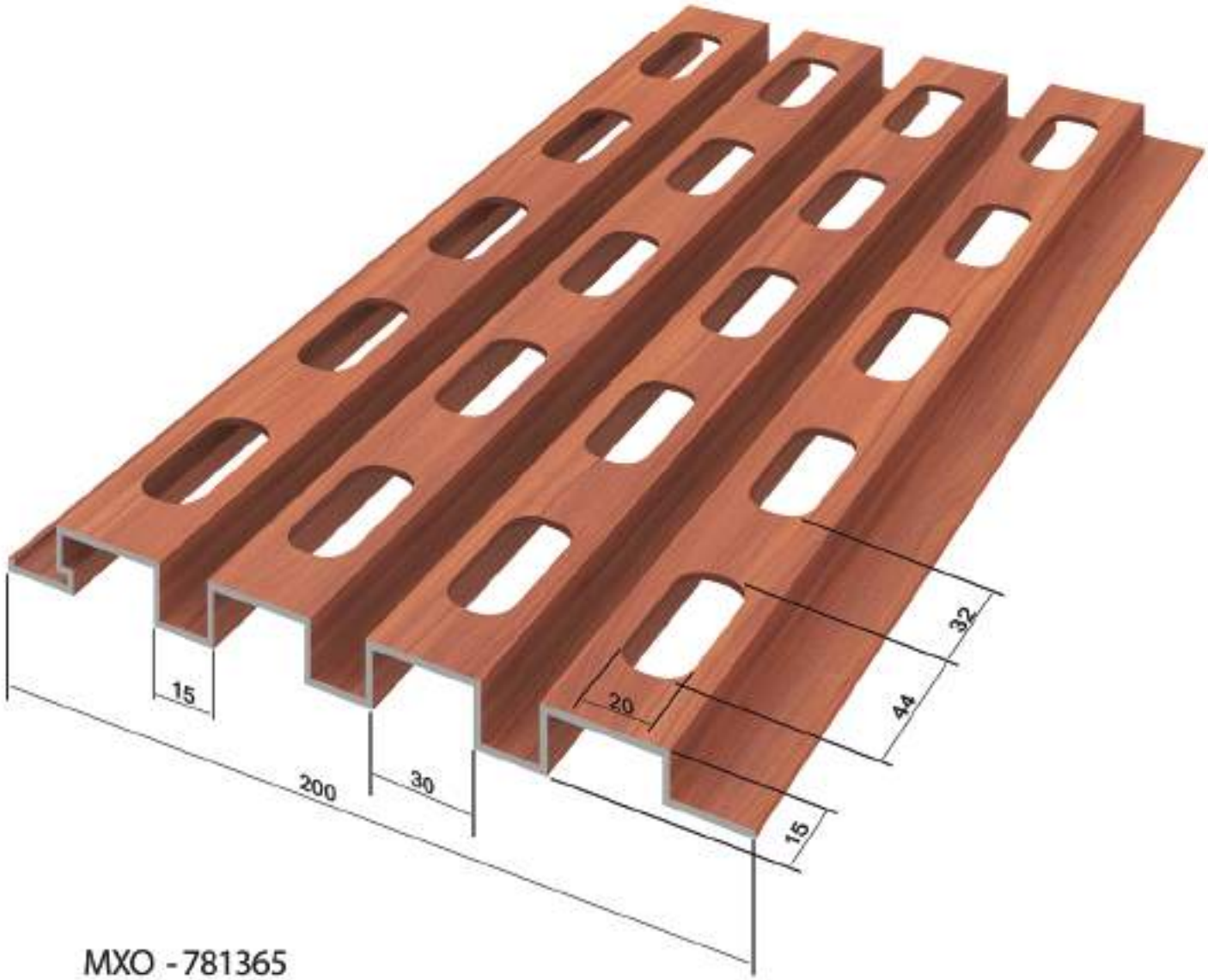

COD: 31-128a
0,145 kg/m

# MUXARABI



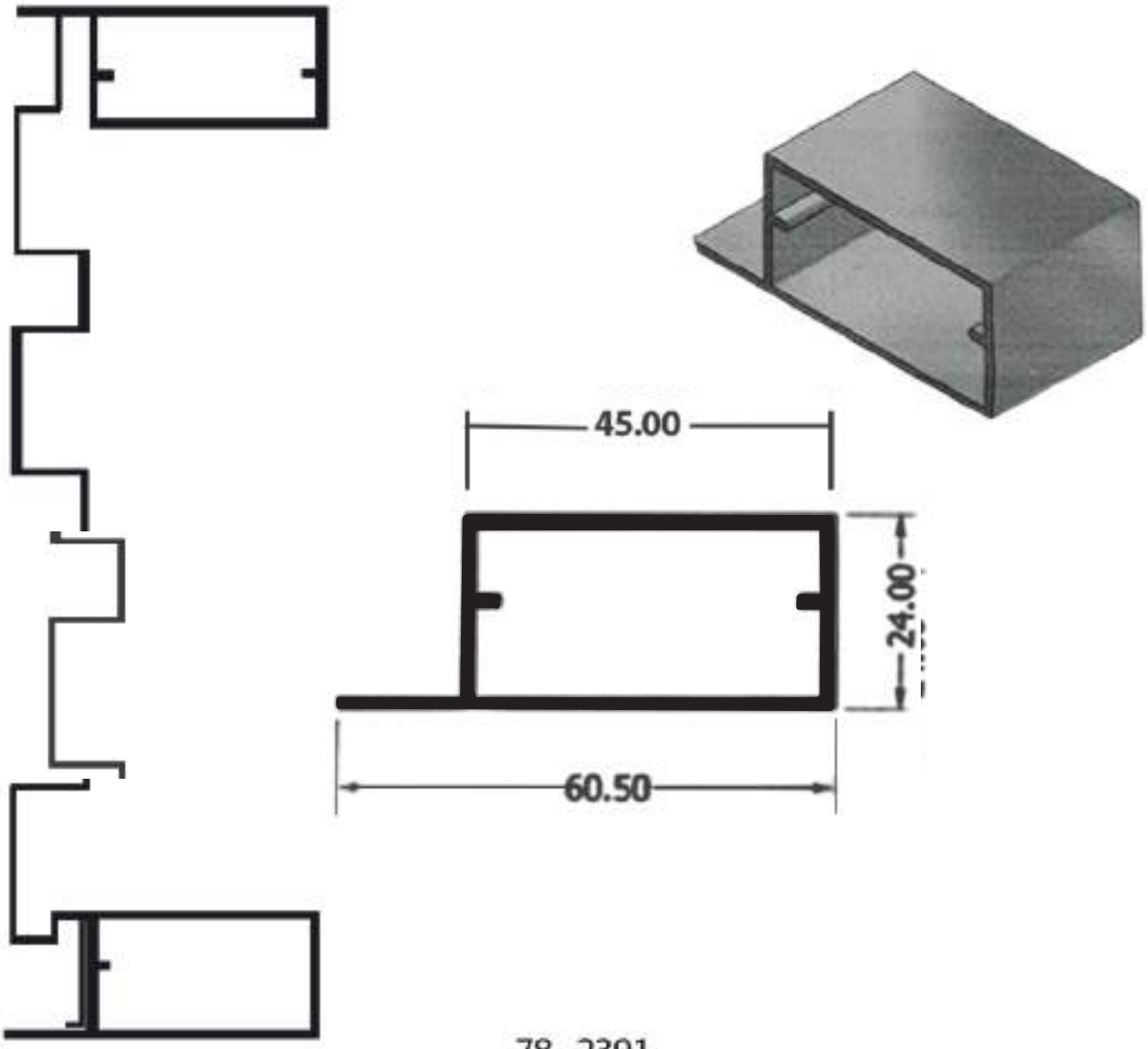

MX - 781365

# MUXARABI VITA




MXO - 781365

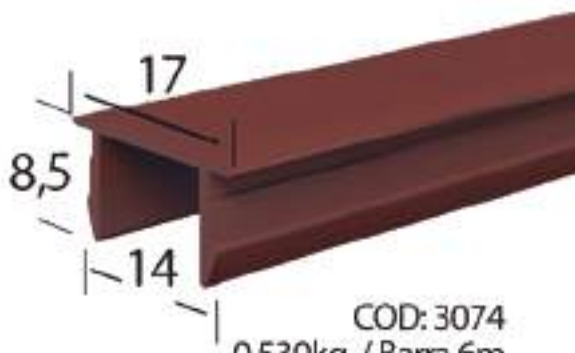
# CONTORNO PARA RIPADO



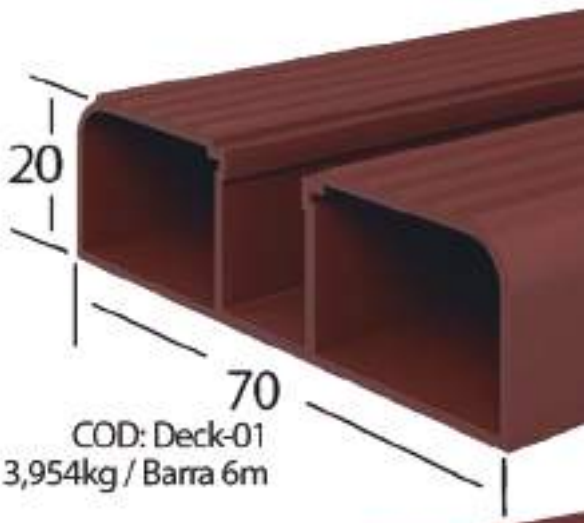

78 - 2391
0,626 Kg/m

# DECK EM ALUMÍNIO

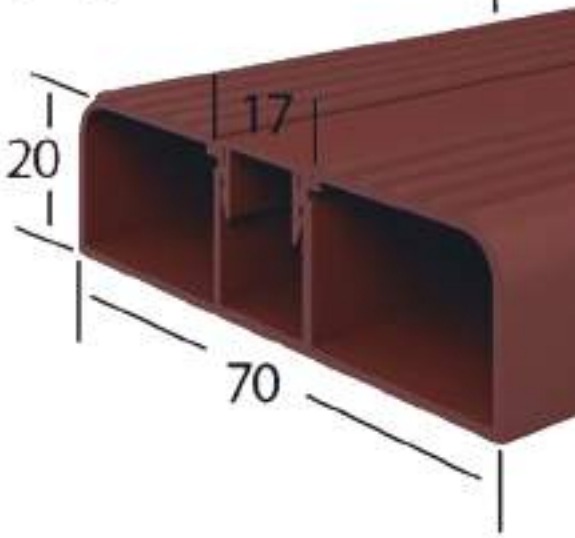




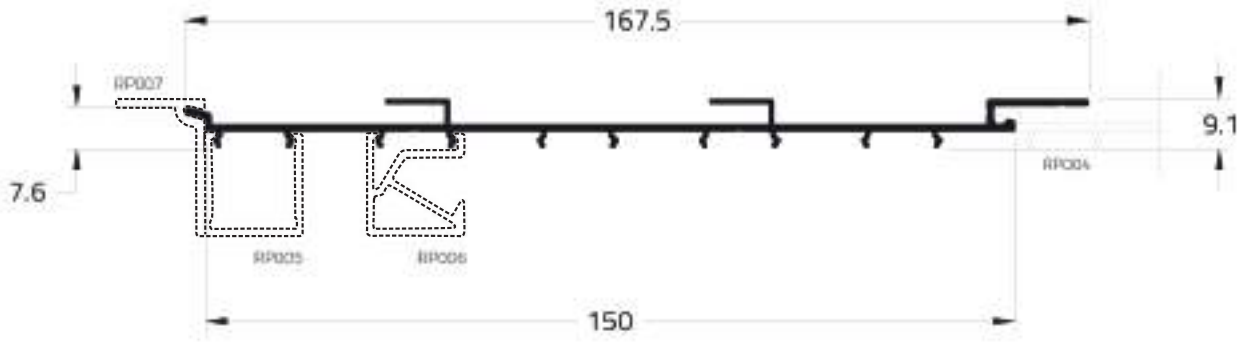

COD: 3074
0,530kg / Barra 6m



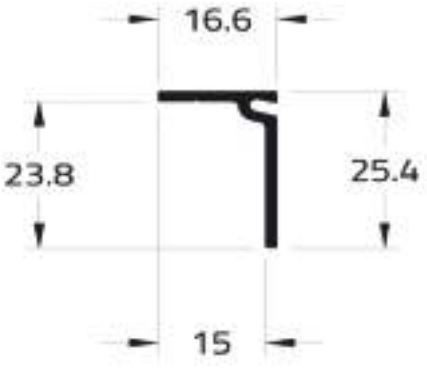

COD: Deck-01
3,954kg / Barra 6m



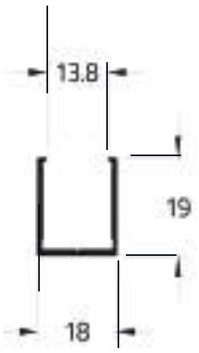
# RIPADO CLICADO PARA APLICAÇÃO DE LED




RIP-004 / Base Ripado
0,979 Kg/m



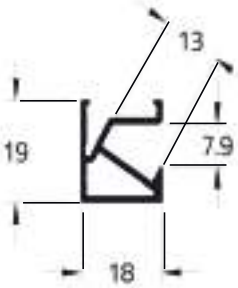

RIP-007 / Presilha Ripado
0,192 Kg/m






PERSPECTIVA

RIP-005 / Click LED
Ripado
0,187 Kg/m






Base projetada para aplicação de fita de led

PERSPECTIVA

RIP-006 / Click LED
Ripado
0,282 Kg/m

## Perfil Alumínio Sobrepor 12

Cód.: 1212S

Material: Alumínio Extrudado (6063 T5).
Acompanha o perfil:
Difusor Translúcido PMMA.
Suporte de fixação para Alvenaria e Marcenaria.
Cabeceiras.
Grau de Proteção: IP 20

Desenho Técnico

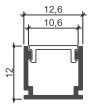
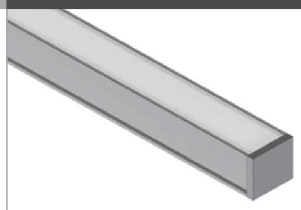



Imagem do Produto



## Perfil Alumínio Sobrepor 18

Cód.: 1810S

Material: Alumínio Extrudado (6063 T5).
Acompanha o perfil:
Difusor Translúcido PMMA.
Suporte de fixação para Alvenaria e Marcenaria.
Cabeceiras.
Grau de Proteção: IP 20

Desenho Técnico

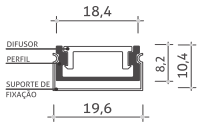



Imagem do Produto



## Perfil Alumínio Sobrepor 20

Cód.: 1815S

Material: Alumínio Extrudado (6063 T5).
Acompanha o perfil:
Difusor Translúcido PMMA.
Suporte de fixação para Alvenaria e Marcenaria.
Cabeceiras.
Grau de Proteção: IP 20

Desenho Técnico

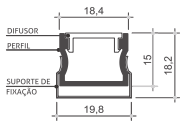



Imagem do Produto



## Perfil Alumínio Sobrepor Square 20

Cód.: 2025S

Material: Alumínio Extrudado (6063 T5).
Acompanha o perfil:
Difusor Translúcido PMMA.
Suporte de fixação para Alvenaria e Marcenaria.
Cabeceiras.
Grau de Proteção: IP 20

Desenho Técnico

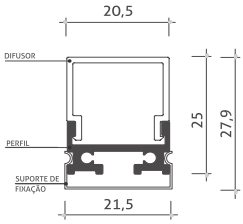



Imagem do Produto



## Perfil Alumínio Sobrepor 30

Cód.: 3327S

Material: Alumínio Extrudado (6063 T5).
Acompanha o perfil:
Difusor Translúcido PMMA.
Suporte de fixação para Alvenaria e Marcenaria.
Cabeceiras.
Grau de Proteção: IP 20

Desenho Técnico

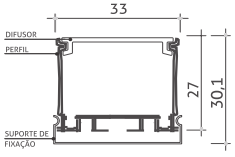



Imagem do Produto



## Perfil Alumínio Embutir 23x10

Cód.: 2310E

Material: Alumínio Extrudado (6063 T5).
Acompanha o perfil:
Difusor Translúcido PMMA.
Suporte de fixação para Alvenaria e Marcenaria.
(Presilhas para gesso: vendidas a parte)
Cabeceiras.
Grau de Proteção: IP 20

Desenho Técnico

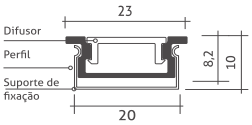



Imagem do Produto



## Perfil Alumínio Sobrepor U

Cód.: 2020S

Material: Alumínio Extrudado (6063 T5).
Acompanha o perfil:
- Difusor Translúcido PMMA.
- Suporte de fixação para Alvenaria e Marcenaria.
- Cabeceiras.

Grau de Proteção: IP 20

Desenho Técnico

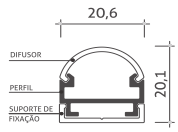



Imagem do Produto



## Perfil Alumínio Sobrepor Rodapé

Cód.: 2040S

Material: Alumínio Extrudado (6063 T5).
Acompanha o perfil:
- Difusor Translúcido PMMA.
- Suporte de fixação para Alvenaria e Marcenaria.
- Cabeceiras.

Grau de Proteção: IP 20

Desenho Técnico

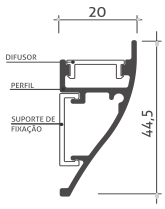



Imagem do Produto



## Perfil Alumínio Cantoneira

Cód.: 1616C

Material: Alumínio Extrudado (6063 T5).
Acompanha o perfil:
- Difusor Translúcido PMMA.
- Suporte de fixação para Alvenaria e Marcenaria.
- Cabeceiras.

Grau de Proteção: IP 20

Desenho Técnico

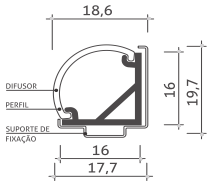



Imagem do Produto



## Perfil Alumínio Embutir Wall Wash

Cód.: 7626E

Material: Alumínio Extrudado (6063 T5).
Acompanha o perfil:
- Difusor Translúcido PMMA.
- Presilhas para fixação em gesso.
- Cabeceiras.

Grau de Proteção: IP 20

Desenho Técnico

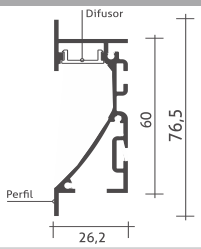



Imagem do Produto



## Perfil Alumínio Fine Arandela ou Pendente 20mm

Cód.: 2121AP

Material: Alumínio Extrudado (6063 T5).
Acompanha o perfil:
- Difusor Translúcido PMMA.
- Kit pendente vendido a parte.
- Cabeceiras.

Grau de Proteção: IP 20

Desenho Técnico

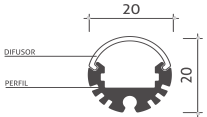



Imagem do Produto



## Perfil Alumínio Embutir 23x10

Cód.: 2310E

Material: Alumínio Extrudado (6063 T5).
Acompanha o perfil:
- Difusor Translúcido PMMA.
- Suporte de fixação para Alvenaria e Marcenaria.
- (Presilhas para gesso: vendidas a parte)
- Cabeceiras.

Grau de Proteção: IP 20

Desenho Técnico

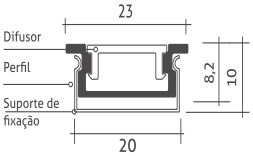
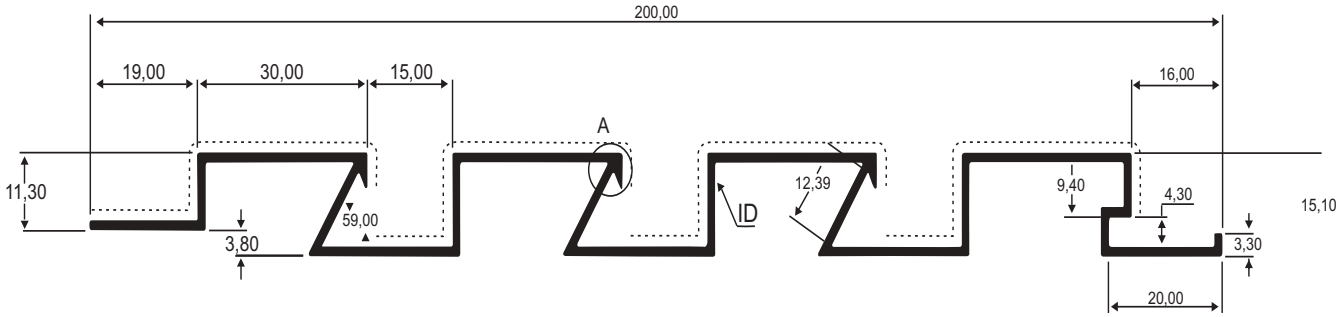


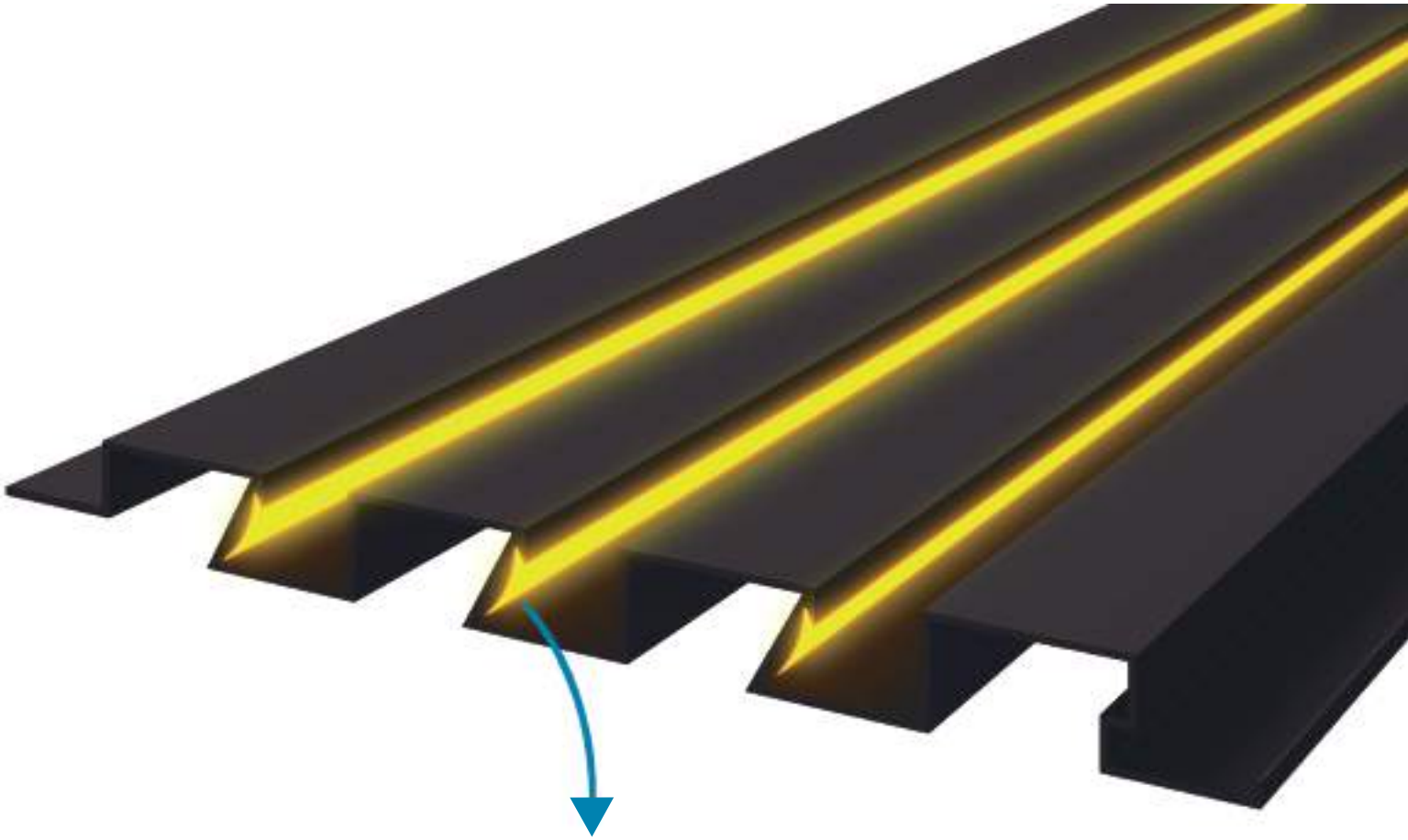

Imagem do Produto



# RIPADO PARA APLICAÇÃO DE LED

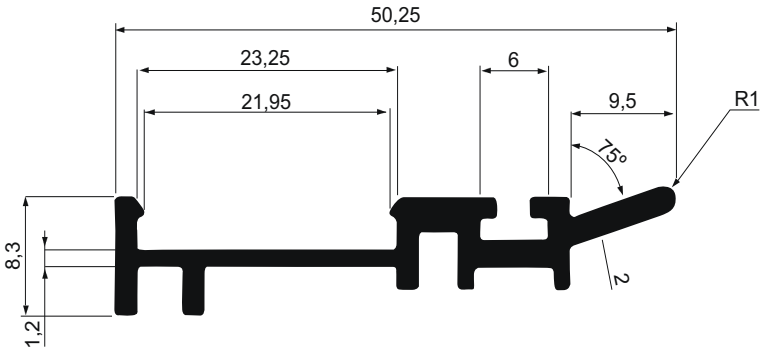



ALP-325
1,348 Kg/m



**Aplicação de fita LED**

ALP-325
1,348 Kg/m




ALP-0801
0,380 Kg/m

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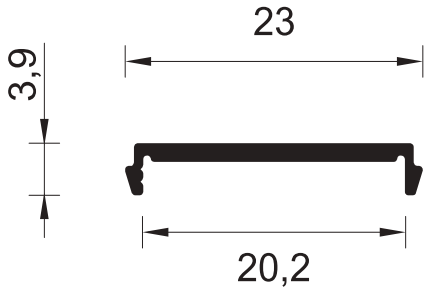



Click Acabamento
781352 - 0,094kg/m

# LINHA OFFICIAL

**Linha Homologada dentro das normas ABNT NBR 10.821.**

**Resultado, qualidade e competitividade.**

**As Linhas Official são Homologadas pelo PBQP-H, Programa Brasileiro da Qualidade e Produtividade do Habitat, isto significa que atende plenamente às normas brasileiras nos requisitos de:**

**- Permeabilidade do ar;**
**- Estanqueidade à água;**
**- Resistência às Cargas de Vento;**
**- Resistência às Operações de Manuseio.**

AFEAL

PBQP do Habitat

ALPA ALUMÍNIO



iTEC

Relatório de Ensaio RE-[illegible]/12

1. MATERIAL ENSAIADO

| Dimensões | L x H x B |
|---|---|
| Marco | (2460x 2242) mm |
| Contra-marco | (2410x 2205) mm |
| Folhas | (1084 2470) mm |
| Vidros (fix.) exterior | [illegible] mm |
| Vidros (fix.) interior | [illegible] mm |

Ferragens de manobra: (3) articuladas em aço inoxidável, (2) mm de largura x (?) mm de altura.
Altura máxima do vão (Altura do vidro): 40 mm.

2. CARACTERÍSTICAS DO PROTÓTIPO

2.1. Fixação no vão

O protótipo foi fixado em vão de [illegible] provisoriamente montado em alvenaria de [illegible] com [illegible] de espessura, [illegible] de [illegible] com [illegible] para fixação da [illegible] e [illegible] do marco no alvenaria.

2.2. Verificação do protótipo em relação ao projeto do ensaio e em ensaio:

Após a [illegible] da instalação dos ensaios, foi realizada a verificação do protótipo em relação ao projeto fornecido pelo interessado, durante a desmontagem do protótipo verificou-se todos os [illegible] de fixação e vedação [illegible] (parafusos, fixadores, etc.).

Durante a verificação realizada constatou-se que o caixilho ensaiado [illegible] com o projeto apresentado.



iTEC

Relatório de Ensaio RE-[illegible]/12

1. MATERIAL ENSAIADO

Uma janela em alumínio com persiana integrada, constituída por (6) folhas de tipo de correr, sendo (4) fixas, com dimensão total de 1400 mm x 1200 mm, instalada com [illegible] em [illegible], conforme especificado a seguir:

| Dimensões | L x H x B |
|---|---|
| Marco | (1400x 1200) mm |
| Contra-marco | (1425 x 1208) mm |
| Folhas | (660x 566) mm |
| Vidros (2x) exteriores | [illegible] mm |

Ferragens de manobra: (2) cremonas de aço inoxidável, 30 mm de largura x (?) mm de altura.
Altura máxima do vão (Altura do vidro): 40 mm.

2. CARACTERÍSTICAS DO PROTÓTIPO

2.1. Fixação no vão

O protótipo foi fixado em vão de [illegible] provisoriamente montado em alvenaria de [illegible] com [illegible].

2.2. Verificação do protótipo em relação ao projeto do ensaio e em ensaio:

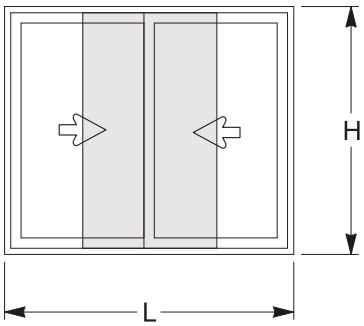
Após a [illegible] da instalação dos ensaios, foi realizada a verificação do protótipo em relação ao projeto fornecido pelo interessado, durante a desmontagem do protótipo verificou-se todos os [illegible] de fixação e vedação [illegible] (parafusos, fixadores, etc.).

Durante a verificação realizada constatou-se que o caixilho ensaiado [illegible] com o projeto apresentado, com exceção ao seguinte:

A – Verificou-se ausência de [illegible] e a [illegible] de borracha, em todo [illegible] no [illegible] (Foto nº 04).

# GRÁFICOS DE DIMENSÕES

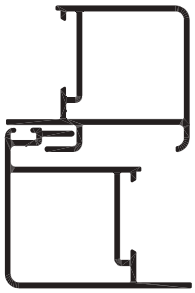
## JANELA DE CORRER 2 FOLHAS

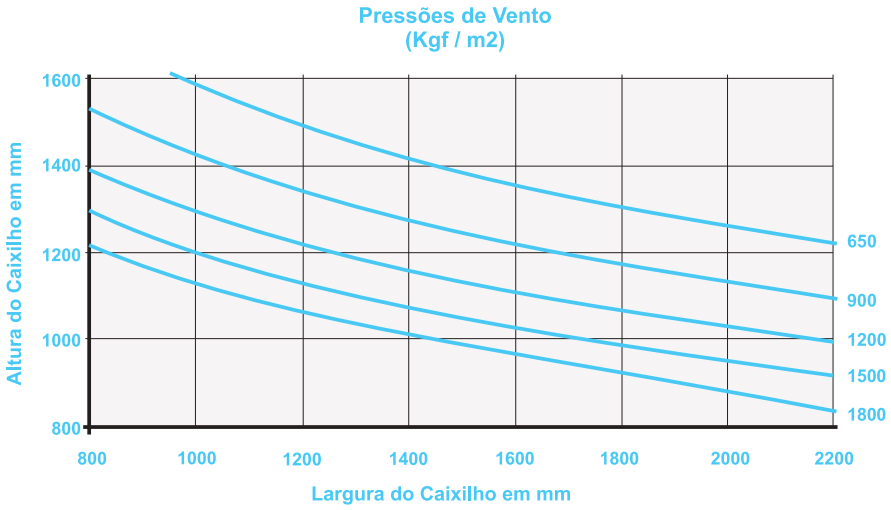



Total
Jx = 4,191 cm4

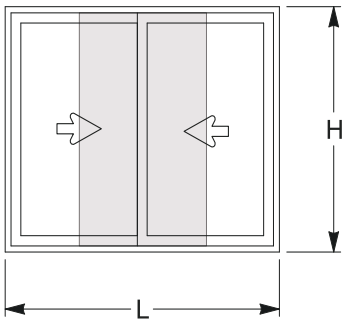
25H508
Jx = 1,844 cm4
Wx = 1,165 cm3

25H509
Jx = 2,347 cm4
Wx = 1,285 cm3





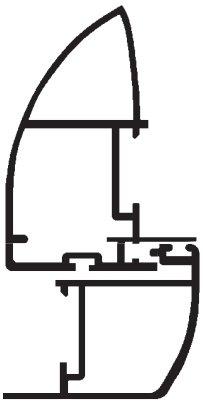

## JANELA DE CORRER 2 FOLHAS

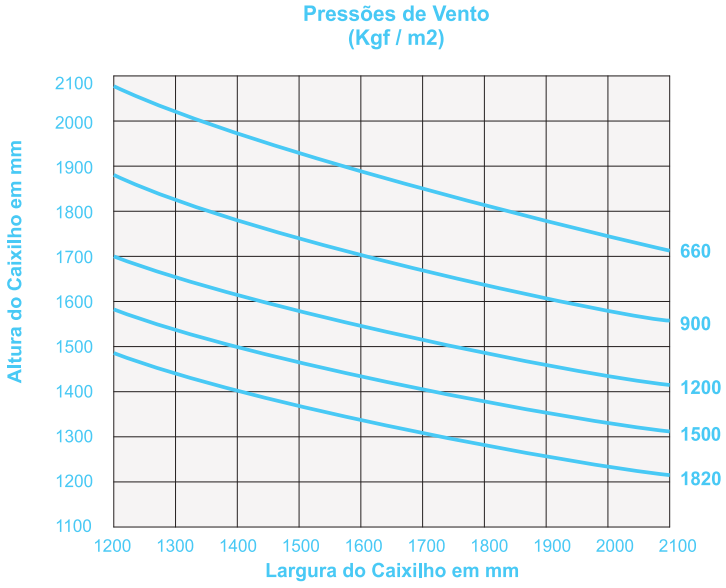



Total
Jx = 11,80 cm4

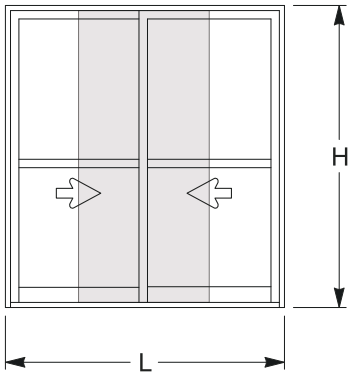
VS 79644
Jx = 8,95 cm4
Wx = 3,10 cm3

VS-88863
Jx = 2,50 cm4
Wx = 1,84 cm3





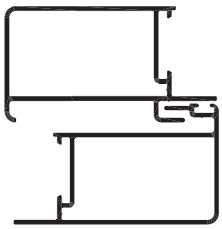
# GRÁFICOS DE DIMENSÕES
## PORTA DE CORRER 2 FOLHAS

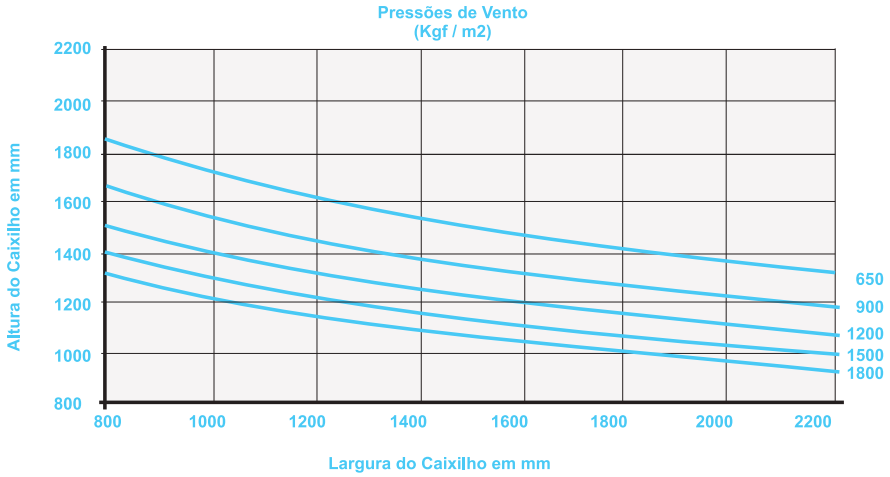



Total
Jx = 5,330 cm4

25H504
Jx = 2,422 cm4
Wx = 1,563 cm3

25H505
Jx = 2,908 cm4
Wx = 1,558 cm3



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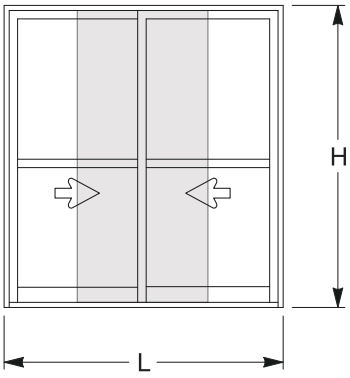
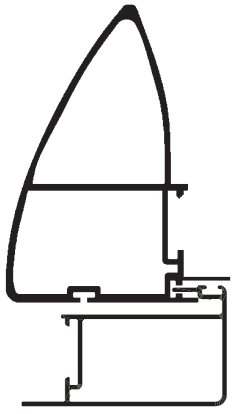


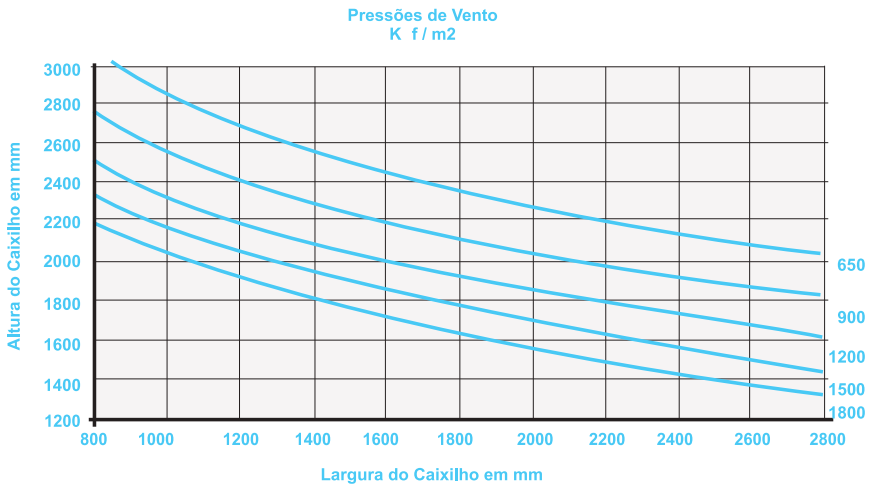

## PORTA DE CORRER 2 FOLHAS

Total
Jx = 24,337 cm4

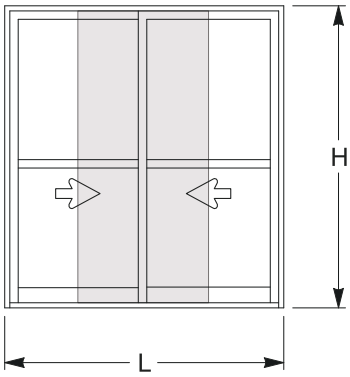
VS 738
Jx = 21,429 cm4
Wx = 6,224 cm3

25H505
Jx = 2,908 cm4
Wx = 1,558 cm3





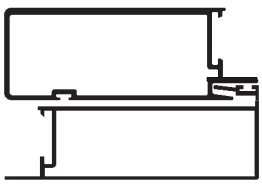
## GRÁFICOS DE DIMENSÕES
## PORTA DE CORRER 2 FOLHAS

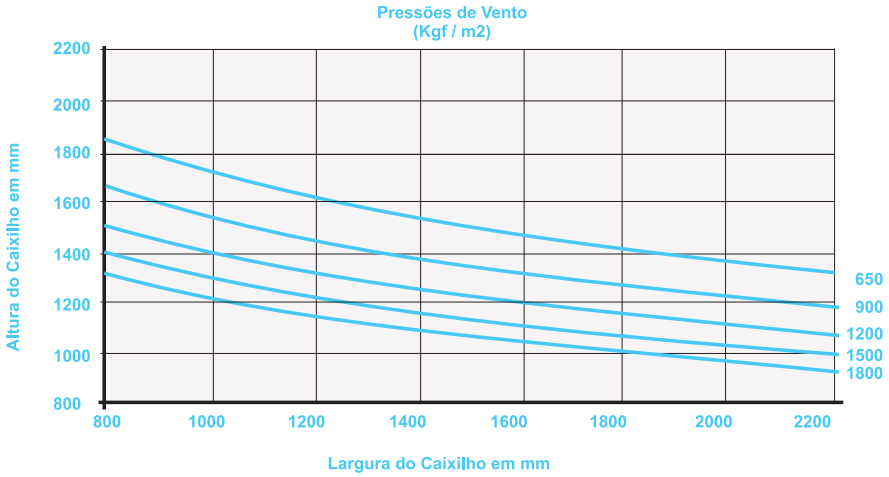



Total
Jx = 5,330 cm4

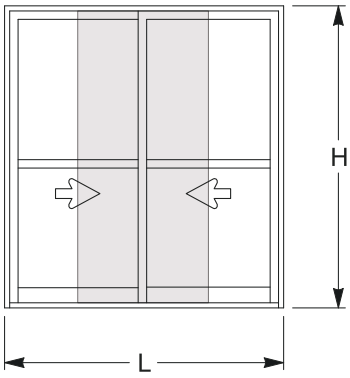
AP 761
Jx = 2,422 cm4
Wx = 1,563 cm3

AP 706
Jx = 2,908 cm4
Wx = 1,558 cm3





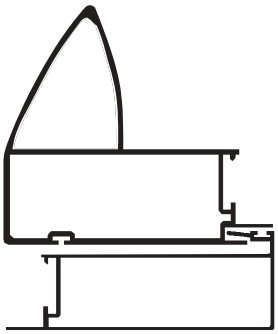

## PORTA DE CORRER 2 FOLHAS

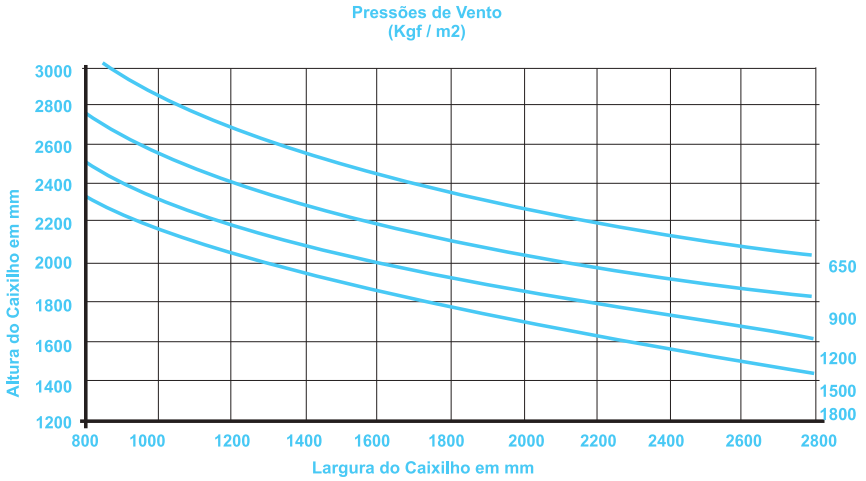


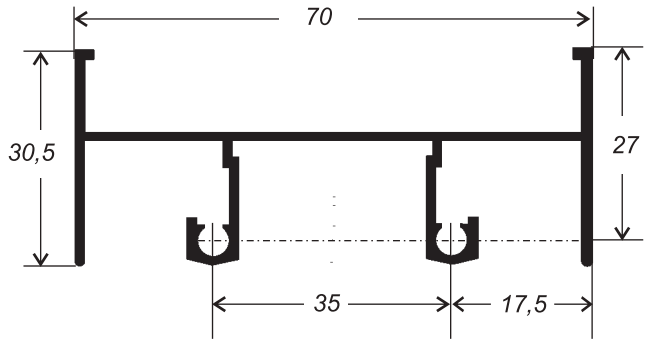

Total
Jx = 24,337 cm4

AP 583
Jx = 21,429 cm4
Wx = 6,224 cm3

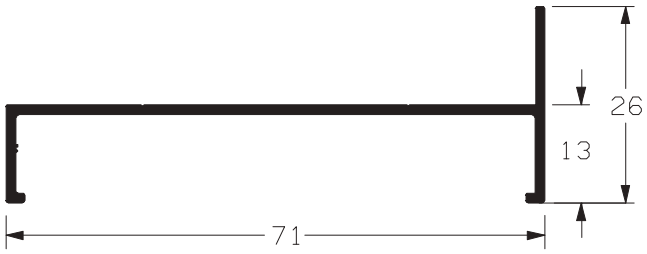
AP 706
Jx = 2,908 cm4
Wx = 1,558 cm3



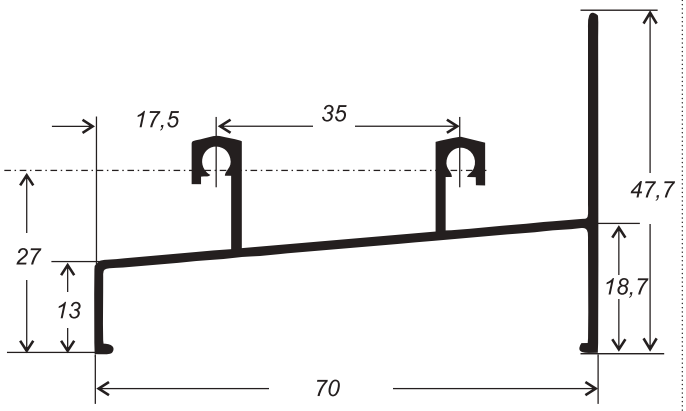




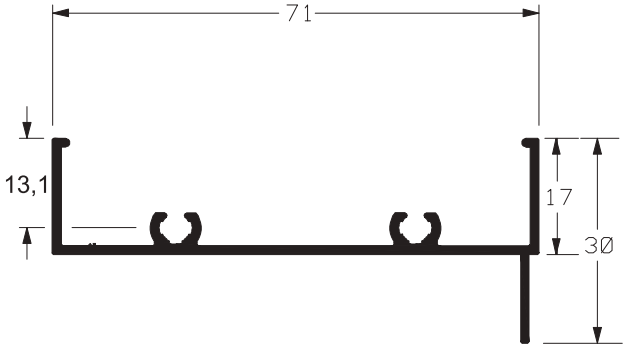

25H-024 - 0,684kg/m



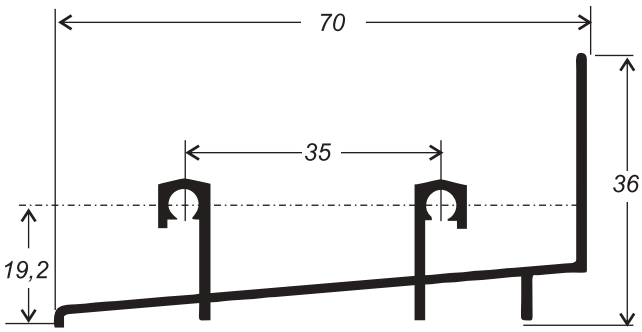

SU-007 - 0,382kg/m



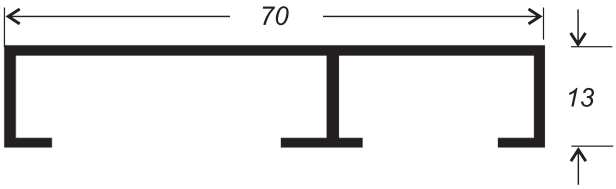

25H-025 - 0,650kg/m



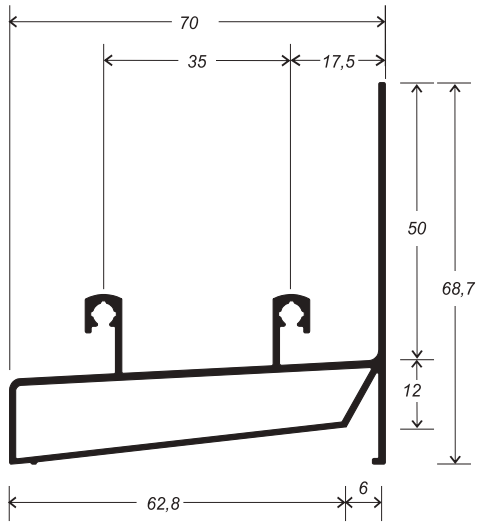

SU-004 - 0,504kg/m



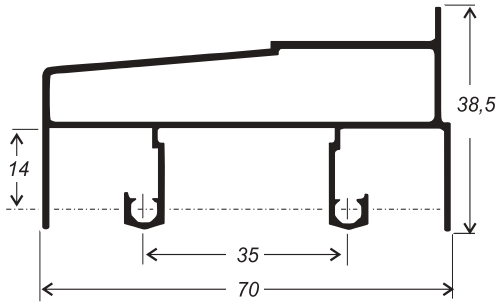

25H-054 - 0,603kg/m



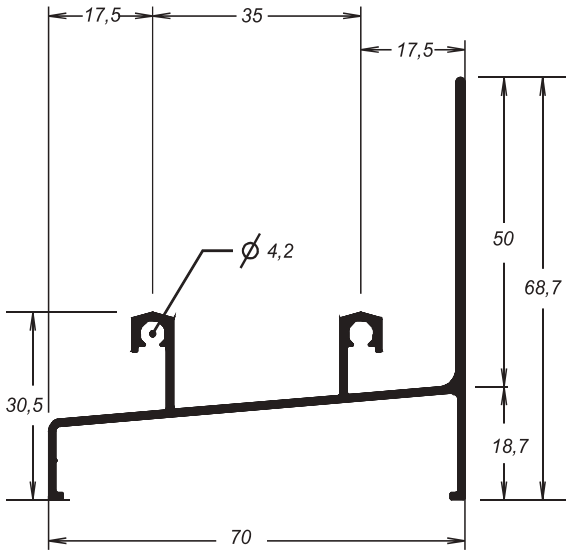

VS-42104 - 0,455kg/m



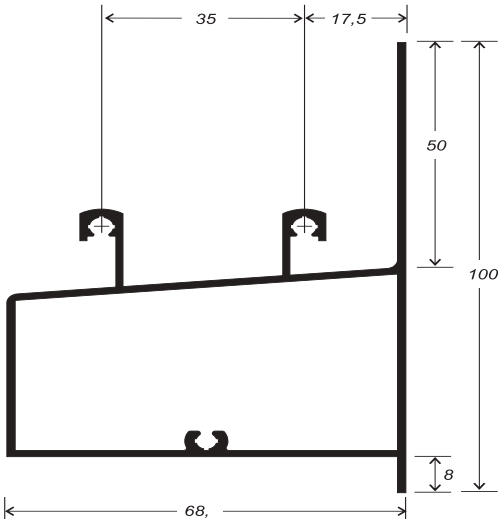

25H-541 - 0,874kg/m



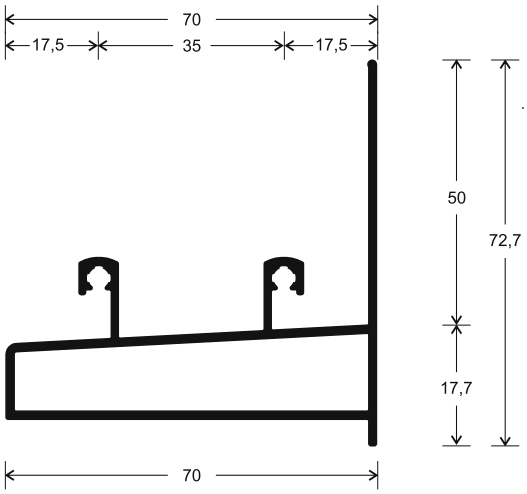

25H-532 - 0,950kg/m



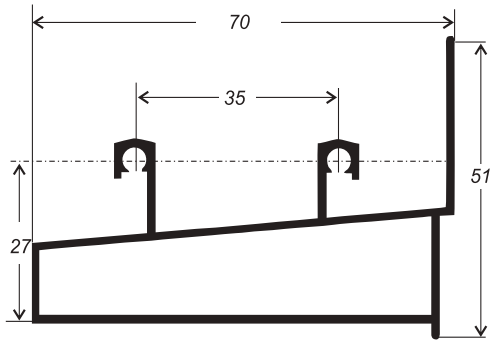

25H-086 - 0,716kg/m



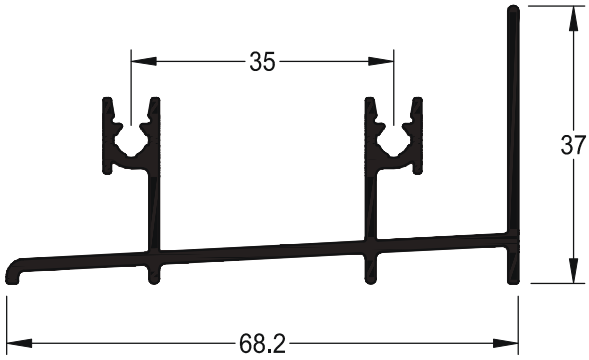

25H-551 - 1,283kg/m



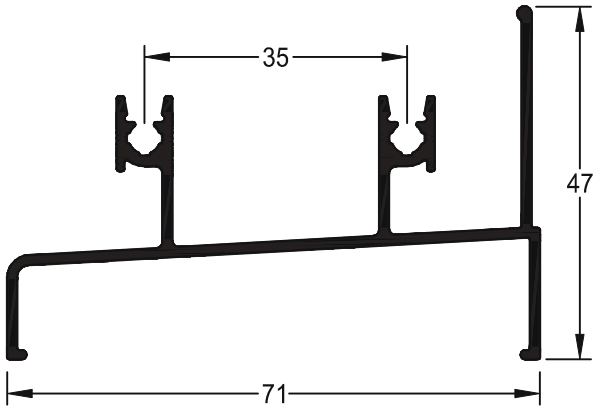

25H-536 - 1,084kg/m




25H-531 - 0,950kg/m



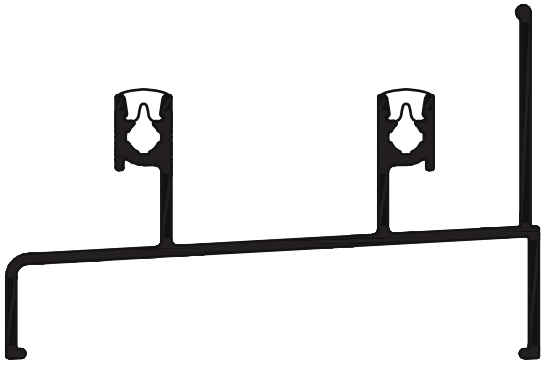

VS-2523 - 0,697kg/m

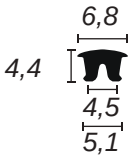


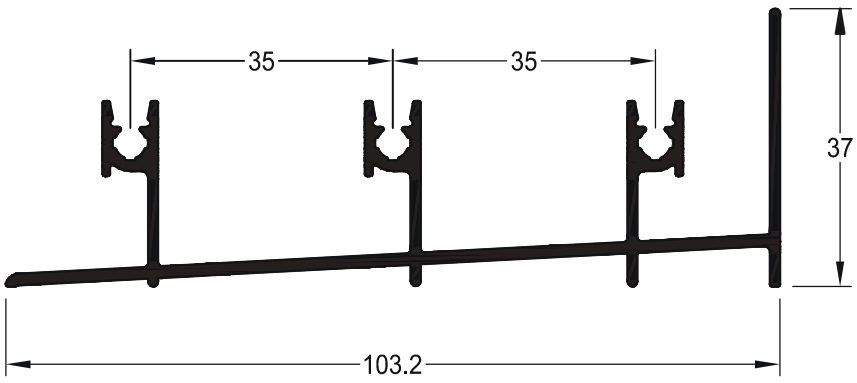

VS-2541 - 0,725kg/m

NYL-2586
Nylon

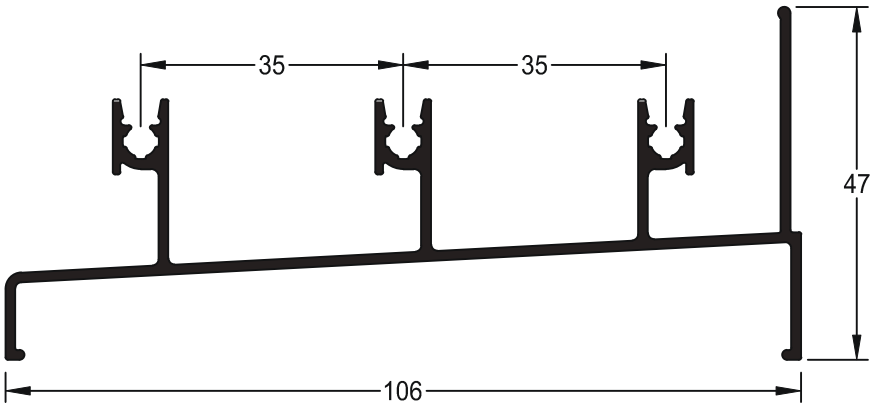
Montagem



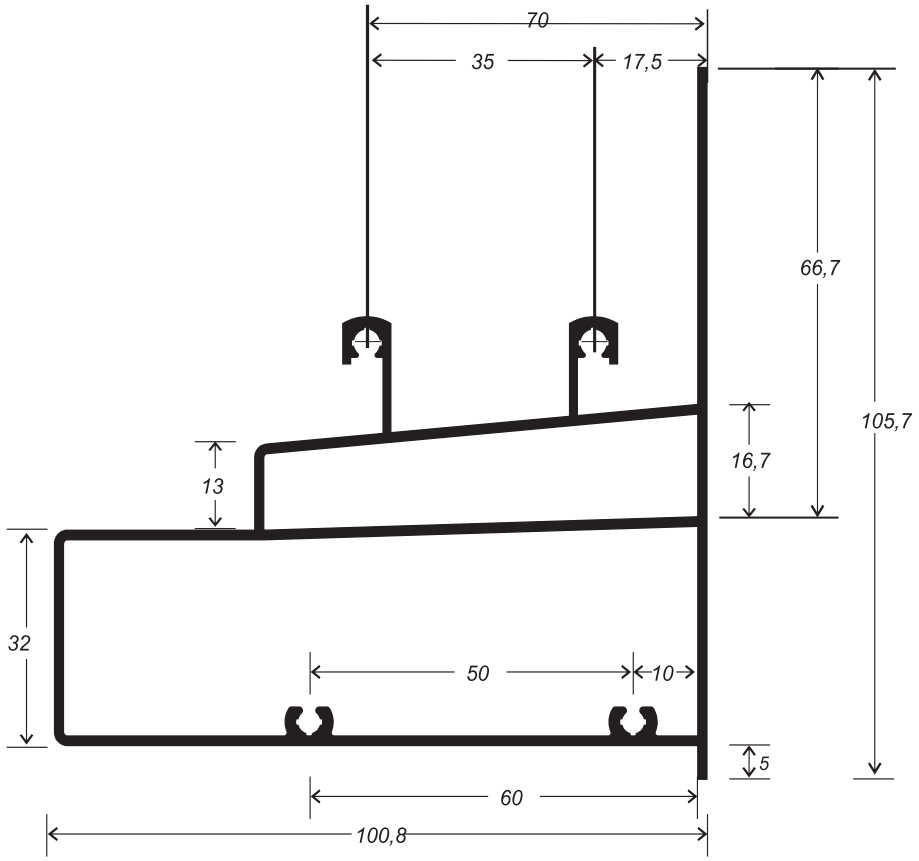


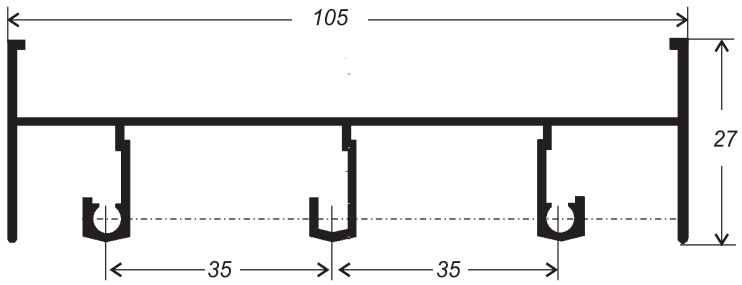

VS-2622 - 0,978kg/m



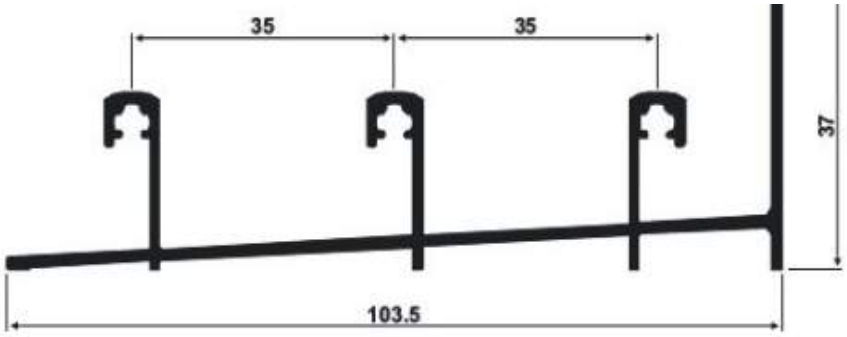

VS-2621 - 0,984kg/m



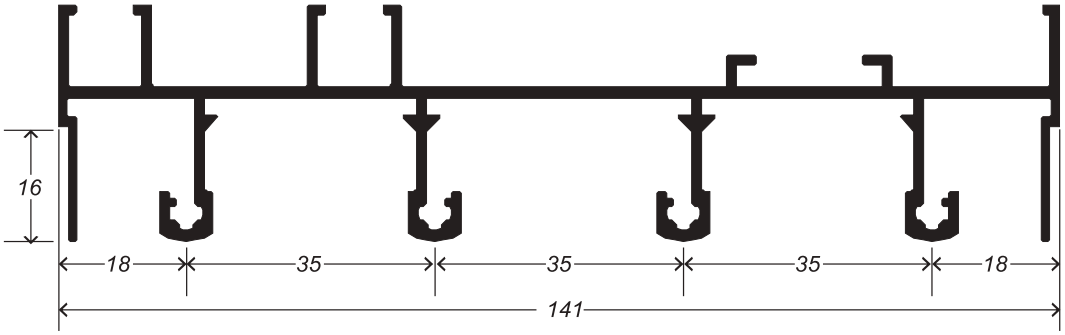

25H-535 - 1,903kg/m



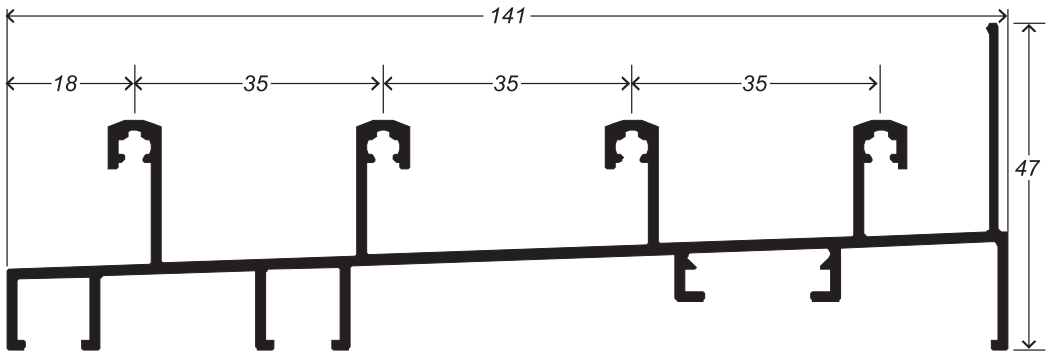

25H-027 - 0,900kg/m



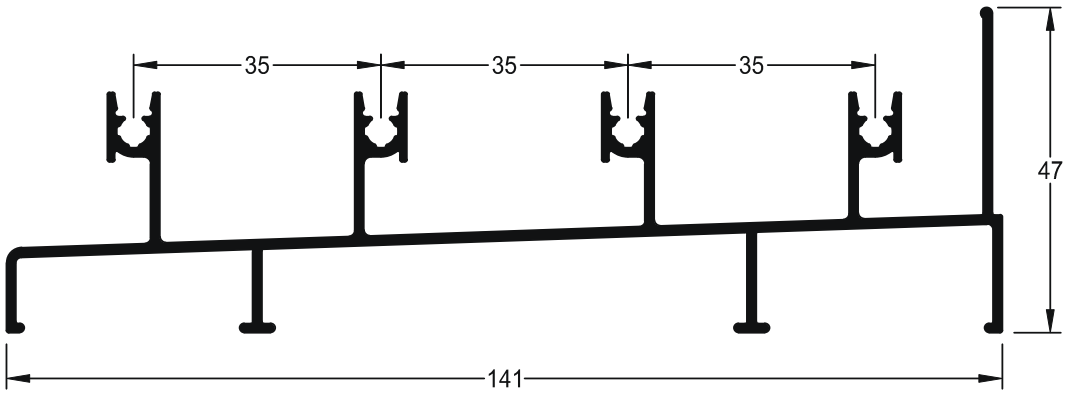

SU-230 - 0,842kg/m



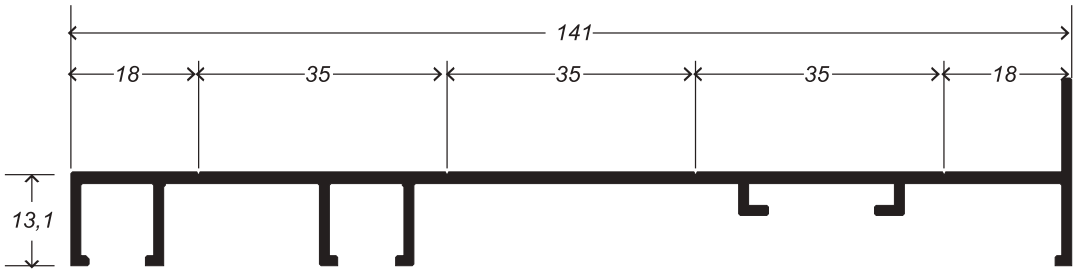

25H-121 - 1,523kg/m



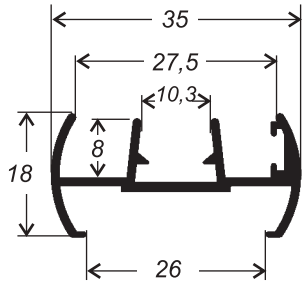

25H-122 - 1,431kg/m



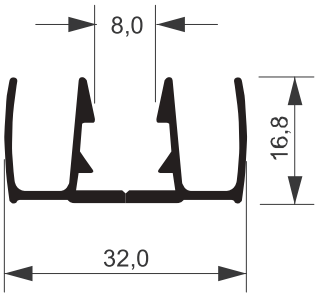

VS-2569 - 1,396kg/m



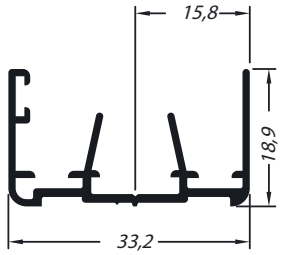

25H-123 - 0,857kg/m



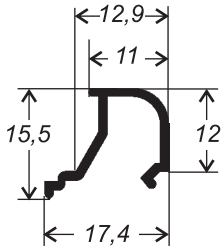

VS-55706 - 0,325kg/m



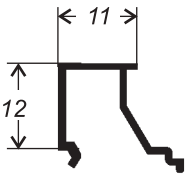

VS-2006 - 0,332kg/m



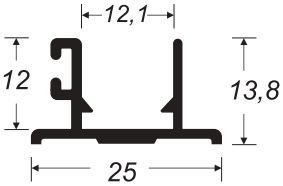

VS-2008 - 0,312kg/m



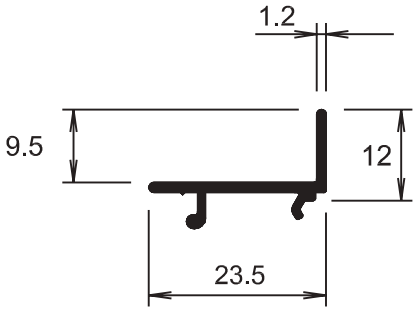

42-473 - 0,102kg/m




SU-102 - 0,113kg/m

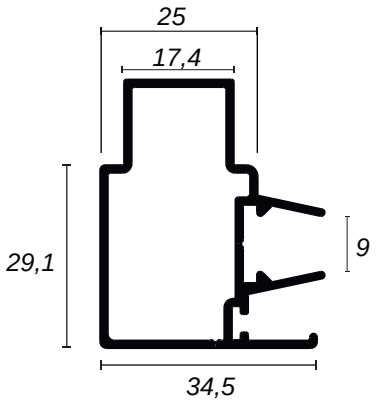



25H-020 - 0,193kg/m

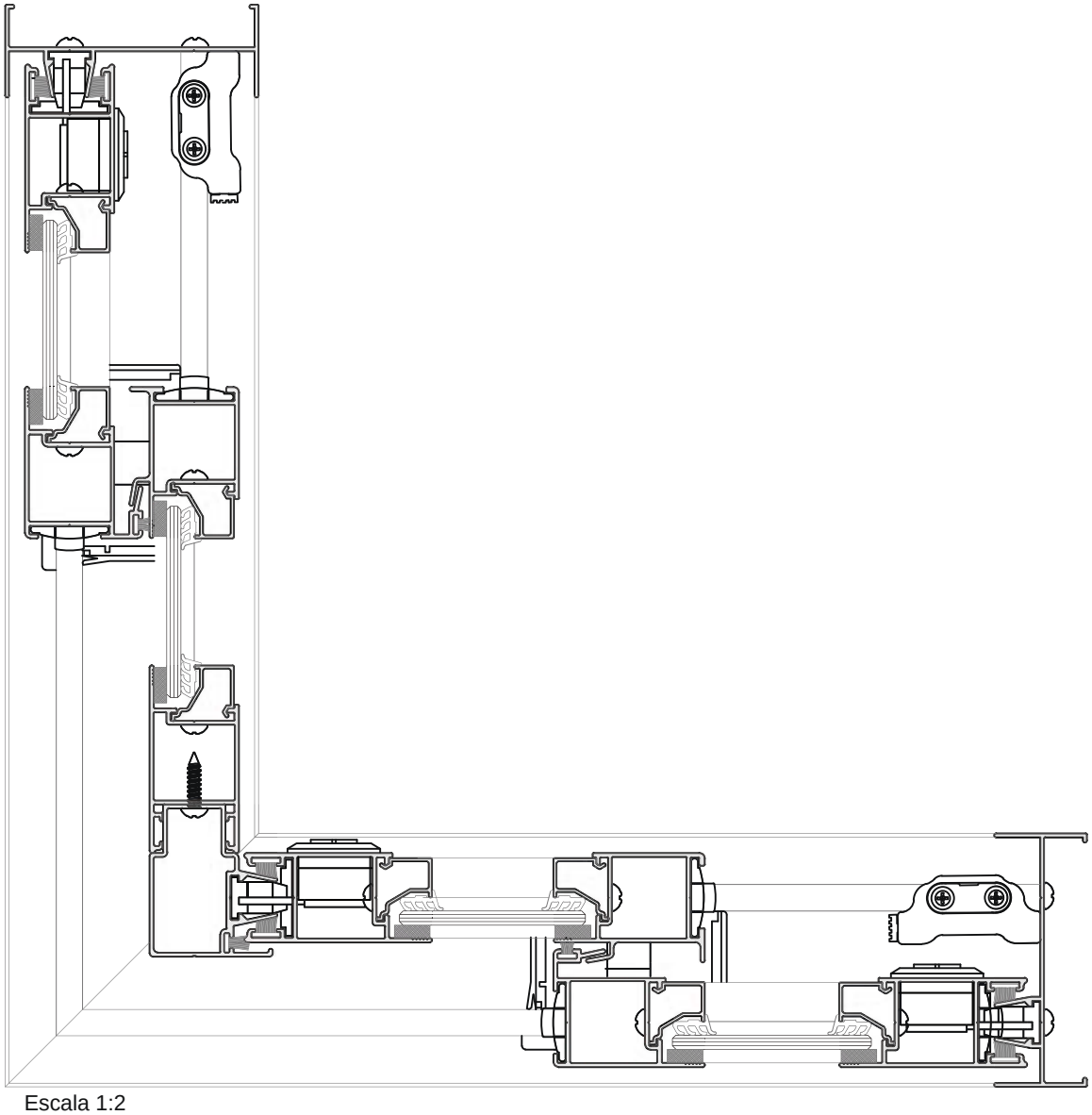



32-0119 - 0,145kg/m

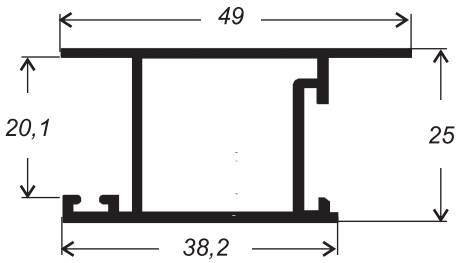
# PERFIL PARA JANELA DE CANTO 90° LINHA 25



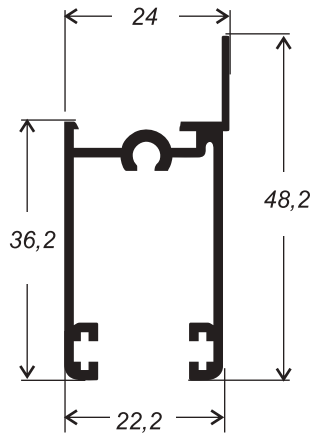

VS-2007 - 0,527kg/m



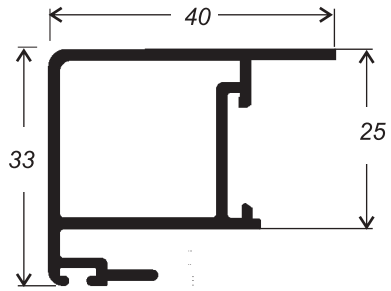
Escala 1:2



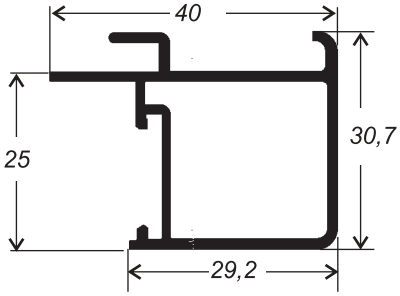

25H-510 - 0,476kg/m



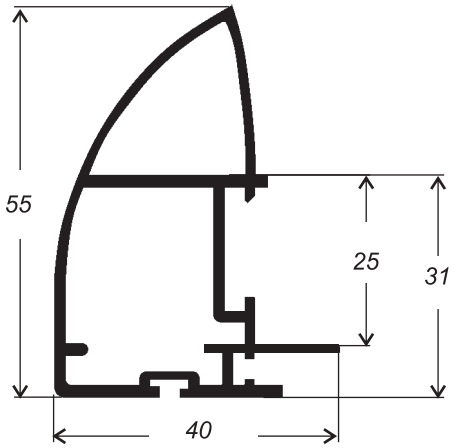

25H-023 - 0,467kg/m



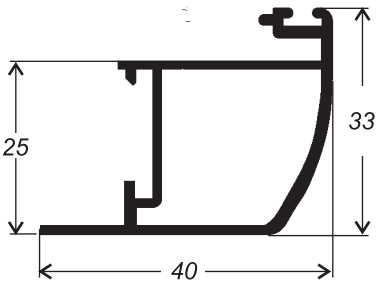

25H-509 - 0,474kg/m



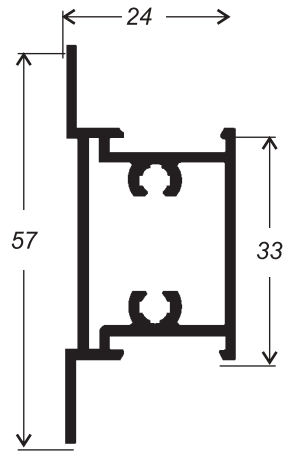

25H-508 - 0,458kg/m



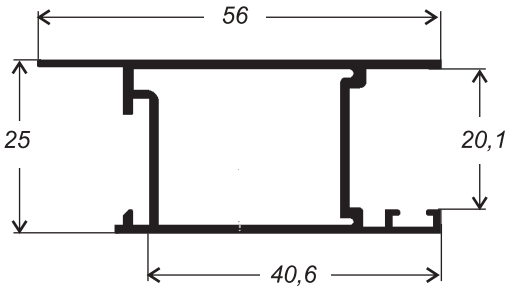

VS-79644 - 0,675kg/m
Mão amiga interna



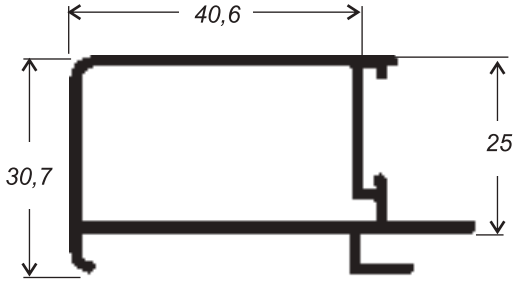

VS-88863 - 0,447kg/m
Mão amiga externa



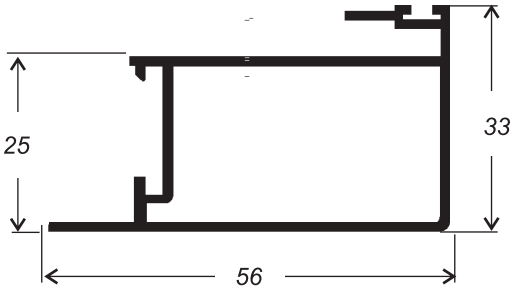

25H-522 - 0,567kg/m



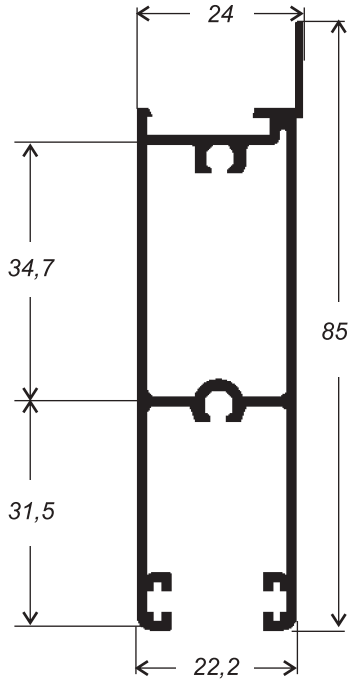

25H-513 - 0,543kg/m
(4,6m)



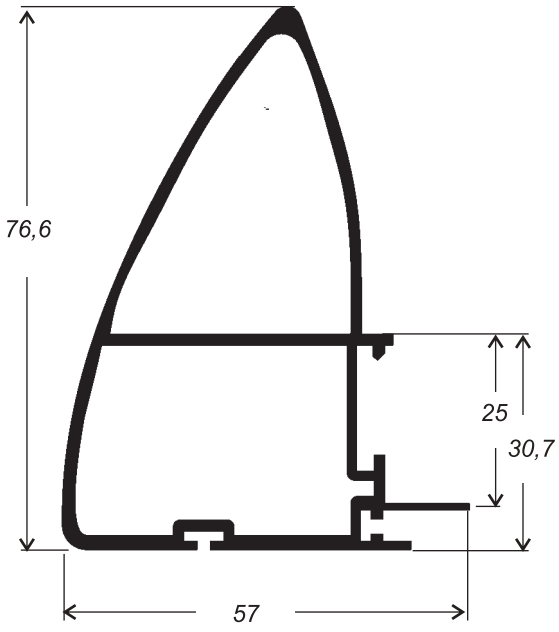

25H-504 - 0,556kg/m
(4,6m)



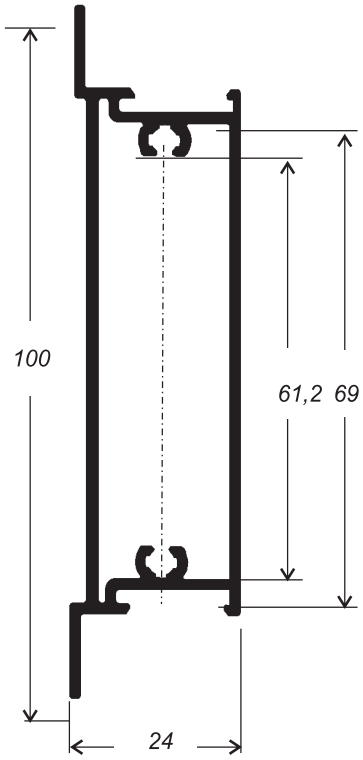

25H-505 - 0,585kg/m
(4,6m)



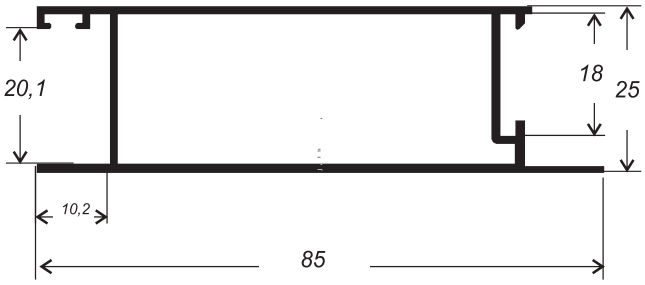

25H-516 - 0,804kg/m



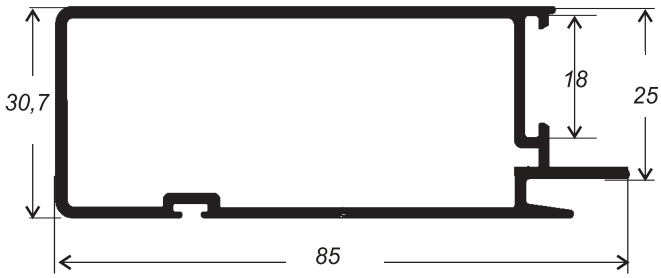

VS-738 - 1,098kg/m
(4,6m)



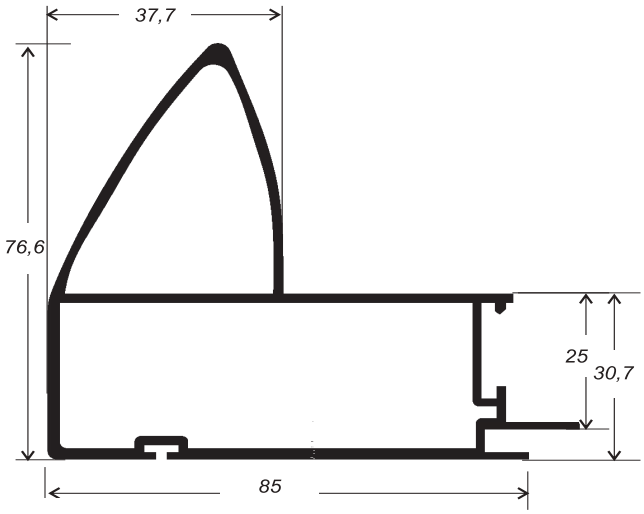

25H-575 - 0,917kg/m



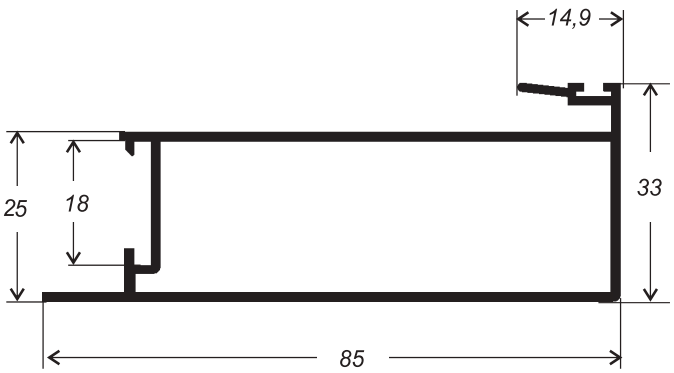

AP-705 - 0,770kg/m



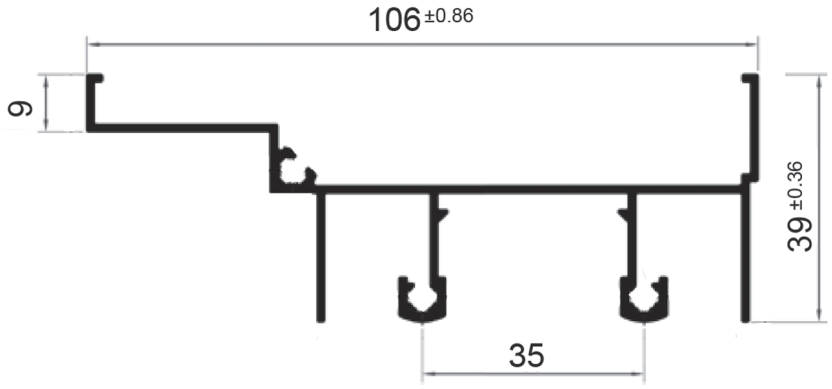

AP-761 - 0,880kg/m



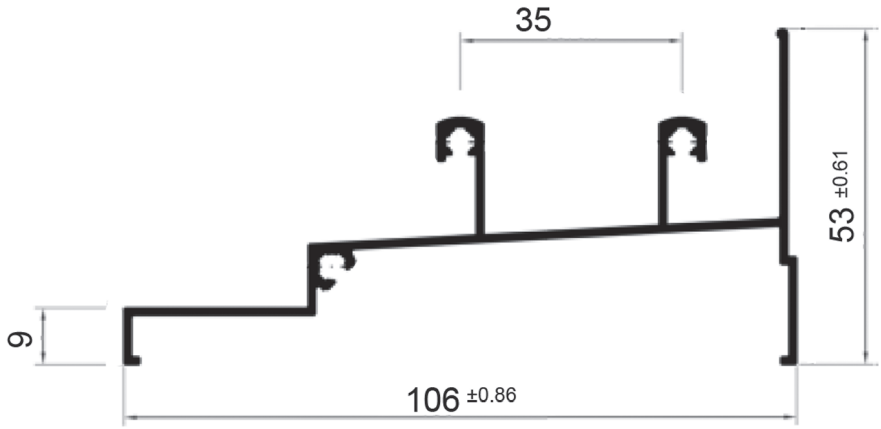

AP-583 - 1,348kg/m



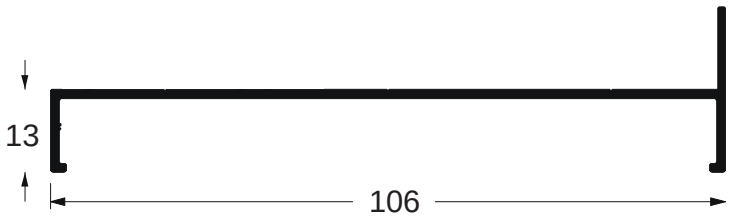

AP-706 - 0,828kg/m



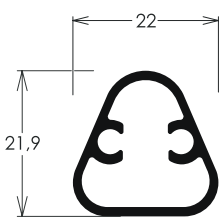

SU-022 - 0,886kg/m



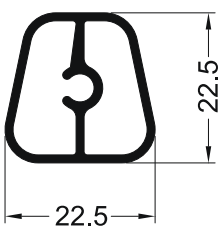

SU-023 - 0,840kg/m



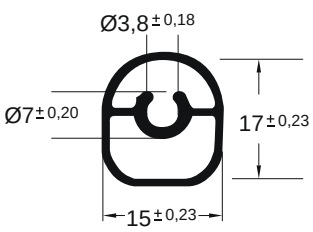

SU-012 - 0,539kg/m



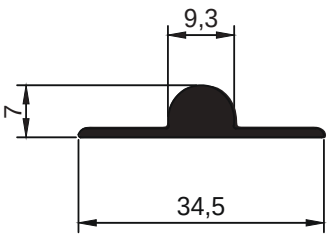

CG-190 - 0,290kg/m



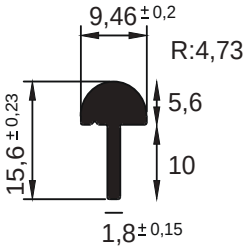

MO-040 - 0,332kg/m



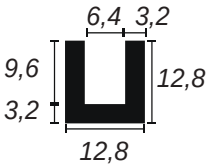

MO-041 - 0,212kg/m



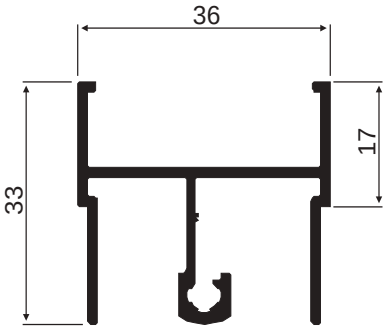

MD-32090 - 0,231kg/m



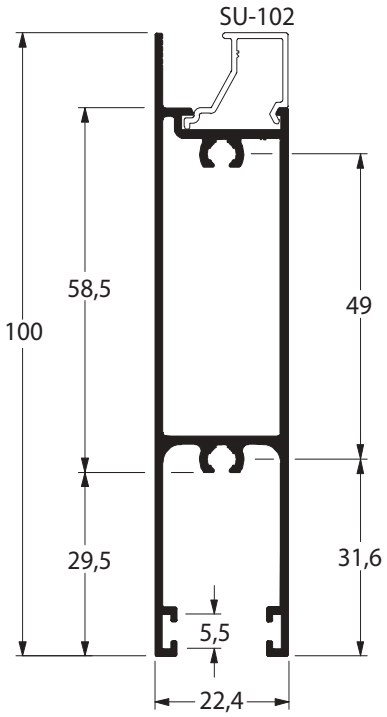

MD-32091 - 0,169kg/m



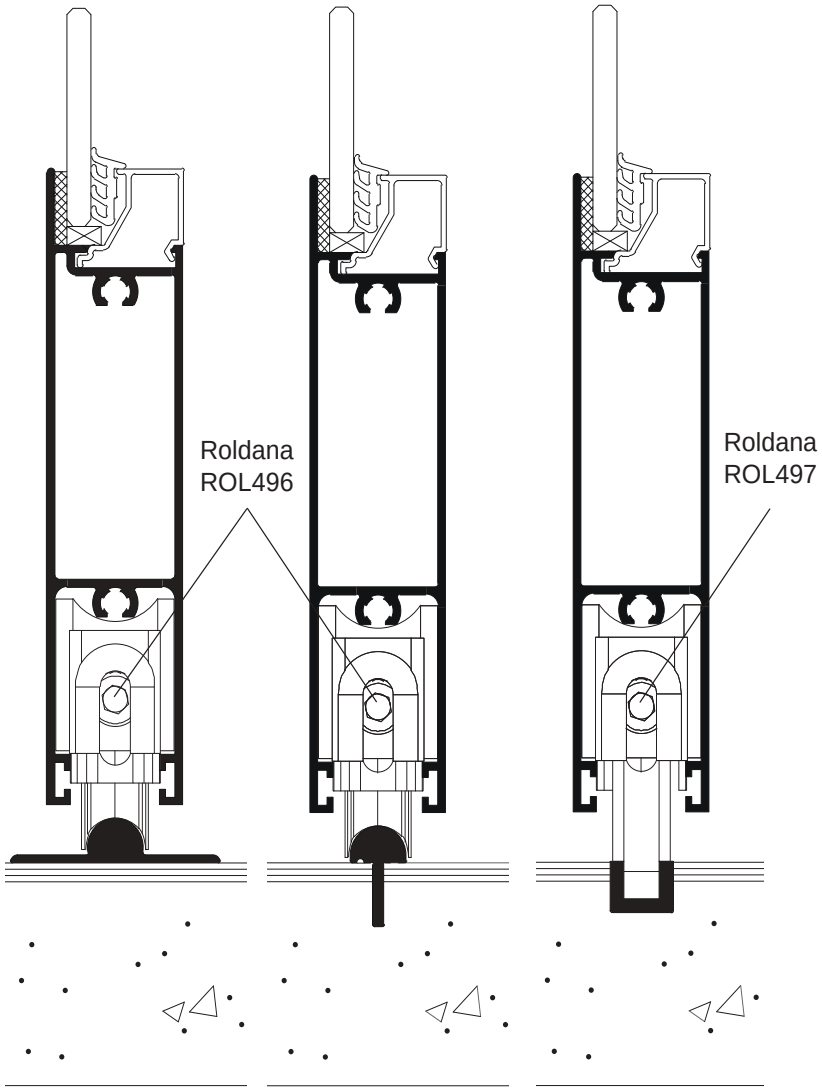

MD-32092 - 0,274kg/m




SU-306 - 0,544kg/m




SU-225 - 0,989kg/m




Montagem

# LINHA NOBILE 2.5

**Linha Homologada dentro das normas ABNT NBR 10.821.**

**Design e Praticidade.**

**A Linha Nobile é homologada pelo PBQP-H Programa Brasileiro de Qualidade e Produtividade do Habitat, significando que atende plenamente às normas brasileiras nos requisitos de:**

**- Permeabilidade do ar;**
**- Estanqueidade à água;**
**- Resistência às Cargas de Vento;**
**- Resistência às Operações de Manuseio.**

AFEAL

PBQP do Habitat

ALPA ALUMÍNIO

iTEC Instituto Tecnológico da Construção Civil

Ensaios NBR ISO/IEC 17025 CRL 0356

*Laboratório de Ensaio acreditado pela Cgcre de acordo com a ABNT NBR ISO/IEC 17025, sob o número CRL 0356*

RE-04314/19A
Folha: 1/10

## *Relatório de Ensaio RE-04314/19A*

Obra: (0336)

### 1. MATERIAL ENSAIADO

01 (uma) janela do tipo de correr, em alumínio, linha Nóbile 25, constituída por 02 (duas) folhas móveis em vidro e persiana integrada, com dimensão nominal de (1200 x 1200)mm, entregue pelo interessado em nosso laboratório em 28/09/2018, caracterizada a seguir:

| Dimensões | L x H x E |
|---|---|
| – Marco: | (1201 x 1206) mm; |
| – Folhas em vidro (02 unidades): | ( 580 x 976) mm; |
| – Vidros laminados (02 unidades): | ( 518 x 886 x 6) mm; |
| – Rasgos de drenagem (04 unidades): | ( 56 x 5) mm; |
| – Altura da aba do trilho: | 29 mm. |

### 2. CARACTERÍSTICAS DO PROTÓTIPO

#### 2.1. Fixação no vão

O protótipo para ensaios em câmara foi fixado em um contramarco previamente chumbado em um vão acabado de alvenaria de blocos cerâmicos revestido com argamassa.

