PLAFOMETAL

ACOUSTIC METAL CEILINGS

2017 EDITION - NO. 2

ALPHA
ALPHA PLUS
DECIBEL

Enhanced performance

- α_w up to 1
  $D_{n,f,w}$ up to 53 dB
- Whole system supplied
- Wide choice of configurations

PLAFOMETAL

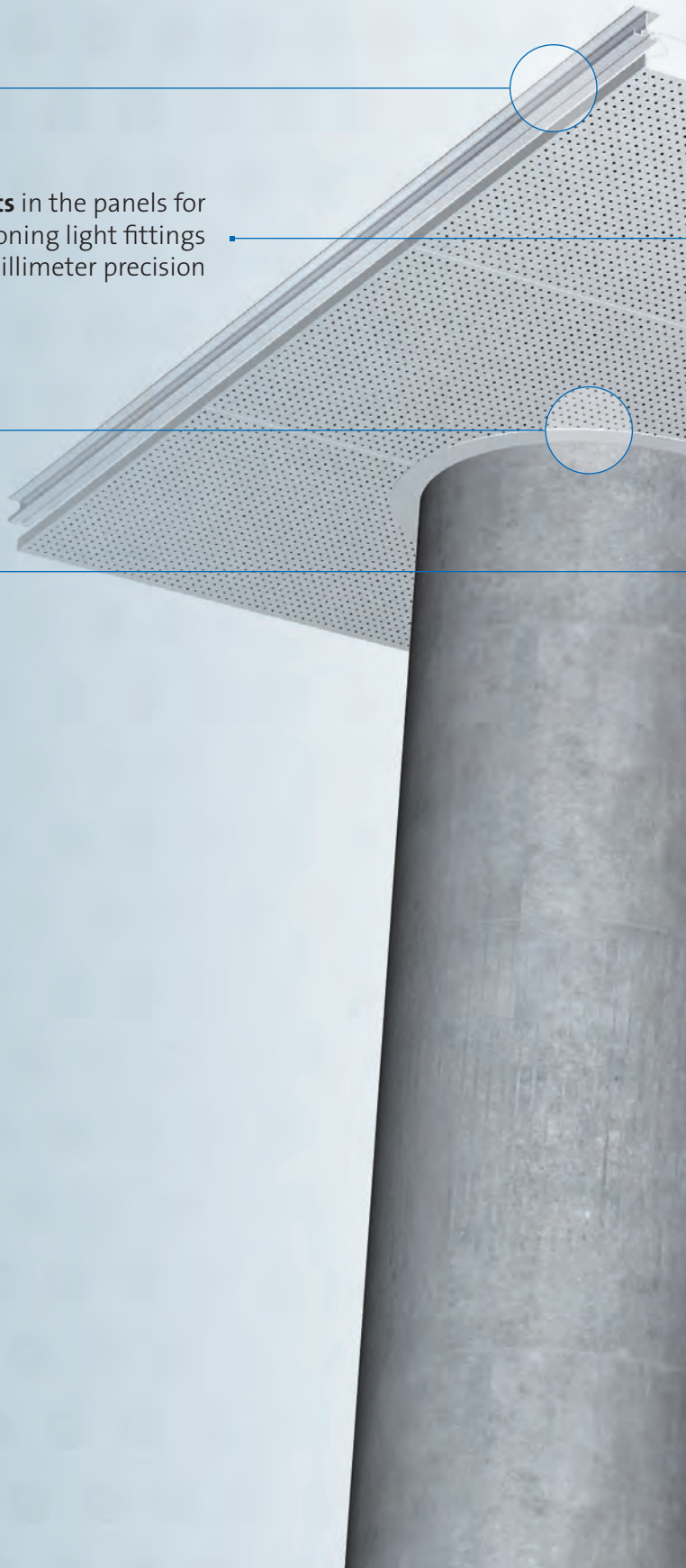
Acoustic and stylish:
solutions designed down to the smallest

