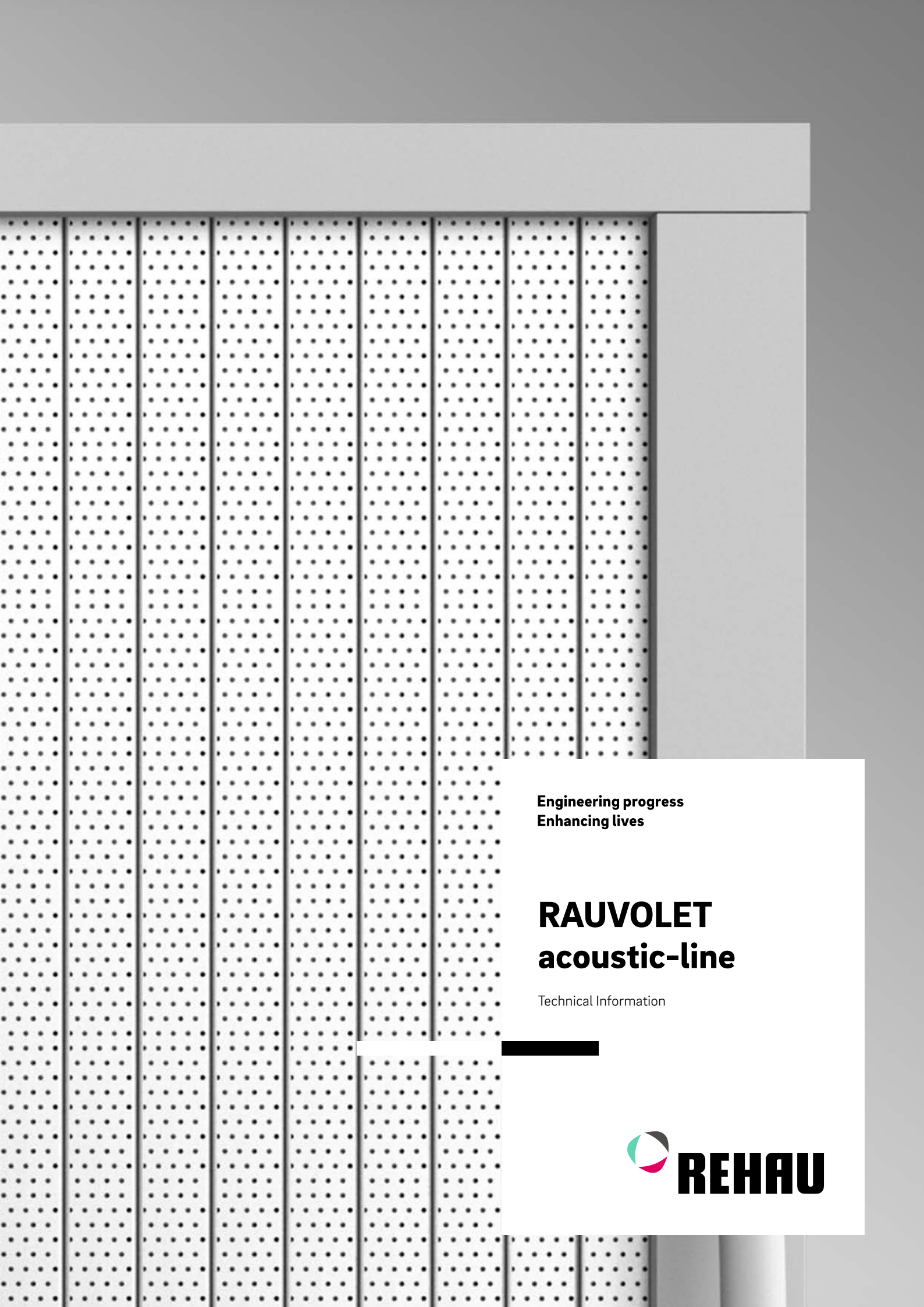


Engineering progress
Enhancing lives

RAUVOLET acoustic-line

Technical Information

REHAU

Contents

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.