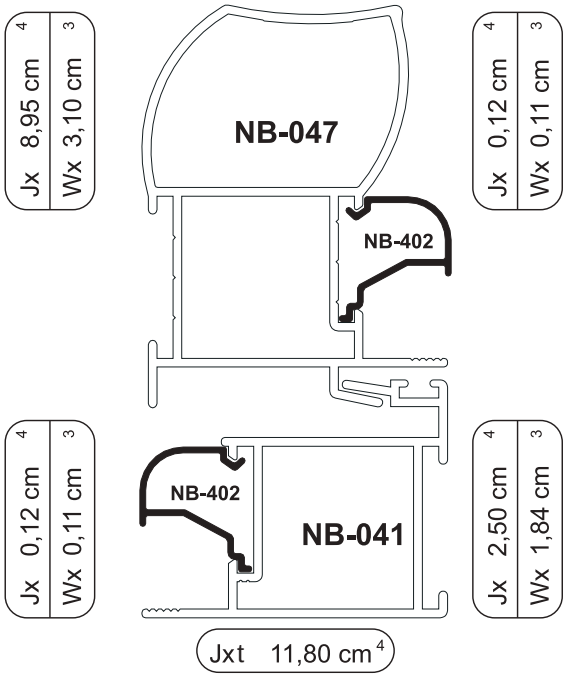
#### 2.2. Verificação do protótipo em relação ao projeto do mesmo em anexo:

Após o término dos ensaios, foi realizada a verificação do protótipo em relação ao projeto enviado pelo interessado, durante a desmontagem do protótipo verificou se todo o sistema de fixação e vedação estão de acordo com projeto.

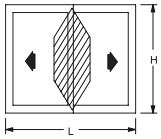
Conforme a verificação realizada constatou-se que a esquadria ensaiada **confere** com o projeto apresentado.

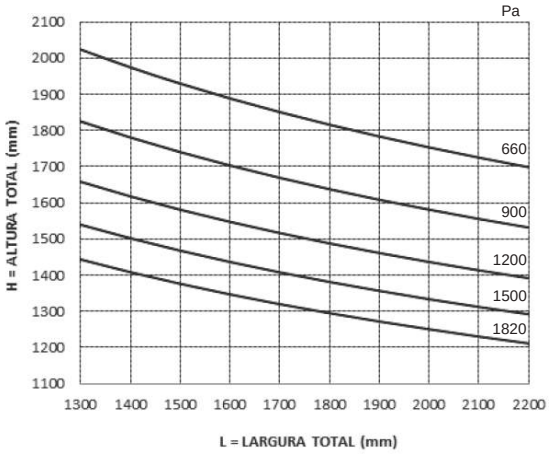
"Os resultados apresentados neste relatório referem-se exclusivamente à amostra ensaiada. A reprodução deste documento somente poderá ser realizada na íntegra, sendo proibida a reprodução parcial."

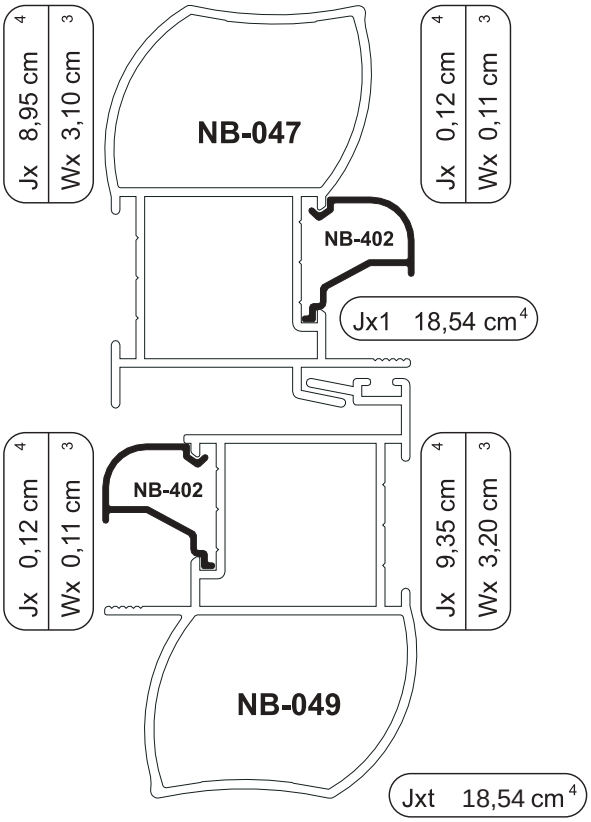
Rua Dr. Elias Chaves, 122 A
São Paulo - SP - CEP 01205-010
Tels.:11 4305-8009 / 11 3225-9104



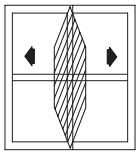

JANELA
MONTANTE CENTRAL

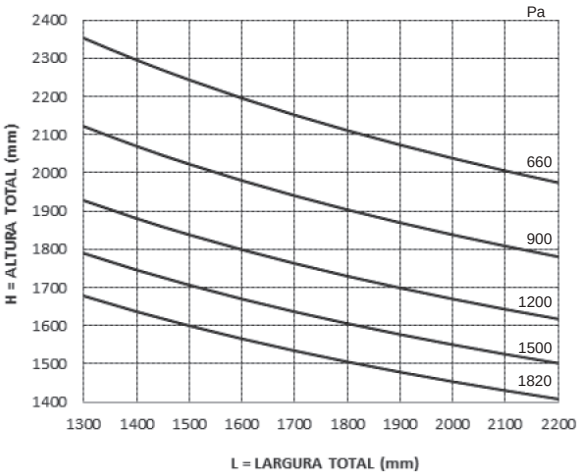


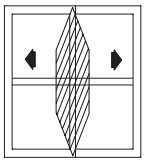



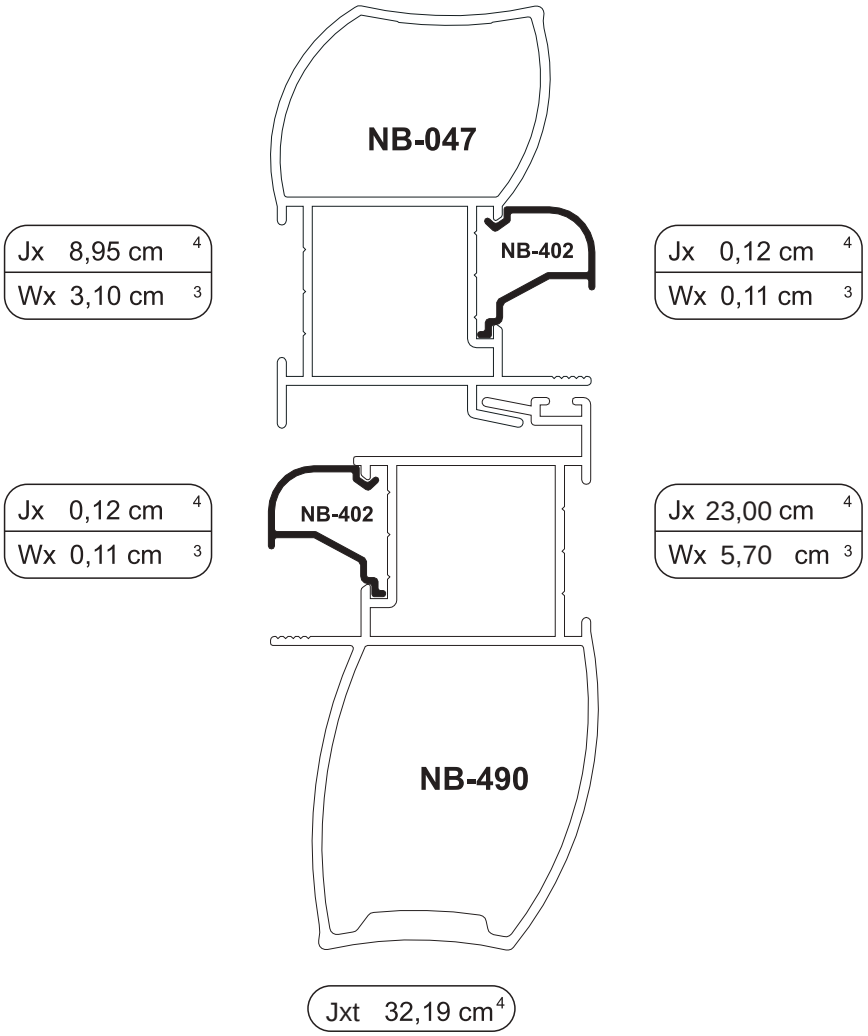

PORTA
MONTANTE CENTRAL

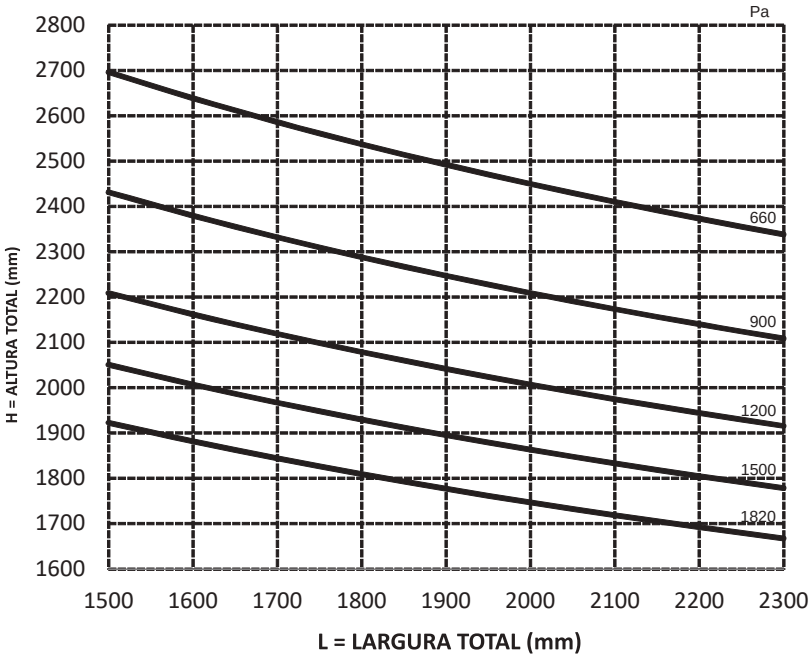


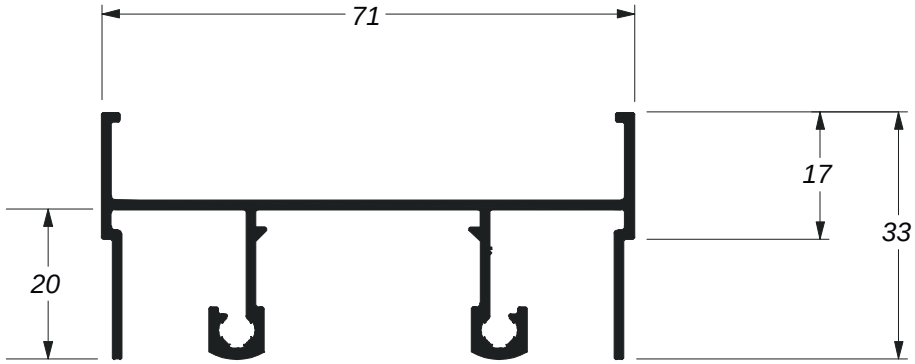


PORTA
MONTANTE CENTRAL

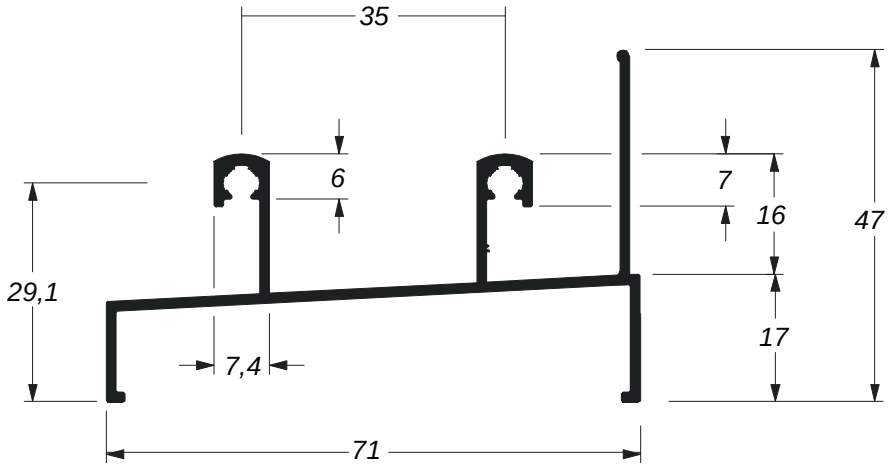




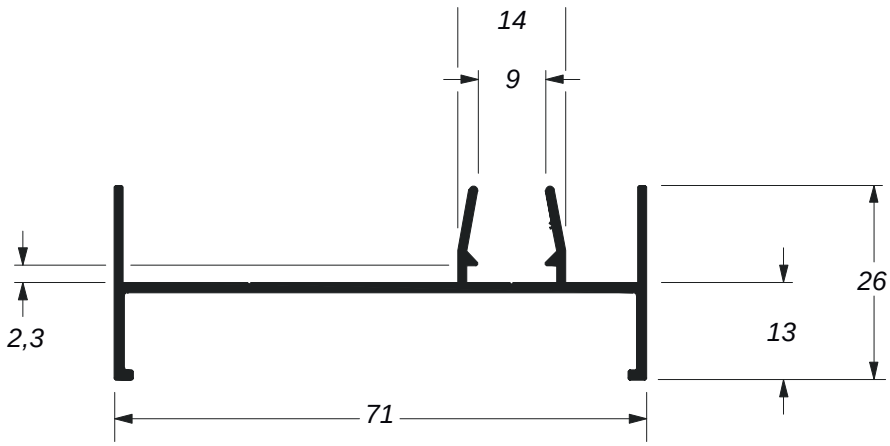





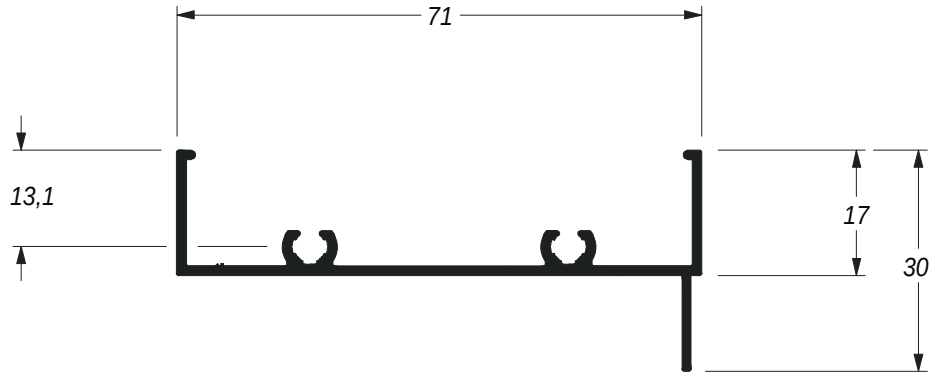

NB-001 - 0,762kg/m



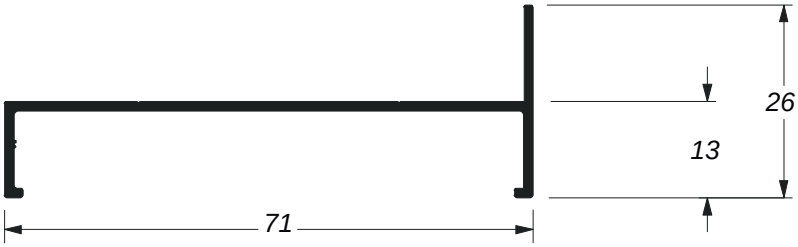

NB-002 - 0,707kg/m



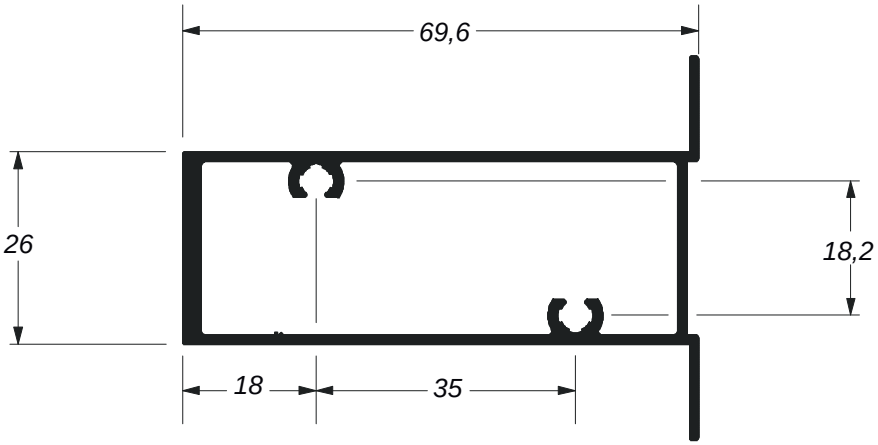

NB-003 - 0,523kg/m



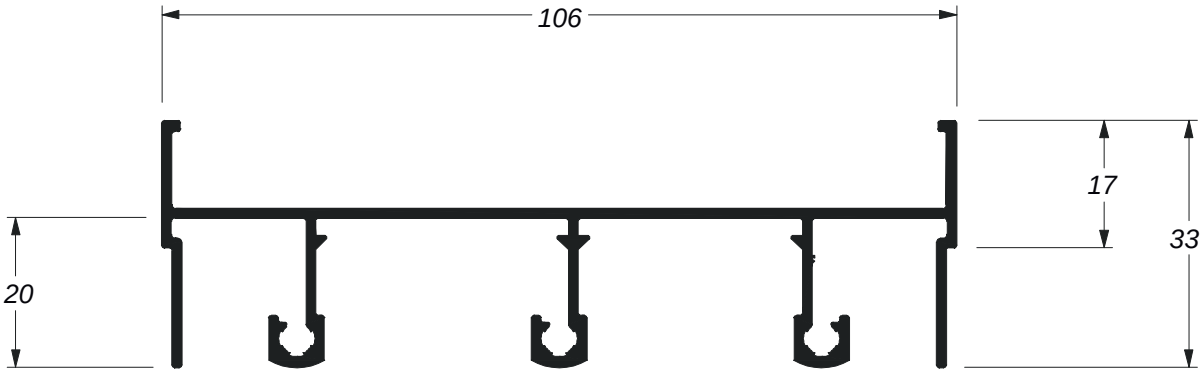

NB-004 - 0,504kg/m



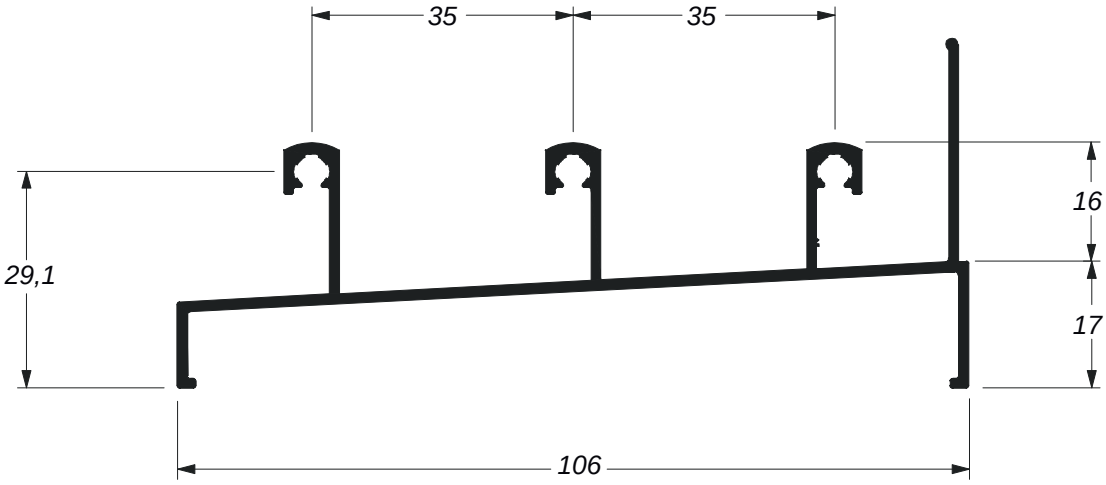

NB-007 - 0,382kg/m



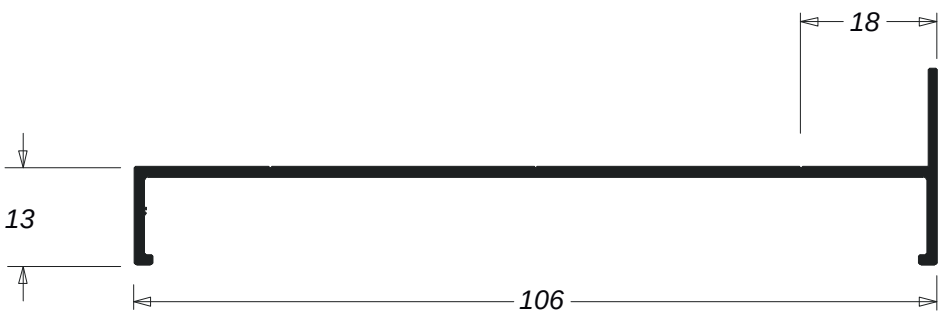

NB-009 - 0,908kg/m



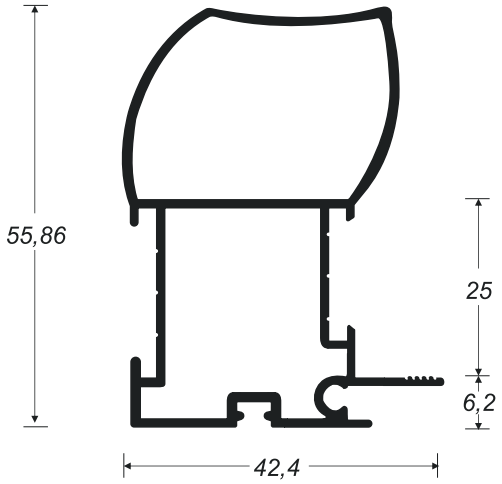

NB-010 - 1,022kg/m



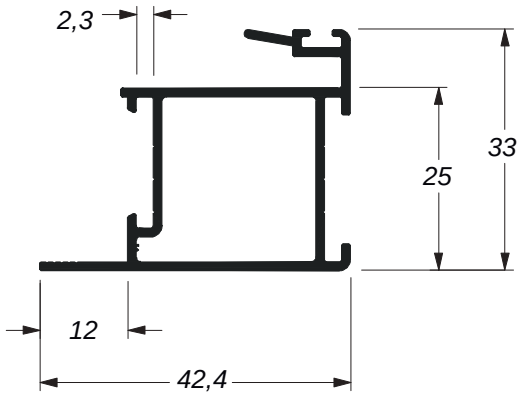

NB-011 - 0,981kg/m



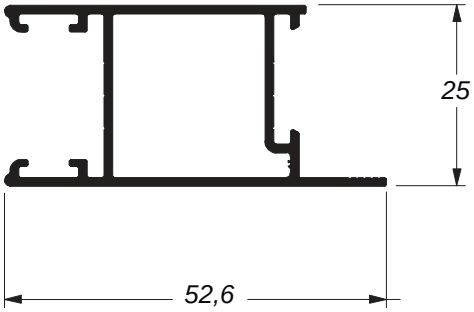

NB-012 - 0,539kg/m



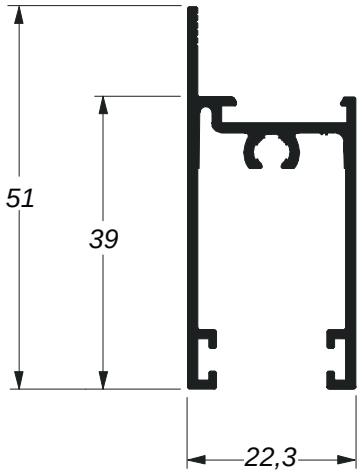

NB-043 - 0,844kg/m



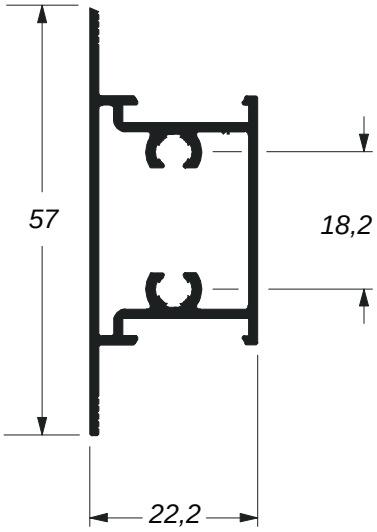

NB-041 - 0,507kg/m



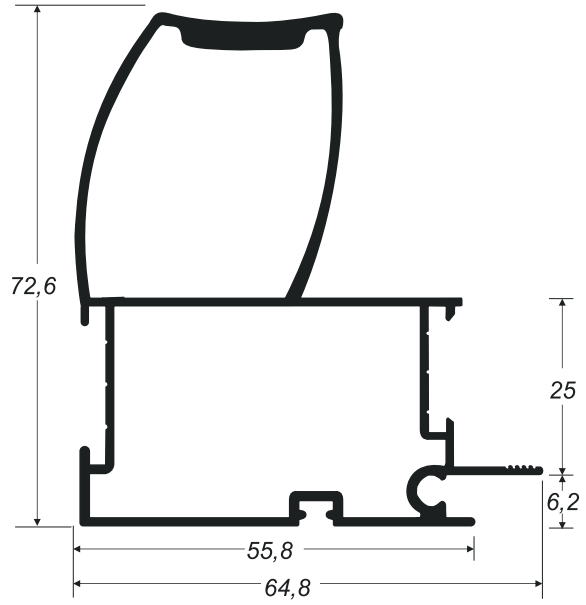

NB-039 - 0,520kg/m



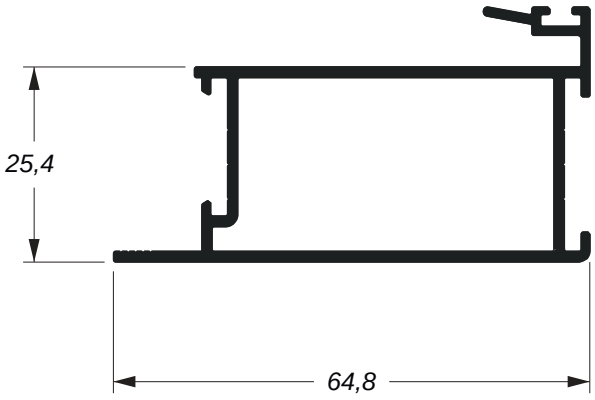

NB-053 - 0,507kg/m



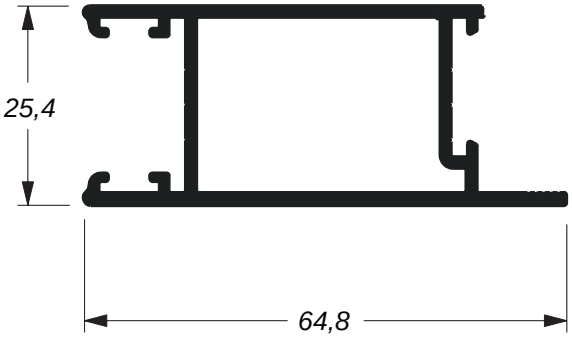

NB-227 - 0,550kg/m



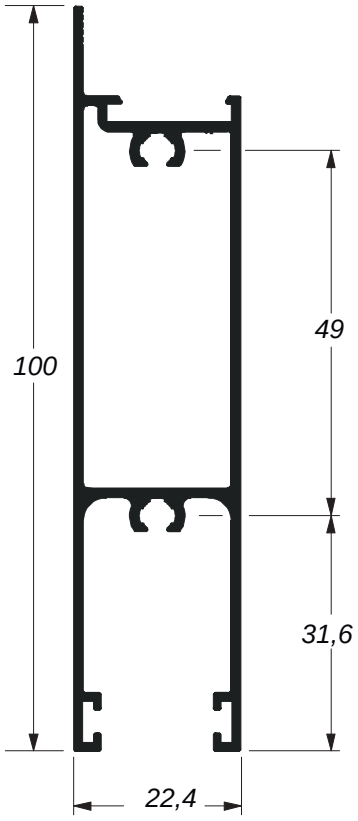

NB-243 - 1,201kg/m



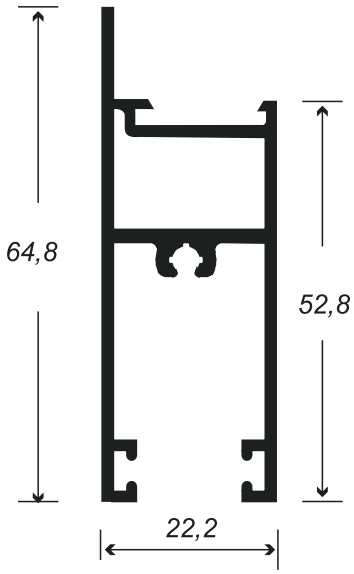

NB-242 - 0,743kg/m




NB-245 - 0,688kg/m




NB-225 - 0,989kg/m




NB-246 - 0,642kg/m

# LINHA NOBILE 3.2

**Linha Homologada dentro das normas ABNT NBR 10.821.**

**Design e Praticidade.**

**A Linha Nobile é homologada pelo PBQP-H Programa Brasileiro de Qualidade e Produtividade do Habitat, significando que atende plenamente às normas brasileiras nos requisitos de:**

**- Permeabilidade do ar;**
**- Estanqueidade à água;**
**- Resistência às Cargas de Vento;**
**- Resistência às Operações de Manuseio.**

AFEAL

PBQP do Habitat

ALPA ALUMÍNIO

iTEC Instituto Tecnológico da Construção Civil

Ensaios NBR ISO/IEC 17025 CRL 0356

*Laboratório de Ensaio acreditado pela Cgcre de acordo com a ABNT NBR ISO/IEC 17025, sob o número CRL 0356*

RE-04312/19A
Folha: 1/10

## *Relatório de Ensaio RE-04312/19A*

Obra: (0336)

### 1. MATERIAL ENSAIADO

01 (uma) janela do tipo de correr, em alumínio, linha Nóbile 32, constituída por 02 (duas) folhas móveis em vidro e persiana integrada, com dimensão nominal de (1200 x 1200)mm, entregue pelo interessado em nosso laboratório em 28/09/2018, caracterizada a seguir:

| Dimensões | L x H x E |
|---|---|
| – Marco: | (1200 x 1200) mm; |
| – Folhas em vidro (02 unidades): | ( 600 x 986) mm; |
| – Persiana de enrolar (01 unidade): | (1170 x 1010) mm; |
| – Vidros laminados (02 unidades): | ( 500 x 893 x 6) mm; |
| – Rasgos de drenagem (04 unidades): | ( 58 x 5) mm; |
| – Altura da aba do trilho: | 50 mm. |

### 2. CARACTERÍSTICAS DO PROTÓTIPO

#### 2.1. Fixação no vão

O protótipo para ensaios em câmara foi fixado em um contramarco previamente chumbado em um vão acabado de alvenaria de blocos cerâmicos revestido com argamassa.

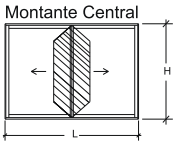
#### 2.2. Verificação do protótipo em relação ao projeto do mesmo em anexo:

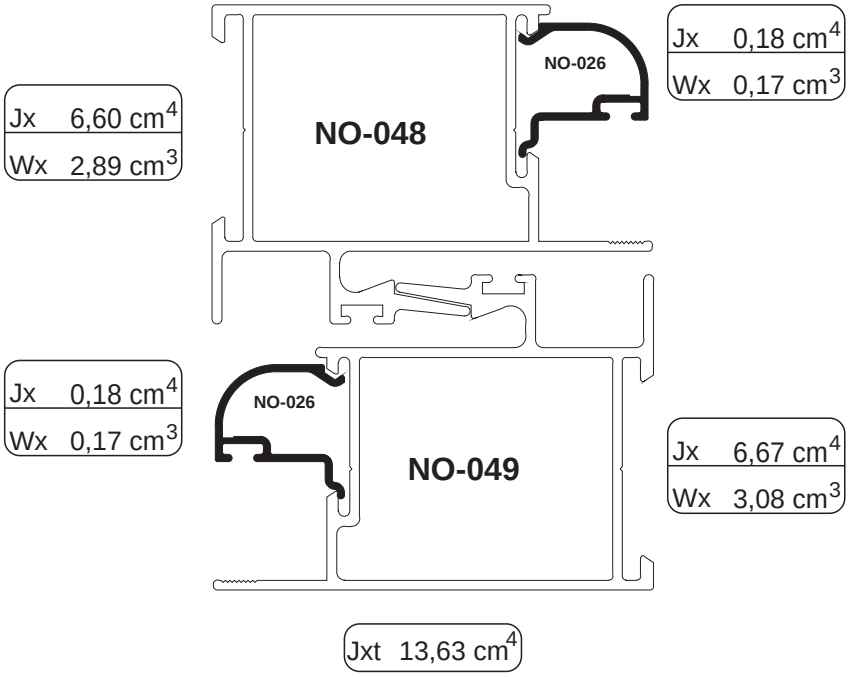
Após o término dos ensaios, foi realizada a verificação do protótipo em relação ao projeto enviado pelo interessado, durante a desmontagem do protótipo verificou se todo o sistema de fixação e vedação estão de acordo com projeto.

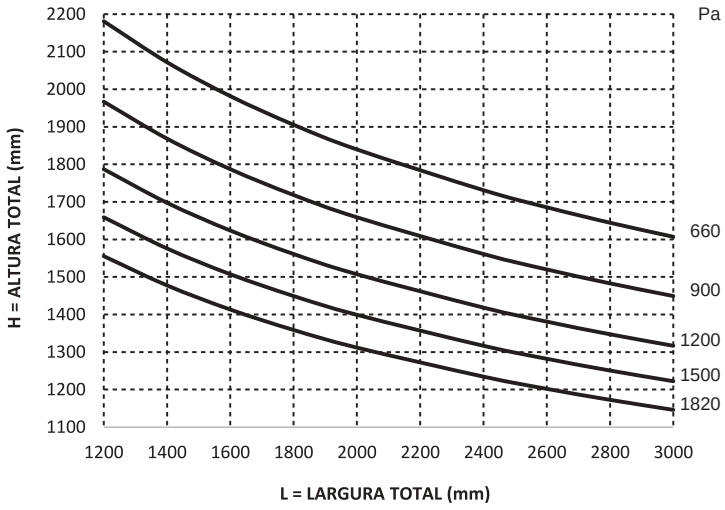
Conforme a verificação realizada constatou-se que a esquadria ensaiada **confere** com o projeto apresentado.

"Os resultados apresentados neste relatório referem-se exclusivamente à amostra ensaiada. A reprodução deste documento somente poderá ser realizada na íntegra, sendo proibida a reprodução parcial."

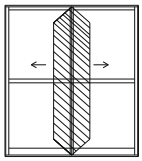
Rua Dr. Elias Chaves, 122 A
São Paulo - SP - CEP 01205-010
Tels.:11 4305-8009 / 11 3225-9104

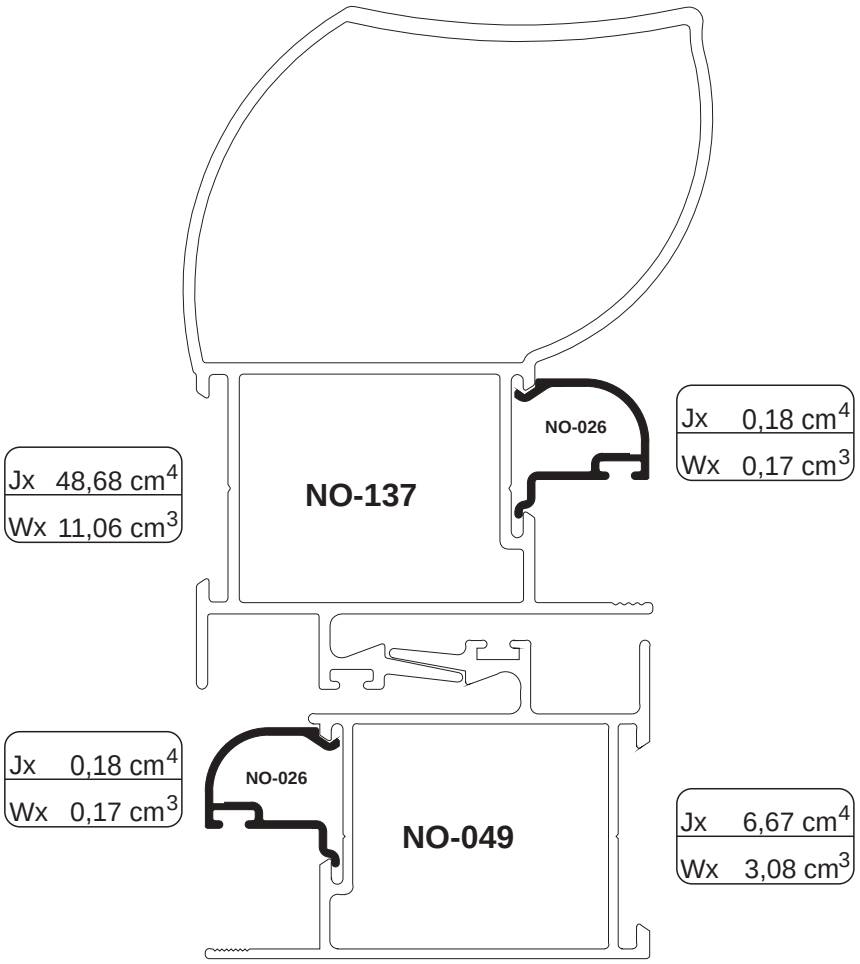

Montante Central
H
L

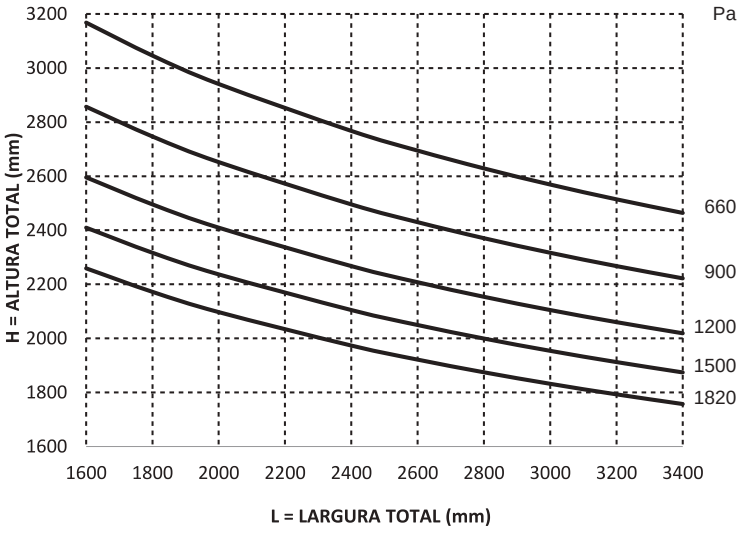

NO-048
NO-026
NO-026
NO-049
Jx 6,60 cm4
Wx 2,89 cm3
Jx 0,18 cm4
Wx 0,17 cm3
Jx 0,18 cm4
Wx 0,17 cm3
Jx 6,67 cm4
Wx 3,08 cm3
Jxt 13,63 cm4


Pa
660
900
1200
1500
1820
H = ALTURA TOTAL (mm)
2200
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1200 1400 1600 1800 2000 2200 2400 2600 2800 3000
L = LARGURA TOTAL (mm)

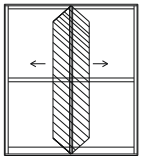
Montante Central

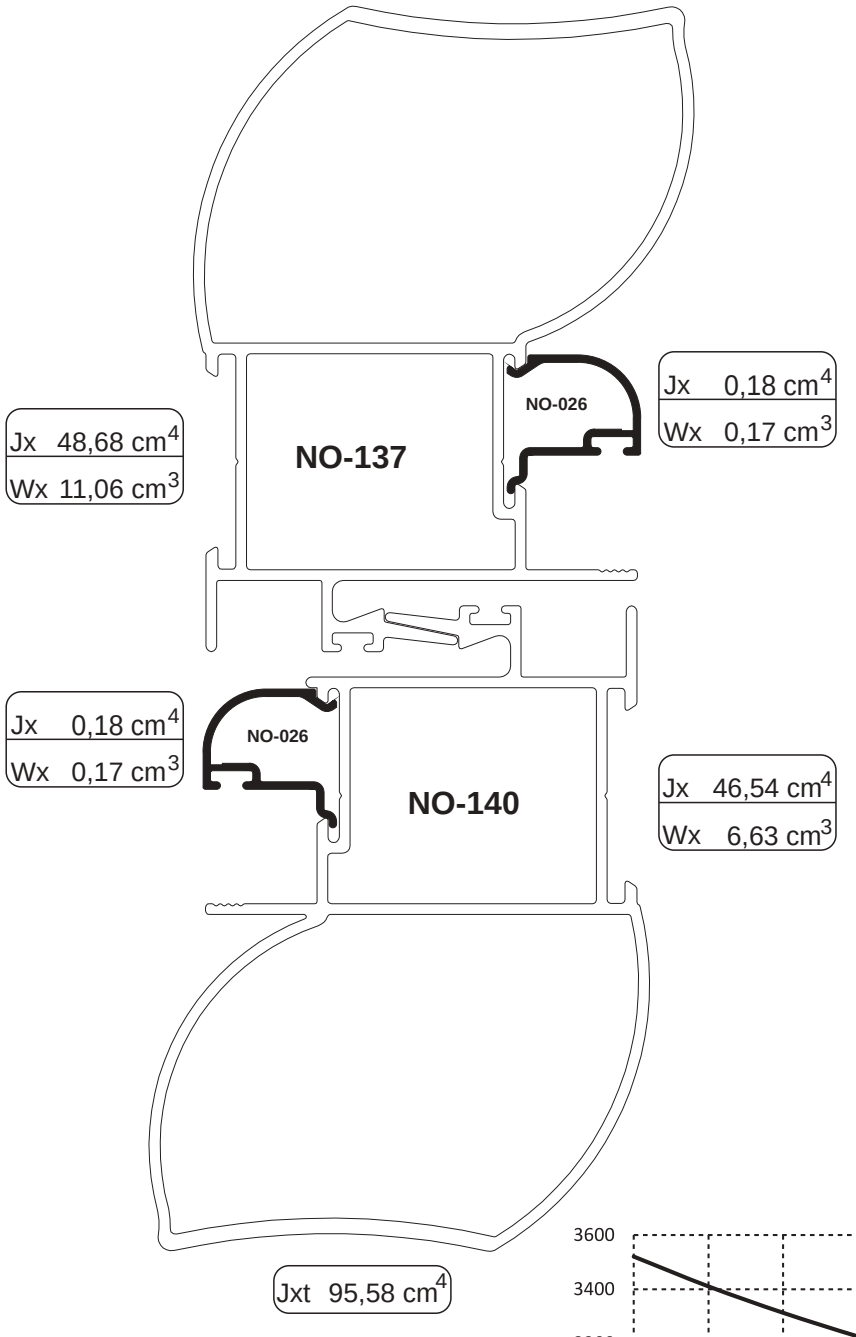


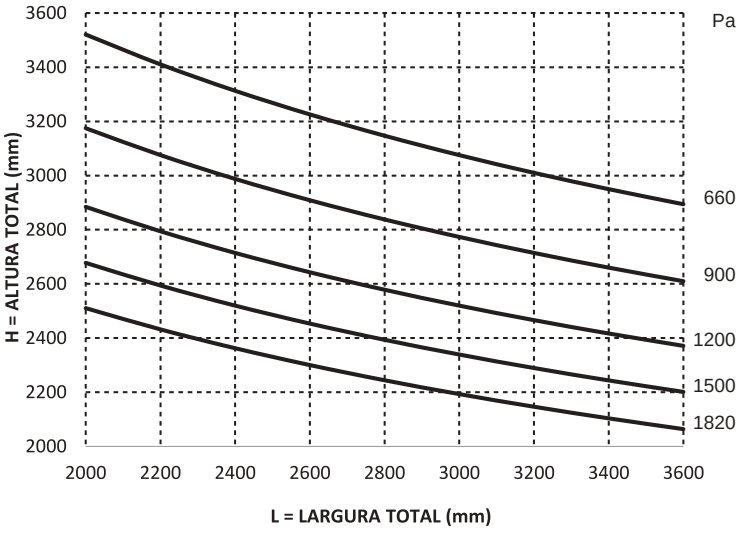


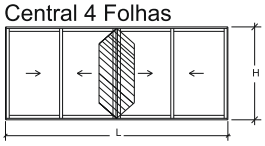
Montante Central

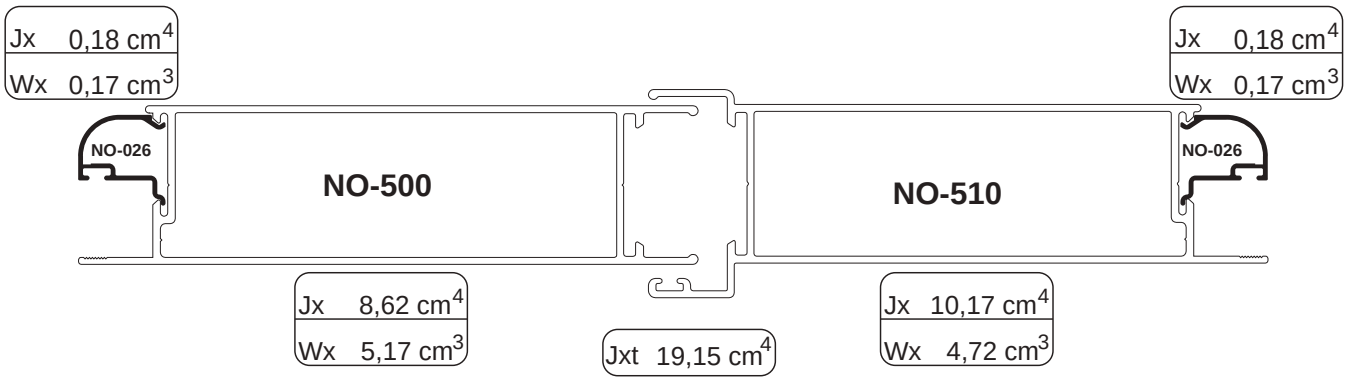


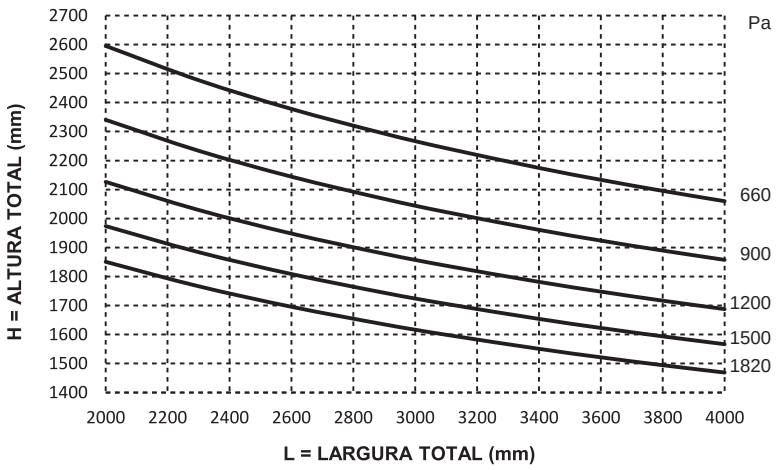


Central 4 Folhas





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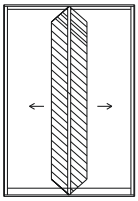
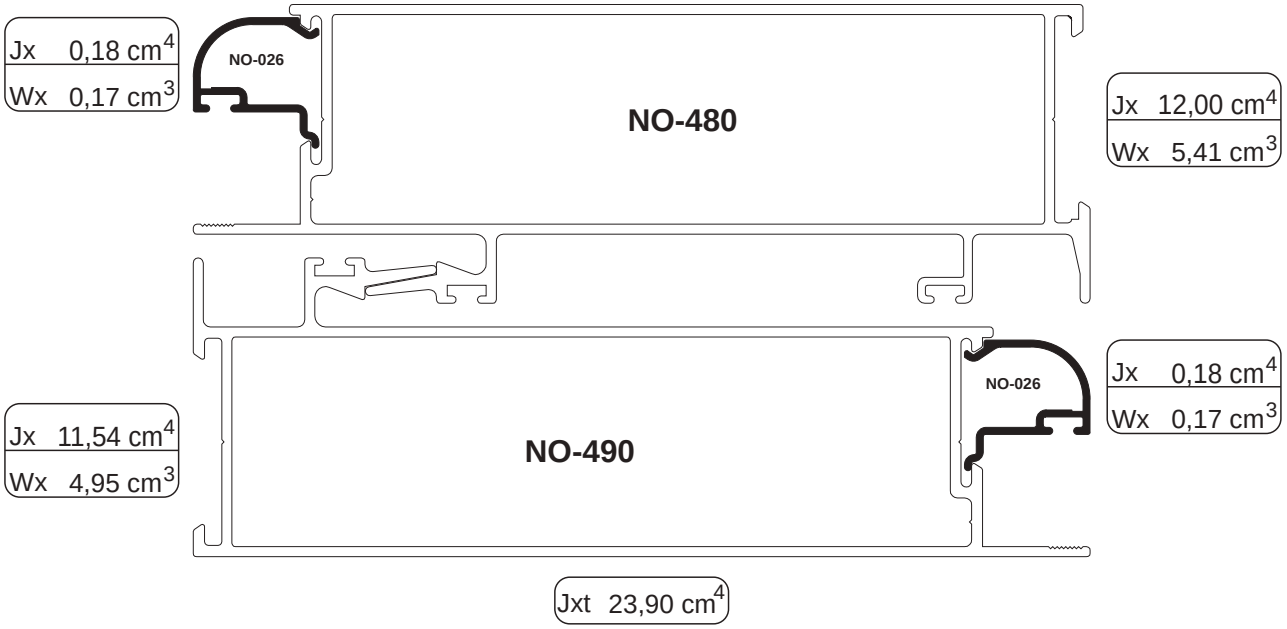
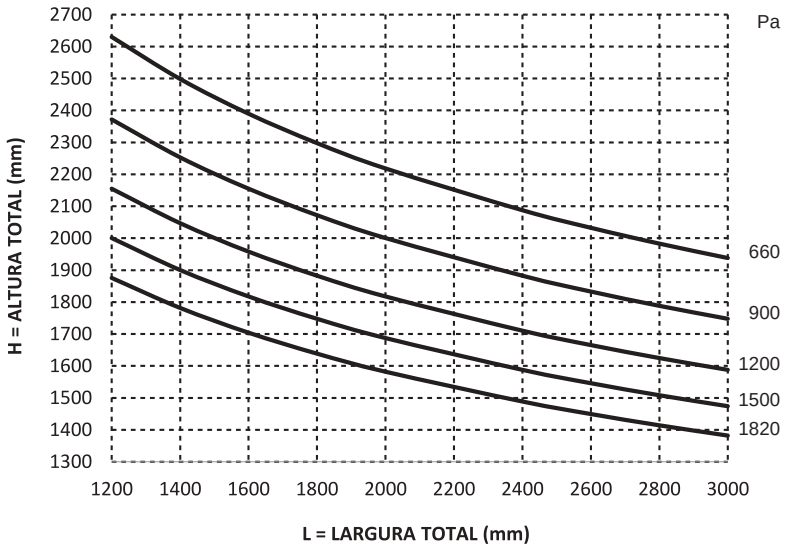
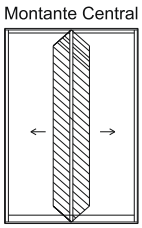
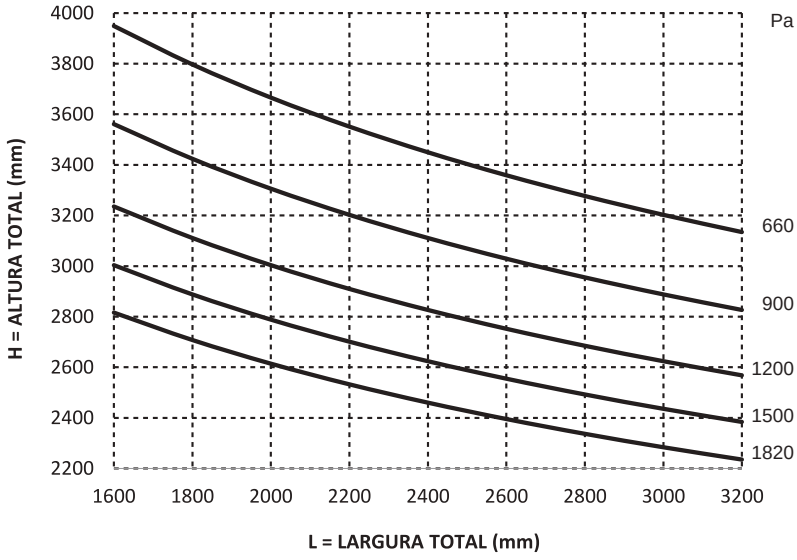


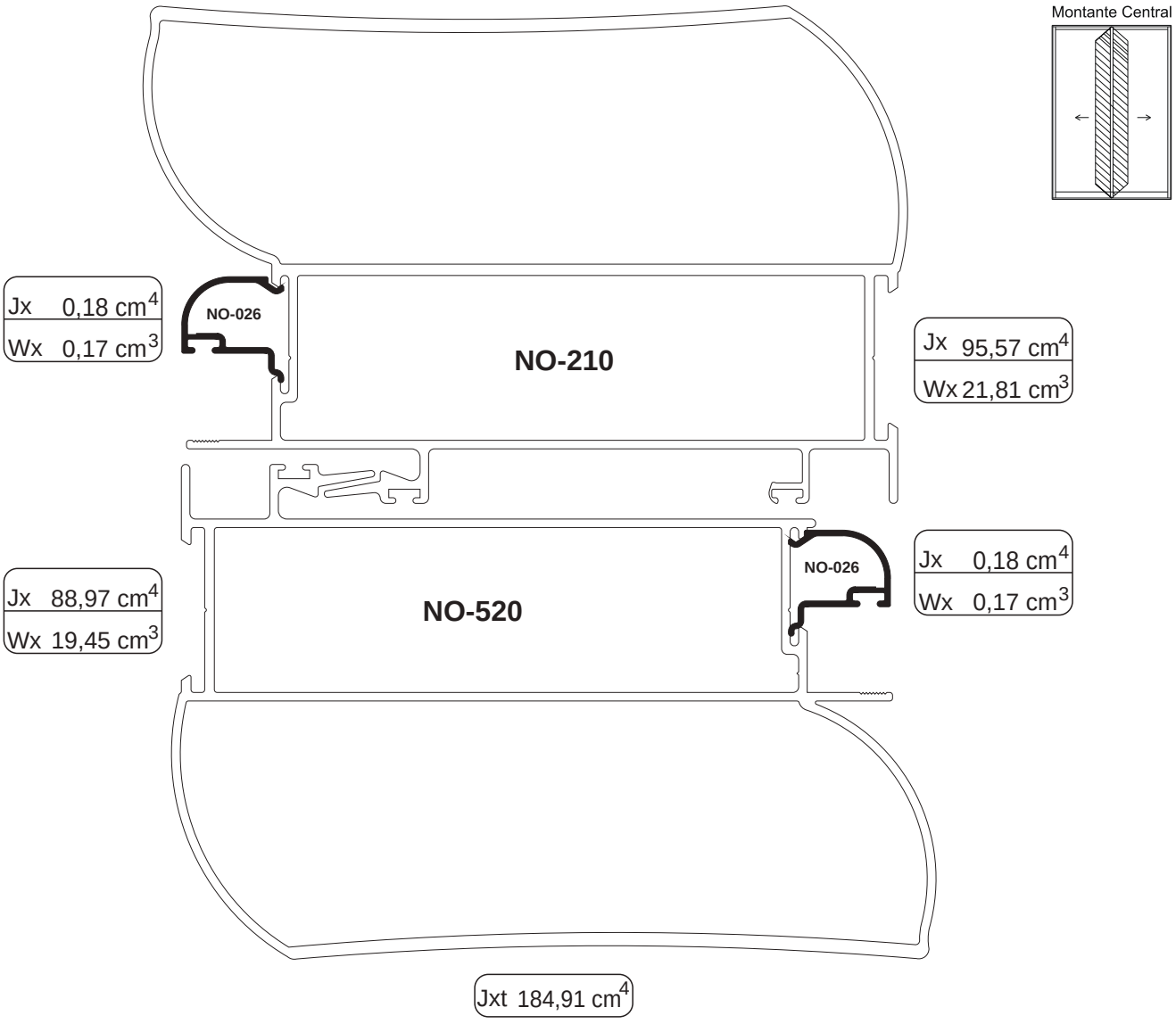


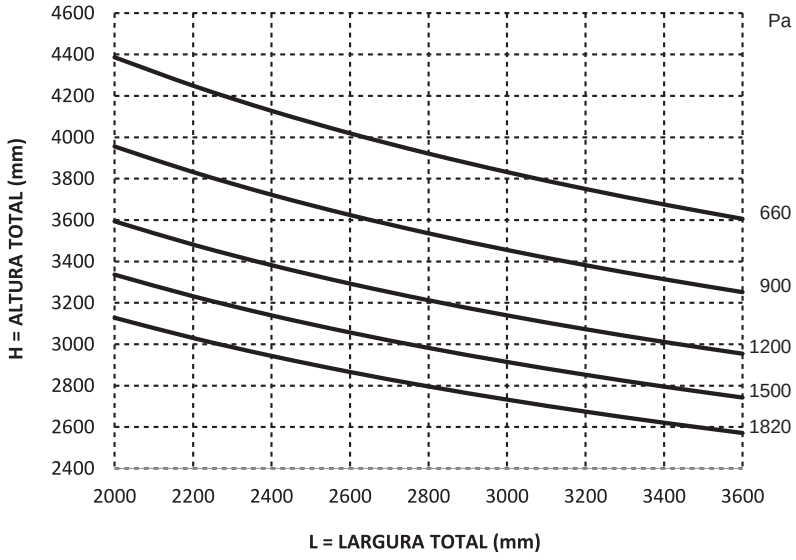




Montante Central


Jx 0,18 cm4
Wx 0,17 cm3
NO-026
NO-210
Jx 95,57 cm4
Wx 21,81 cm3
NO-026
Jx 0,18 cm4
Wx 0,17 cm3
Jx 11,54 cm4
Wx 4,95 cm3
NO-490
Jxt 107,47 cm4


4000
3800
3600
3400
3200
3000
2800
2600
2400
2200
H = ALTURA TOTAL (mm)
1600
1800
2000
2200
2400
2600
2800
3000
3200
L = LARGURA TOTAL (mm)
Pa
660
900
1200
1500
1820


Montante Central
Jx 0,18 cm4
Wx 0,17 cm3
NO-026
NO-210
Jx 95,57 cm4
Wx 21,81 cm3
Jx 88,97 cm4
Wx 19,45 cm3
NO-520
NO-026
Jx 0,18 cm4
Wx 0,17 cm3
Jxt 184,91 cm4


Pa
660
900
1200
1500
1820
H = ALTURA TOTAL (mm)
4600
4400
4200
4000
3800
3600
3400
3200
3000
2800
2600
2400
2000
2200
2400
2600
2800
3000
3200
3400
3600
L = LARGURA TOTAL (mm)

# LINHA MUNDIALE

**MUNDIALE 60**

**MUNDIALE 80**

**MUNDIALE 86**

**MUNDIALE 100**

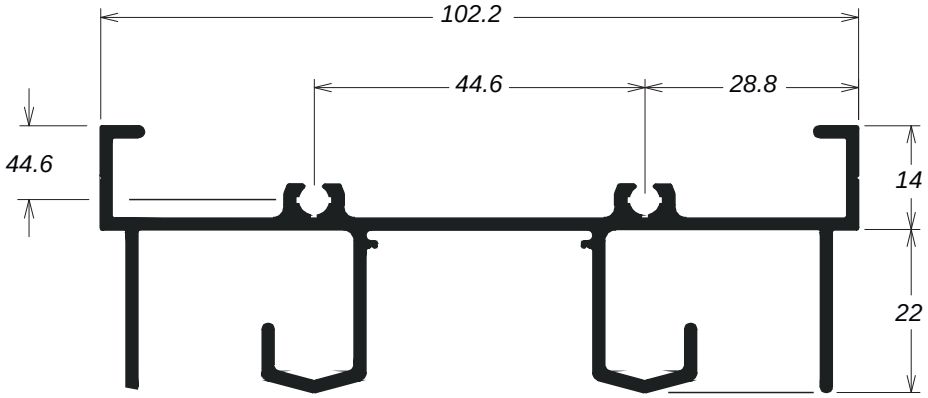
**GRAN MUNDIALE 125**

**MINIMALISTA 32**

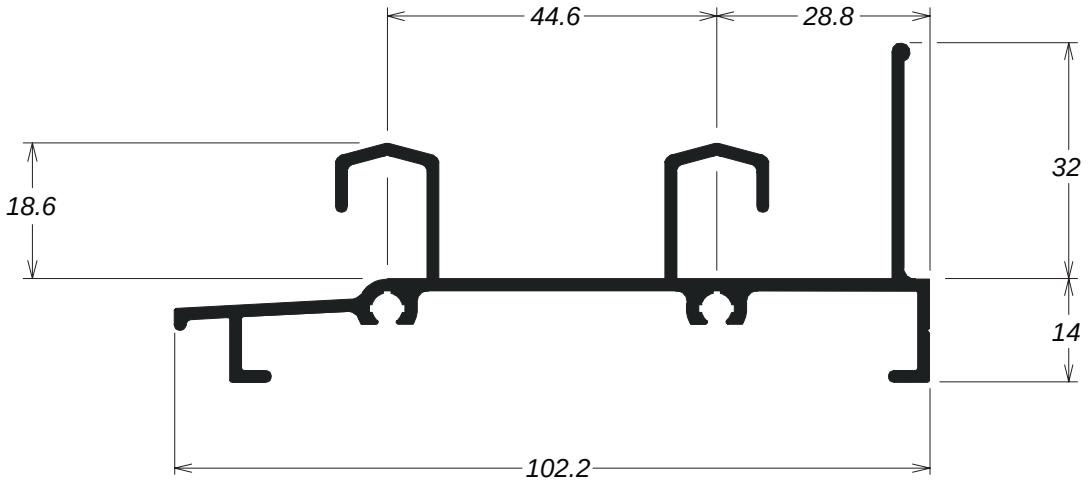
**Mega 32 / 100**

**SOFISTICAÇÃO E ALTO DESEMPENHO. DESENVOLVIDA PARA ATENDER PROJETOS ESPECIAIS. POSSUI BITOLA DE 32MM E ESTRUTURA PARA ATENDER GRANDES VÃOS COM POSSIBILIDADE DE ISOLAMENTO TERMO ACÚSTICO COM USO DE EPS.**

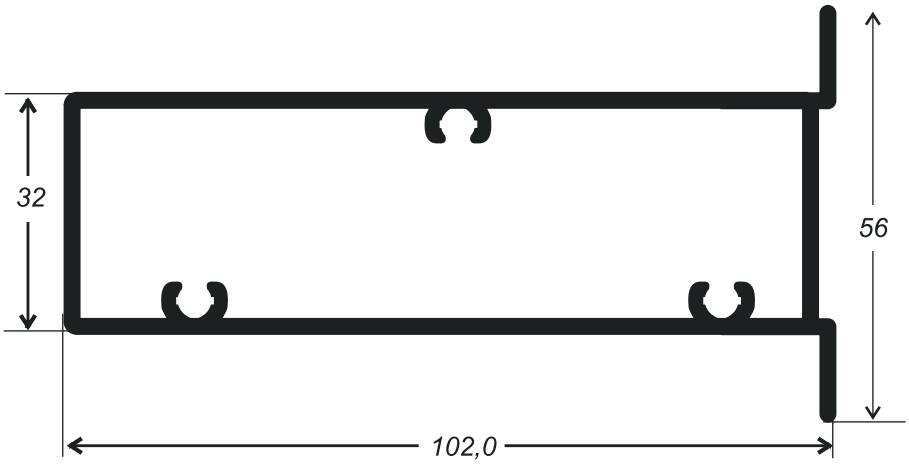
ALPA
ALUMÍNIO



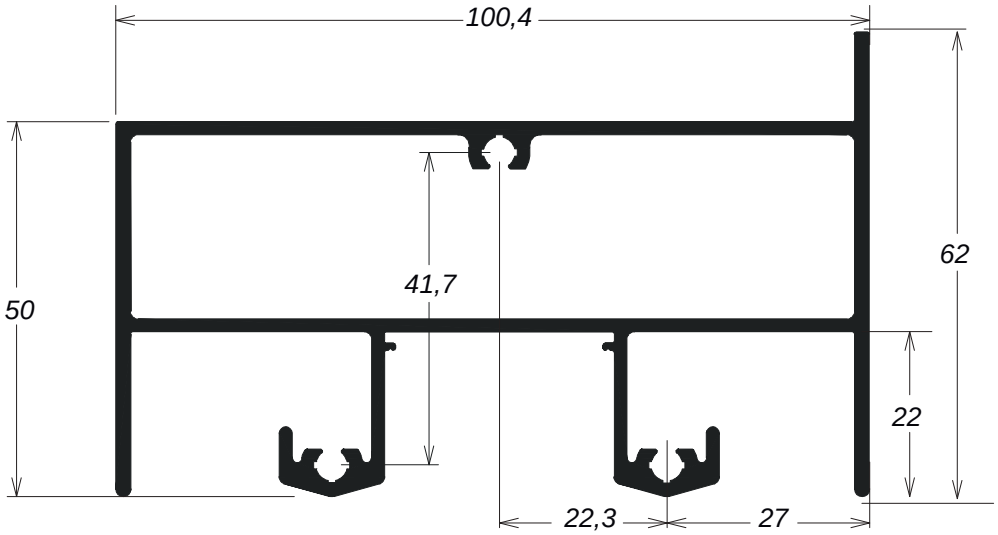

MD-301 - 1,247kg/m



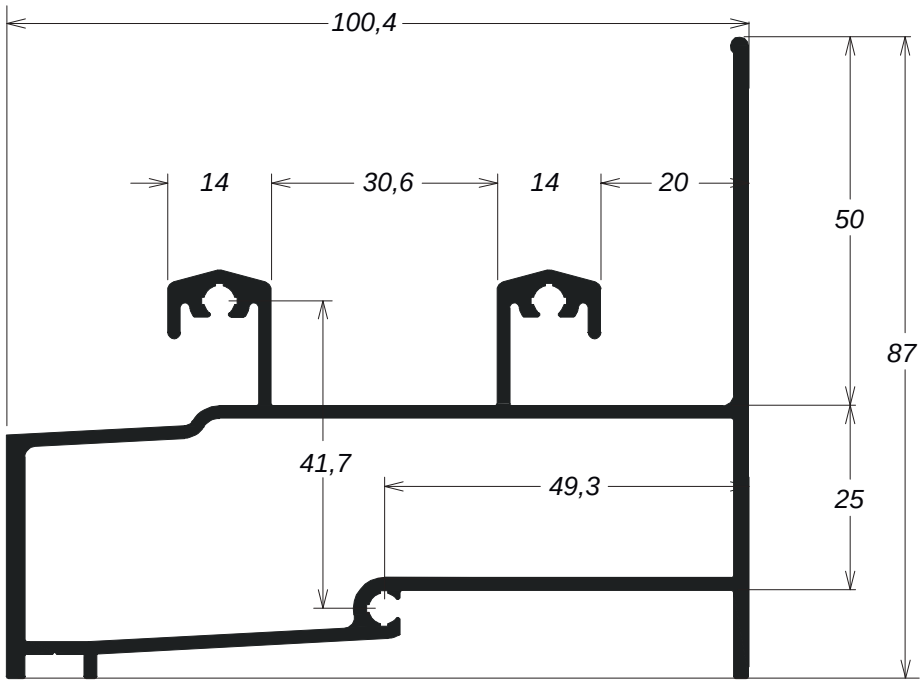

MD-306 - 1,133kg/m



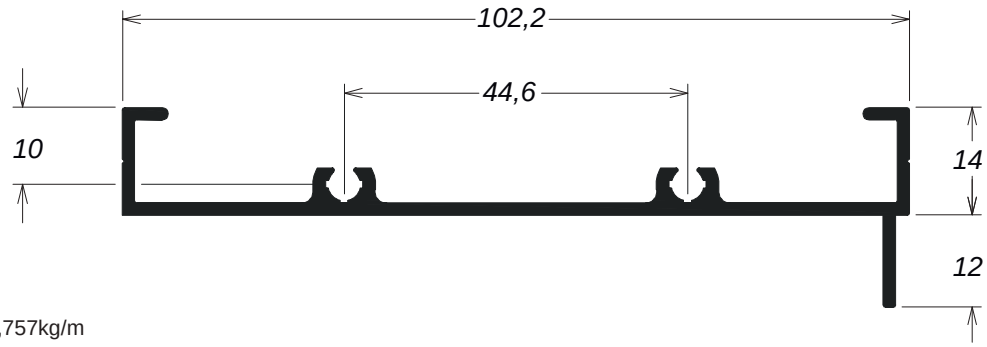

MD-176 - 1,642kg/m



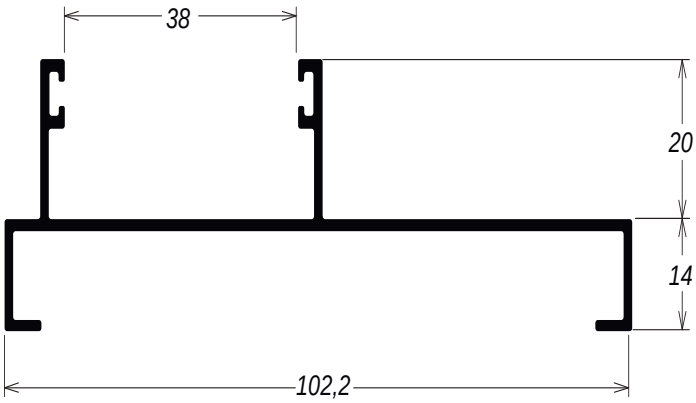

MD-004 - 2,035kg/m



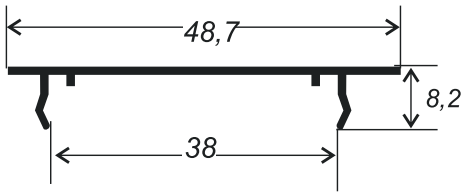

MD-005 - 2,104kg/m



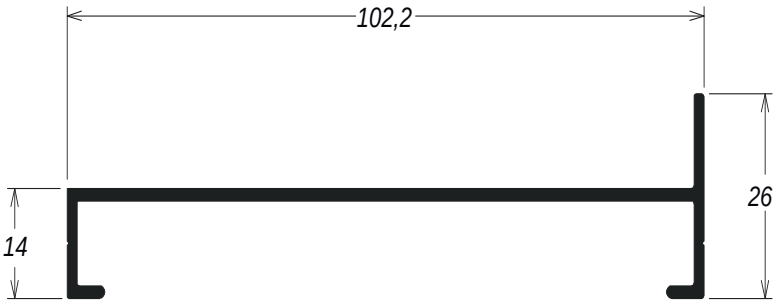

MD-003 - 0,757kg/m



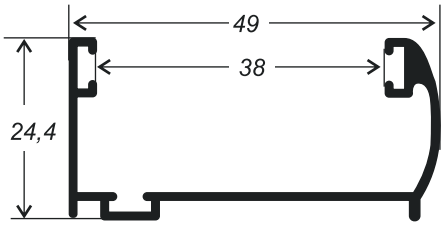

MD-049 - 0,957kg/m



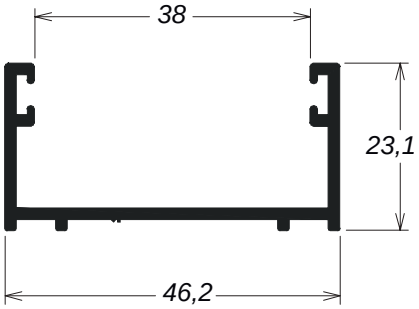

MD-305E - 0,206kg/m



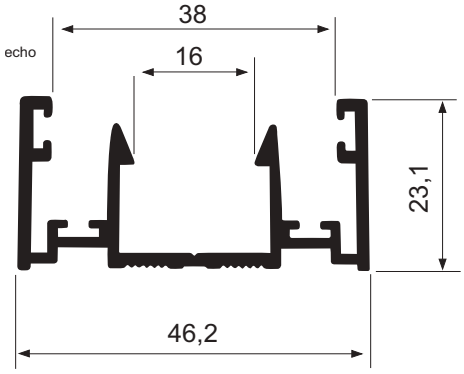

MD-6002 - 0,639kg/m



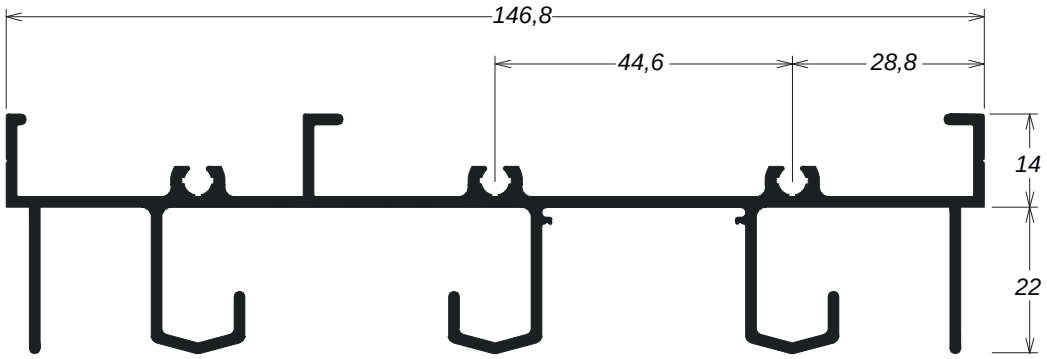

MD-028 - 0,417kg/m



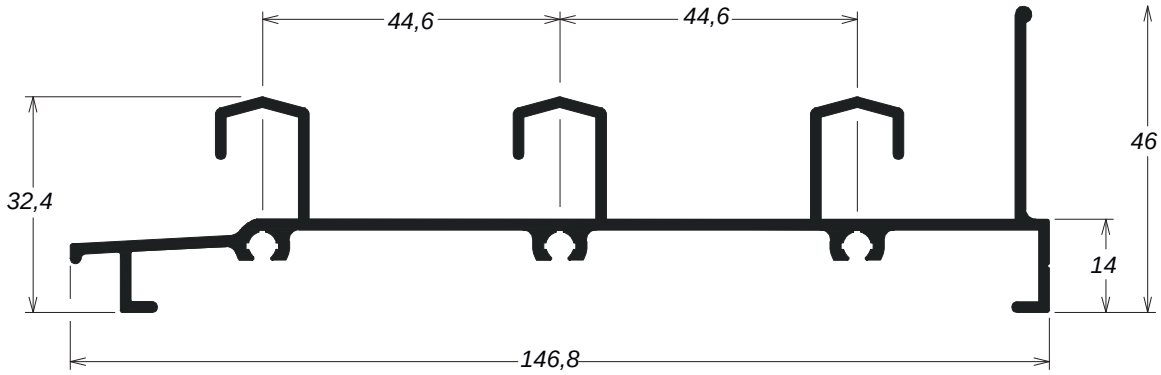

LG-028 - 0,455kg/m



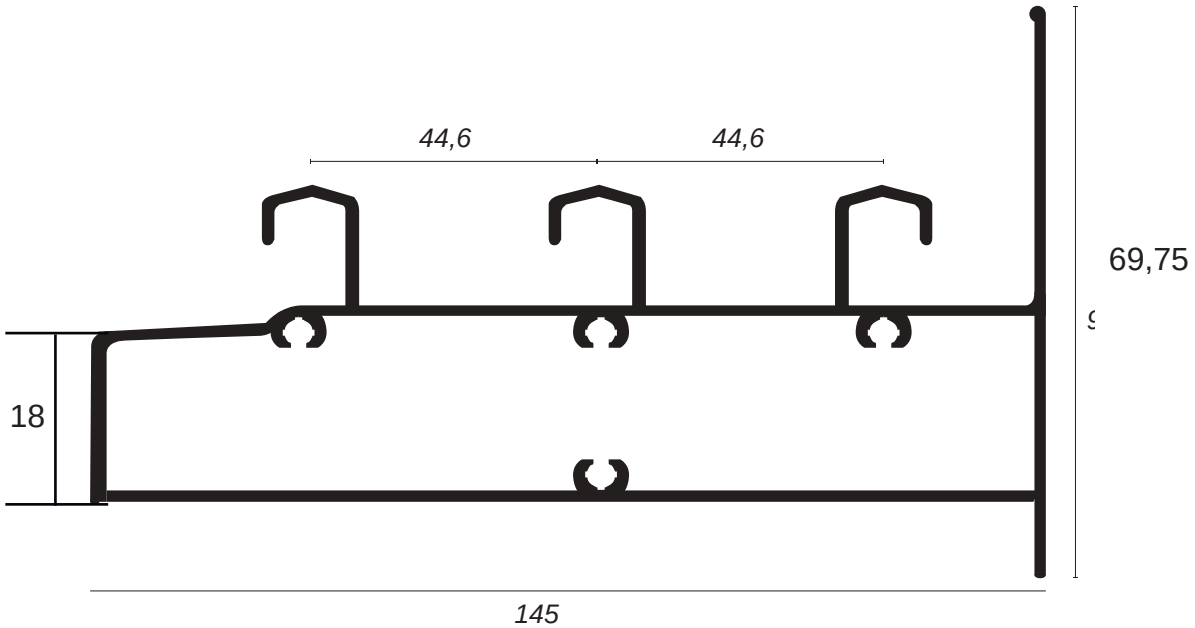

ALP - 029 - 0,603kg/m



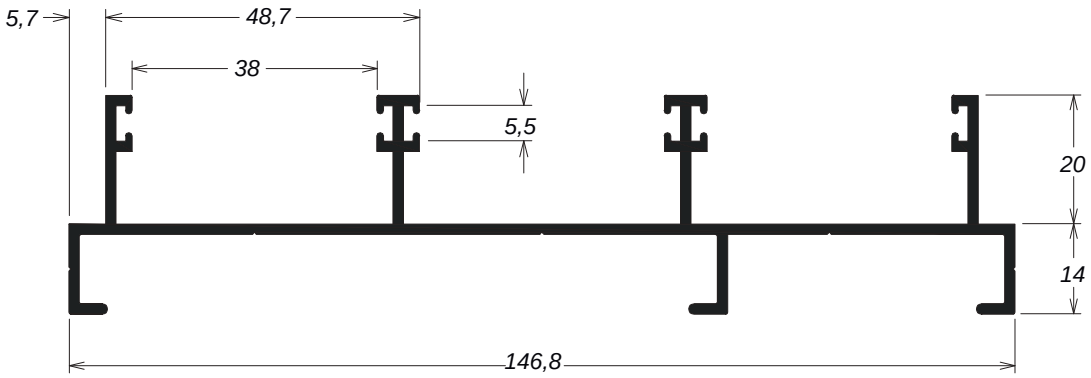

MD-343 - 1,728kg/m



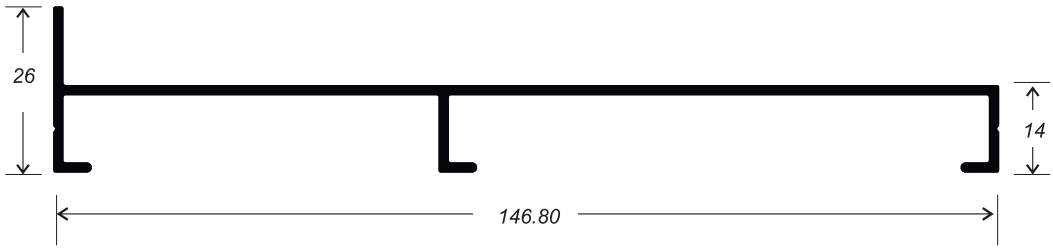

MD-364 - 1,539kg/m



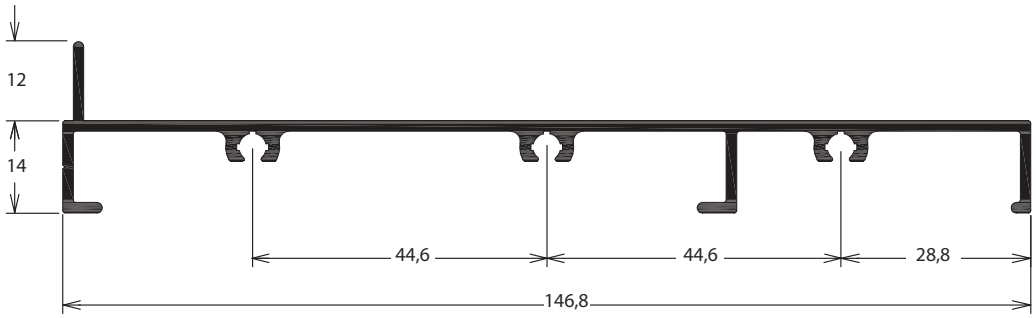

MD-365 - 2,667kg/m



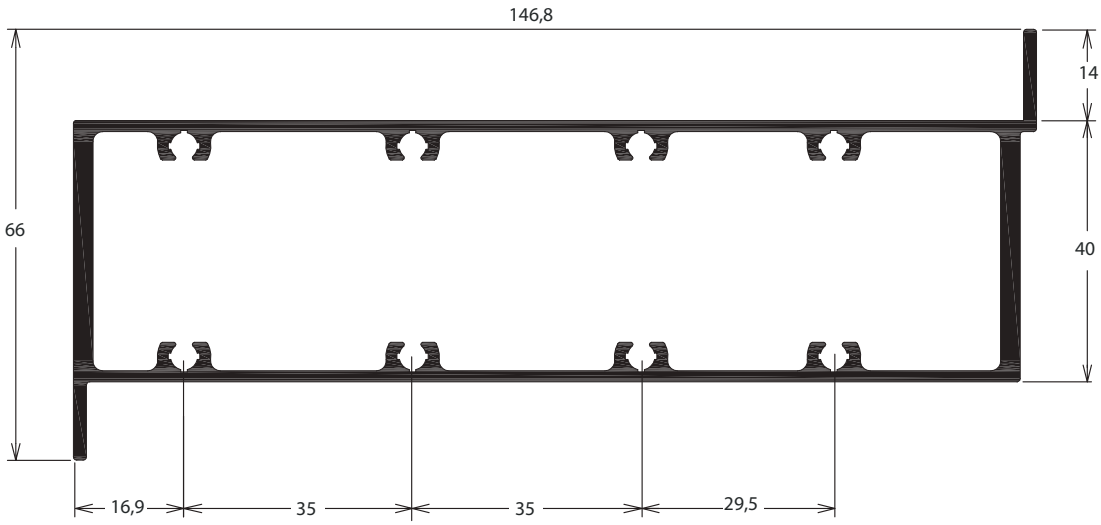

MD-347 - 1,358kg/m



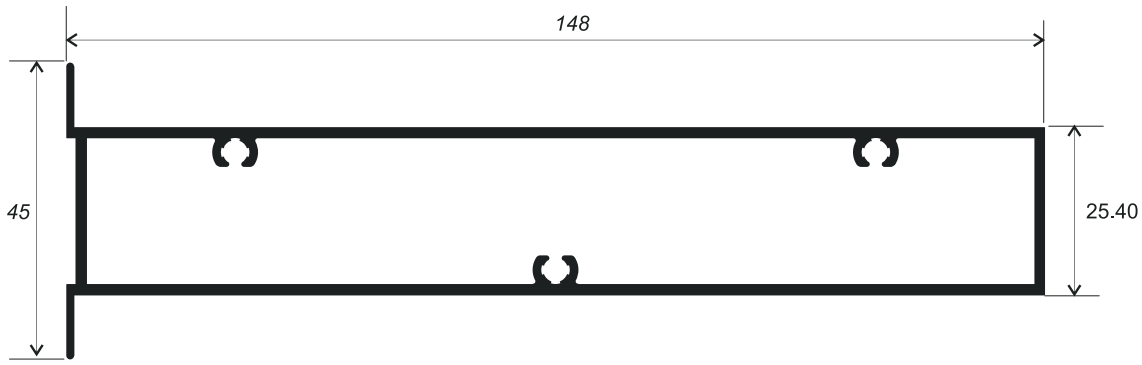

MD-158 - 0,849kg/m



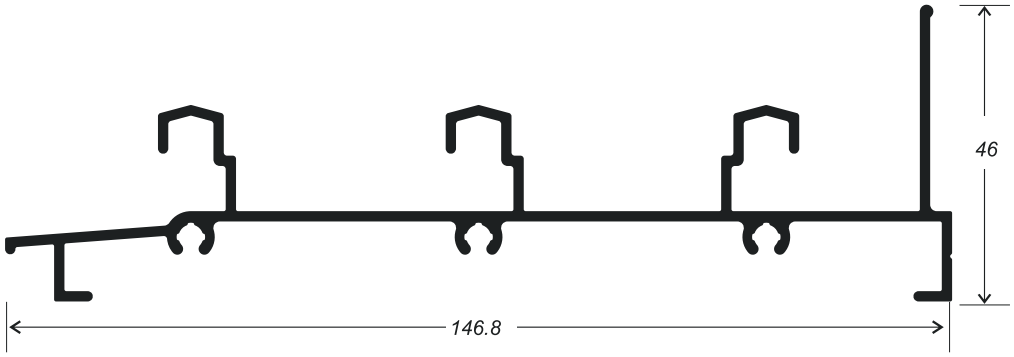

LG-234 - 1,068kg/m



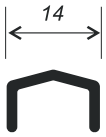

LG-233 - 2,527kg/m



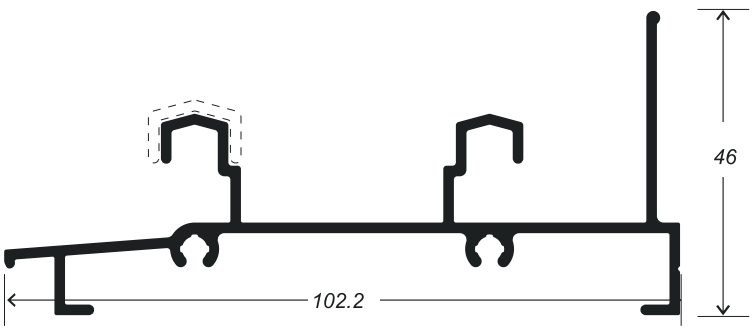

MDC-002 - 1,587kg/m



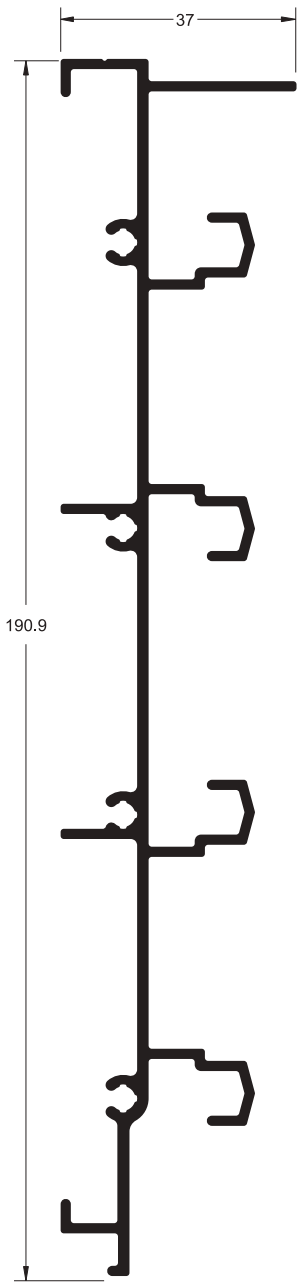

MD-32084 - 1,470kg/m



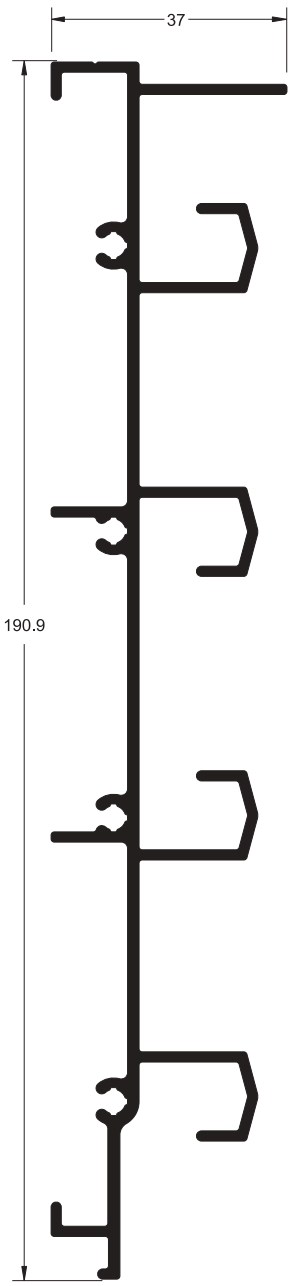

MD-32086 - 0,114kg/m



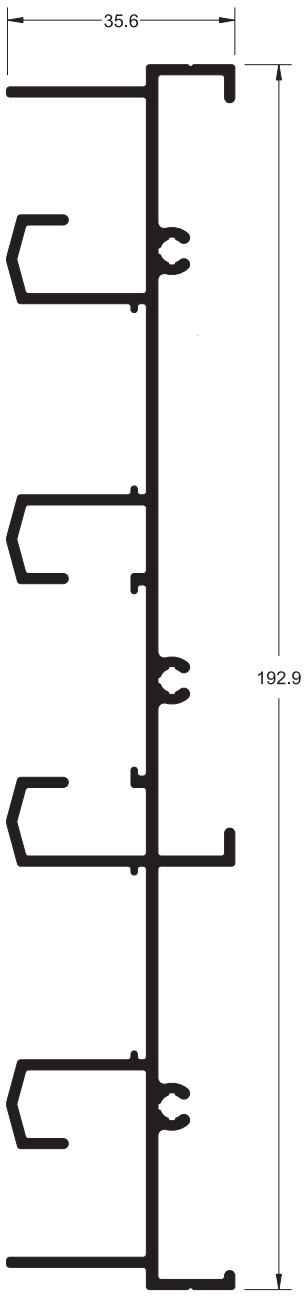

MD-32083 - 1,088kg/m



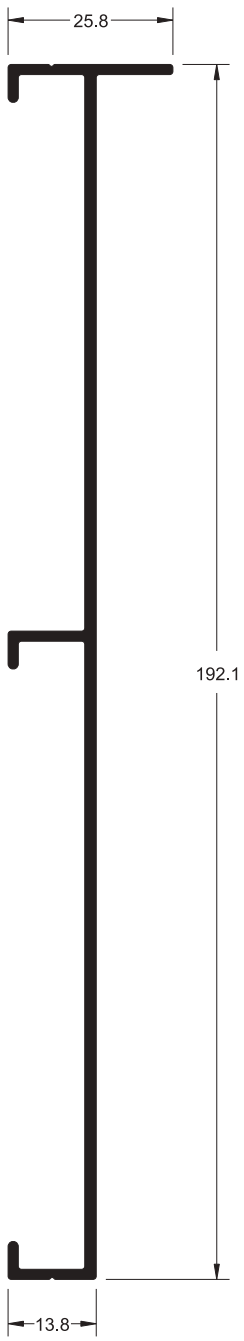

MD-32085 - 1,979kg/m



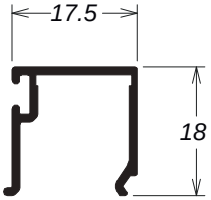

MD-32065 - 2,117kg/m



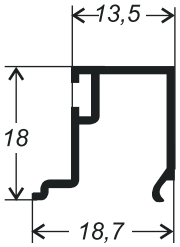

MD-32066 - 1,967kg/m



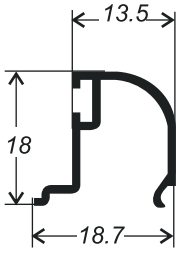

MD-32067 - 1,163kg/m



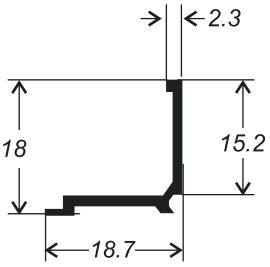

MD-328 - 0,169kg/m



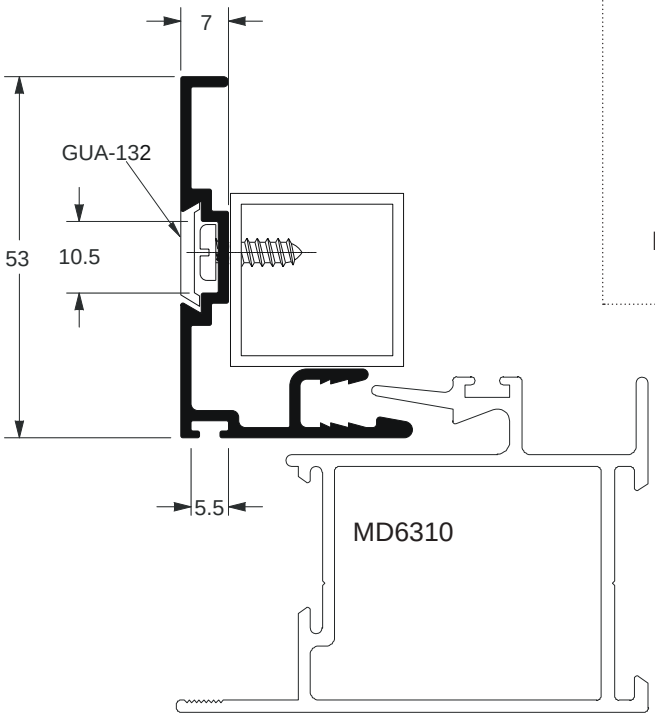

BG-057 - 0,171kg/m



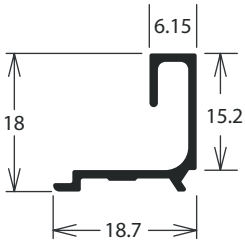

MD-026 - 0,159kg/m



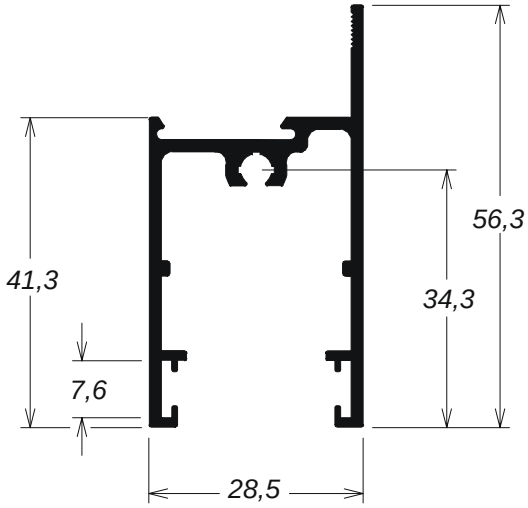

MD-015 - 0,146kg/m



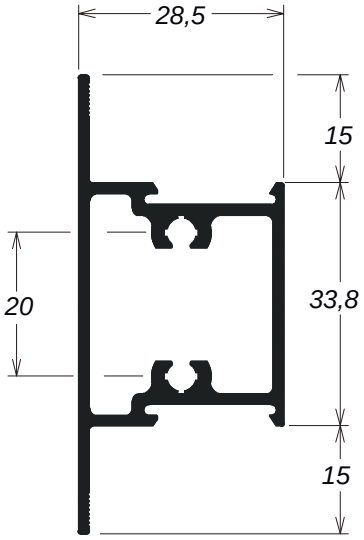

LG-023 - 0,551kg/m
(5m)