Concealed grids for
a monolithic appearance

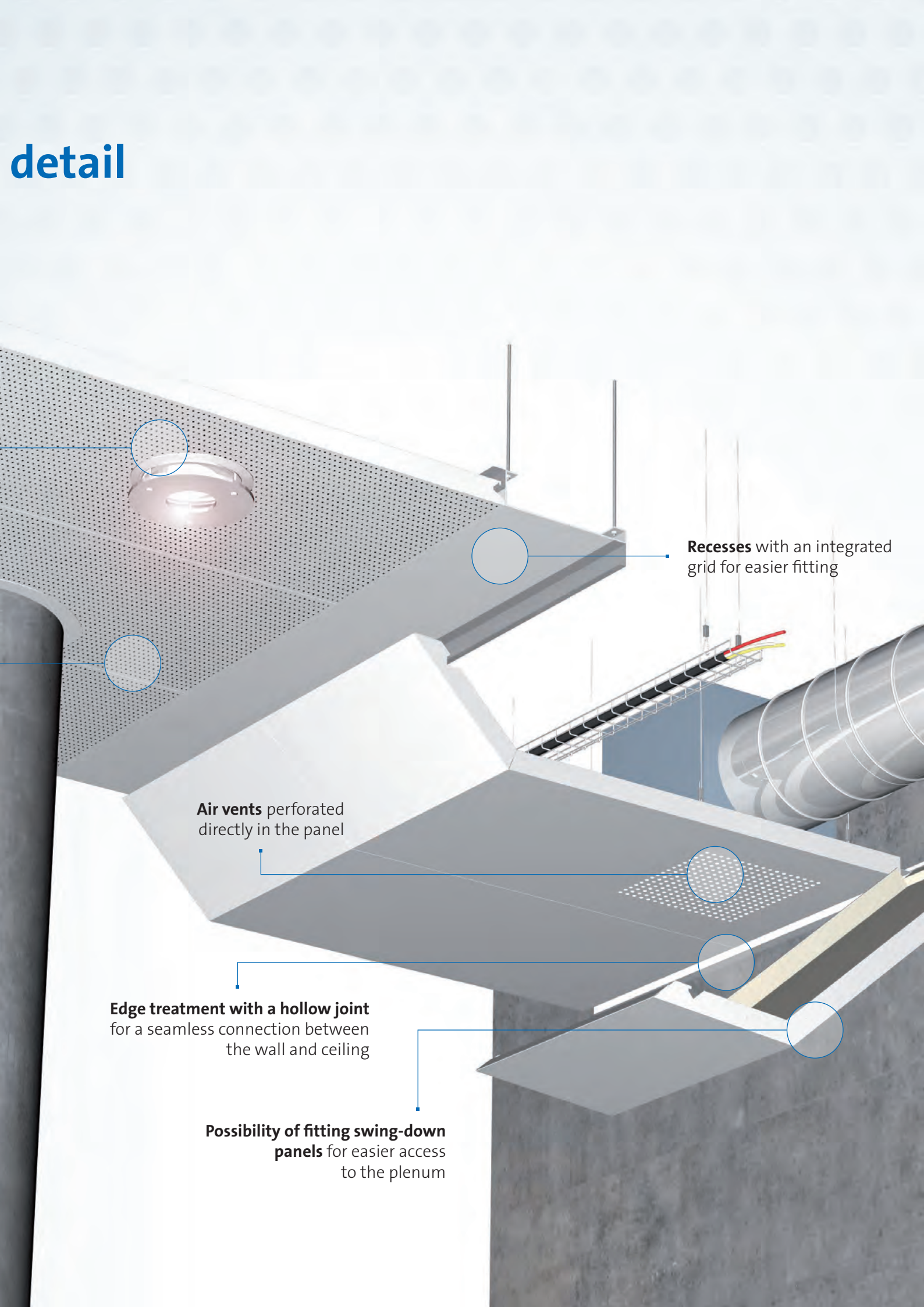
Accurate cut-outs in the panels for
positioning light fittings
with millimeter precision

**Edges designed for a sleek seamless
fit** around all types of pillar

A large number of perforations for
a wider choice of stylish finishes



detail


Recesses with an integrated grid for easier fitting
Air vents perforated directly in the panel
Edge treatment with a hollow joint for a seamless connection between the wall and ceiling
Possibility of fitting swing-down panels for easier access to the plenum

NEW PERFORMANCE

ACOUSTIC SOLUTIONS

ALPHA • ALPHA PLUS • DECIBEL

Your imagination is the only limit to your creativity!

Metal ceilings expert PLAFOMETAL offers a product range capable of satisfying the most creative interior design projects.
Whether an office, hospital, train station or shopping mall, each project is unique. For both bespoke and standard solutions, our design engineers will work by your side throughout your project, offering the support that you need to make the right technical choices for your suspended ceilings.

Metal: a highly resourceful material

Metal, a noble and durable material, has consistently proven its tremendous ability to satisfy every taste and style, however daring. Instantly recognizable, metal takes building design to the next level with a clearly modern and high-end touch.
Another advantage is its proven durability. Metal is so hard-wearing that maintenance work in the plenum is no longer an issue. Metal tiles can be removed countless times without sustaining the slightest damage.

PLAFOMETAL boasts the ability to leverage and enhance the natural qualities of metal to transform ceilings into an architectural feature delivering superior acoustic performance.

EXCELLENT ENVIRONMENTAL CREDENTIALS

PLAFOMETAL ceilings are made from steel and aluminum, which presents an undeniable advantage when addressing the environmental concerns of building professionals and their clients. Verified Environmental & Health Product Declarations (EHPDs) are available for downloading from the INIES national database (www.inies.fr). Steel is currently the most recycled material in the world, while steel recycling plants offer the highest efficiency levels (there are no disposal costs, and steel can be fully recycled without altering its qualities).

Keep noise under control for enhanced acoustic comfort

Time to debunk the myths!

Acoustic qualities are added to metal by perforating the panels to allow sound waves to circulate. Common sense would say that more perforations per cm^2 with a larger diameter would improve acoustic absorption.
Wrong! The usual open area percentages hardly have any effect on acoustic absorption, meaning that the choice of perforation is an exclusively esthetic one.

The new range of acoustic metal ceilings has been designed to provide a solution to all acoustic comfort issues by keeping sound waves under firm control.

The ceiling is the free surface that is the best candidate for acoustic treatment

Since the ceiling is usually the largest single free surface in a room, it plays a primary role in reducing sound reverberations. That is why its ability to absorb sound waves is essential when looking to raise the acoustic performance bar.

Good acoustic conditions make the room more comfortable and are also conducive to relaxation, work and healing.

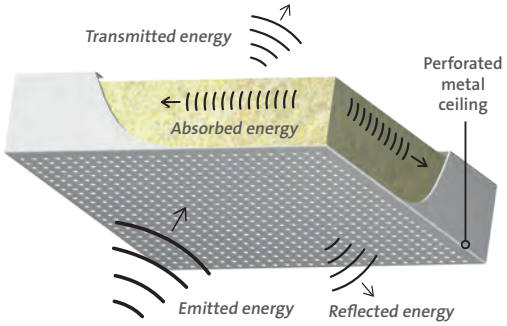
Watch the video and enjoy the acoustic metal ceiling experience!

YouTube

Sound is a vibration that propagates as a spherical wave. When that wave encounters an obstacle, it is either absorbed or reflected. Reflected waves may combine with other waves to create a sensation of noise and discomfort.