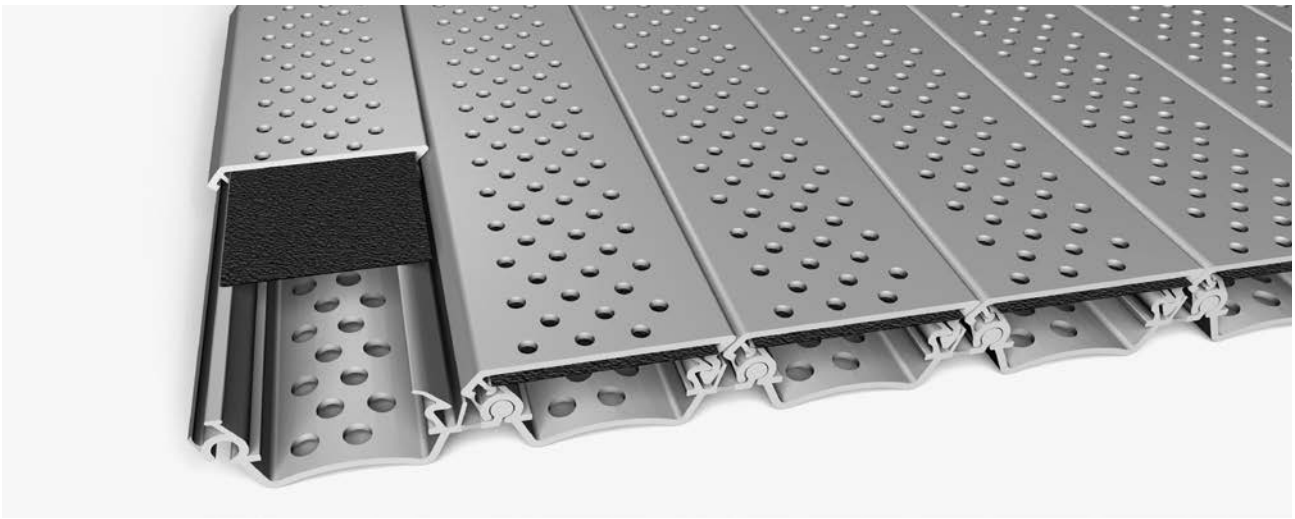
This technical information "RAUVOLET acoustic line" is valid from January 2025.

You can find our current technical documentation available for download at **interior.rehau.com**.

All dimensions and weights are approximate values. Subject to errors and changes.

01 Technical Data

Roller shutter base profile	RAUVOLET acoustic-line 12 mm
Profile dimensions (width x height)	27 x 12 mm
Colour/decorative design	Individually adjustable
Material	Polypropylen (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_2O
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 Signal white Platinum grey	RAL 9004 RAL 9003 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 mm[3)]
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	12 mm guide	Insert in every 3rd slat, bottom recommended (article number: 350177)	
	8 mm guide	Insert in each slat, top and bottom (article no.: 350175)	
Steel cabinet insert	12 mm guide	Insert in each slat, bottom (article no.: 350177)	

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.

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

02 Acoustic values

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)

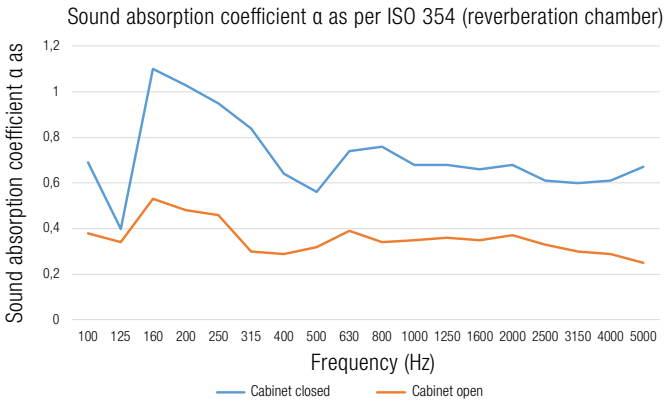
Frequency (Hz)	α_S Third	α_P Octave
100	0.69	
125	0.4	0.75
160	1.1	
200	1.03	
250	0.95	0.95
315	0.84	
400	0.64	
500	0.56	0.65
630	0.74	
800	0.76	
1000	0.68	0.7
1250	0.68	
1600	0.66	
2000	0.68	0.65
2500	0.61	
3150	0.6	
4000	0.61	0.65
5000	0.67	

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.

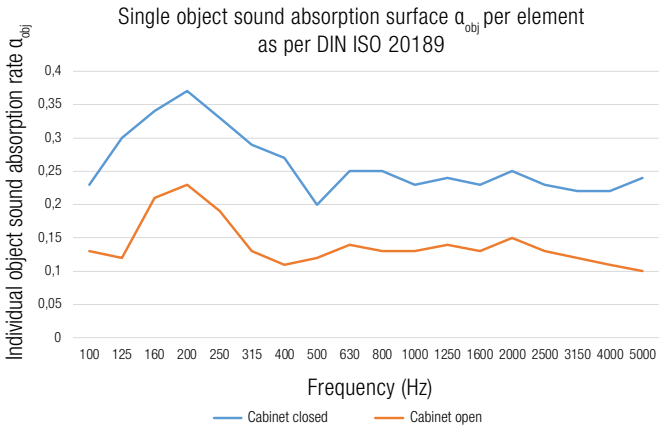
Sound absorption rate as per ISO 354 (reverberation chamber)

	Cabinet closed		Cabinet open	
Frequency (Hz)	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

	Cabinet closed		Cabinet open	
Frequency (Hz)	α_{Obj} Third	α_{Obj} Octave	α_{Obj} Third	α_{Obj} Octave
100	0.23		0.13	
125	0.30	0.29	0.12	0.16
160	0.34		0.21	
200	0.37		0.23	
250	0.33	0.33	0.19	0.18
315	0.29		0.13	
400	0.27		0.11	
500	0.20	0.24	0.12	0.12
630	0.25		0.14	
800	0.25		0.13	
1000	0.23	0.24	0.13	0.13
1250	0.24		0.14	
1600	0.23		0.13	
2000	0.25	0.24	0.15	0.14
2500	0.23		0.13	
3150	0.22		0.12	
4000	0.22	0.23	0.11	0.11
5000	0.24		0.10	



03 Technical Definitions

Frequency
Number of incidences (vibrations) in a certain time period T. The unit of frequency is Hertz [Hz]

1 Hz = 1/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-Wert – Noise Reduction Coefficient nach 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 [m^3]) and the equivalent absorption surface (A [m^2]).