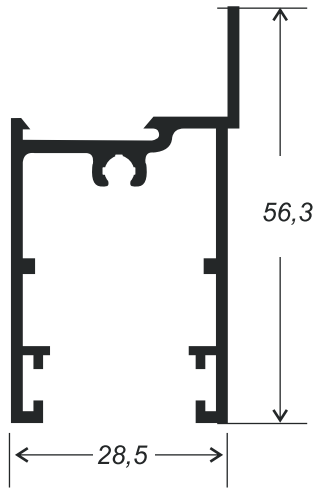

LG-027 - 0,149kg/m



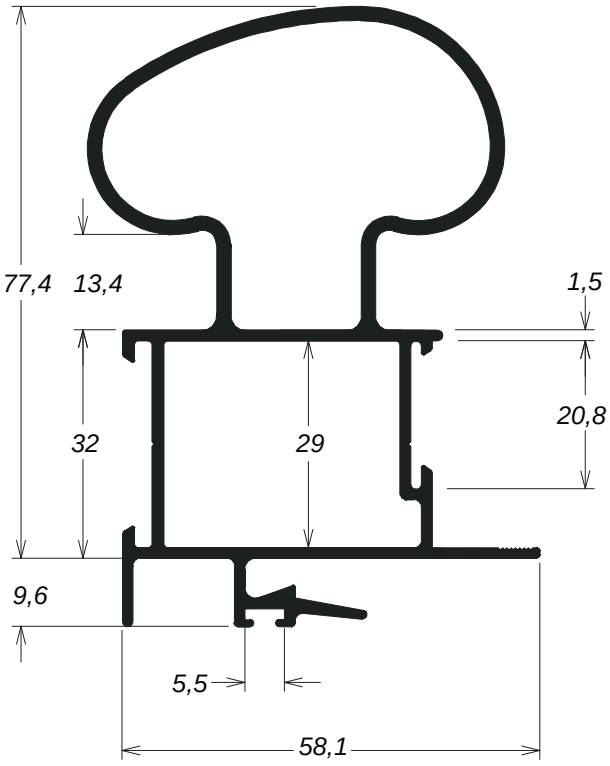

LG-006 - 0,677kg/m



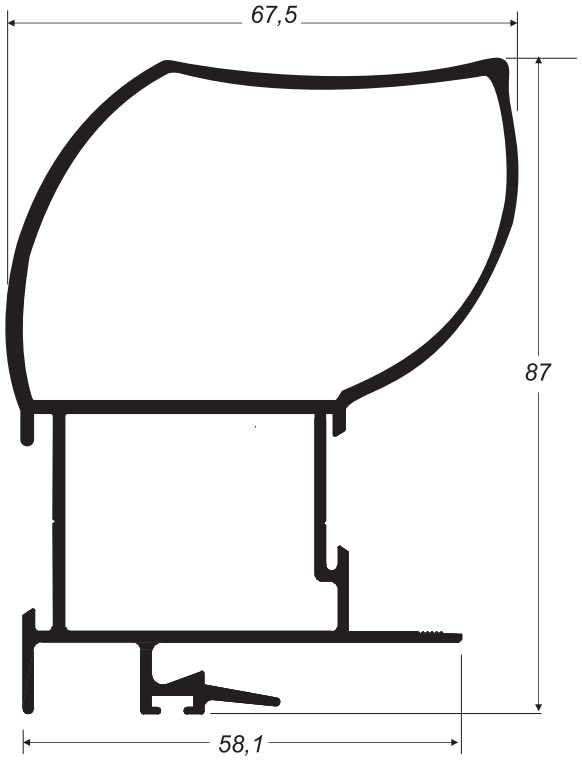

MD-6317 - 0,759kg/m



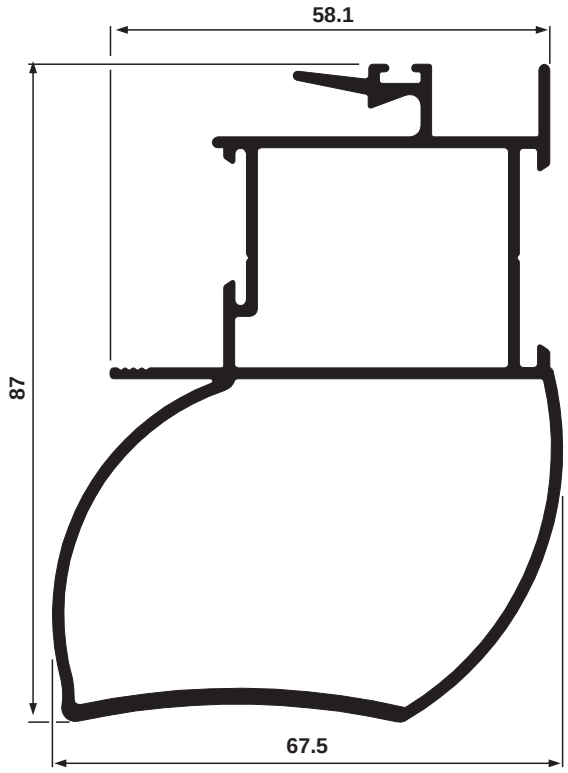

MD-006 - 0,850kg/m



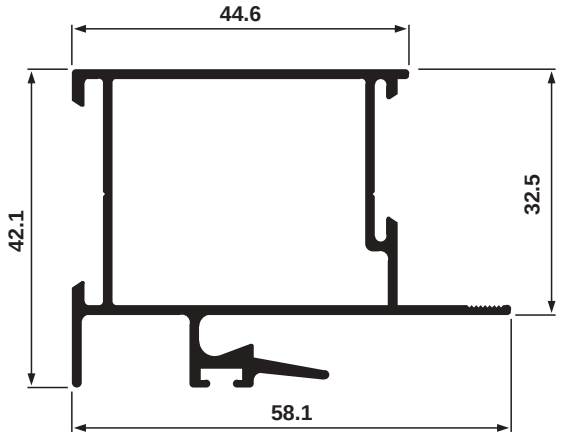

MD-021 - 1,733kg/m



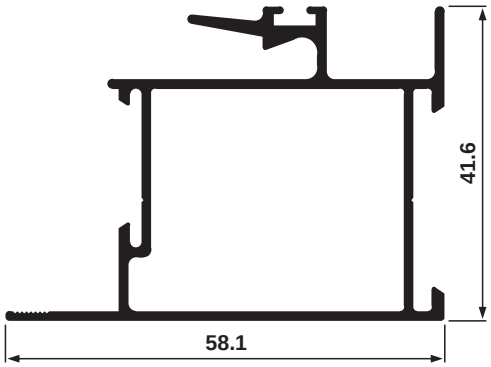

NO-137 - 1,526kg/m
Interno



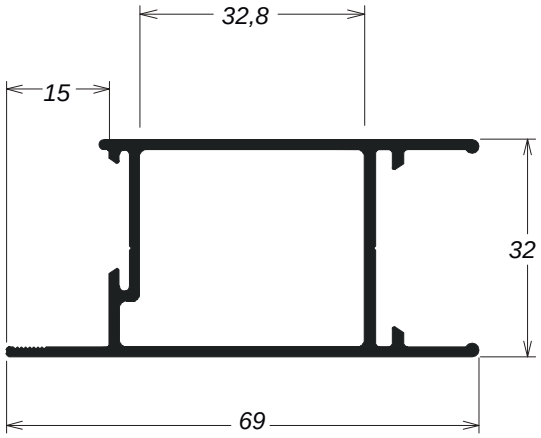

NO-140 - 1,532kg/m
Externo



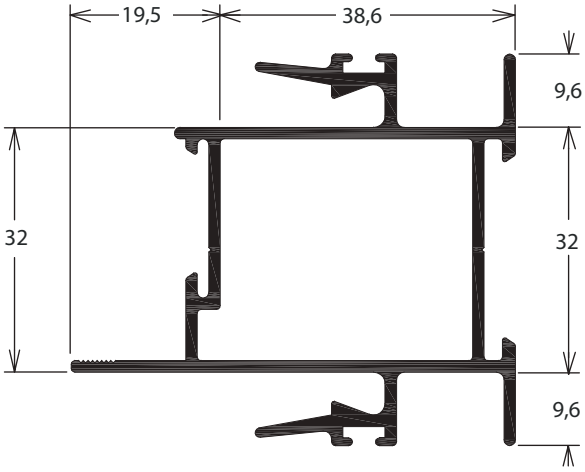

MD-6309 - 0,967kg/m



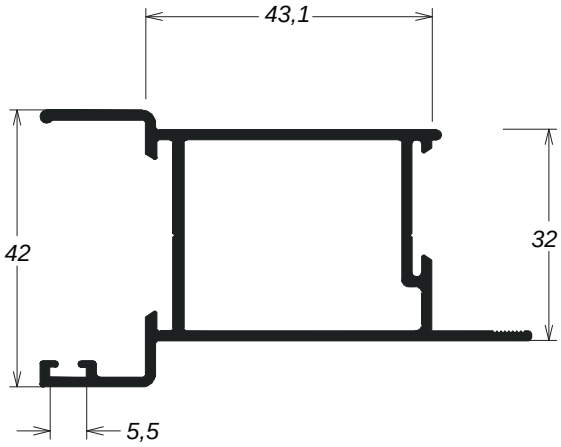

MD-6310 - 0,905kg/m



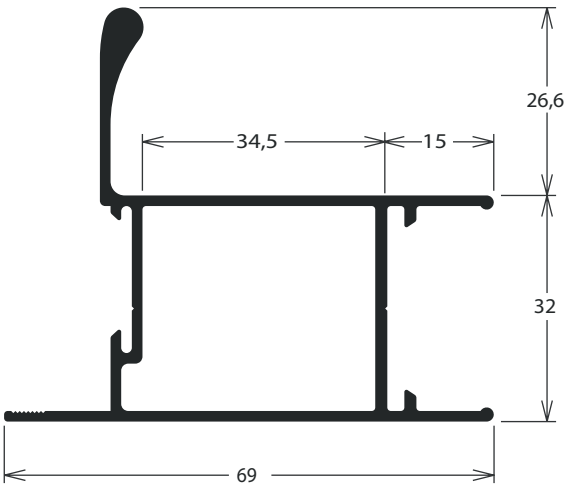

MD-6311- 0,816kg/m



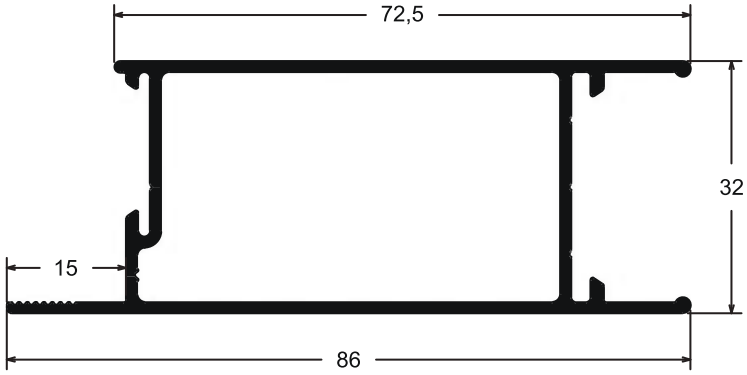

MD-162- 1,074kg/m



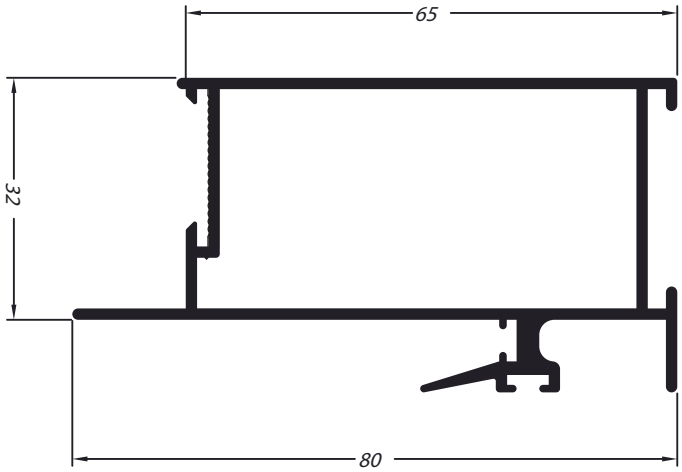

MD-6312 - 0,916kg/m



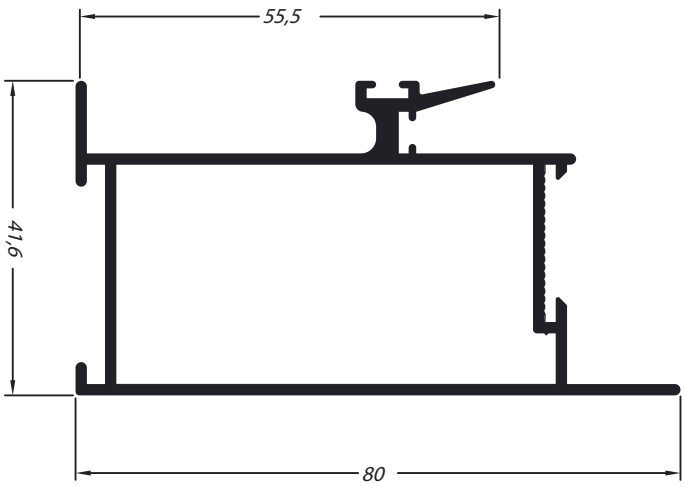

LG-017 - 1,010kg/m



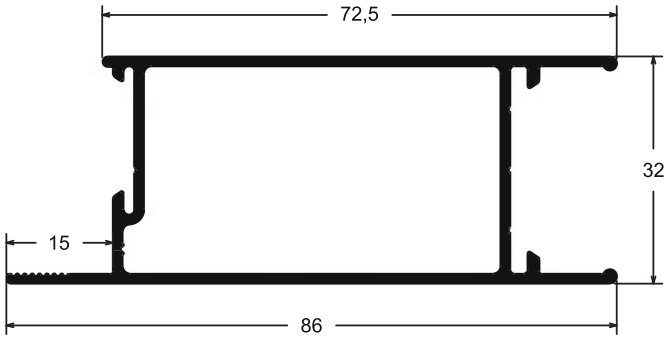

MD-860 - 0,921kg/m



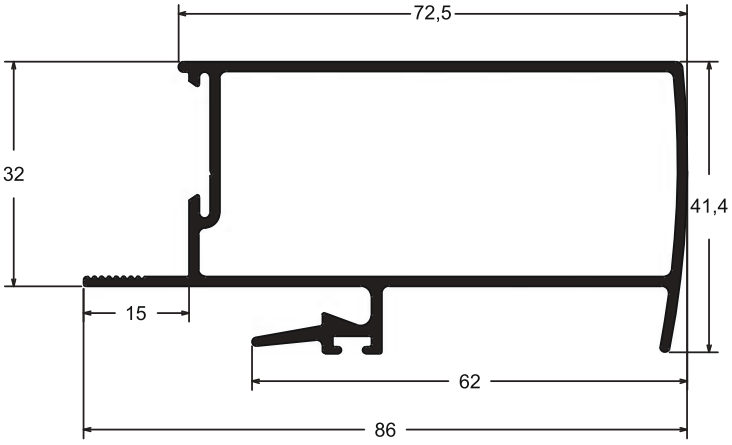

MD-810 - 1,030kg/m



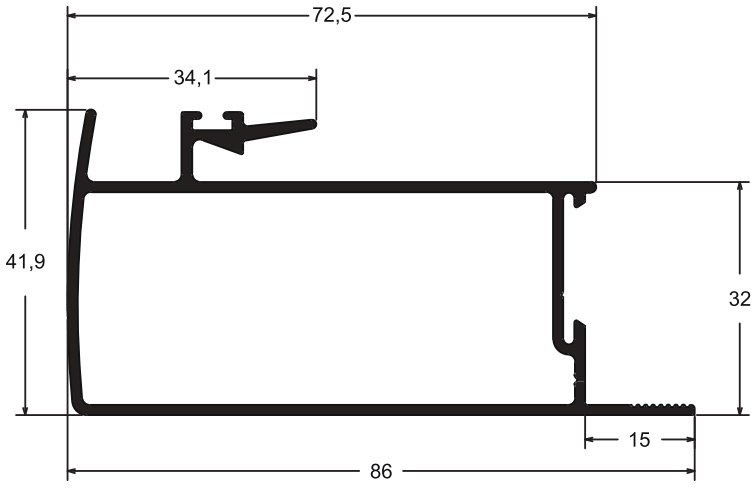

MD-809 - 1,030kg/m



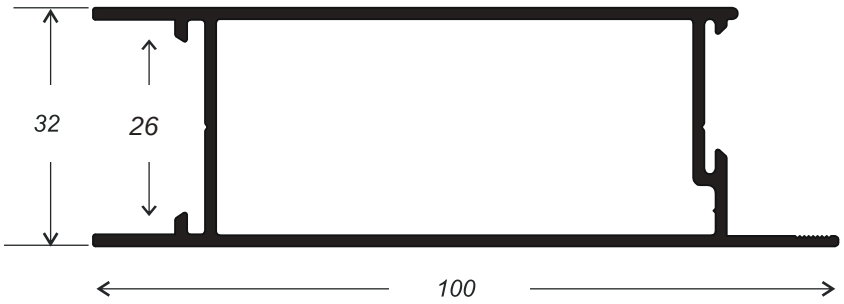

MD-860 - 0,921kg/m



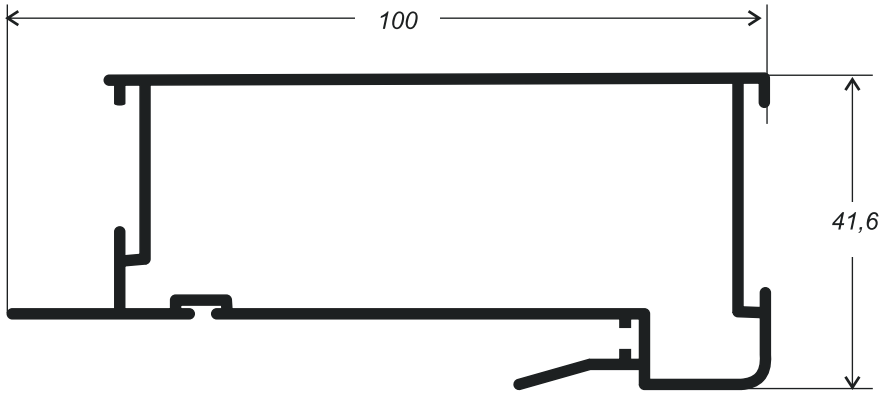

MD-861 - 1,025kg/m



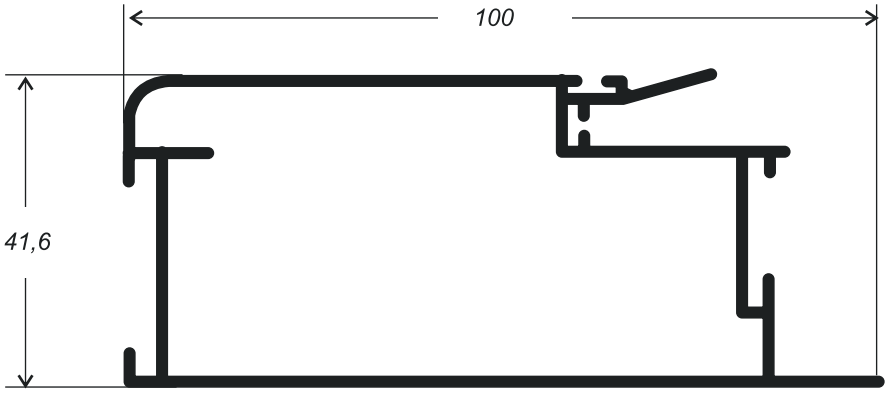

MD-862 - 1,023kg/m



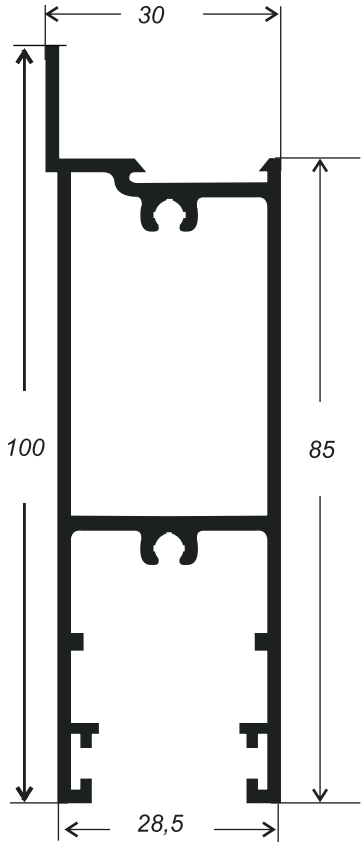

MD-311 - 1,083kg/m



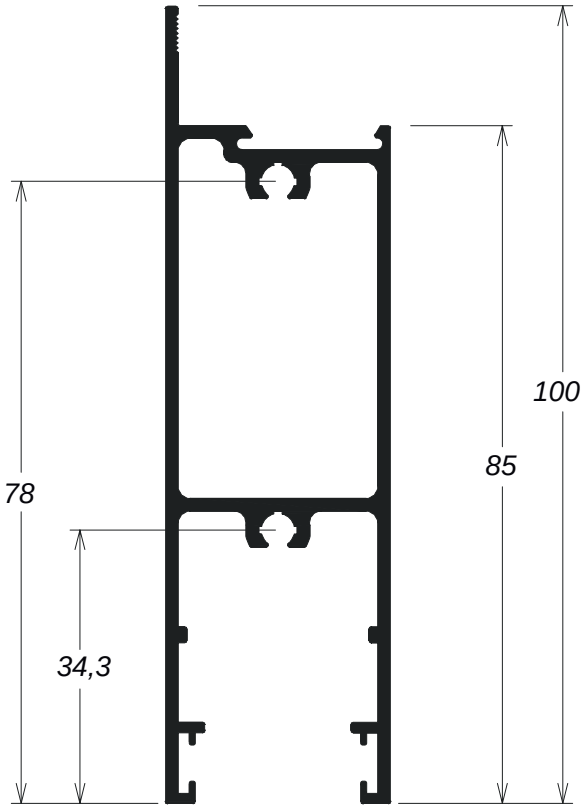

MD-309 - 1,240kg/m



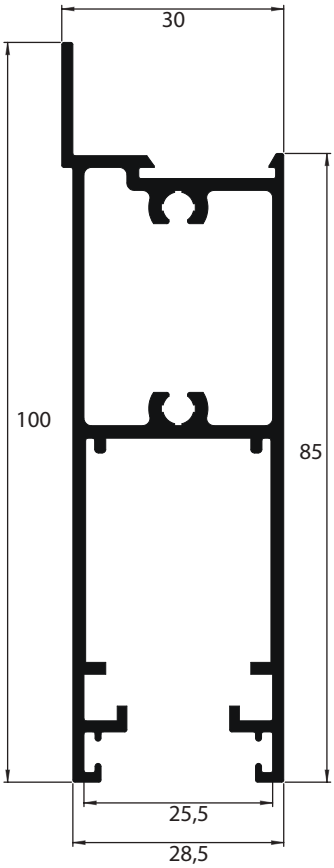

MD-310 - 1,250kg/m



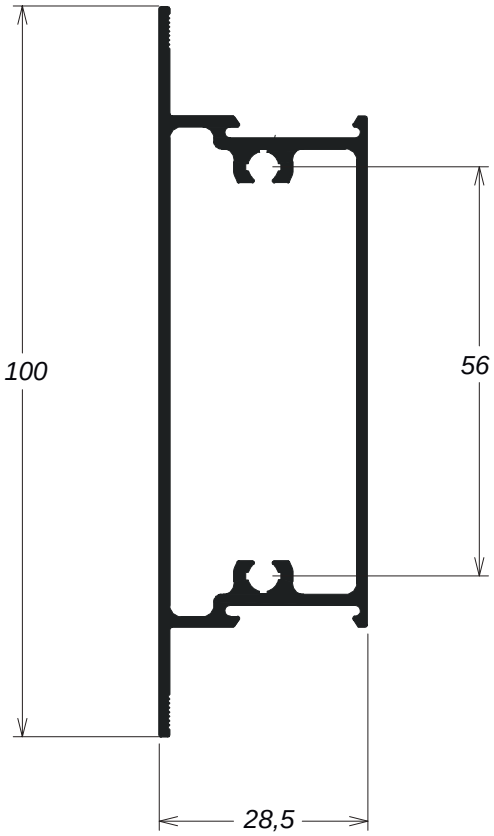

MD-007 - 1,183kg/m



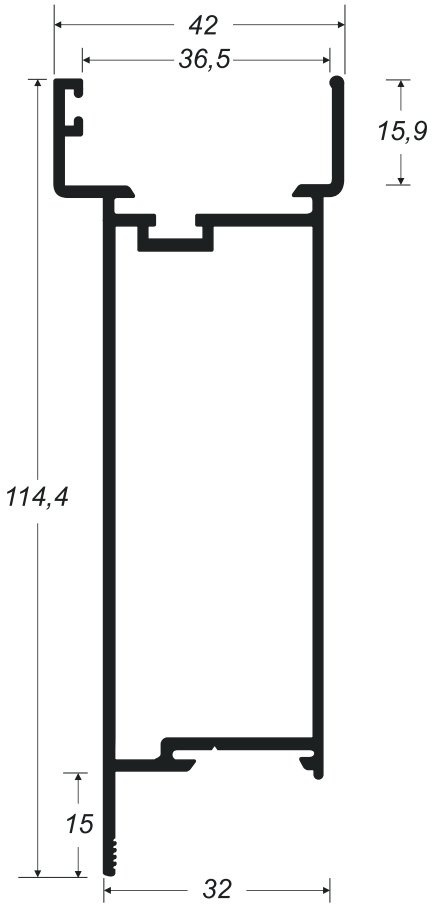

LG-007 - 1,233kg/m



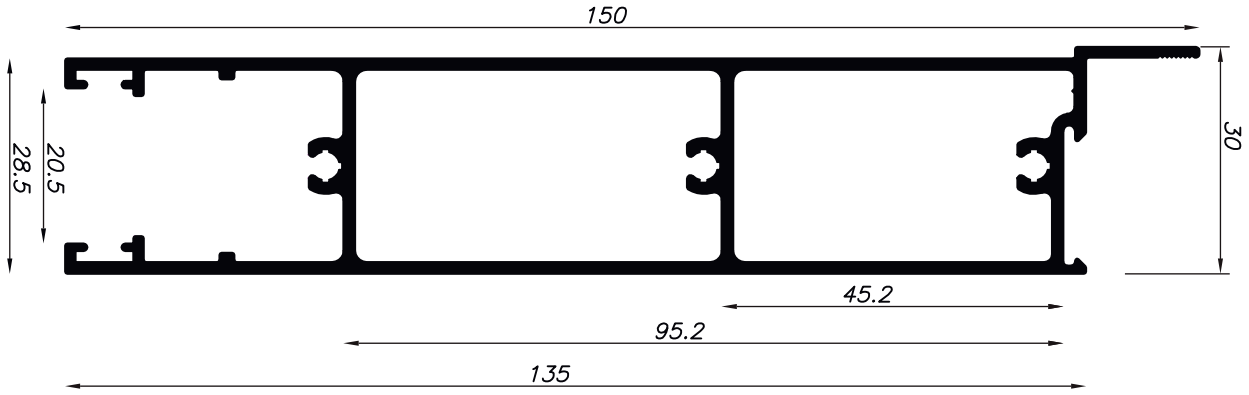

MD-317 - 1,376kg/m
Roldana para esse perfil
(ROL439RA)



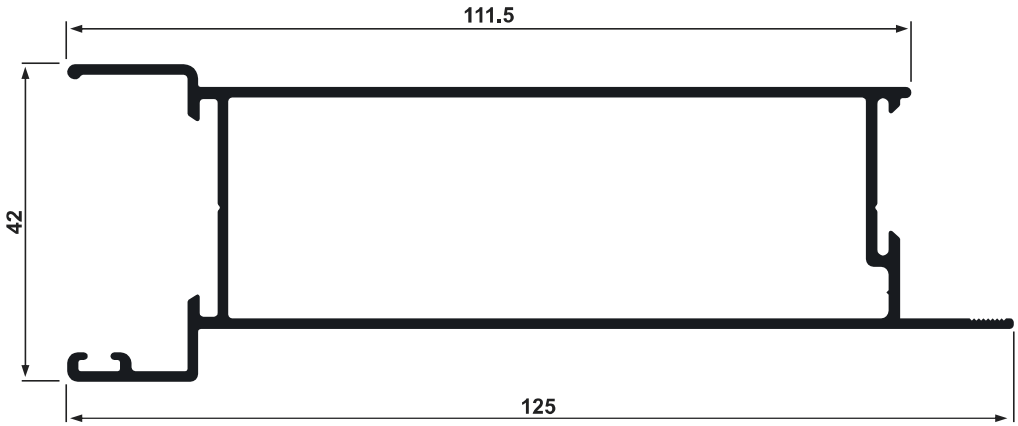

MD-022 - 1,064kg/m




MD-312 - 1,261kg/m



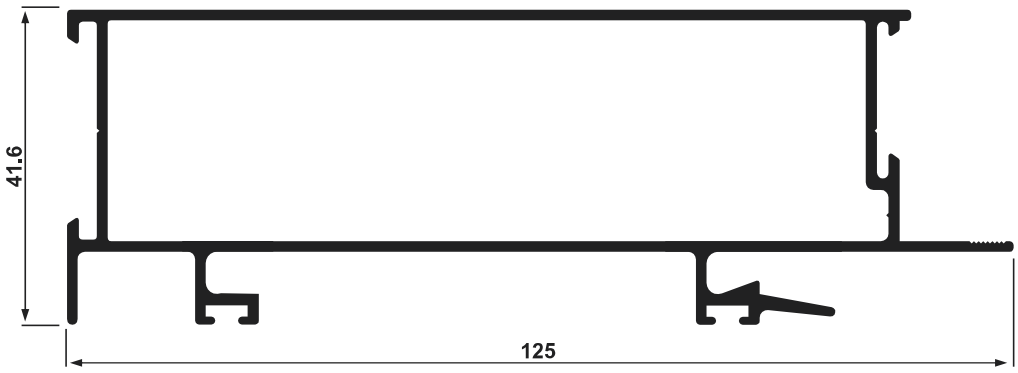

MD-150 - 1,849kg/m



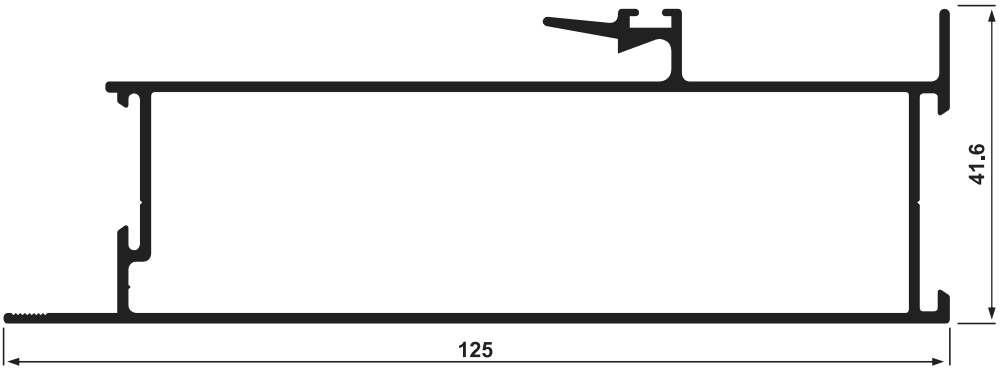

Montante Central
MD-510 - 1,294kg/m



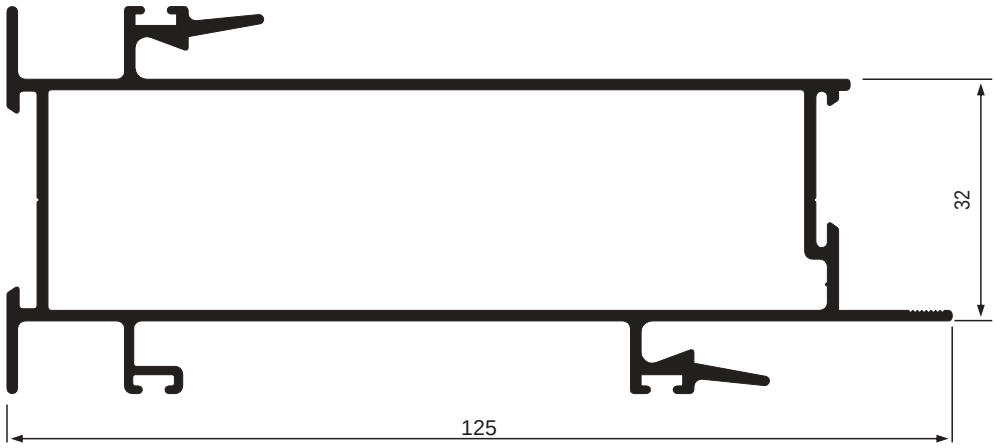

Montante Lateral
MD-500 - 1,234kg/m



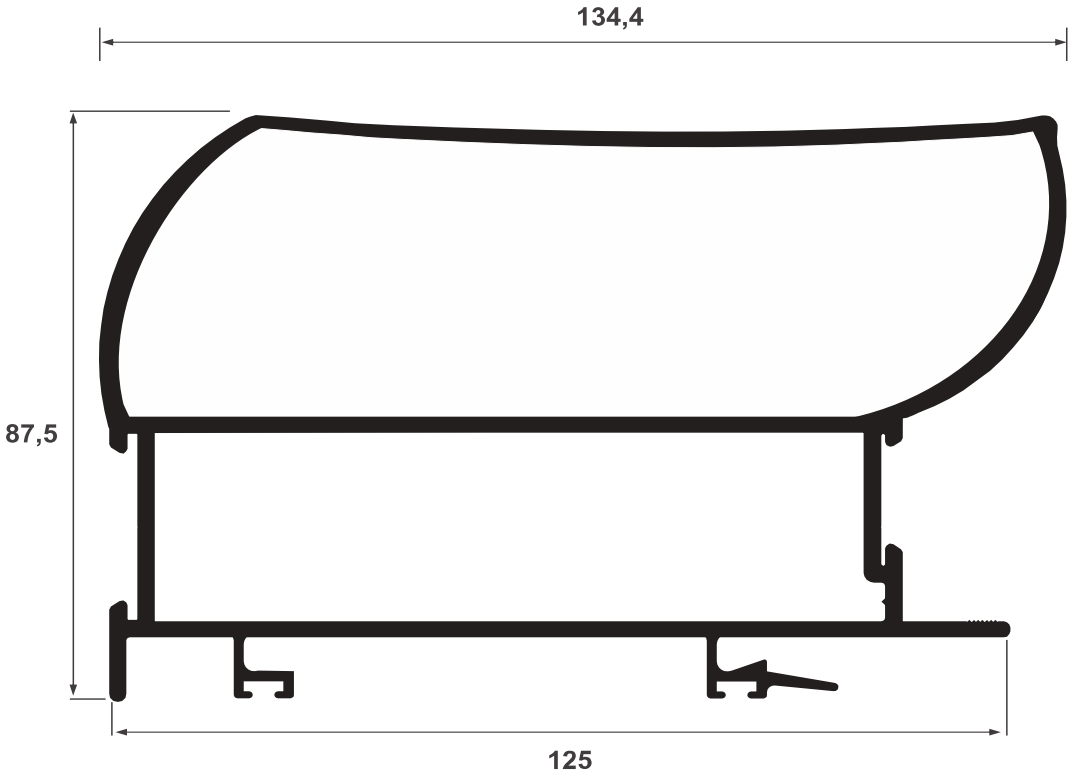

Montante Mão de Amigo
MD-480 - 1,485kg/m



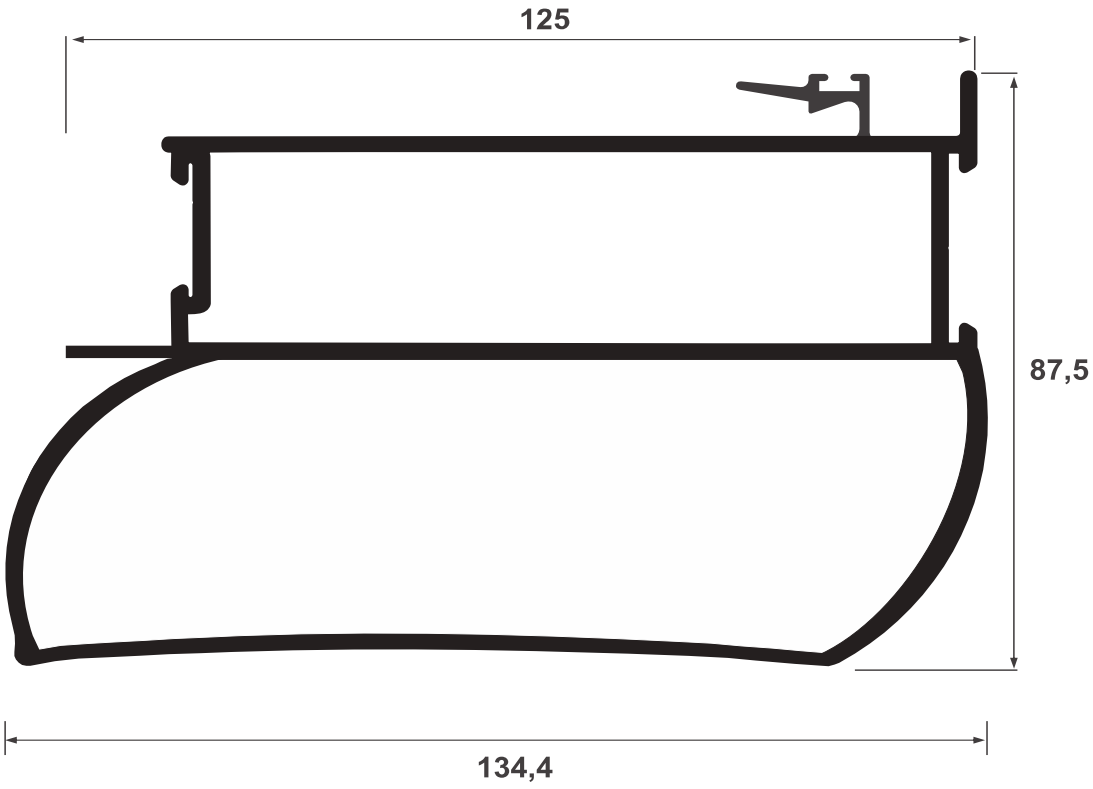

Montante Mão de Amigo
MD-490 - 1,417kg/m



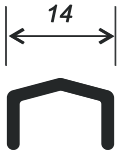

Montante Mão de Amigo
MD-498 - 1,716kg/m



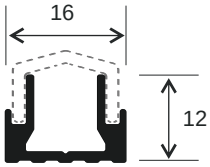

MD-210 - 2,909kg/m
Interno



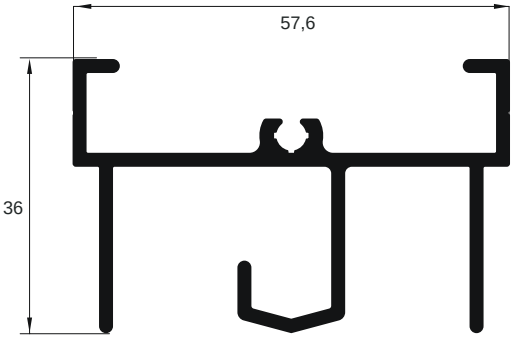

MD-520 - 2,697kg/m
Externo




MD-32086 - 0,114kg/m



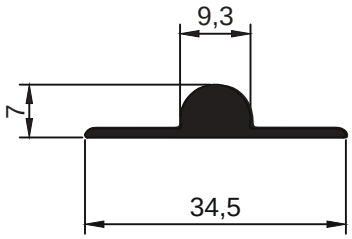

MD-32087 - 0,165kg/m



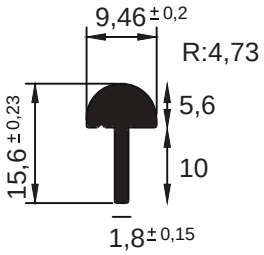

MD-32088 - 0,813kg/m



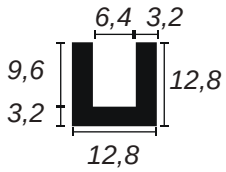

MD-32089 - 0,623kg/m



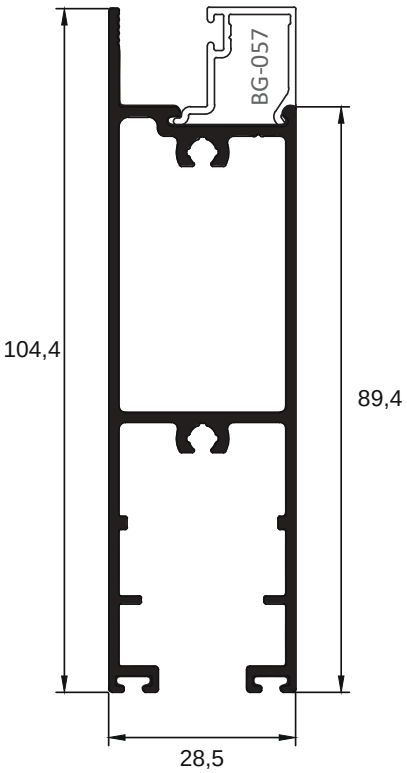

MD-32090 - 0,231kg/m



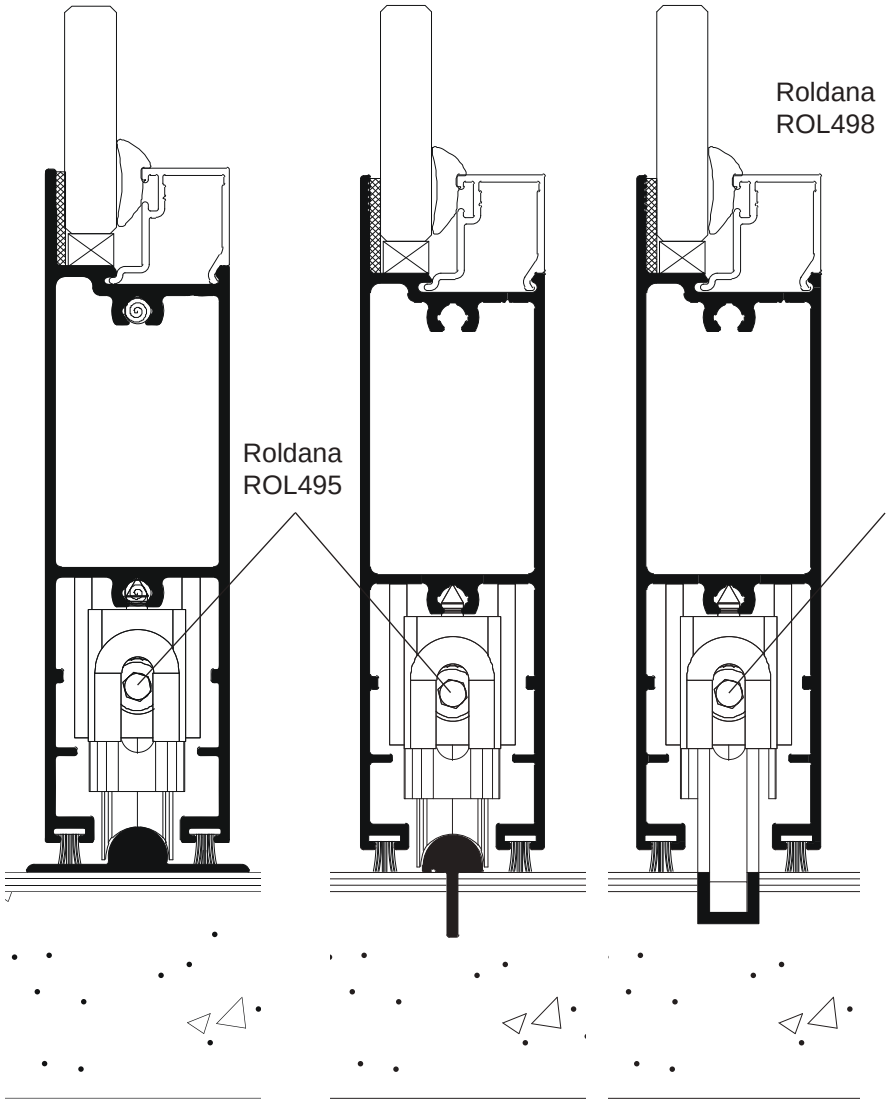

MD-32091 - 0,169kg/m



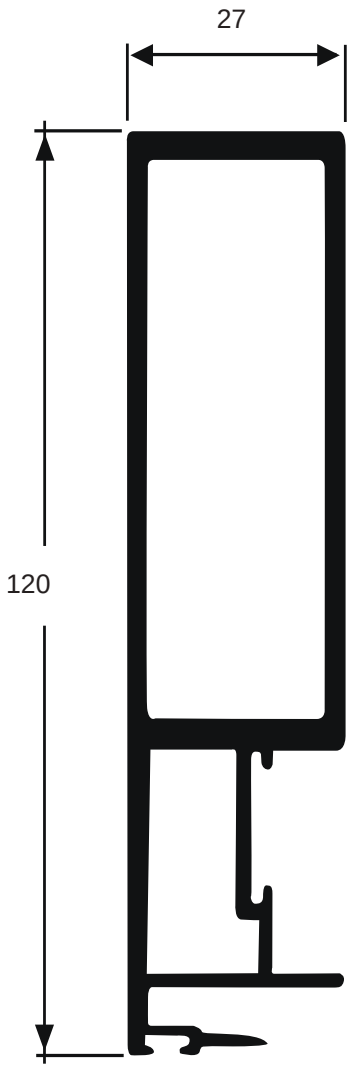

MD-32092 - 0,274kg/m



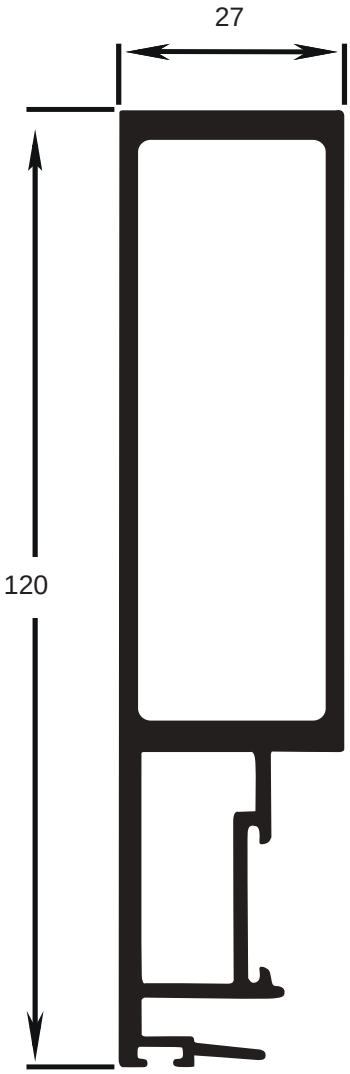

MD-008 - 1,234kg/m



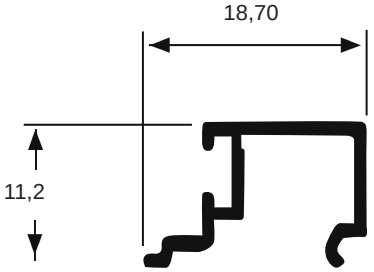

Montagem



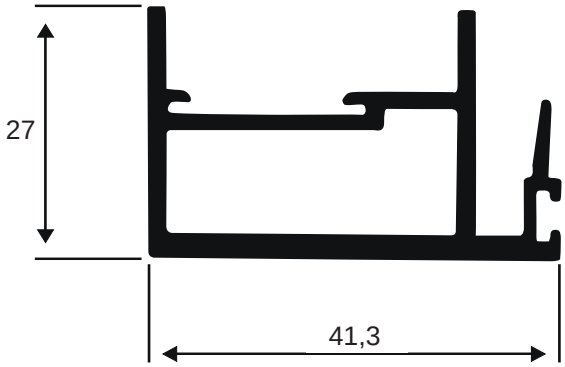

AM-2306 - 2,213kg/m



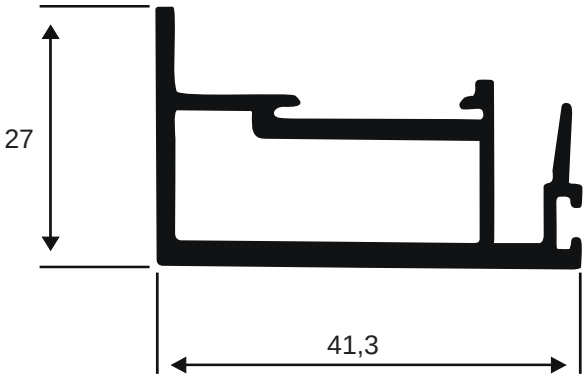

AM-2307 - 2,176kg/m




AM-2305 - 0,123kg/m

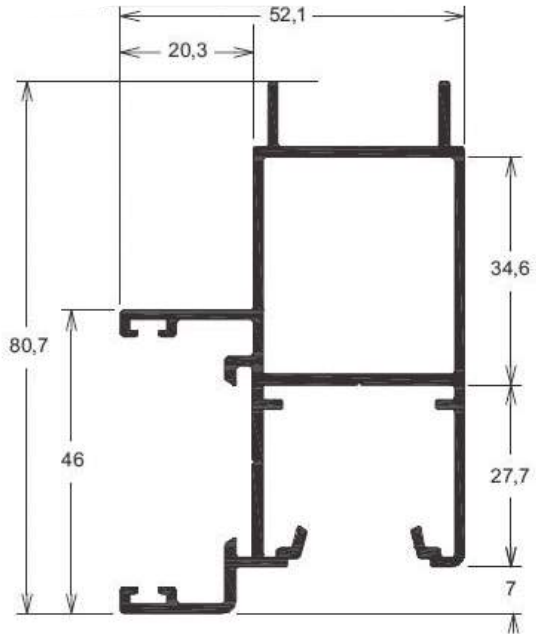



AM-2312 - 0,776kg/m

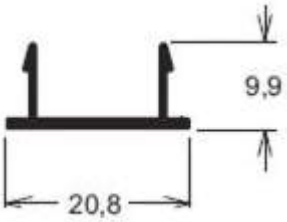



AM-2313 - 0,740kg/m

# PERFIL PARA JANELA DE CANTO 90° LINHA 32

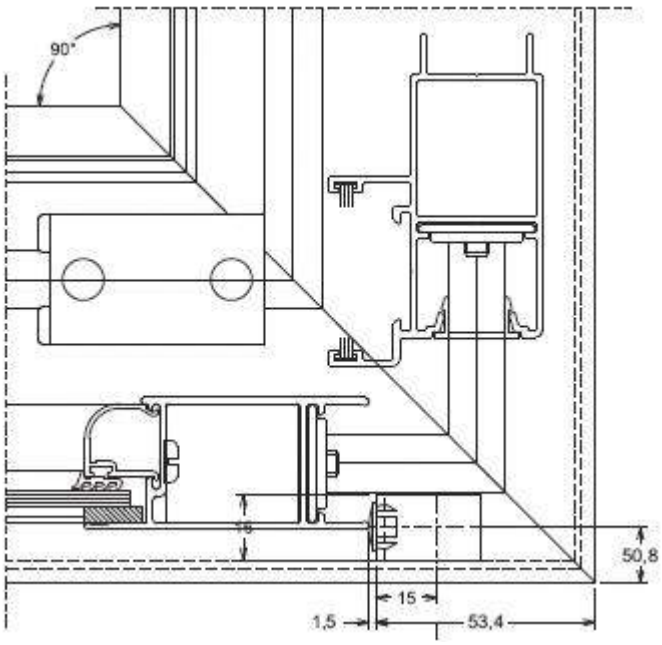



MD-009 - 1,229kg/m

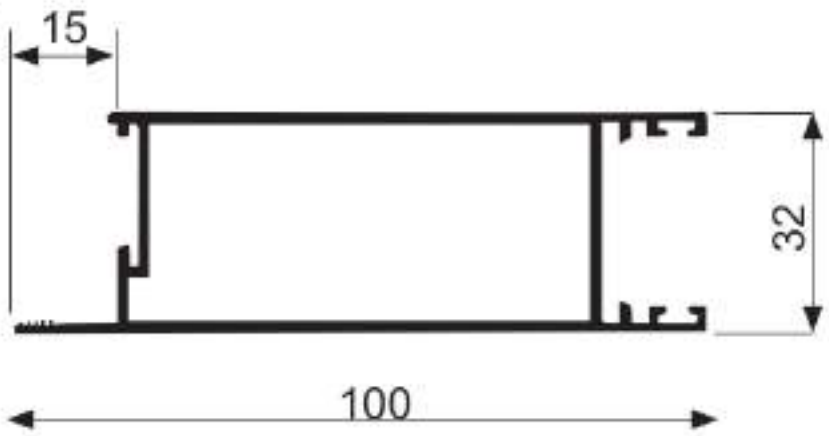



MD-010 - 0,130kg/m

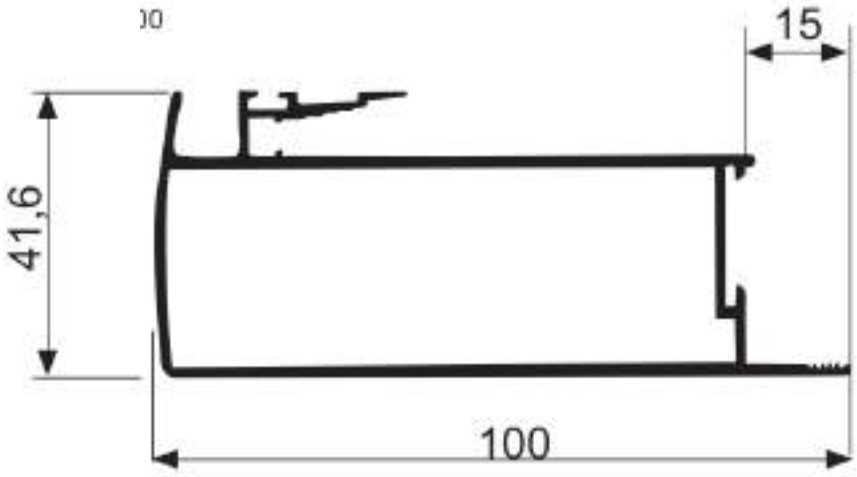
Montagem



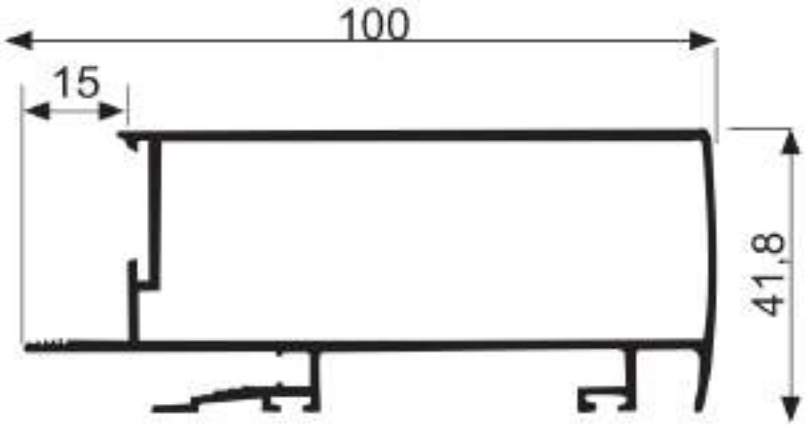
MGA-0108
Montante lateral 100
1,071kg/m




MGA-0110
Montante central externo 100
1,144kg/m




MGA-0111
Montante central interno 100
1,222kg/m



# SUBLIME 45º

- Bitola 45
- 95mm altura
- Corte 45º
- Linha homologada dentro das normas ABNT NBR 10.821

ALPA
ALUMÍNIO

Ensaios NBR ISO/IEC 17025 — CRL 0003

Falcão Bauer
Centro Tecnológico de Controle da Qualidade

Relatório de Ensaio nº CCC/314.477/19
Página: 1/31

Laboratório de Ensaio Acreditado pelo Cgcre de acordo com NBR ISO IEC 17025, sob o nº CRL 0003.
A Cgcre é signatária do Acordo de Reconhecimento Mútuo do ILAC – International Laboratory Acreditation Cooperation.

# RELATÓRIO DE ENSAIO Nº CCC/314.477/19
# ESQUADRIA DE ALUMINIO
# ENSAIOS DIVERSOS

## 1. IDENTIFICAÇÃO DAS AMOSTRAS

02 (dois) protótipos de esquadrias, entregues pelo interessado no laboratório central da L. A. Falcão Bauer em 05/06/2019 apresentando as seguintes características:

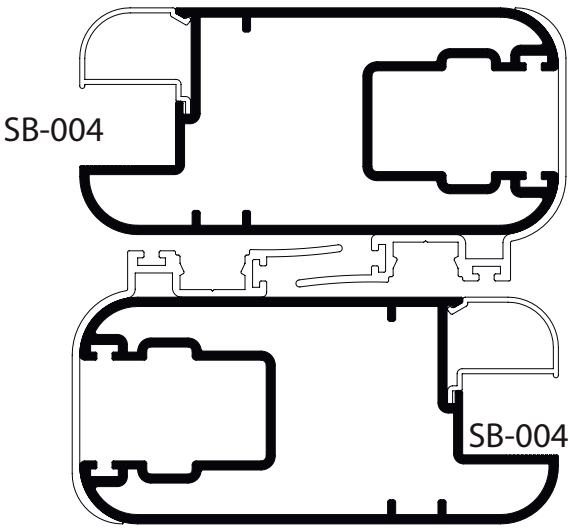
| IDENTIFICAÇÃO DAS AMOSTRAS FORNECIDA PELO INTERESSADO | |
|---|---|
| TIPOLOGIA E LINHA | • PORTA DE CORRER 02 FOLHAS – LINHA 45 |

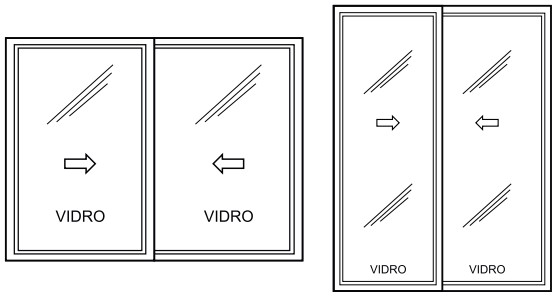
| CARACTERÍSTICAS DO PROTÓTIPO | |
|---|---|
| DIMENSÕES DO PROTÓTIPO | • (2 400 x 2 400) mm |
| DIMENSÕES DA FOLHA MÓVÉL | • Direita (1 225 x 2 335) mm<br>• Esquerda (1 225 x 2335) mm |
| ALTURA DA TRAVESSA INFERIOR | • 23,00 mm |
| MATERIAL PREDOMINANTE DA ESQUADRIA | • Alumínio e vidro |
| CANAIS DE DRENAGEM | • 01 com (30,40 x 8,80) mm;<br>• 04 com Ø 12,0 mm. |
| TIPO DE VIDRO E ESPESSURA | • Comum Laminado 10 mm (5+5) mm |
| INSTALAÇÃO NA CÂMARA | • Fixado em contramarco previamente chumbado em alvenaria de blocos cerâmicos |
| INSTALAÇÃO MANUSEIO | • Fixado em pórtico metálico |

Os resultados apresentados no presente documento referem-se exclusivamente a(s) amostra(s) ensaiada(s).9
A reprodução deste documento somente poderá ser feita na íntegra e sua utilização para fins promocionais depende de autorização prévia.

SÃO PAULO: Rua Aquinos, 111 - S.P. - CEP 05036-070 - FONE (11) 3611-0833 - FAX (11) 3611-0170
**Filiais: SP:** Bauru - Campinas - Santos - São José dos Campos - **RJ:** Macaé - Rio de Janeiro - MG: Belo Horizonte
www.falcaobauer.com.br - bauer@falcaobauer.com.br

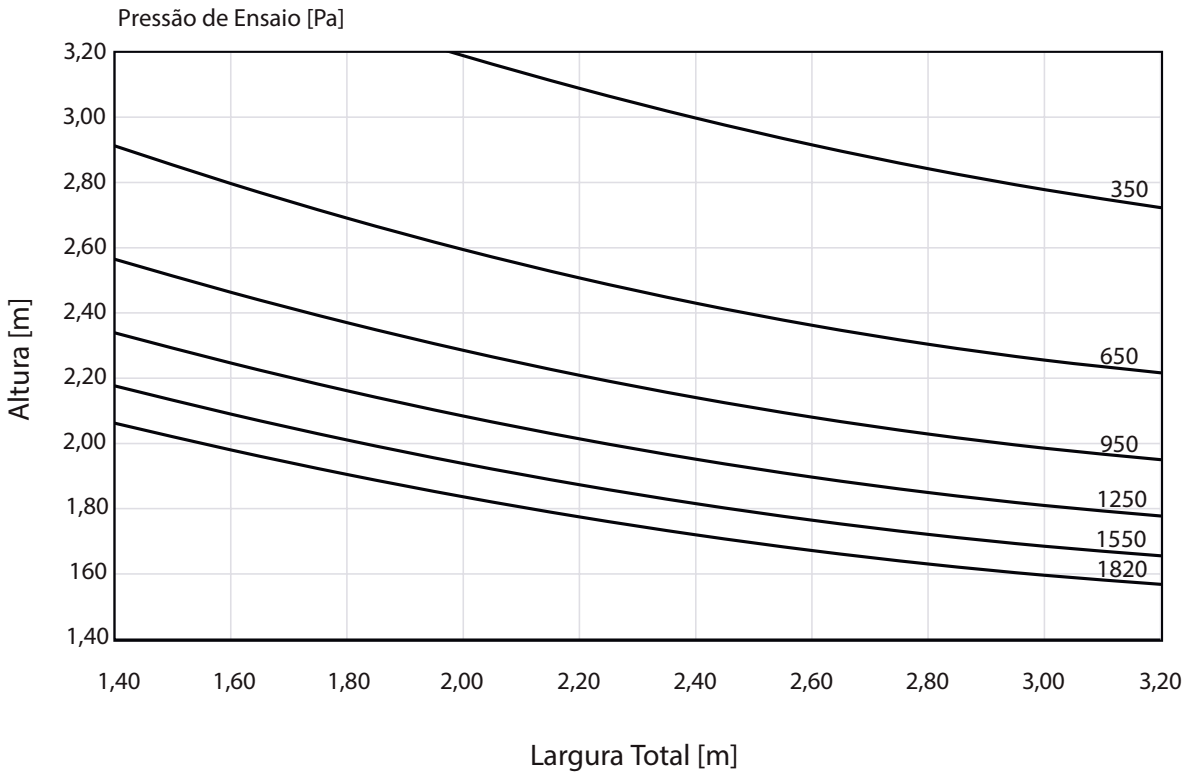
Porta e janela de correr



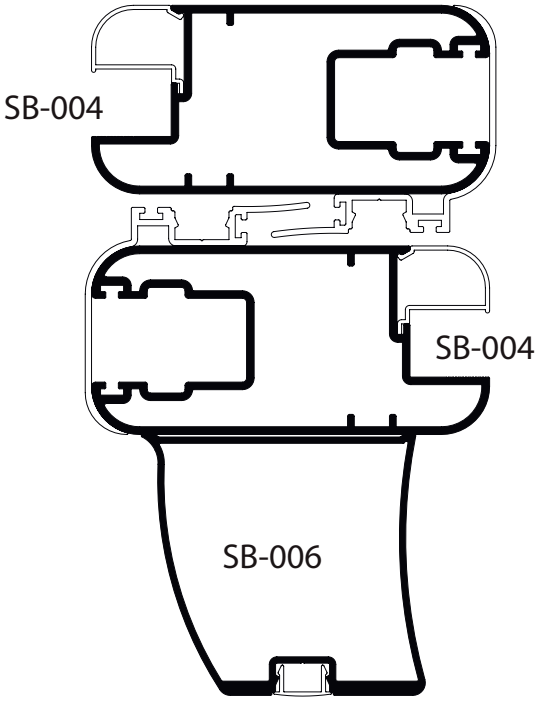



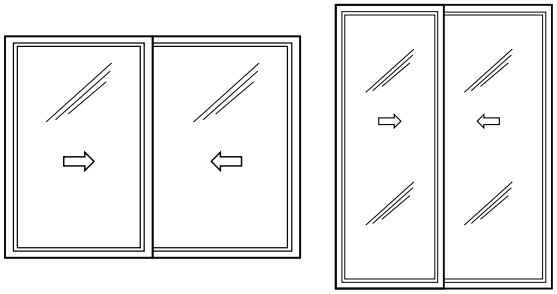

SB-004

| Descrição | S.I. | Valor |
|---|---|---|
| Momento de Inércia | Ixx | 186.048,78 mm$^4$ |
| Momento Polar | Wxx | 7.756,56 mm$^3$ |



Porta e janela de correr



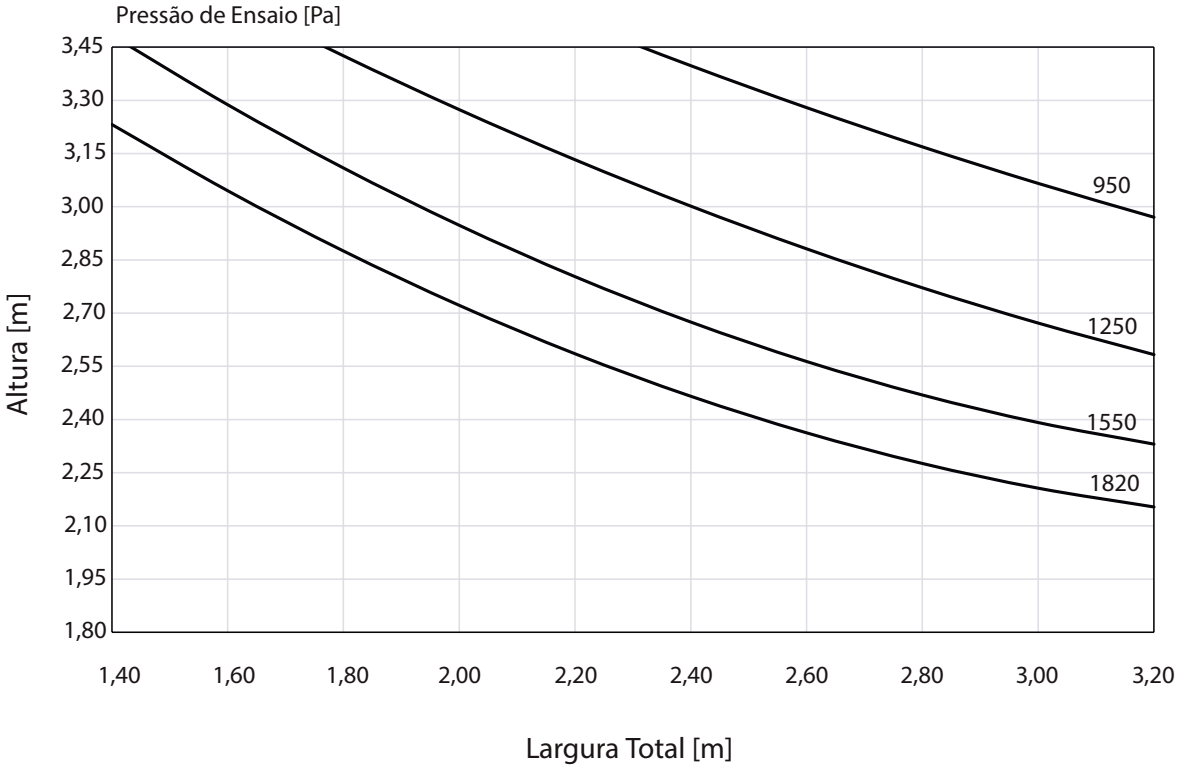



SB-004

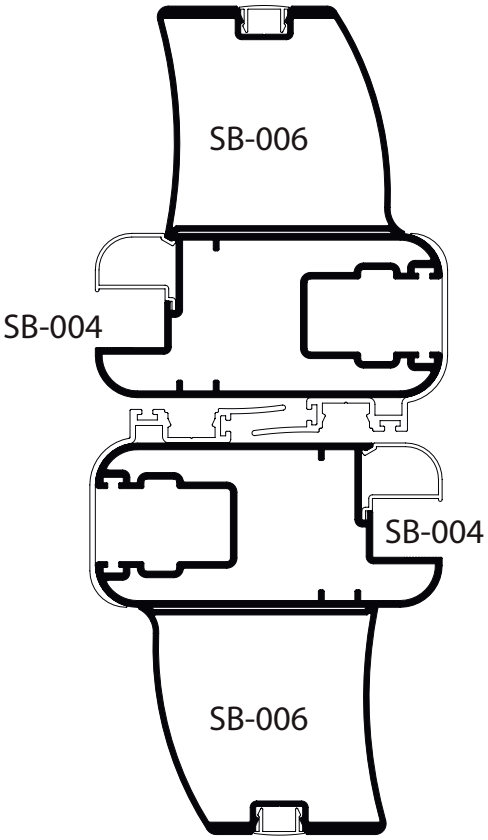
| Descrição | S.I. | Valor |
|---|---|---|
| Momento de Inércia | Ixx | 186.048,78 mm $^4$ |
| Momento Polar | Wxx | 7.756,56 mm$^3$ |

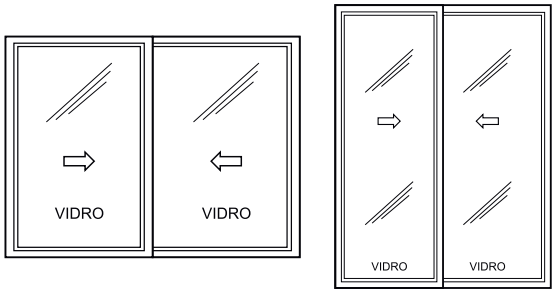
SB-004 + SB-006

| Descrição | S.I. | Valor |
|---|---|---|
| Momento de Inércia | Ixx | 1.330.962,58mm $^4$ |
| Momento Polar | Wxx | 21.082,89 mm$^3$ |



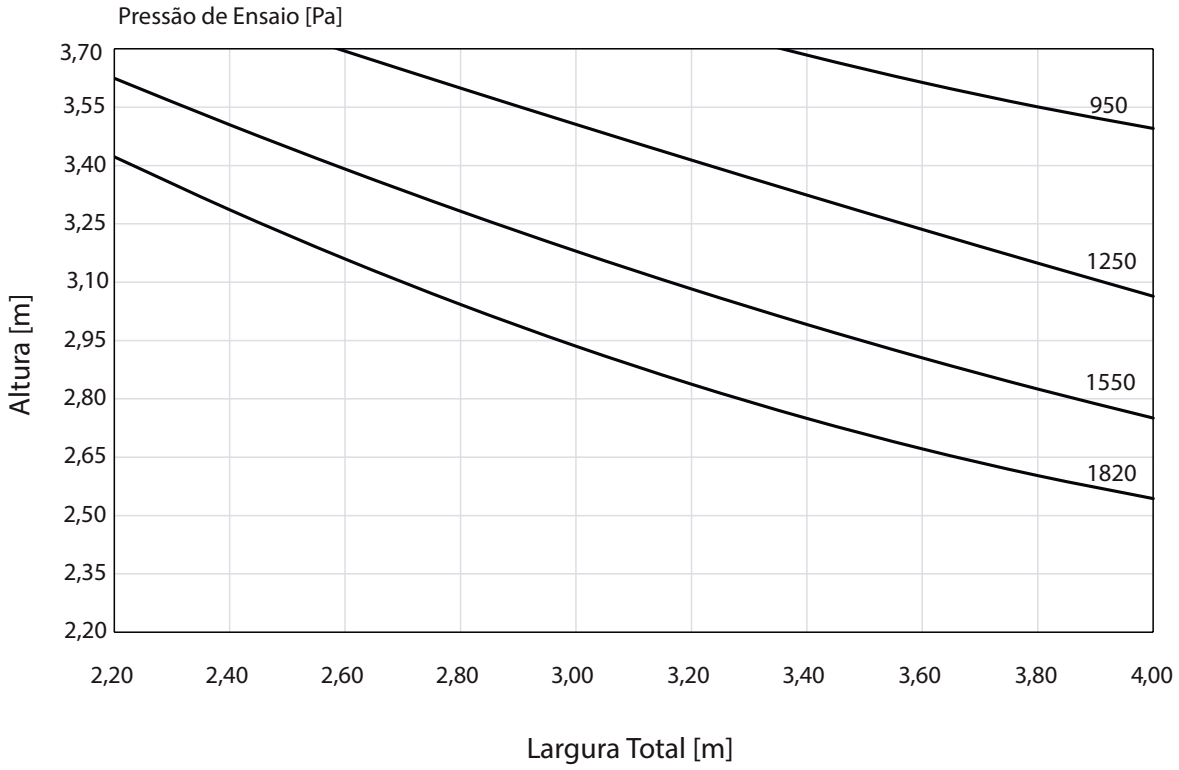
Porta e janela de correr



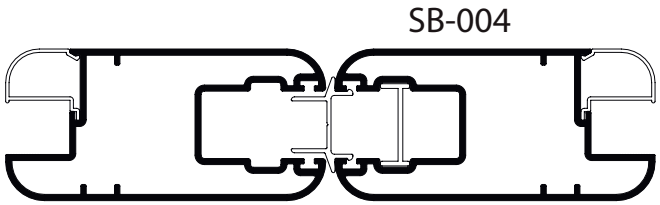




SB-004 + SB-006

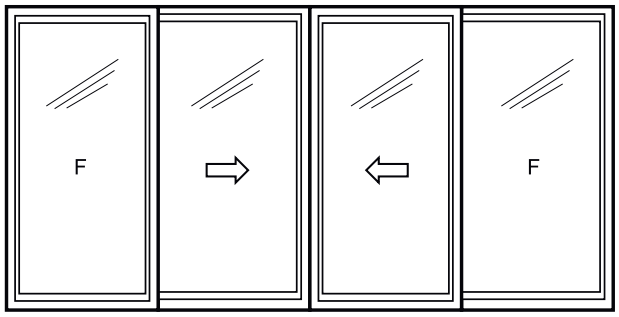
| Descrição | S.I. | Valor |
|---|---|---|
| Momento de Inércia | Ixx | 1.330.962,58mm $^4$ |
| Momento Polar | Wxx | 21.082,89 mm$^3$ |