A clearer insight into **the rules of acoustics**

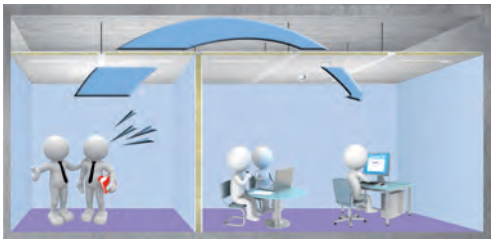
Acoustic absorption



The acoustic absorption performance of a suspended ceiling can be defined by its capacity to reduce sound energy through total or partial absorption (which is known as reducing the reverberation time).
This ability to absorb sound is determined using the Sabin absorption coefficient (α), which is measured in frequency ranges according to ISO 354 and produces a unique index α_w that can be used to compare acoustic performance via a scale ranging from 0 (no absorption = high reverberation of sound waves) to 1 (total absorption = no sound reverberation).

PLAFOMETAL acoustic metal ceilings are engineered from materials with the ability to absorb sound energy. They improve a room's acoustic comfort by reducing reflected waves.

Sound insulation



The sound insulation performance of a suspended ceiling can be defined by its ability to reduce the propagation of sound waves between adjacent rooms sharing the same plenum (this type of construction method is commonly found in tertiary sector buildings). Performance is expressed by a standardized acoustic insulation index $D_{n,f,w}$ and measured in decibels.

PLAFOMETAL offers a range of metal ceilings that are specifically designed to deliver superlative sound insulation performance in addition to acoustic absorption.

INNOVATION: THE DRIVING FORCE OF A MAJOR GROUP

PLAFOMETAL, a Saint-Gobain subsidiary, actively shares the Group's innovation policy by pooling its developments and expertise, which are especially important in acoustic applications, with the Group's other subsidiaries.

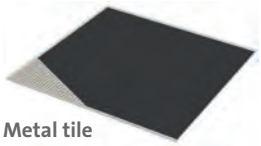
Technical and acoustic performance

Drawing on its experience in the suspended ceilings sector, PLAFOMETAL clearly believes in staying ahead of the innovation curve. In addition, the performance of PLAFOMETAL's products is consistently checked by CSTB (Building Science and Technology Center) to guarantee maximum efficiency. All tests are carried out in a certified, independent laboratory over a short timescale and in comparable conditions to ensure consistent results. Over 170 measurements have been taken since 2014, which has allowed PLAFOMETAL to improve its products and pioneer new solutions.

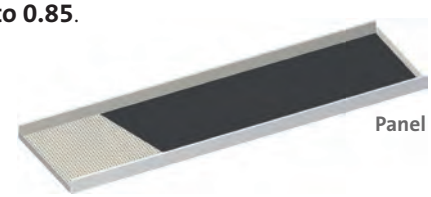
An end-to-end range to address every need

- **ALPHA + GREATER INTELLIGIBILITY**

  Metal tiles and panels covered with a new-generation thermal bonded fleece **for an absorption coefficient α_w up to 0.85**.



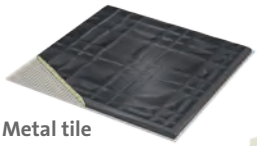
Metal tile



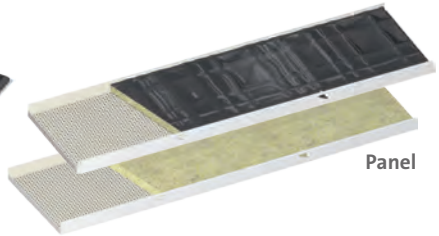
Panel

- **ALPHA PLUS + SUPERIOR ACOUSTIC COMFORT**

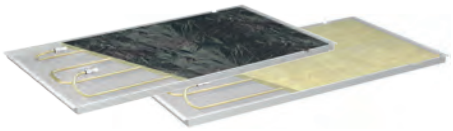
  Metal tiles and panels covered with a high-density mineral wool pad in thin plastic film or with a black tissue face **for an absorption coefficient α_w up to 1** with the option of incorporating the absorption surface into climate ceilings.



Metal tile



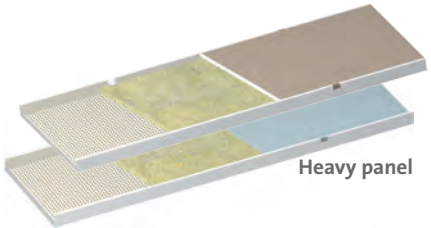
Panel



Climate ceiling

- **DECIBEL + MORE PRIVACY**

  Panels covered with a mineral wool pad and rear top plate **for lateral sound insulation $D_{n,f,w}$ up to 53 dB and an absorption coefficient α_w up to 0.75** with the option of incorporating the absorption surface into climate ceilings.



Heavy panel

Climate ceiling

Alpha solution
+ greater intelligibility

Benefits:

- **Exclusive acoustic absorption: α_w up to 0.85**
- Easy to handle: light and simple to cut
- All-in-one ceiling and supplied in ready-to-install format

The best solution for all passageways

Since access is often required to the plenum, the ceilings in the Alpha range are especially robust and easy to handle during servicing and maintenance. As their name suggests, passageways are transitional areas. Unlike an office or meeting room where comfort is a prerequisite, acoustic treatment is less of a priority in passageways. An absorption rating of Class B is more than adequate to provide an excellent level of acoustic comfort.

- Available in metal tiles, self-supporting panels and opening panels
- Ten types of perforation

Acoustic performance depending on the configuration:

The following table specifies the absorption coefficients α_w according to the products and their perforations.

		Class C	Class B		Class A		
	α_w	0.75	0.80	0.85	0.90	0.95	1.00
Metal tiles							
	H0 H2 H8 H9	22% Dia. 1.5 46% 5.5x5.5	10% Dia. 2.5 11% Dia. 1.5 12% Dia. 2.5				
	Monobac Monobac FS	22% Dia. 1.5	16% Dia. 2.5 23% Dia. 2.5				
Self-supporting panels							
	Pm12 Pm10 Pm3 Pm4	22% Dia. 1.5	10% Dia. 2.5 11% Dia. 1.5 12% Dia. 2.5 16% Dia. 2.5 23% Dia. 2.5 40% 61x4 (1)	18% IRR 20% 61x4 (1)			
	Pm2 Horus						
	Pm8 FS (2)						
Opening panels							
	Orial Aries Axess Translabac	22% Dia. 1.5	10% Dia. 2.5 11% Dia. 1.5 12% Dia. 2.5 16% Dia. 2.5 23% Dia. 2.5 40% 61x4	18% IRR 20% 61x4			
	Orial FS		10% Dia. 2.5 11% Dia. 1.5				

(1) *Perforations only available with Pm2 and Horus*
(2) *For Pm8 FS panels, 23% Dia. 2.5 and 40% 61x4 perforations are not suitable for corridors*

Other perforations are available on request. Details of the absorption performance by frequency range (α_p) are available in the summary table on 18. For more information about our products, refer to the PLAFOMETAL catalog.

