



REHAU[®]

Unlimited Polymer Solutions



RAUVOLET ACOUSTIC-LINE

TECHNICAL INFORMATION

RAUVOLET ACOUSTIC-LINE

CONTENTS

1	Description	3
2	Technical data	4
3	Acoustic values	6
4	Technical definitions	8
4.1	Example calculation – reverberation period	11
5	Wooden cabinet accessories	12
5.1	Slam rails	12
5.2	Vertical pelmets PP	14
5.3	Track systems	16
6	Steel cabinet accessories	18
6.1	Aluminium slam rail systems	18
6.2	Track systems	20
7	Wooden and steel cabinet accessories	22

1

DESCRIPTION

RAUVOLET ACOUSTIC-LINE – SOUND ABSORPTION ON THE FURNITURE FRONT

The patented RAUVOLET acoustic-line system is suitable for both cabinet and partition wall solutions. The award-winning broadband absorber absorbs sound and serves to provide sound protection in the surrounding area.

The intelligent combination of acoustics and storage space in furniture supports the conditioning of room acoustics.

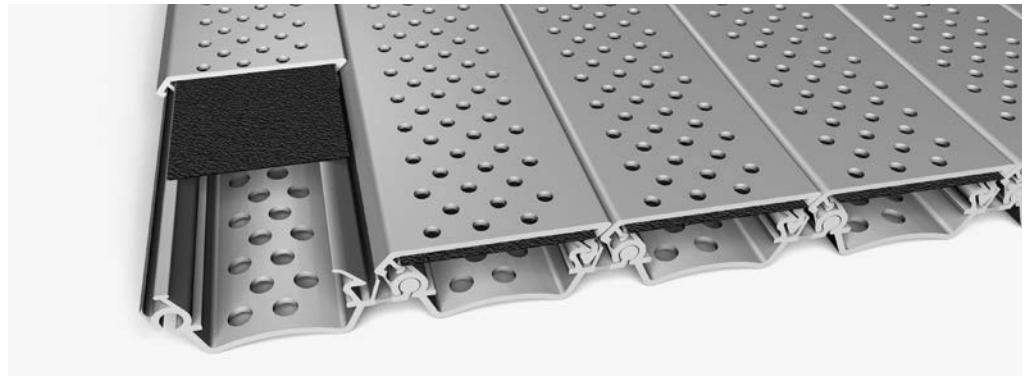


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TECHNICAL DATA

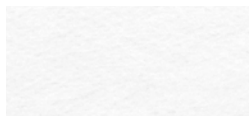
RAUVOLET ACOUSTIC-LINE – SOUND ABSORPTION ON THE FURNITURE FRONT

Roller shutter base profile	RAUVOLET acoustic-line 12 mm
Profile dimensions (width x height)	27 x 12 mm
Colour/decorative design	Individually adjustable
Material	Polypropylene (RAU-PP 1482)
Field of application	Interiors
Applications	Cabinet applications, partition wall applications
Temperature range	Room climate
Recyclability	Thermally, material
Decomposition products arising during combustion	Carbon dioxide, carbon monoxide, H ₂ O
Compliance with fire protection standards	Glow Wire test as per VDE 0471 T2 for 1.6 and 3.2 mm = 750 °C Flame resistance as per UL-94 3.2 mm = HB (slow burning)



RAUVOLET acoustic-line 12 mm

Acoustic non-woven fabric	RAUVOLET acoustic-line 12 mm
Colour	Signal black RAL 9004 Signal white RAL 9003 Platinum grey RAL 7036
Material	Glass, pulp
Fire behaviour	B1 flame-resistant as per DIN 4102



Signal white
similar to RAL 9003



Platinum grey
similar to RAL 7036



Black
similar to RAL 9004

Fabricated roller shutter carpet	RAUVOLET acoustic-line 12 mm
Colour	Profile colour combined with fabric colour
Weight	3.6 kg/m ²
Track system width	12 mm

Horizontal application



Installation in a wooden cabinet.

Lift top or prise cabinet open and insert shutter carpet.

Wooden cabinet	12 mm
Profile length (max. cabinet height)	1900 mm (5 OH) ¹⁾
Max. cabinet width	- 1200 mm (up to 5 OH) - 1600 mm (up to 3 OH)
Carpet welded on the reverse	Yes ²⁾



Installation in a double door steel cabinet.

Slats can slide individually allowing the carpet and handle to be tilted and inserted into the cabinet.

Steel cabinet	12 mm
Profile length (max. cabinet height)	1900 mm (5 OH) ¹⁾
Carpet length (max. cabinet width)	- 1200 mm (up to 5 OH) - 1600 mm (up to 3 OH)
Track system	12 mm
Carpet welded on the reverse	No

Vertical application



	12 mm³
Maximum carpet length	approx. 2300 mm (5 OH) ¹⁾
Maximum profile length	1000 mm
Weight balancing mechanism	C3

Vertical application – caddy application

(application with caddy brake only)



	12 mm
Maximum carpet length	1080 mm
Maximum profile length	1000 mm

Roller shutter glides	RAUVOLET acoustic-line 12 mm
Wooden cabinet insert	<p>12 mm guide Insert in every 3rd slat, bottom recommended (article number: 350177)</p> <p>8 mm guide Insert in each slat, top and bottom (article no.: 350175)</p>
Steel cabinet insert	12 mm guide Insert in each slat, bottom (article no.: 350177)



- 1) OH = folder height
- 2) Special cases excluded
- 3) Profile notched at 8 mm on the side

Care and maintenance

The roller shutter systems should be lubricated regularly to ensure that the roller shutters run smoothly. We can make recommendations for lubricants if required.

Soiled roller shutter carpets can be cleaned with a cloth that is damp but not a wet. Areas covered with dust can be vacuumed. Please ensure here that no nozzles are used that could scratch the surface.