Sabine's formula: T= 0.16 x 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.

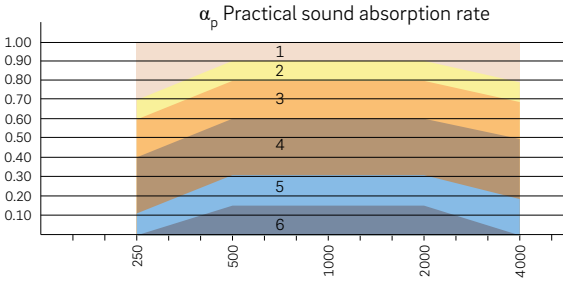
Sound absorption/sound absorption coefficient
The sound absorption property of a material is clearly described by the sound absorption coefficient/sound absorption rate α (alpha) for each frequency band.

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

- **αs:**
  Measurement of sound absorption in a reverberation chamber. How much effective sound absorption surface A is equivalent to one m^2 test surface. Will be calculated separately for each third value band, as per DIN EN ISO 354.
- **αw (Assessed absorption rate):**
  Averaged sound absorption rate
- **αp (Practical absorption rate):**
  Practical sound absorption rate as per DIN EN ISO 11654

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 αw is firstly determined by the displacement of a standard reference curve. (The exact procedure is described in DIN EN ISO 11654).



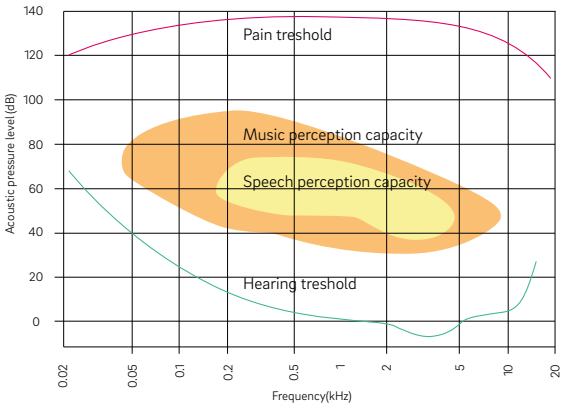
1. Absorber class A
2. Absorber class B
3. Absorber class C
4. Absorber class D
5. Absorber class E
6. Not classified

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

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.

Audible spectrum of humans



Third:
Small frequency intervals: 1/3 octave.

Example for reverberation period and sound level:

- Volume V of an office approx. 65 m^3 with 4 people
- assumed reverberation period of 2 seconds without RAUVOLET acoustic-line (empty, very reverberant room)
  => 5.3 m^2 equivalent absorption area A1 (assumed for this empty room)
- ddition of 4 cabinets, 7.2 m^2 total surface area S for an average sound absorption rate α_S 0,7:
  $\Delta A = S \cdot \alpha_S$
  7.2 $m^2 \cdot 0.7$
  => 5.04 m^2 sound absorption surface ΔA
- Reduction in sound pressure levels using the formula:
  $\Delta L=10 \lg ((A 1 + \Delta A) / A1)$ dB
  $10\lg ((5.3 + 5.04) / 5.3)$
  => gives 2.9 dB reduction in sound levels
- Reverberation period according to Sabine's formula:
  $T = 0.163 \cdot (V/A)$
  $T = (0.163 \cdot 65\ m^3) / (5.04 + 5.3\ m^2)$
  => reduction in reverberation period to 1.02 seconds

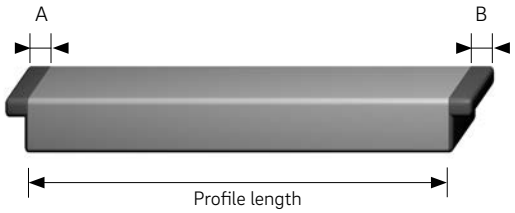
Installing 4 cabinets with RAUVOLET acoustic-line in the room produces:

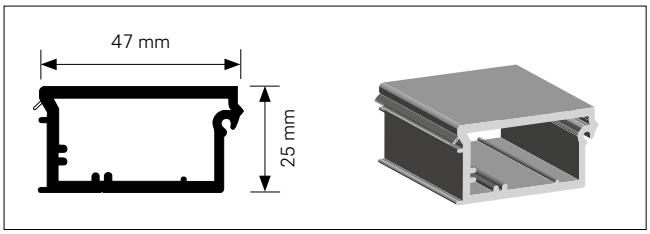
- A reduction in the sound level of approx. 3 dB
- A reduction in the reverberation period from 2 seconds to 1 second