Alpha Plus solution

+ superior acoustic comfort

Benefits:

- **Superior Class A acoustic absorption α_w up to 1.00**
- Robust and durable
- All-in-one ceiling

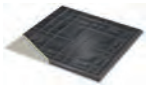
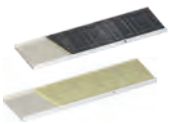
The solution for quiet spaces: offices, classrooms and so on

Alpha Plus is the ideal solution for areas where users need to be able to hear one another. Trying to have a quality telephone conversation is difficult when the person sitting opposite is also in deep conversation... Alpha Plus is PLAFOMETAL's answer for ensuring excellent acoustic comfort.

- A flexible range geared towards all projects (standard metal tiles, self-supporting panels, opening panels, bespoke designs, etc.)
- Six types of perforation
- Two types of specific sound absorbent pad
- Possibility of a climate ceiling
- Ceilings supplied in ready-to-install or kit format, depending on the model
- The sound absorbent pad with all ready-to-install ceilings is held mechanically inside the panels, meaning easy removal and handling without any risk of damaging the products

Acoustic performance depending on the configuration:

The following table specifies the absorption coefficients α_w according to the products, their perforations and their types of sound absorbent pad.

	Class C	Class B		Class A		
α_w	0.75	0.80	0.85	0.90	0.95	1.00
Metal tiles						
 H0* H2* H8* H9* Monobac* Monobac FS*				10% Dia. 2.5	16% Dia. 2.5	11% Dia. 1.5 22% Dia. 1.5 23% Dia. 2.5
Self-supporting panels						
 Pm12** Pm10** Pm2** Horus**				10% Dia. 2.5 18% IRR	16% Dia. 2.5	11% Dia. 1.5 22% Dia. 1.5 23% Dia. 2.5
						10% Dia. 2.5 11% Dia. 1.5 16% Dia. 2.5 22% Dia. 1.5 23% Dia. 2.5 18% IRR
 Pm3* Pm4* Pm8 FS**				10% Dia. 2.5	16% Dia. 2.5	11% Dia. 1.5 22% Dia. 1.5 23% Dia. 2.5
Opening panels						
 Orial** Aries** Axess** Translabac**				10% Dia. 2.5 18% IRR	16% Dia. 2.5	11% Dia. 1.5 22% Dia. 1.5 23% Dia. 2.5
						10% Dia. 2.5 11% Dia. 1.5 16% Dia. 2.5 22% Dia. 1.5 23% Dia. 2.5 18% IRR
Climate ceiling			16% Dia. 2.5	22% Dia. 1.5	16% Dia. 2.5	22% Dia. 1.5

Details of the absorption performance by frequency range (α_p) are available in the summary table on 18. For more information about our products, refer to the PLAFOMETAL catalog.

* Ceiling supplied in kit format
** Ceiling supplied in ready-to-install format

Specific mineral wool pad with black tissue face

Specific mineral wool pad in thin plastic film


Arc & Ciel

Decibel solution
+ more privacy

Benefits:

- **Maximal sound insulation: $D_{n,f,w}$ up to 53 dB**
- Major flexibility for partitions
- All-in-one ceiling and supplied in ready-to-install format

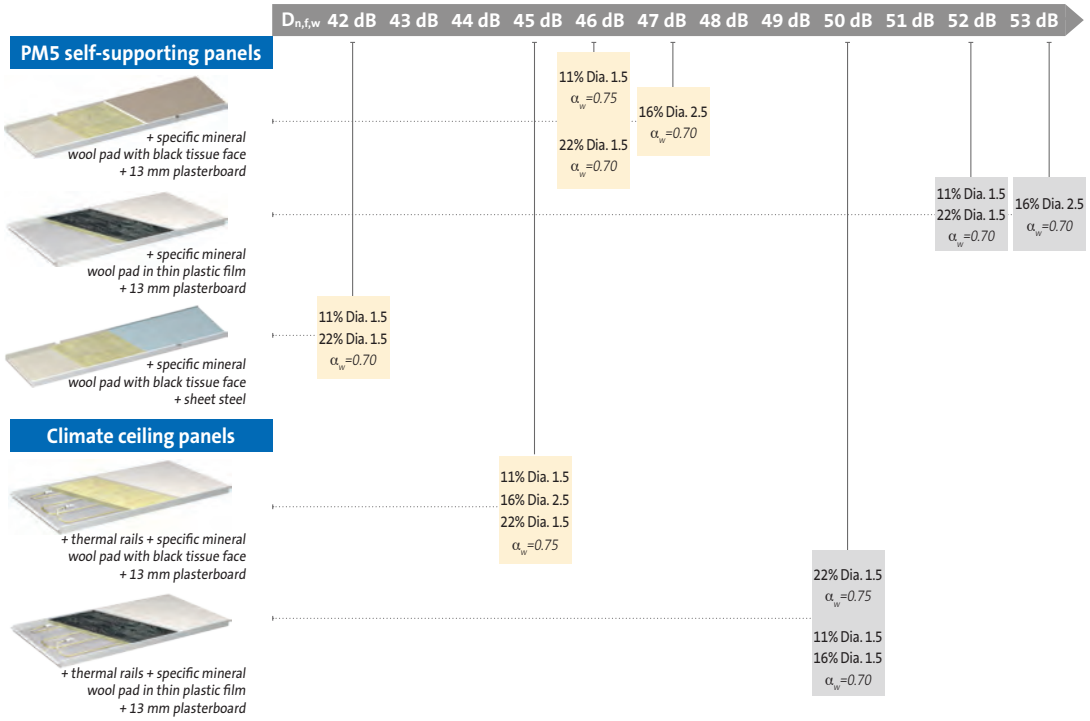
Guaranteed privacy between partitioned offices

The Decibel solution effectively combines high sound absorption and sound insulation to guarantee privacy in partitioned offices sharing the same plenum.
It also represents the ideal solution for open-plan offices with removable partition walls. The bandrasters are designed to receive all types of partition walls to reflect the company's changing needs.