3 ACOUSTIC VALUES

RAUVOLET ACOUSTIC-LINE. THE SOUND-ABSORBING SYSTEM

Acoustic values – RAUVOLET acoustic-line 12 mm

Holes	Front D 2 mm / back D 3.5 mm
Proportion of space taken up by holes (front/back)	10% / 12%
Average sound absorption rate a (as per VDI 2569)	7 mm / 8.73 mm
Assessed sound absorption rate aw (as per DIN EN ISO 11654)	0.70 (L)
Sound absorption class (as per DIN EN ISO 11654)	C
NRC value (Noise Reduction Coefficient as per ASTM C423)	0.70
SAA value (Sound Absorption Average as per ASTM C423)	0.74
Prüfinstitut Akustikbüro Oldenburg Dr. Christian Nocke	Test report no. 2020/0097_M103 dated 28/05/2020

The measurement values refer to the measurements in a reverberation test chamber as per DIN EN ISO 354 and refer to empty cabinets without content.

RAUVOLET acoustic-line 12 mm (cabinet without content)

Frequency (Hz)	α_s Third	α_p Octave
100	0.69	
125	0.4	0.75
160	1.1	
200	1.03	
250	0.95	0.95
315	0.84	
400	0.64	
500	0.56	0.65
630	0.74	
800	0.76	
1000	0.68	0.7
1250	0.68	
1600	0.66	
2000	0.68	0.65
2500	0.61	
3150	0.6	
4000	0.61	0.65
5000	0.67	

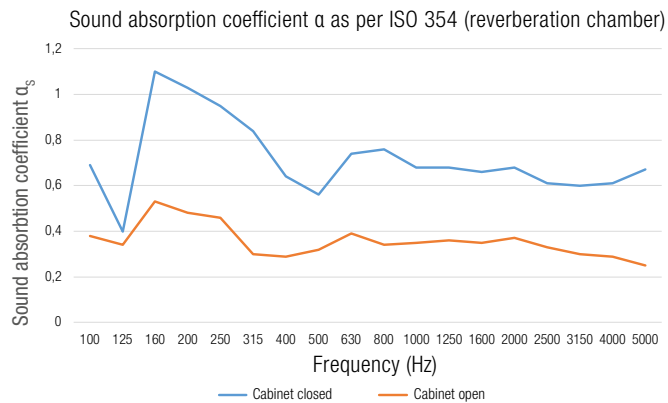
α_s Sound absorption as per ISO 354

α_p Practical sound absorption rate as per ISO 11654

We can provide detailed test reports on request.

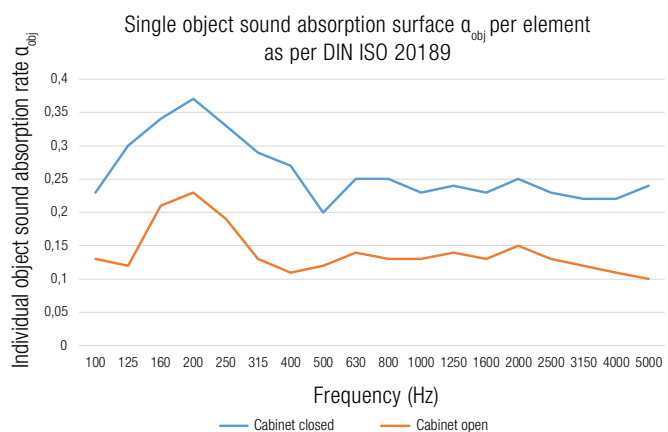
Sound absorption rate as per ISO 354 (reverberation chamber)

Frequency (Hz)	Cabinet closed		Cabinet open	
	α_s Third	α_p Octave	α_s Third	α_p Octave
100	0.69		0.38	
125	0.40	0.75	0.34	0.40
160	1.10		0.53	
200	1.03		0.48	
250	0.95	0.95	0.46	0.40
315	0.84		0.30	
400	0.64		0.29	
500	0.56	0.65	0.32	0.35
630	0.74		0.39	
800	0.76		0.34	
1000	0.68	0.70	0.35	0.35
1250	0.68		0.36	
1600	0.66		0.35	
2000	0.68	0.65	0.37	0.35
2500	0.61		0.33	
3150	0.60		0.30	
4000	0.61	0.65	0.29	0.30
5000	0.67		0.25	



Individual object sound absorption rate α a Obj per element as per DIN ISO 20189

Frequency (Hz)	Cabinet closed		Cabinet open	
	α_{obj} Third	α_{obj} Octave	α_{obj} Third	α_{obj} Octave
100	0.23		0.13	
125	0.30	0.29	0.12	0.29
160	0.34		0.21	
200	0.37		0.23	
250	0.33	0.33	0.19	0.33
315	0.29		0.13	
400	0.27		0.11	
500	0.20	0.24	0.12	0.24
630	0.25		0.14	
800	0.25		0.13	
1000	0.23	0.24	0.13	0.24
1250	0.24		0.14	
1600	0.23		0.13	
2000	0.25	0.24	0.15	0.24
2500	0.23		0.13	
3150	0.22		0.12	
4000	0.22	0.23	0.11	0.23
5000	0.24		0.10	



4 TECHNICAL DEFINITIONS

RAUVOLET ACOUSTIC-LINE.

THE SOUND-ABSORBING SYSTEM

Frequency:

Number of incidences (vibrations) in a certain time period T.

The unit of frequency is Hertz [Hz]

$$1 \text{ Hz} = 1/\text{s}$$

The higher the frequency, the more vibrations per second, the higher the sound.

The lower the frequency, the fewer the vibrations per second, the deeper the sound.

Frequency range of the human voice:

150–5000 Hz

Ability to hear words and sentences:

800–1200 Hz

Reverberation period:

The time T in which the sound pressure level decreases by 60 dB when the sound source is switched off.

NRC value – Noise Reduction Coefficient as per ASTM C423:

The 4 third octave values at 250, 500, 1000 and 2000 Hz are added together and divided by 4. The result is rounded up at intervals of 0.05.

(Source: AFE Akustikbau Ewers GmbH & Co KG: Basics for sound absorption – AFE Acoustic modules for walls and ceilings, p. 6)

Octave:

Doubling or halving the frequency.

Octaves are used to separate the audible range into frequency intervals. 1 octave consists of 3 thirds.