04 Wooden cabinet accessories

04.01 Slam rails

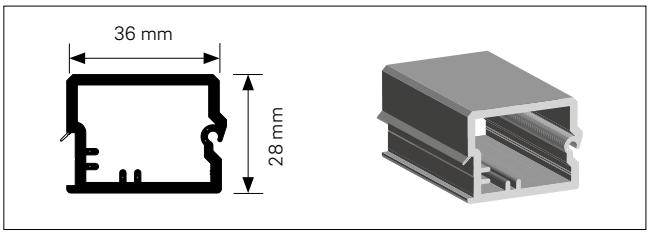
Schematic diagram:
Glide clearance from the profile (A + B)





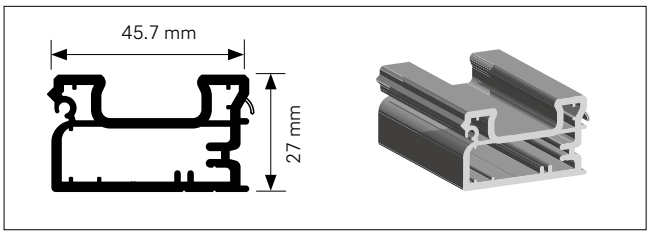
Standard PP slam rail 47 mm

Uni:	Art. 1770553	
Uni + Lacquer:	Art. 1770684	
Decorative design:	Art. 1770044	Glide clearance (A + B):
Slam rail glide 12 mm	Art. 1266358	11.5 + 11.5 mm (top and bottom)
Slam rail glide 8 mm	Art. 1241603	11.5 + 11.5 mm (top and bottom)



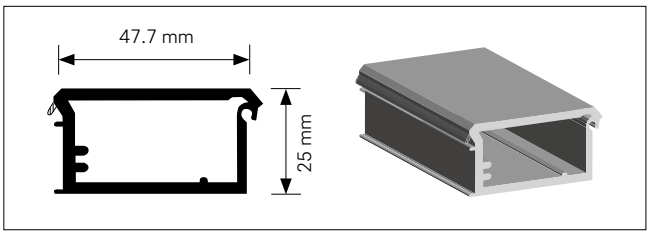
Standard PP slam rail 36 mm

Uni:	Art. 1770849	
Uni + Lacquer:	Art. 1770839	
Decorative design:	Art. 1770829	Glide clearance (A + B):
Slam rail glide 12 mm	Art. 1265166	13 + 10.5 mm
Slam rail glide 8 mm	Art. 1265855	10.5 + 8 mm



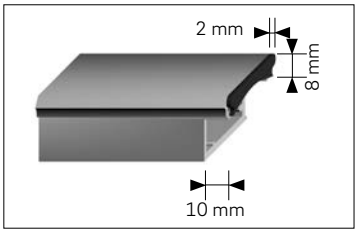
PP slam rail with grip 46 mm

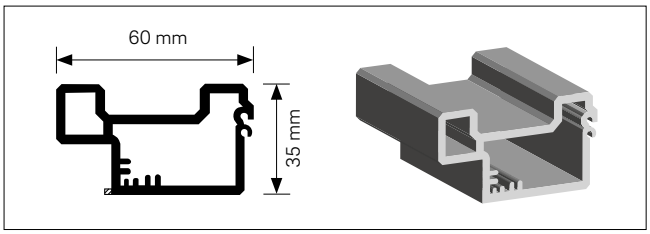
Uni:	Art. 1750125	
Uni + Lacquer:	Art. 1750135	
Decorative design:	Art. 1750145	Glide clearance (A + B):
Slam rail glide 12 mm	Art. 1296869	13.4 + 10.4 mm
Slam rail glide 8 mm	Art. 1296868	13.4 + 10.4 mm
Vertical 8 mm	Art. 1296875	10.4 + 10.4 mm



PP slam rail flush

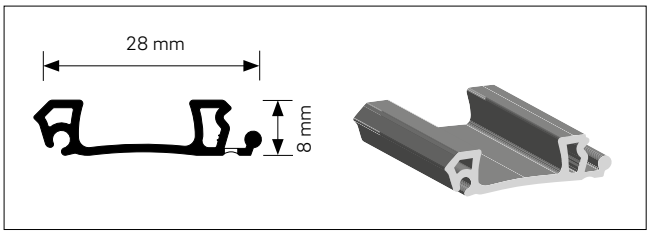
Uni:	Art. 1770514	
Uni + Lacquer:	Art. 1770964	
Decorative design:	Art. 1770515	Glide clearance (A + B):
Slam rail glide 8 mm	Art. 1229280	11.0 + 8 mm
Slam rail glide for notched slam rail 8 mm (gap-free appearance)	Art. 1243746	2 + 2 mm (fabrication on slam rail required)





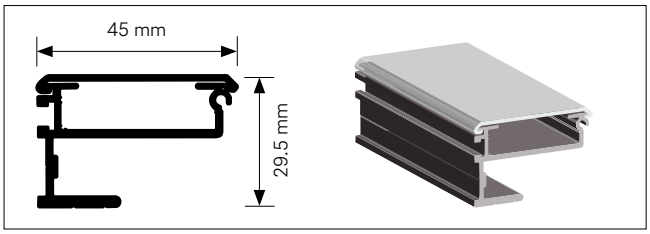
PP Slam rail with grip 60 mm

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 Glide clearance:
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