- One range of highly customizable self-supporting panels
- Three types of perforation
- Two types of specific sound absorbent pad
- Two types of top plates for sound insulation (sheet steel or 13 mm plasterboard)
- Possibility of a climate ceiling

Acoustic performance depending on the configuration:

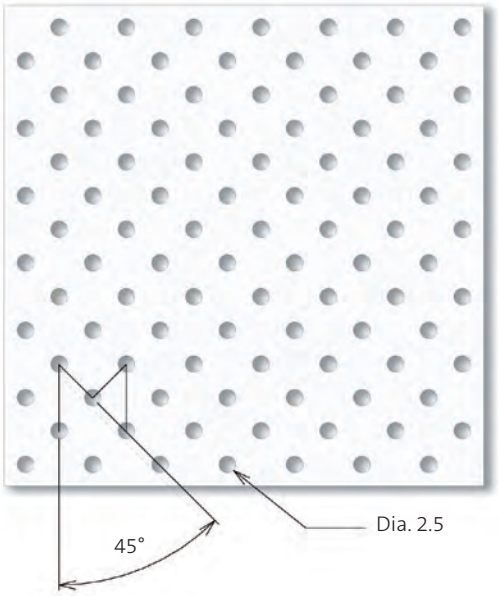
The following table specifies the sound insulation indices $D_{n,f,w}$ and the absorption coefficients α_w according to the chosen solution (type of sound absorbent pad, perforation and activation)



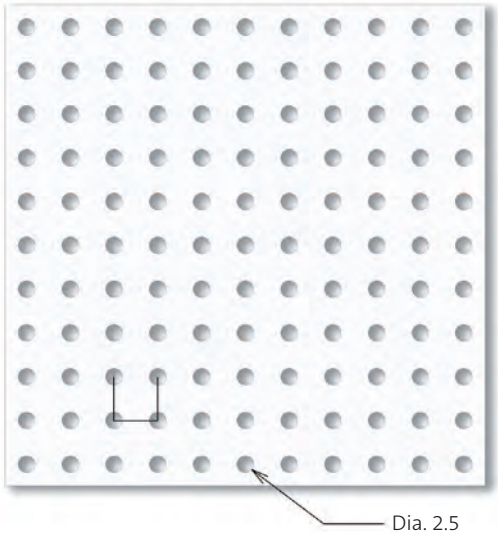
The corrected sound insulation indices $D_{n,f,w}$ (C; Ctr) and the details of the absorption performance by frequency range (α_p) are available in the summary table on page 18. For more information about our products, refer to the PLAFOMETAL catalog.