SAA value – Sound Absorption Average as per ASTM C423:

Sound absorption average of all third values from 200–2500 Hz.

Sabine's formula (theoretical calculation of the reverberation period):

Combination of reverberation period (T [s]), volume (V [m³]) and the equivalent absorption surface (A [m²]).

Sabine's formula:

$$T = 0.16 \times V/A$$

Discovered by Wallace Clement Sabine (1869–1919)

However, the problem with the theoretical formula is that sound isn't evenly distributed around the room. To obtain realistic room conditioning, acoustic experts have to be consulted who provide individual advice regarding room acoustics and use of space.

Sound absorption/sound absorption coefficient:

The sound absorption property of a material is clearly described by the sound absorption coefficient/sound absorption rate α (alpha) for each frequency band.

The value α can lie between 0 (total reflection) and 1 (total absorption).

α_s

Measurement of sound absorption in a reverberation chamber.

How much effective sound absorption on surface A is equivalent to one m² test surface.

Will be calculated separately for each third value band, as per DIN EN ISO 354.

α_w (Assessed absorption rate):

Averaged sound absorption rate:

α_p (Practical absorption rate):

Practical sound absorption rate as per DIN EN ISO 11654



4 TECHNICAL DEFINITIONS

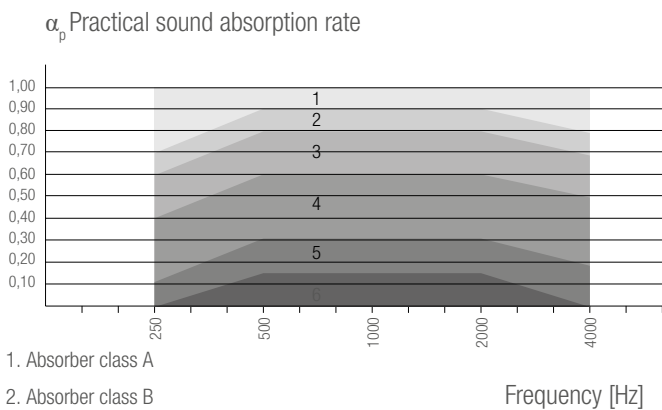
RAUVOLET ACOUSTIC-LINE. THE SOUND-ABSORBING SYSTEM

Sound absorption class:

The classification into sound absorption classes A to E according to the international DIN EN ISO 11654 serves to simplify the assessment of individual materials.

To determine the sound absorption class the absorption ability over the frequency range of 250 to 4000 Hz is considered, where the worst individual values in each case are a deciding factor for the classification.

To do this, the assessed sound absorption rate α_w is firstly determined by the displacement of a standard reference curve. (The exact procedure is described in DIN EN ISO 11654).

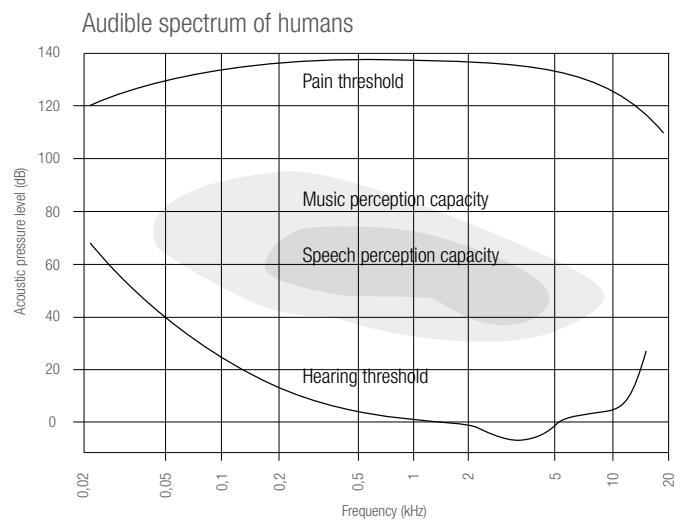


Sound pressure level:

Sound pressure level [dB] = Sound volume

Pressure fluctuations which are described as sound pressure are caused by sound waves in the air.

The hearing threshold for humans is 0 dB, the pain threshold is 120 dB.



Third:

Small frequency intervals: 1/3 octave.

Sound absorber category	α_w values
A	0.90; 0.95; 1.00
B	0.80; 0.85
C	0.60; 0.65; 0.70; 0.75
D	0.30; 0.35; 0.40; 0.45; 0.50; 0.55
E	0.15; 0.20; 0.25
F	0.00; 0.05; 0.10

4.1 TECHNICAL DEFINITIONS

EXAMPLE CALCULATION REVERBERATION PERIOD

Example for reverberation period and sound level:

- Volume V of an office approx. 65 m³ with 4 people
- assumed reverberation period of 2 seconds without RAUVOLET acoustic-line (empty, very reverberant room)
- **= 5.3 m² equivalent absorption area A1 (assumed for this empty room)**
- Addition of 4 cabinets, 7.2 m² total surface area S for an average sound absorption rate α_s 0.7:

$$\Delta A = S \cdot \alpha_s$$
$$7.2 \text{ m}^2 \cdot 0.7$$

=> 5,04 m² sound absorption surface ΔA

- Reduction in sound pressure levels using the formula:

$$\Delta L = 10 \lg((A_1 + \Delta A) / A_1) \text{ dB}$$
$$10 \lg((5.3 + 5.04) / 5.3)$$

=> gives 2.9 dB reduction in sound levels

- Reverberation period according to Sabine's formula:

$$T = 0.163 \cdot (V/A)$$

$$T = (0.163 \cdot 65 \text{ m}^3) / (5.04 + 5.3 \text{ m}^2)$$

=> reduction in reverberation period to 1.02 seconds

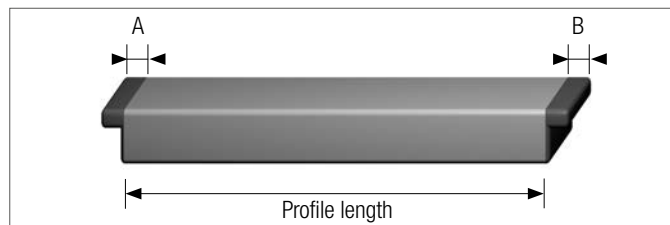
Installing 4 cabinets with RAUVOLET acoustic-line in the room produces:

- A reduction in the sound level of approx. 3 dB
- A reduction in the reverberation period from 2 seconds to 1 second

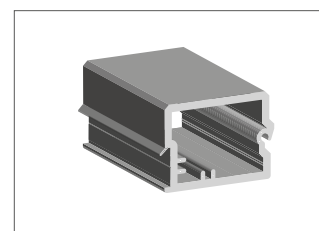
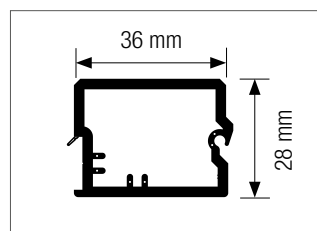
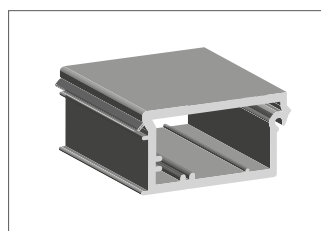
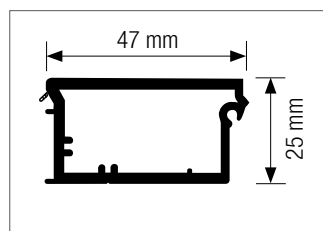


5.1 WOODEN CABINET ACCESSORIES

SLAM RAILS



Schematic diagram:
Glide clearance from the profile (A + B)



Standard PP slam rail 47 mm

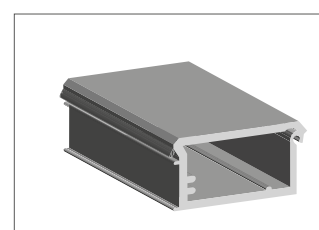
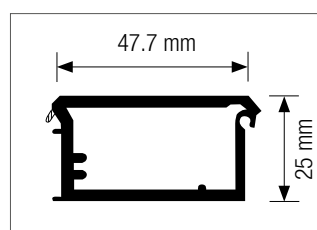
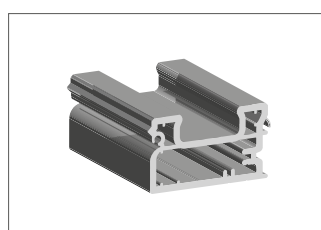
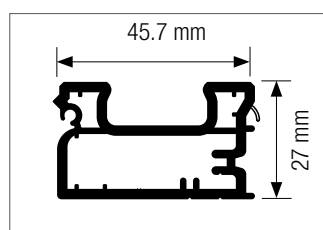
Uni: Art. 1770553
Uni + Lacquer: Art. 1770684
Decorative design: Art. 1770044
Slam rail glide 12 mm Art. 1266358
Slam rail glide 8 mm Art. 1241603

Glide clearance (A + B):
11.5 + 11.5 mm (top and bottom)
11.5 + 11.5 mm (top and bottom)

Standard PP slam rail 36 mm

Uni: Art. 1770849
Uni + Lacquer: Art. 1770839
Decorative design: Art. 1770829
Slam rail glide 12 mm Art. 1265166
Slam rail glide 8 mm Art. 1265855

Glide clearance (A + B):
13 + 10.5 mm
10.5 + 8 mm



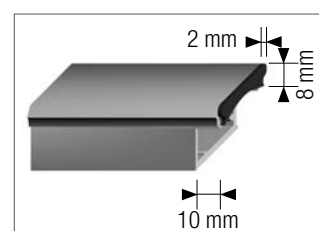
PP slam rail with grip 46mm

Uni: Art. 1750125
Uni + Lacquer: Art. 1750135
Decorative design: Art. 1750145
Slam rail glide 12 mm Art. 1296869
Slam rail glide 8 mm Art. 1296868
Vertical 8 mm Art. 1296875

Glide clearance (A + B):
13.4 + 10.4 mm
13.4 + 10.4 mm
10.4 + 10.4 mm

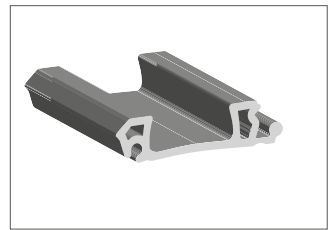
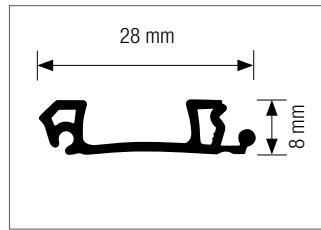
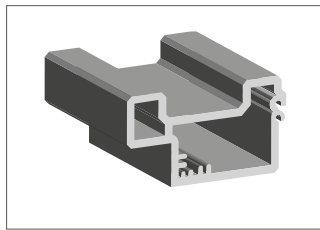
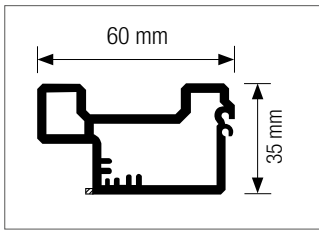
PP slam rail flush

Uni: Art. 1770514
Uni + Lacquer: Art. 1770964
Decorative design: Art. 1770515



Slam rail glide 8 mm Art. 1229280
Slam rail glide for notched slam rail
8 mm (gap-free appearance)

Glide clearance (A + B):
11.0 + 8 mm
2 + 2 mm (fabrication on slam rail required)
Art. 1243746