Porta e janela de correr

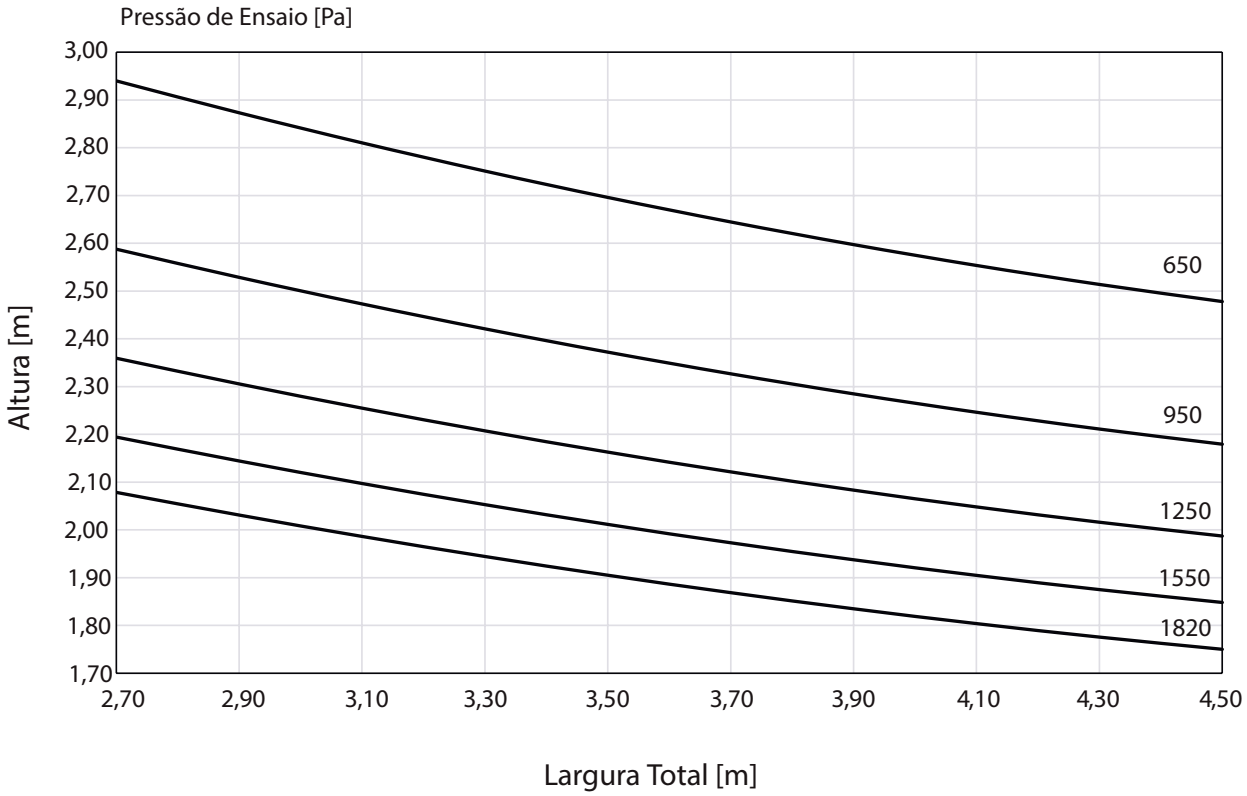


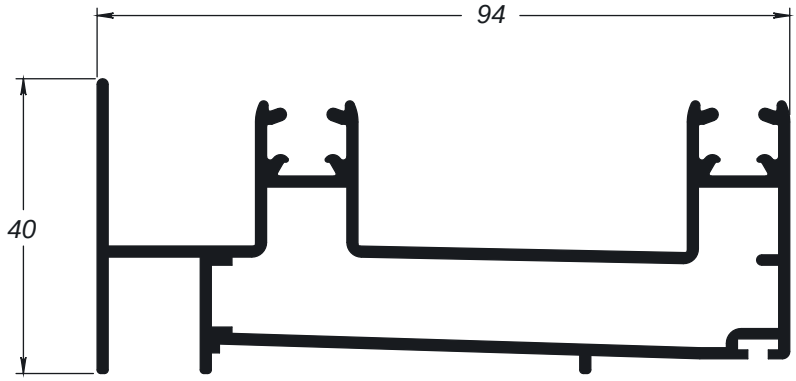

SB-004



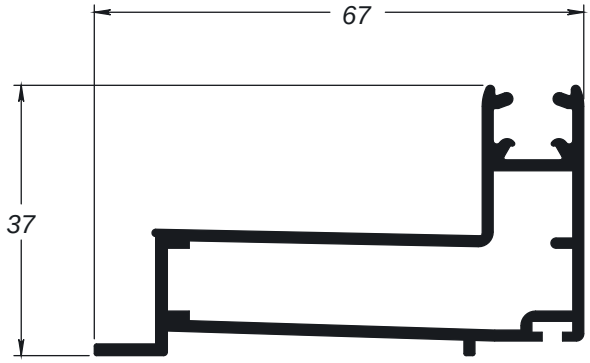

SB-004

| Descrição | S.I. | Valor |
|---|---|---|
| Momento de Inércia | Ixx | 186.048,78 mm$^4$ |
| Momento Polar | Wxx | 7.756,56 mm$^3$ |

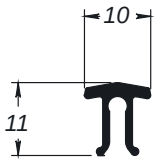




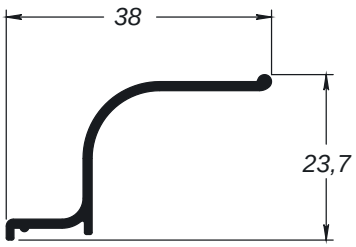

SB-001 - 1,444kg/m



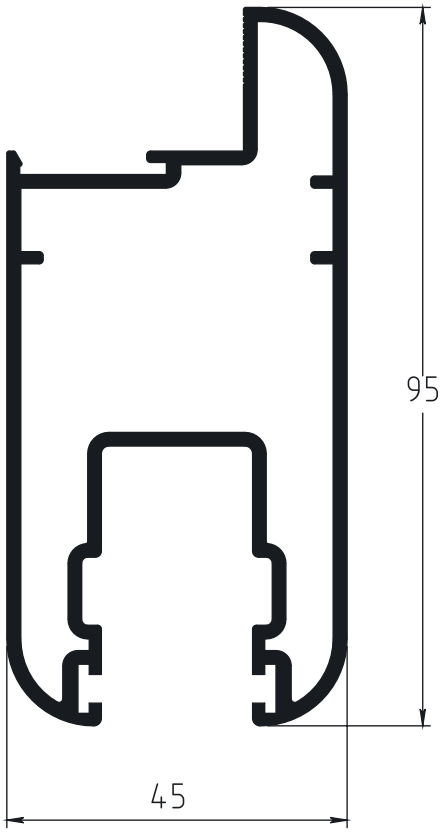

SB-002 - 0,891kg/m



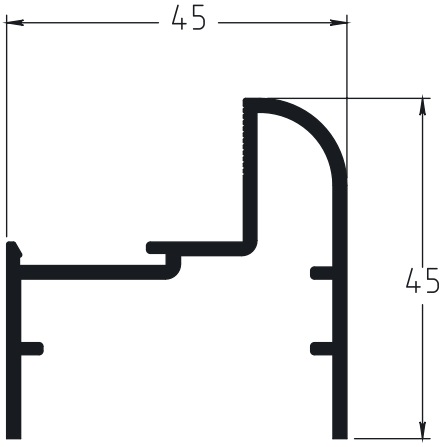

SB-003 - 0,099kg/m



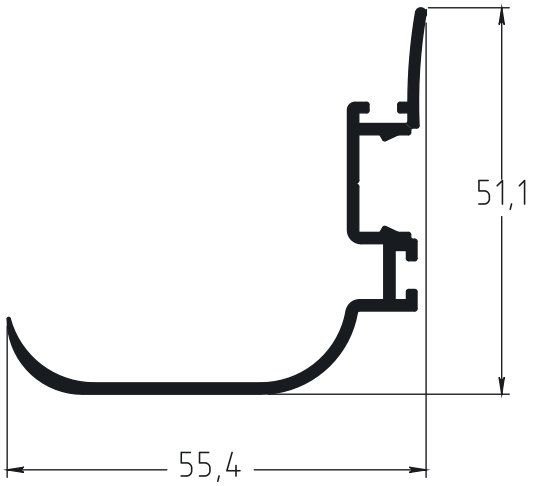

SB-008 - 0,200kg/m



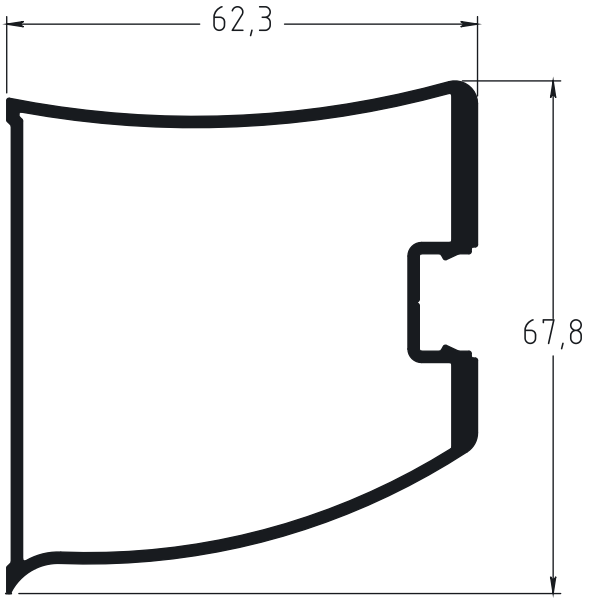

SB-004 - 1,778kg/m



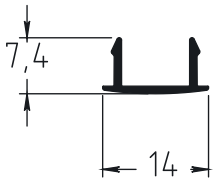

SB-014 - 0,684kg/m



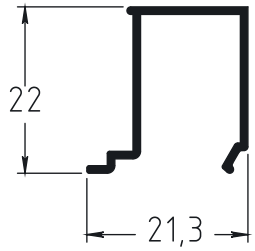

SB-005 - 0,513kg/m



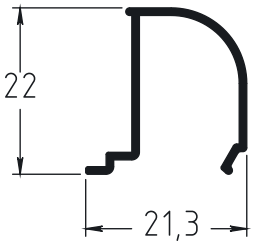

SB-006 - 1,172kg/m



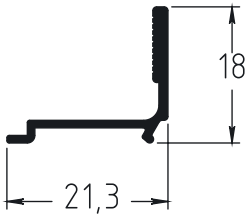

SB-007 - 0,066kg/m



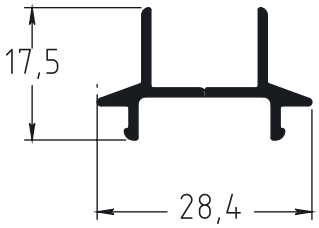

SB-009 - 0,175kg/m



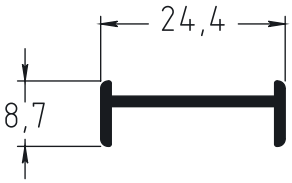

SB-010 - 0,164kg/m



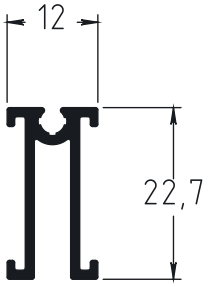

SB-011 - 0,136kg/m



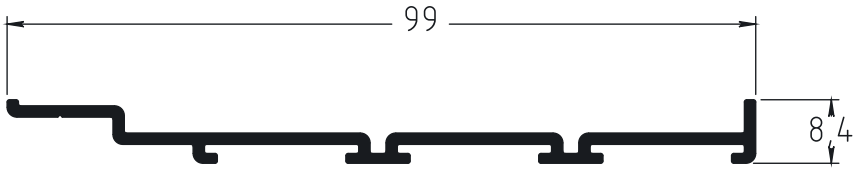

SB-012 - 0,230kg/m




SB-013 - 0,145kg/m




SB-016 - 0,226kg/m




SB-015 - 0,524kg/m

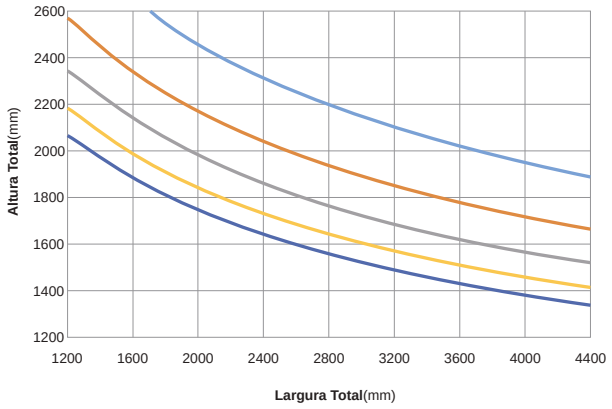
# SUBLIME 45º PLUS

- Bitola 45
- 100mm altura
- Corte 45º
- Linha homologada dentro das normas ABNT NBR 10.821

ALPA
ALUMÍNIO

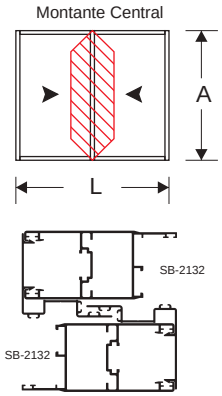
# Linha 45 - Janelas

## SB-2132 — Correr 2 planos - 45x100

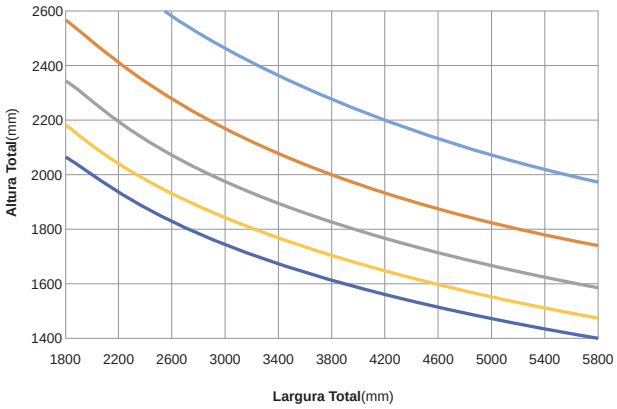



650PA (Reg. I)
950PA (Reg. II)
1250PA (Reg. III)
1550PA (Reg. IV)
1820PA (Reg. V)

Jxt = 31,52 cm$^4$

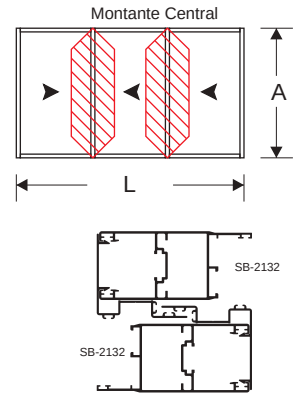



## SB-2132 — Correr 3 planos - 45x100

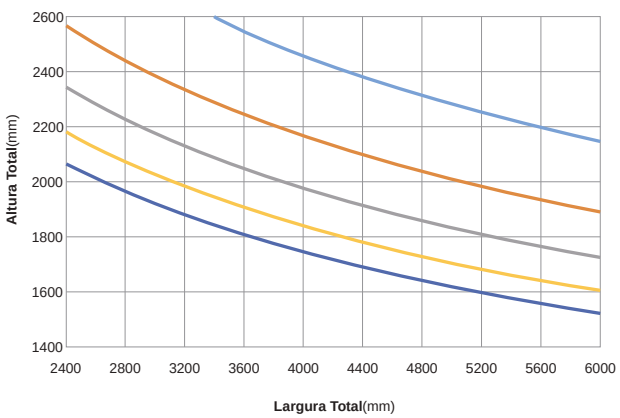



650PA (Reg. I)
950PA (Reg. II)
1250PA (Reg. III)
1550PA (Reg. IV)
1820PA (Reg. V)

Jxt = 31,52 cm$^4$

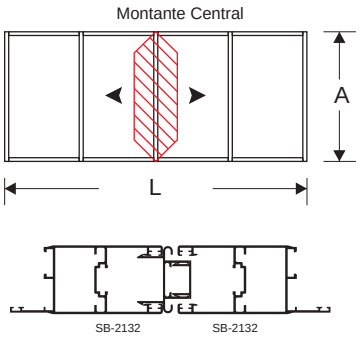



## SB-2132 — Correr 4 planos - 45x100



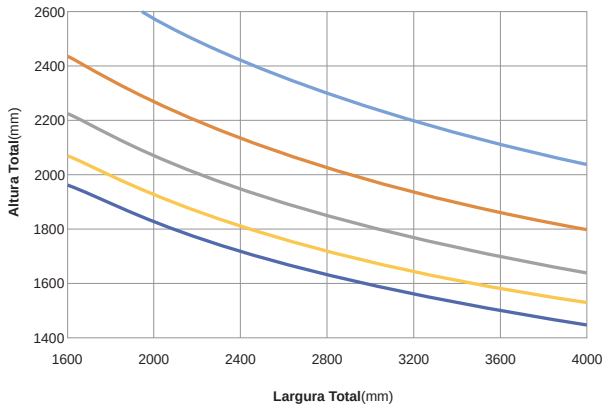

650PA (Reg. I)
950PA (Reg. II)
1250PA (Reg. III)
1550PA (Reg. IV)
1820PA (Reg. V)

Jxt = 31,52 cm$^4$



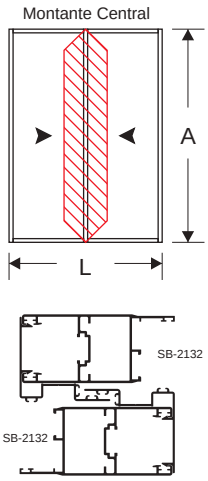
# Linha 45 - Portas

## SB-2132 — Correr 2 planos - 45x100

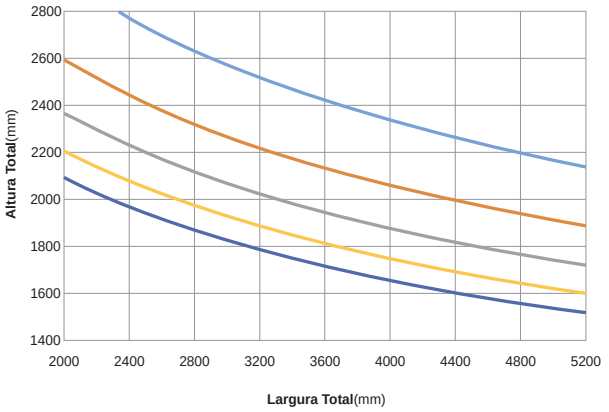



650PA (Reg. I)
950PA (Reg. II)
1250PA (Reg. III)
1550PA (Reg. IV)
1820PA (Reg. V)

Jxt = 36,04 cm$^4$

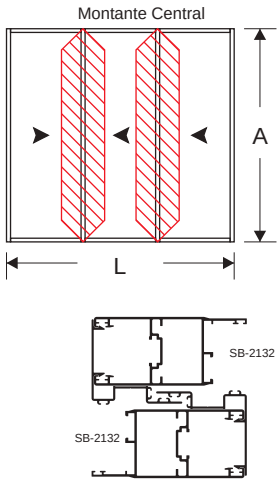



## SB-2132 — Correr 3 planos - 45x100

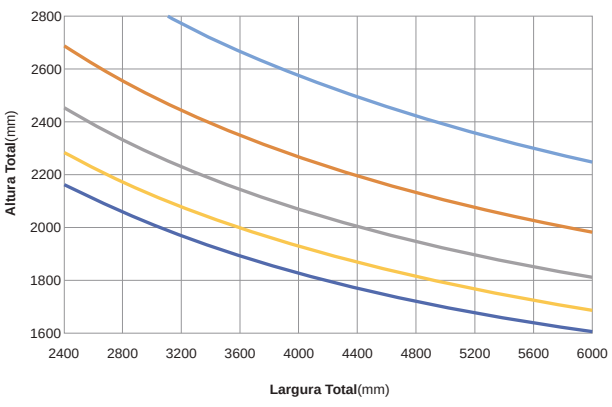



650PA (Reg. I)
950PA (Reg. II)
1250PA (Reg. III)
1550PA (Reg. IV)
1820PA (Reg. V)

Jxt = 36,04 cm$^4$

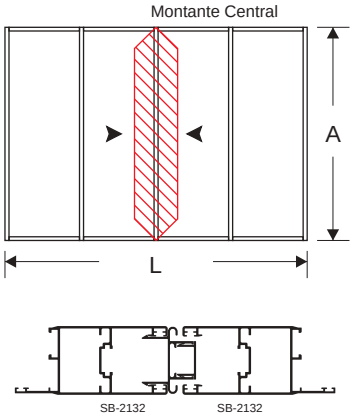


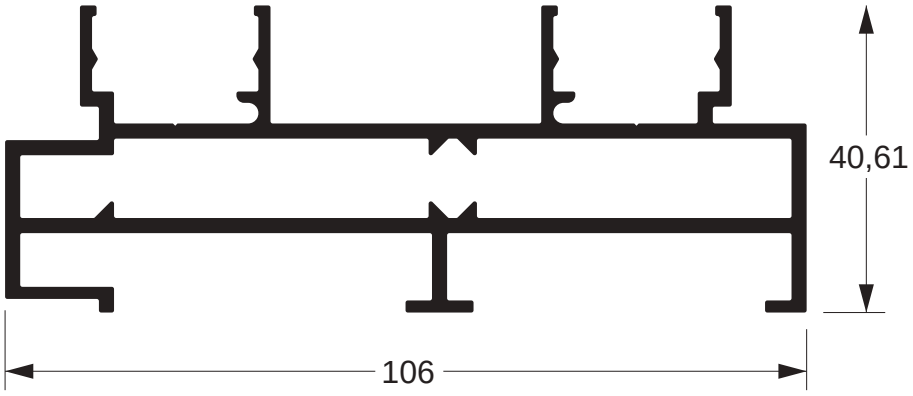

## SB-2132 — Correr 4 planos - 45x100



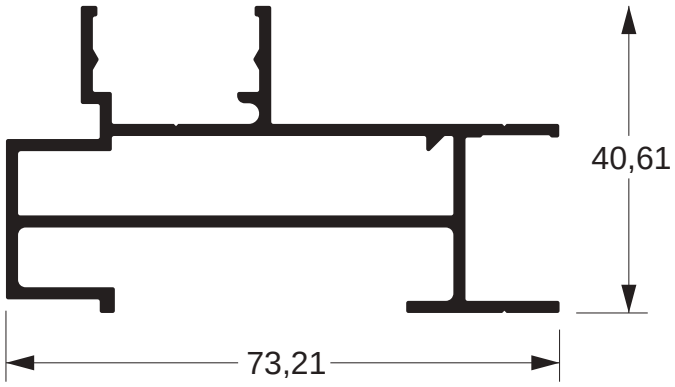

650PA (Reg. I)
950PA (Reg. II)
1250PA (Reg. III)
1550PA (Reg. IV)
1820PA (Reg. V)

Jxt = 36,04 cm$^4$

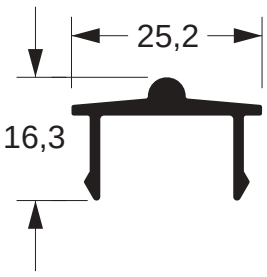




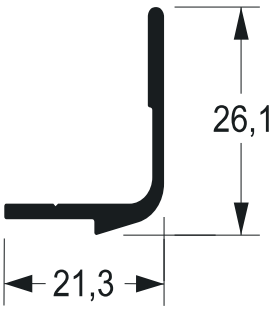

SB-2075 - 1,933kg/m



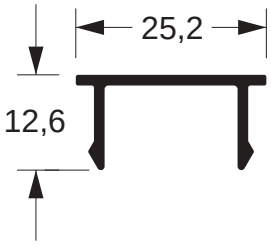

SB-2149 - 1,087kg/m



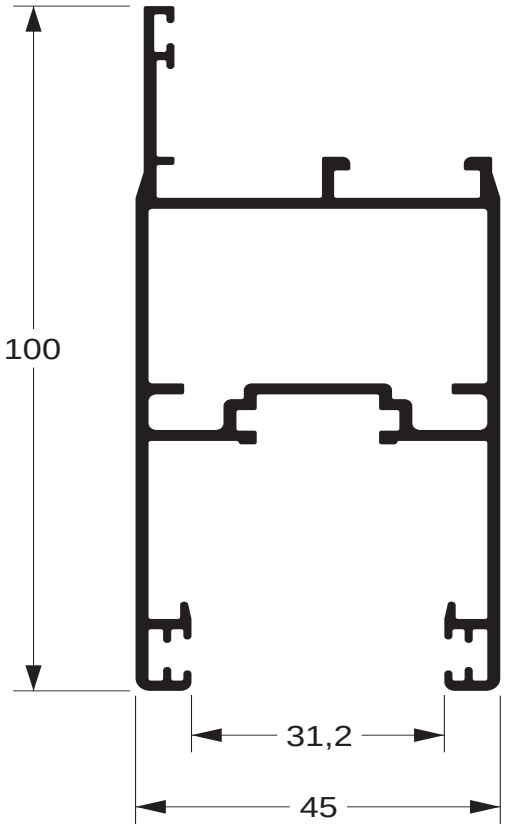

SB-2076 - 0,271kg/m



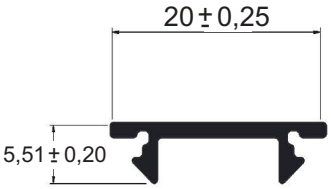

SB-2082 - 0,233kg/m



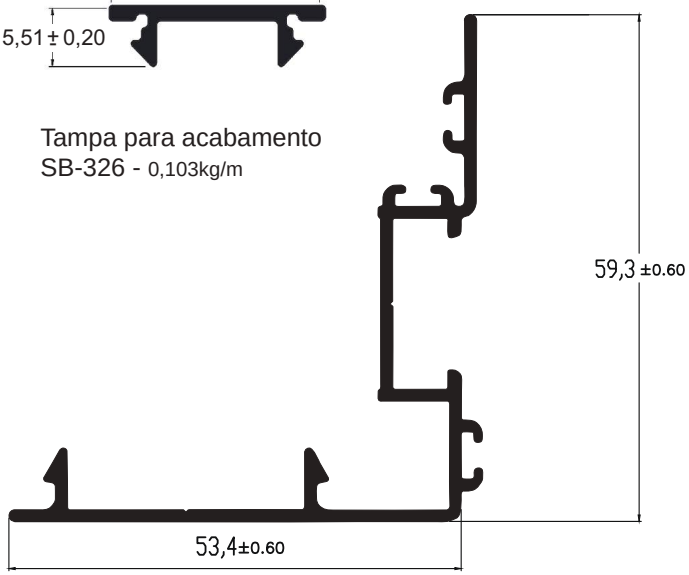

SB-2077 - 0,186kg/m



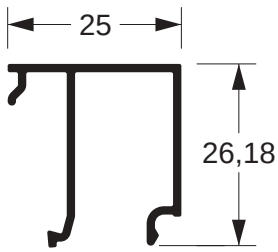

SB-2132 - 1,472kg/m



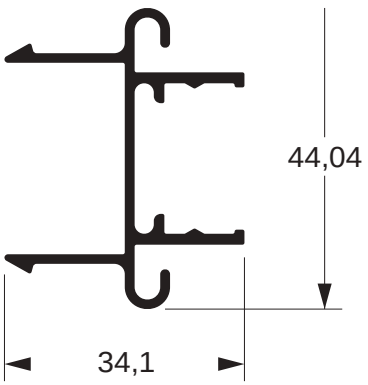

Tampa para acabamento
SB-326 - 0,103kg/m



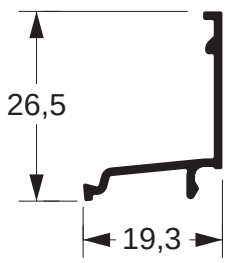

SB-2121 - 0,641kg/m



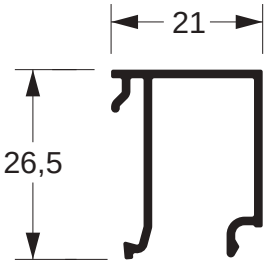

SB-2051 - 0,282kg/m



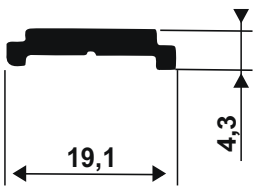

SB-2144 - 0,537kg/m



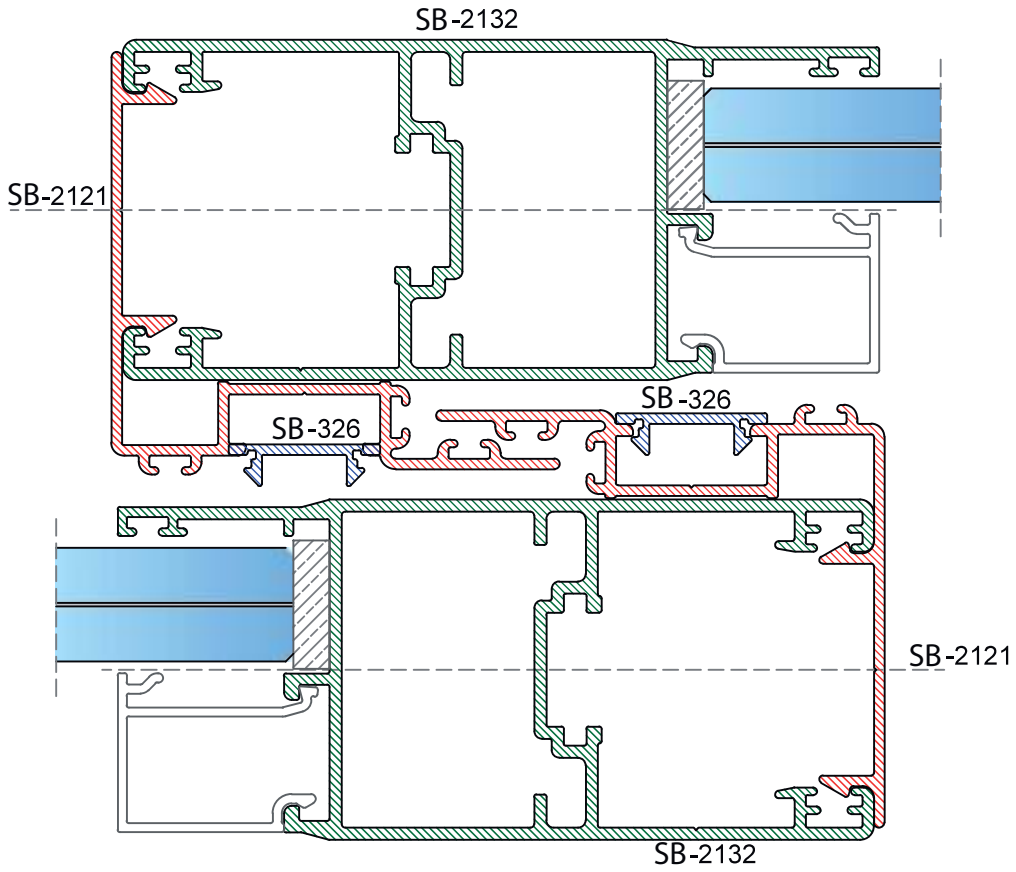

SB-2128 - 0,165kg/m



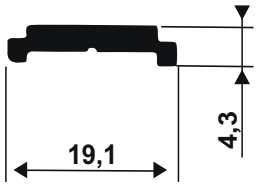

SB-2078 - 0,268kg/m



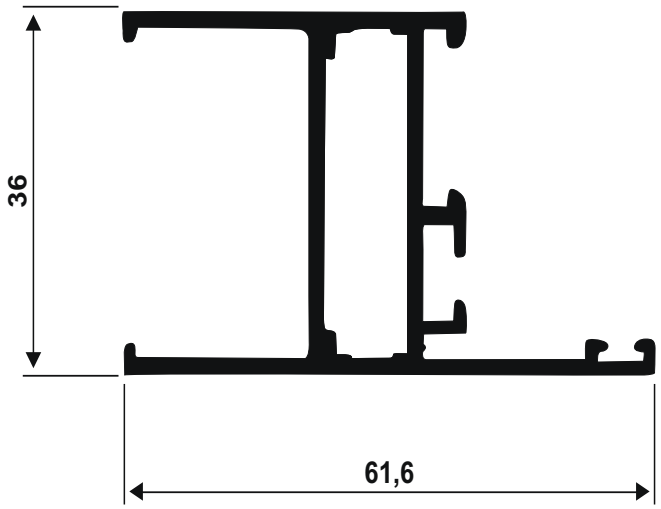

ALO-816 - 0,152kg/m



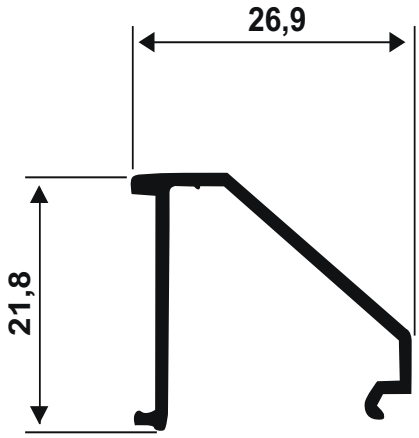

Obs: Baguete e vidro apenas ilustrativo.



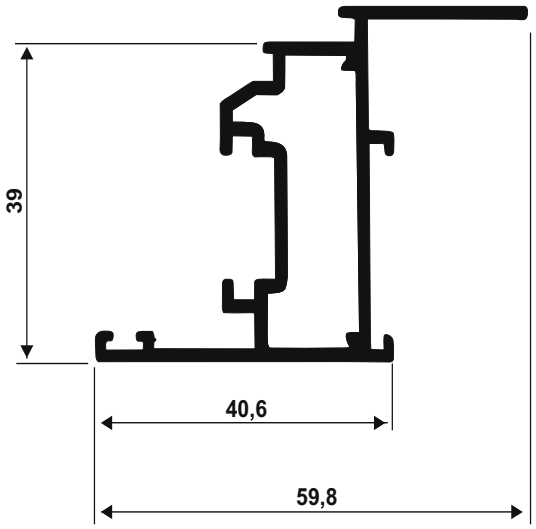

ALO-816 - 0,152kg/m




ALO-820 - 0,877kg/m



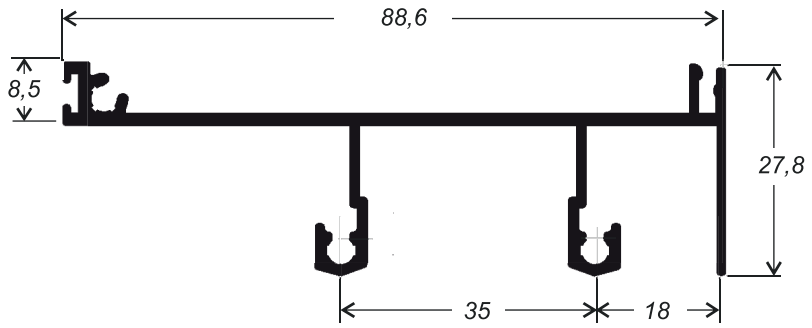

ALO-819 - 0,200kg/m



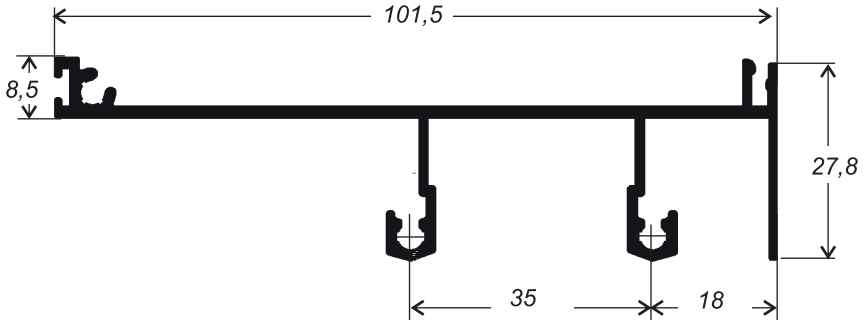

ALO-854 - 0,811kg/m

# SISTEMA INTEGRADO

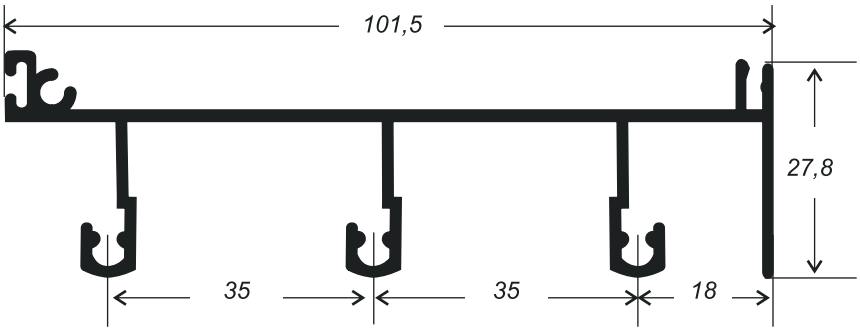
ALPA
ALUMÍNIO



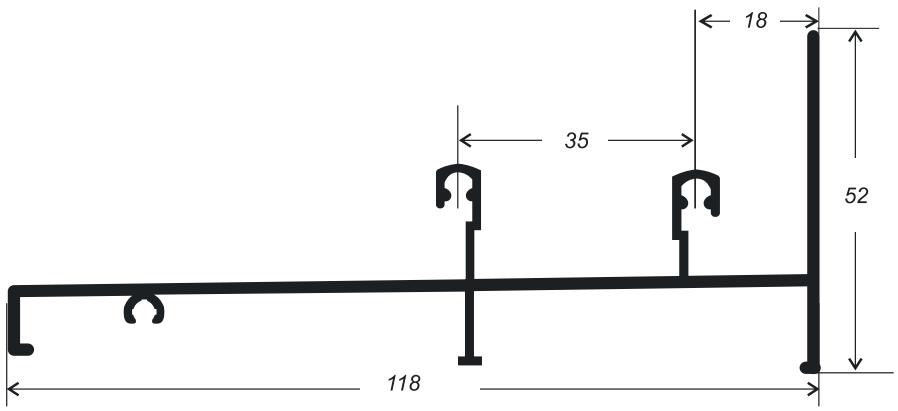

VS-45667 - 0,734kg/m



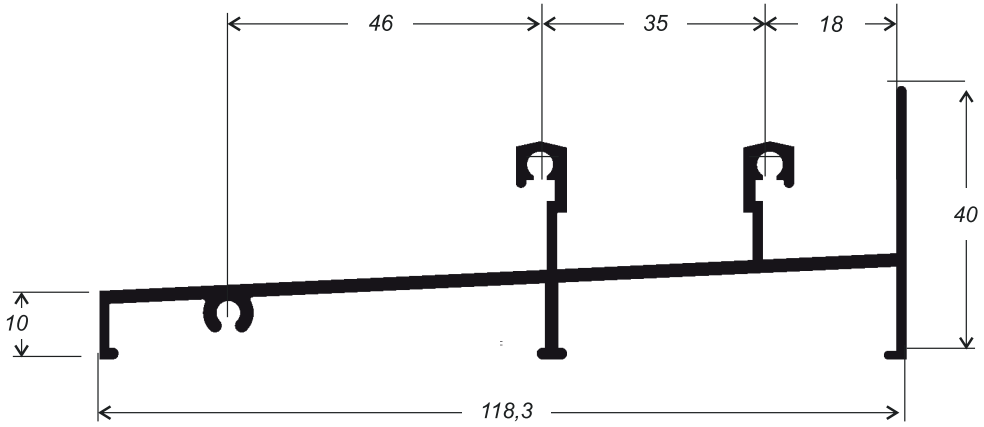

VS-45773 - 0,783kg/m



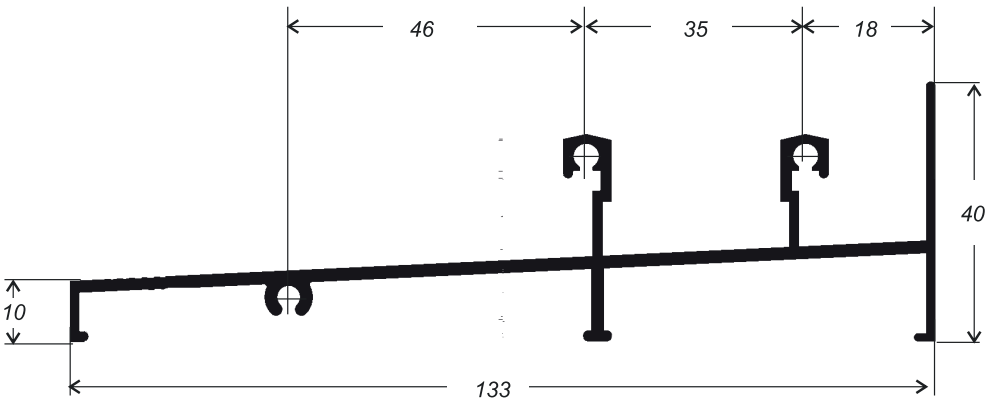

VS-42103 - 0,900kg/m



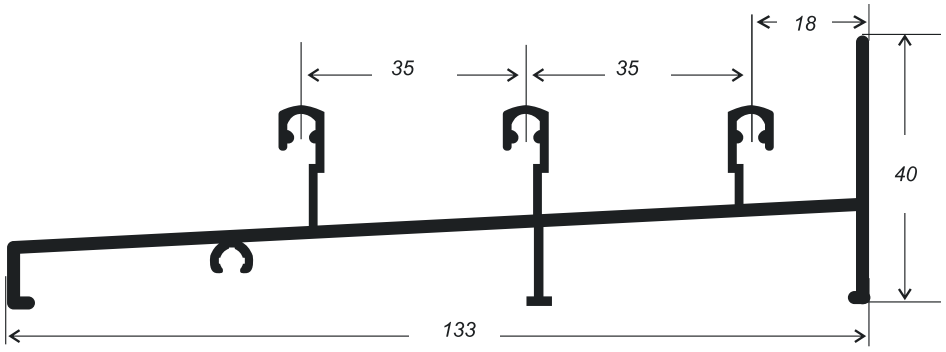

VS-45665 - 1,017kg/m



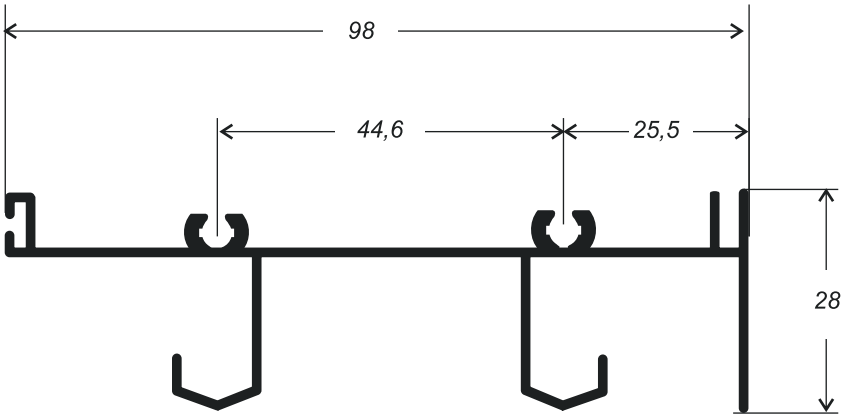

VS-45666 - 0,967kg/m



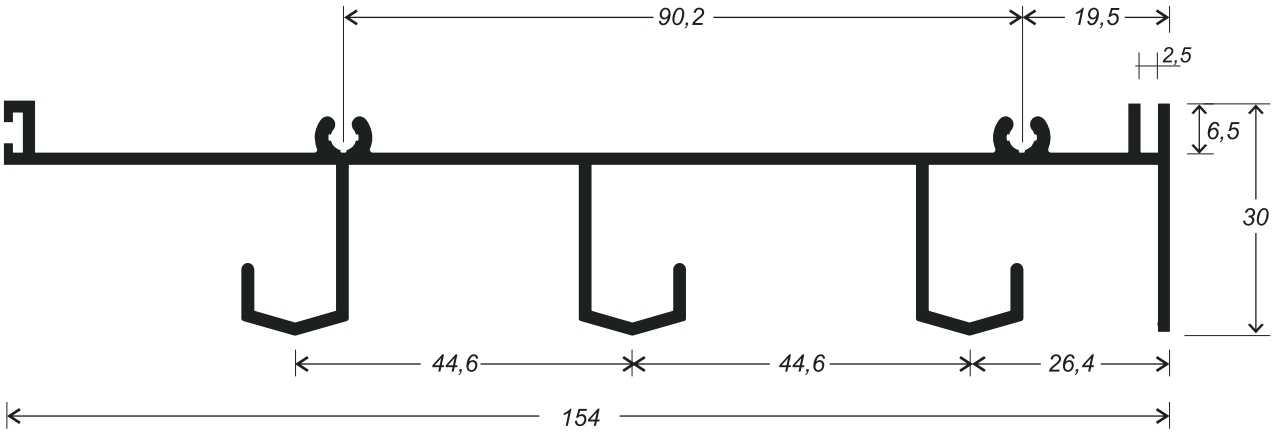

VS-45757 - 1,033kg/m



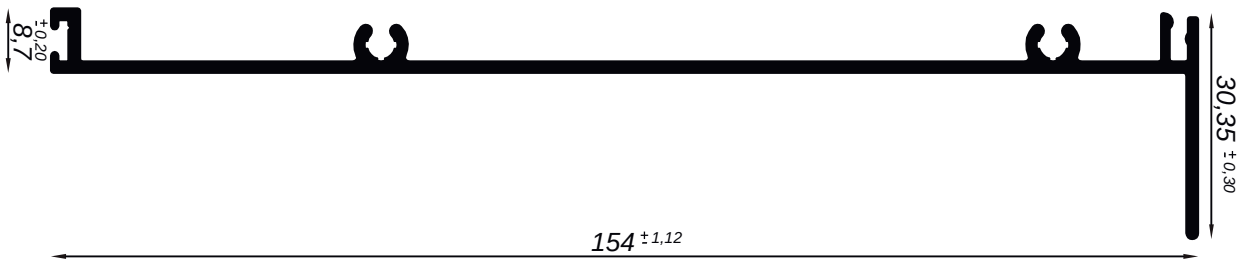

VS-45805 - 1,150kg/m



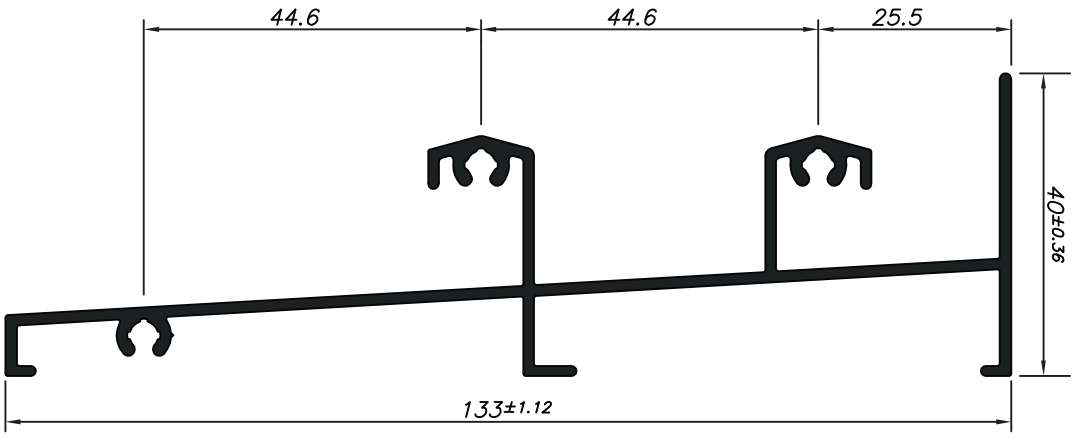

MD-002 - 0,950kg/m



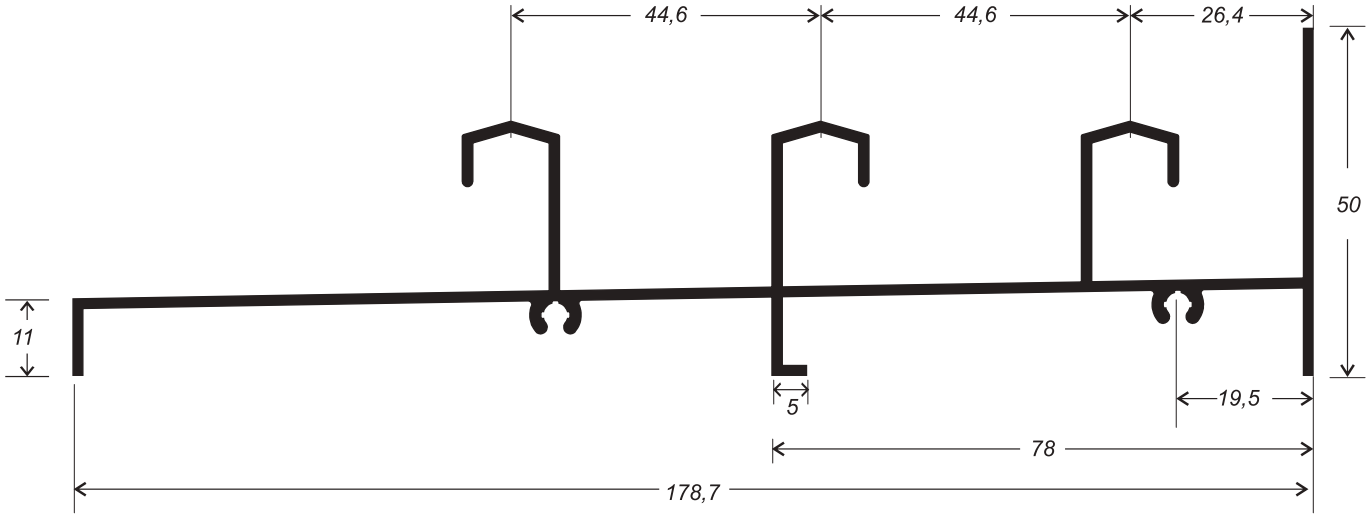

MD-42103 - 1,344kg/m



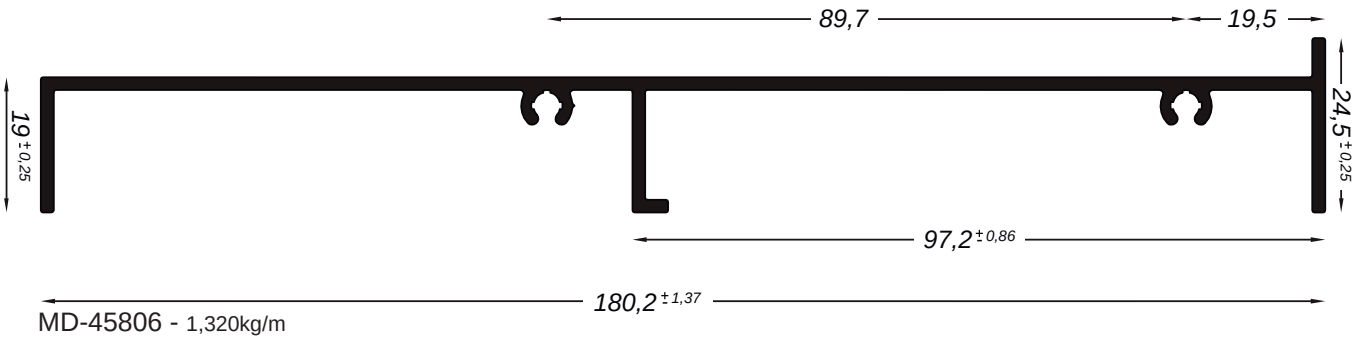

MD-42104 - 0,989kg/m



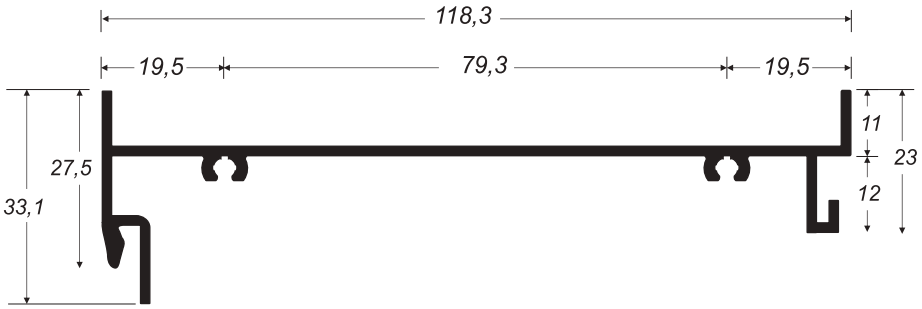

MD-030 - 1,225kg/m



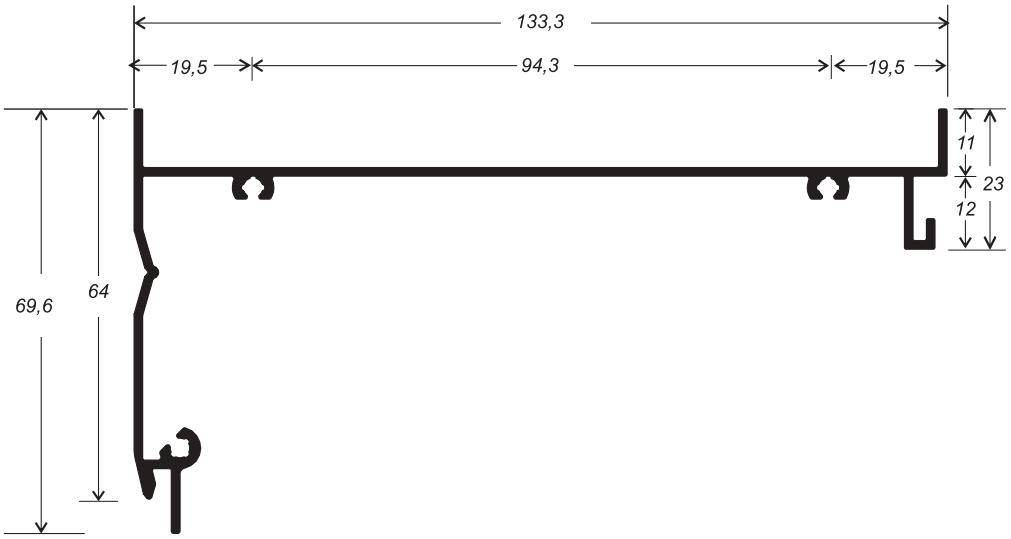

MD-45805 - 1,558kg/m



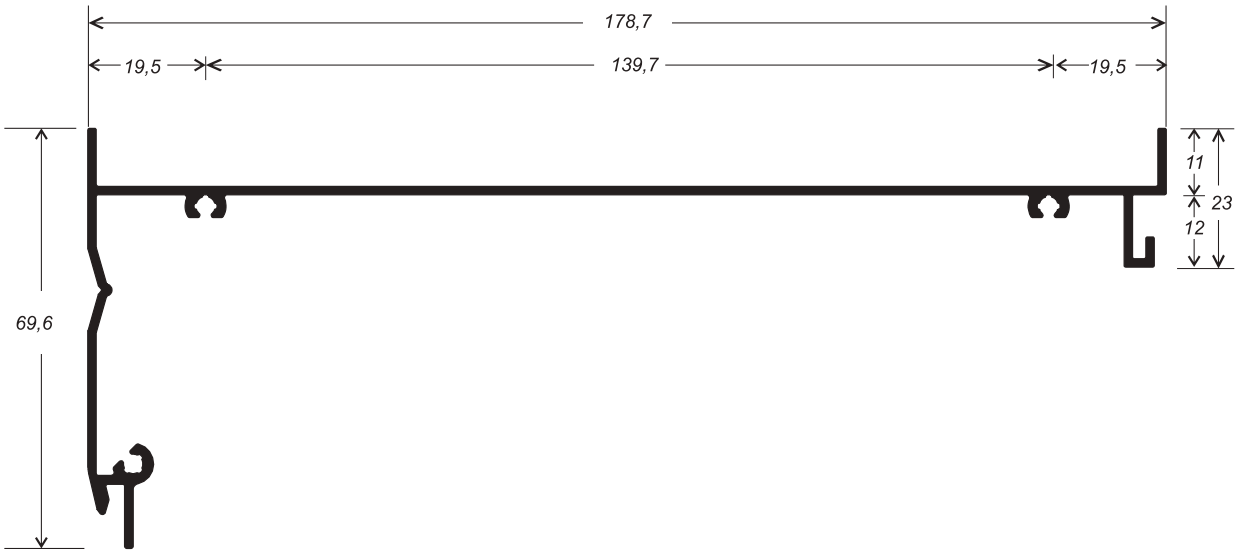

MD-45806 - 1,320kg/m



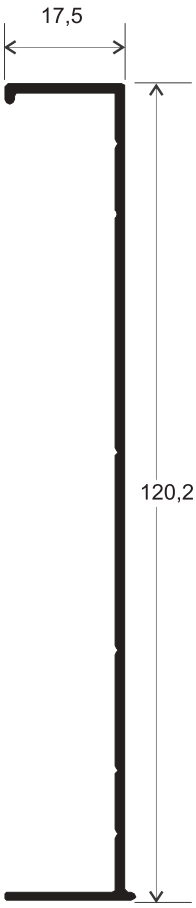

VS-249 - 0,868kg/m



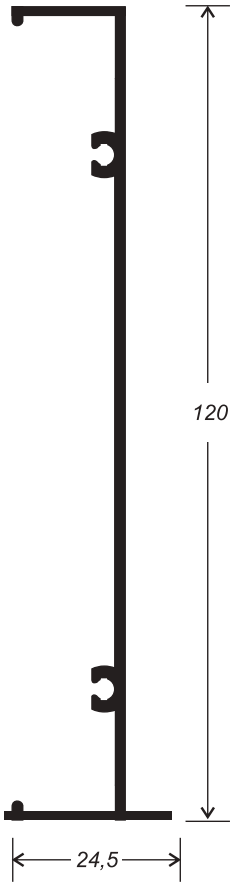

VS-250 - 1,077kg/m



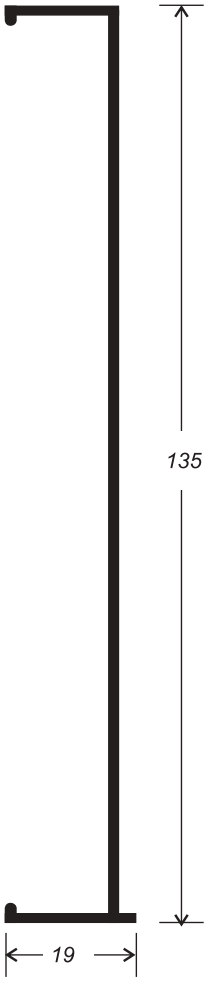

MD-245 - 1,240kg/m



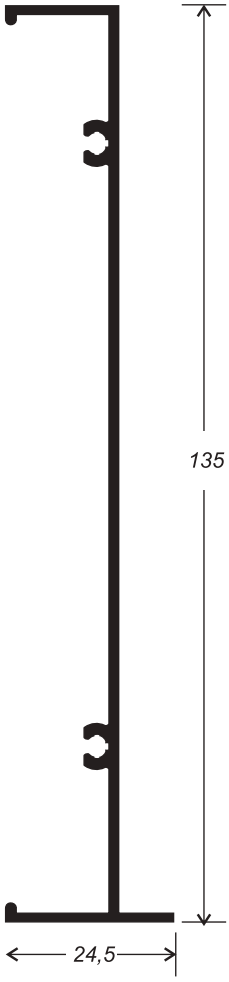

VS-234 - 0,600kg/m



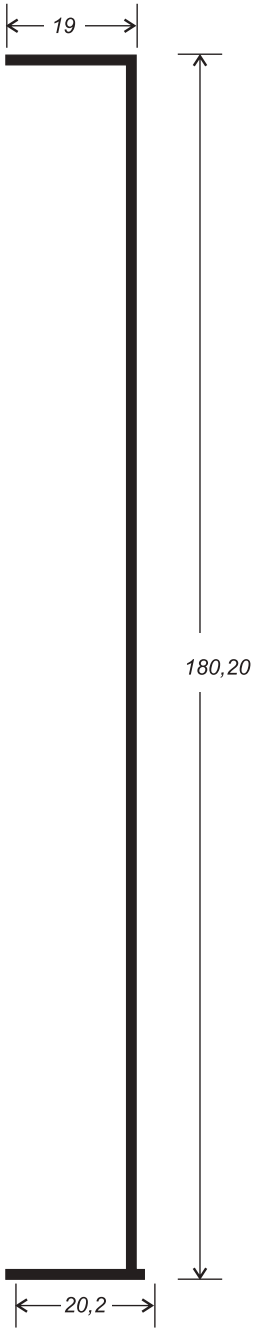

VS-234O - 0,719kg/m



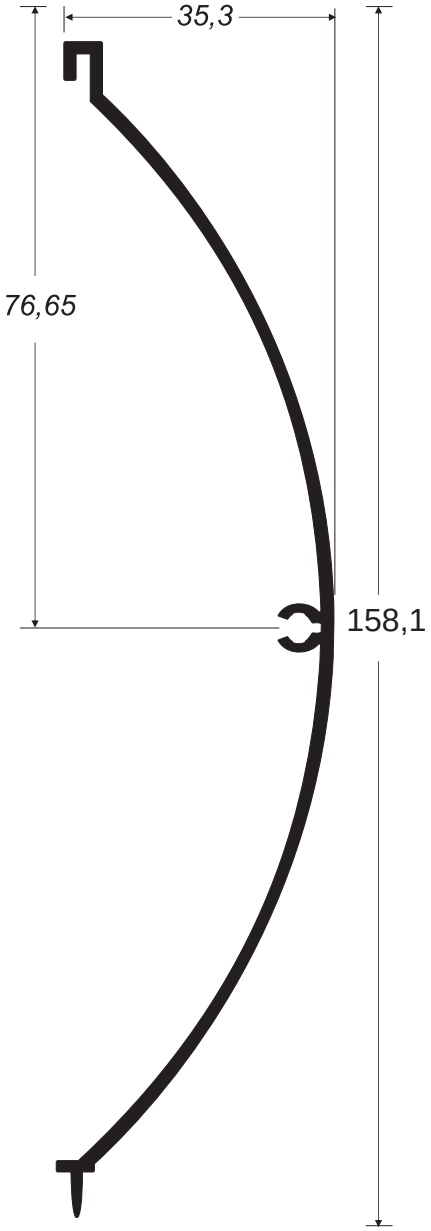

VS-235 - 0,700kg/m



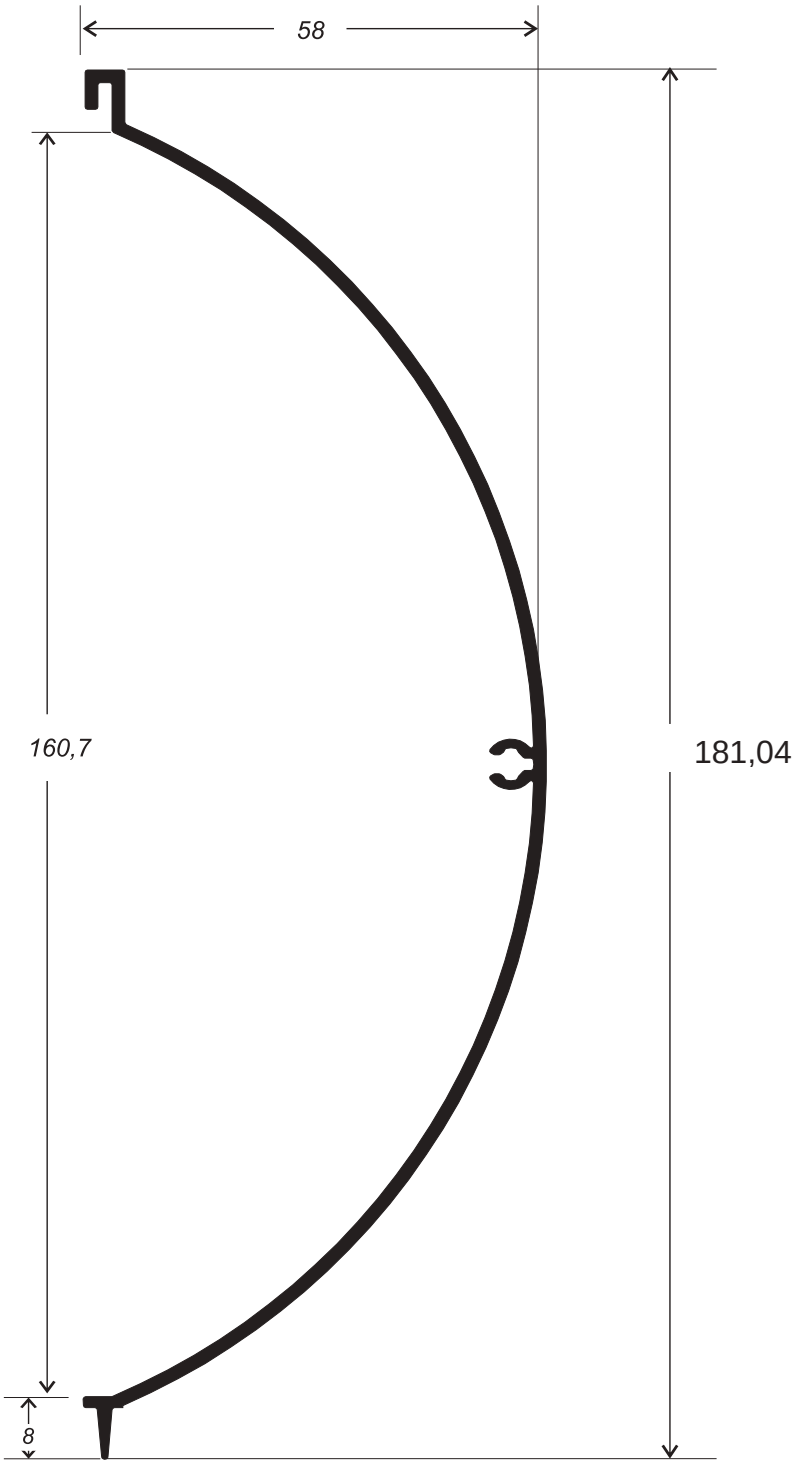

VS-235O - 0,780kg/m



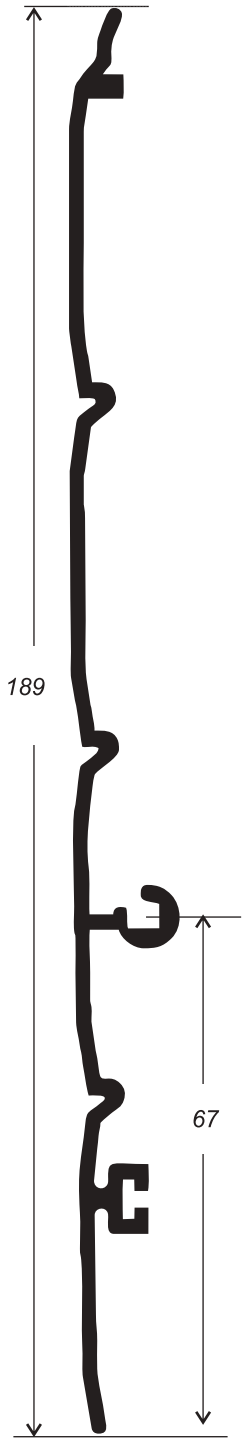

MD-235 - 0,821kg/m



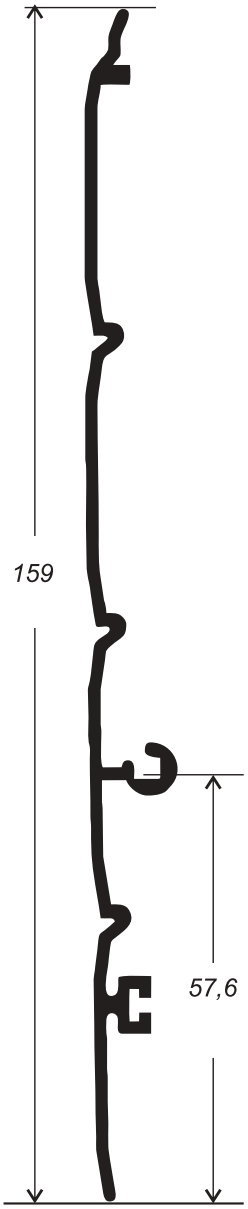

VS-224 - 0,815kg/m



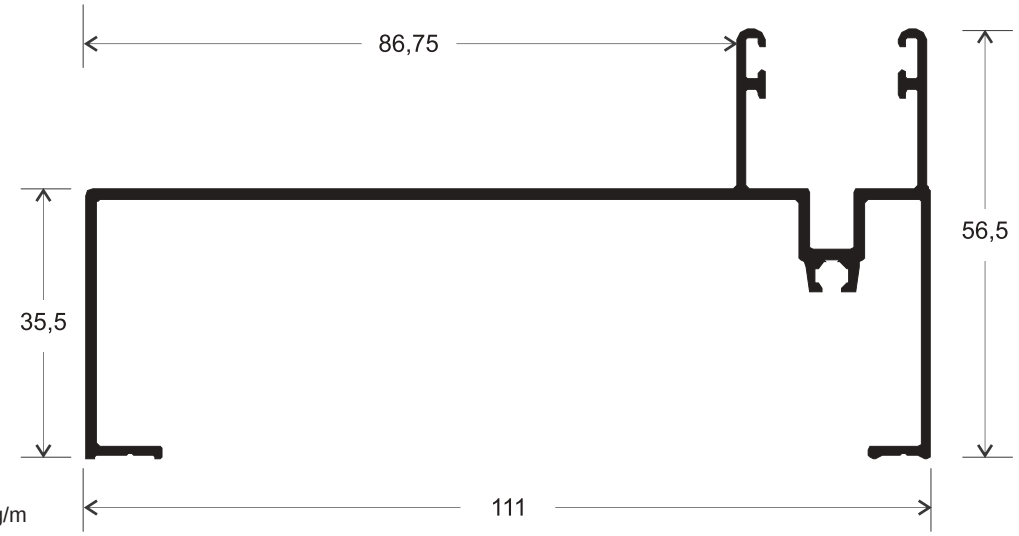

VS-227 - 1,033kg/m



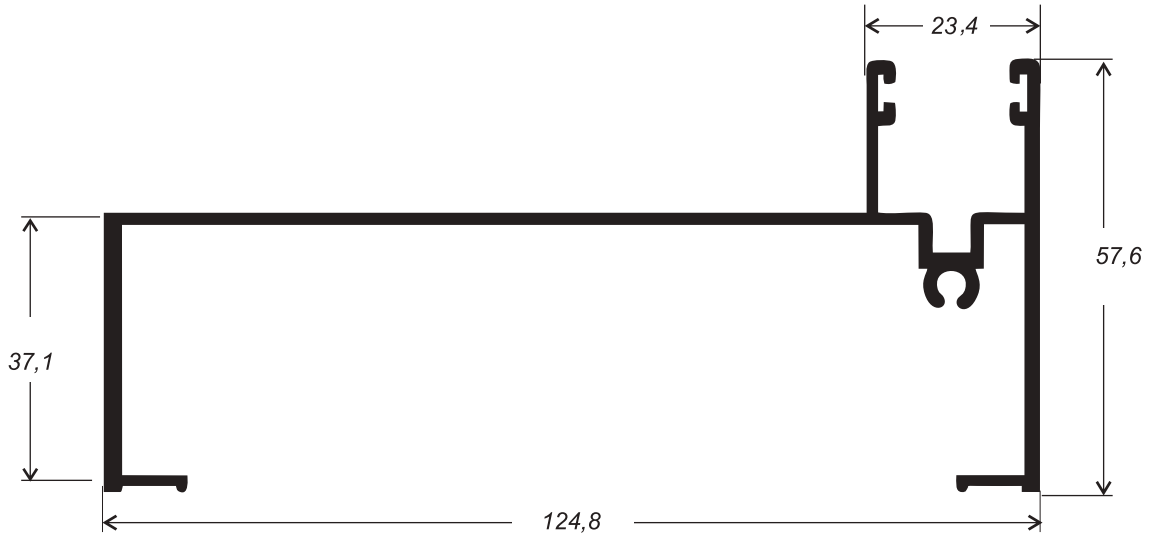

VS-238 - 0,958kg/m



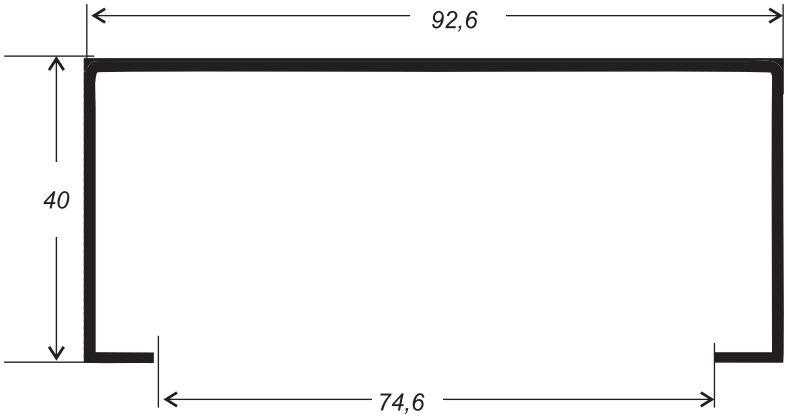

VS-236 - 0,834kg/m



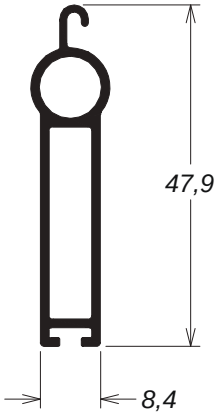

VS-248 - 0,994kg/m



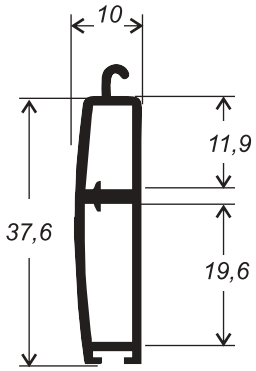

VS-246 - 1,308kg/m



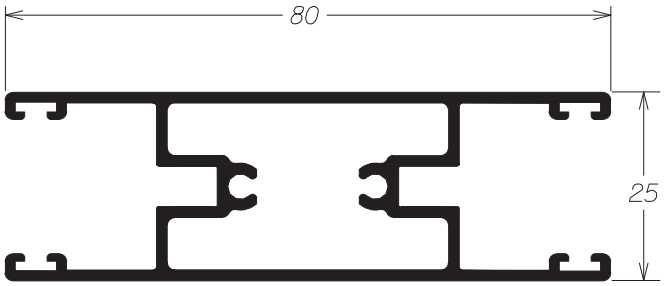

25H-057 - 0,742kg/m



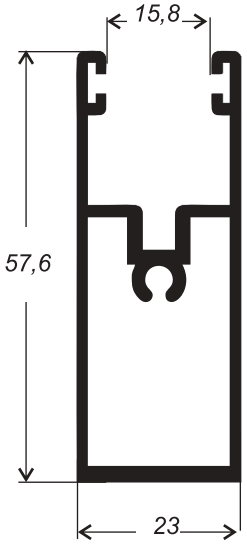

MN-055 - 0,371kg/m



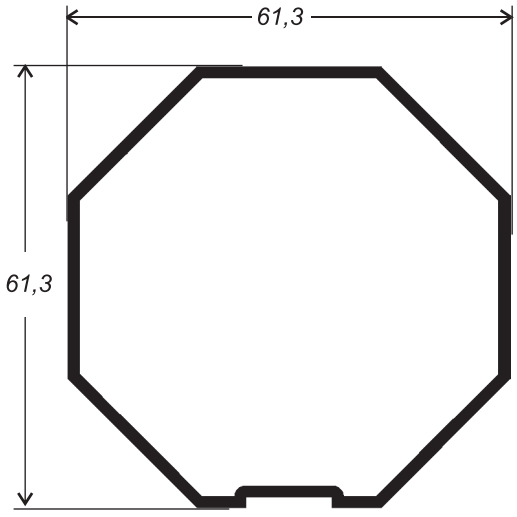

VS-06178 - 0,375kg/m



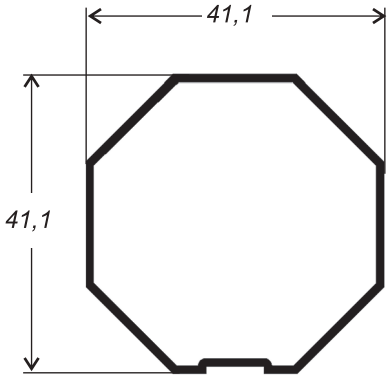

MN-027 - 1,043kg/m




VS-06176 - 0,692kg/m




MN-015 - 0,900kg/m




78-472 - 0,500kg/m

# LINHA IV GOLD

**SOFISTICAÇÃO E DESEMPENHO NOS PROJETOS DE ALTO PADRÃO**

- Perfeita para grandes vãos;
- Grande variedade de tipologias;
- Componentes exclusivos garantem suavidade e praticidade ao conjunto;
- Possibilidade de instalação de vidros duplos reduz a transmissão de calor e ruídos;
- Excelente comportamento estrutural;
- Folhas com deslizamento suave;
- Facilidade na fabricação e instalação.

**A NBR 10.821 / 11 - Esquadrias externas para edificações - determina os parâmetros de desempenho das esquadrias em todo o Brasil e o conhecimento de seu conteúdo é de grande importância para todos que atuam neste mercado.**

ALPA ALUMÍNIO



Ref.: ECC/131.094/07

**RELATÓRIO DE ENSAIO ECC/131.094/07**

**ESQUADRIA DE ALUMÍNIO**

**DETERMINAÇÕES DIVERSAS**

Interessado: **ALCOA ALUMÍNIO S/A.**
Rua Felipe Camarão, 454 – Utinga
09.220-580 - Santo André – SP.

Ensaios: (4R 235)

1. **MATERIAL ENSAIADO:**

Um protótipo de janela de alumínio de fabricação **ALCOA ALUMÍNIO S/A**, entregue pelo interessado em 12/01/07, apresentando as seguintes características:

**1.1 - Tipo**

Janela de alumínio (linha gold) composta por duas folhas de correr.

**1.2 - Dimensões do protótipo**

Dimensões das folhas:
- Folha de vidro móvel (esquerda): (756 x 1 148) mm;
- Folha de vidro móvel (direita): (756 x 1 148) mm;
- Dimensão total do protótipo: (1 500 x 1 200) mm.

**1.3 - Fixação ao vão no laboratório**

Para a realização dos ensaios, a janela de alumínio foi fixada no contra marco, previamente chumbado em alvenaria de bloco cerâmico.

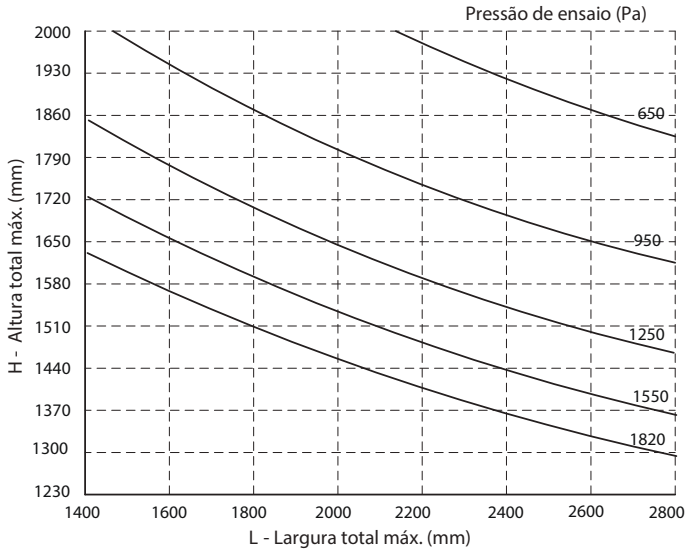
**1.4 - Sistema de vedação**

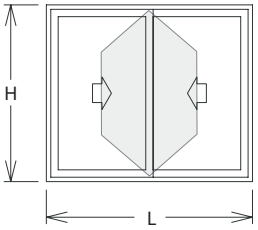
- **Silicone:**
  - Nos encontros a 90° das travessas e montantes do marco na face interna do perfil;
  - Em todos os encontros a 90° de todos os montantes e travessas do marco e das folhas de vidro móveis;
  - Sobre os parafusos de fixação do marco no contramarco;
- **Guarnição de borracha:**
  - Na fixação dos vidros em todo o perímetro pelo lado interno;

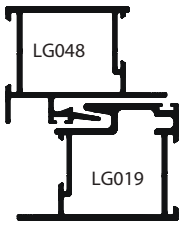
| Tipologia | Nº de Certificado | Ensaio Realizado | Laboratório |
|---|---|---|---|
| Janela de correr 2 folhas | ECC - 129736/07<br>ECC - 131094/07 | NBR 10.821 : 2011 | Falcão Bauer |
| Janela de correr 4 folhas | ECC - 134021/07<br>ECC - 132414/07 | | |
| Janela de correr 6 folhas | ECC - 132412/07<br>ECC - 132411/07 | | |
| Janela Maxim-ar | E - 75892/04<br>E - 76353/04<br>E - 76727/04<br>E - 75893/04 | | |
| Porta de correr 2 folhas | ECC - 129736/07<br>ECC - 130550/06 | | |

NBR10.821 : 2011 - Verificação da resistência às operações de manuseio

## Janela de correr 2 folhas




Área = 357 mm²
Jx = 7 7461 mm⁴
Wx = 3 588 mm³

Área = 398 mm²
Jx = 1 01970 mm⁴
Wx = 4821 mm³

Jx total = 179431 mm ⁴

Tensão Admissível = 7 Kg / mm ² (liga C0A7 T5)
Flecha Admissível = H / 175

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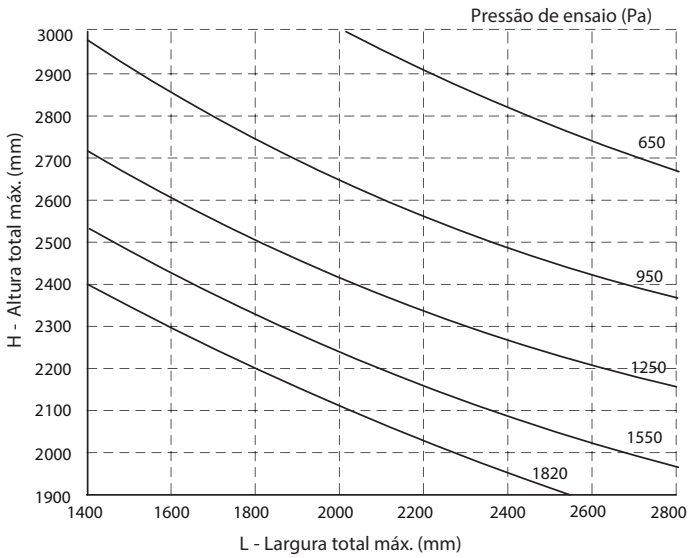
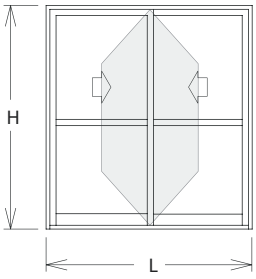
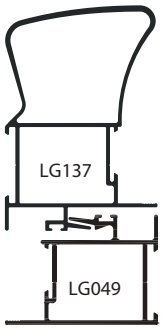
## Porta de correr 2 folhas



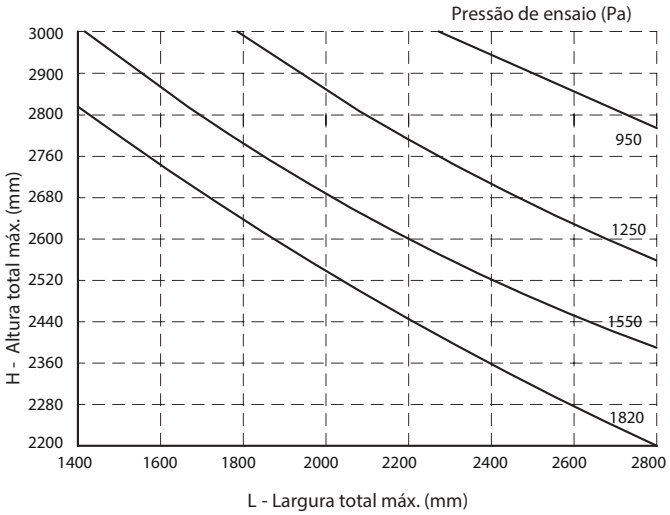

Área = 582 mm²
Jx = 4 94246 mm⁴
Wx = 1 1362 mm³

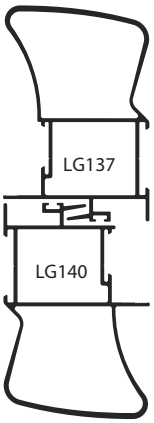
Área = 335 mm²
Jx = 7 3331 mm⁴
Wx = 3305 mm³

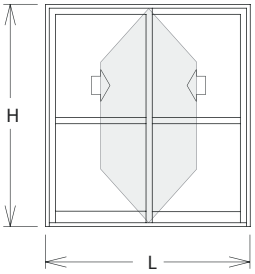
Jx total = 567577 mm ⁴

Tensão Admissível = 7 Kg / mm ² (liga C0A7 T5)
Flecha Admissível = H / 175

## Porta de correr 2 folhas




Área = 582 mm²
Jx = 4 94246 mm⁴
Wx = 1 1362 mm³

Área = 583 mm²
Jx = 4 69948 mm⁴
Wx = 10530 mm³

Jx total = 964194 mm ⁴

Tensão Admissível = 7 Kg / mm ² (liga C0A7 T5)
Flecha Admissível = H / 175

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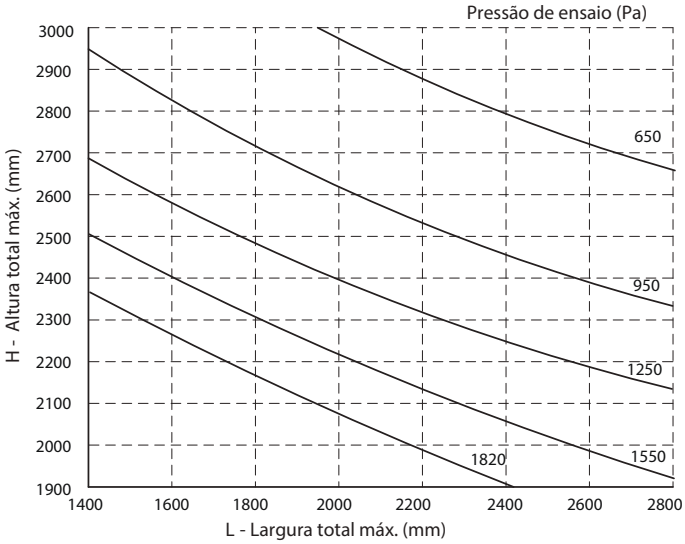
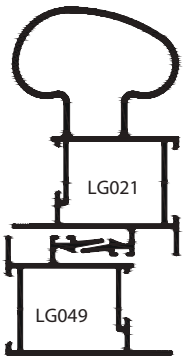
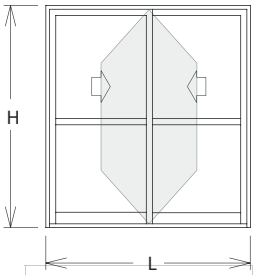
## Porta de correr 2 folhas



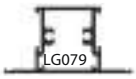

Área = 639 mm²
Jx = 4 75344 mm⁴
Wx = 1 0708 mm³

Área = 335 mm²
Jx = 7 3331 mm⁴
Wx = 3305 mm³

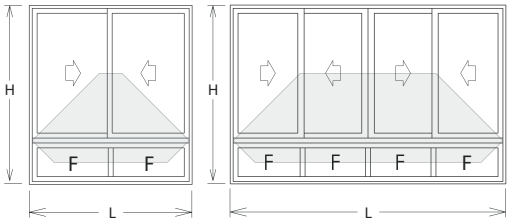
Jx total = 548675 mm ⁴

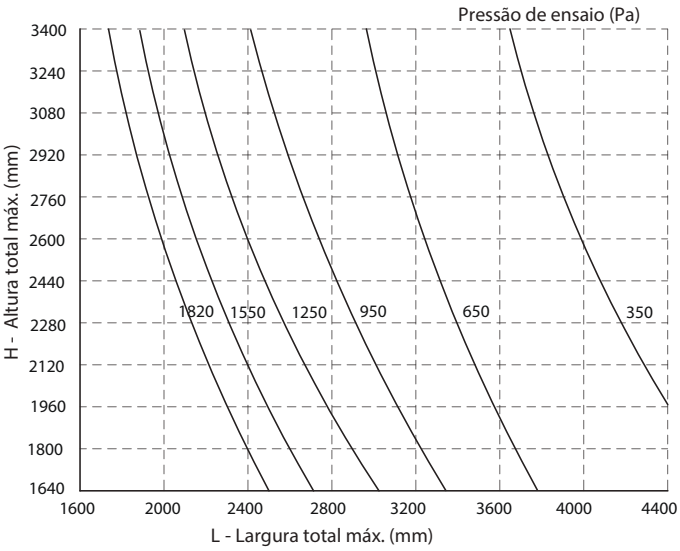
Tensão Admissível = 7 Kg / mm ² (liga C0A7 T5)
Flecha Admissível = H / 175

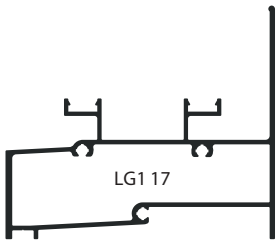
# Travessa do peitoril
## Porta e Janela de correr 2 e 4 folhas




Nota: Após verificação das curvas de pressão de ensaio (abaixo), para larguras superiores a 2 400 mm, utilizar o perfil LG079, para evitar a deformação da travessa do peitoril e prejudicar o funcionamento das folhas de correr.