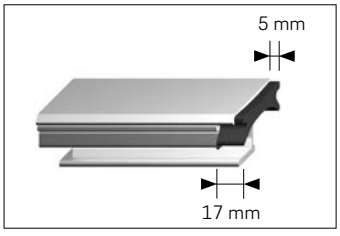
Mid Grip

Uni:	Art. 1770516, PP
Uni + Lacquer:	Art. 1770526, PP
Decorative design:	Art. 1770536, PP

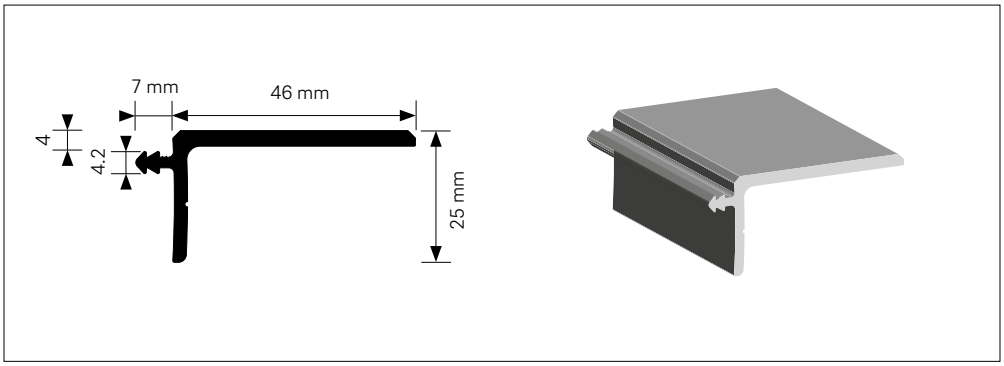


Aluminium slam rail with 45 mm PP cover

Aluminium base profile	Art. 1783921	
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



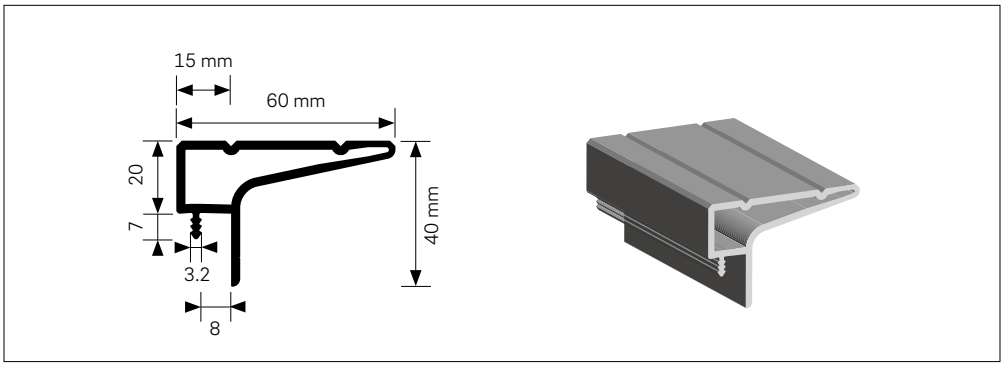
04.02 Polypropylene vertical pelmets



Article with barb (without barb)

Groove size for barb = 4.2 mm

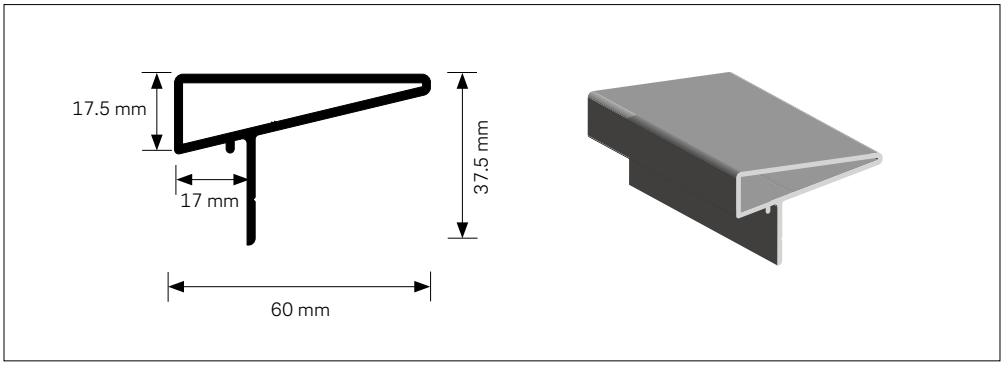
Uni: Art. 1770963 (770744)
Uni + Lacquer: Art. 1770694 (770847)
Decorative design: Art. 1770024 (770155)