A stylish acoustic range

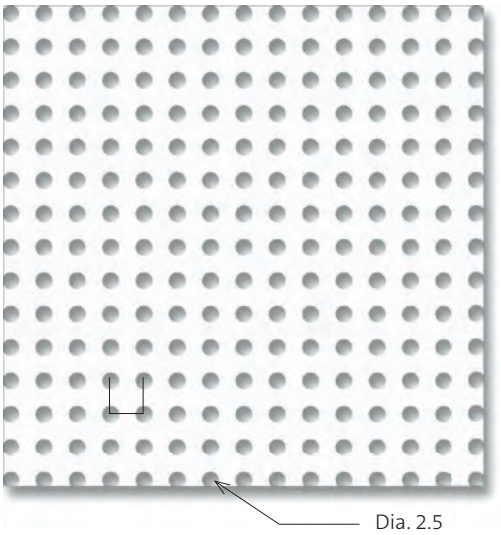
10% Dia. 2.5[2]
M layout



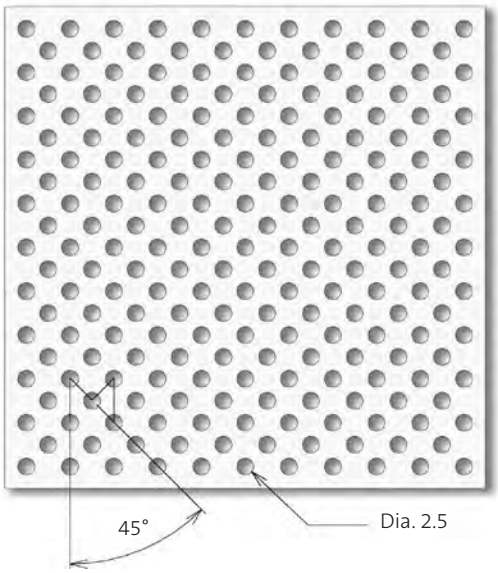
12% Dia. 2.5[1]
U layout



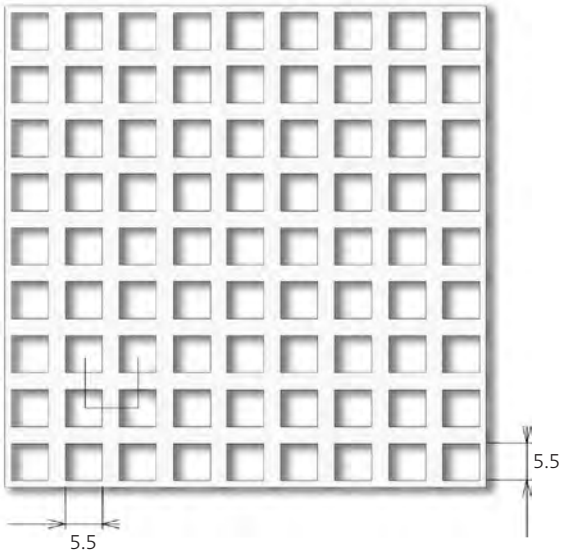
16% Dia. 2.5[3]
U layout



23% Dia. 2.5[2]
M layout



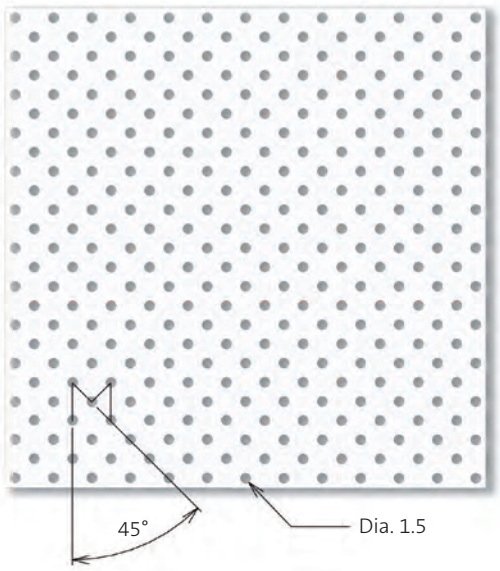
46% 5.5x5.5[1]
U layout



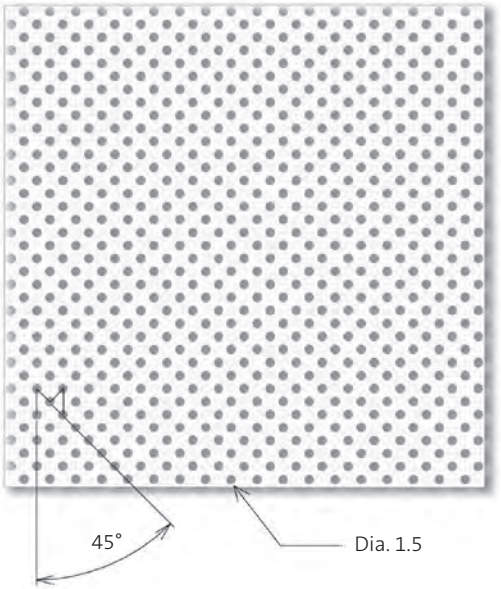
[1] tested in the laboratory for the Alpha solution
[2] tested in the laboratory for the Alpha and Alpha Plus solutions
[3] tested in the laboratory for the Alpha, Alpha Plus and Decibel solutions

Perforations play a role in the metal ceiling's acoustic performance. PLAFOMETAL offers a broad array of perforation solutions for creating a wide range of eye-catching ceiling designs.