Área = 760 mm²
Jy = 931543 mm ⁴
Wy = 16640 mm³

Tensão Admissível = 7 Kg / mm ² (liga C0A7 T5)
Flecha Admissível = H / 175

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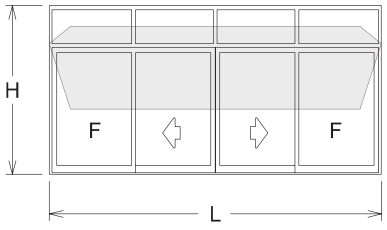
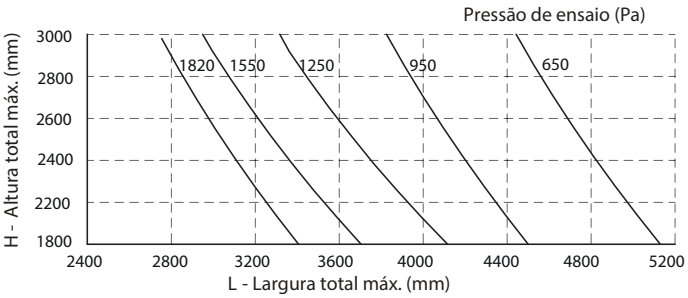
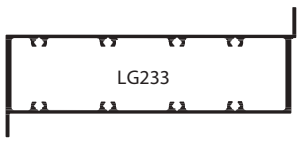
# Travessa

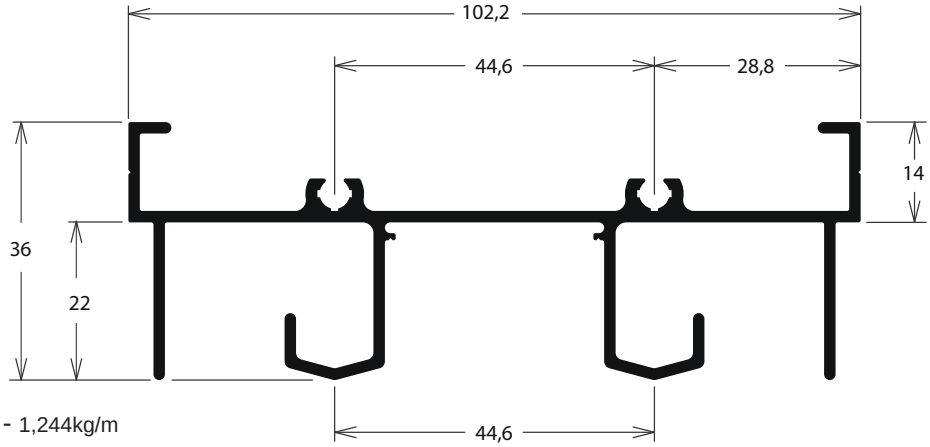


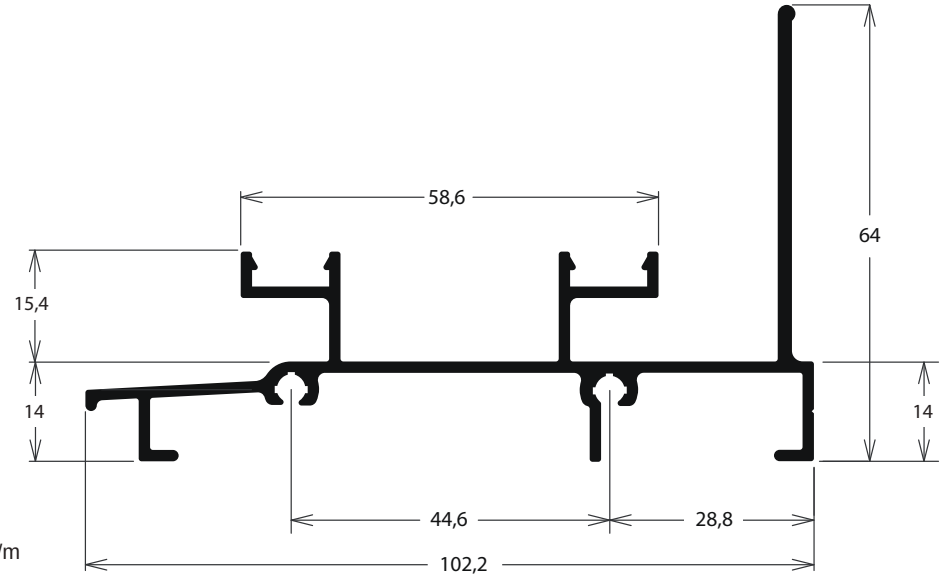




Jy = 2522690 mm ⁴
Wy = 33524 mm³

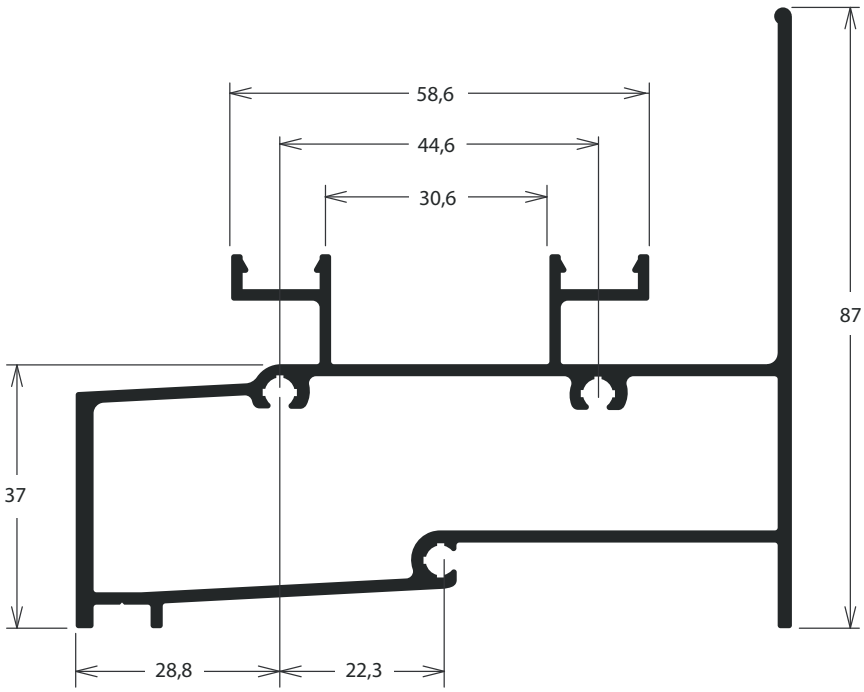
Tensão Admissível = 7 Kg / mm ² (liga C0A7 T5)
Flecha Admissível = H / 175