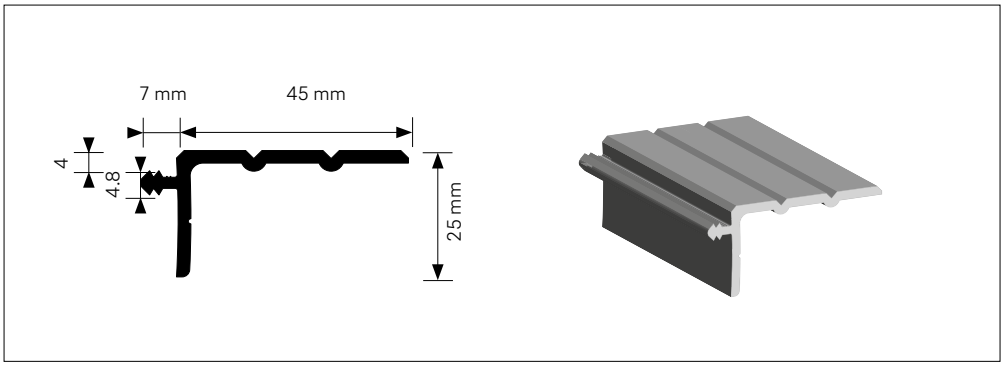
Article with barb (without barb)

Groove size for barb = 3.2 mm

Uni: Art. 1770324 (770016)
Uni + Lacquer: Art. 1770975 (770026)
Decorative design: Art. 1770024 (770036)

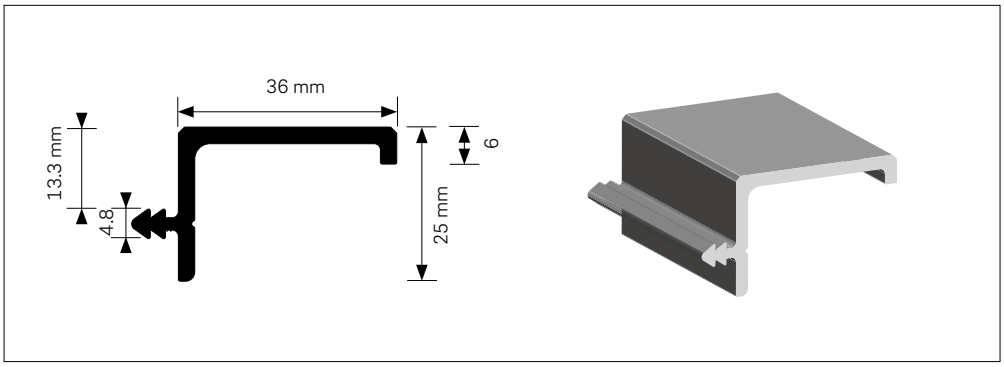


Uni: Art. 1770767
Uni + Lacquer: Art. 1770877
Decorative design: Art. 1770777



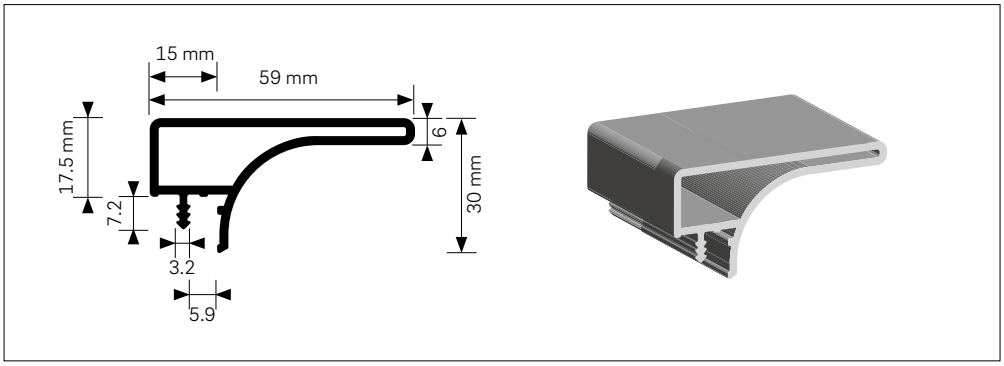
Uni: Art. 1770534
Uni + Lacquer: Art. 1770974
Decorative design: Art. 1770704