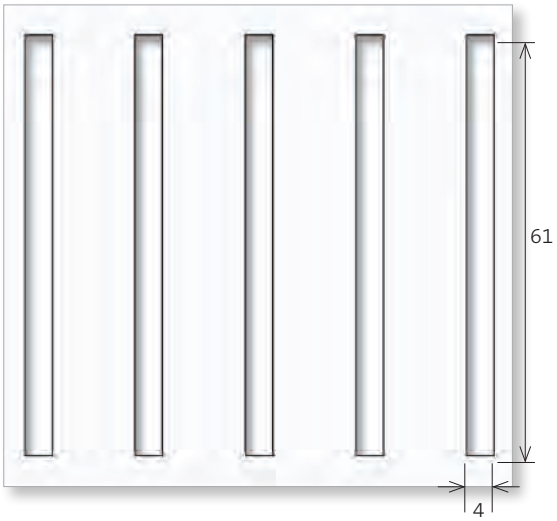
11% Dia. 1.5[3]
M layout



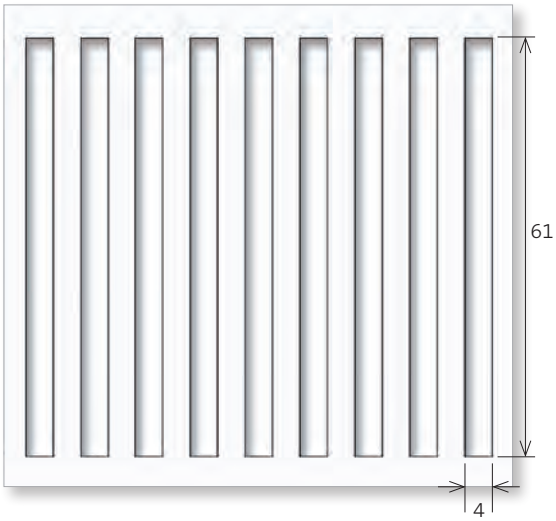
22% Dia. 1.5[3]
M layout



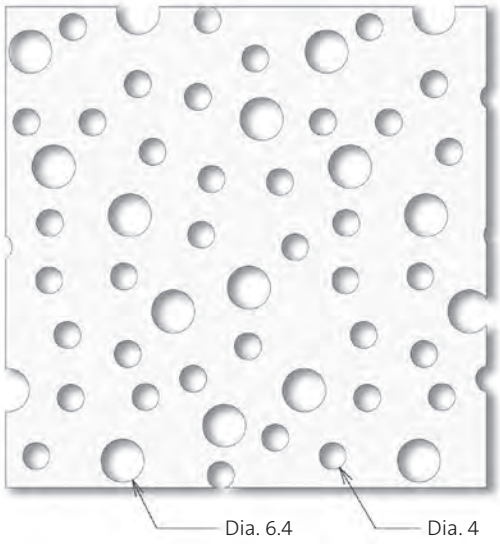
20% 61x4[1]
U layout



40% 61x4[1]
U layout



18% IRR[2]
Random layout



Acoustic comfort

Acoustic solutions	Perforation	Configuration	α_w
ALPHA α_w up to 0.85	10% Dia. 2.5 mm	Specific fleece	0.80
	12% Dia. 2.5 mm	Specific fleece	0.80
	16% Dia. 2.5 mm	Specific fleece	0.80(L)
	23% Dia. 2.5 mm	Specific fleece	0.80
	11% Dia. 1.5 mm	Specific fleece	0.80
	22% Dia. 1.5 mm	Specific fleece	0.75
	18% IRR	Specific fleece	0.85(L)
	11% 61x4 mm	Specific fleece	0.70(L)
	20% 61x4 mm	Specific fleece	0.85(L)
	40% 61x4 mm	Specific fleece	0.80(L)
	46% 5.5x5.5 mm	Specific fleece	0.75
ALPHA PLUS α_w up to 1	10% Dia. 2.5 mm	Specific mineral wool pad in thin plastic film	0.90
		Specific mineral wool pad with black tissue face	1.00
	16% Dia. 2.5 mm	Specific mineral wool pad in thin plastic film	0.95
		Specific mineral wool pad with black tissue face	1.00
		Climate ceiling + specific mineral wool pad in thin plastic film	0.85
		Climate ceiling + specific mineral wool pad with black tissue face	0.95
	23% Dia. 2.5 mm	Specific mineral wool pad in thin plastic film	1.00
		Specific mineral wool pad with black tissue face	1.00
	11% Dia. 1.5 mm	Specific mineral wool pad in thin plastic film	1.00
		Specific mineral wool pad with black tissue face	1.00
	22% Dia. 1.5 mm	Specific mineral wool pad in thin plastic film	1.00
		Specific mineral wool pad with black tissue face	1.00
		Climate ceiling + specific mineral wool pad in thin plastic film	0.90
		Climate ceiling + specific mineral wool pad with black tissue face	1.00
	18% IRR	Specific mineral wool pad in thin plastic film	0.90
		Specific mineral wool pad with black tissue face	1.00
DECIBEL $D_{n,f,w}$ up to 53 dB	16% Dia. 2.5 mm	Specific mineral wool pad in thin plastic film + 13 mm plasterboard	0.70(M)
		Specific mineral wool pad with black tissue face + 13 mm plasterboard	0.70(MH)
		Climate ceiling + specific mineral wool pad in thin plastic film + 13 mm plasterboard	0.70(M)
		Climate ceiling + specific mineral wool pad with black tissue face + 13 mm plasterboard	0.75(M)
	11% Dia. 1.5 mm	Specific mineral wool pad in thin plastic film + 13 mm plasterboard	0.70(MH)
		Specific mineral wool pad with black tissue face + 13 mm plasterboard	0.75(MH)
		Specific mineral wool pad with black tissue face + sheet steel	0.70(MH)
		Climate ceiling + specific mineral wool pad in thin plastic film + 13 mm plasterboard	0.70(M)
		Climate ceiling + specific mineral wool pad with black tissue face + 13 mm plasterboard	0.75(MH)
	22% Dia. 1.5 mm	Specific mineral wool pad in thin plastic film + 13 mm plasterboard	0.70(MH)
		Specific mineral wool pad with black tissue face + 13 mm plasterboard	0.70(MH)
		Specific mineral wool pad with black tissue face + sheet steel	0.70(MH)
		Climate ceiling + specific mineral wool pad in thin plastic film + 13 mm plasterboard	0.75
		Climate ceiling + specific mineral wool pad with black tissue face + 13 mm plasterboard	0.75(MH)

The table above specifies the key acoustic performance levels of metal ceilings.
The results only apply to products that have been defined, inspected and delivered exclusively by PLAFOMETAL.

The stated values are subject to change following any additional tests performed. Users are responsible for checking the then-current values at the time of purchase and before using the product.
The acoustic absorption values for the Alpha and Alpha Plus solutions have all been obtained with a suspension height of 200 mm.