PP Slam rail with grip 60mm

Uni: Art. 1770314

Uni + Lacquer: Art. 1770965

Decorative design (front surfaces completely printed): Art. 1770706

Decorative design (front surfaces printed on the outside only): Art. 1770414

Slam rail glide 12 mm Art. 1228330 11 + 8 mm

Slam rail glide 8 mm Art. 1241145 11 + 10 mm

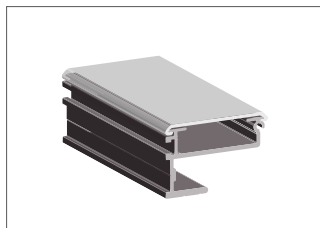
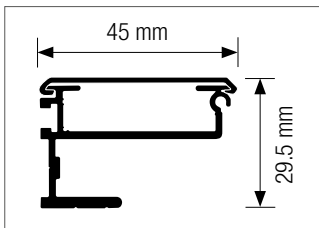
Vertical 8 mm Art. 1227747 9 + 9 mm

Mid Grip

Uni: Art. 1770516, PP

Uni + Lacquer: Art. 1770526, PP

Decorative design: Art. 1770536, PP



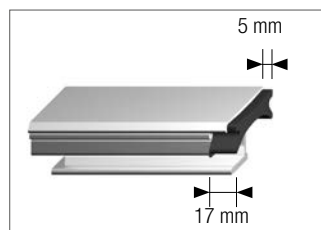
Aluminium slam rail with 45 mm PP cover

Aluminium base profile

Cover Uni: Art. 1770725

Cover Uni + Lacquer: Art. 1770745

Cover decorative design: Art. 1770735



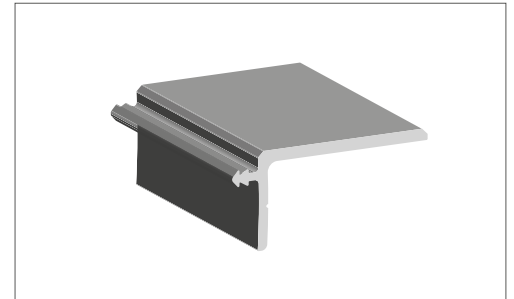
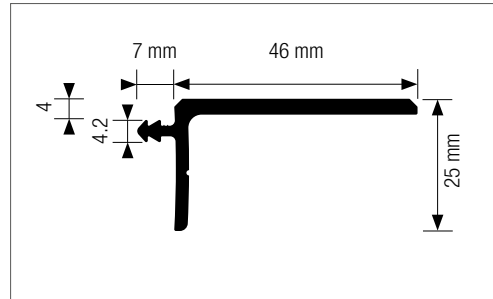
Glide clearance (A + B):

Slam rail glide 12 mm Art. 1244332 Cover profile 5 + 5 mm, aluminium 17 + 17 mm

Slam rail glide 8 mm Art. 1244322 Cover profile 5 + 5 mm, aluminium 17 + 17 mm

5.2 WOODEN CABINET ACCESSORIES

POLYPROPYLENE VERTICAL PELMETS



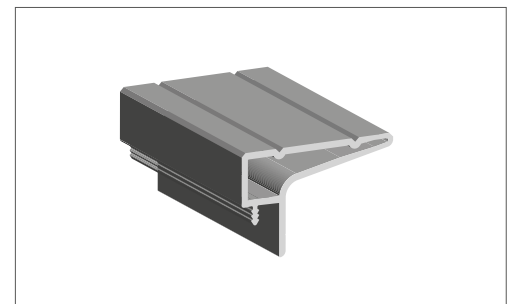
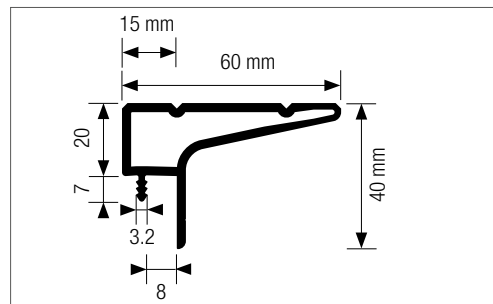
Article with barb (without barb)

Uni: Art. 1770963 (770744)

Uni + Lacquer: Art. 1770694 (770847)

Decorative design: Art. 1770024 (770155)

Groove size for barb = 4.2 mm



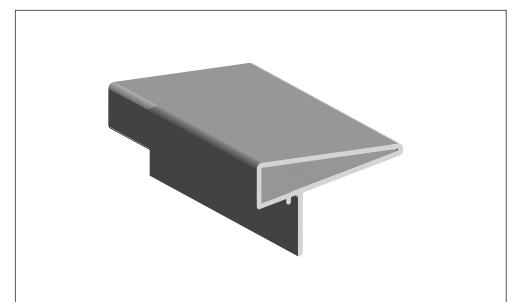
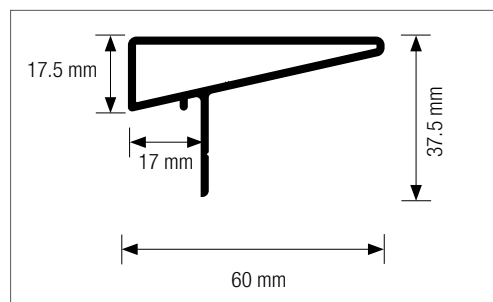
Article with barb (without barb)

Uni: Art. 1770324 (770016)

Uni + Lacquer: Art. 1770975 (770026)

Decorative design: Art. 1770024 (770036)

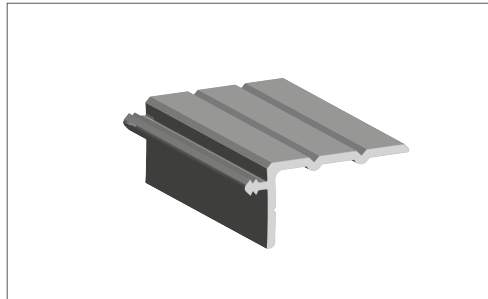
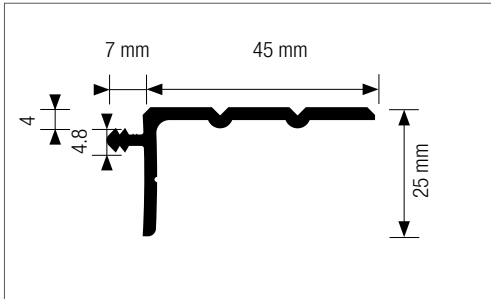
Groove size for barb = 3.2 mm