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

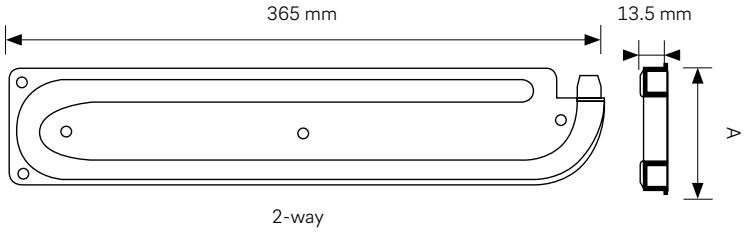


Uni: Art. 1750007
Uni + Lacquer: Art. 1750017
Decorative design: Art. 1750027

Groove size for barb = 3,2 mm

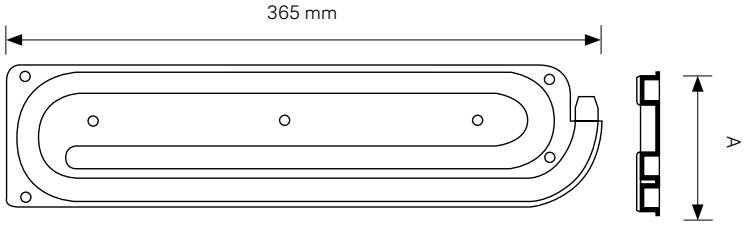
04.03 Track systems 8 mm / 12 mm

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



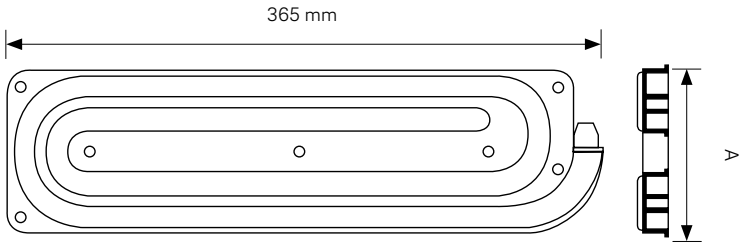
2-way

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



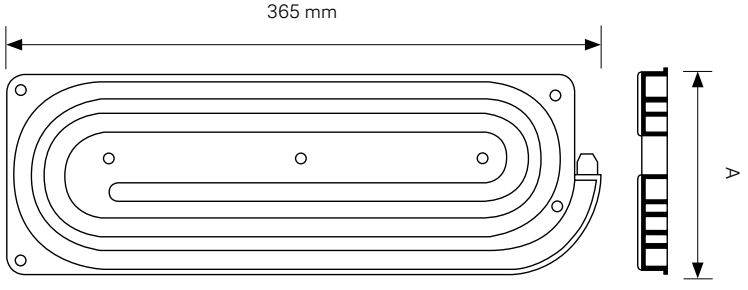
3-way

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



4-way

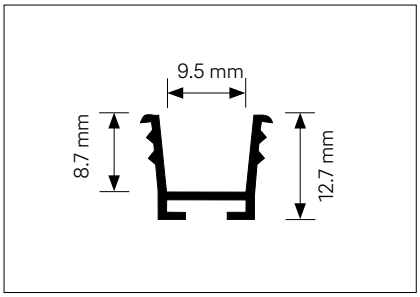
12 mm system (Dimension A = 109 mm): Art. 1260625
8 mm system (Dimension A = 109 mm): Art. 1260635
Capacity: max. 1280 mm
Cabinet width (single-door) up to 1200 mm



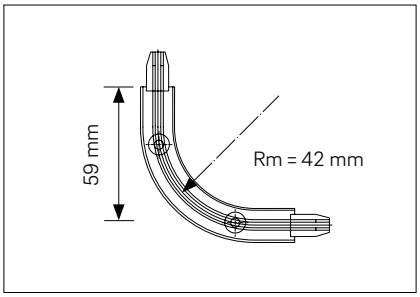
5-way

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

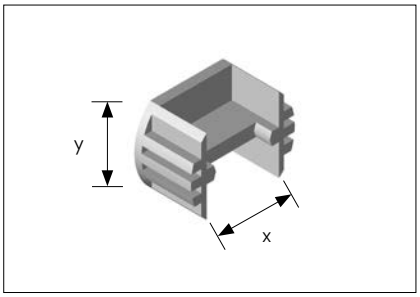
Milling patterns can be provided if required.



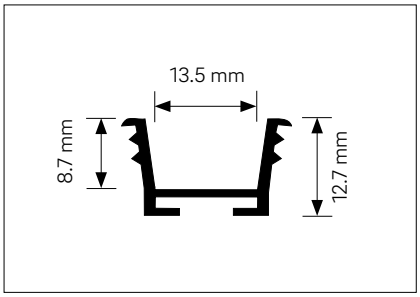
Art. 1770693, PP
Art. 1957811, ABS
(recommended groove size 13/12.5 mm (width/ depth))



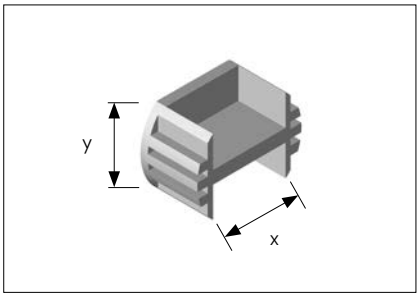
Art. 266222 – 12 mm system for art. 1612123, PA
Art. 1266212 – 8 mm system for art. 770383, PA



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



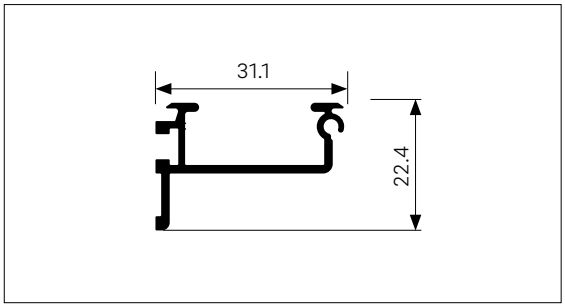
Art. 1770793, PP
(recommended groove size 17/12.5 mm (width/ depth))