LG-044/MD-301 - 1,244kg/m



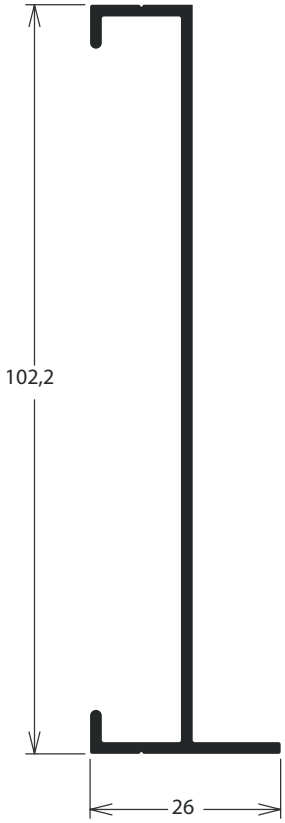

LG-115 - 1,282kg/m



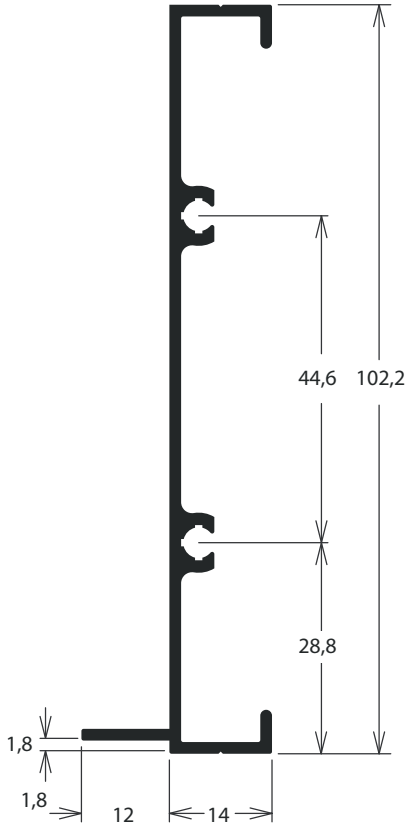

LG-117 - 2,060kg/m



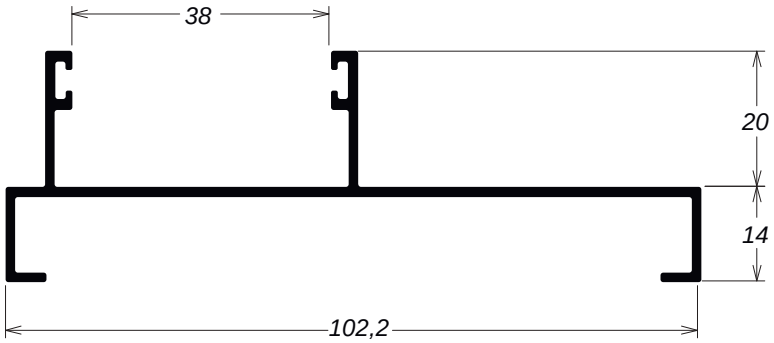

LG-111 - 0,096kg/m



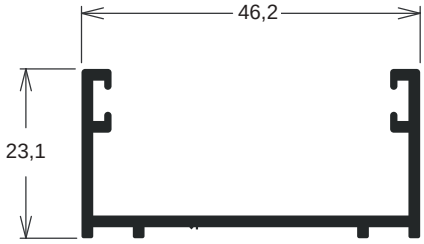

LG-002/MD-6002 - 0,639kg/m



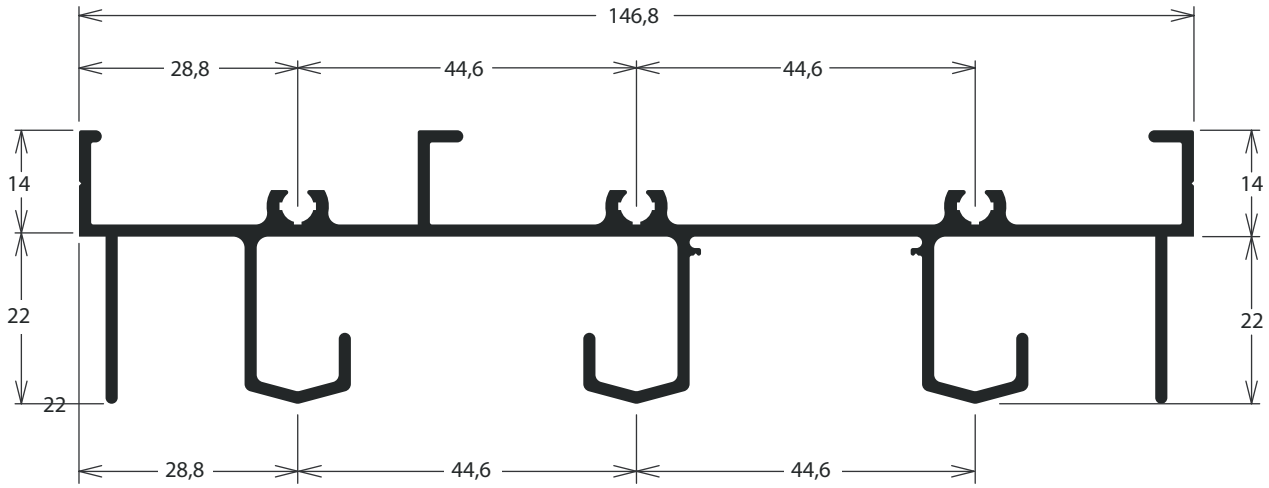

LG-003/MD-003 - 0,757kg/m



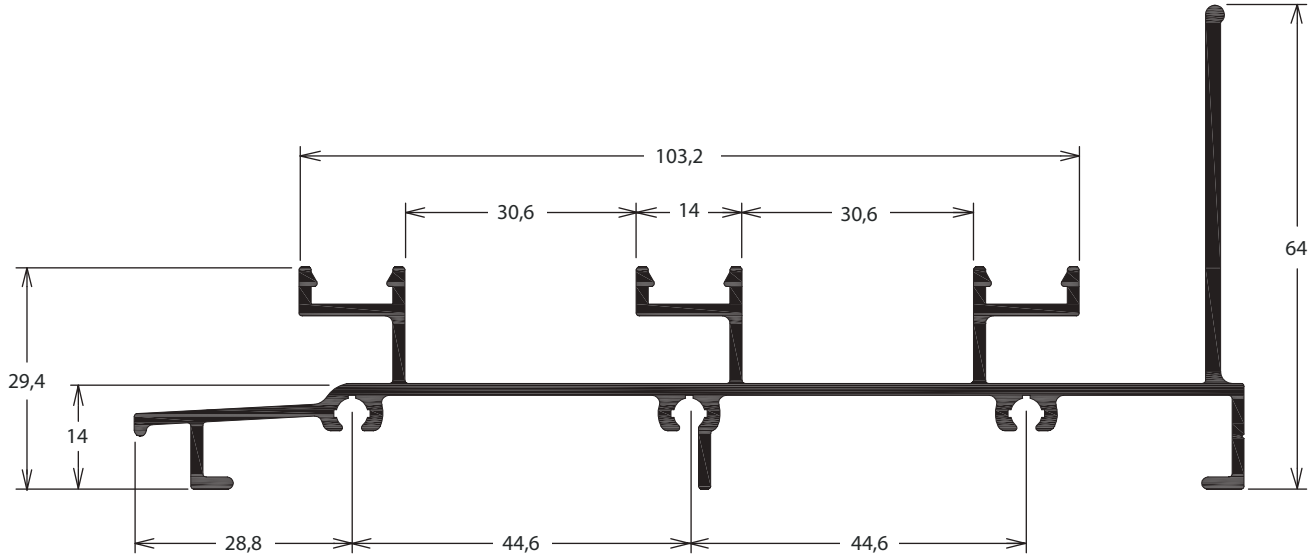

LG-124/MD-049 - 0,957kg/m



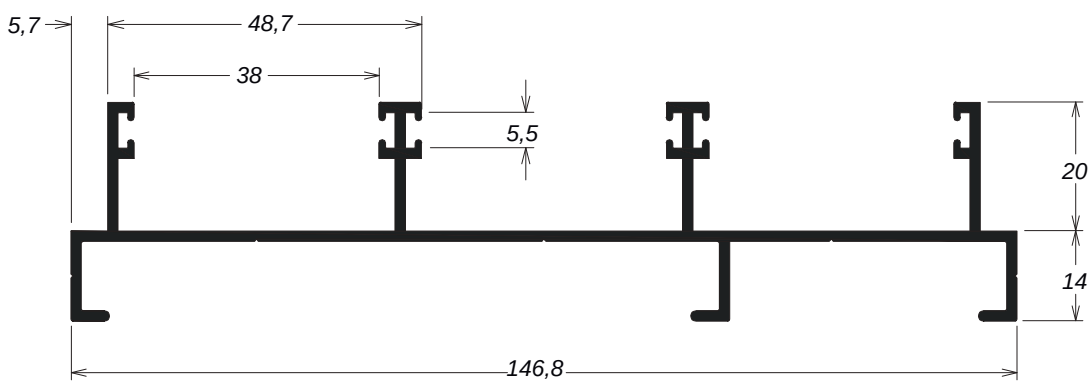

LG-028 - 0,454kg/m



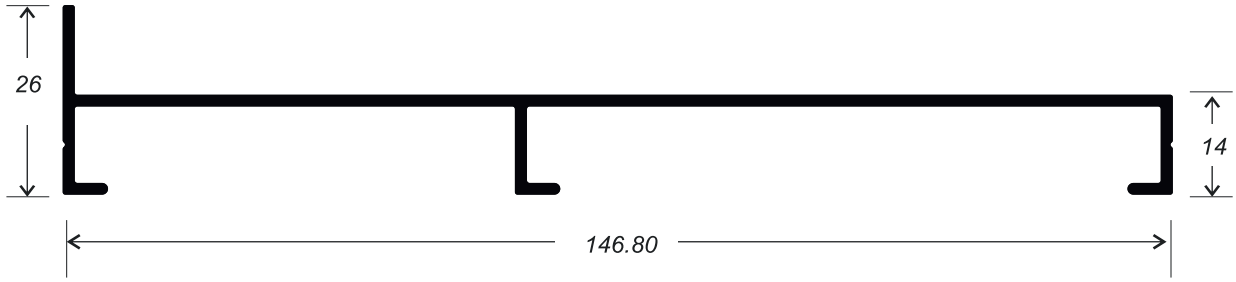

LG-062/MD-343 - 1,766kg/m



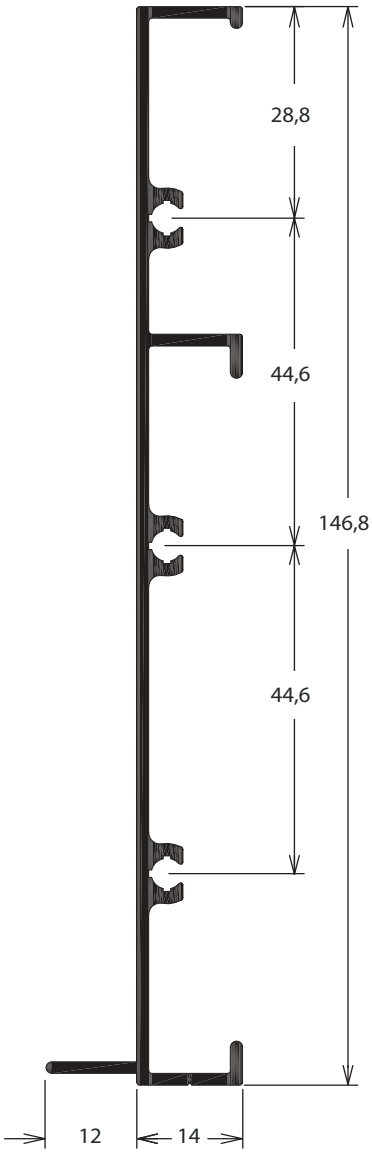

LG-181 - 1,680kg/m



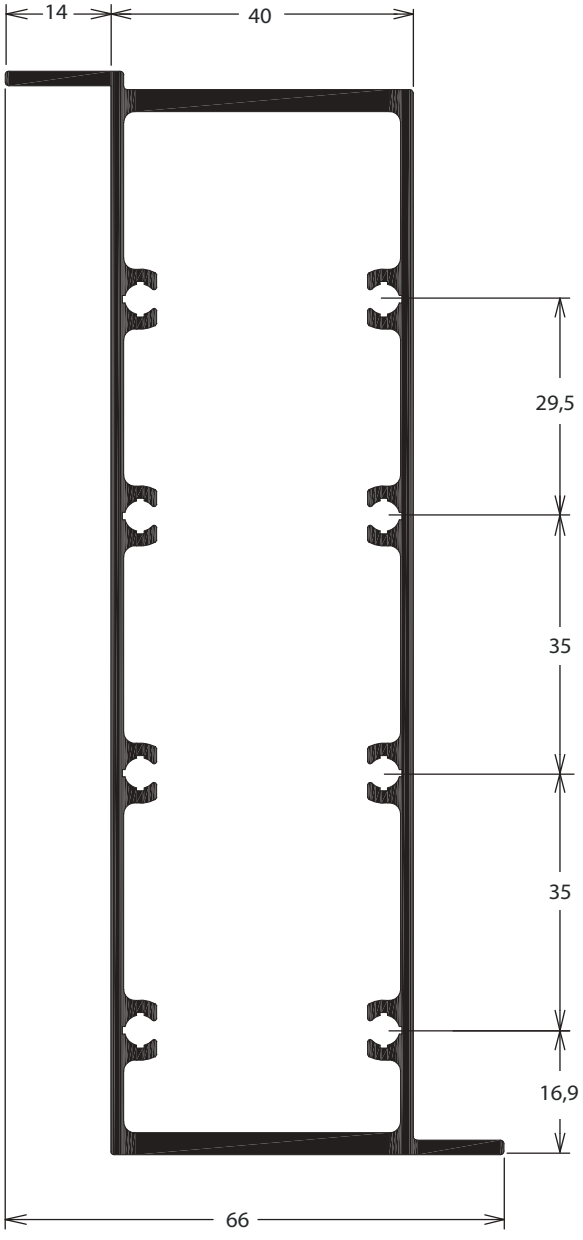

LG-145/MD-347 - 1,358kg/m



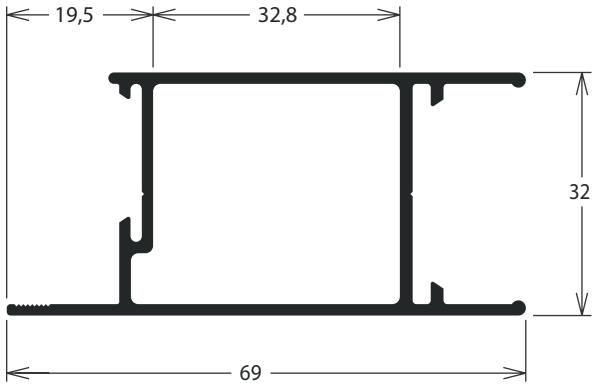

LG-158/MD-158 - 0,849kg/m



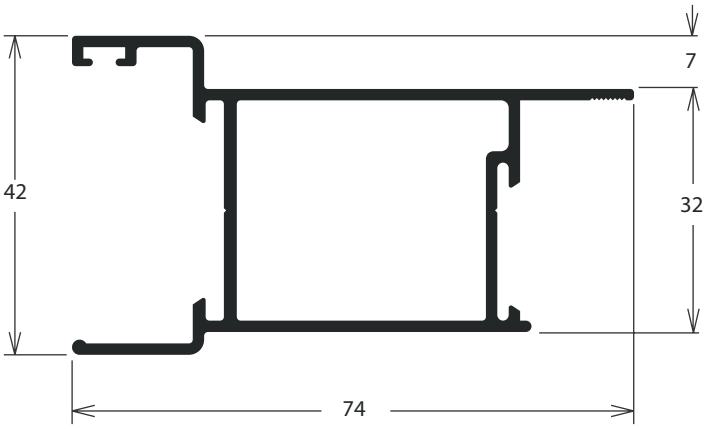

LG-234 - 1,068kg/m



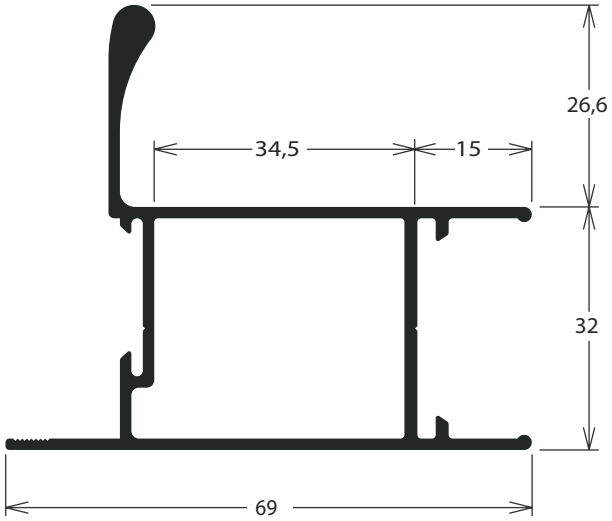

LG-233 - 2,527kg/m



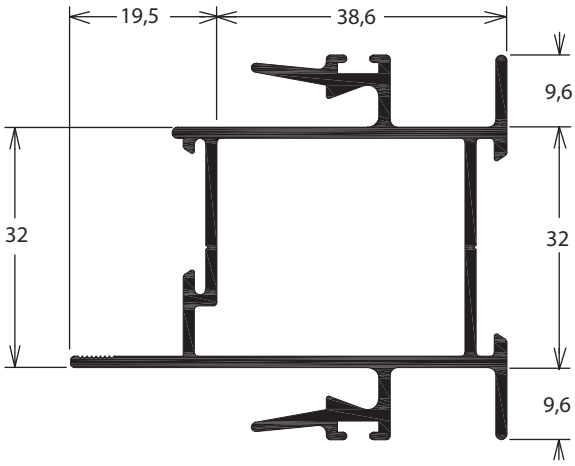

LG-050/MD-6311 - 0,811kg/m



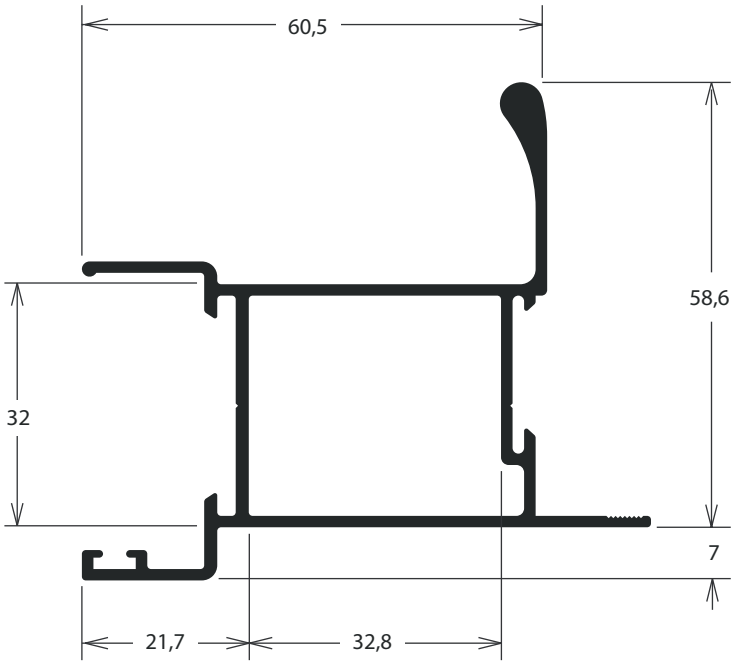

LG-051/MD-6312 - 0,919kg/m



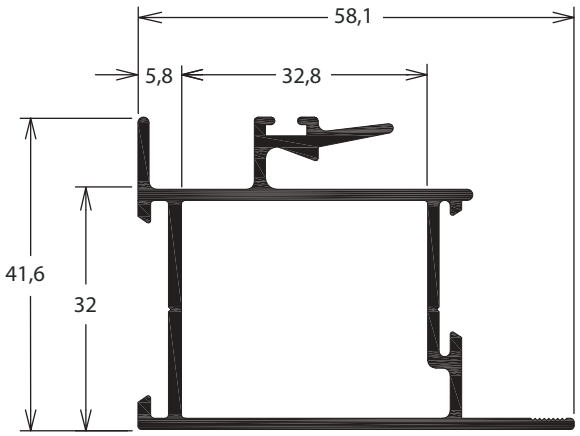

LG-017 - 1,010kg/m



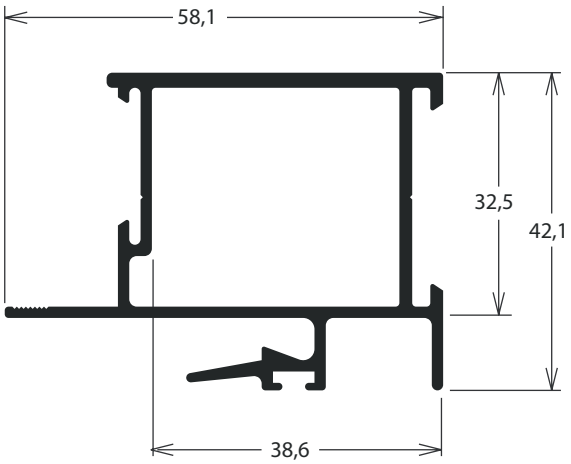

LG-162/MD-162 - 1,074kg/m



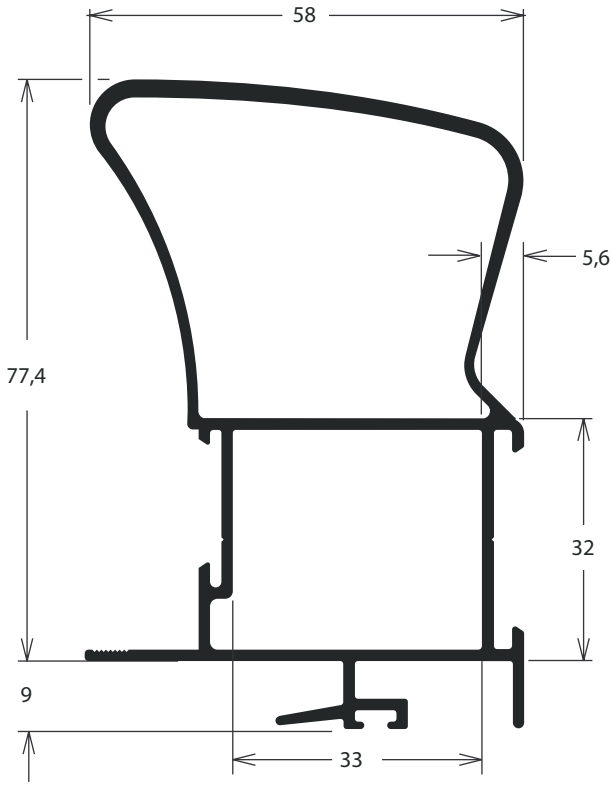

LG-020 - 1,116kg/m



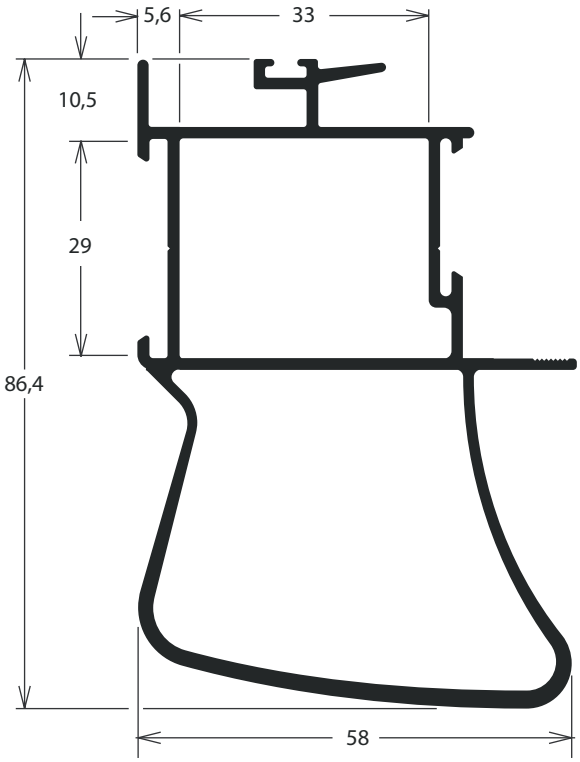

LG-049/MD-6310 - 0,908kg/m



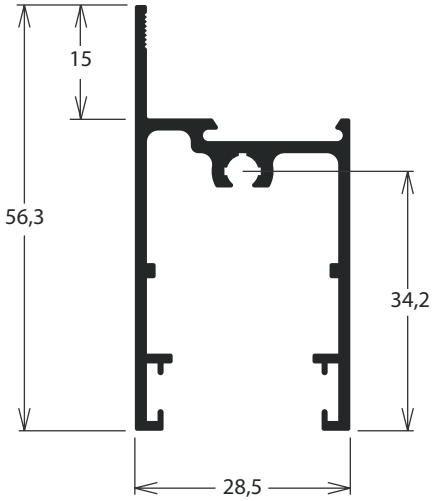

LG-048/MD-6309 - 0,967kg/m



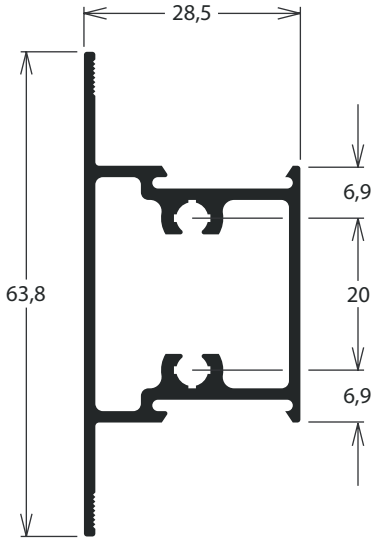

LG-137 - 1,579kg/m



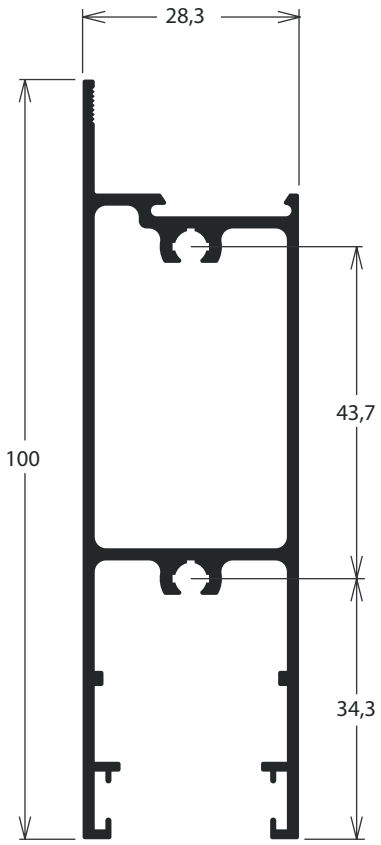

LG-140 - 1,579kg/m



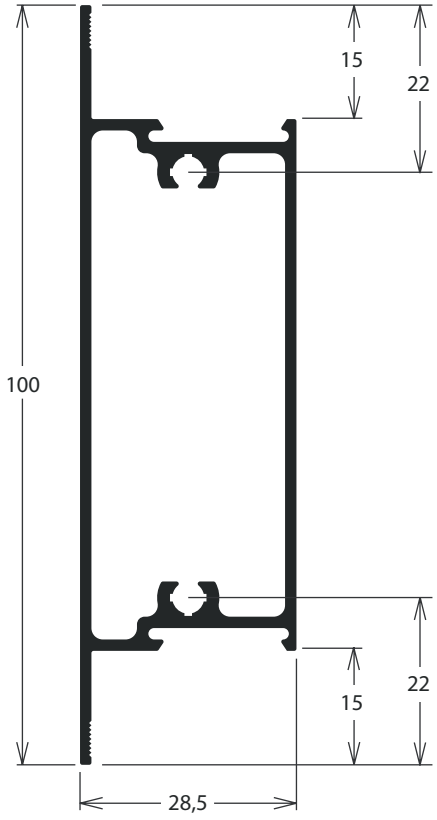

LG-006 - 0,677kg/m



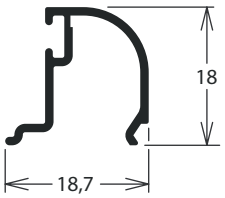

LG-055/MD-6317 - 0,758kg/m



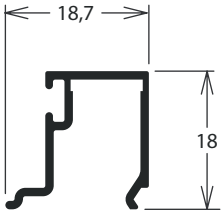

LG-007 - 1,229kg/m



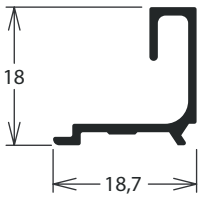

LG-022/MD-022 - 1,064kg/m



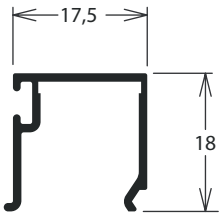

LG-026/MD-026 - 0,158kg/m



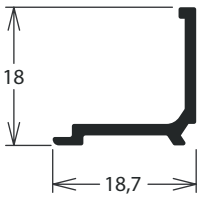

BG-057 - 0,170kg/m



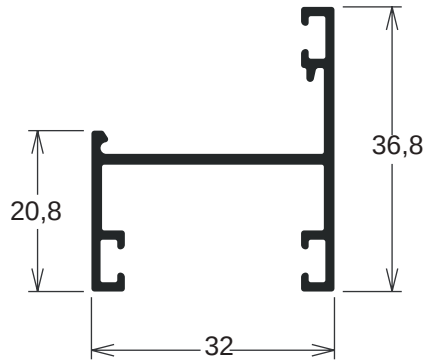

LG-027 - 0,149kg/m



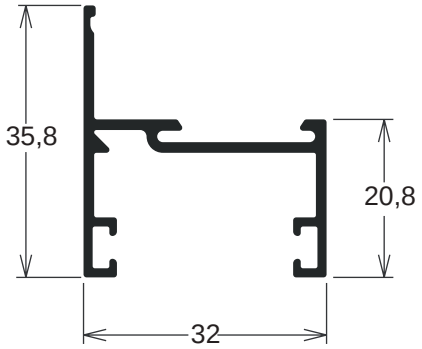

LG-059/MD-328 - 0,169kg/m



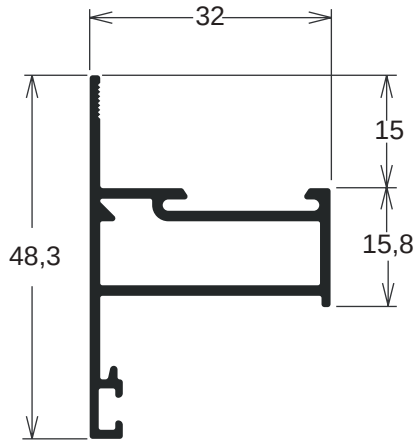

LG-015/MD-015 - 0,147kg/m



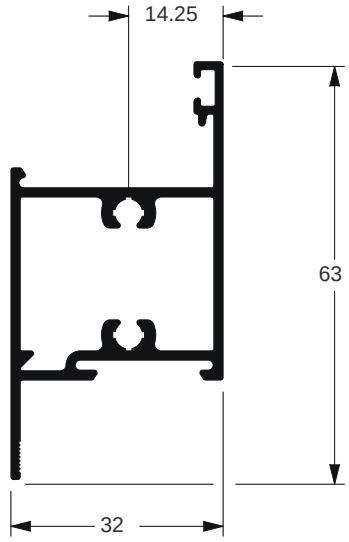

LG-068 - 0,405kg/m




LG-083 - 0,405kg/m

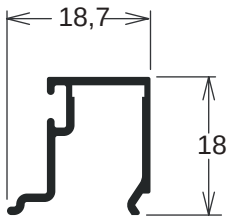



LG-085 - 0,529kg/m

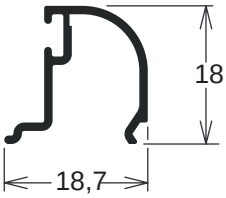



LG-076 - 0,765kg/m

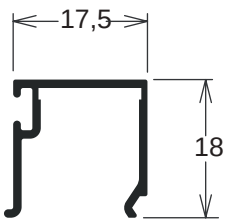
**BAGUETES**



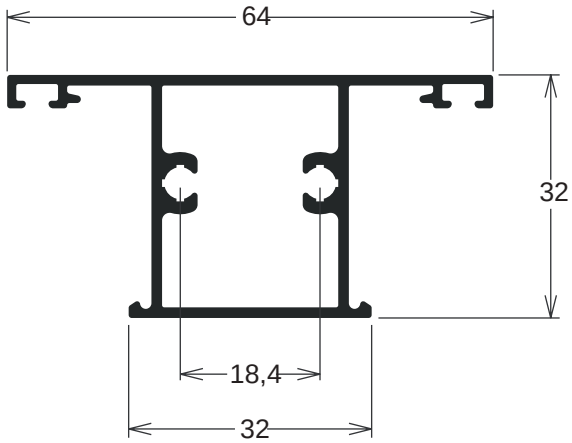

BG-057 - 0,170kg/m



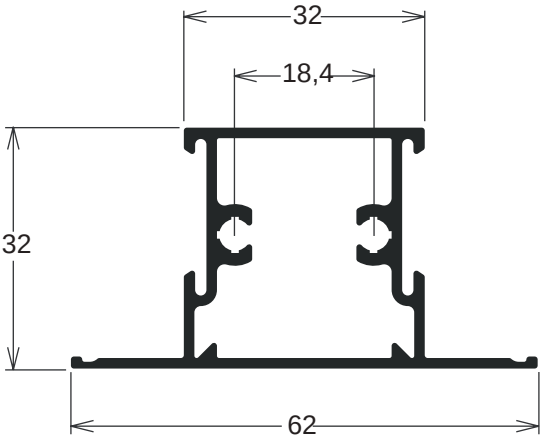

LG-026/MD-026 - 0,158kg/m



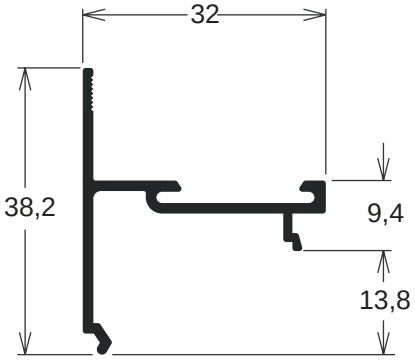

LG-059/MD-328 - 0,169kg/m



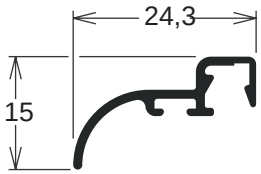

LG-074 - 0,760kg/m



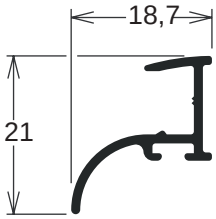

LG-079 - 0,770kg/m



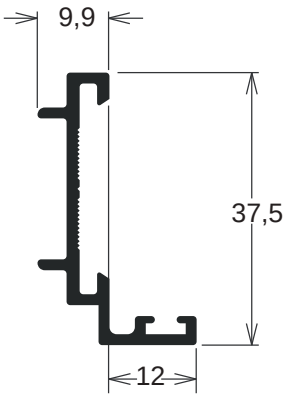

LG-077 - 0,323kg/m



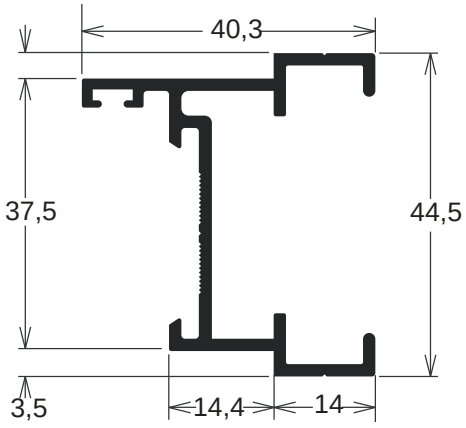

LG-091 - 1,151kg/m



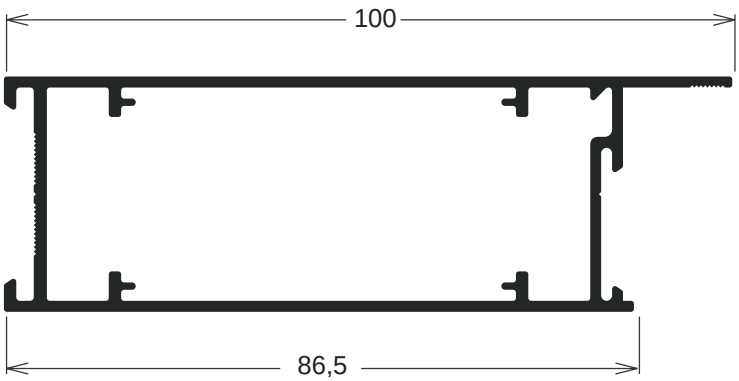

LG-092 - 0,158kg/m



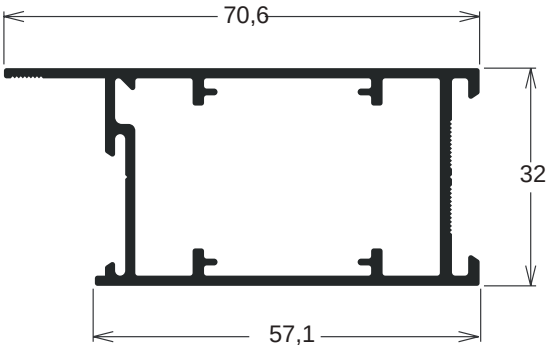

LG-016 - 0,338kg/m



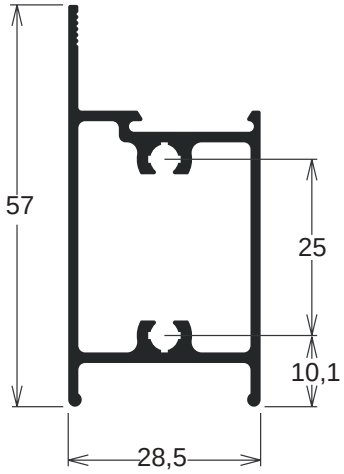

LG-056 - 0,643kg/m



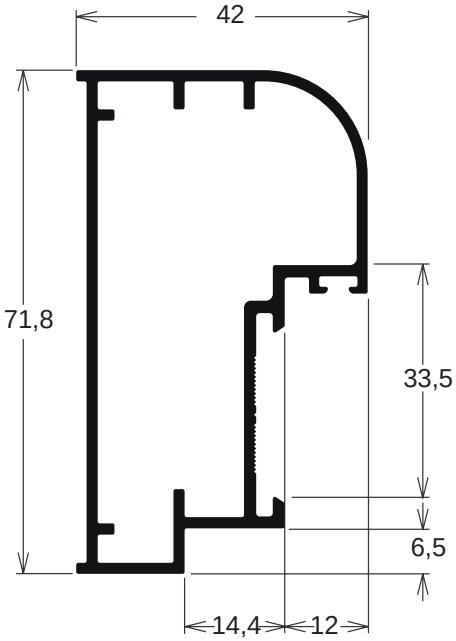

LG-042 - 1,169kg/m




LG-043 - 0,930kg/m



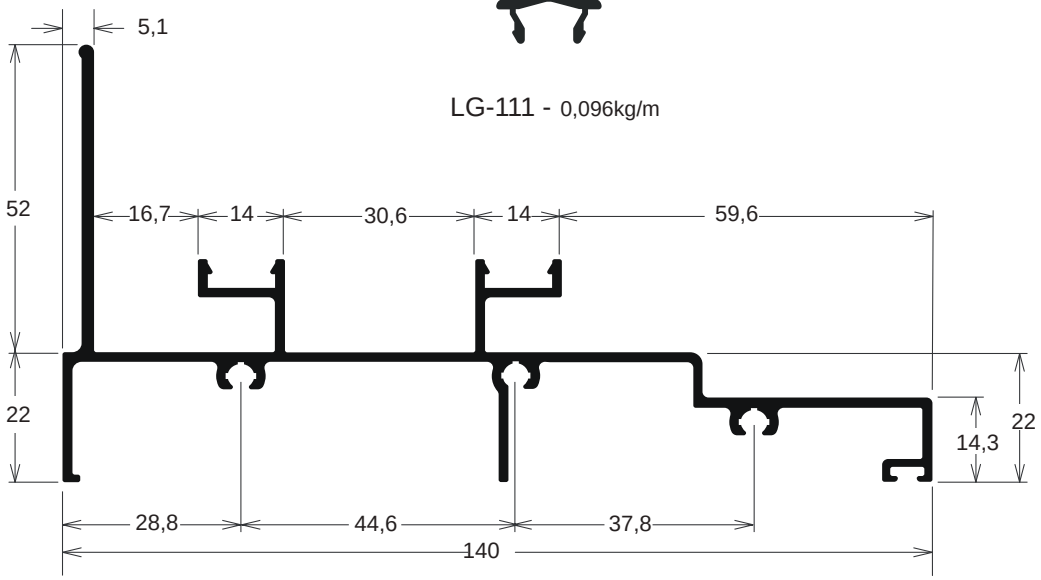

LG-058 - 0,759kg/m



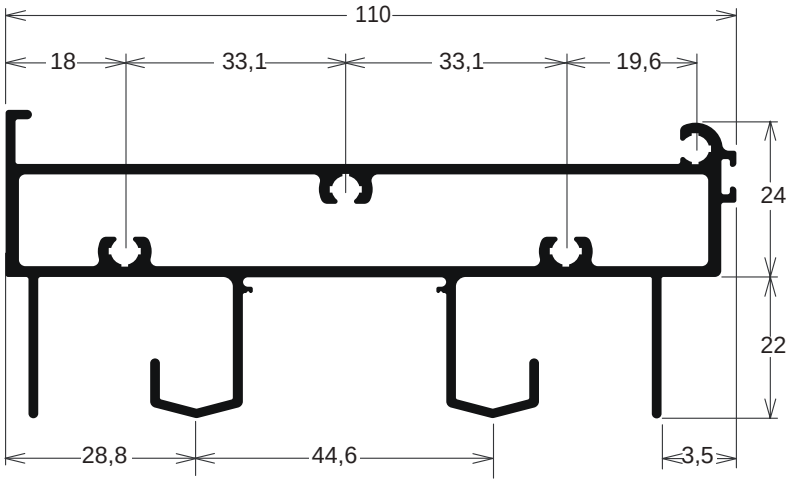

LG-175 - 1,087kg/m



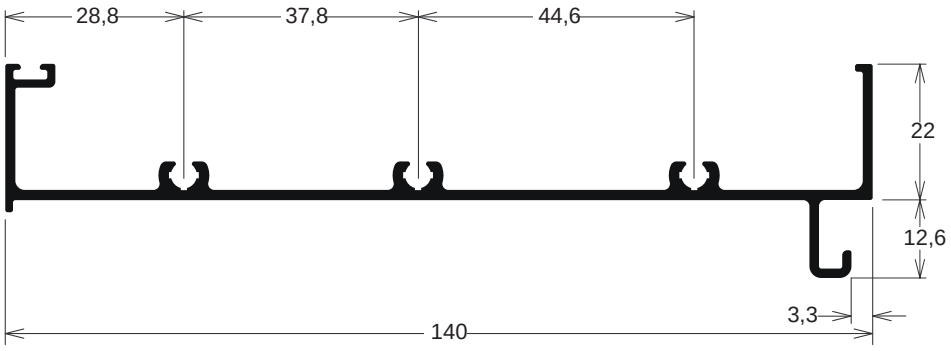

LG-111 - 0,096kg/m



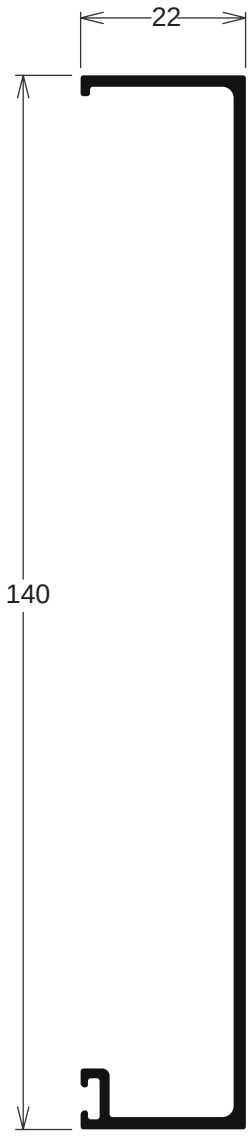

LG-172 - 1,686kg/m



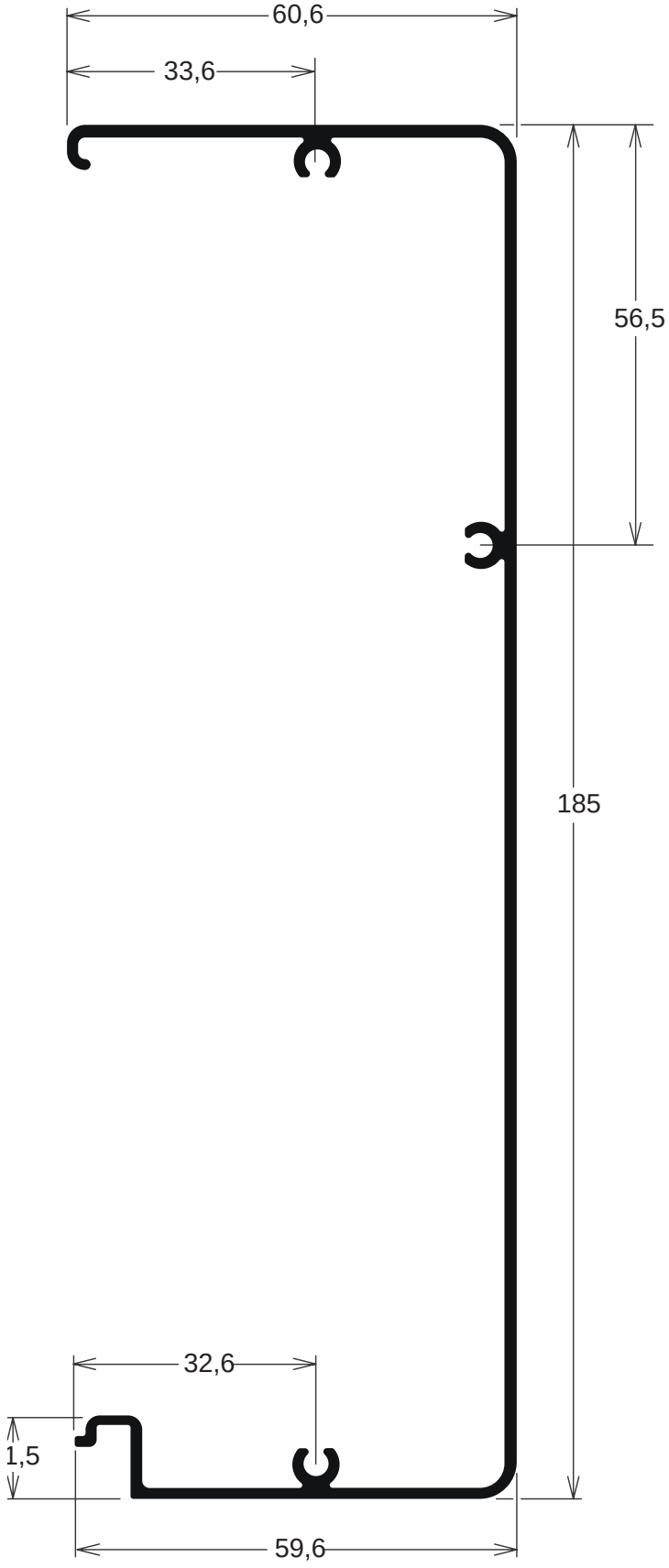

LG-166 - 1,897kg/m



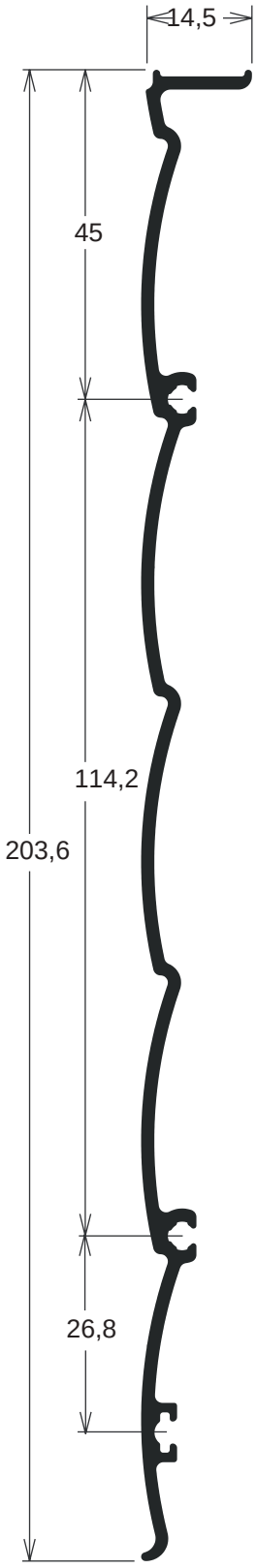

LG-168 - 1,094kg/m



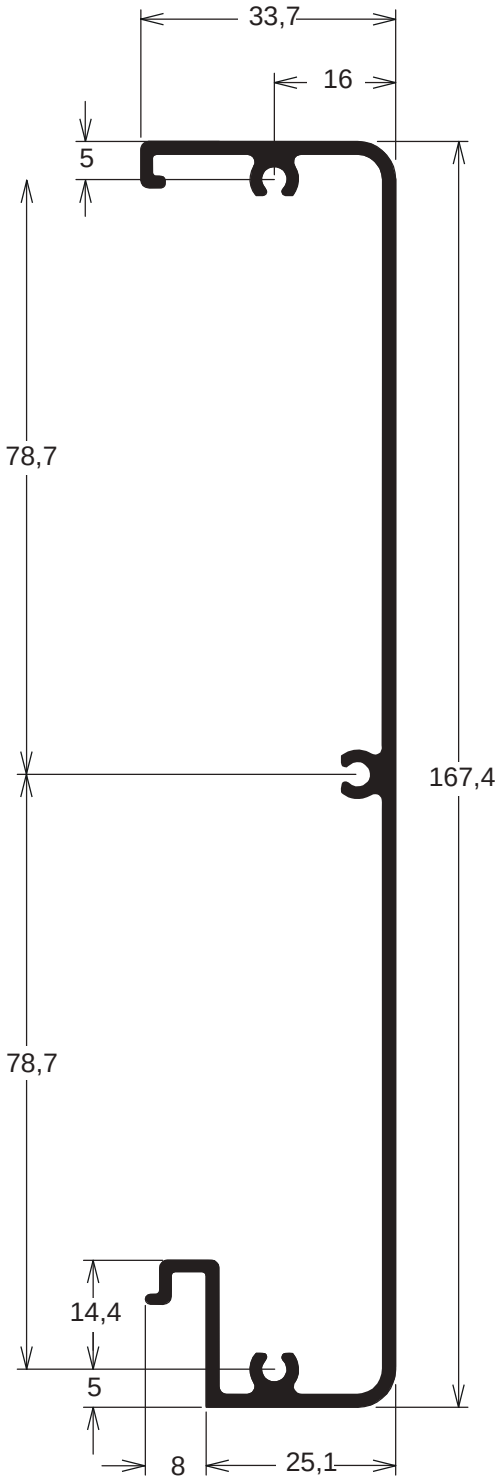

LG-170 - 0,827kg/m



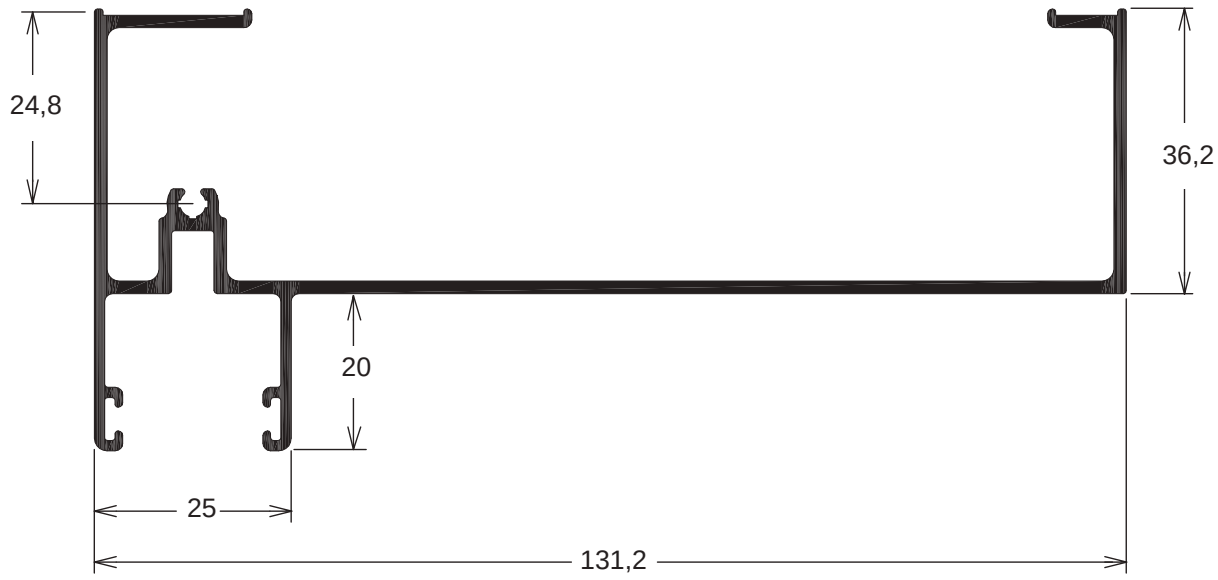

LG-167 - 1,598kg/m



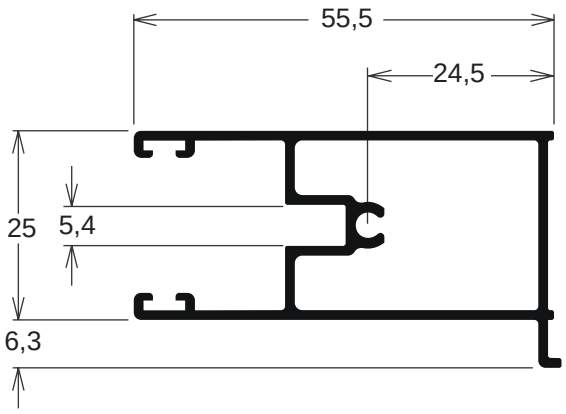

IN-039 - 1,216kg/m




MN-031 - 1,331kg/m



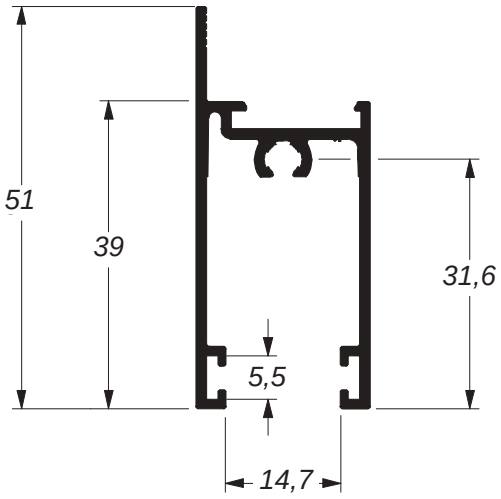

LG-236 - 1,282kg/m



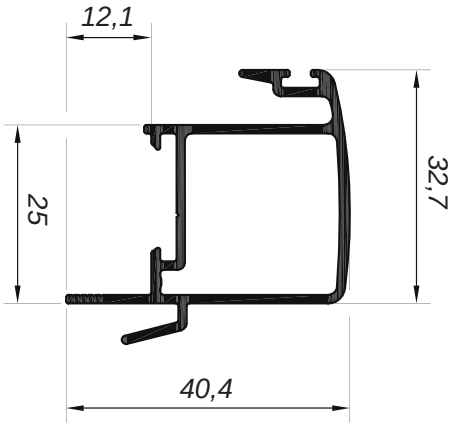

MN-007 - 0,710kg/m

# LINHA MEGA 25

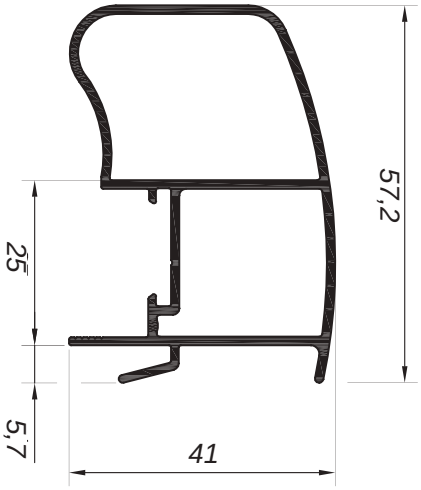
ALPA ALUMÍNIO



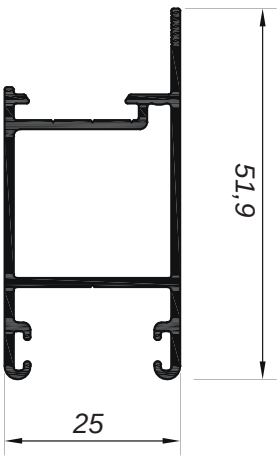

SU-053 - 0,507kg/m



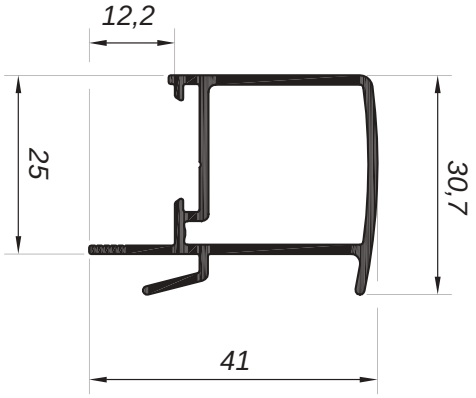

EXL-503 - 0,523kg/m



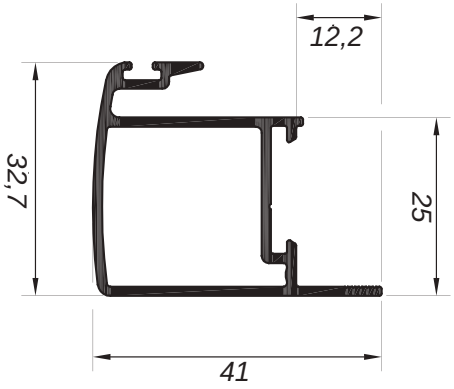

EXL-504 - 0,787kg/m



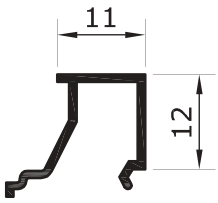

EXL-500 - 0,542kg/m



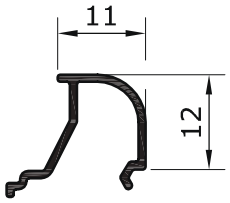

EXL-501 - 0,479kg/m



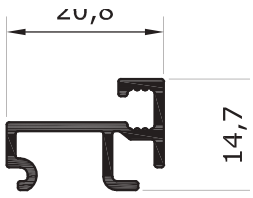

EXL-502 - 0,512kg/m



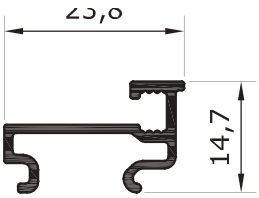

SU-102 - 0,110kg/m



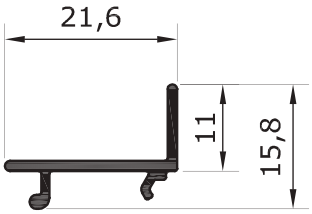

42473 - 0,104kg/m



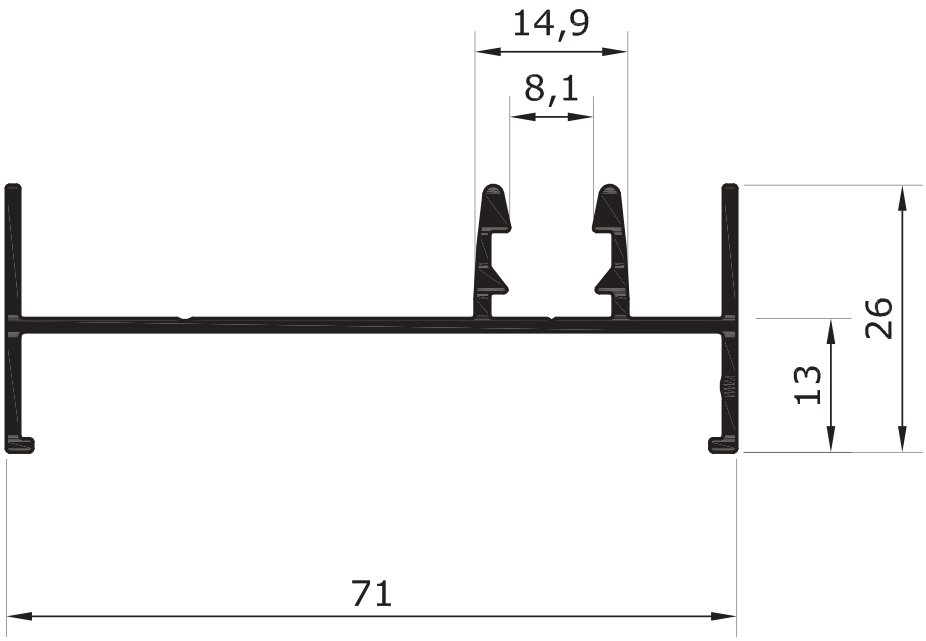

ALV-2042 - 0,195kg/m



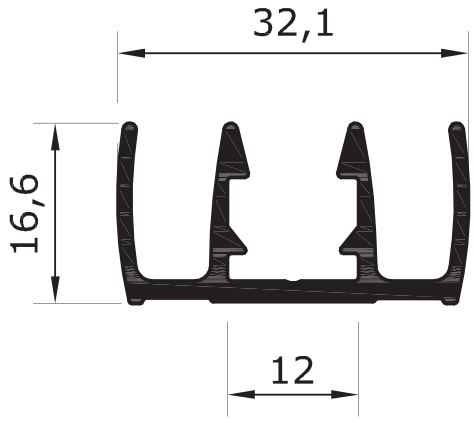

ALV-2043 - 0,187kg/m



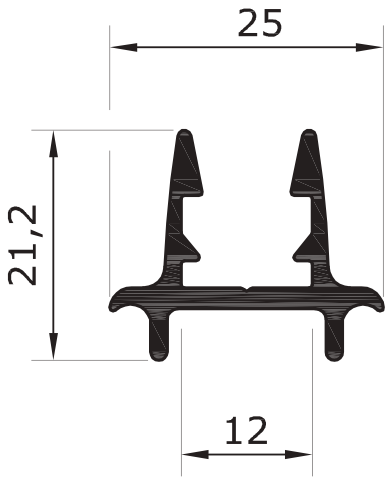

ALV-2044 - 0,140kg/m



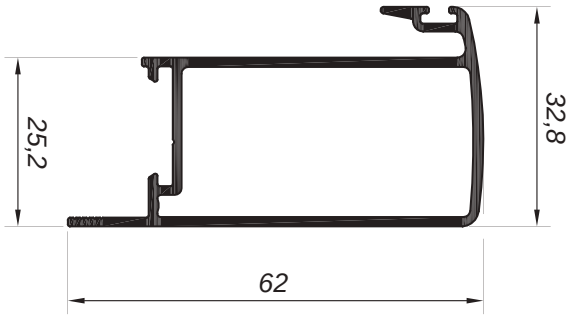

EXL-791 - 0,559kg/m



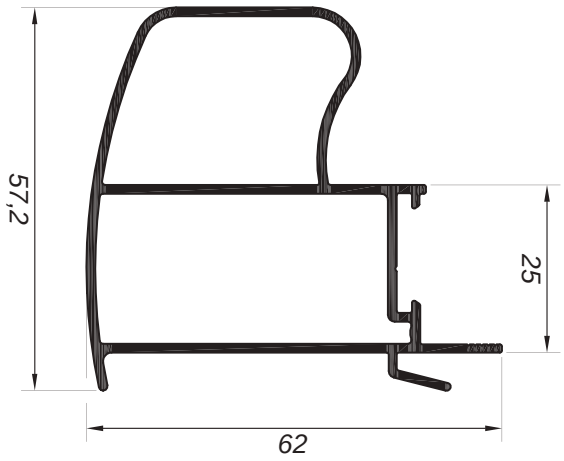

VS-2006 - 0,382kg/m



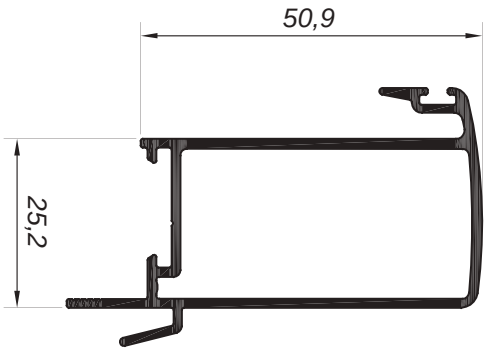

EXL-506 - 0,303kg/m



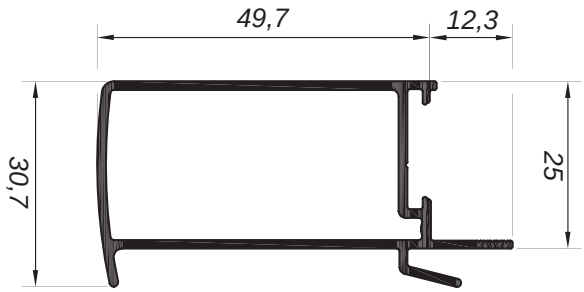

ALV-2015 - 0,690kg/m



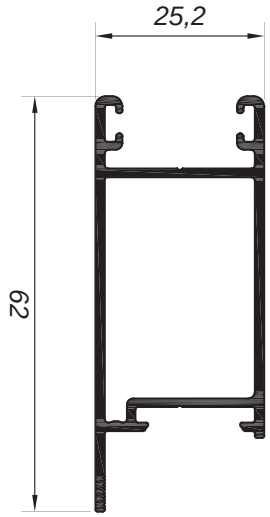

ALV-2016 - 0,912kg/m



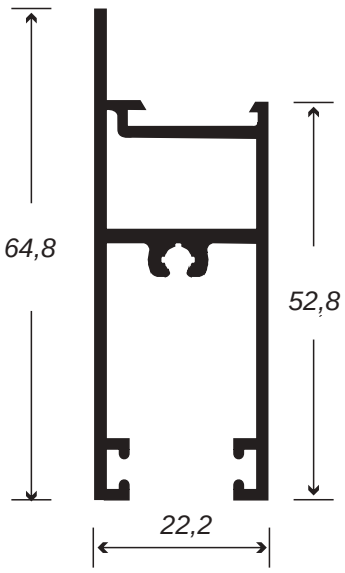

ALV-2027 - 0,730kg/m



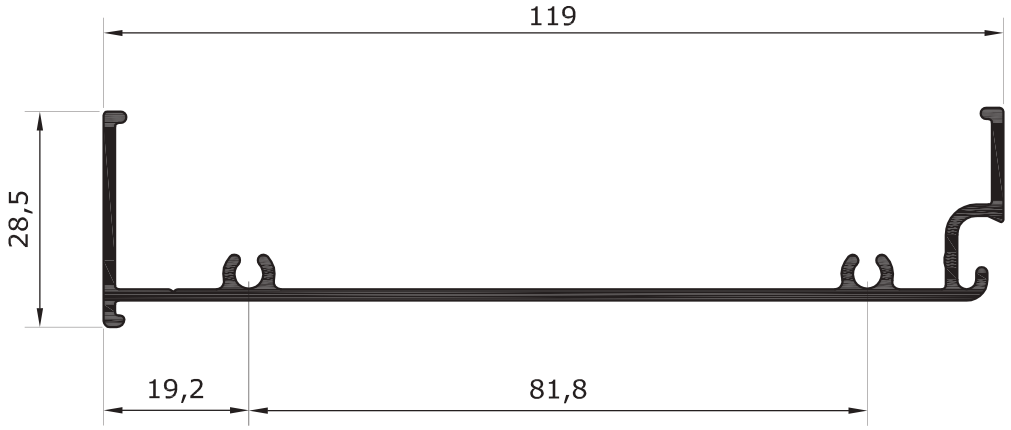

ALV-2018 - 0,626kg/m



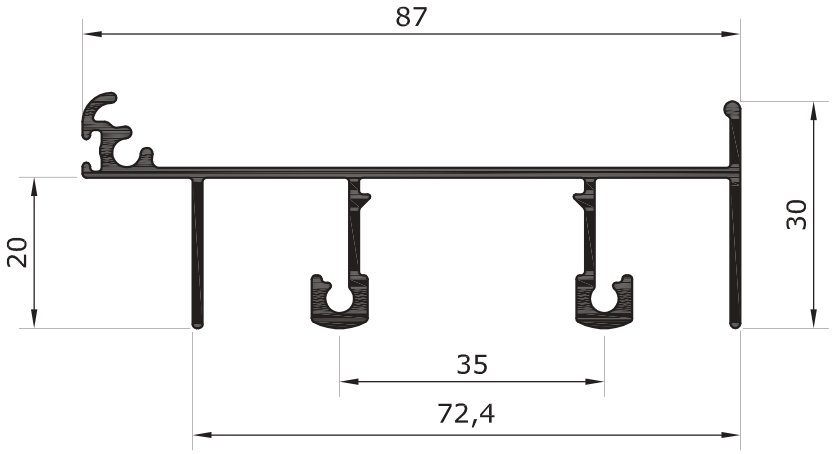

ALV-2017 - 0,653kg/m



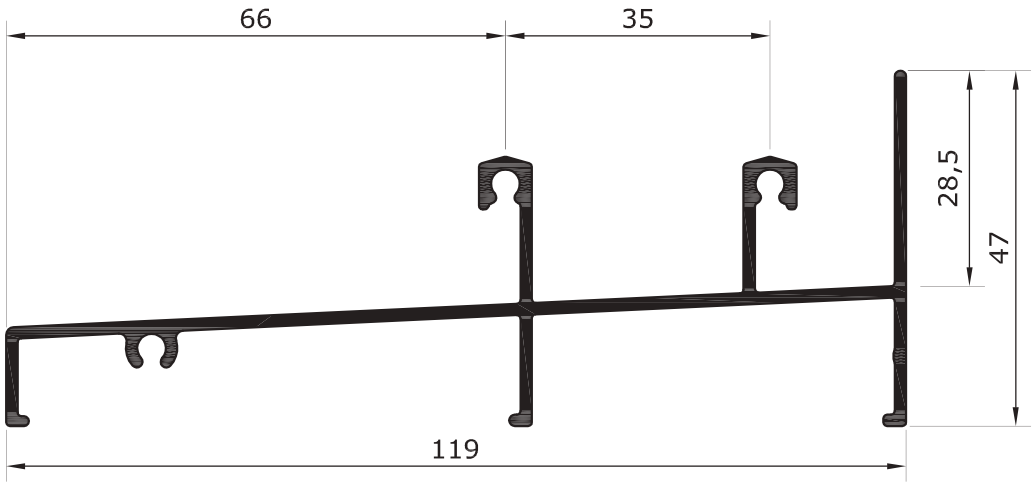

SU-246 - 0,653kg/m



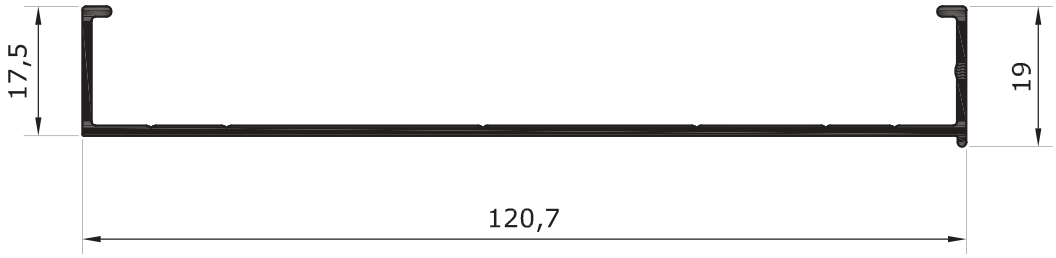

EXL-508 - 0,510kg/m



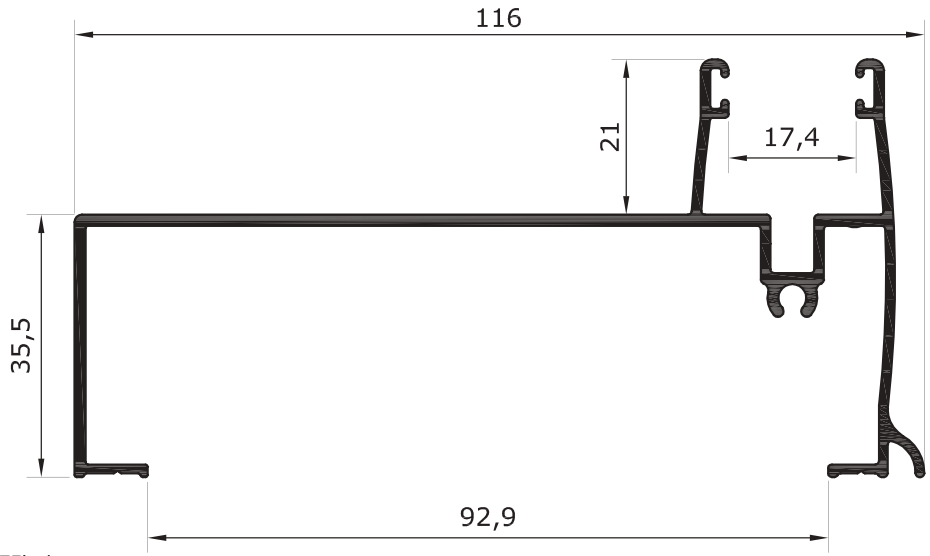

EXL-509 - 0,843kg/m



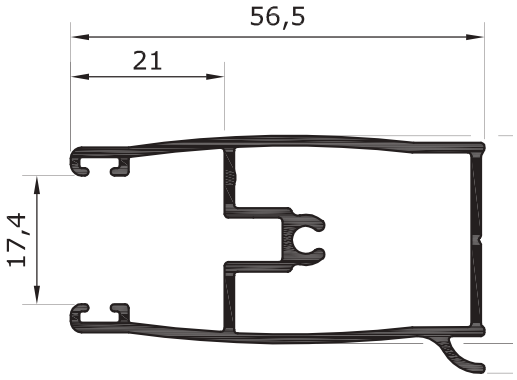

EXL-510 - 1,085kg/m



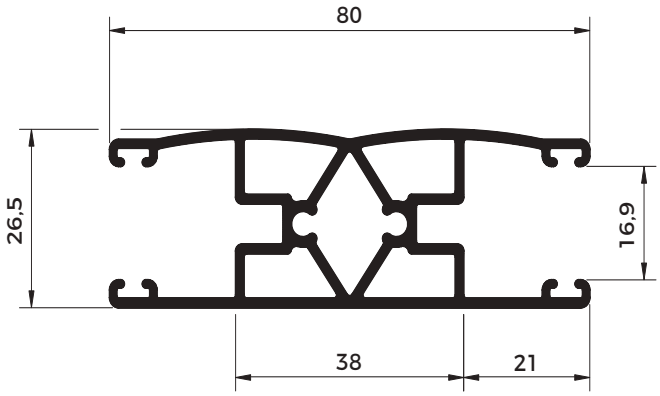

EXL-511 - 0,578kg/m



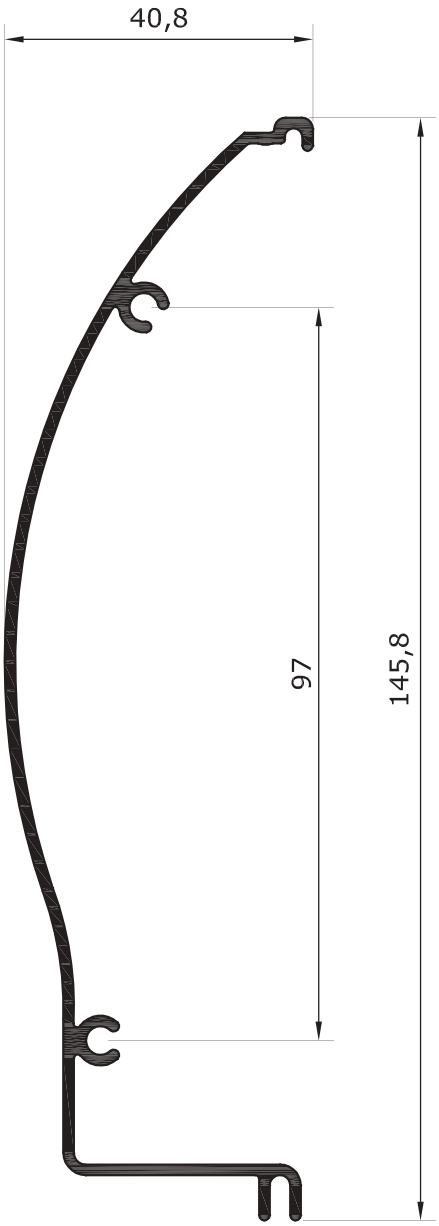

EXL-513 - 1,075kg/m



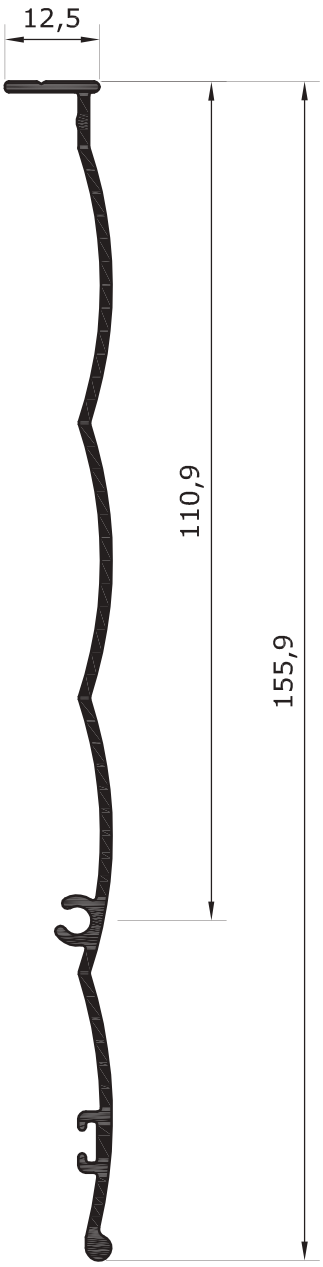

EXL-514 - 0,741kg/m



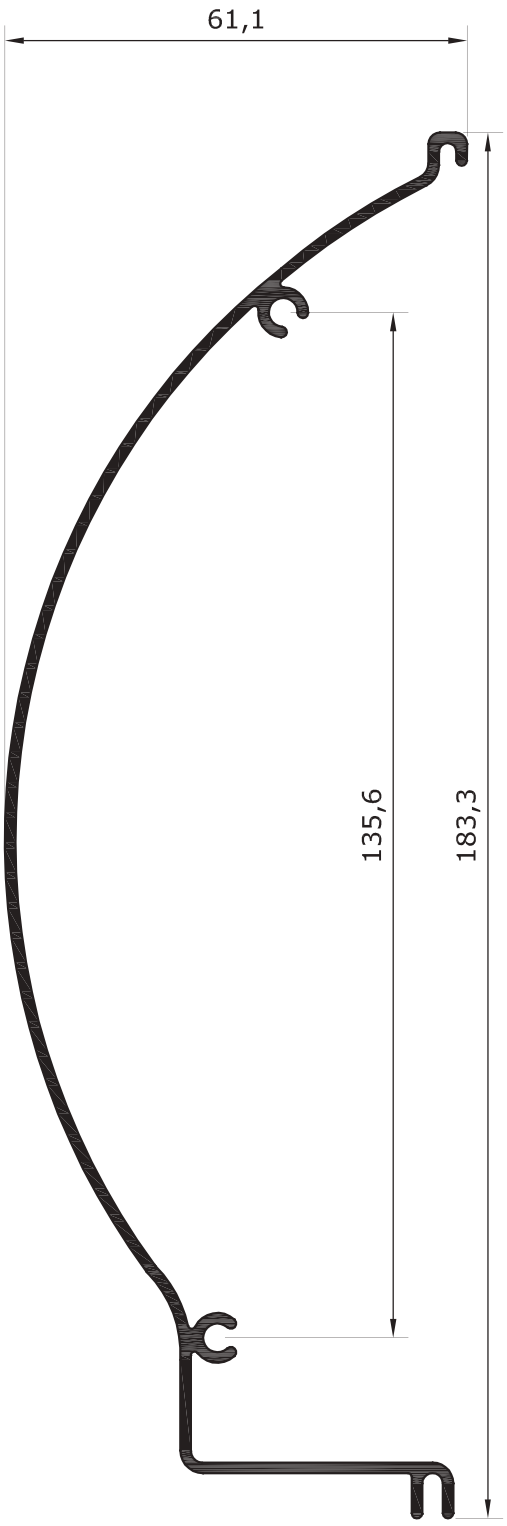

EXL-888 - 1,159kg/m



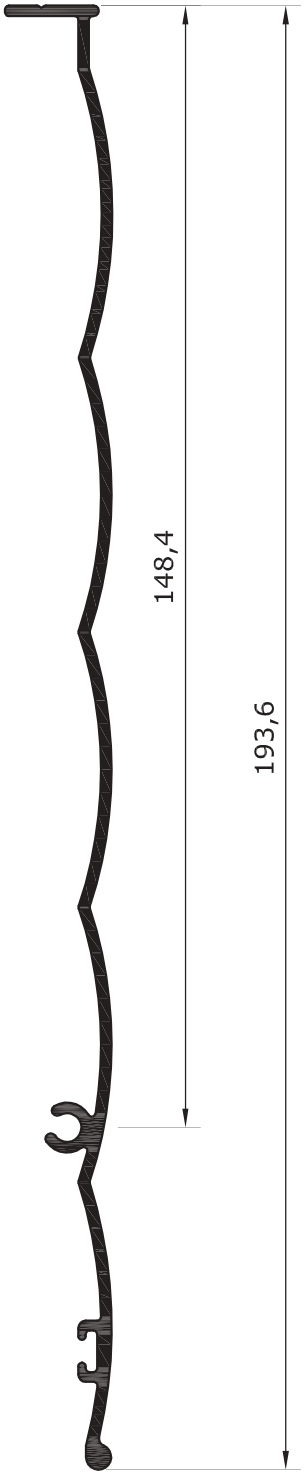

EXL-515 - 0,857kg/m



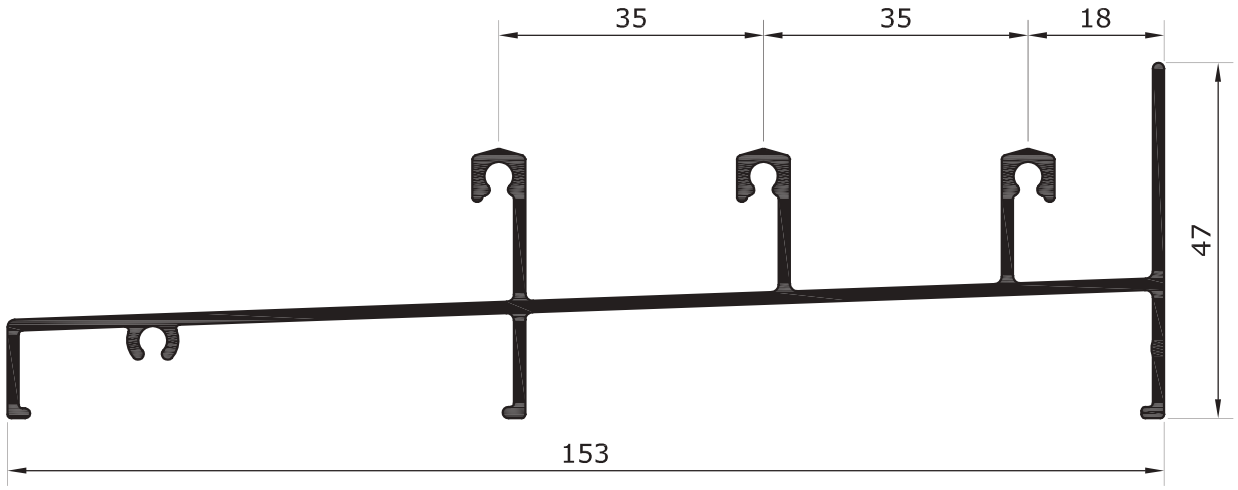

EXL-516 - 0,724kg/m



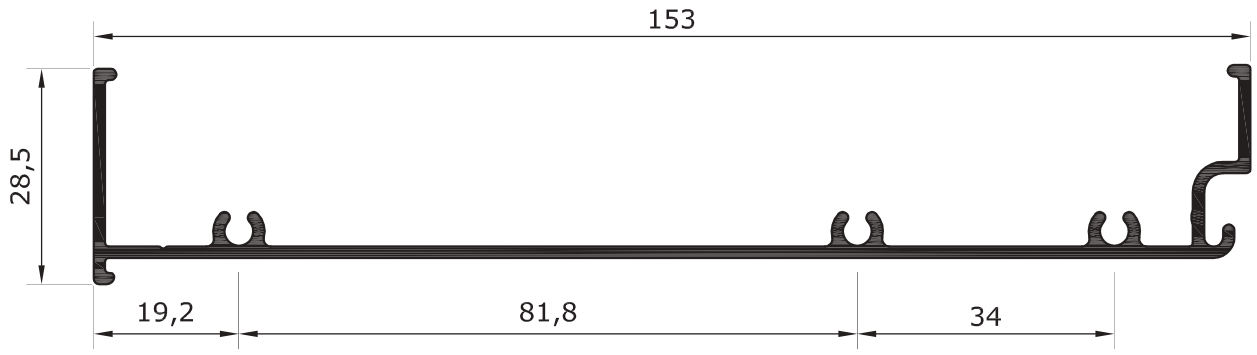

EXL-517 - 1,052kg/m



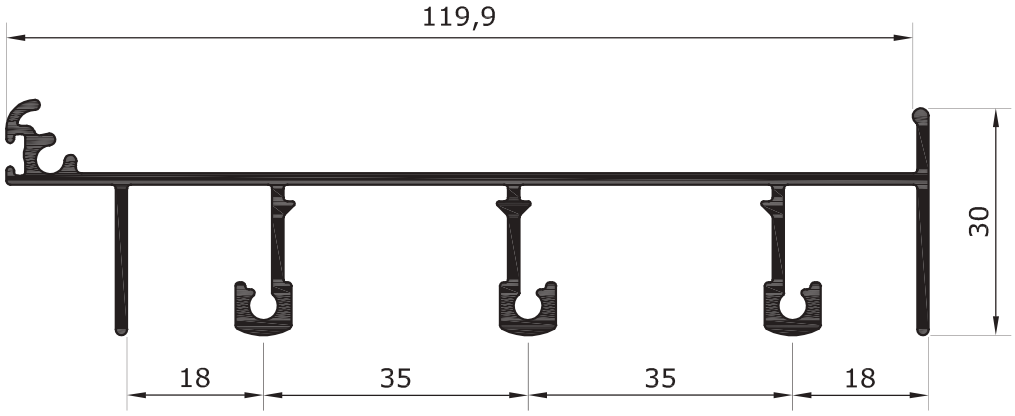

EXL-518 - 0,885kg/m



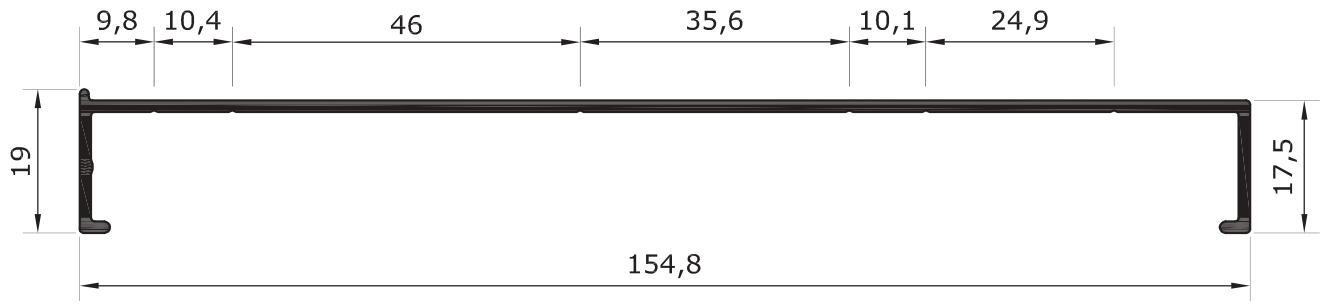

EXL-333 - 1,349kg/m



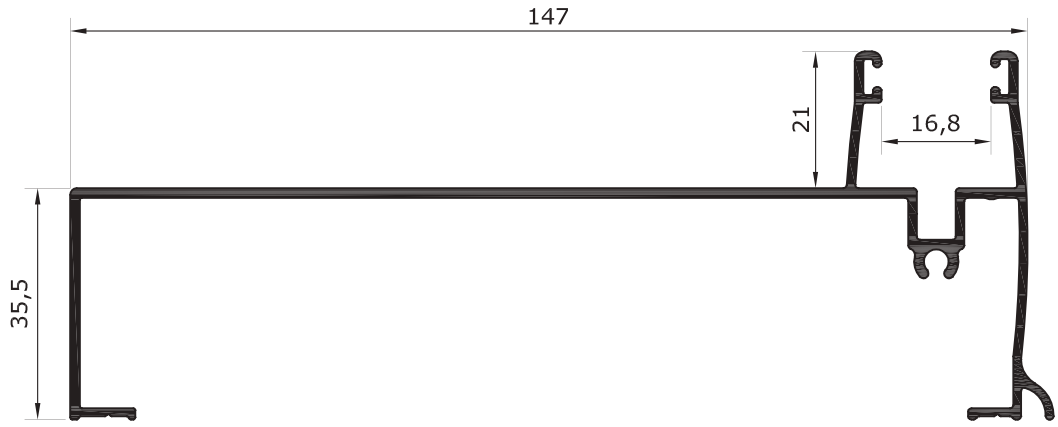

EXL-334 - 1,000kg/m




EXL-335 - 1,223kg/m



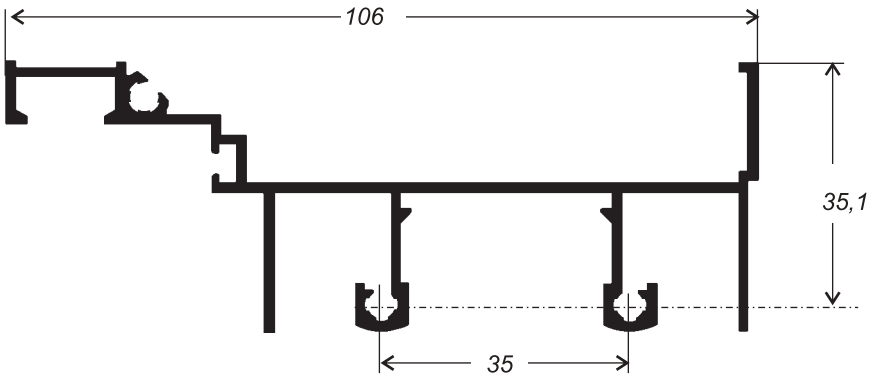

EXL-336 - 0,782kg/m



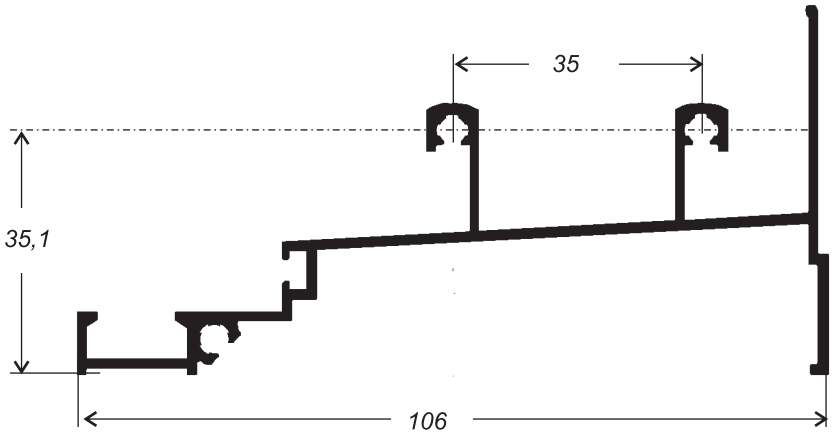

EXL-337 - 1,294kg/m

# SISTEMA CAMARÃO

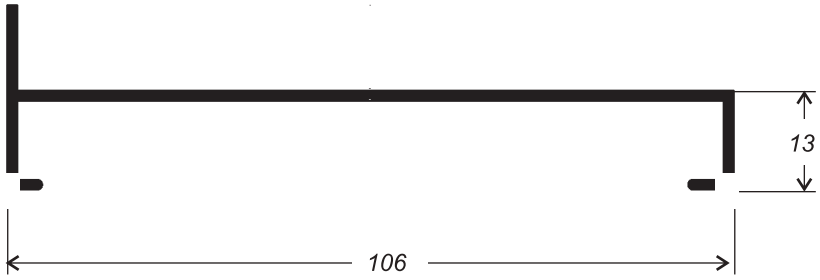
ALPA
ALUMÍNIO



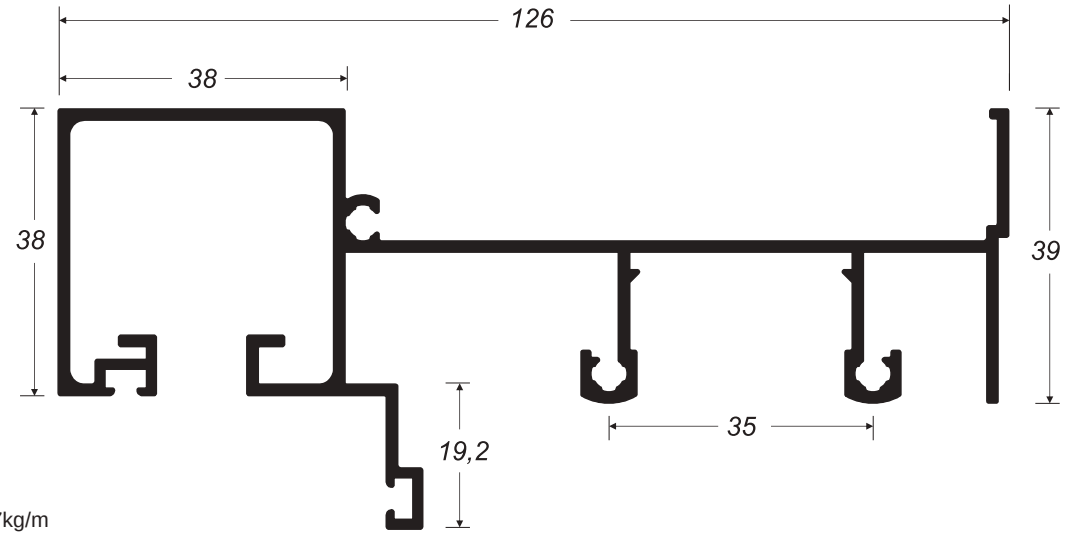

SU-024 - 1,024kg/m



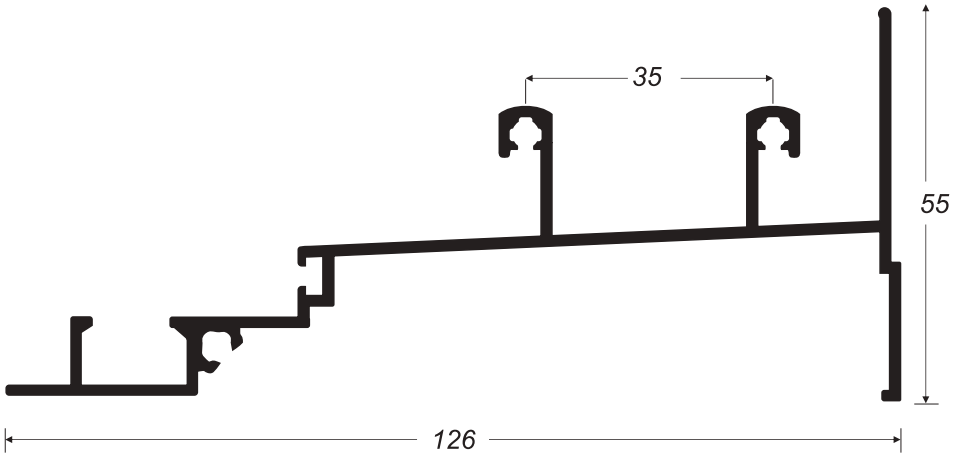

SU-025 - 0,973kg/m



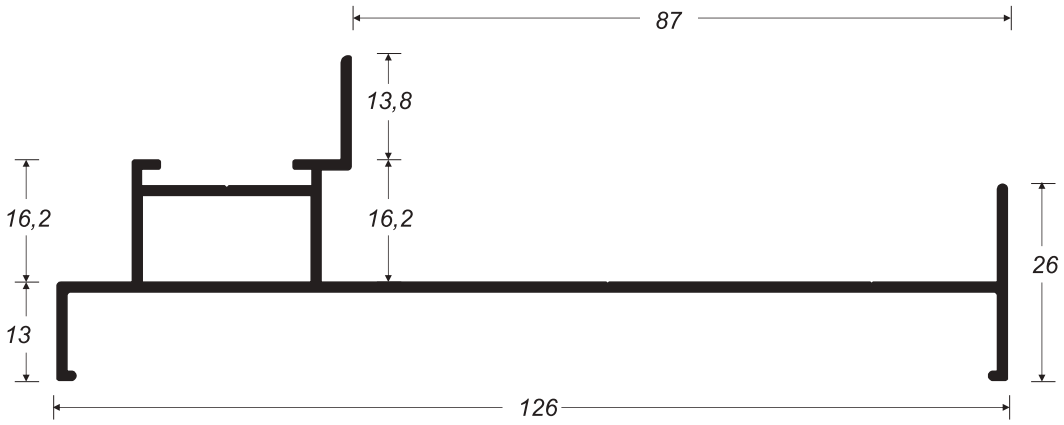

SU-012 - 0,539kg/m



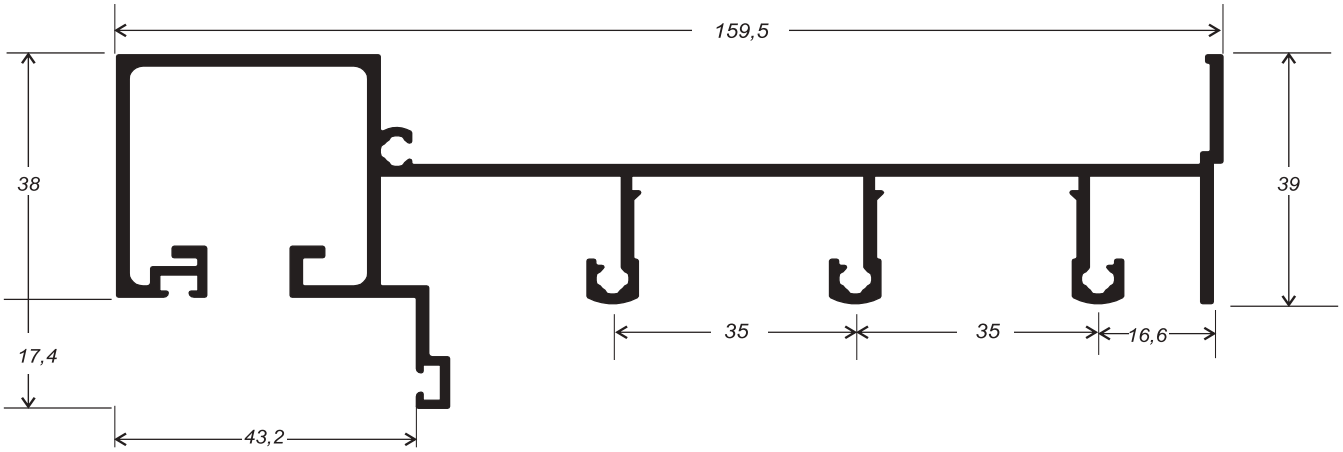

VS-024 - 1,817kg/m



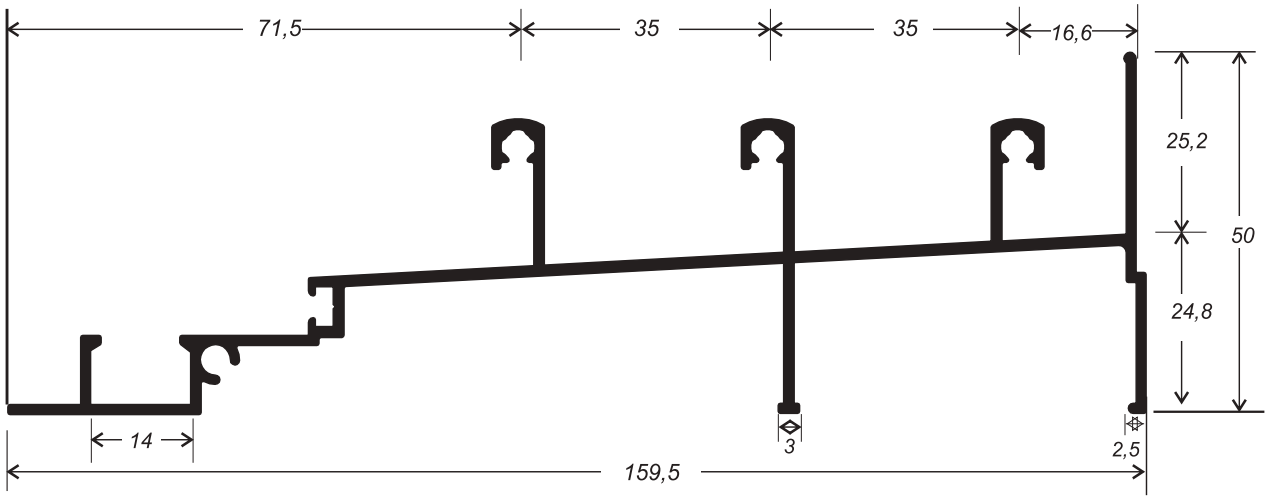

VS-025 - 1,168kg/m



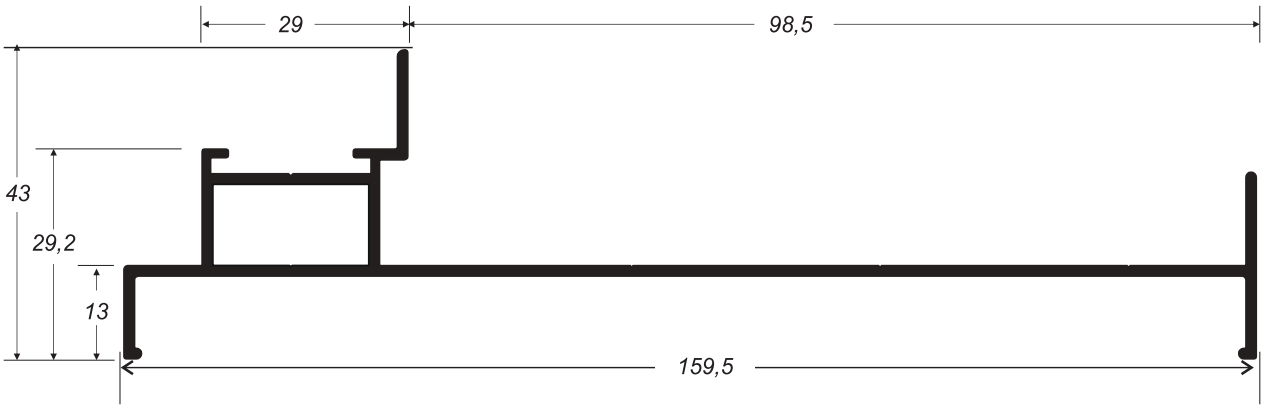

VS-012 - 1,089kg/m



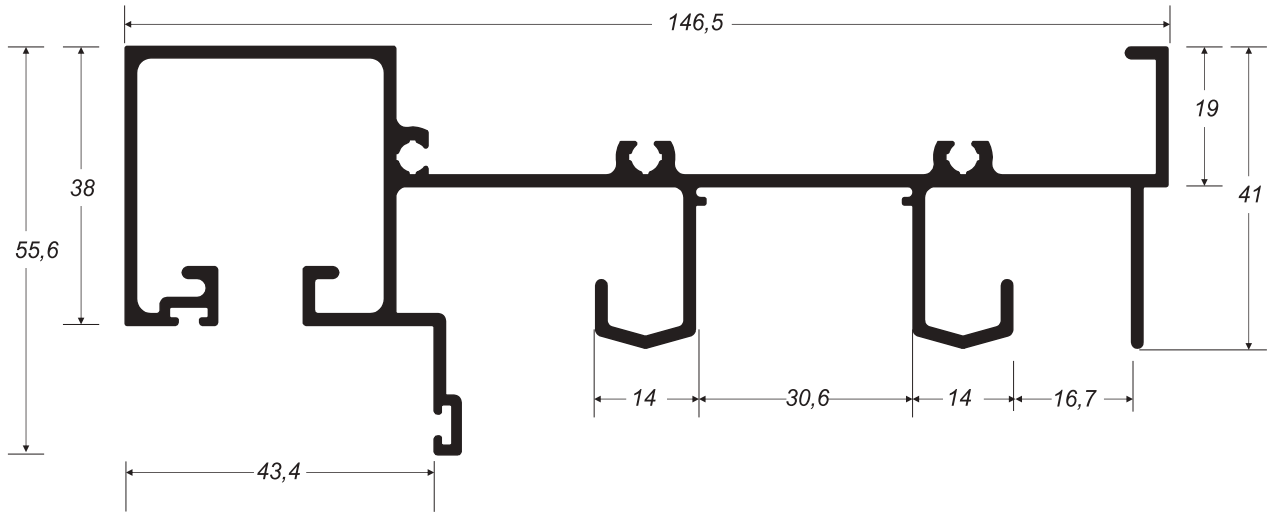

VS-044 - 2,125kg/m



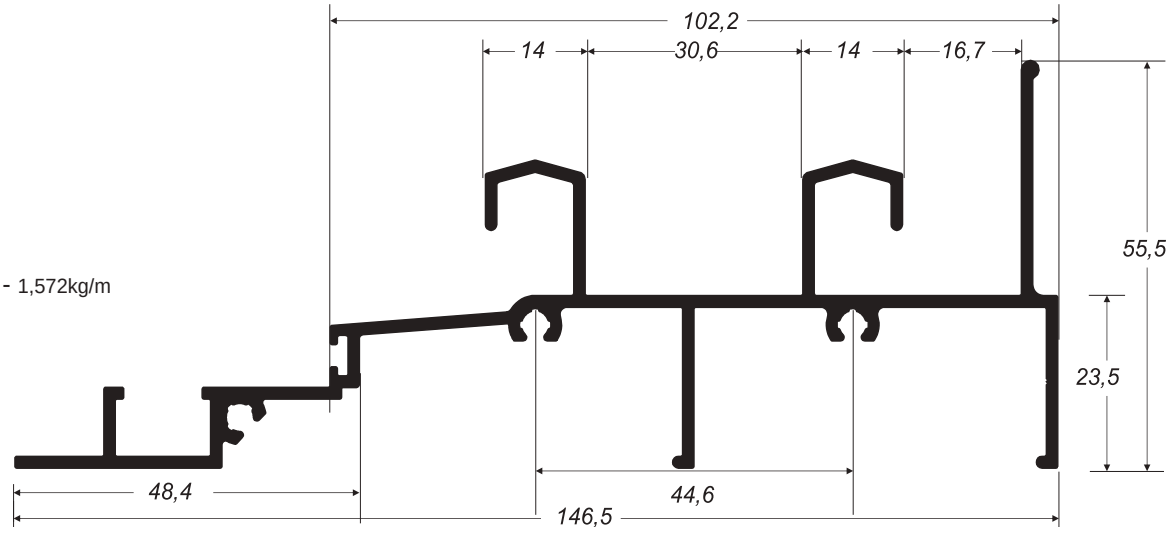

VS-045 - 1,455kg/m



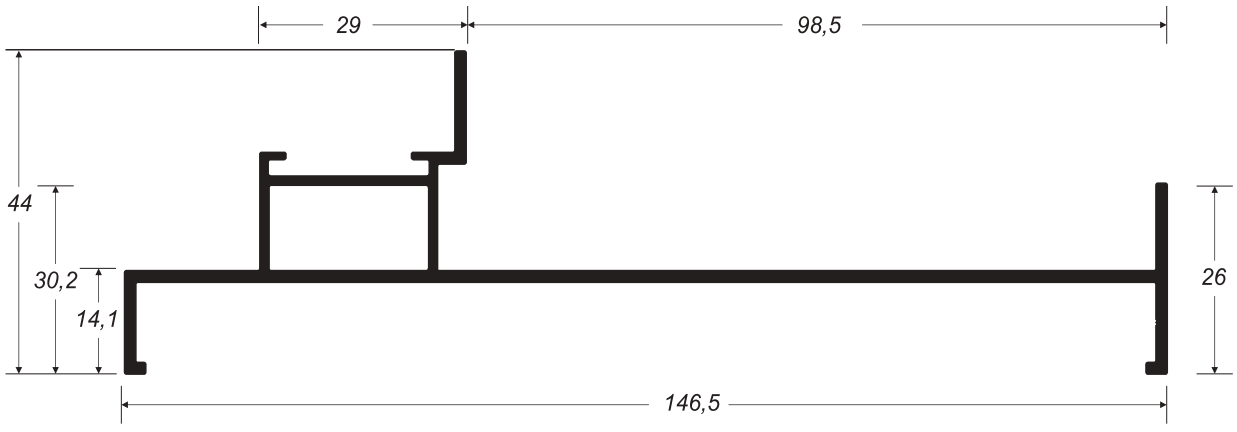

VS-042 - 1,103kg/m



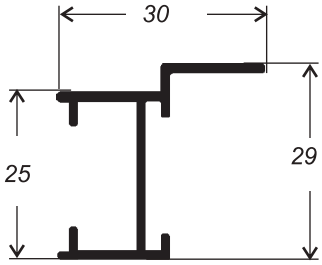

MD-024 - 1,971kg/m



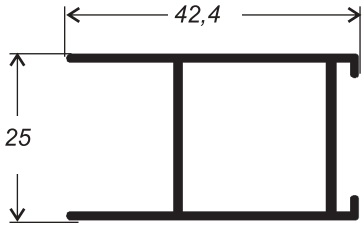

MD-025 - 1,572kg/m



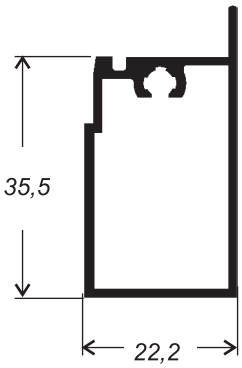

MD-012 - 1,089kg/m



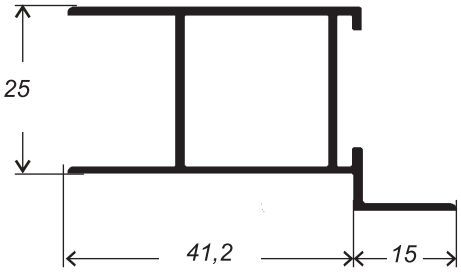

SU-071 - 0,276kg/m



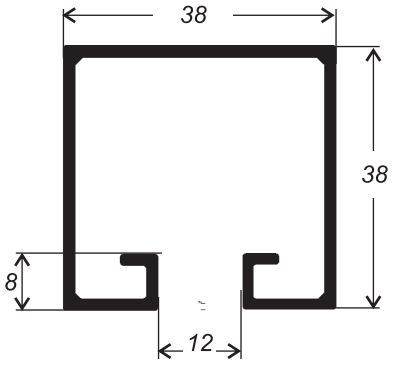

SU-072 - 0,439kg/m



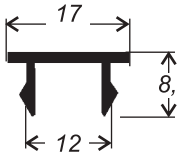

SU-073 - 0,447kg/m



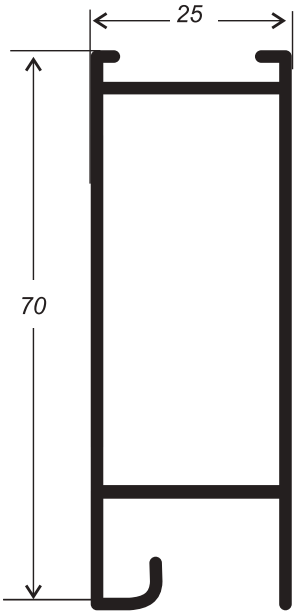

SU-074 - 0,501kg/m



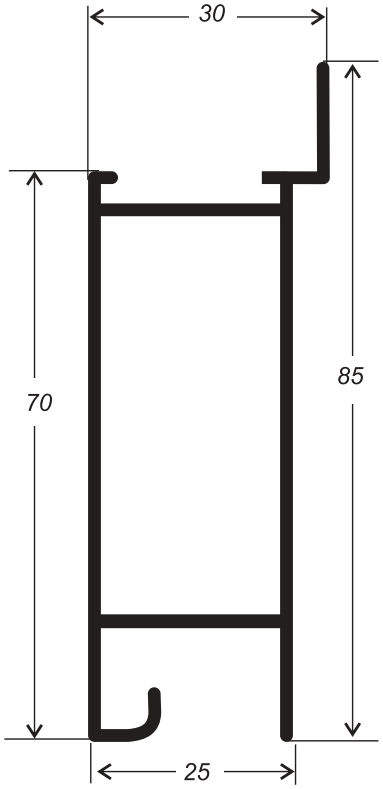

DS-314 - 0,635kg/m



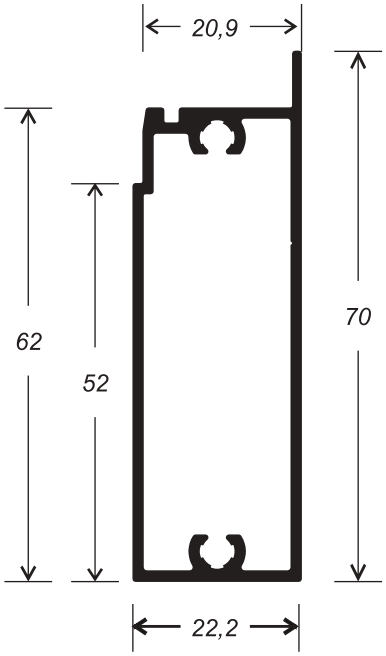

CL-022 - 0,111kg/m



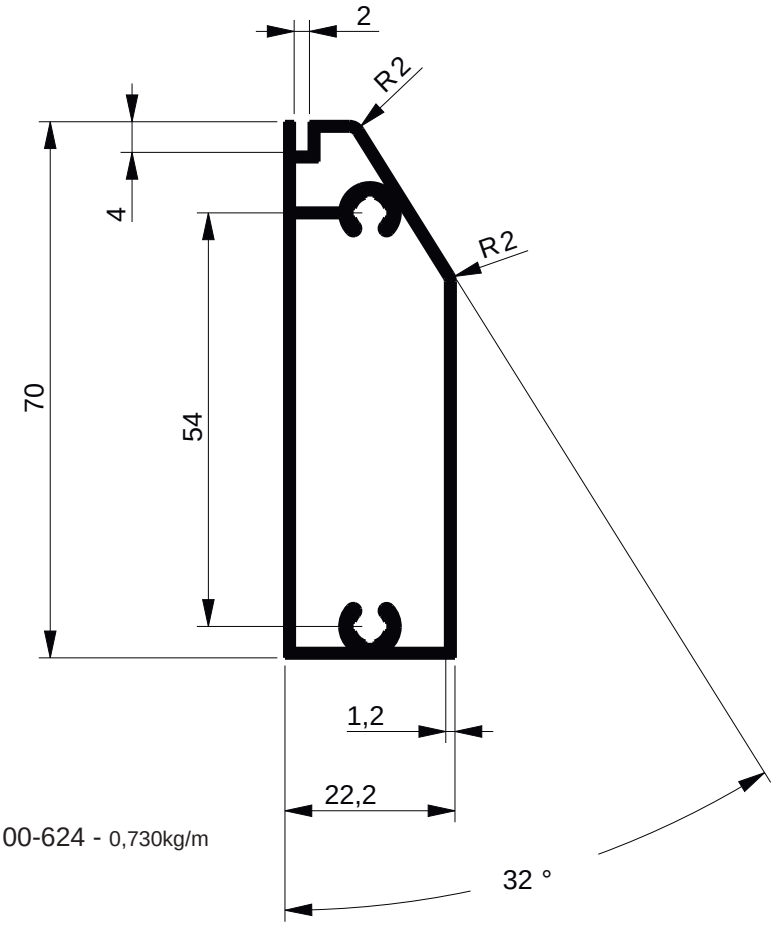

00-621 - 0,867kg/m



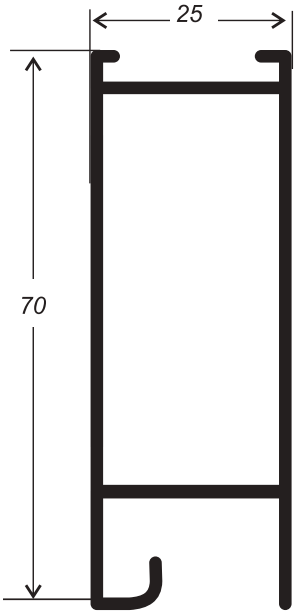

00-622 - 0,933kg/m



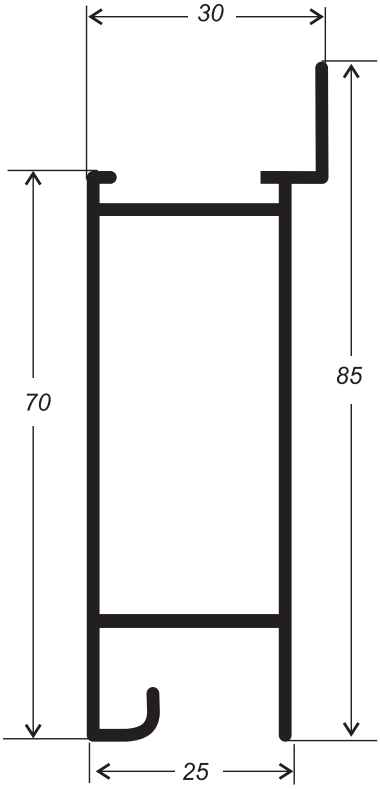

00-623 - 0,694kg/m



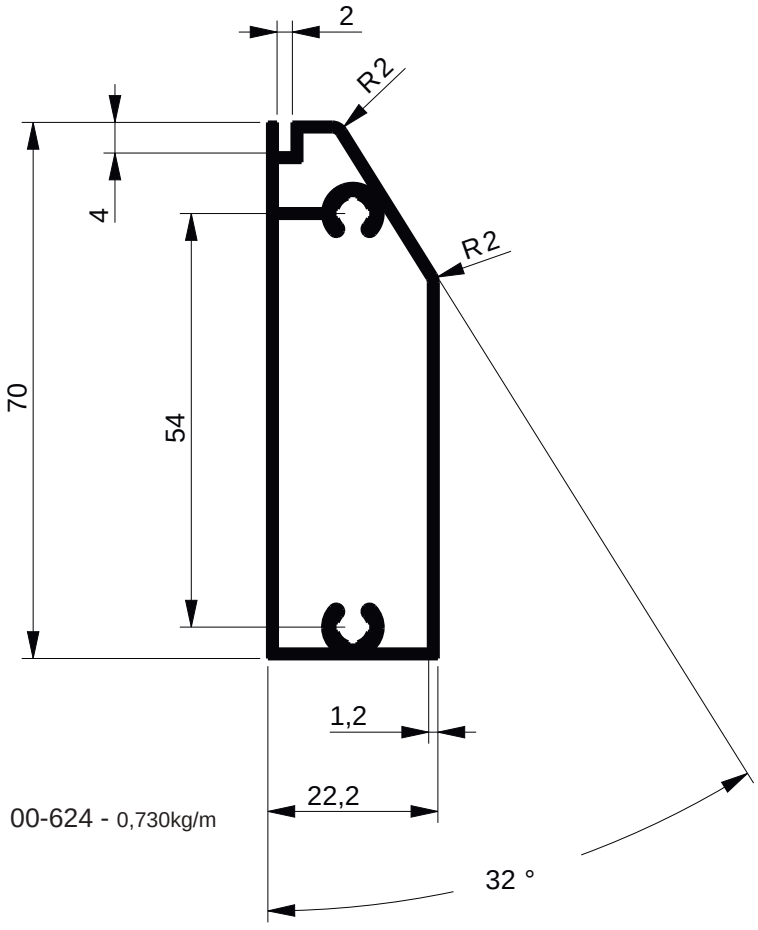

00-624 - 0,730kg/m



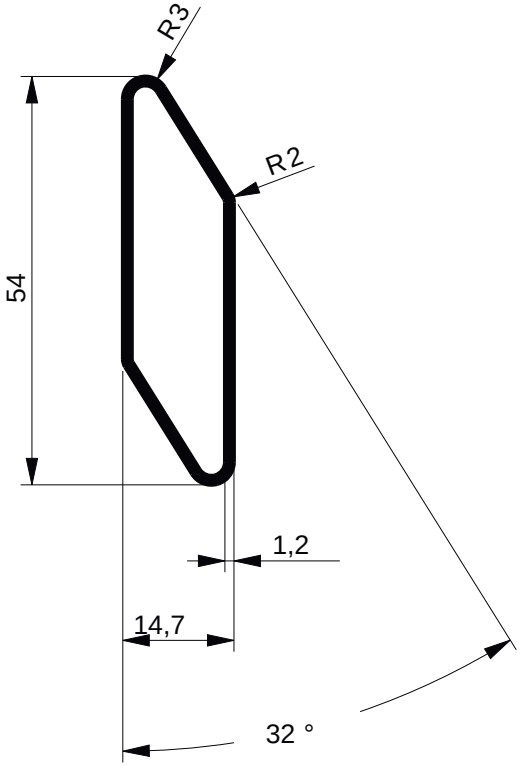

00-621 - 0,867kg/m




00-622 - 0,933kg/m

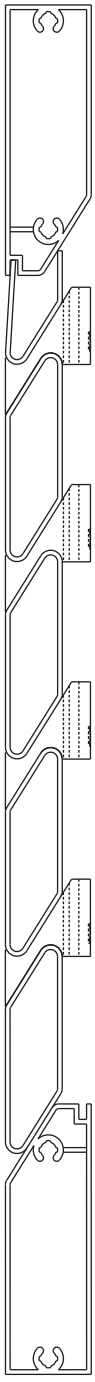


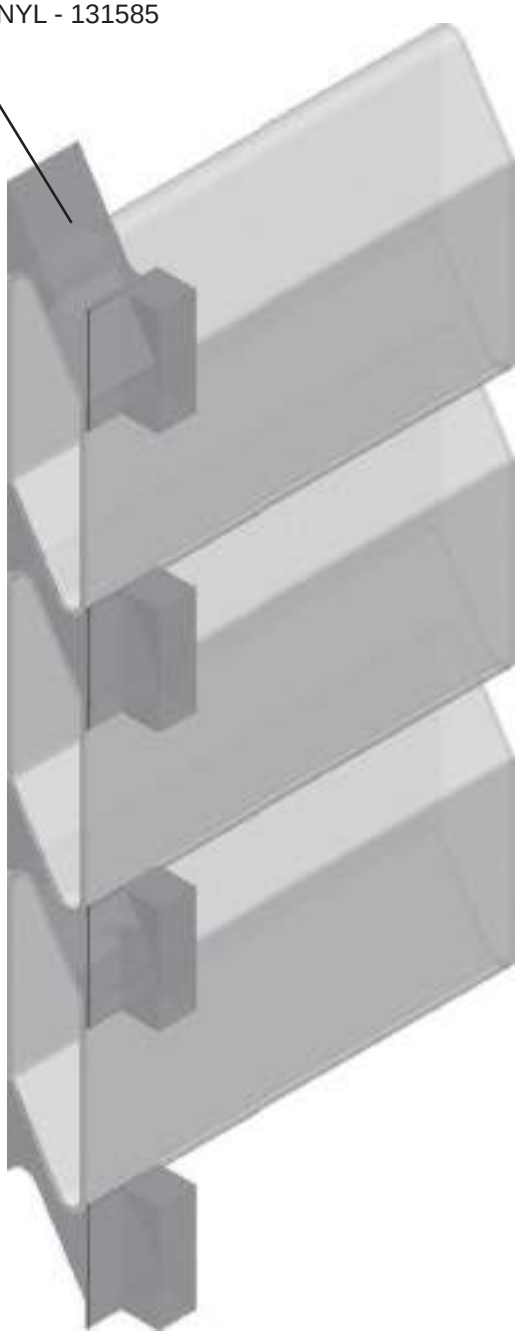

00-624 - 0,730kg/m



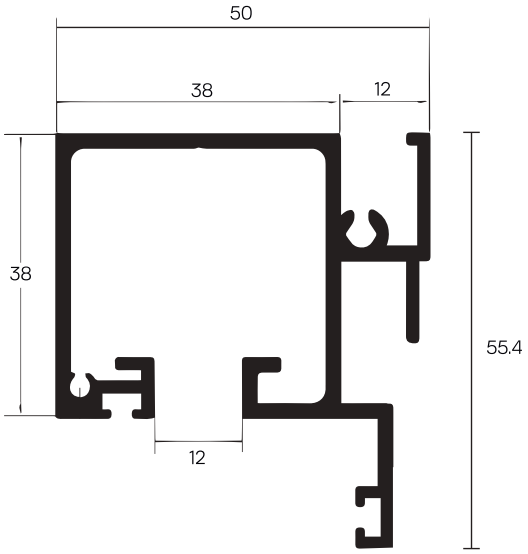

13-1585 - 0,385kg/m

Acessório Nylon - NYL - 131585

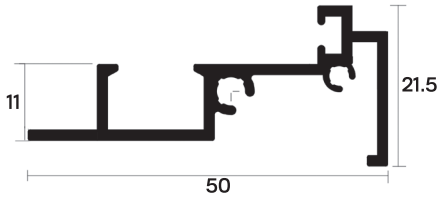




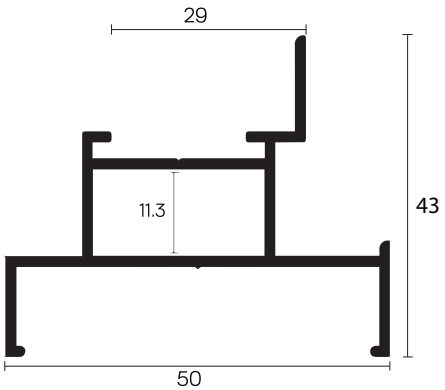
Montagem



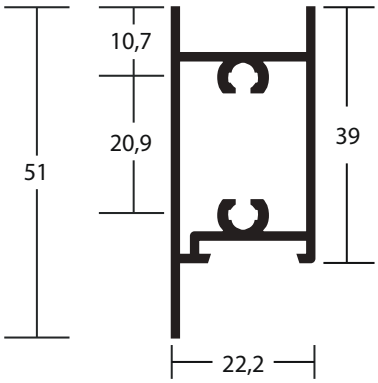

ACO-024 - 1,112kg/m



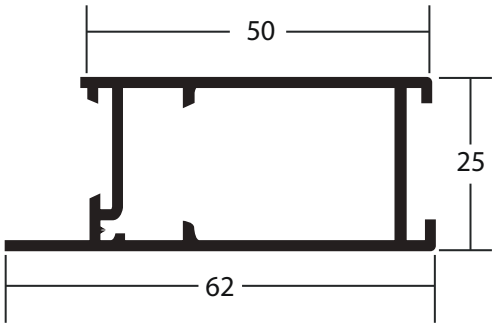

ACO-025 - 0,475kg/m



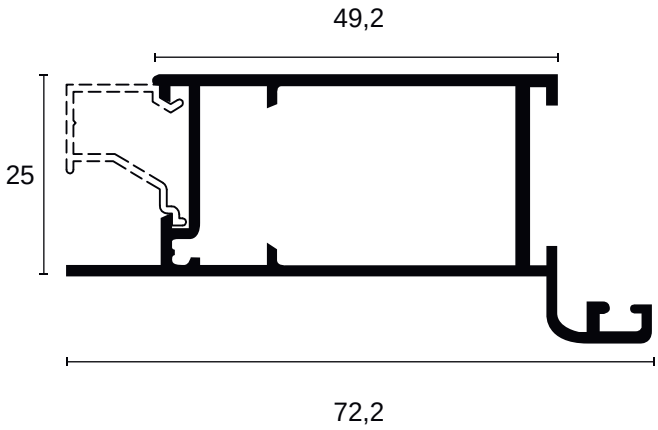

ACO-012 - 0,613kg/m



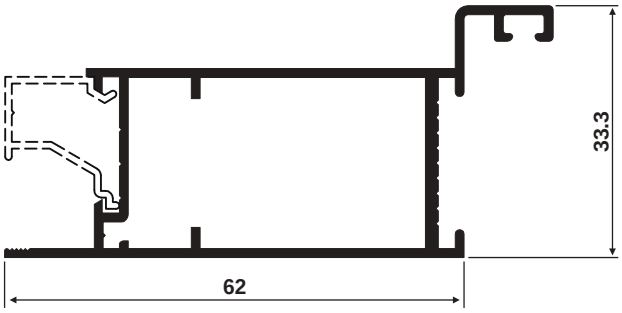

CR-110 - 0,534kg/m



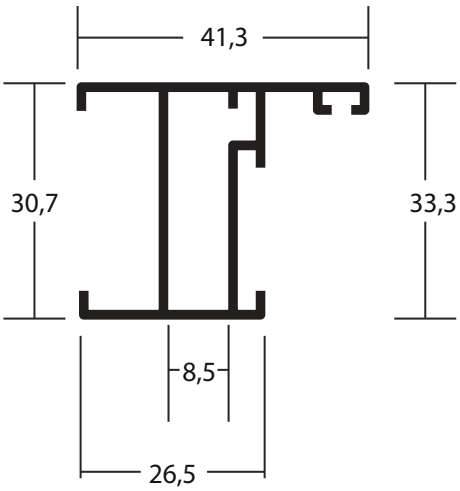

CR-111 - 0,640kg/m



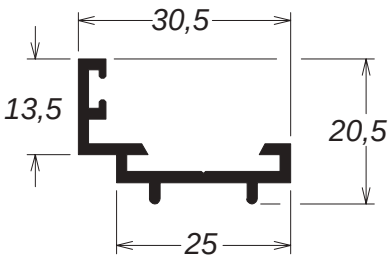

CR-112 - 0,609kg/m



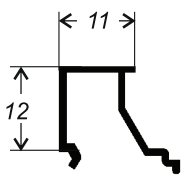

CR-113 - 0,664kg/m




CR-279 - 0,565kg/m

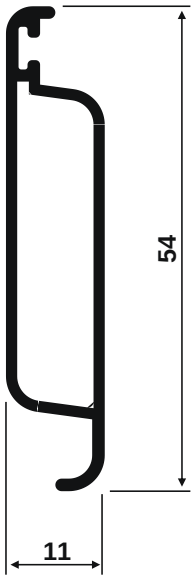



25-548 - 0,281kg/m

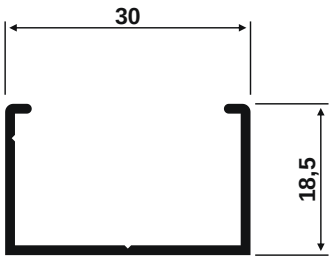



SU-102 - 0,113kg/m

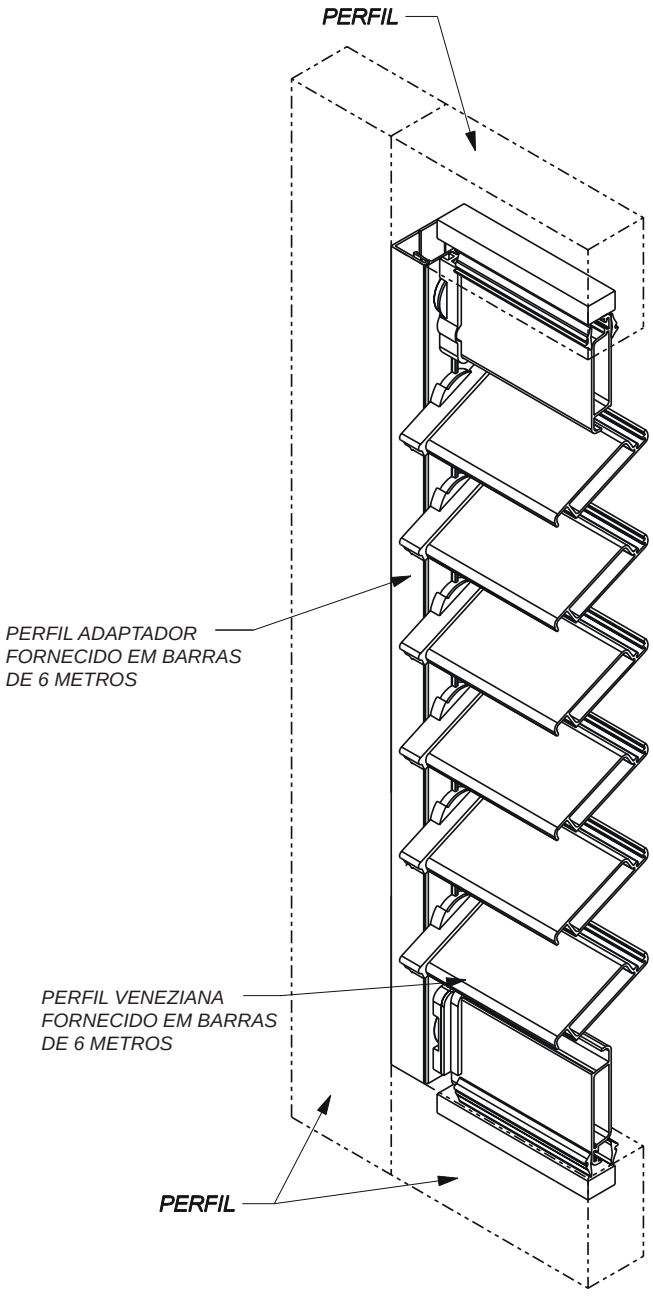
# VENEZIANAS



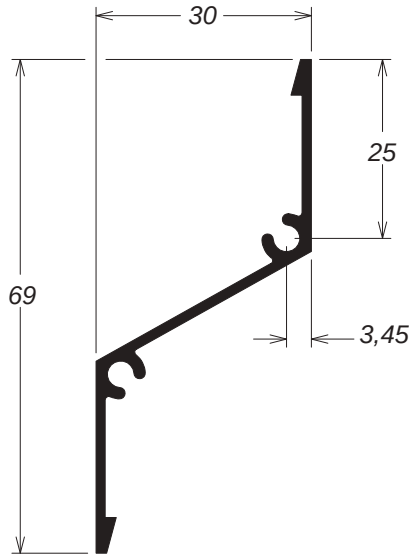

VO-001 - 0,419kg/m



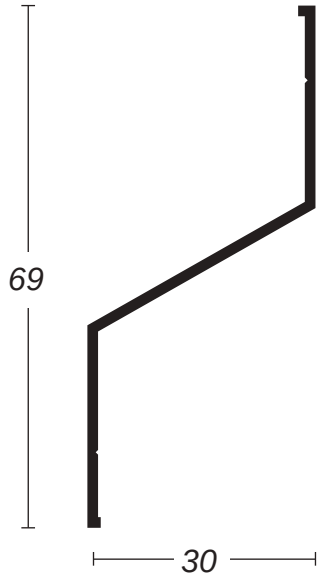

VO-002 - 0,230kg/m



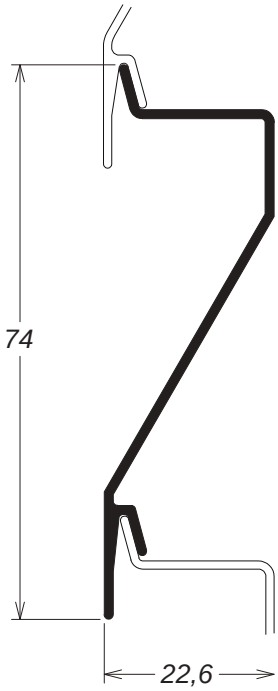

***PERSPECTIVA DA APLICAÇÃO***



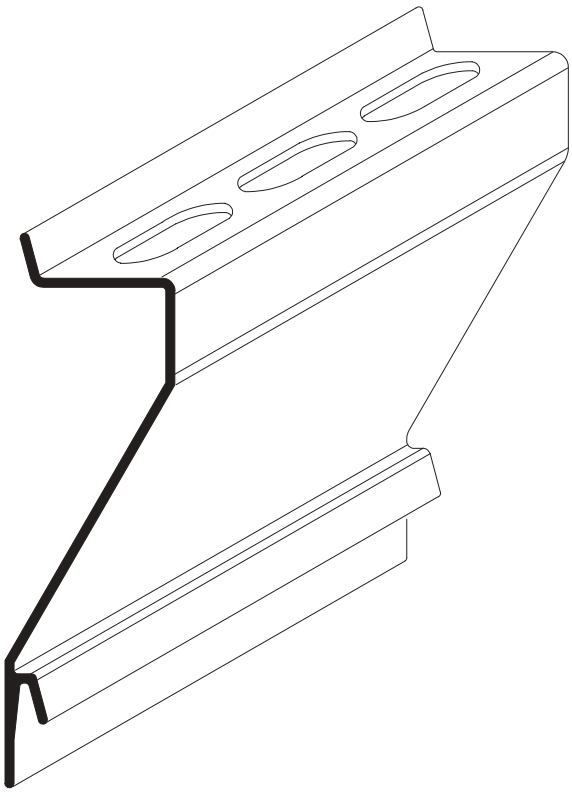

VZ-060 - 0,394kg/m



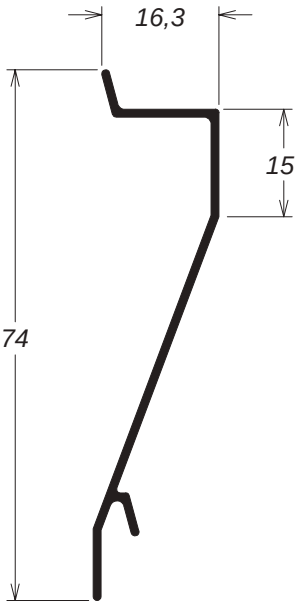

VZ-021- 0,329kg/m



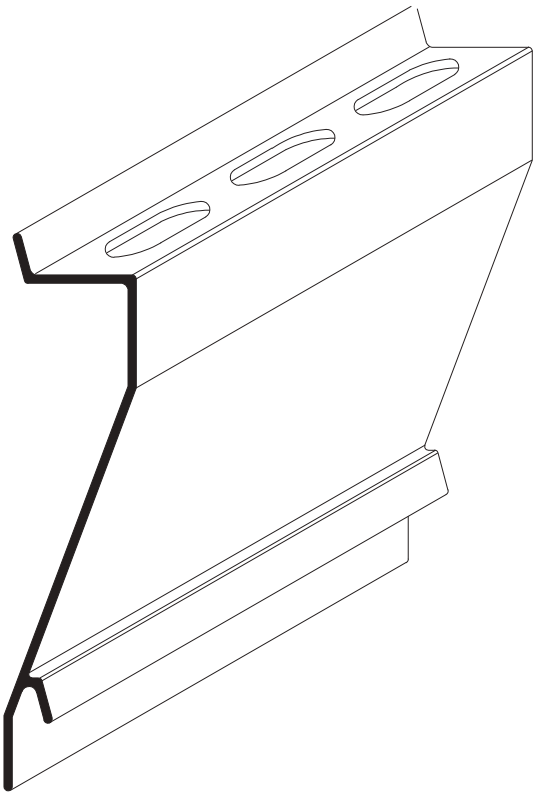

VZ-006 - 0,326kg/m
(Pode ser usado na Linha Gold)



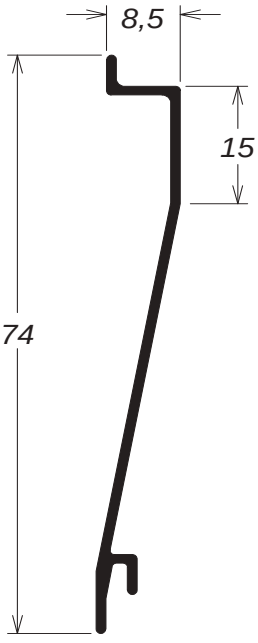
US-285 - 0,326kg/m
(Pode ser usado na Linha Gold)



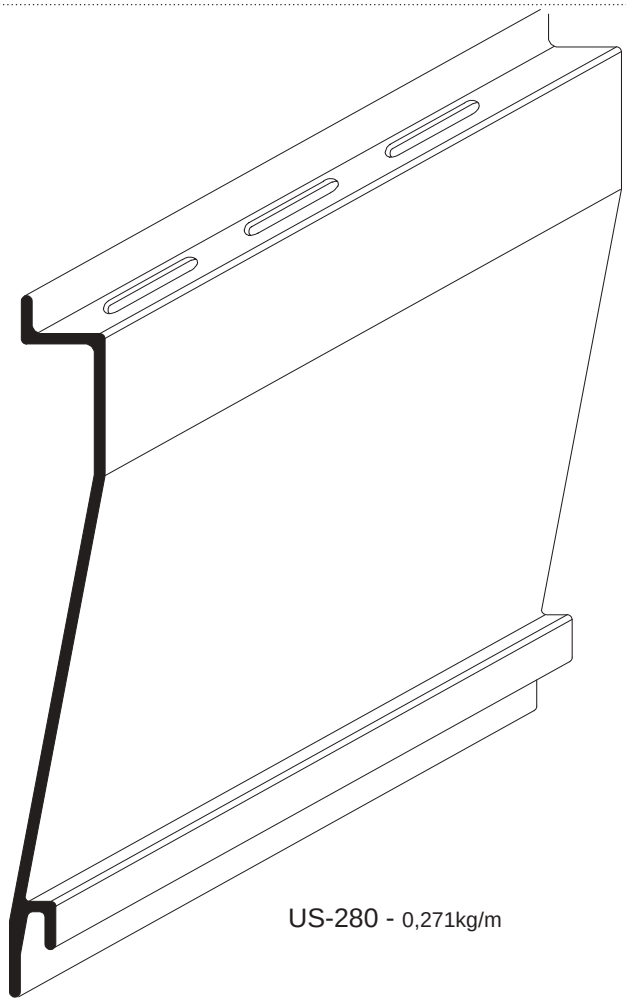

VZ-023 - 0,293kg/m



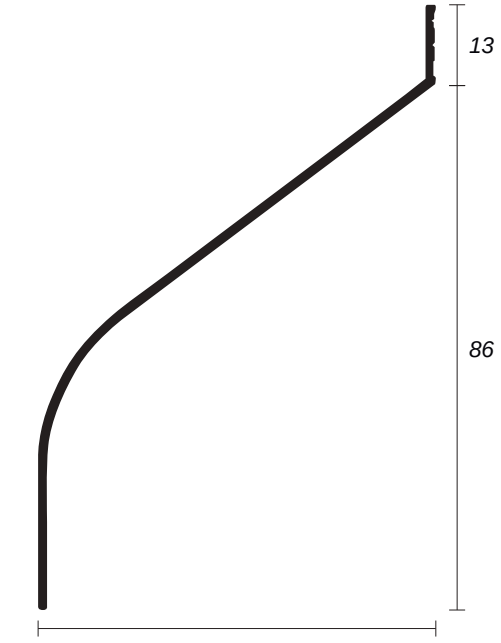
US-282 - 0,293kg/m



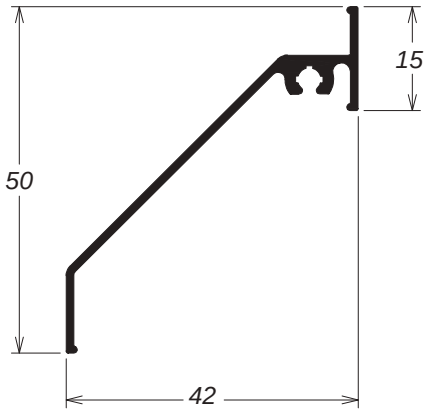

VZ-024 - 0,271kg/m



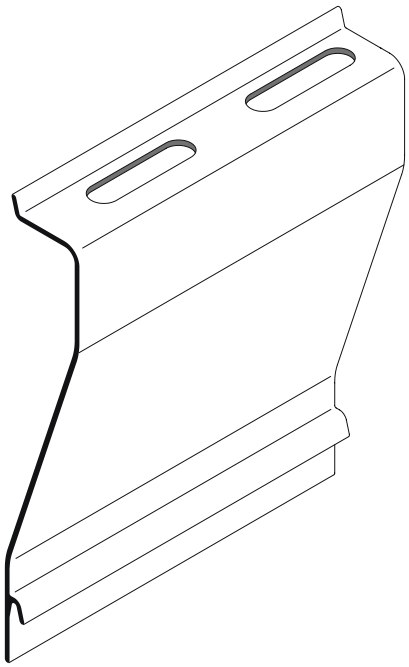
US-280 - 0,271kg/m



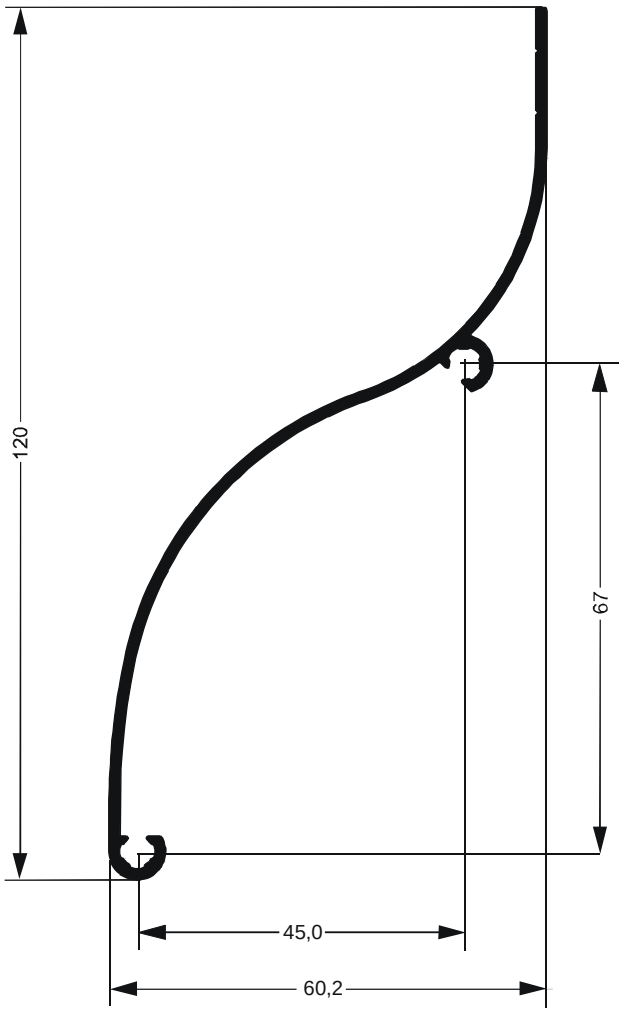

000-322 - 0,517kg/m



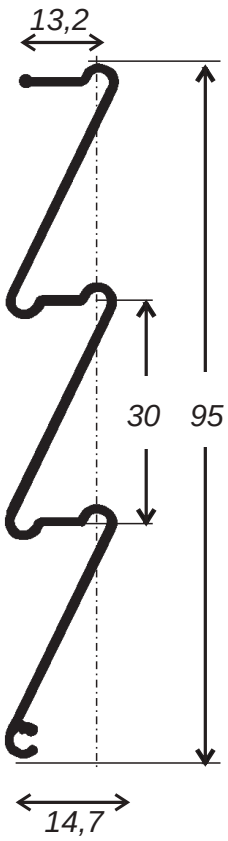

VZ-047 - 0,298kg/m



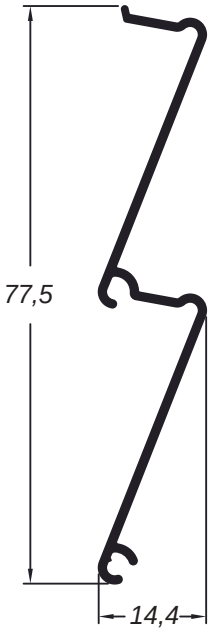
US-621 - 0,259kg/m
(Usado na Linha Inova)



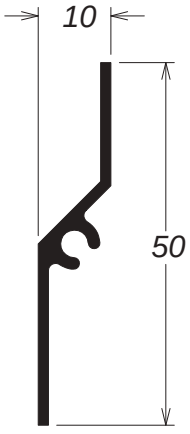

VZ-800 - 0,750kg/m



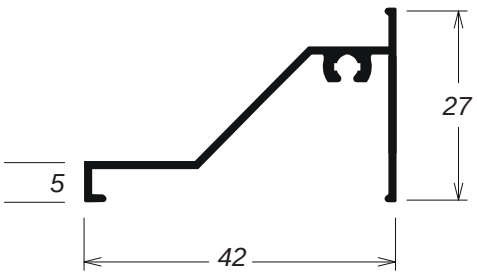

13-1583 - 0,525kg/m



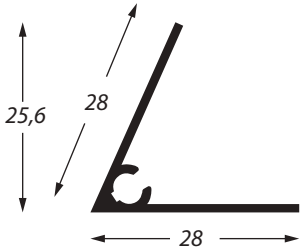

13-1584 - 0,308kg/m




DV-113 - 0,254kg/m



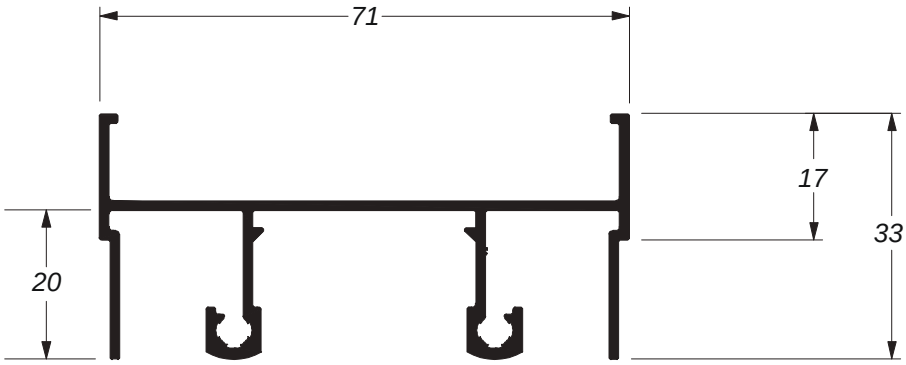

VZ-049 - 0,301kg/m



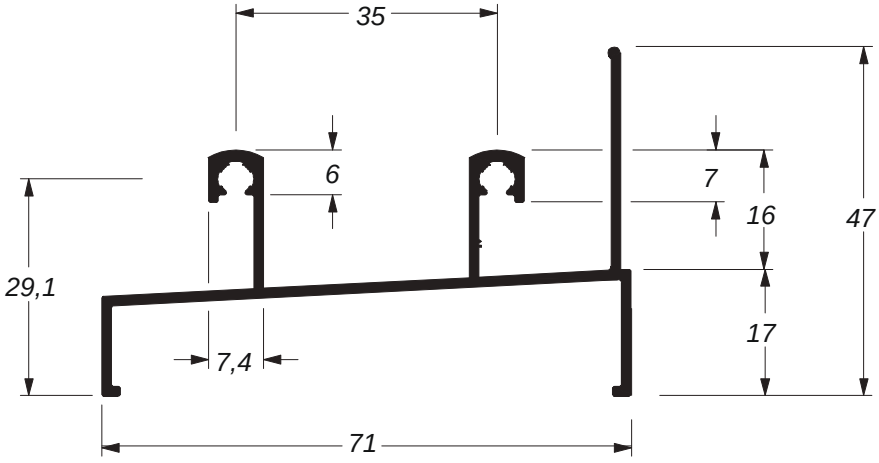

VZ-001 - 0,198kg/m

# LINHA SUPREMA

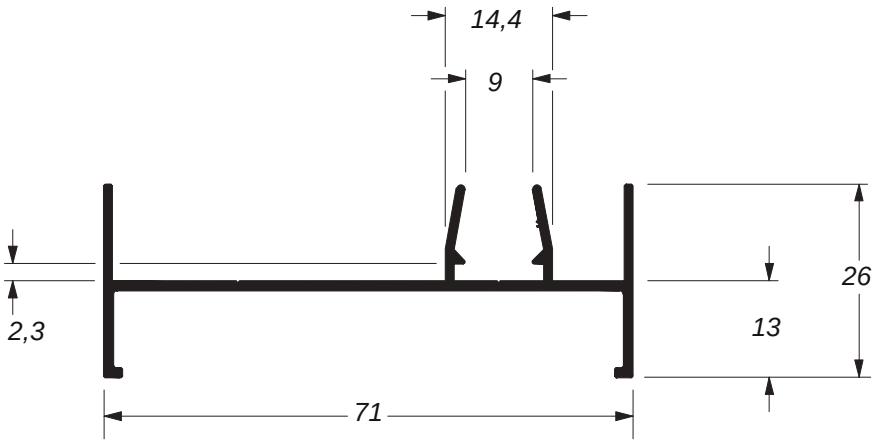
ALPA
ALUMÍNIO



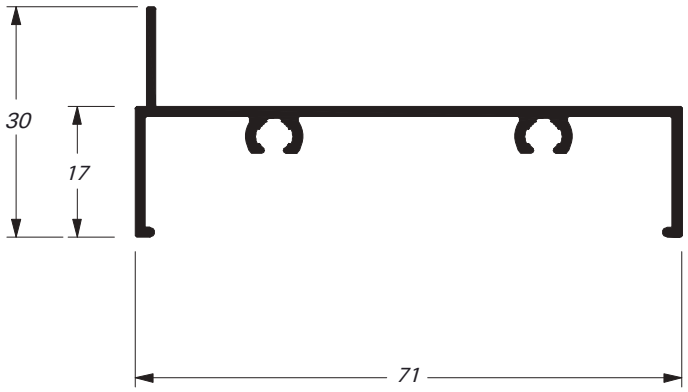

SU-001 - 0,782kg/m



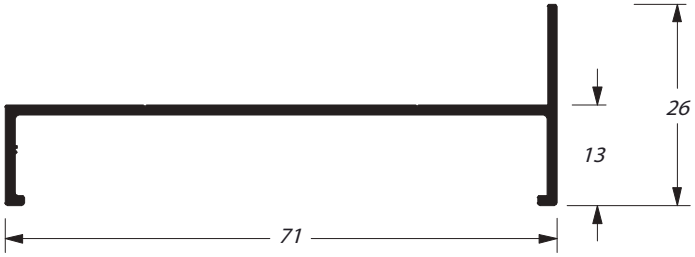

SU-002 - 0,707kg/m



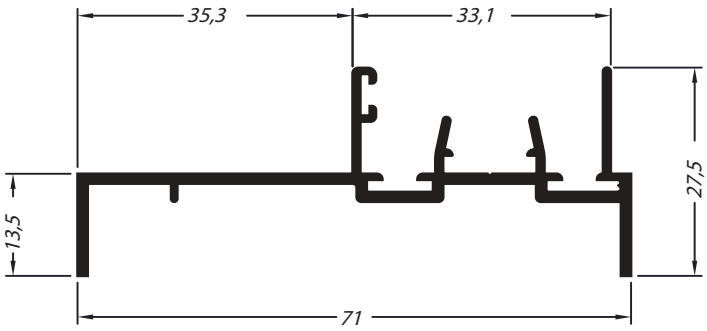

SU-003 - 0,523kg/m



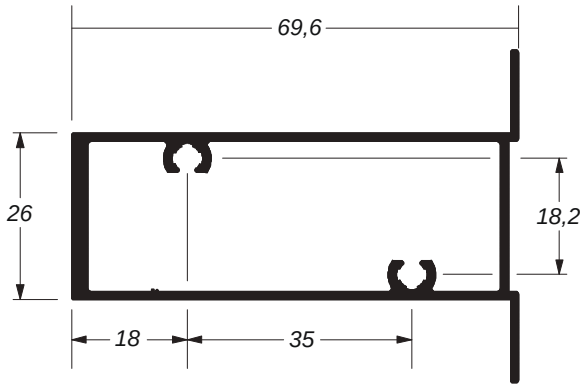

SU-004 - 0,504kg/m



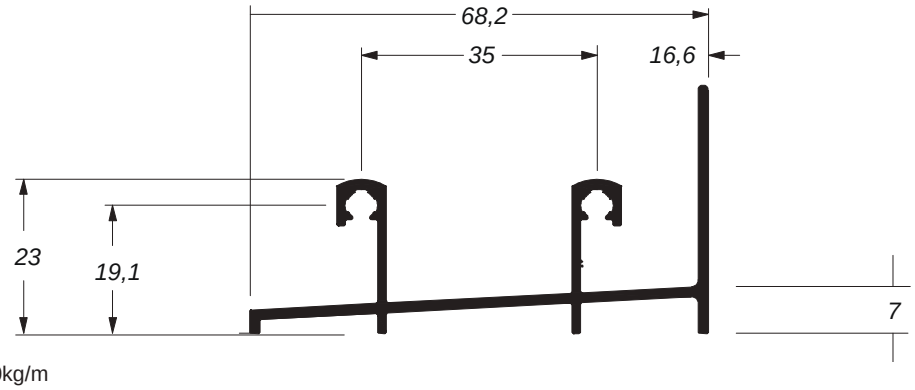

SU-007 - 0,382kg/m



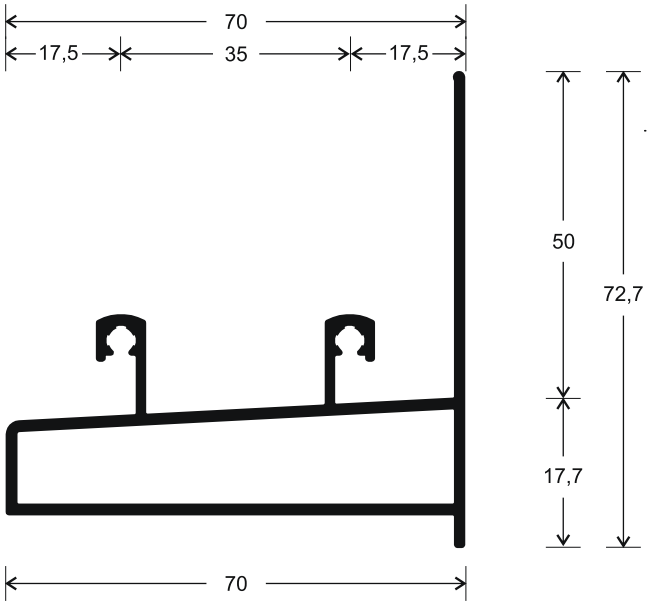

SU-167 - 0,518kg/m



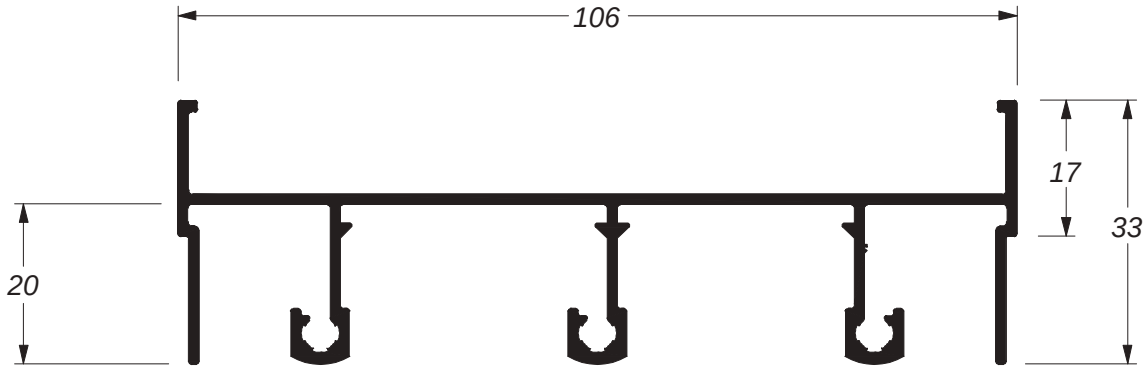

SU-009 - 0,908kg/m



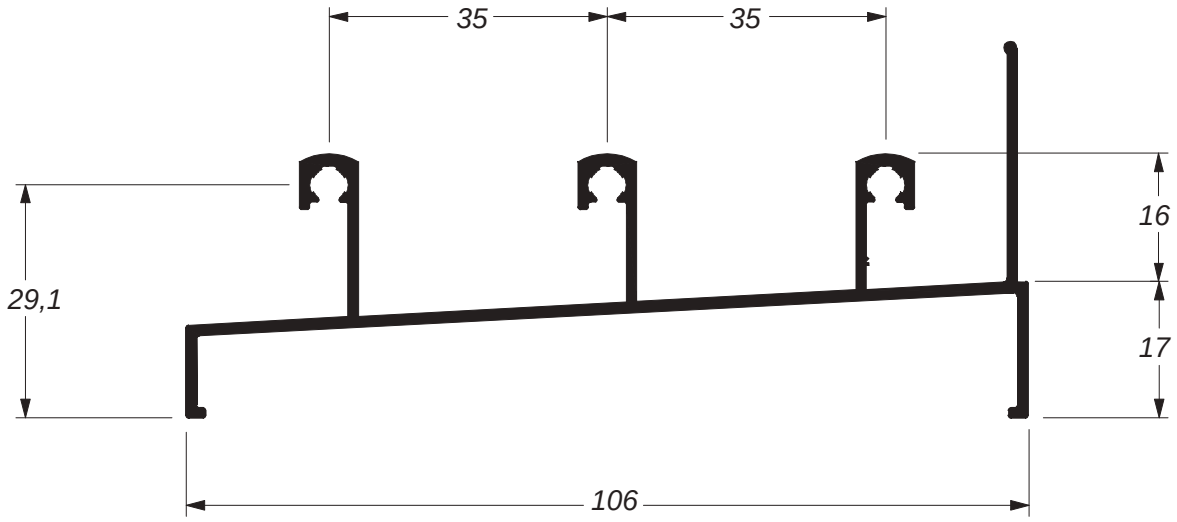

SU-228 - 0,700kg/m



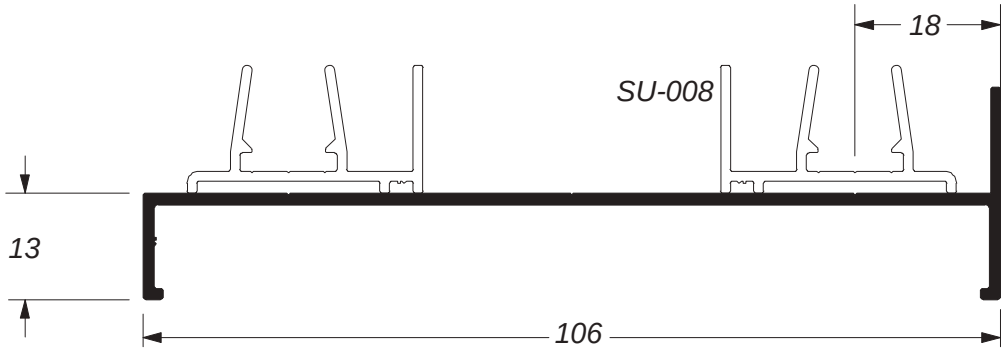

25H-536 - 1,084kg/m



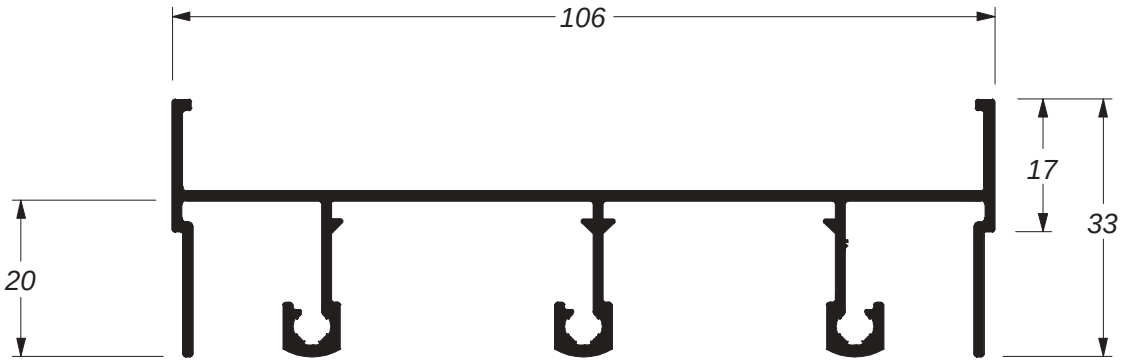

SU-010 - 1,022kg/m



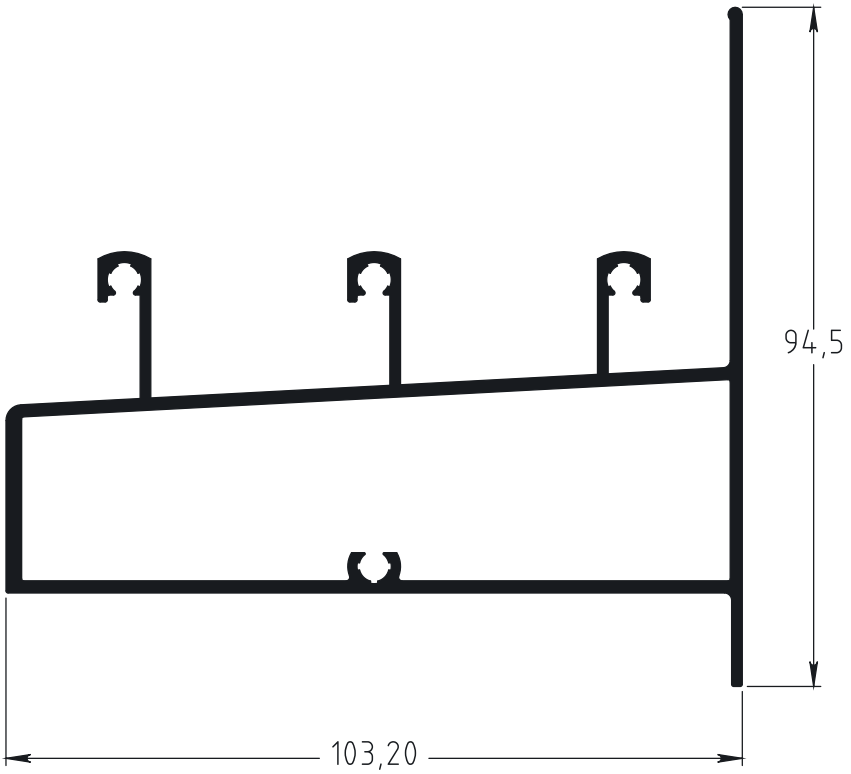

SU-011 - 0,981kg/m




SU-012 - 0,539kg/m



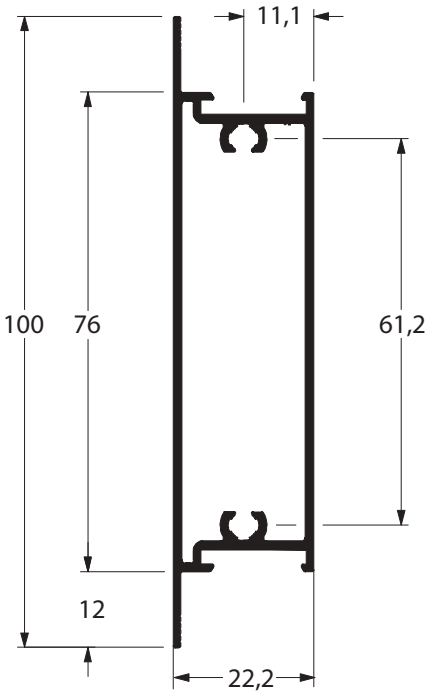

SU-010 - 1,022kg/m



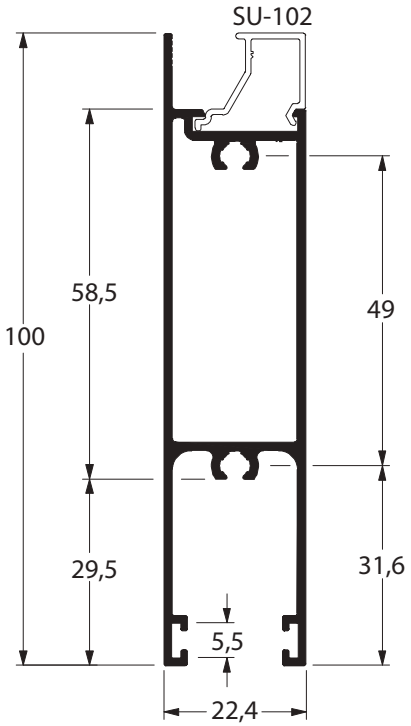

SU-300 - 1,911kg/m



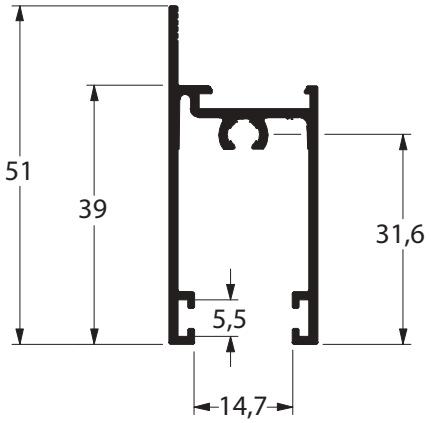

SU-301 - 0,620kg/m



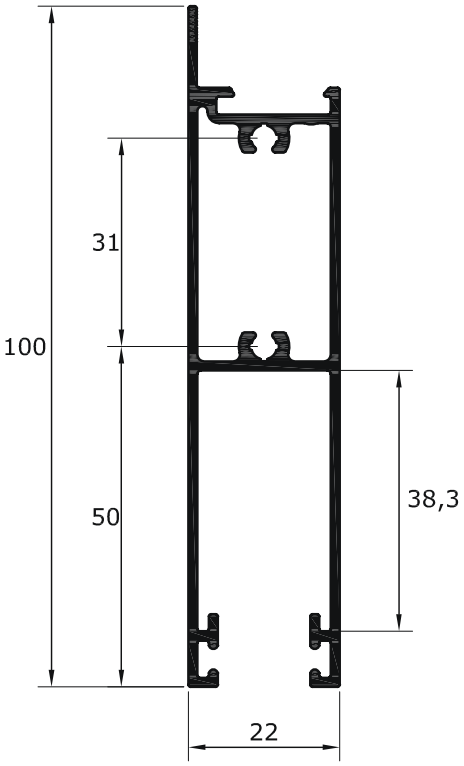

SU-050 - 0,921kg/m



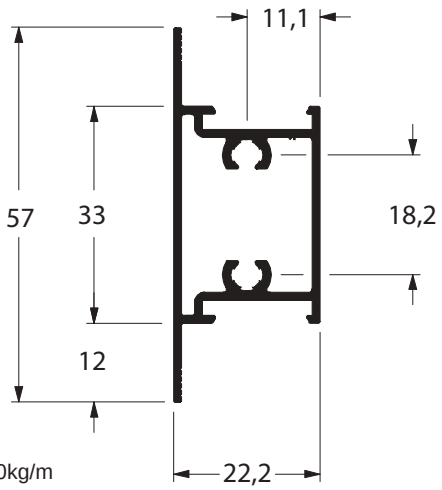

SU-225 - 0,989kg/m



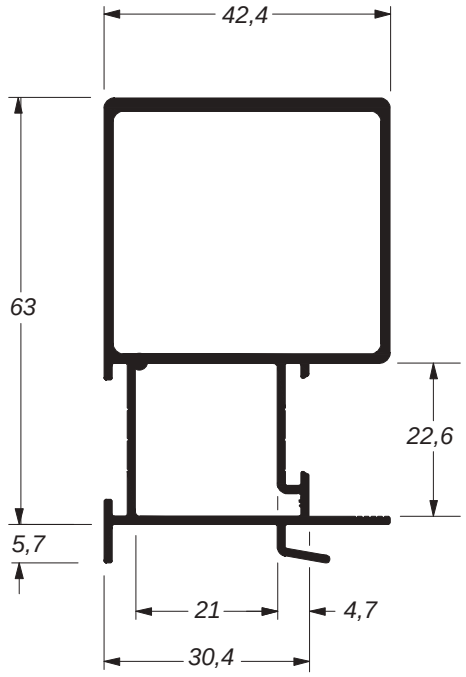

SU-053 - 0,507kg/m



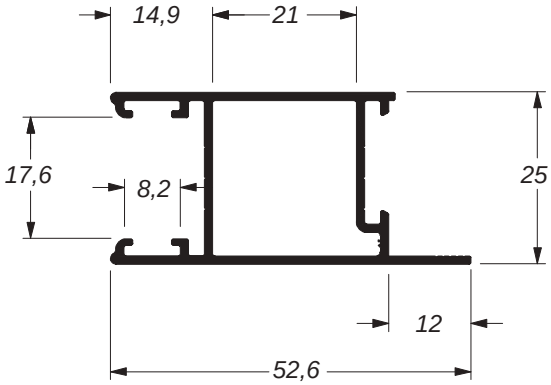

25H-556 - 1,001kg/m
Roldana para esse perfil
(ROL439RA)