ACOUSTIC ABSORPTION						LATERAL SOUND INSULATION		
α_p - Frequency Hz per octave band						$D_{n,f,w}$ (C; Ctr)	$D_{n,f,w}$ + C	$D_{n,f,w}$ + Ctr
125	250	500	1,000	2,000	4,000			
0.50	0.80	0.95	0.75	0.75	0.70	-	-	-
0.45	0.80	0.95	0.75	0.80	0.75	-	-	-
0.50	0.85	0.95	0.75	0.80	0.80	-	-	-
0.35	0.75	0.95	0.75	0.80	0.75	-	-	-
0.40	0.80	0.95	0.75	0.75	0.70	-	-	-
0.30	0.75	0.90	0.70	0.75	0.75	-	-	-
0.45	0.90	0.95	0.80	0.80	0.80	-	-	-
0.50	0.75	0.85	0.70	0.65	0.55	-	-	-
0.45	0.90	1.00	0.80	0.80	0.75	-	-	-
0.40	0.85	1.00	0.75	0.80	0.85	-	-	-
0.35	0.70	0.90	0.65	0.75	0.70	-	-	-
0.40	0.85	1.00	0.90	0.95	0.70	-	-	-
0.40	0.90	1.00	1.00	1.00	0.95	-	-	-
0.60	0.85	0.95	0.95	1.00	0.85	-	-	-
0.50	0.85	1.00	0.95	1.00	1.00	-	-	-
0.45	0.85	0.95	0.95	0.90	0.65	-	-	-
0.40	0.90	1.00	1.00	0.95	0.80	-	-	-
0.45	0.90	1.00	0.95	1.00	0.85	-	-	-
0.45	0.90	1.00	0.95	1.00	1.00	-	-	-
0.55	0.85	1.00	1.00	1.00	0.90	-	-	-
0.45	0.90	1.00	0.95	1.00	1.00	-	-	-
0.55	0.85	0.95	0.95	1.00	0.95	-	-	-
0.45	0.85	1.00	0.95	1.00	1.00	-	-	-
0.45	0.85	0.95	0.95	0.90	0.70	-	-	-
0.45	0.90	1.00	1.00	0.95	0.85	-	-	-
0.50	0.90	1.00	0.90	0.95	0.70	-	-	-
0.45	0.90	1.00	0.95	1.00	1.00	-	-	-
0.25	0.40	0.75	0.95	0.90	0.75	53 (-4; -11) dB	49 dB	42 dB
0.25	0.40	0.70	1.00	1.00	1.00	47 (-4; -12) dB	43 dB	35 dB
0.25	0.45	0.90	1.00	0.80	0.60	50 (-2; -9) dB	48 dB	41 dB
0.25	0.45	0.85	1.00	0.95	0.75	45 (-3; -10) dB	42 dB	35 dB
0.20	0.40	0.75	1.00	0.95	0.70	52 (-3; -11) dB	49 dB	41 dB
0.35	0.45	0.80	1.00	1.00	1.00	46 (-3; -11) dB	43 dB	35 dB
0.35	0.40	0.85	1.00	1.00	1.00	42 (-3; -9) dB	39 dB	33 dB
0.20	0.45	0.90	0.95	0.85	0.60	50 (-2; -9) dB	48 dB	41 dB
0.25	0.45	0.85	1.00	1.00	0.85	45 (-3; -10) dB	42 dB	35 dB
0.25	0.40	0.70	0.95	1.00	0.85	52 (-3; -11) dB	49 dB	41 dB
0.25	0.40	0.70	0.95	1.00	1.00	46 (-3; -11) dB	43 dB	35 dB
0.35	0.40	0.80	1.00	1.00	1.00	42 (-3; -9) dB	39 dB	33 dB
0.20	0.45	0.90	0.95	0.90	0.70	50 (-2; -9) dB	48 dB	41 dB
0.25	0.45	0.85	1.00	1.00	0.85	45 (-3; -10) dB	42 dB	35 dB

(L): Low frequencies (M): Medium frequencies (H): High frequencies

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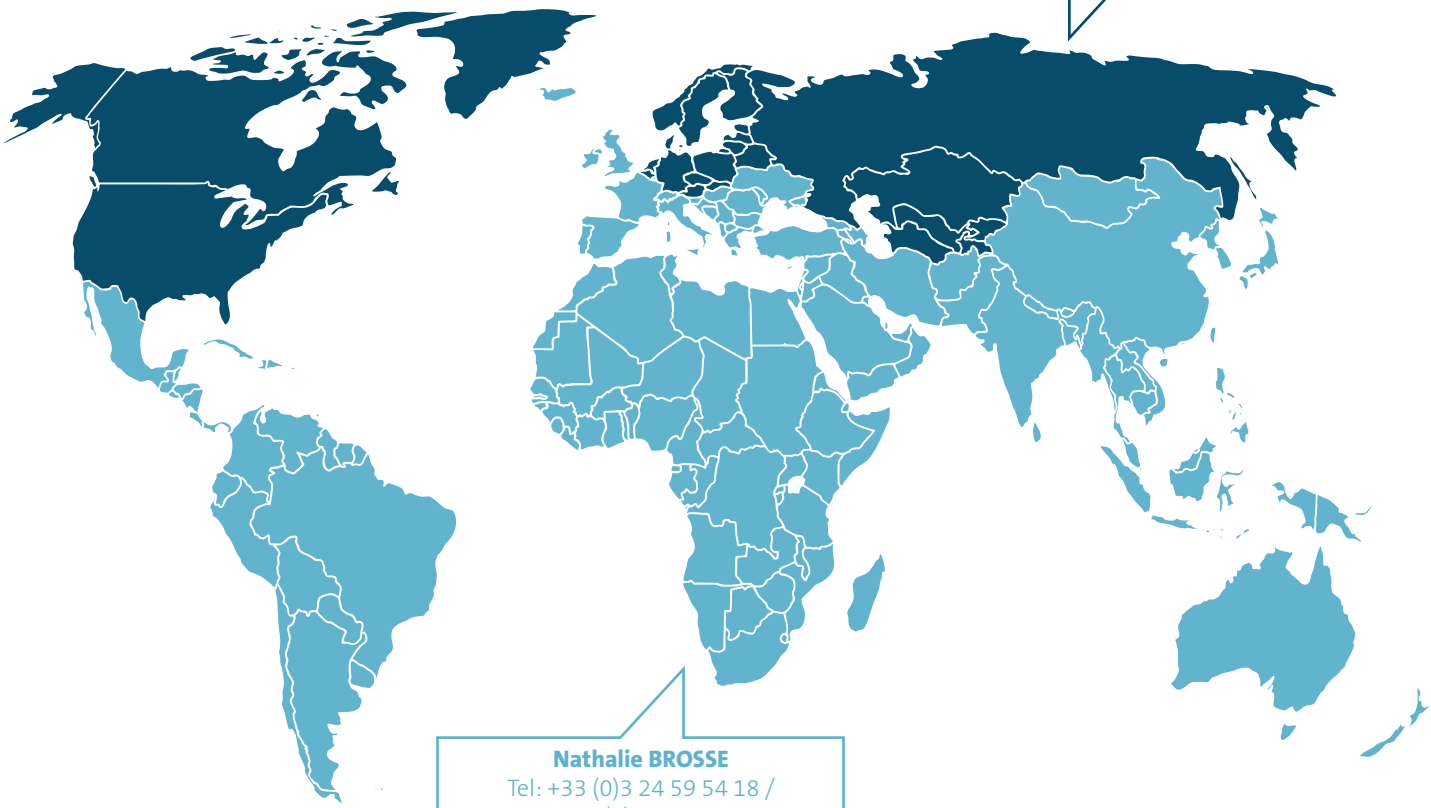

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