Uni: Art. 1770767

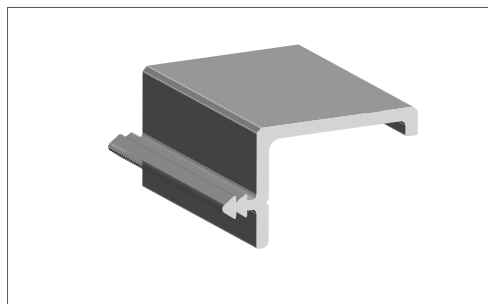
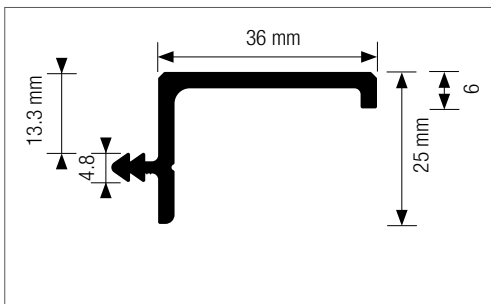
Uni + Lacquer: Art. 1770877

Decorative design: Art. 1770777



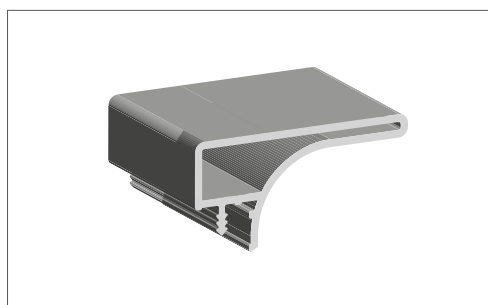
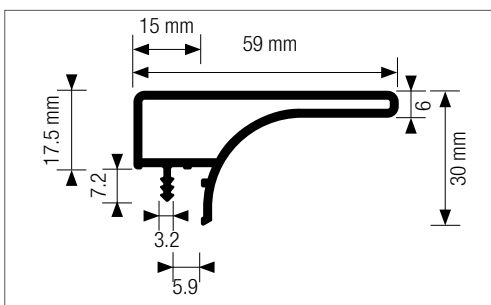
Uni: Art. 1770534
 Uni + Lacquer: Art. 1770974
 Decorative design: Art. 1770704

Groove size for barb = 4.8 mm



Uni: Art. 1770879
 Uni + Lacquer: Art. 1770869
 Decorative design: Art. 1770859

Groove size for barb = 4.8 mm



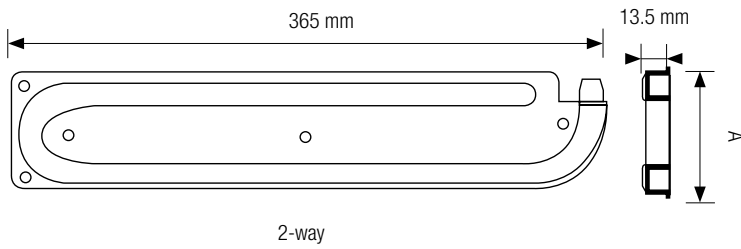
Uni: Art. 1750007
 Uni + Lacquer: Art. 1750017
 Decorative design: Art. 1750027

Groove size for barb = 3.2 mm

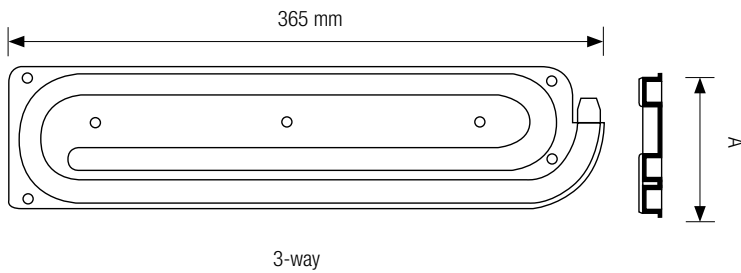
5.3 WOODEN CABINET ACCESSORIES

TRACK SYSTEMS 8 MM/12 MM

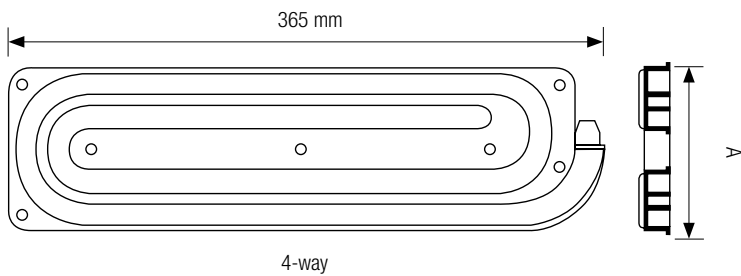
The spiral track with connecting tab for a clean transition to the track



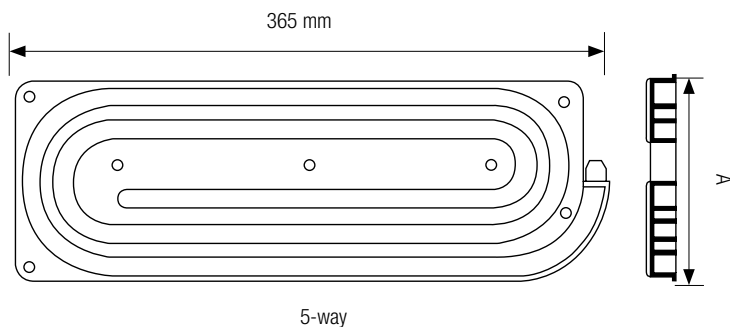
12 mm system (Dimension A = 69 mm): Art. 1269372
 8 mm system (Dimension A = 69 mm): Art. 1260645
 Capacity: max. 670 mm
 Cabinet width (single-door) up to 800 mm



12 mm system (Dimension A = 89 mm): Art. 1264585
 8 mm system (Dimension A = 85.5 mm): Art. 1267069
 Capacity: max. 980 mm
 Cabinet width (single-door) up to 1000 mm