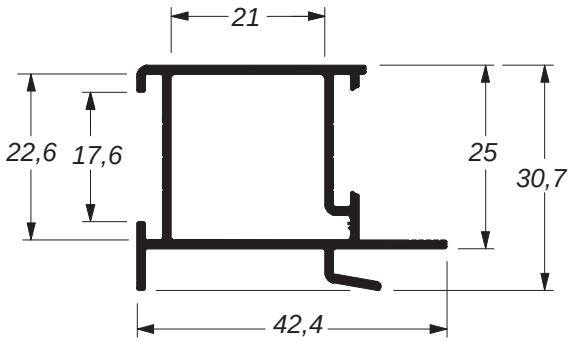

SU-227 - 0,550kg/m



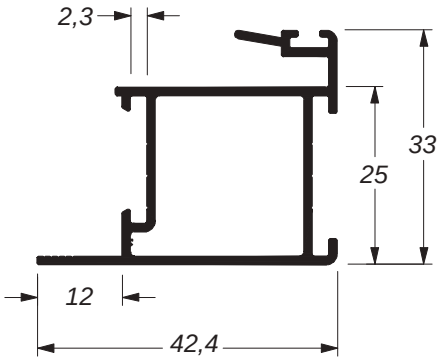

SU-047 - 1,041kg/m
(4,6m)



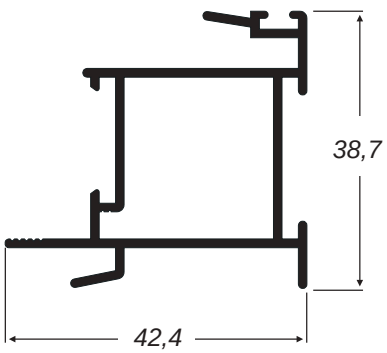

SU-039 - 0,520kg/m



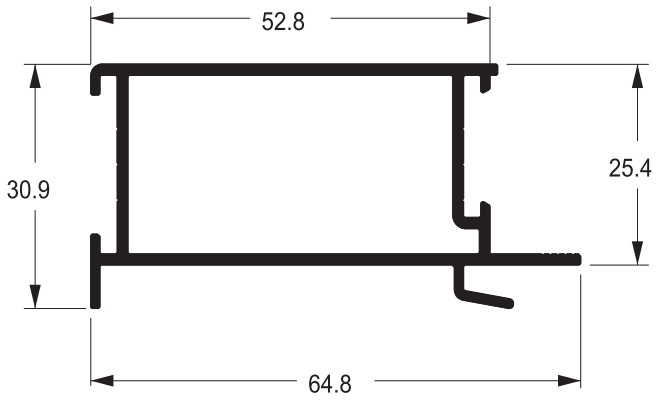

SU-040 - 0,480kg/m



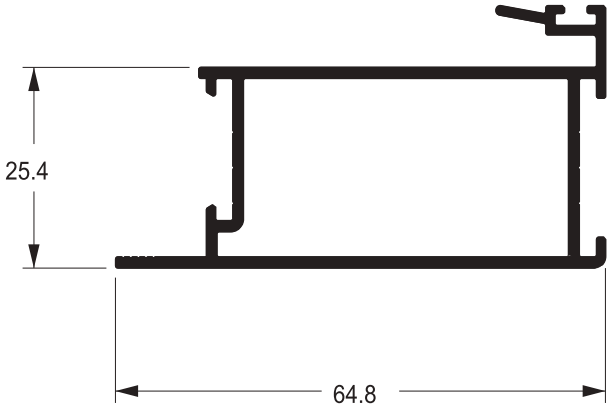

SU-041 - 0,507kg/m



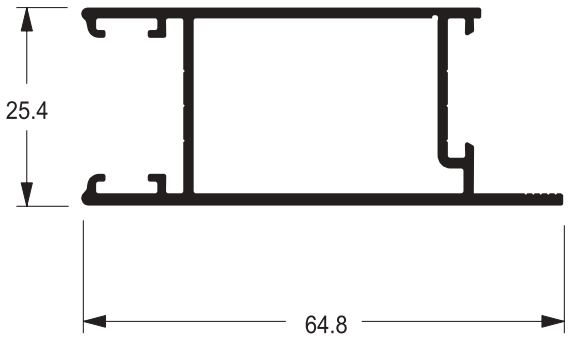

SU-042 - 0,564kg/m



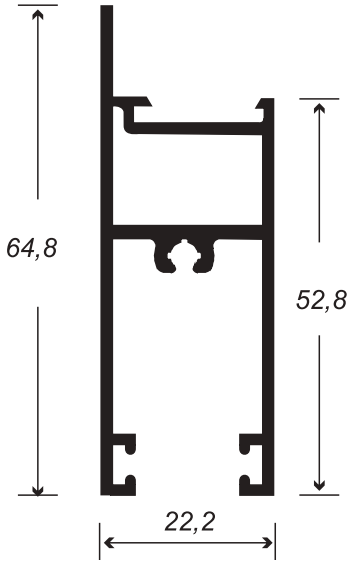

SU-243 - 0,712kg/m



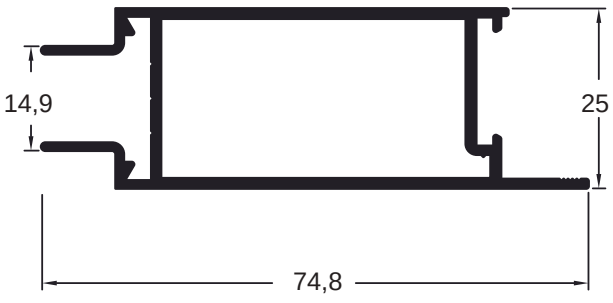

SU-242 - 0,743kg/m



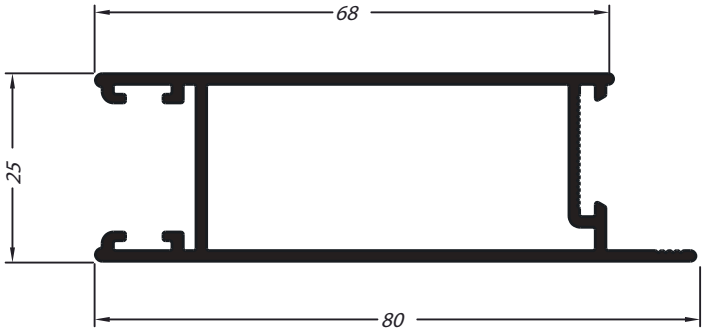

SU-245 - 0,688kg/m



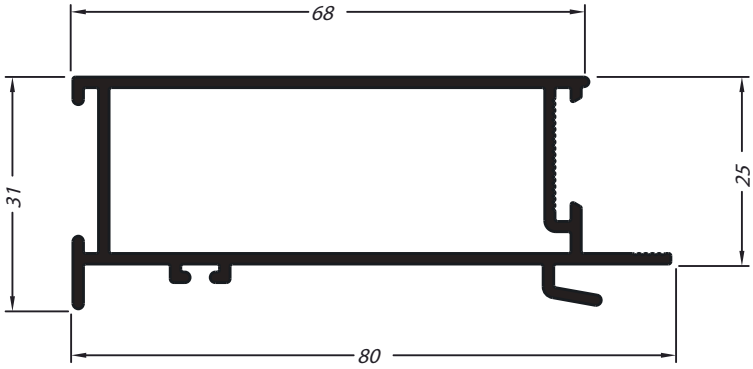

SU-246 - 0,642kg/m



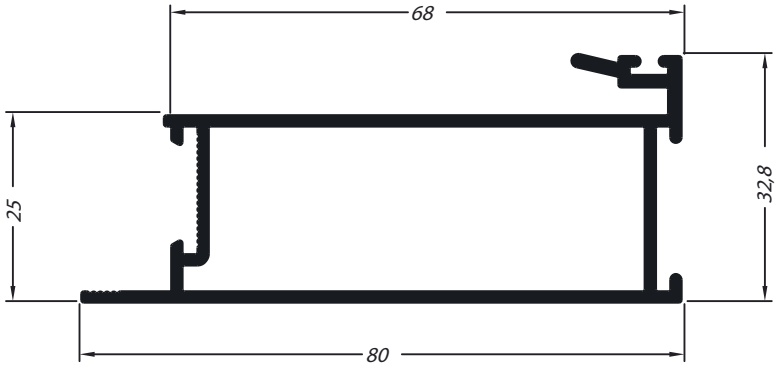

SU-244 - 0,716kg/m



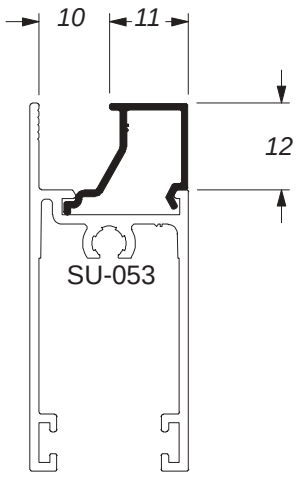

SU-385 - 0,808kg/m



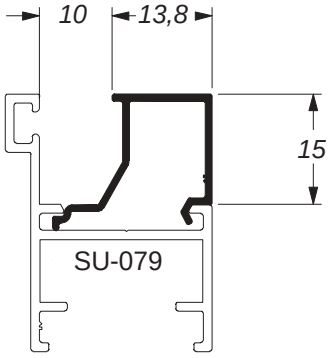

SU-383 - 0,860kg/m



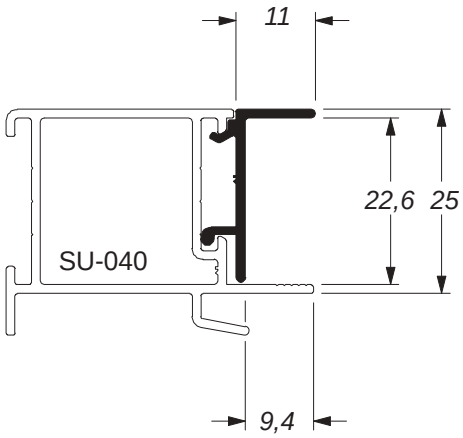

SU-382 - 0,882kg/m



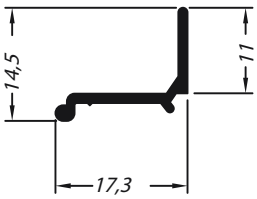

SU-102 - 0,111kg/m



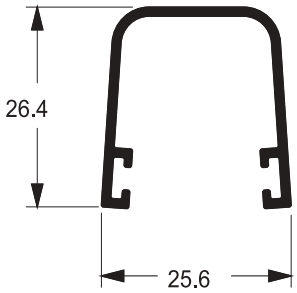

SU-103 - 0,140kg/m



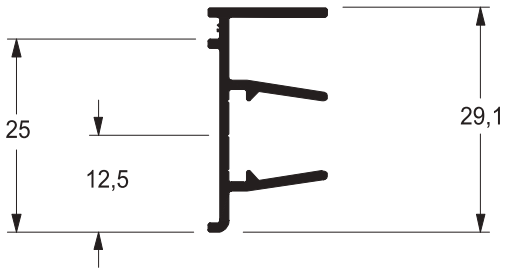

SU-108 - 0,146kg/m



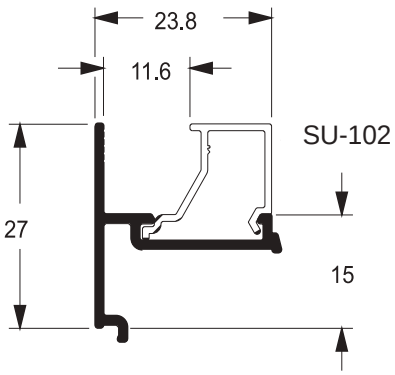

SU-109 - 0,101kg/m



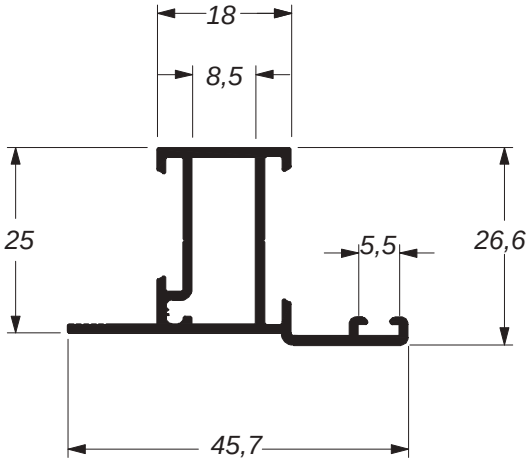

SU-107 - 0,271kg/m



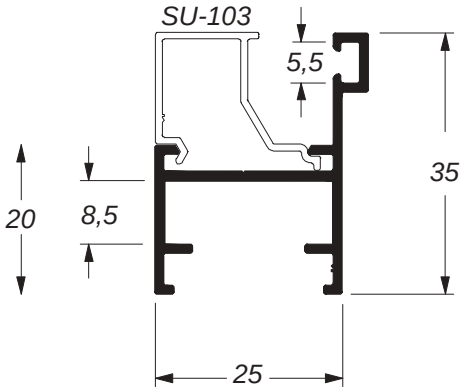

SU-008 - 0,244kg/m



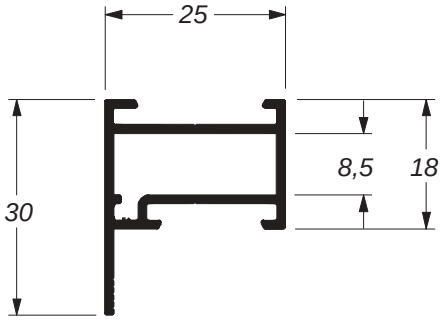

SU-292 - 0,220kg/m



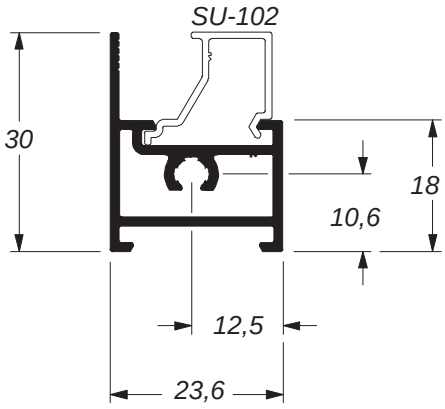

SU-200 - 0,444kg/m



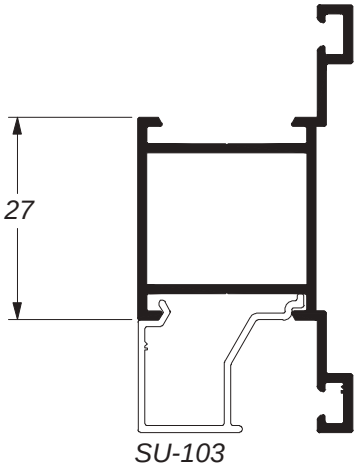

SU-079 - 0,341kg/m



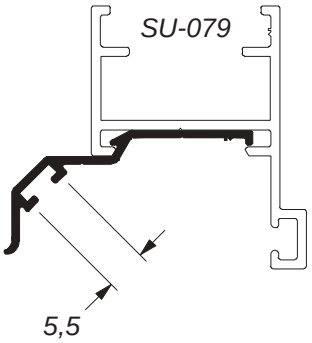

SU-080 - 0,360kg/m



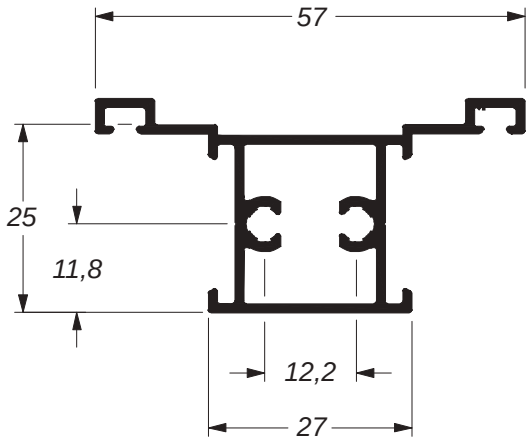

SU-082 - 0,382kg/m



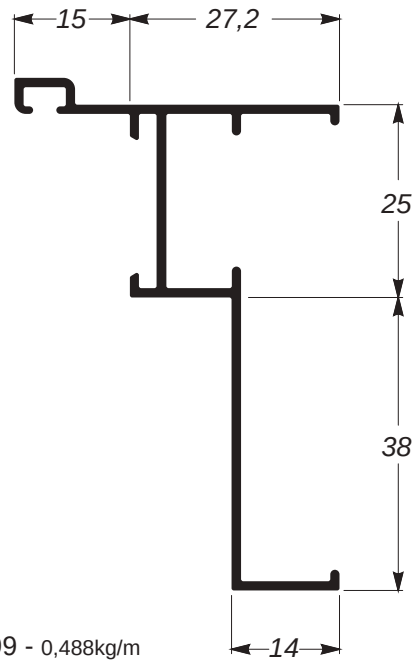

SU-085 - 0,501kg/m



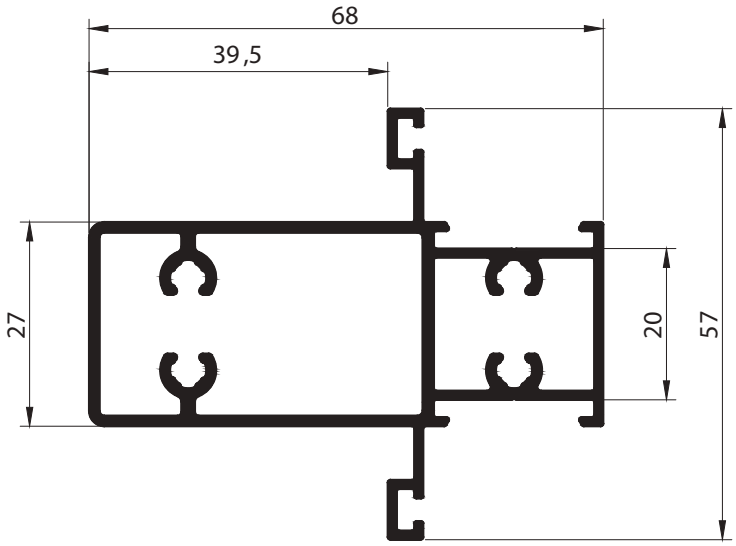

SU-083 - 0,144kg/m



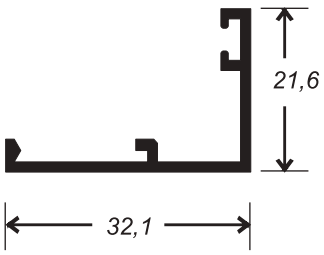

SU-086 - 0,592kg/m



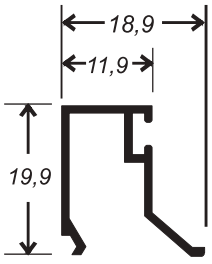

LCB-399 - 0,488kg/m



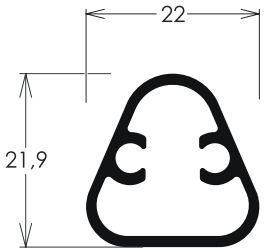

EL-002 - 1,216kg/m



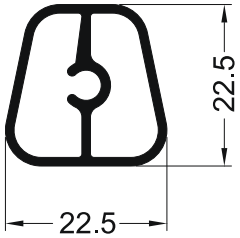

CB-273 - 0,244kg/m



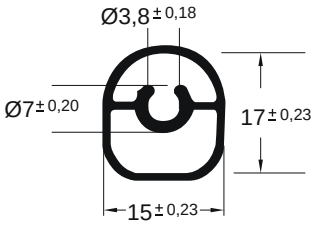

CB-276 - 0,163kg/m



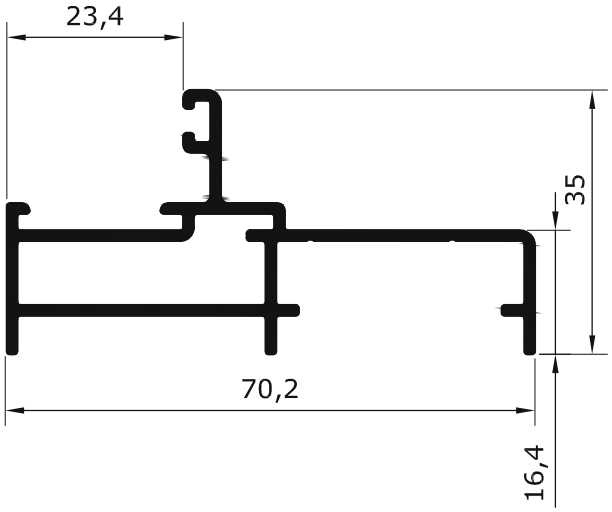

CG-190 - 0,290kg/m




MO-040 - 0,332kg/m




MO-041 - 0,219kg/m

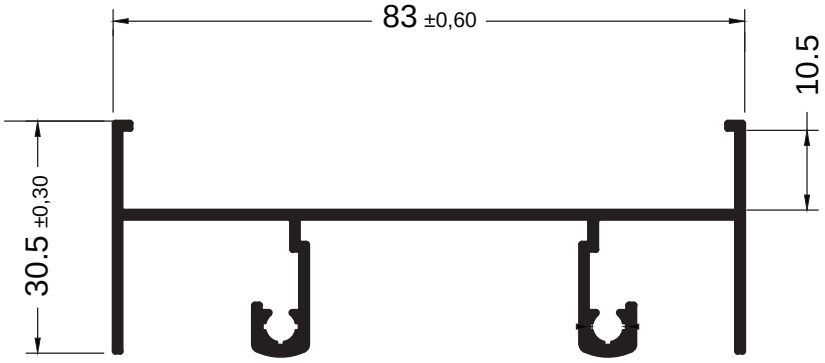



SU-20708 - 0,742kg/m

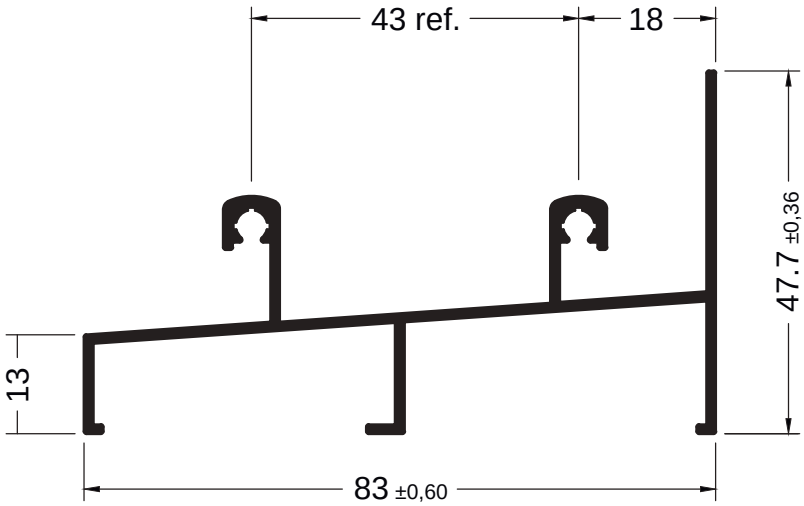
# LINHA VISIONE

**A linha Visione foi projetada para ampliar o campo de visão do seu projeto . Pois a montagem dos vidros são feitas através de colagem com fita dupla face . Deixando oculto os perfis mantendo a parte externa um design minimalista .**

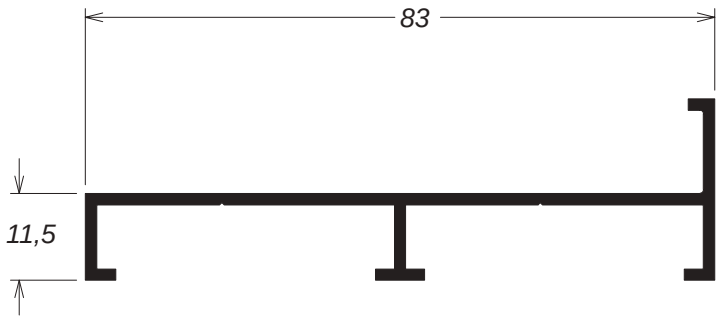
ALPA
ALUMÍNIO



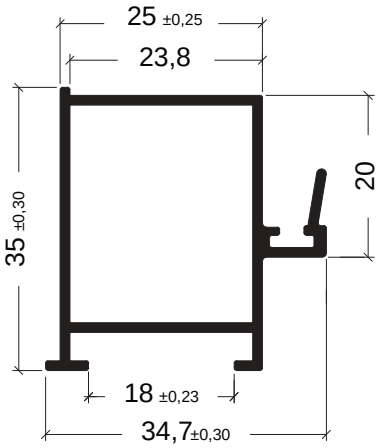

VI-001 - 0,705kg/m



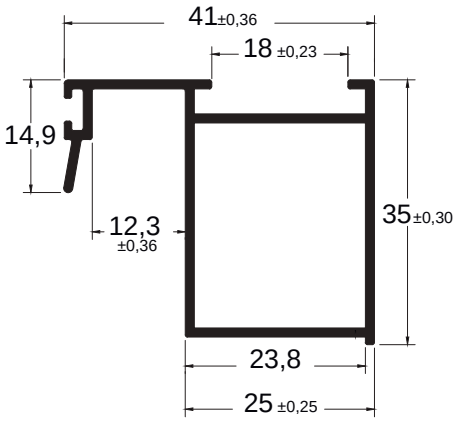

VI-002 - 0,737kg/m



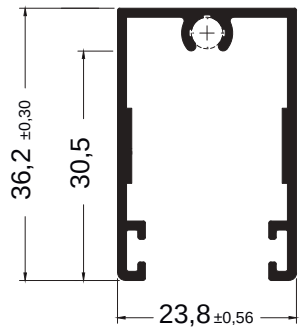

30-089 - 0,558kg/m



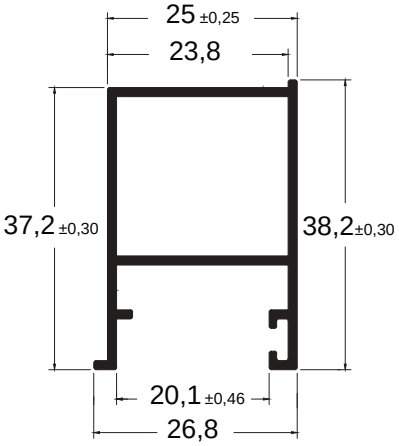

VI-041 - 0,464kg/m



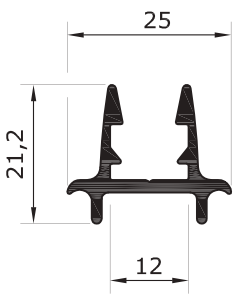

VI-040 - 0,497kg/m




VI-053 - 0,420kg/m



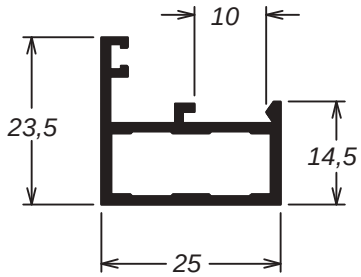

VI-039 - 0,427kg/m



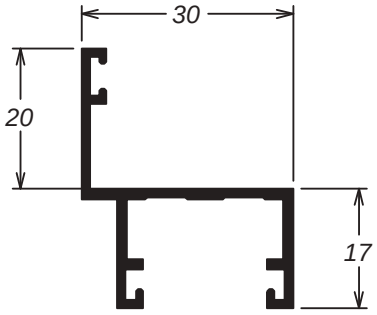

EXL-506 - 0,303kg/m

# LINHA 25

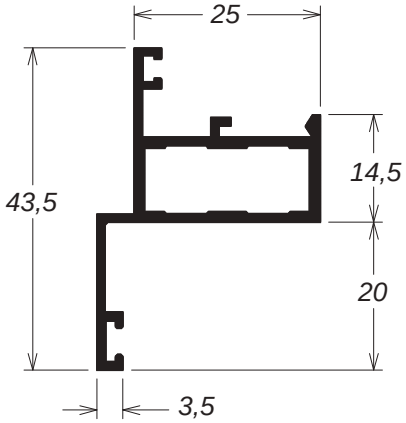
ALPA
ALUMÍNIO



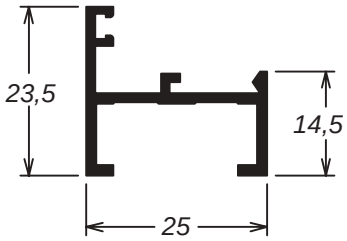

25-001 - 0,322kg/m



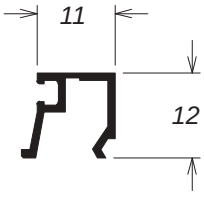

25-002 - 0,351kg/m



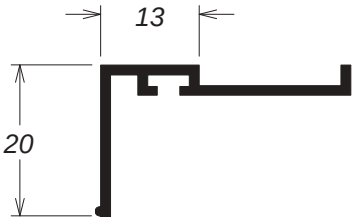

25-005 - 0,422kg/m



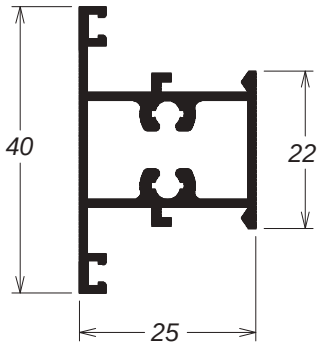

25-027 - 0,271kg/m



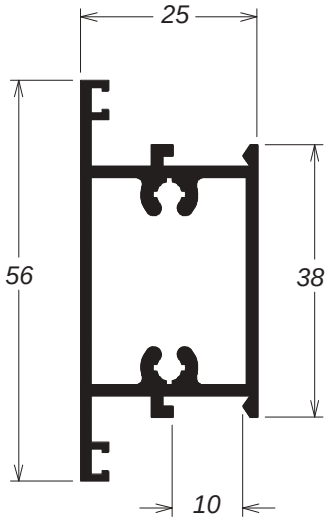

BG-001 - 0,108kg/m



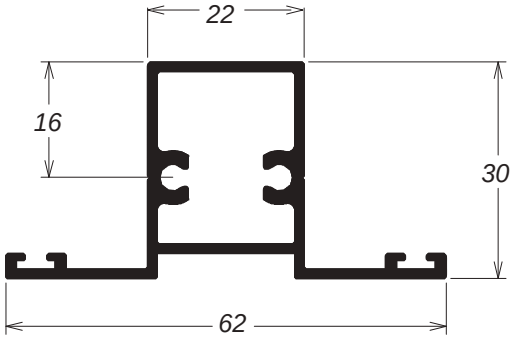

CL-015 - 0,210kg/m



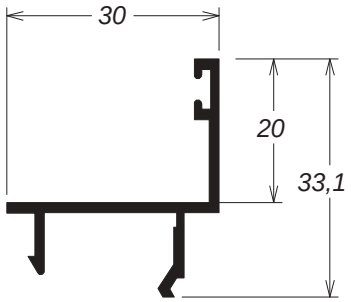

25-026 - 0,488kg/m



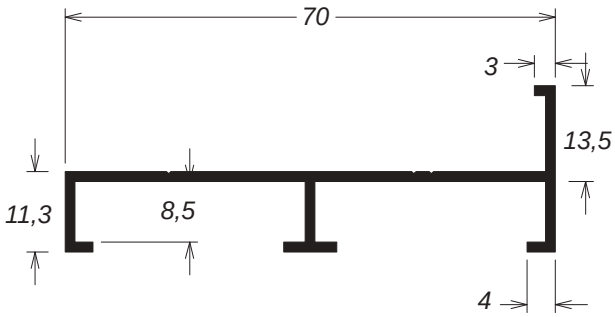

25-508 - 0,756kg/m



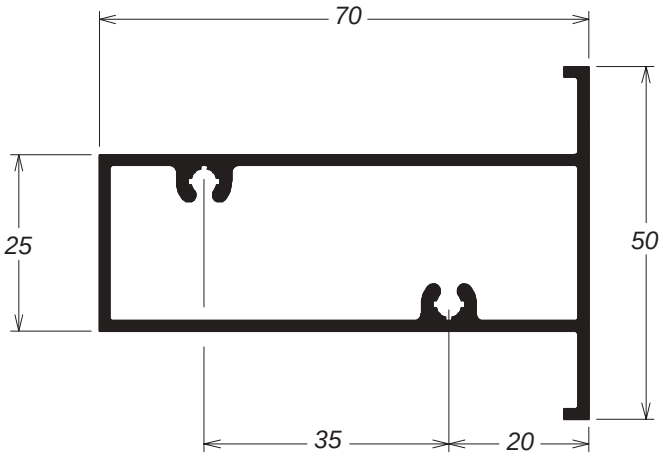

25-669 - 0,634kg/m



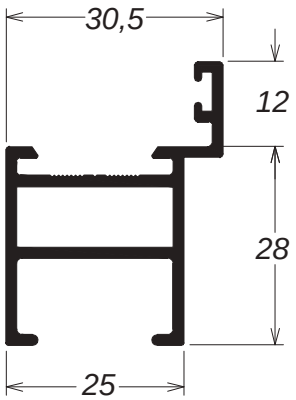

25-554 - 0,290kg/m



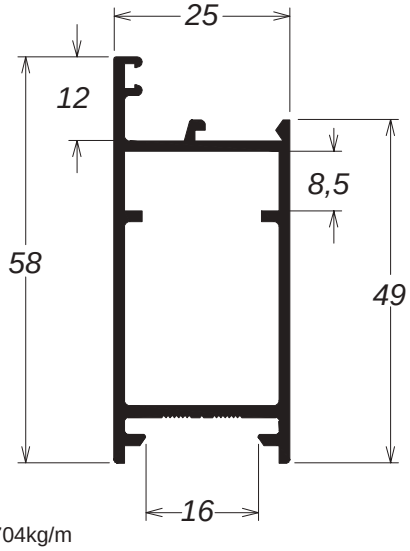

25-514 - 0,472kg/m



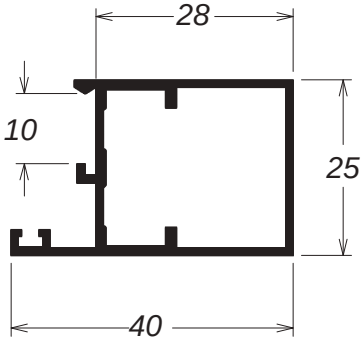

FC-070 - 0,984kg/m



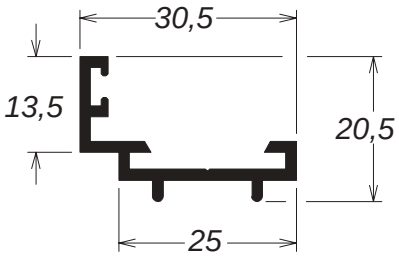

25-540 - 0,560kg/m



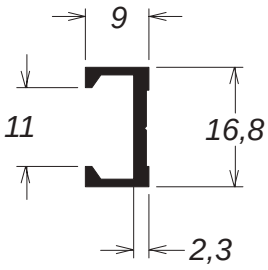

25-542 - 0,704kg/m



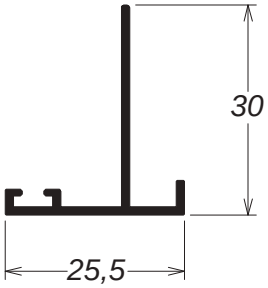

25-016 - 0,428kg/m




25-548 - 0,281kg/m




CL-050 - 0,154kg/m




25-677 - 0,211kg/m

# LINHA 30

ALPA
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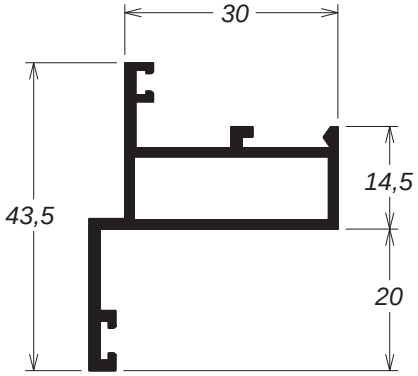
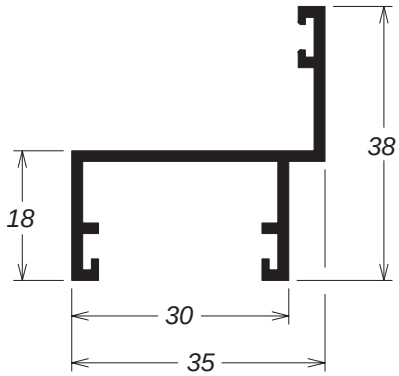
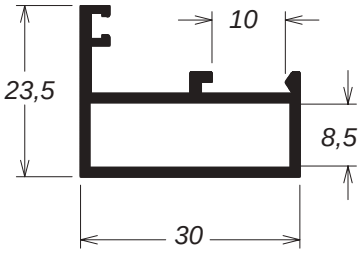


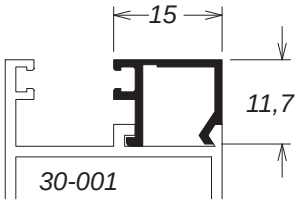

30-049 - 0,533kg/m



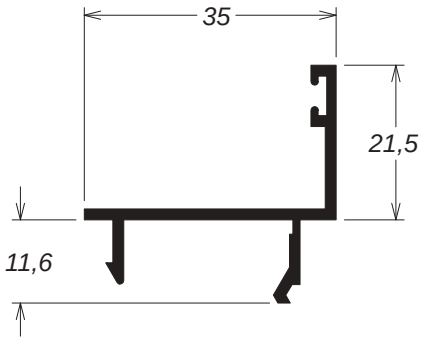

30-054 - 0,435kg/m



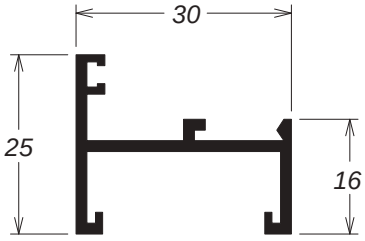

30-051 - 0,408kg/m



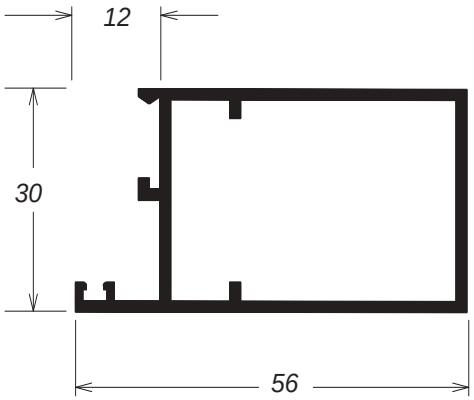

BG-010 - 0,115kg/m



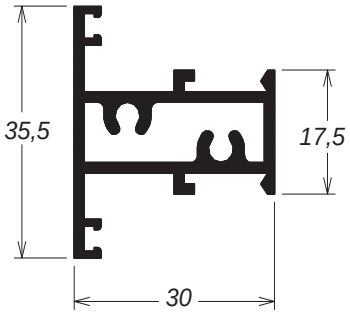

30-056 - 0,340kg/m



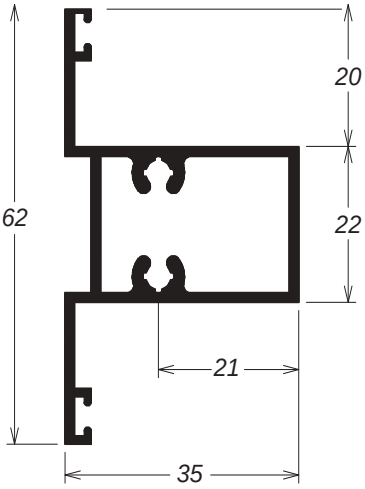

30-052 - 0,336kg/m



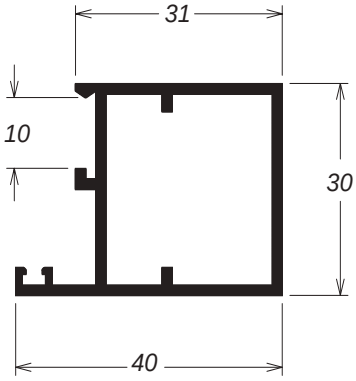

30-008 - 0,692kg/m



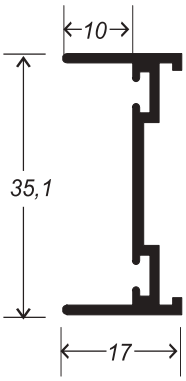

30-036 - 0,590kg/m



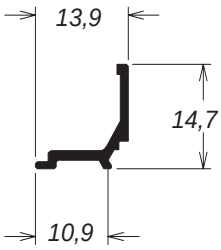

30-235 - 0,726kg/m



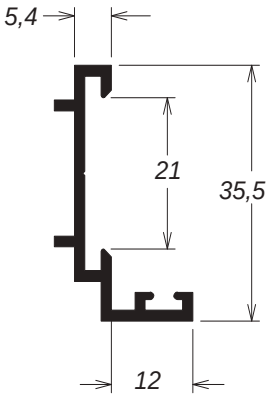

30-003 - 0,560kg/m



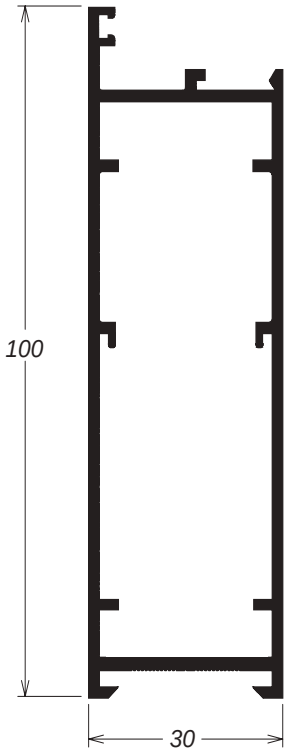

30-019 - 0,295kg/m



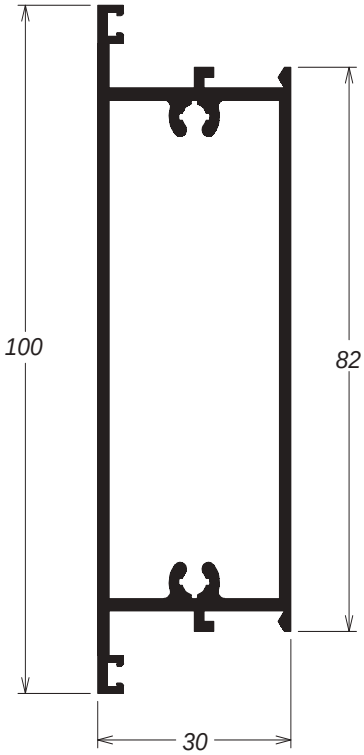

ME-114 - 0,095kg/m



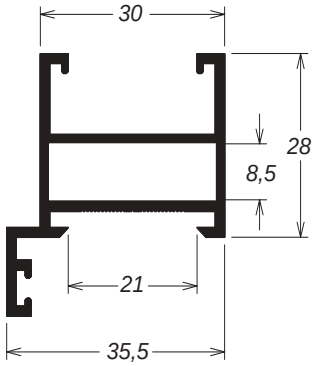

30-034 - 0,297kg/m



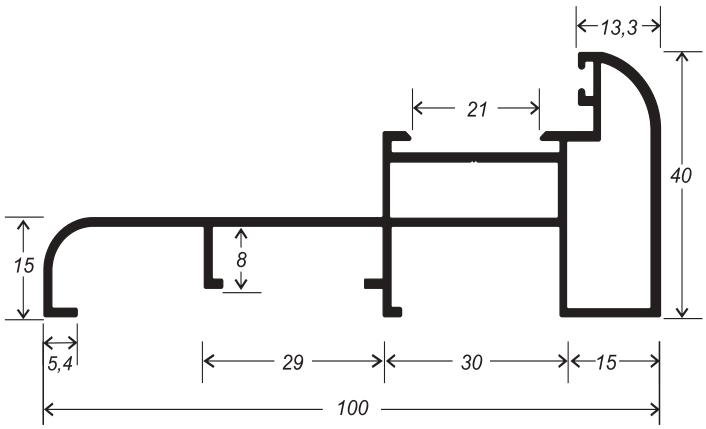

30-082 - 1,195kg/m



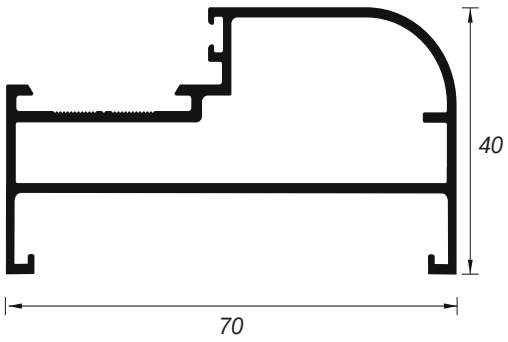

30-030 - 1,318kg/m



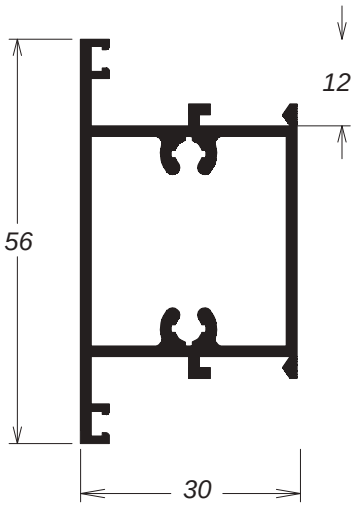

30-023 - 0,615kg/m



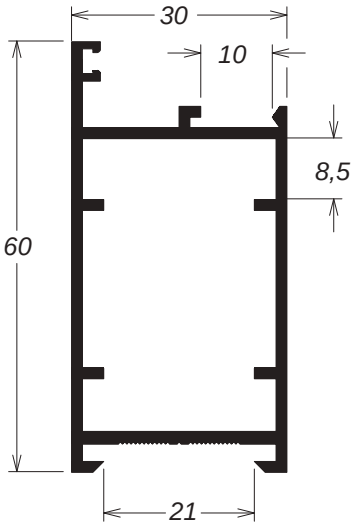

30-020 - 1,000kg/m



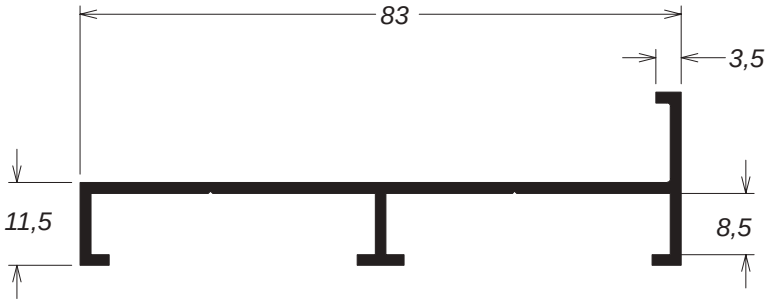

781341 - 0,966kg/m



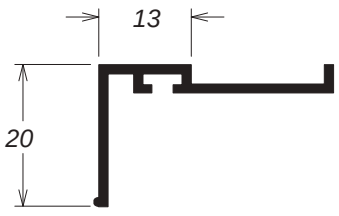

30-025 - 0,793kg/m



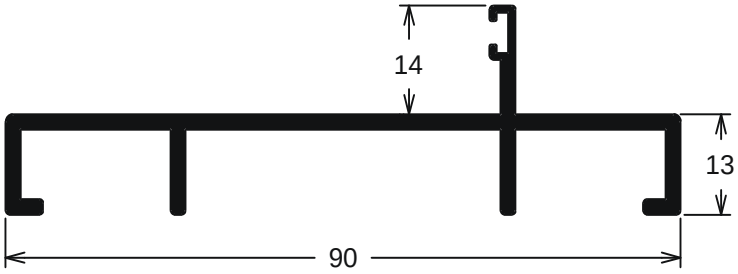

30-026 - 0,780kg/m



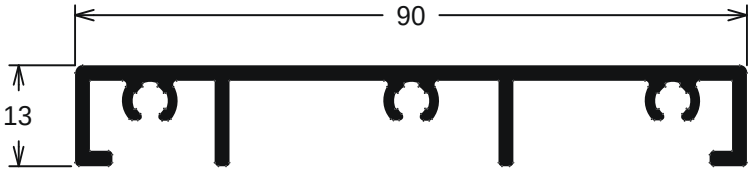

30-089 - 0,558kg/m



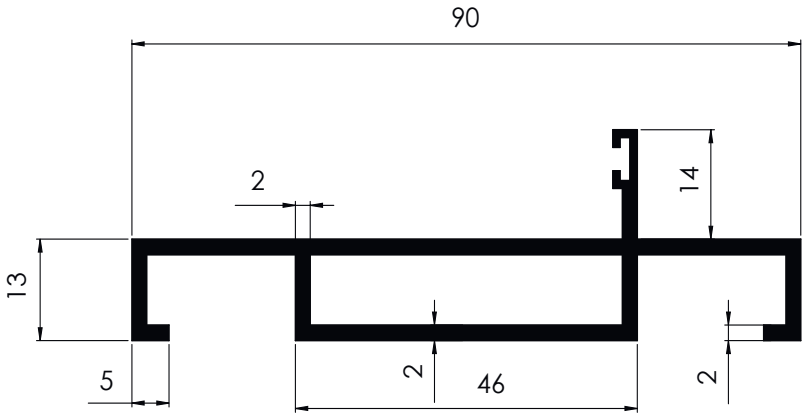

CL-015 - 0,210kg/m



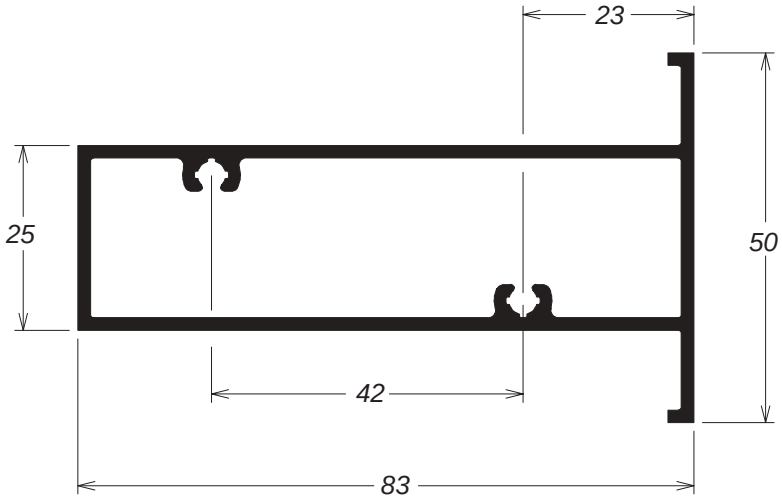

781331 - 0,830kg/m



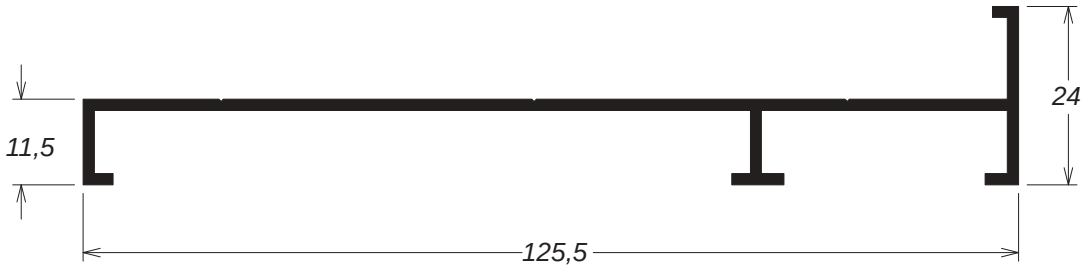

781332 - 0,897kg/m



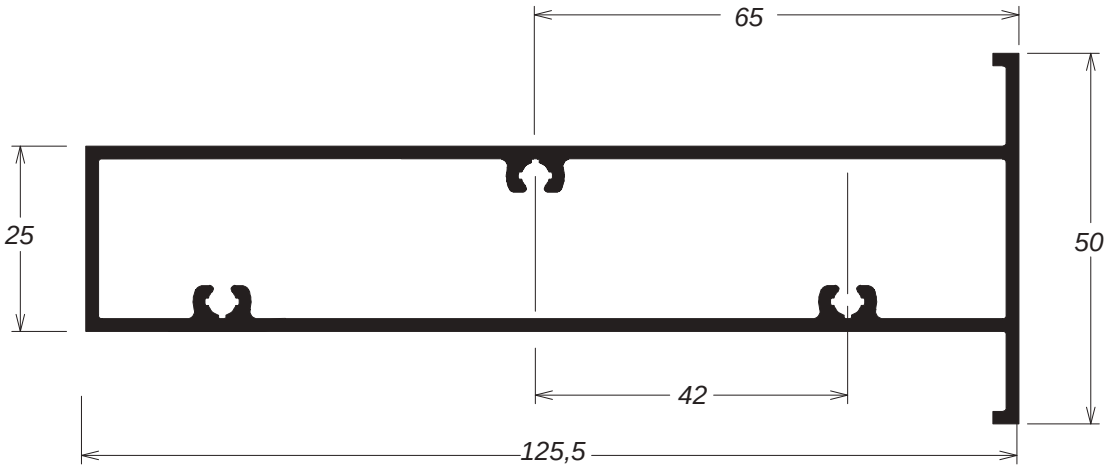

781333 - 1,060kg/m




30-067 - 1,206kg/m




30-253 - 0,734kg/m




30-312 - 1,504kg/m

# LINHA 42

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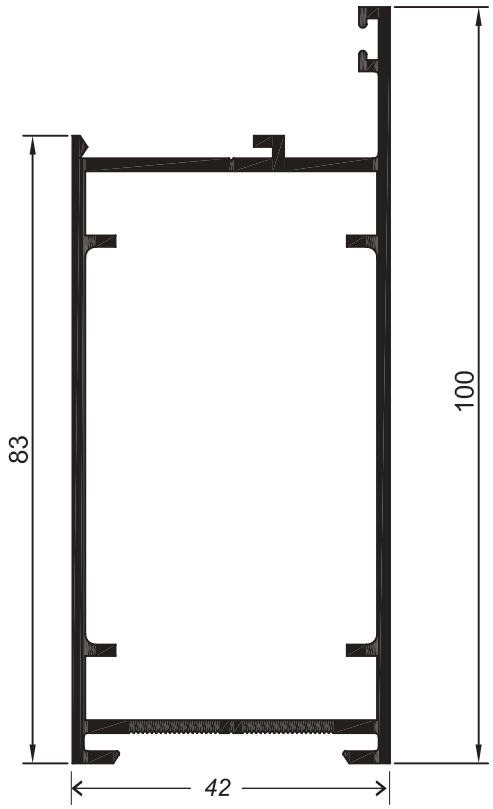
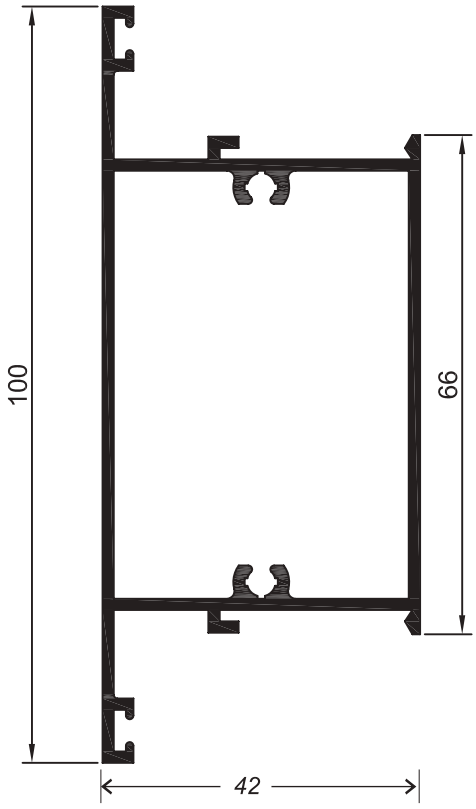
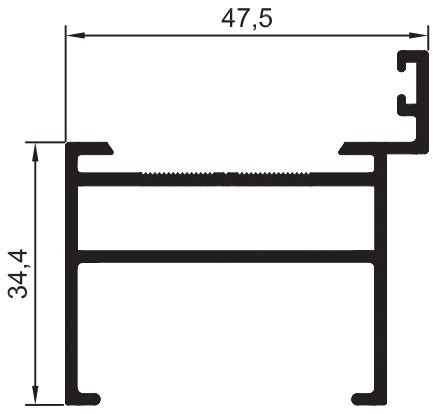


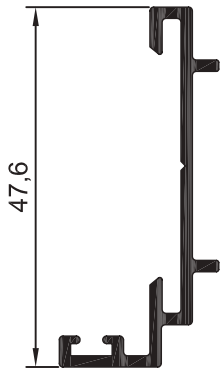

42-032 - 1,385kg/m



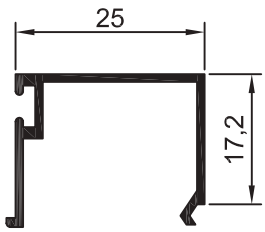

42-007 - 1,275kg/m



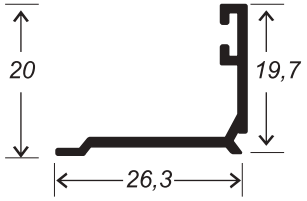

42-012 - 0,870kg/m




42-014 - 0,380kg/m




BG-021 - 0,217kg/m




BG-036 - 0,166kg/m

# PELE DE VIDRO PVII

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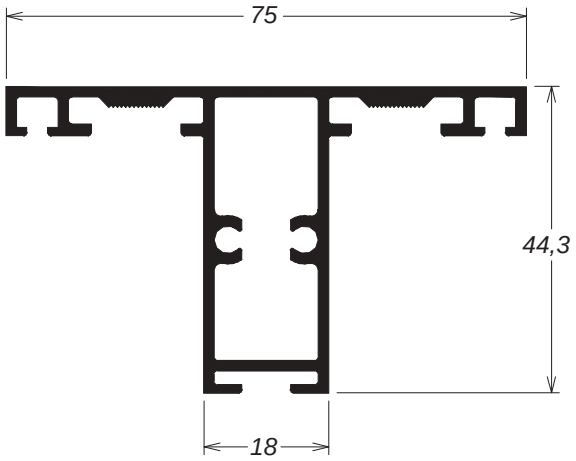
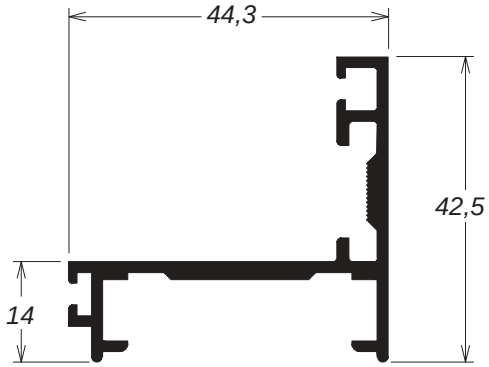
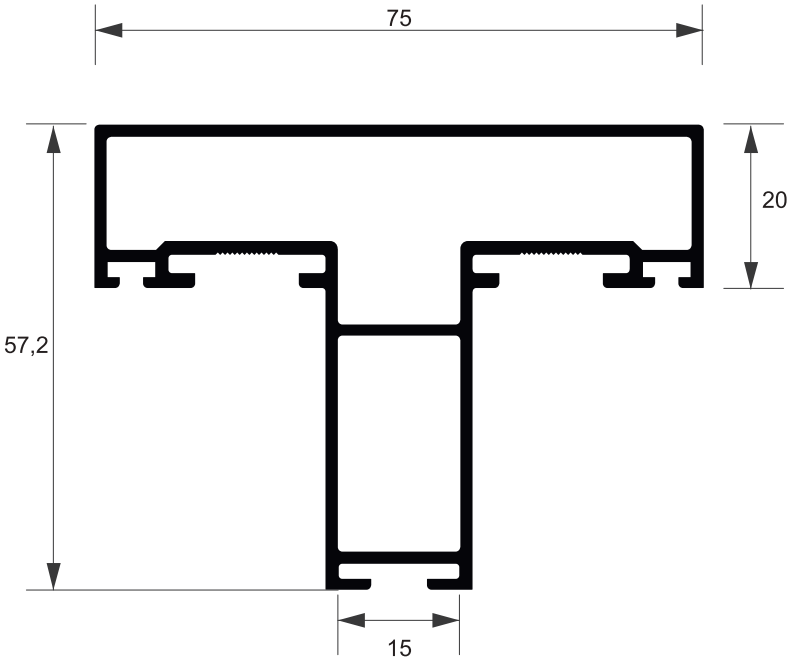


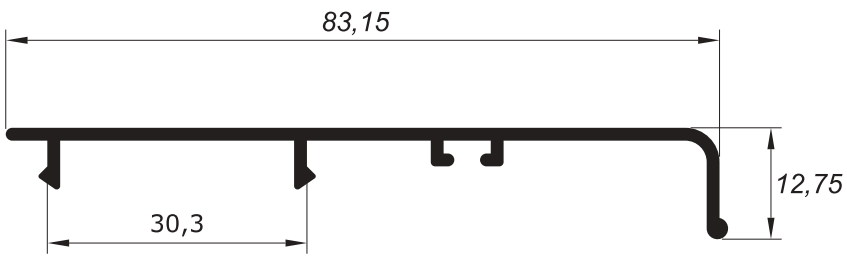

FC-231 - 1,062kg/m



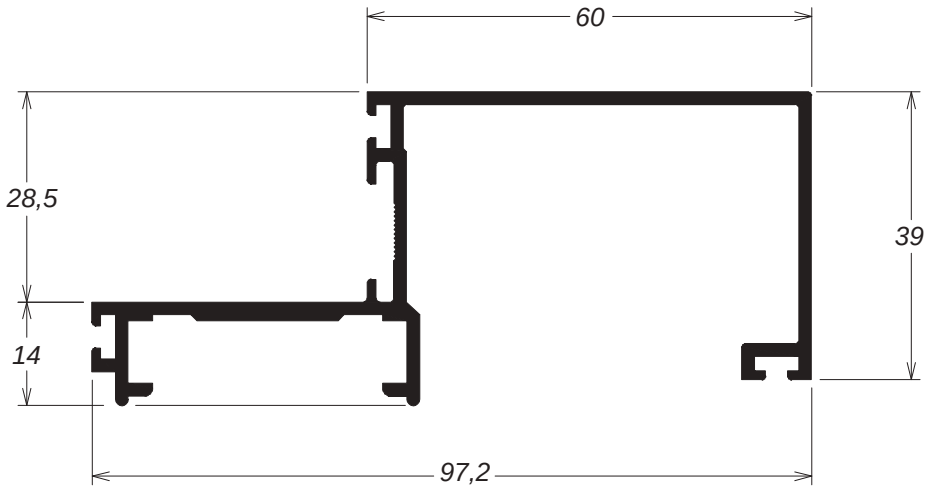

FC-225 - 0,640kg/m



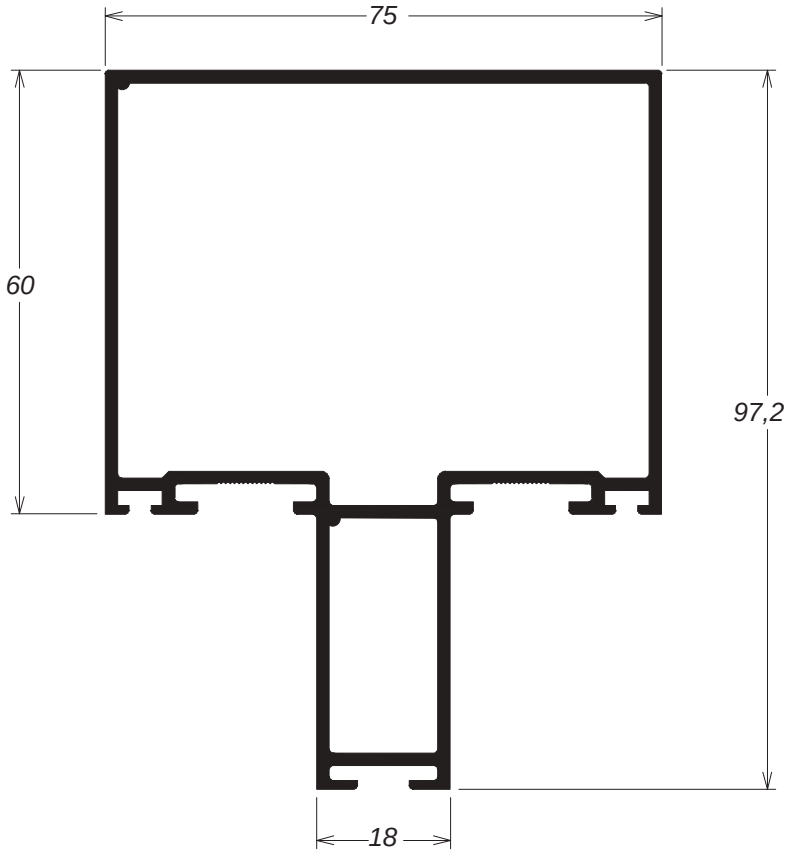

FC-232 - 1,303kg/m



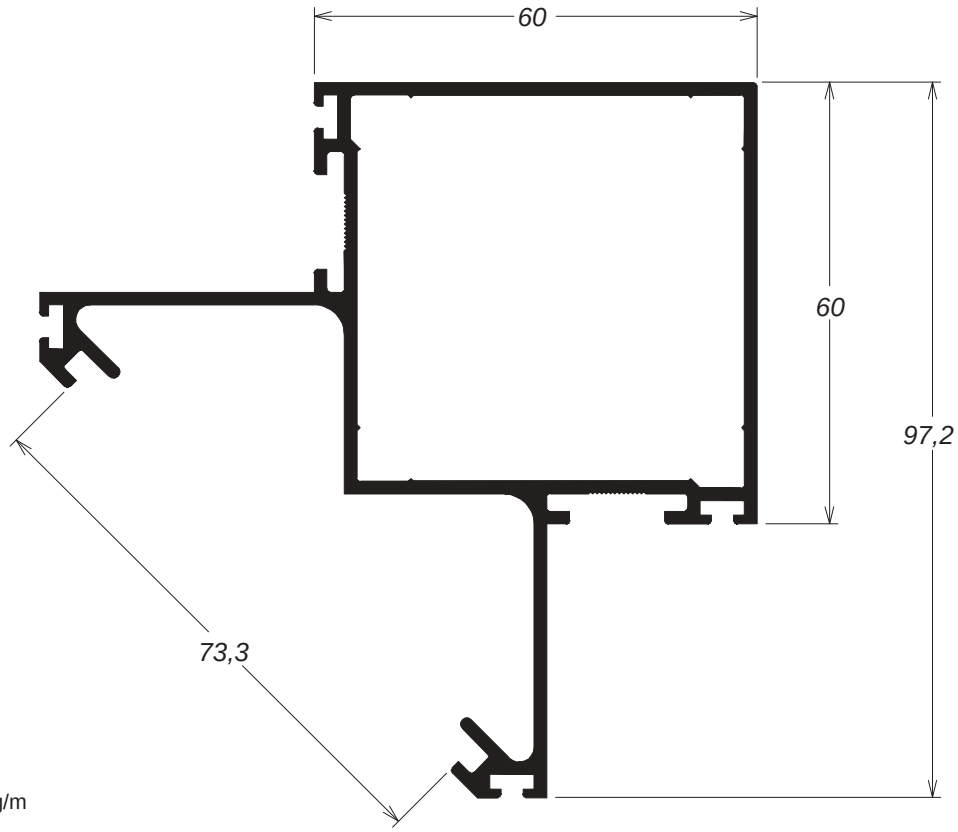

FC-229 - 0,445kg/m



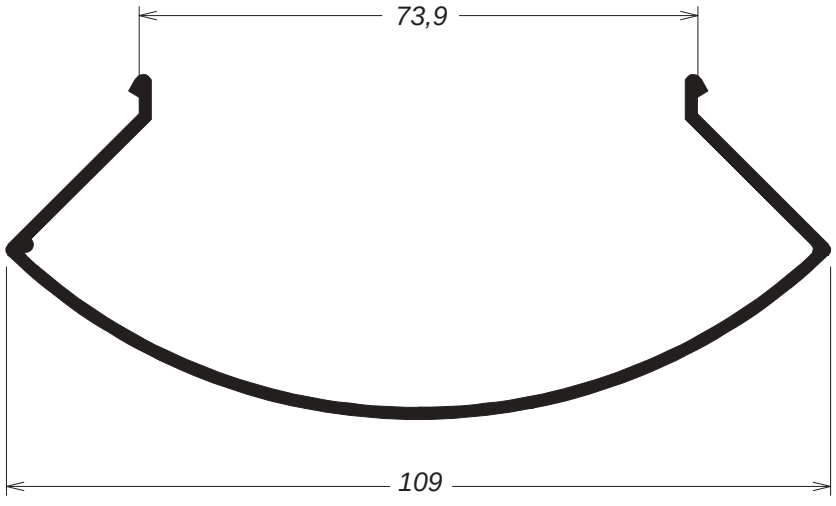

FC-243 - 1,108kg/m
(6,5m)



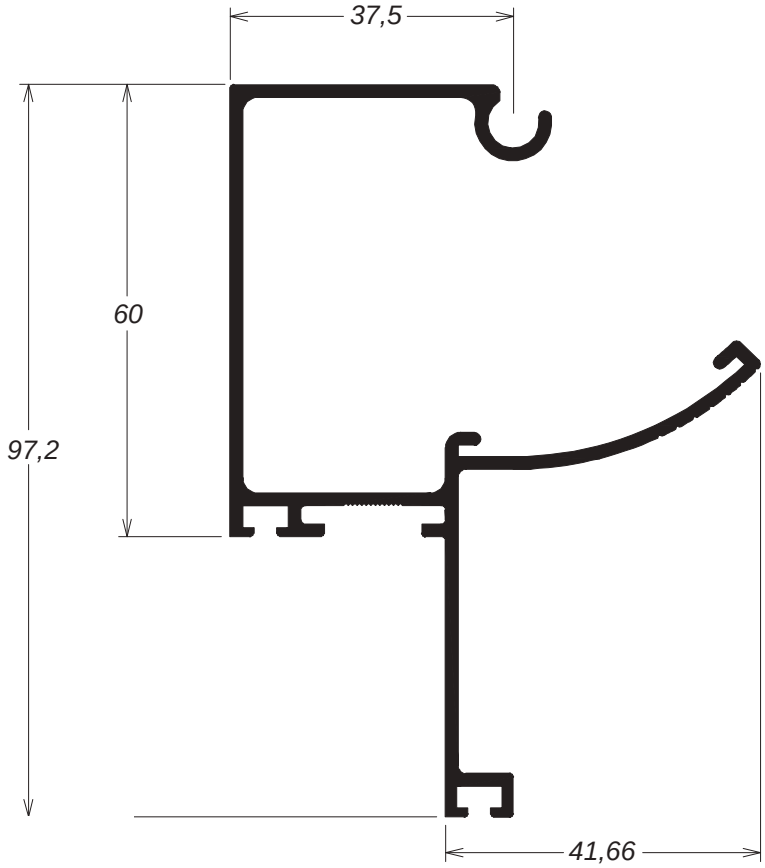

FC-202 - 1,821kg/m
(6,5m)



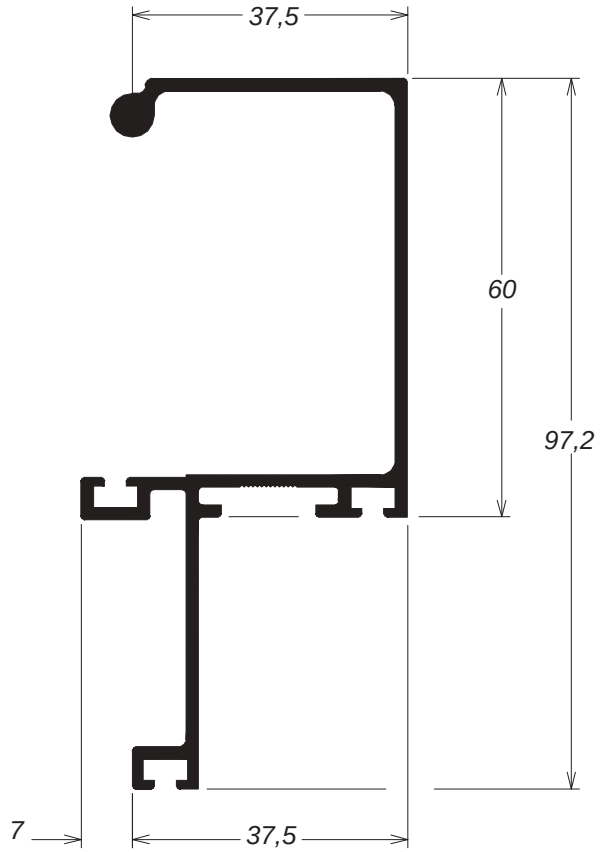

FC-244 - 1,786kg/m
(6,5m)



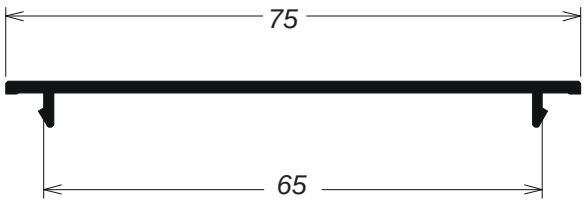

FC-242 - 0,791kg/m
(6,5m)



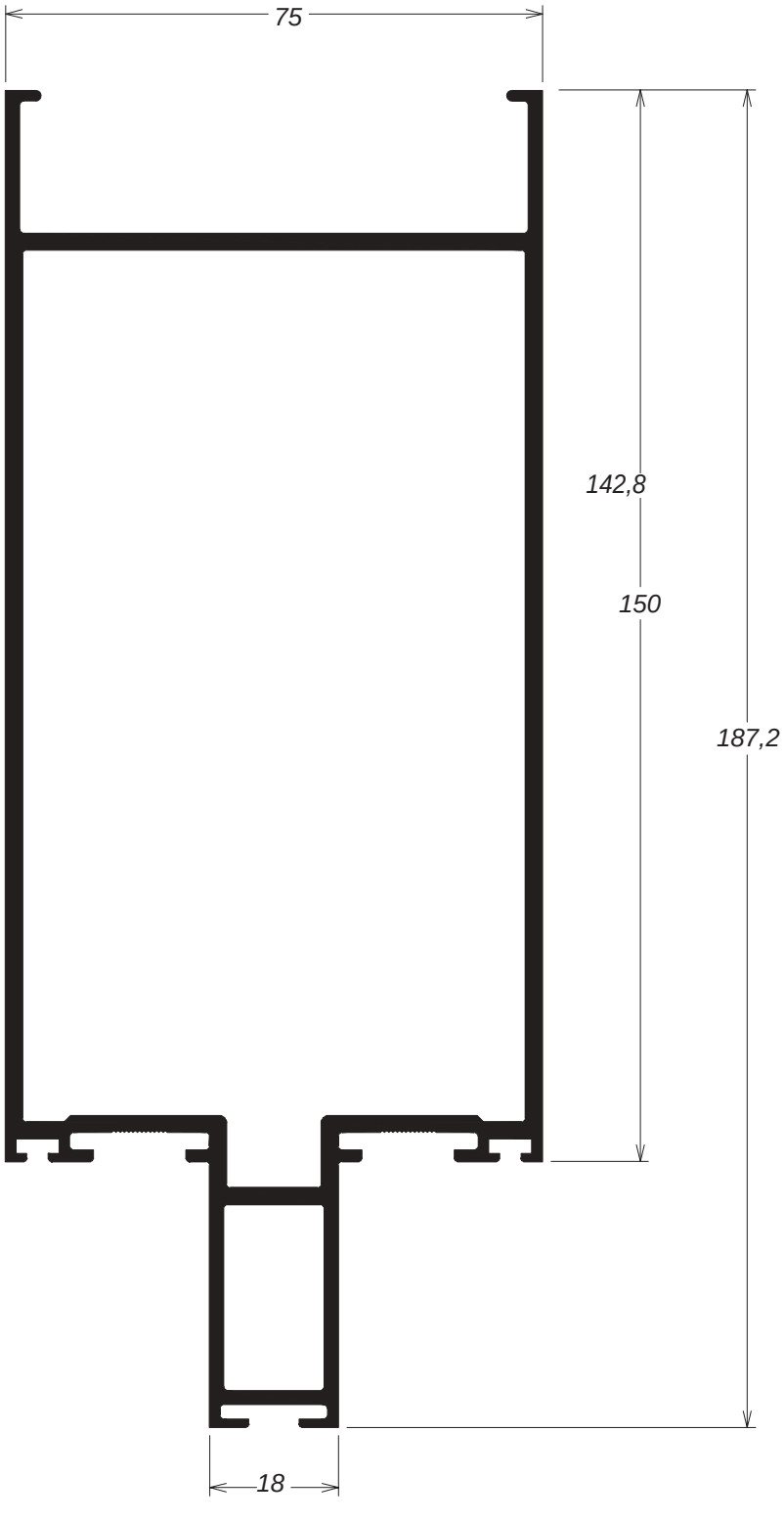

FC-325 - 1,236kg/m



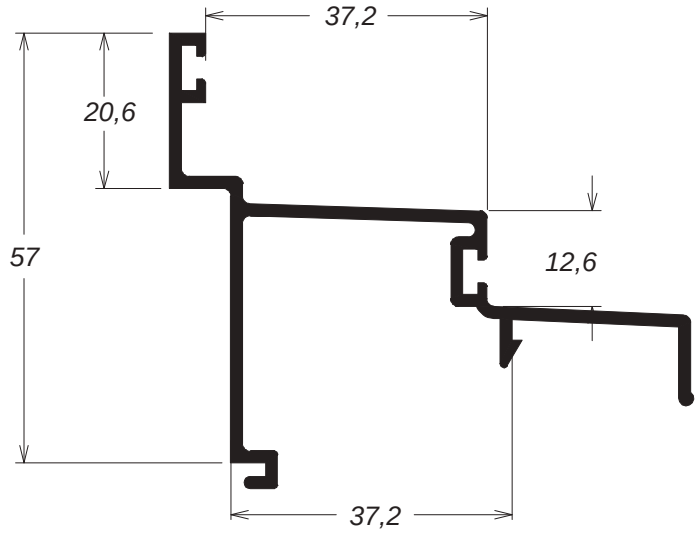

FC-326 - 1,069kg/m



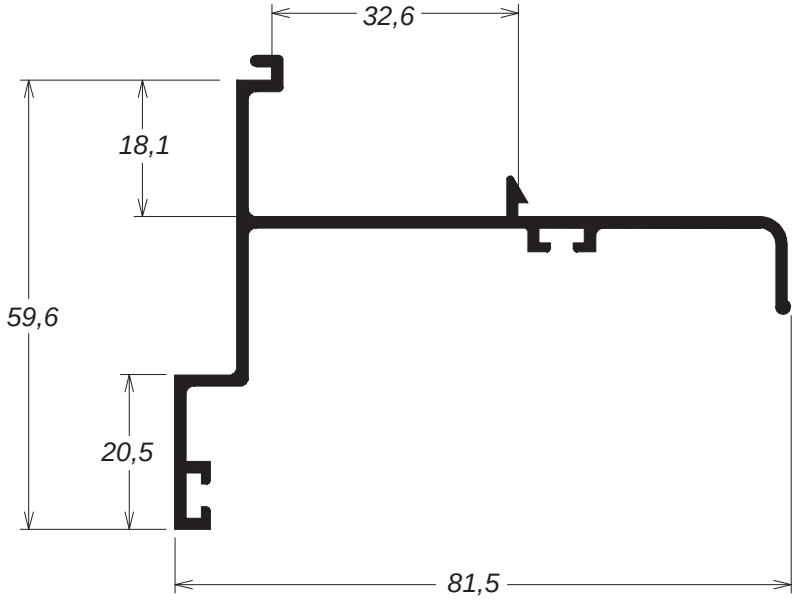

FC-234 - 0,339kg/m
(6,5m)



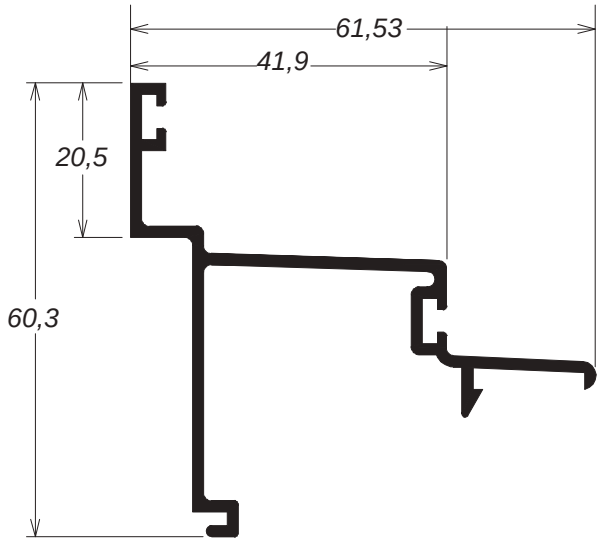

FC-233 - 3,494kg/m
(6,5m)