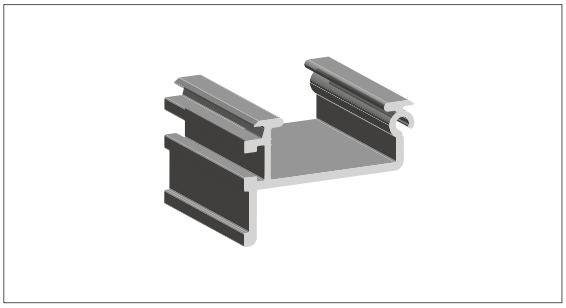


Art. 1266951: x = 25.2 mm, y = 17.5 – 12 mm system
Milling dimension: Ø 25 x 14 mm
Art. 1262424: x = 20.2 mm, y = 15.0 – 8 mm system
Milling dimension: Ø 20 x 14 mm

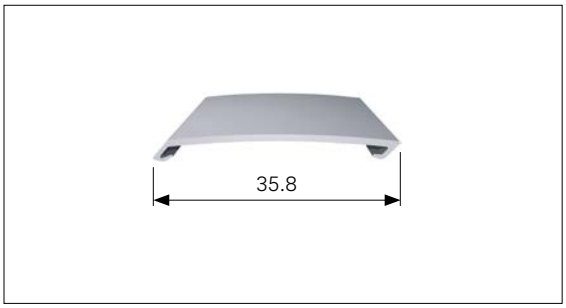
05 Steel cabinet accessories

05.01 Aluminium slam rail systems





Aluminium base profile
Aluminium mill-finish Art. 1780315



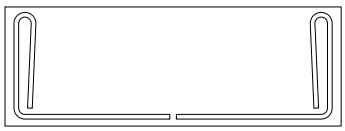
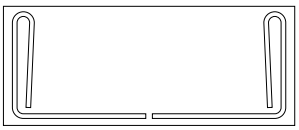
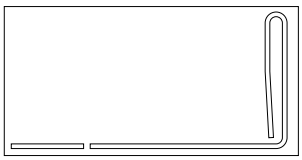
PP cover asymmetrical
Uni Art. 1770448
Uni + Lacquer Art. 1770468
Decorative design Art. 1770458

Slam rail glide
Art. 1242902

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

05.02 Track systems

Standard installation situation in a steel cabinet

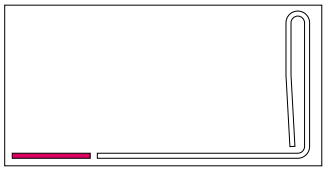
Depth [mm]	Width [mm]	Doors	Spiral	Sketch
>360	1200	2	2 x 596.5 mm (T1)	
>360	1000	2	2 x 496.5 mm (T1)	
>360	800	2	2 x 396.5 mm (T1)	
>415	800	1	1 x 596.5 mm (T2) + 182 mm Extension	

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.

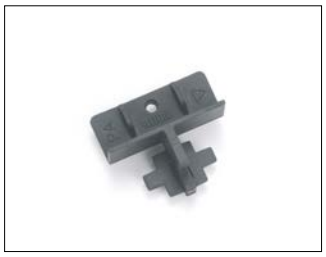
The exact system specification is to be decided considering the specific installation situation in each case.

Extension track
for single-door cabinets

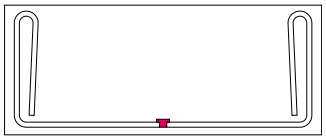
Art. 1245483 left
Art. 1245493 right

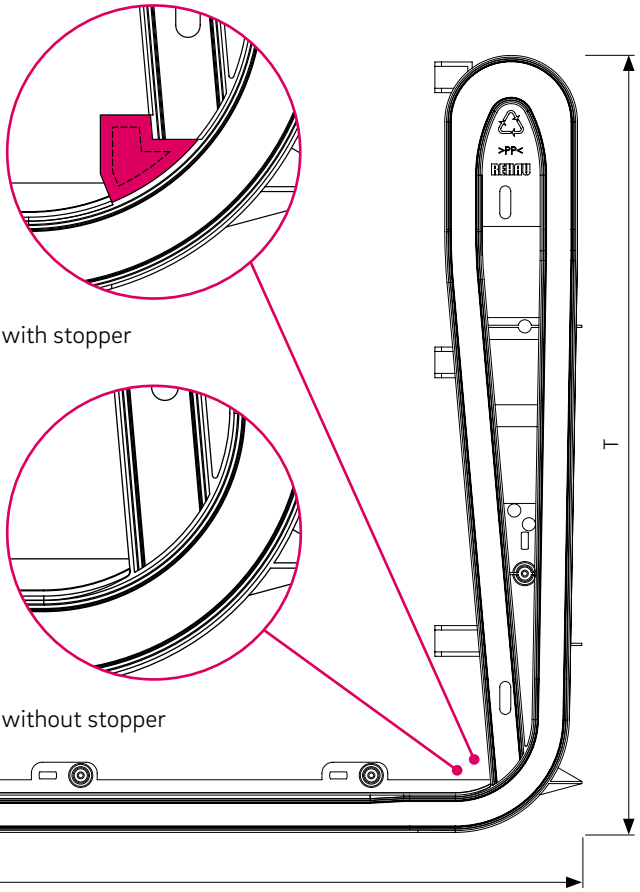


Centre stop
for double-door cabinets



Art. 1247262





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	

06 Wooden and steel cabinet accessories

06.01 Ancillary components

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

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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