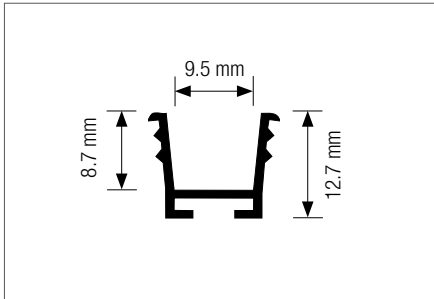


12 mm system (Dimension A = 109 mm): Art. 1260625
 8 mm system (Dimension A = 109 mm): Art. 1260635
 Capacity: max. 1280 mm
 Cabinet width (single-door) up to 1200 mm

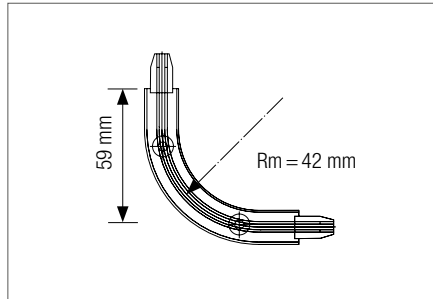


12 mm system (Dimension A = 129 mm): Art. 1260615
 8 mm system (Dimension A = 118.5 mm): Art. 1265955
 Capacity: max. 1590 mm
 Cabinet width (single-door) up to 1600 mm

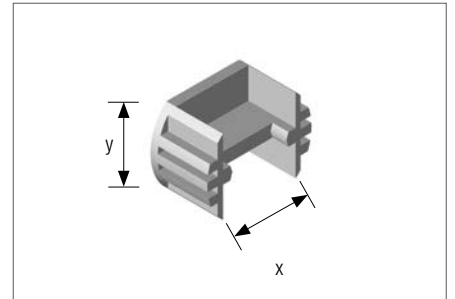
Milling patterns can be provided if required.



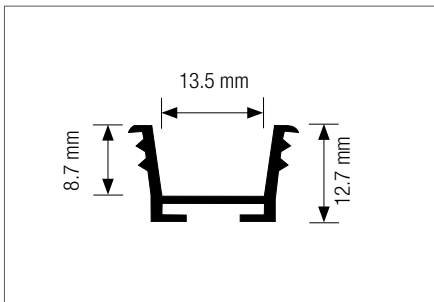
Art. 1770693, PP
 Art. 1957811, ABS
 (recommended groove size 13/12.5 mm (width/depth))



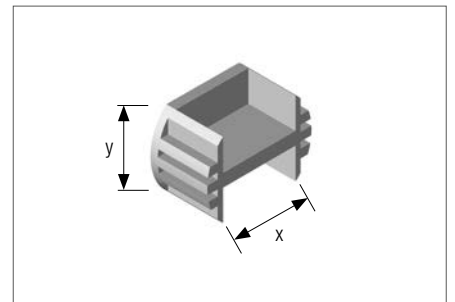
Art. 266222 – 12 mm system for art. 1612123, PA
 Art. 1266212 – 8 mm system for art. 770383, PA



Art. 248866: x = 25.2 mm, y = 17.5 – 12 mm system
 Milling dimension: Ø 25 x 14 mm
 Art. 1246793: x = 20.2 mm, y = 15.0 – 8 mm system
 Milling dimension: Ø 20 x 14 mm



Art. 1770793, PP
 (recommended groove size 17/12.5 mm (width/depth))

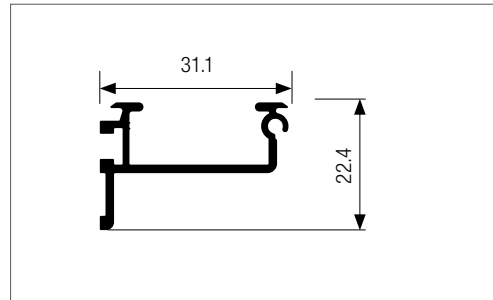


Art. 1266951: x = 25.2 mm, y = 17.5 – 12 mm system
 Milling dimension: Ø 25 x 14 mm
 Art. 1262424: x = 20.2 mm, y = 15.0 – 8 mm system
 Milling dimension: Ø 20 x 14 mm



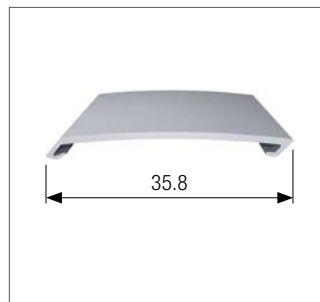
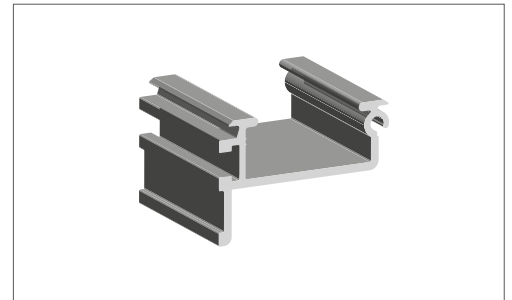
STEEL CABINET ACCESSORIES

ALUMINIUM SLAM RAIL SYSTEMS



Aluminium base profile

Aluminium mill-finish Art. 1780315



PP cover asymmetrical

Uni: Art. 1770448

Uni + Lacquer Art. 1770468

Decorative design: Art. 1770458



Slam rail glide

Art. 1242902



Spacer washer

Art. 1247341 (spacer washer art. 1247341 will be required for the assembly of the bow handles).



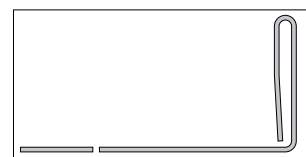
6.2 STEEL CABINET ACCESSORIES

TRACK SYSTEMS

Standard installation situation in a steel cabinet

Depth [mm]	Width [mm]	Doors	Spiral
>360	1200	2	2 x 596.5 mm (T1)
>360	1000	2	2 x 496.5 mm (T1)
>360	800	2	2 x 396.5 mm (T1)
>415	800	1	1 x 596.5 mm (T2) + 182 mm Extension

Sketch



The single-part injection moulded spiral track for easy assembly with minimum space requirement is available in three lengths and two depths in each case. Additional variability is achieved by using an extension track.