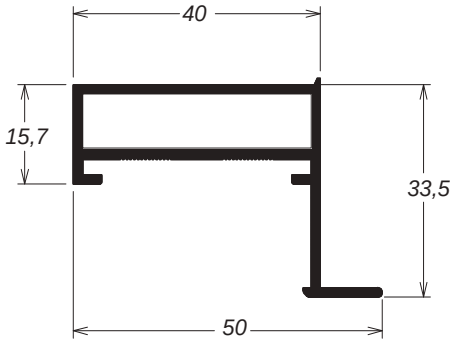

FC-222 - 0,788kg/m



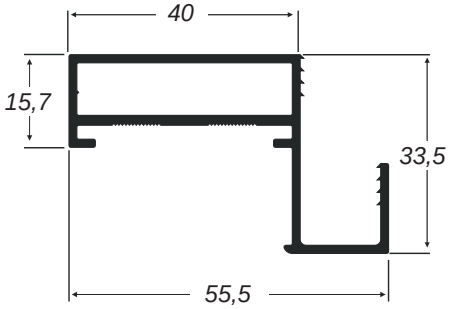

FC-226 - 0,749kg/m



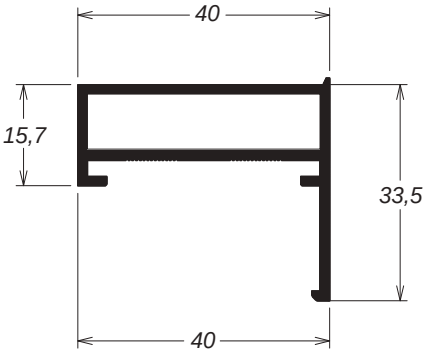

FC-227 - 0,674kg/m



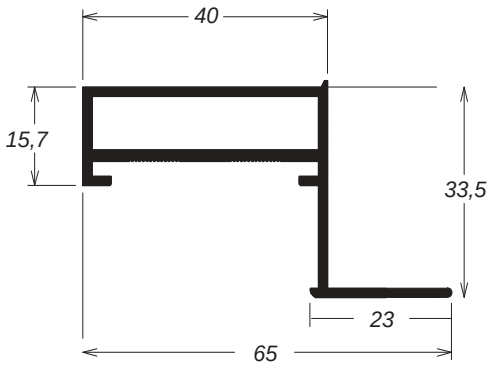

FC-228 - 0,594kg/m



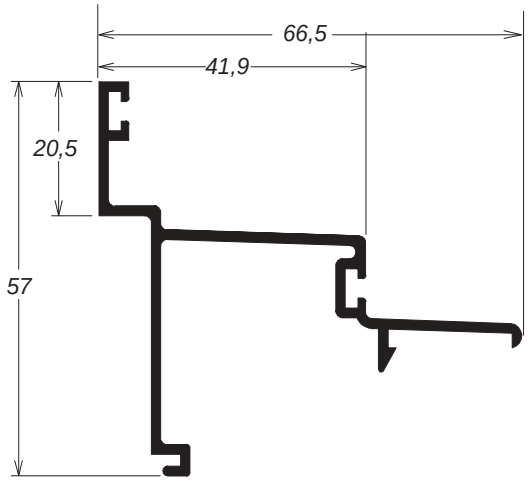

FC-293 - 0,631kg/m



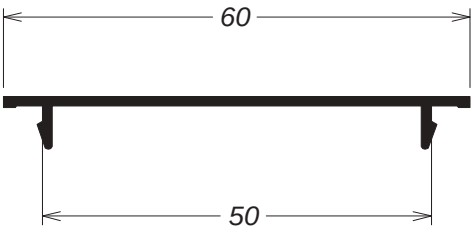

FC-261 - 0,555kg/m



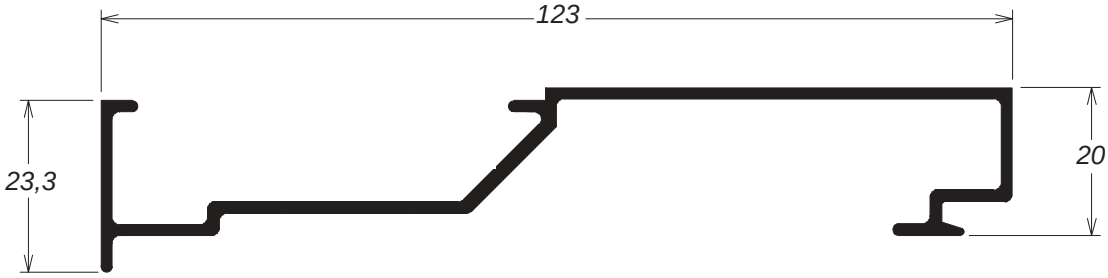

FC-228VD - 0,605kg/m



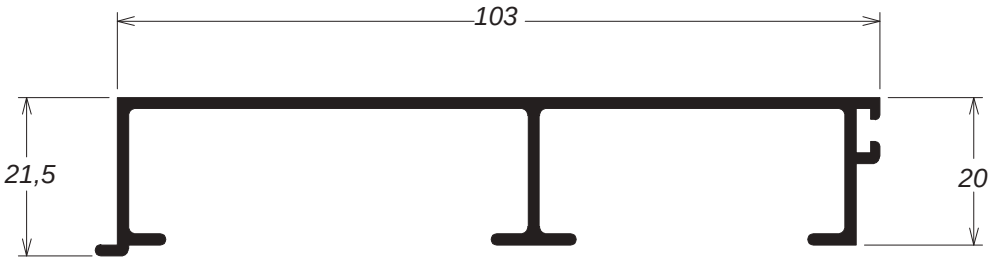

FC-227VD - 0,705kg/m



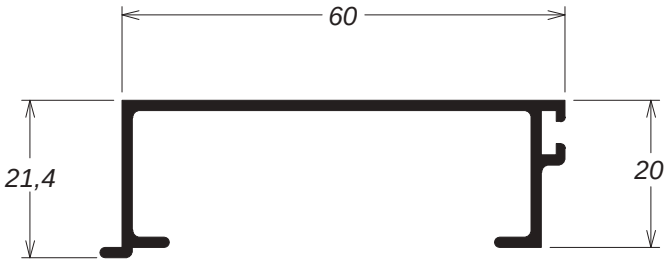

FC-085 - 0,255kg/m



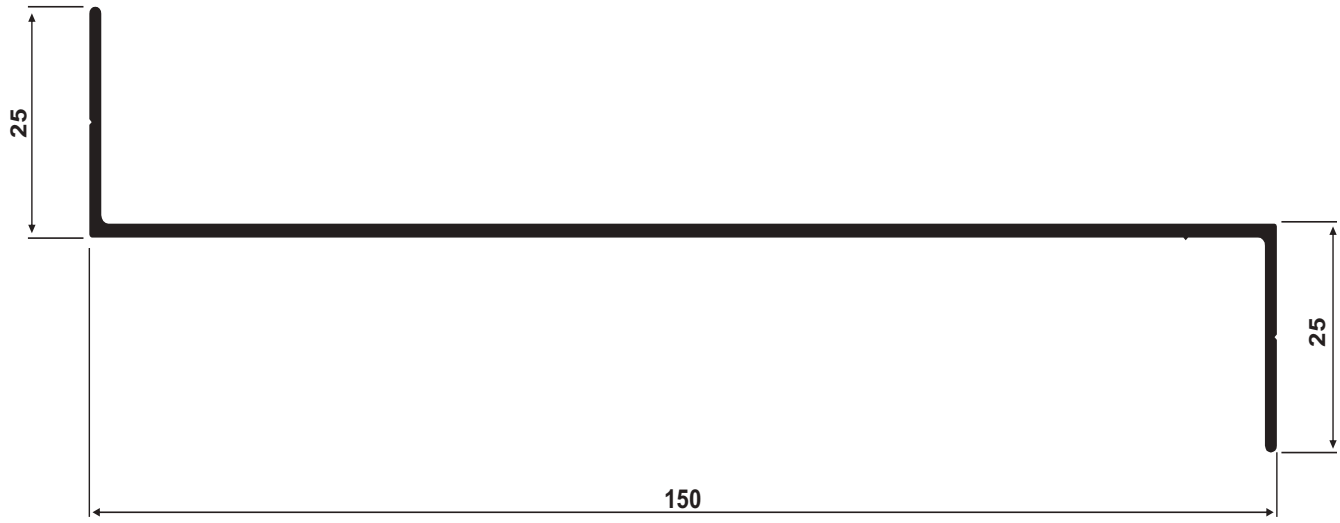

FC-250 - 0,836kg/m




FC-246 - 0,766kg/m




FC-247 - 0,444kg/m




RUFO
FC-088 - 0,829kg/m

# FACHADA ELITE

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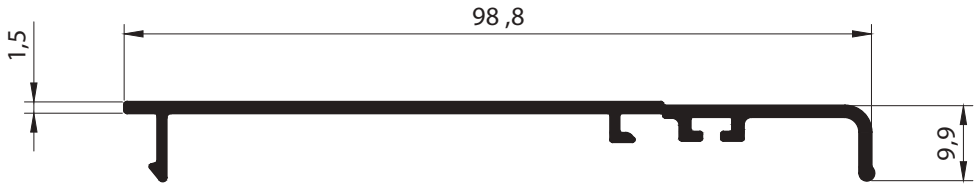
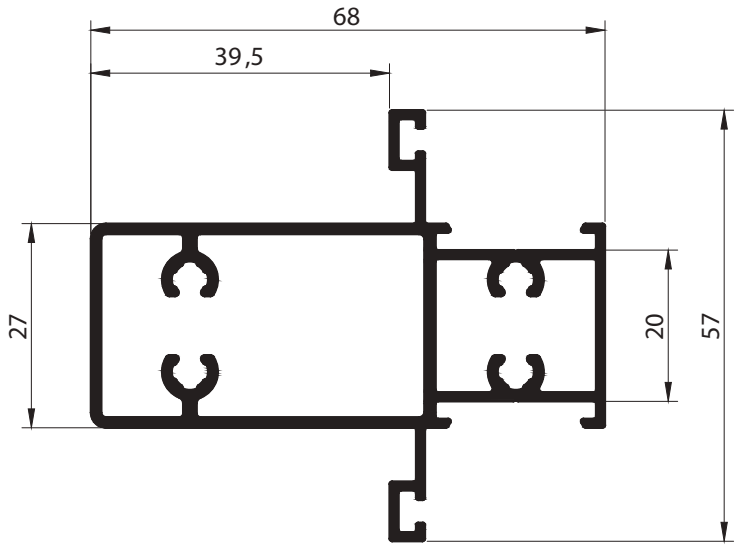
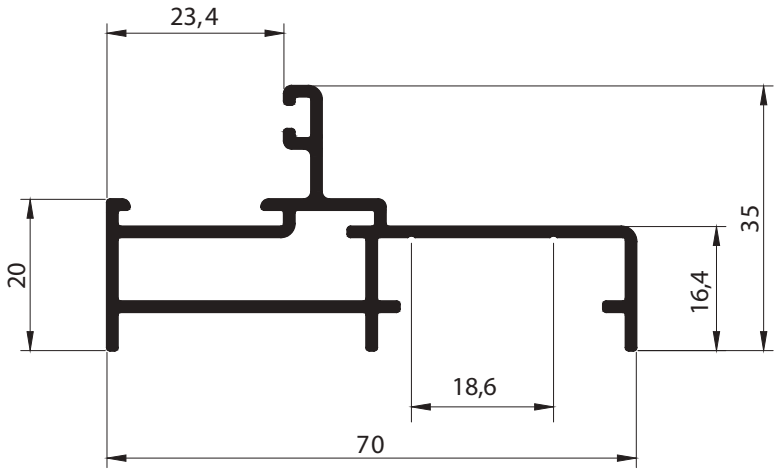


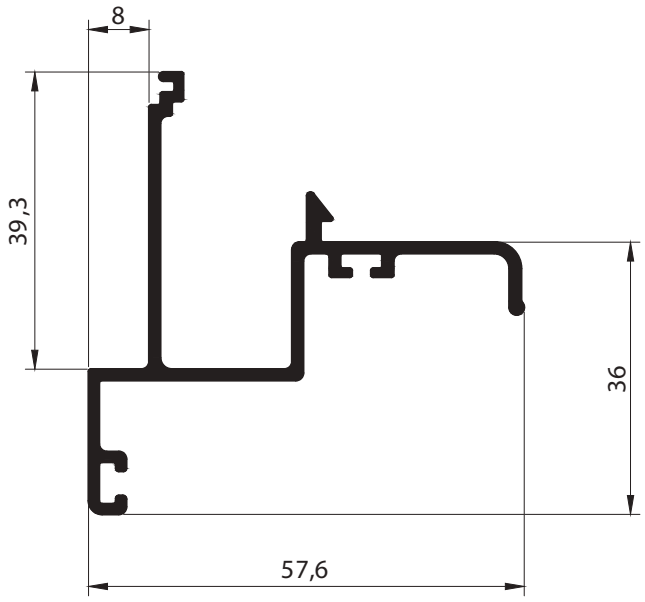

EL-001 - 0,550kg/m



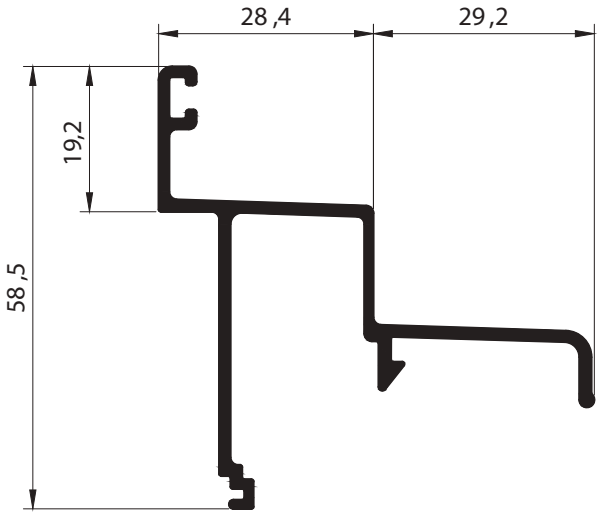

EL-002 - 1,216kg/m



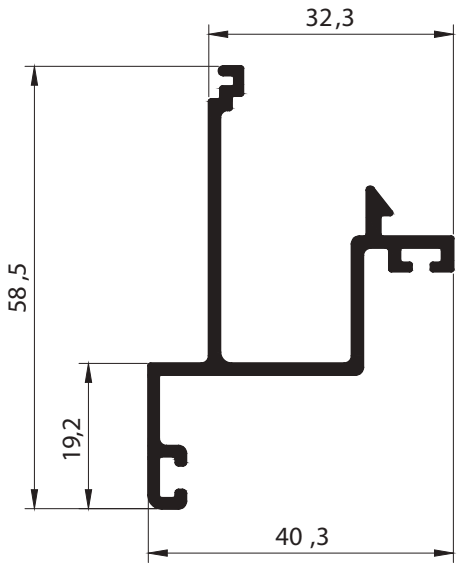

SU-20708 - 0,742kg/m



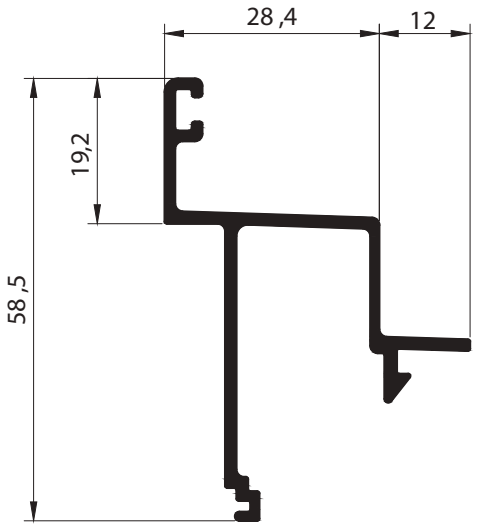

EL-005 - 0,724kg/m



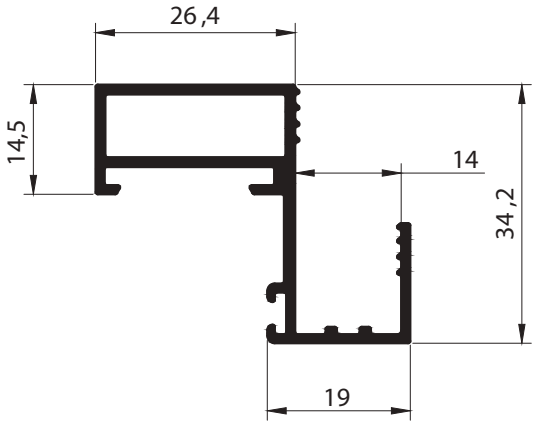

EL-006 - 0,676kg/m



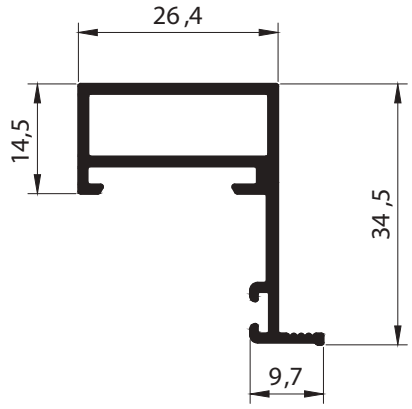

EL-011 - 0,618kg/m




EL-012 - 0,577kg/m



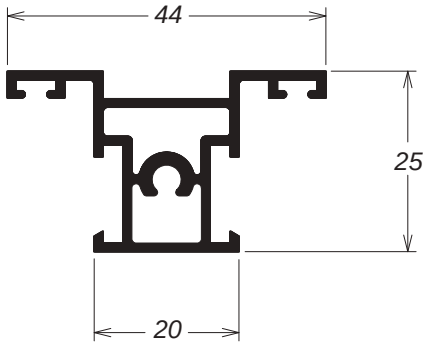

EL-007 - 0,542kg/m



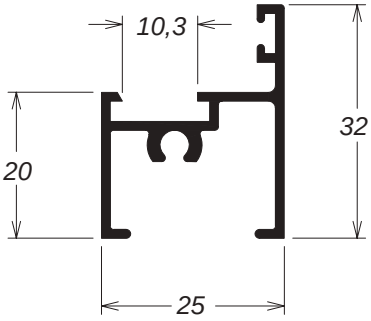

EL-008 - 0,440kg/m

# MÓDULO MAX

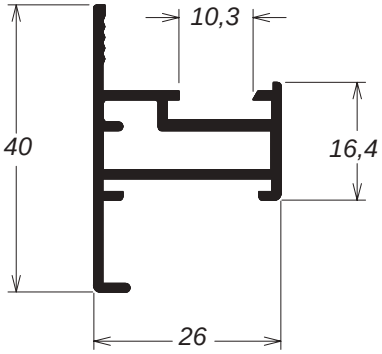
ALPA
ALUMÍNIO



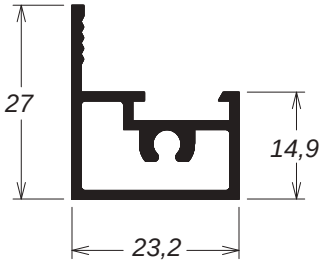

MM-376 - 0,523kg/m



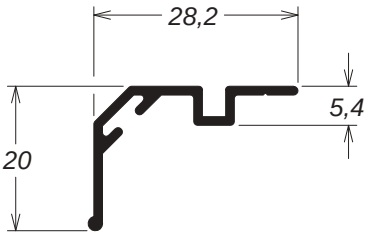

25-312 - 0,352kg/m



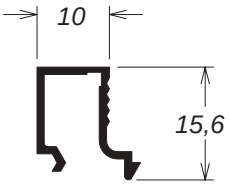

MM-375 - 0,416kg/m



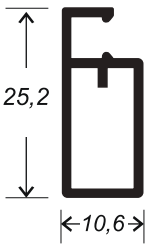

25-301 - 0,350kg/m



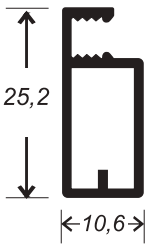

ME-056 - 0,197kg/m




BG-035 - 0,122kg/m



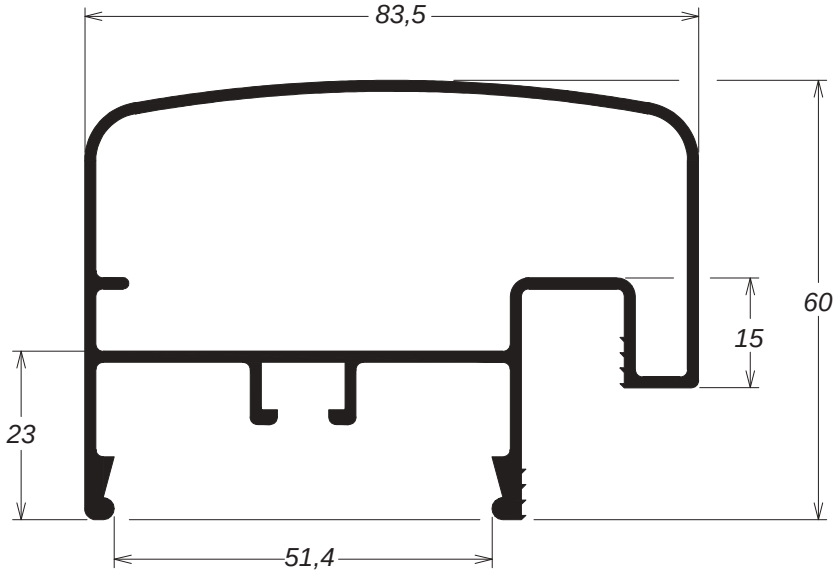

25-273 - 0,190kg/m



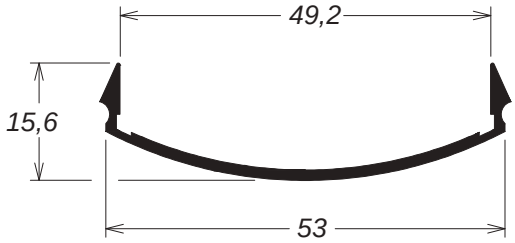

25-274 - 0,190kg/m

# GRADIL PANORAMA

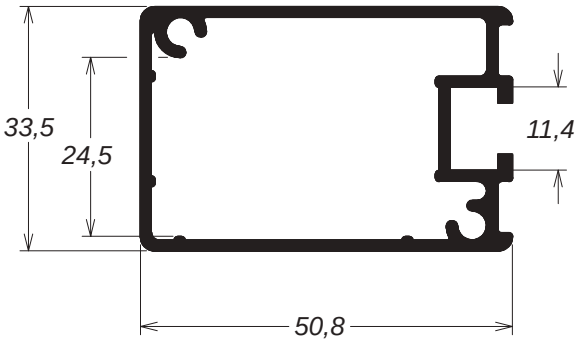
ALPA
ALUMÍNIO



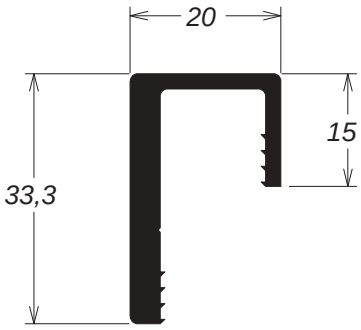

CG-083 - 1,403kg/m



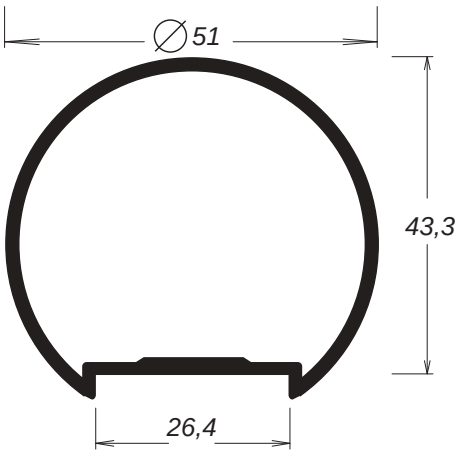

CG-074 - 0,270kg/m



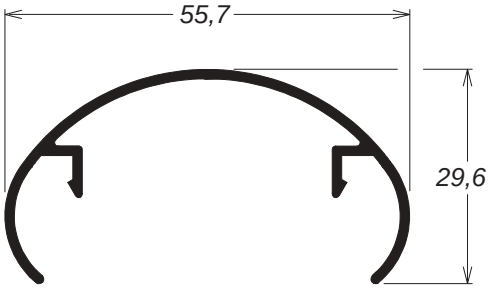

CG-077 - 0,842kg/m



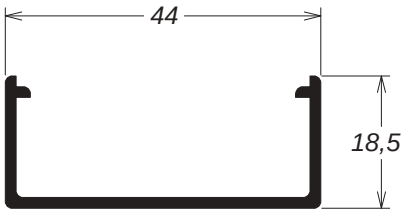

CG-075 - 0,520kg/m



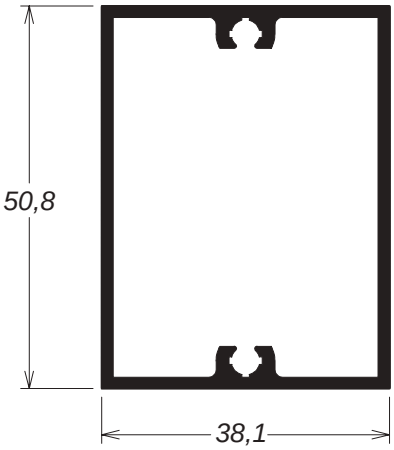

CG-005 - 0,675kg/m



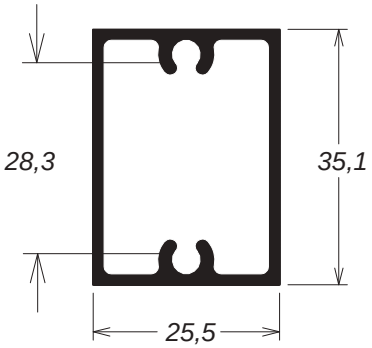

CG-078 - 0,409kg/m



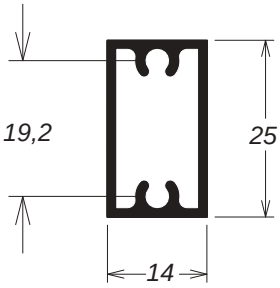

CG-079 - 0,330kg/m



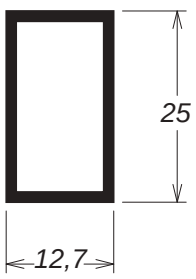

CG-104 - 0,802kg/m



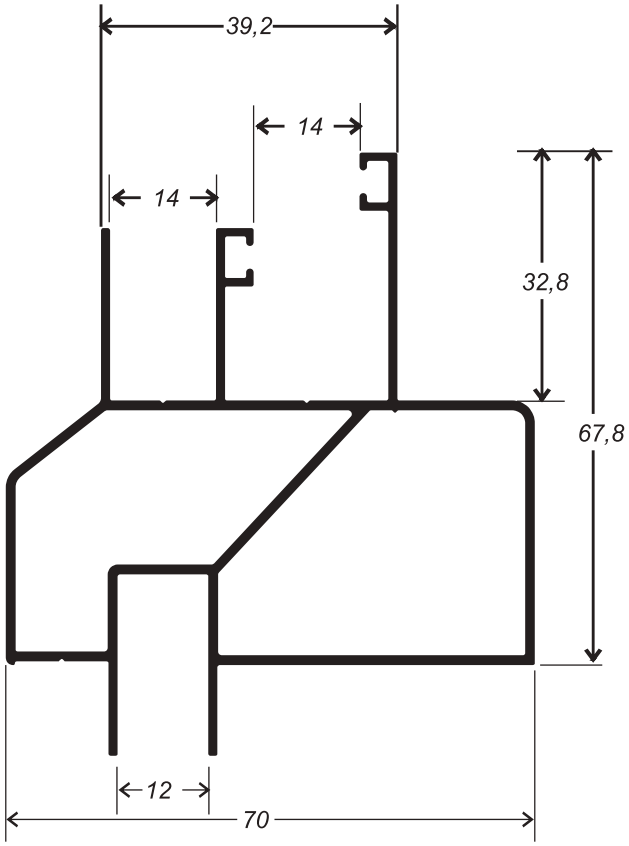

CG-012 - 0,544kg/m




CG-021 - 0,329kg/m




TG-074 - 0,250kg/m




79-0050 - 1,269kg/m

# GRADIL UNIVERSAL

ALPA ALUMÍNIO

## UM ÚNICO SISTEMA.
## INFINITAS POSSIBILIDADES.

- O peitoril suporta altas cargas de esforço de acordo com a nova NBR 14718:2008;
- Pontaletes de alumínio evitam a corrosão e mantém a resistência e a segurança do conjunto;
- O painel de proteção resiste a altos impactos;
- Tampas com desenhos diferenciados e acabamentos exclusivos;
- O novo Gradil da Linha Universal obedece a todos requisitos de segurança determinados pela nova norma técnica NBR 14718:2008.

ALPA
ALUMÍNIO

**O Gradil da Linha Universal é um sistema composto por perfis e acessórios de alumínio com diversas tipologias disponíveis possibilitando a execução de retas, curvas ou cantos, obedecendo as características de cada projeto.**

**Uma das principais preocupações , em relação a guarda-corpos, é a questão da segurança na sua especificação e fabricação.**

**Para garantir a segurança necessária, em 2001 foi publicada pela ABNT a norma NBR 14718 exclusiva para gradis. Desde 2005 essa norma vem sendo revisada com o intuito de melhorar ainda mais a segurança de guarda-corpos no Brasil.**

**Emjaneiro de 2008 foi publicado a nova NBR 14718:2008. A nova norma foi baseada em normas vigentes em países como Espanha, Portugal e França, colocando o Brasil em linha com as principais normas internacionais.**

**O Gradil da Linha Universal obedece a todos os requisitos de segurança de nova norma. O painel de proteção resiste a altos impactos e o perfil do parapeito respeita a altura recomendada. É possível ainda, instalar o produto sobre o peitoril de alvenaria, com uma solução prática, leve e resistente.**

ALPA
ALUMÍNIO

Falcão Bauer
Centro Tecnológico de Controle da Qualidade



# RELATORIO DE ENSAIO Nº CCC/214.155/11

## GUARDA-CORPO

## ENSAIOS DIVERSOS

### 1. IDENTIFICAÇÃO DA(S) AMOSTRA(S).

Um protótipo de guarda-corpo de alumínio com fechamento de vidro com as seguintes características e dimensões aproximadas, instalado pelo interessado em nosso laboratório central.

- Comprimento total: 2 200 mm;
- Altura: 1 002 mm;
- Distância entre montantes estruturais: 1 000 mm;
- Vidro laminado: 10 mm.

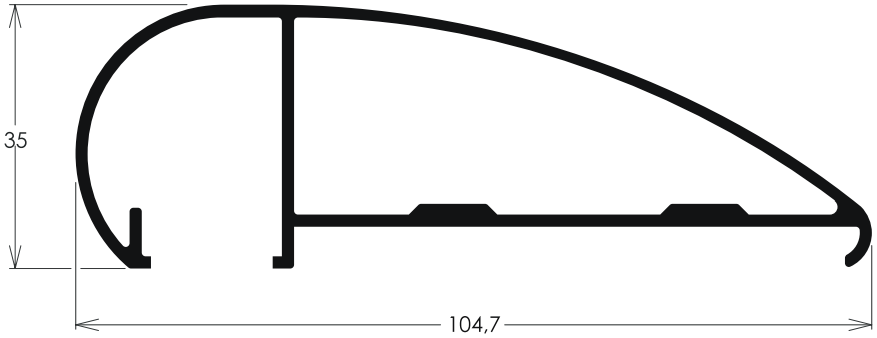
### 2. METODOLOGIA(S) UTILIZADA(S).

**2.1** NBR 14.718/08 – Guarda-corpos para edificação, anexo A - Determinação do esforço estático horizontal.

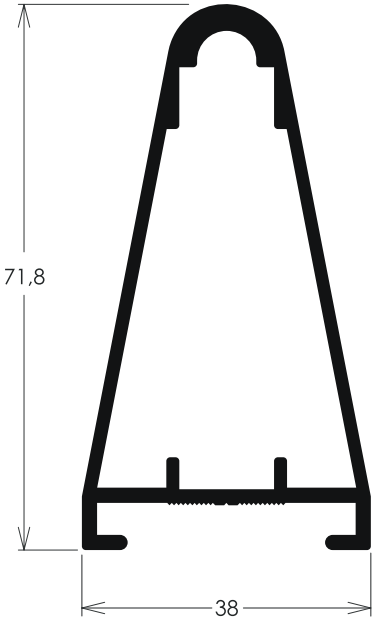
**2.2** NBR 14.718/08 - Determinação do esforço estático vertical, conforme anexo B.

**2.3** NBR 14.718/08 – Determinação da resistência a impactos, conforme anexo C.

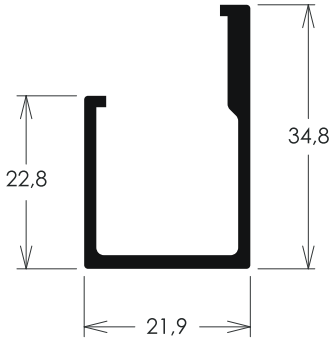
Os resultados apresentados no presente documento referem-se exclusivamente à amostra ensaiada. A reprodução deste documento somente poderá ser feita na integra e, a sua utilização, para fins promocionais, depende de aprovação prévia.



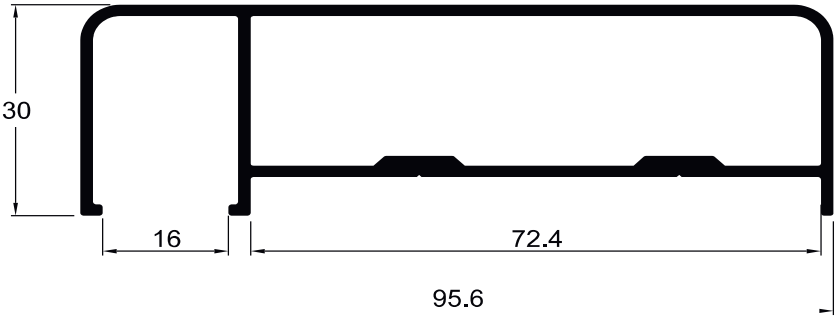

CG-179 - 1,214kg/m



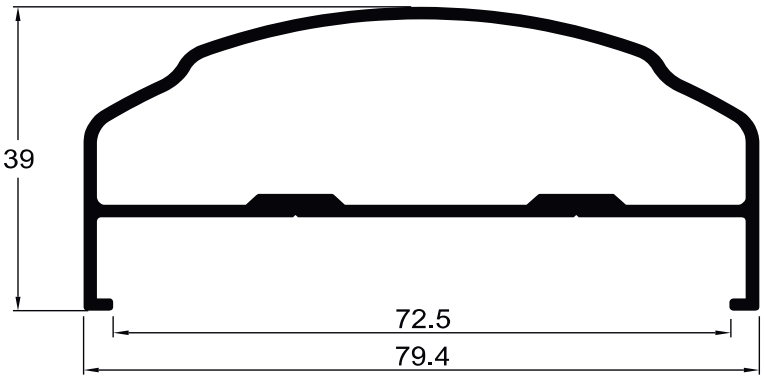

CG-180 - 1,102kg/m



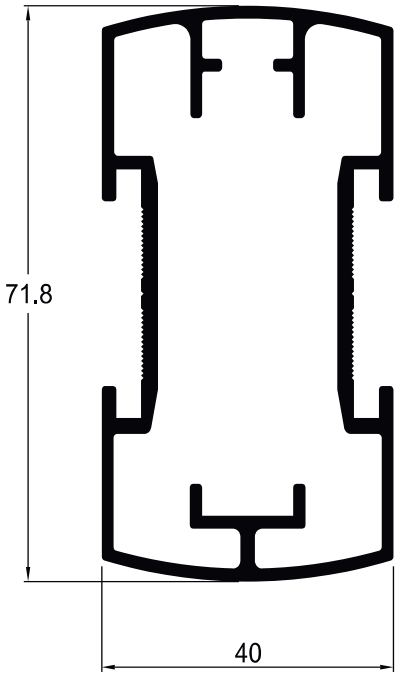

CG-171 - 0,405kg/m



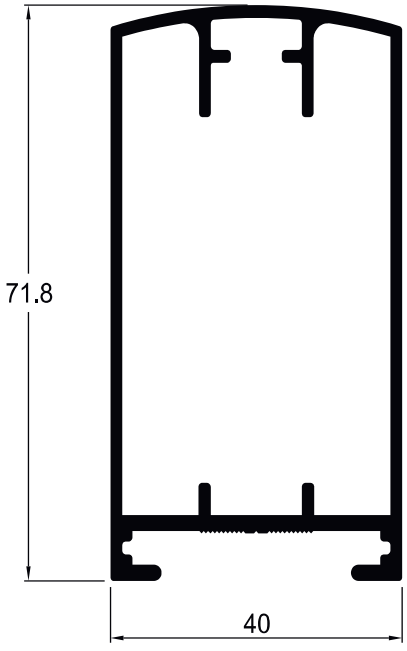

Corrimão
CG-1016 - 1,170kg/m




Corrimão
CG-189 - 0,999kg/m

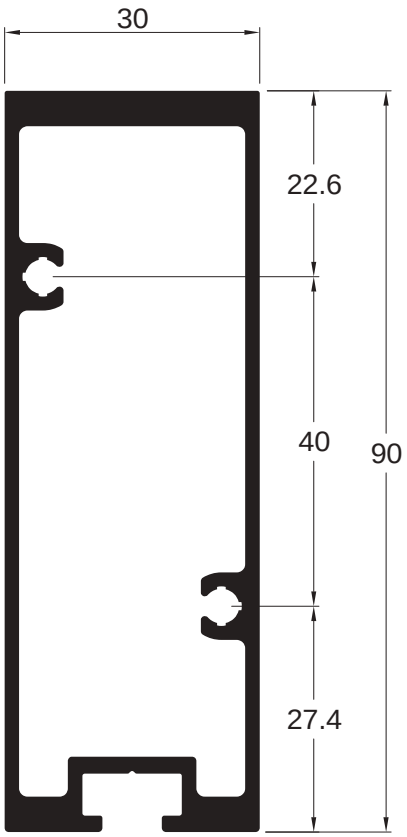



Montante Central
CG-181 - 1,463kg/m

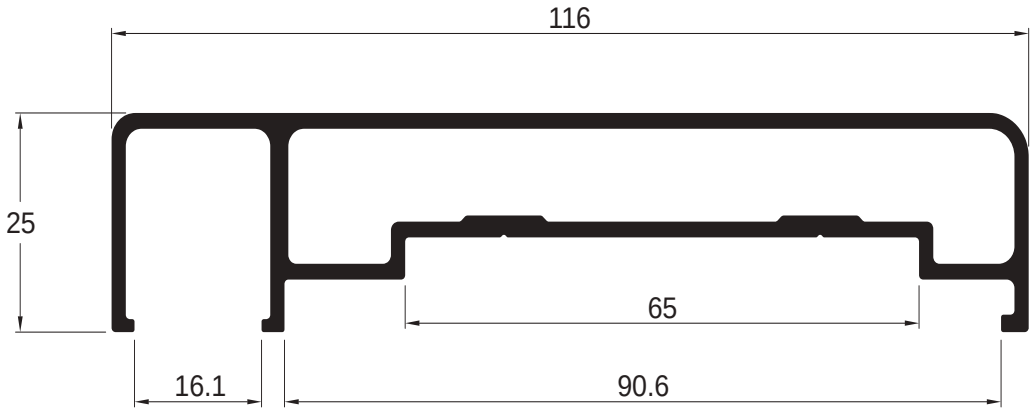



Montante Central
CG-182 - 1,214kg/m

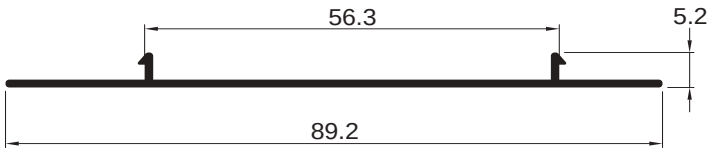
Montante Central
CG-1040 - 1,592kg/m

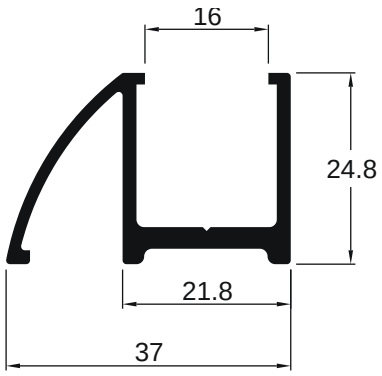



Corrimão
CG-1021 - 1,476kg/m

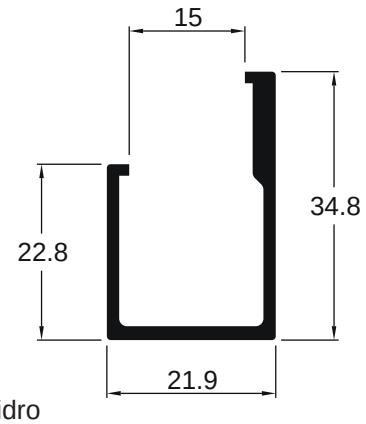



Tampa inferior de acabamento do corrimão slim
CG-1045 - 0,306kg/m

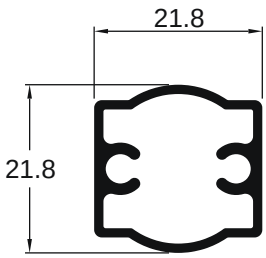




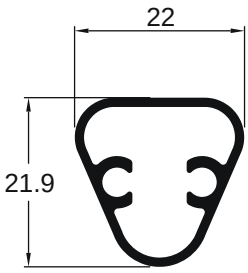

Apoio de vidro
CG-169 - 0,525kg/m



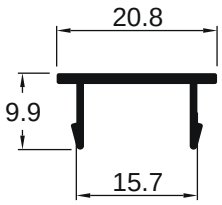

Apoio de vidro
CG-171 - 0,405kg/m



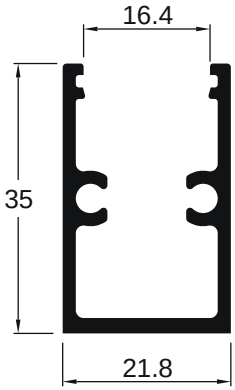

Barrote
CG-177 - 0,338kg/m



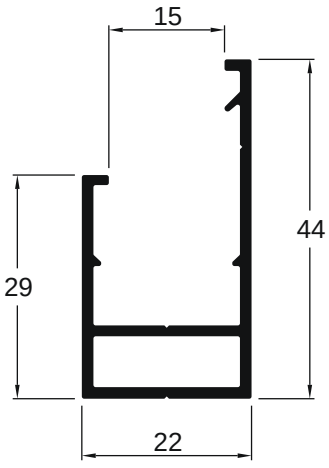

Barrote
CG-190 - 0,290kg/m




Tampa de arremate
FC-368 - 1,130kg/m




Apoio para barrotes
CG-176 - 0,527kg/m



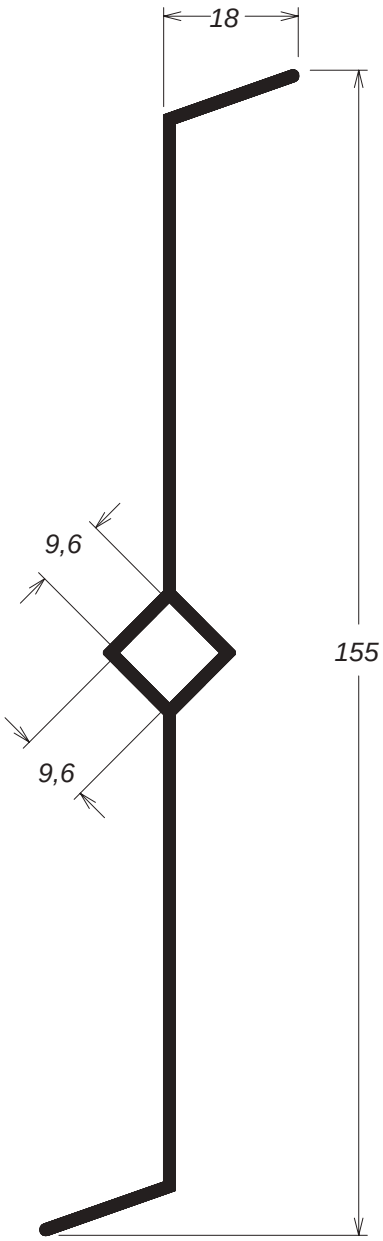

Apoio de vidro
060545 - 0,472kg/m

# BRISES

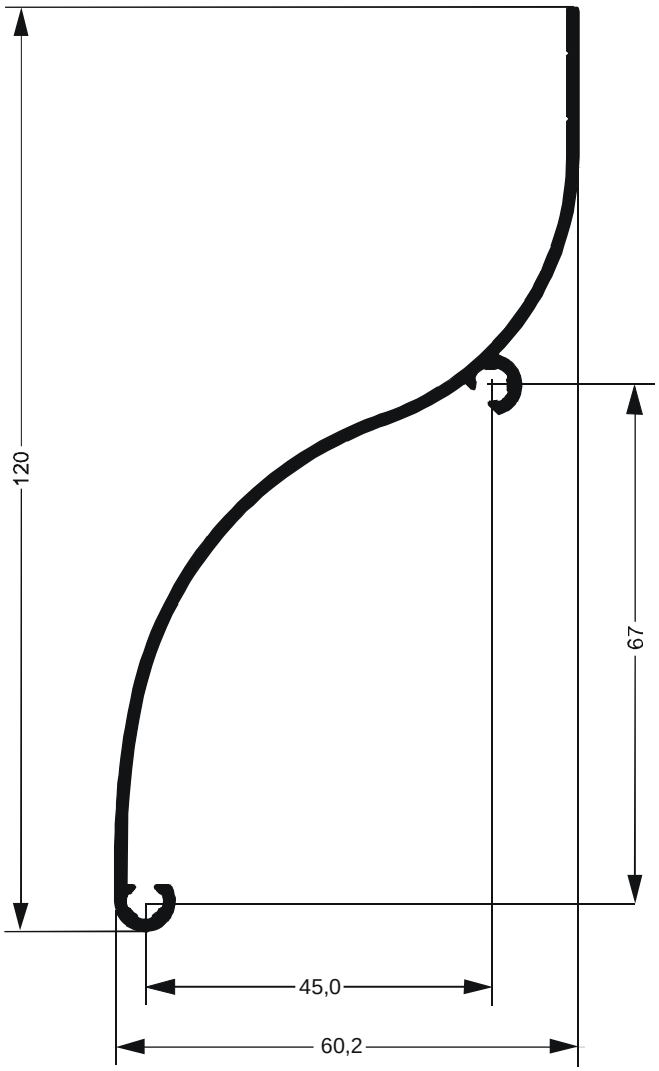
ALPA ALUMÍNIO



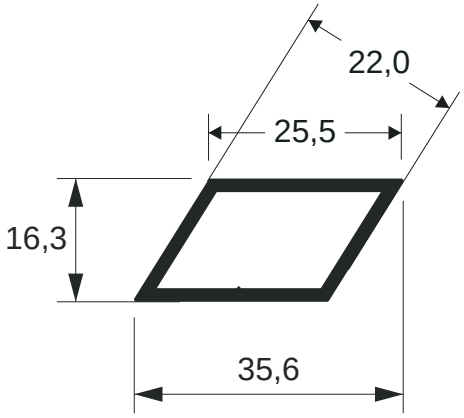

DC-004 - 1,308kg/m



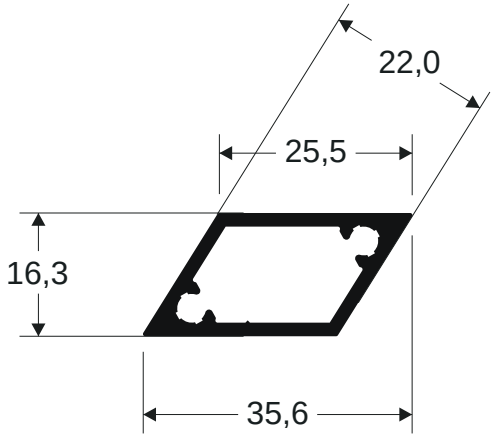

DC-006 - 0,834kg/m



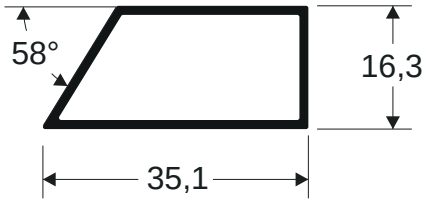

VZ-800 - 0,750kg/m




781389 - 0,399kg/m



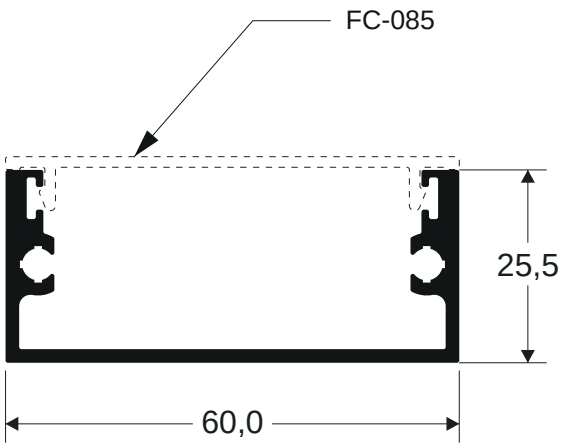

781390 - 0,439kg/m



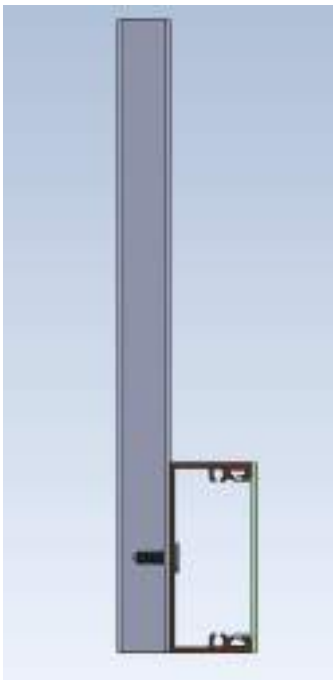

781391 - 0,296kg/m



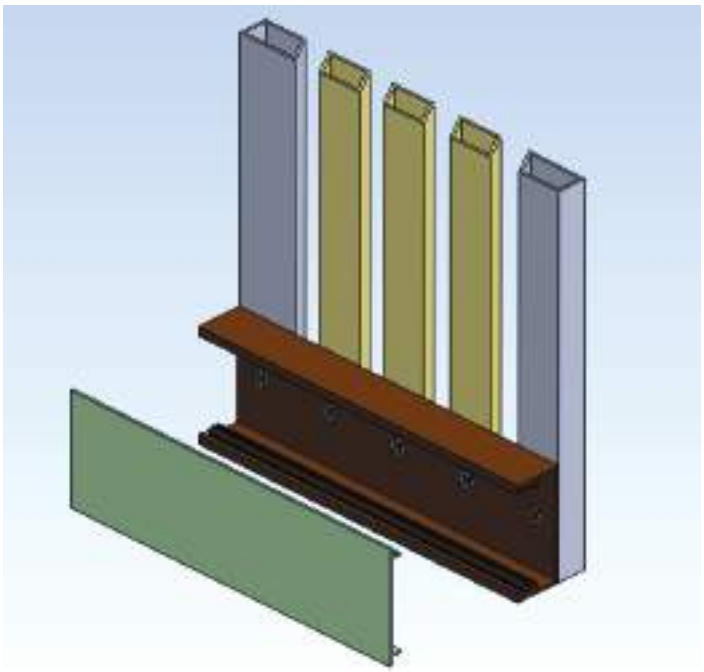

FC-085 - 0,280kg/m



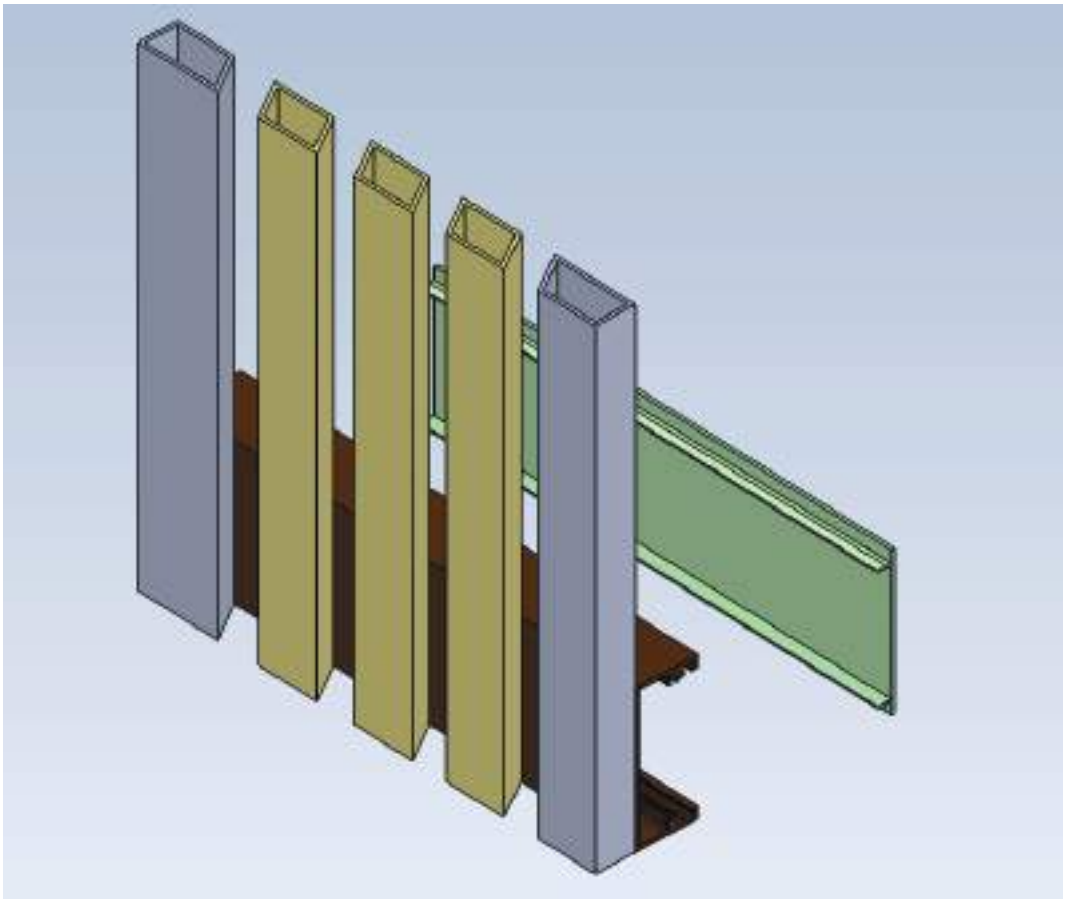

781392 - 0,743kg/m



Vista lateral com capa.

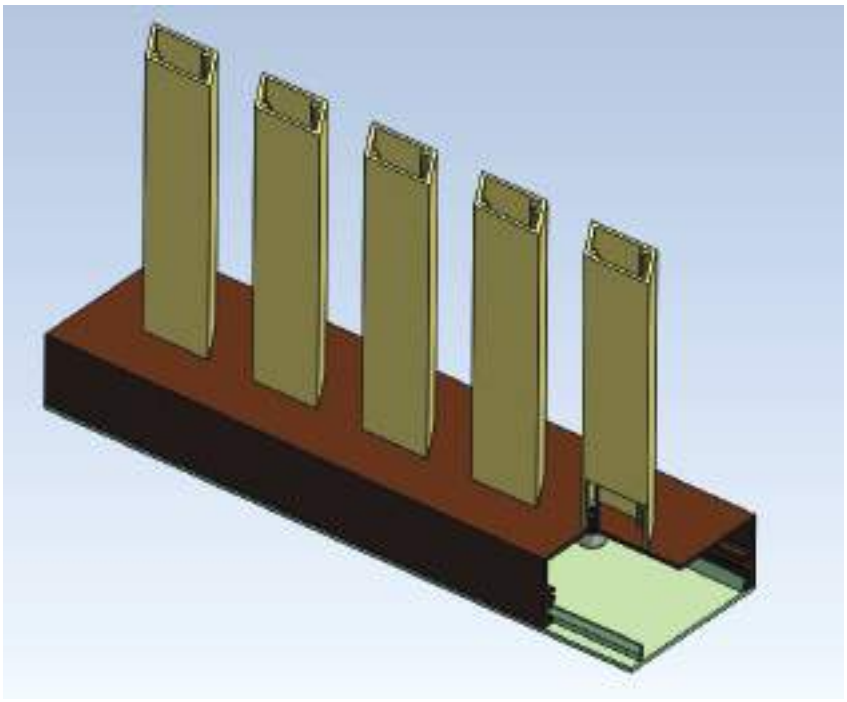


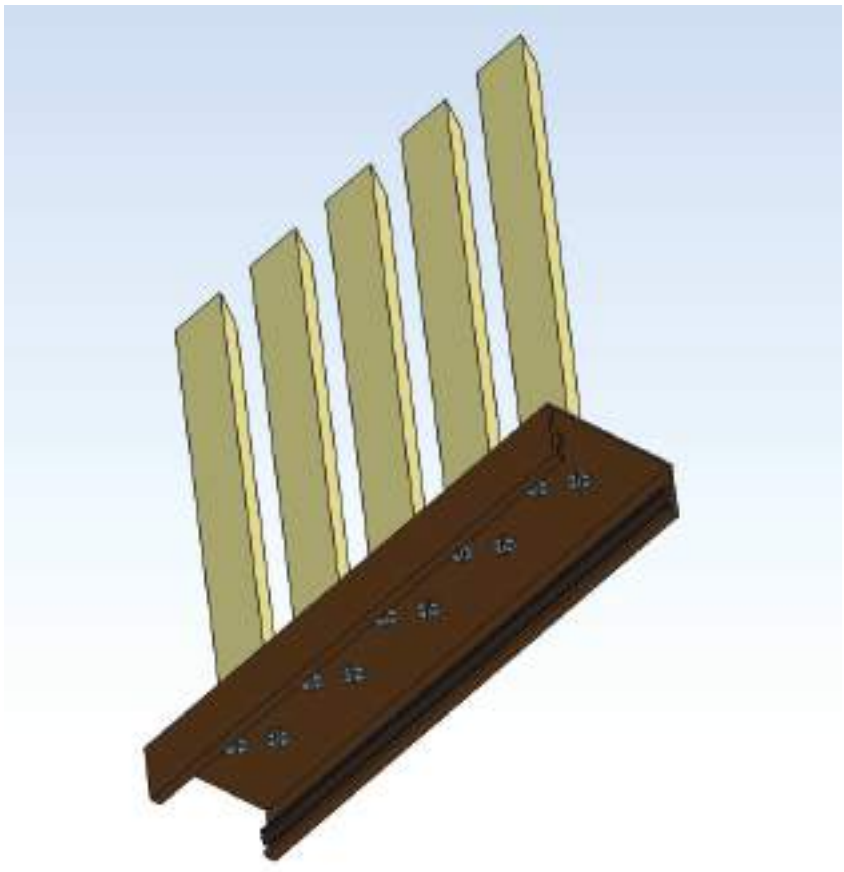
Vista frontal.

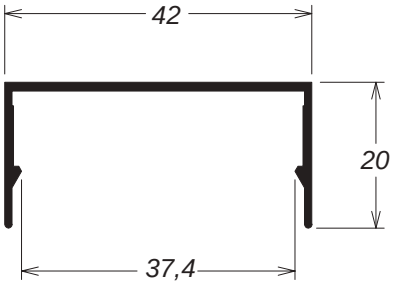


Vista lateral sem capa para acabamento com aplicação parafuso.

Vista de aplicação com olhal parte superior.



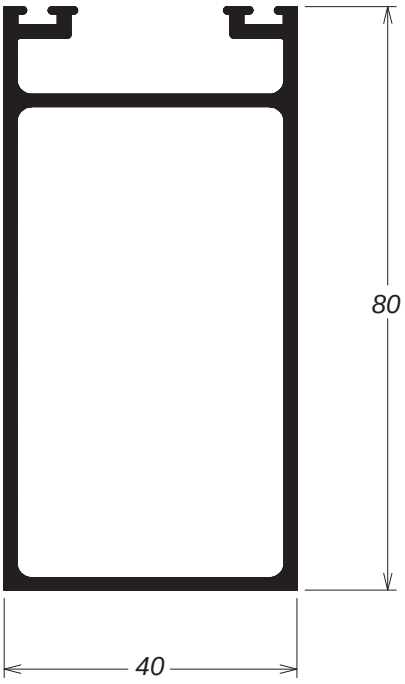




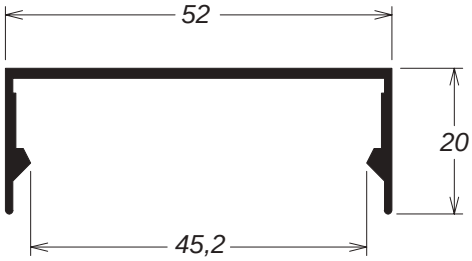

FC-013 - 0,260kg/m



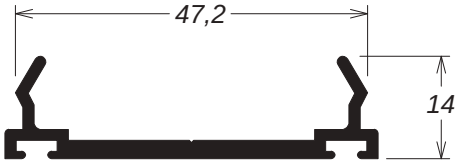

FC-014 - 0,375kg/m



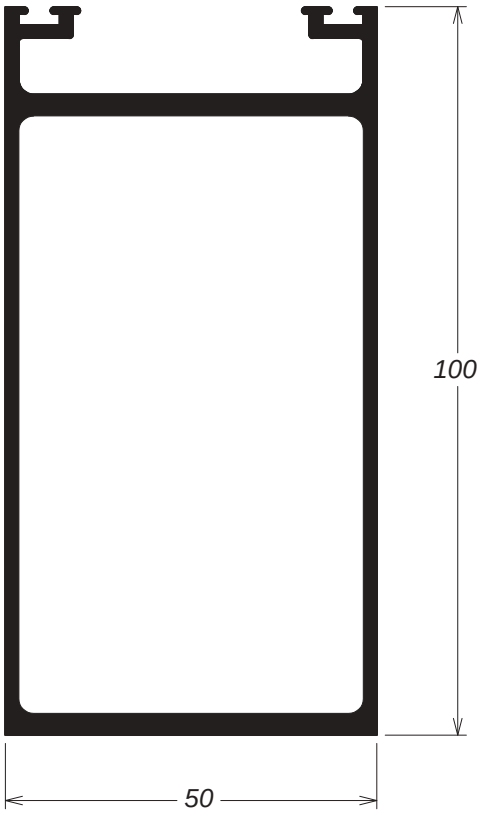

FC-012 - 1,247kg/m




FC-542 - 0,350kg/m



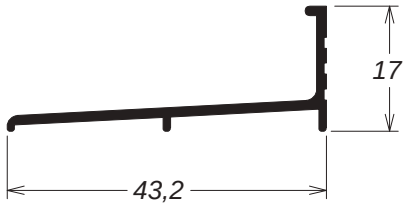

FC-543 - 0,434kg/m



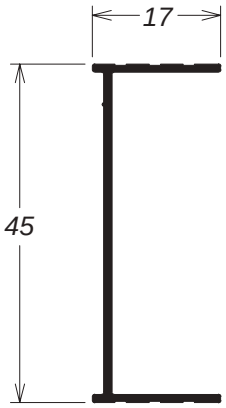

FC-017 - 1,860kg/m

# BOX

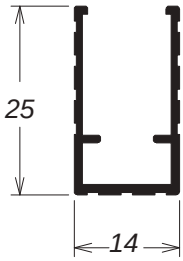
ALPA ALUMÍNIO



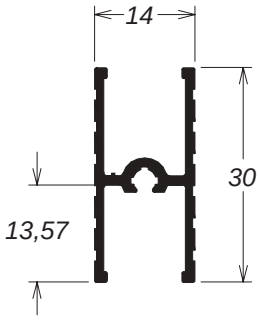

BX-253 - 1,278kg/m



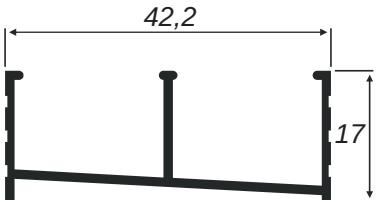

BX-256 - 0,224kg/m



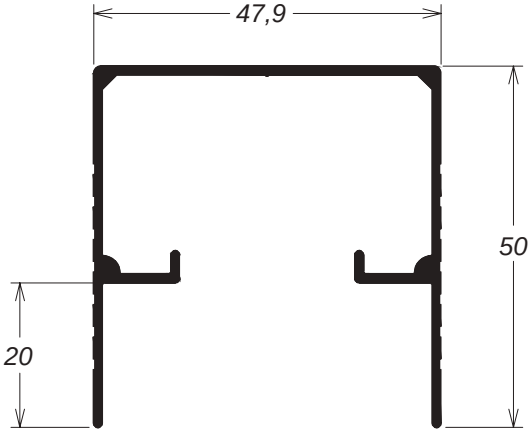

BX-254 - 0,198kg/m




BX-255 - 0,288kg/m



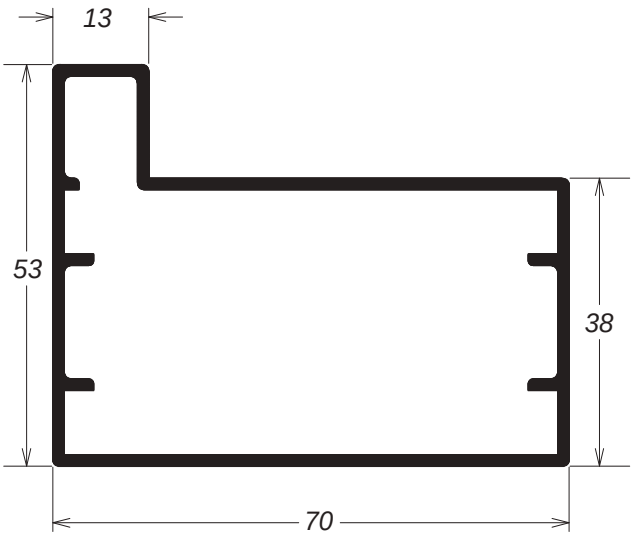

BX-258 - 1,716kg/m



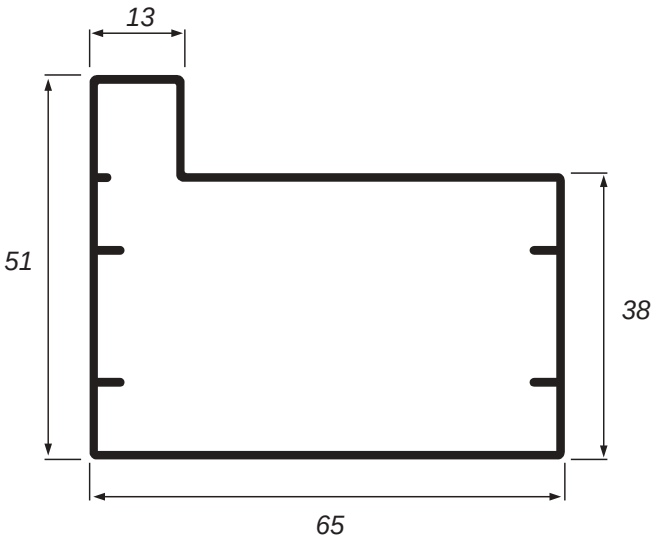

BX-257 - 0,591kg/m

# DIVERSOS

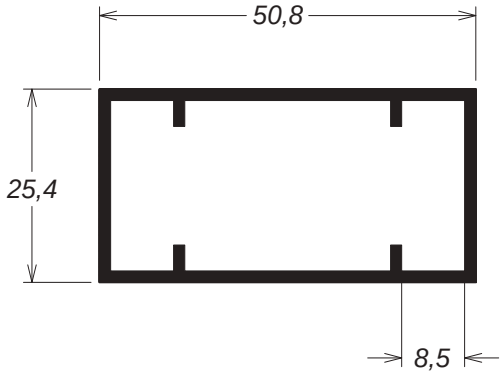
ALPA
ALUMÍNIO



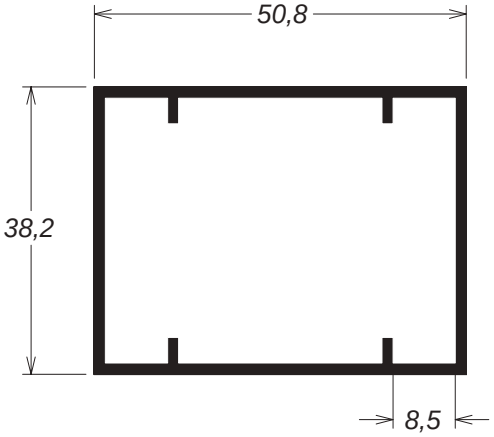

PC-010 - 1,190kg/m



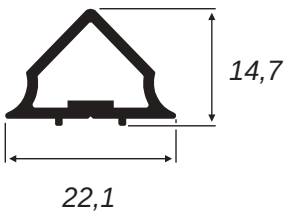

PC-027 - 0,770kg/m



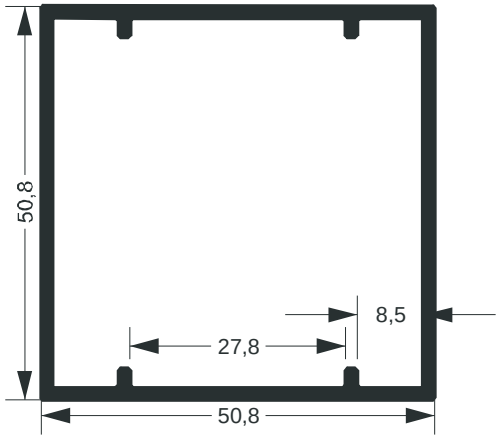

PC-002 - 0,650kg/m



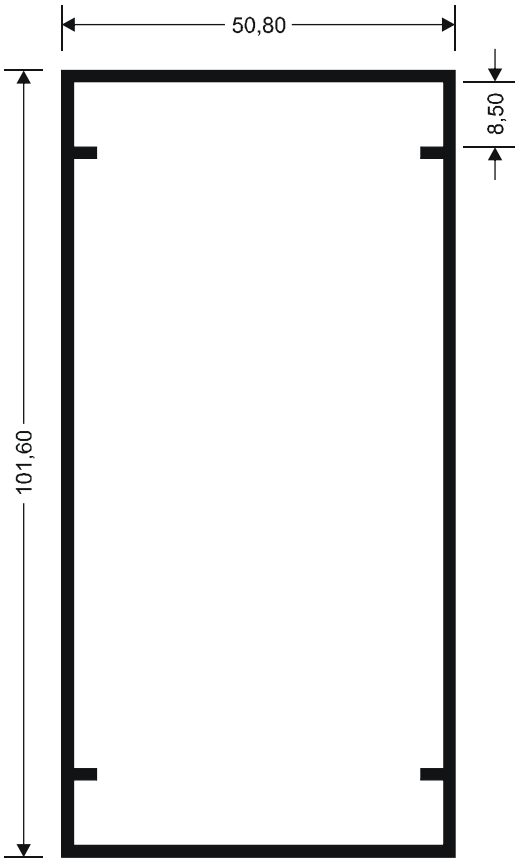

PC-004 - 0,755kg/m



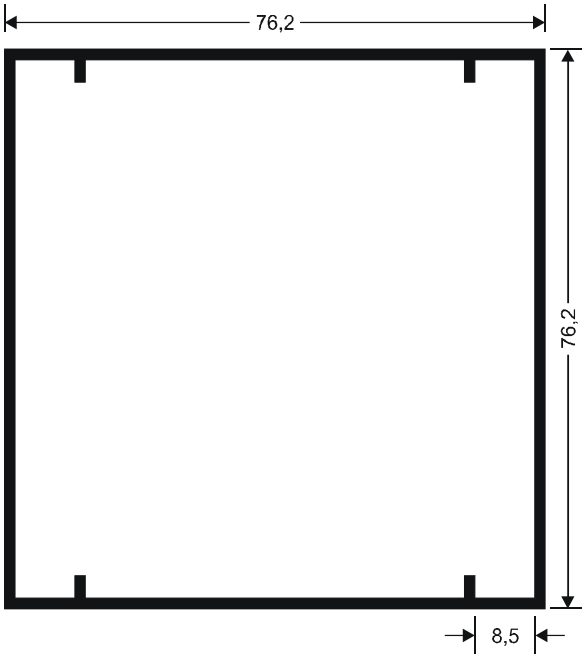

30-044 - 0,225kg/m
Roldana para este perfil
(ROL3180)



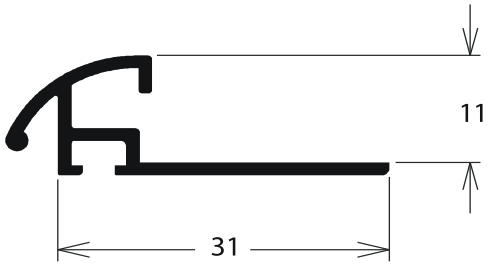

PC-055 - 0,927kg/m



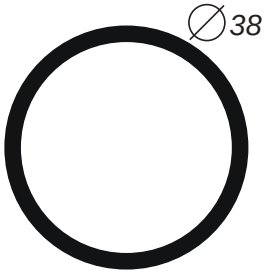

PC-072 - 1,345kg/m



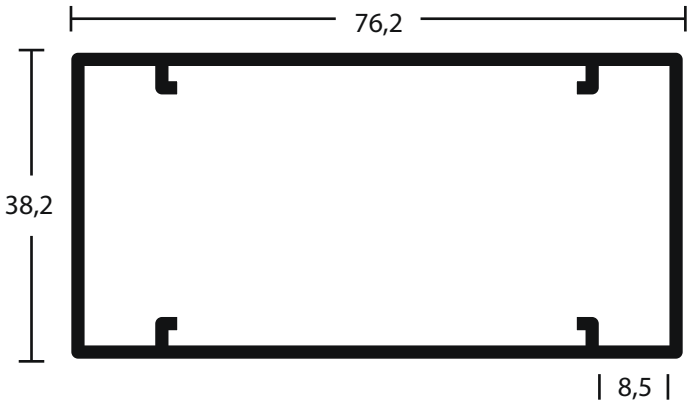

PC-007 - 1,250kg/m



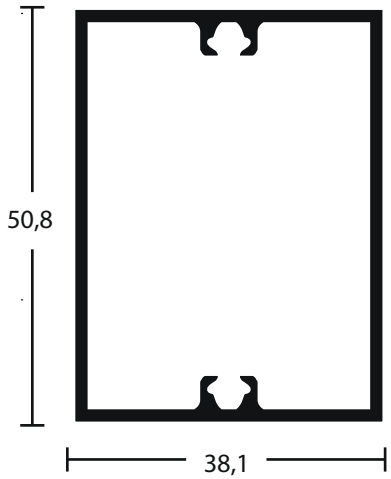

IN-049 - 0,227kg/m



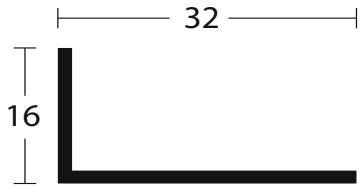

PORT04 - 6m
PORT11 - 3m



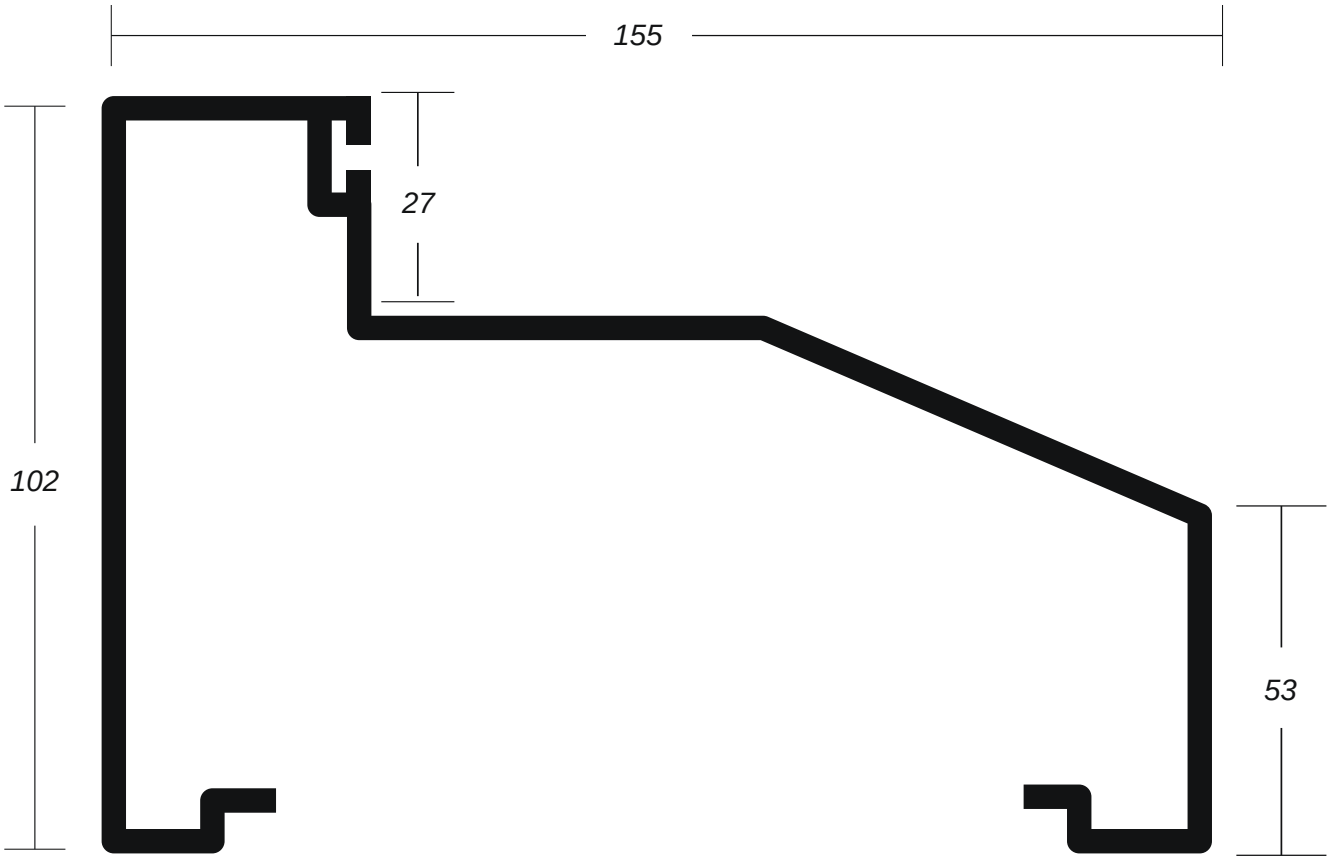

PC-003 - 1,103kg/m




CG-104 - 0,802kg/m



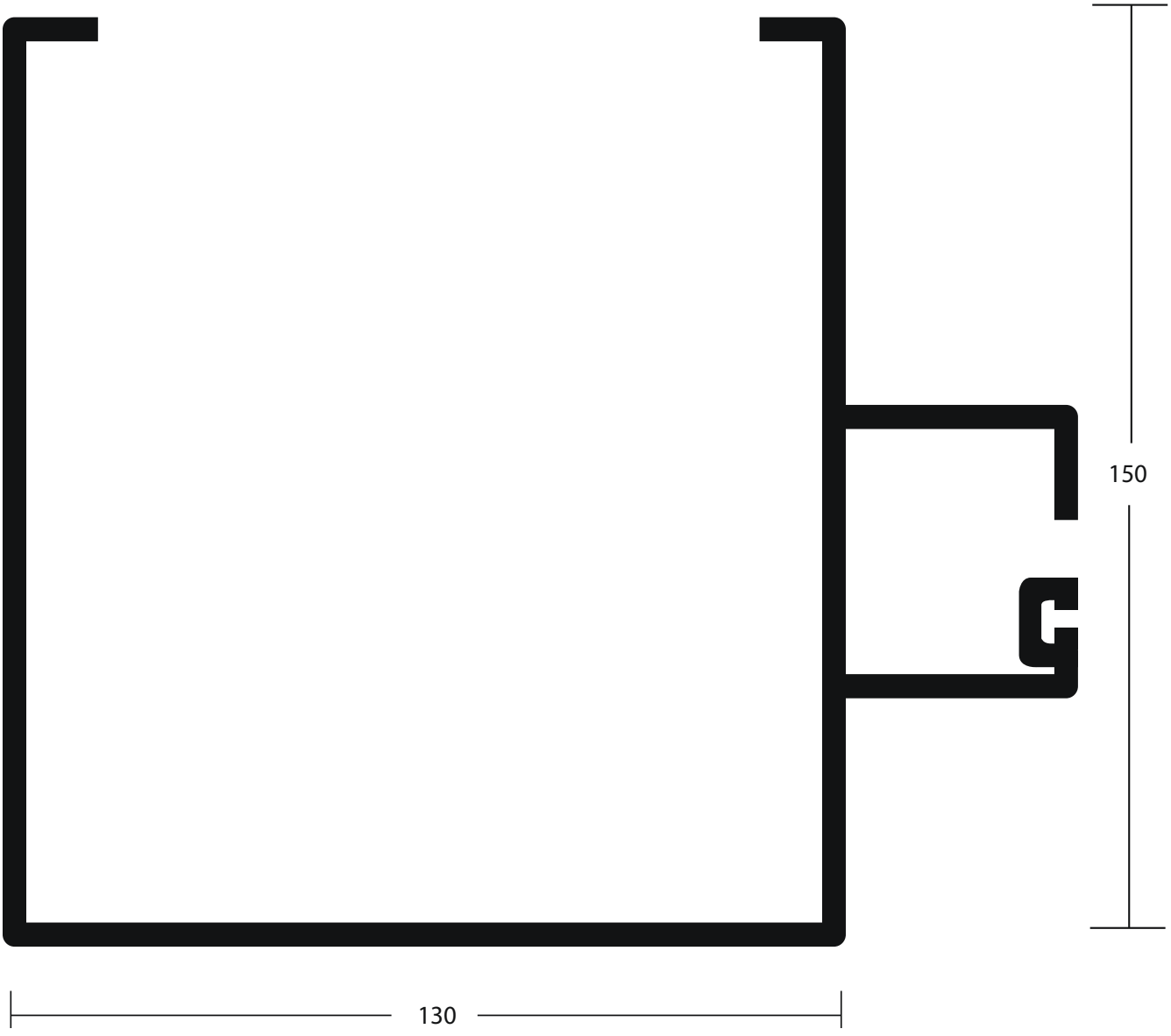

CT-209 - 0,153kg/m




PORT01 - 6m
PORT10 - 3m




PORT03 - 6m




PORT02 - 6m

# NORMAS ABNT PARA CÁLCULO DE PRESSÃO DE VENTO

ALPA ALUMÍNIO

No Brasil, o comportamento estrutural de uma esquadria está regulamentada pela Norma NBR 10821.

Esta norma fixa as condições de desempenho de caixilhos em edificações residenciais e comerciais e visa assegurar ao consumidor, o recebimento de produtos com condições mínimas exigíveis de desempenho, especificamente quanto à resistência a cargas uniformemente distribuídas e que apresenta um roteiro de cálculo da pressão de ensaio (vento e vedação).

Figura 1

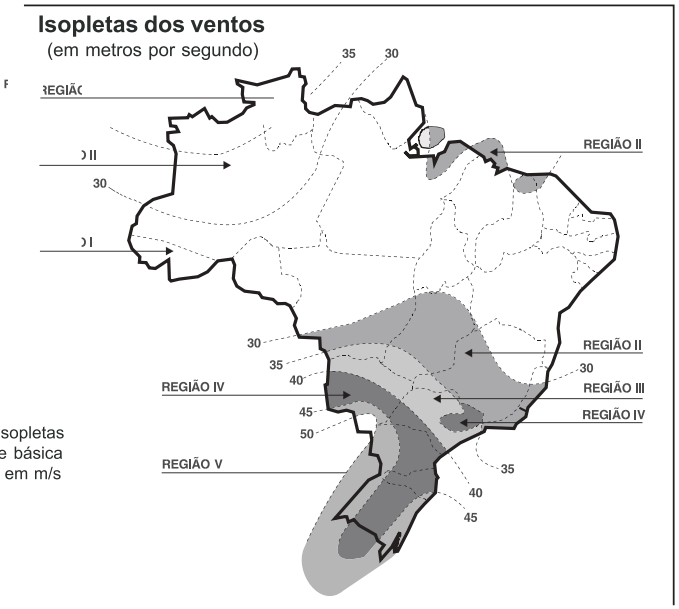



Gráfico das isopletas da velocidade básica do vento: "V" em m/s no Brasil.

Tabela 1

**Pressão de ensaio de cargas uniformemente distribuidas.**

| Classe | Região do País | Pressão de projeto Pp em Pa | Pressão de sucção, em Pa, P.x0,8 | Pressão de ensaio P= Ppx1,5 em Pa |
|---|---|---|---|---|
| Residencial Unifamiliar ou Comercial simples até 2 pavimentos<br>Normal | I<br>II<br>III<br>IV<br>V | 300<br>400<br>550<br>650<br>850 | 350<br>500<br>650<br>800<br>1000 | 450<br>600<br>800<br>950<br>1250 |
| Residencial ou Comercial até 4 pavimentos ou 12 metros<br>Melhorada | I<br>II<br>III<br>IV<br>V | 450<br>600<br>800<br>1000<br>1200 | 550<br>700<br>950<br>1200<br>1450 | 650<br>900<br>1200<br>1500<br>1800 |
| Comercial pesada ou edifícios residênciais com mais de 5 pavimentos<br>Reforçada | Todas as regiões | Calcular conforme NBR 6123 | Calcular conforme NBR 6123 | Calcular conforme NBR 6123 |
| Arquiteturas especiais (Shopping, industriais, hospitais, etc.)<br>Excepcional | Todas as regiões | Calcular conforme NBR 6123 | Calcular conforme NBR 6123 | Calcular conforme NBR 6123 |

**Notas:** **1)** Na classe reforçada, os valores de pressão, calculados conforme a NBR-6123, deverão ser, pelo menos, iguais aos valores das pressões de ensaio da classe Melhorada.
**2)** Nos casos de arquiteturas especiais da classe Excepcional, os valores de pressão de ensaio, calculados conforme a NBR-6123, quando inferiores aos valores da classe Melhorada, deverão ser justificados através de ensaios em túneis de vento ou planilhas de cálculo e assinadas por um responsável técnico.

**Pressão de ensaio de estanqueidade à água**

| Classe de utilização | Região do País | Pressão de estanqueidade à água - Pressão de projeto de vento - Pp x 0,15, em Pa |
|---|---|---|
| Residencial Unifamiliar ou Comercial simples - até dois pavimentos<br>Normal | I<br>II<br>III<br>IV<br>V | 40<br>60<br>80<br>100<br>120 |
| Residencial ou Comercial até 4 pavimentos ou 12 metros<br>Melhorada | I<br>II<br>III<br>IV<br>V | 60<br>90<br>120<br>150<br>180 |
| Comercial pesada ou edifícios residênciais com mais de 5 pavimentos<br>Reforçada | Todas as regiões | Pressões de ensaio = o maior dos dois valores.<br>0,15 x Pp (pressão de projeto das cargas de vento) e os valores das pressões da classe Melhorada. |
| Arquiteturas especiais (Shopping, indústrias, hospitais, etc.)<br>Excepcional | Todas as regiões | Pressões de ensaio= o maior dos dois valores:<br>0,15 x Pp (pressão de projeto das cargas de vento) e os valores das pressões de classe Melhorada. |

Tabela 3
**Fator topográfico de correção $S_1$**

| Topografia | $S_1$ |
|---|---|
| Vales profundos, protegidos de todos os ventos. | 0,9 |
| Encostas e cristas de morro em que ocorre aceleração do vento. Vales com efeitos de afunilamento. | 1,1 |
| Todos os casos, exceto os acima citados. | 1 |

Tabela 4
**Fator de Correção $S_2$**
Rugosidade do terreno, dimensões da edificação e altura acima do terreno.

| Altura acima do terreno H (m) | CATEGORIA | | | |
|---|---|---|---|---|
| | Terreno aberto sem obstruções | Terreno aberto com poucas obstruções | Terreno com muitas obstruções; pequenas cidades; subúrbios de grandes cidades | Terreno com obstruções grandes e frequentes Ex: centros de grandes cidades |
| 3 | 0,83 | 0,72 | 0,64 | 0,56 |
| 5 | 0,88 | 0,79 | 0,70 | 0,60 |
| 10 | 1,00 | 0,93 | 0,78 | 0,67 |
| 15 | 1,03 | 1,00 | 0,88 | 0,74 |
| 20 | 1,06 | 1,03 | 0,95 | 0,79 |
| 30 | 1,09 | 1,07 | 1,01 | 0,90 |
| 40 | 1,12 | 1,10 | 1,05 | 0,97 |
| 50 | 1,14 | 1,12 | 1,08 | 1,02 |
| 60 | 1,15 | 1,14 | 1,10 | 1.05 |
| 80 | 1,18 | 1,17 | 1,13 | 1,10 |
| 100 | 1,20 | 1,19 | 1,16 | 1,13 |
| 120 | 1,22 | 1,21 | 1,18 | 1,15 |
| 140 | 1,24 | 1,22 | 1,20 | 1,17 |
| 160 | 1,25 | 1,24 | 1,21 | 1,19 |
| 180 | 1,26 | 1,25 | 1,23 | 1,20 |
| 200 | 1,27 | 1,26 | 1,24 | 1,22 |

**Fator Probabilístico $S_3$ = 0,88**

## Descrição do exemplo a ser calculado

Obra localizada em São Paulo, REGIÃO III, em local de terreno aberto e poucas obstruções, com 16 pavimentos (± 50 metros).
Vide tabela 4, 3.ª coluna.

***EXEMPLO SIMPLIFICADO DE PRESSÃO DE ENSAIO NA CLASSE REFORÇADA.***

**P = Pressão de Ensaio**

$$P = q.(Ce-Ci)$$

onde:

**P =** Pressão de Ensaio (Pa)

**q =** Pressão de Obstrução (Pa)

**Ce-Ci =** Para este exemplo, adotamos o valor de 1,5 para **(Ce-Ci)** que é um coeficiente válido para condições desfavoráveis.

**q = Presssão de Obstrução**

$$q = \frac{(VK)^2}{1,6}$$

onde:

**VK = Velocidade Características do Vento**

$$VK = V_0 . S_1 . S_2 . S_3$$

onde:

| | |
|---|---|
| $V_0$ | Velocidade Básica do Vento em m/s, dada pelas isopletas. (Figura 1) |
| $S_1$ | Fator Topográfico de Correção, dado pela tabela 3. |
| $S_2$ | Fator de Correção que considera as influências da rugosidade do terreno,das dimensões da edificação e de sua altura sobre o terreno, dado pela tabela 4. |
| $S_3$ | Fator Probabilístico, de valor igual a 0,88. |

1) $VK = V_0 . S_1 . S_2 . S_3$

onde:

$V_0$ = 40 m/s
$S_1$ = 1
$S_2$ = 1,12
$S_3$ = 0,88
**VK** = 39,42 m/s

2) $q = \frac{(VK)^2}{1,6}$

**q**= 971 Pa (também é igual a Pressão de Projeto = Pp)

3) **P = q.(Ce-Ci)**

**P** = 1457 Pa ou 145,7 kg/m²

**Conclusão deste exemplo:**

a) Para efeito de cálculo estrutural, temos que utilizar o valor de

**145,7 kg/m²** ou **1457 Pa**

b) Para efeito de ensaio de estanqueidade à água, temos que utilizar o valor que representa 15% do valor da Pressão de Projeto, que é

**97,1 kg/m²** ou **971 Pa**,

cujo valor é

**14,6 kg/m²** ou **140 Pa**

ALPA
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