The exact system specification is to be decided considering the specific installation situation in each case.

Extension track
for single-door cabinets



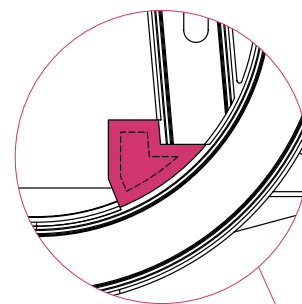
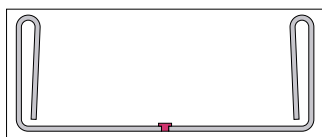
Art. 1245483 left
Art. 1245493 right



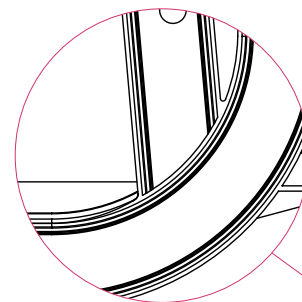
Centre stop
For double-door cabinets



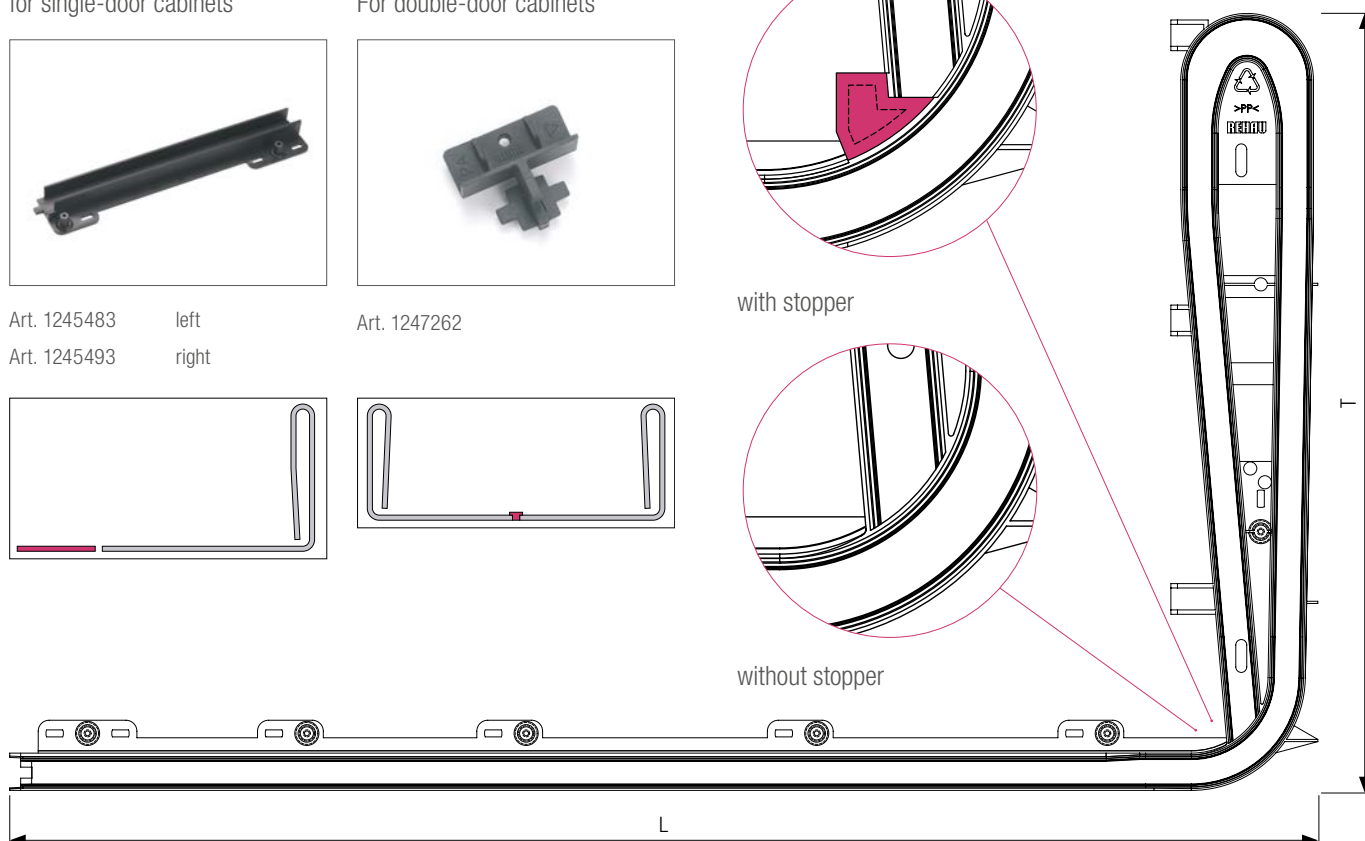
Art. 1247262



with stopper



without stopper



Spiral track for 12 mm systems

	L [mm]	396.5	496.5	596.5	
Depth T1 [mm]	Left	1295709	1295639	1295619	without stopper
354.3	Right	1295719	1295649	1295629	
Depth T1 [mm]	Left	1295749	1295769	1295789	incl. stopper
354.3	Right	1295759	1295779	1295799	
Depth T2 [mm]	Left	1295599	1295579	1295559	incl. stopper
411	Right	1295609	1295589	1295569	

**Magnetic profile**

Art. 1618974

Hook bolt lock

Art. 1220807 left closing

Art. 1220808 right closing

Art. 1224147 rosette

3-point hook bolt lock

Art. 1229869

Adapter

Art. 1770296

When using metallic colour tones and other direction-dependent decorative designs on double-door cabinets, we recommend the use of asymmetrical slam rail variants. An adapter will be required for this.

Recessed handle

for aluminium slam rails with cover

Art. 1242902

Recessed handle

for solid plastic slam rails

Art. 1779984



Bow handle

Art. 1779800 silver, 128 mm

Art. 1779810 silver, 192 mm



Lock

keyed alike 1700695

individually keyed 1700694





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