



GROUPE BOËT

APPLICATIONS

**INLETS AND OUTLETS OF AIR TREATMENT AND VENTILATION SYSTEMS
ACOUSTIC INSULATION OF MACHINES
VENTILATION, AIR CONDITIONING OR ENERGY PRODUCTION EQUIPMENT**

- Certified acoustic performance
- From 9 to 23 dB
- Robust construction in galvanized steel
- Custom sizes
- Reduced footprint
- Low pressure losses
- Quick and easy implementation
- Numerous options available
- Over 60 years of experience
- ISO 9001:2015 certified quality



From
9 to 23 dB



Quick
installation



Dimensions
custom-made



Fast delivery



DUAL EXPERTISE: AERO-ACOUSTICS

Recognized experience and know-how:

Acoustics and aerodynamics are closely linked and must be considered from the very beginning of the project to ensure proper sizing and thus avoid unforeseen and costly modifications.

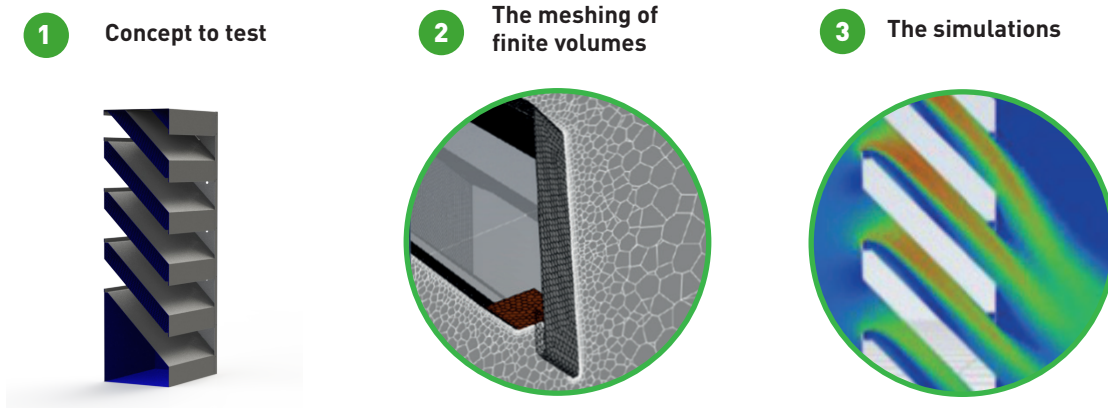
Groupe Boët has perfect proficiency in these two fields, allowing it to optimize the sizing and costs of your projects. Our unique expertise in designing acoustic ventilation grilles is reinforced by the use of finite volume numerical calculation tools (FEM) with software such as ANSYS and FLUENT.

Through our experience, we are aware that each project has unique constraints in terms of air flow management and noise control.

Therefore, we are able to offer solutions tailored to the specific requirements of your most demanding projects. On request, we provide acoustic/aerodynamic calculation reports justifying the precise performance of our solutions in real situations.

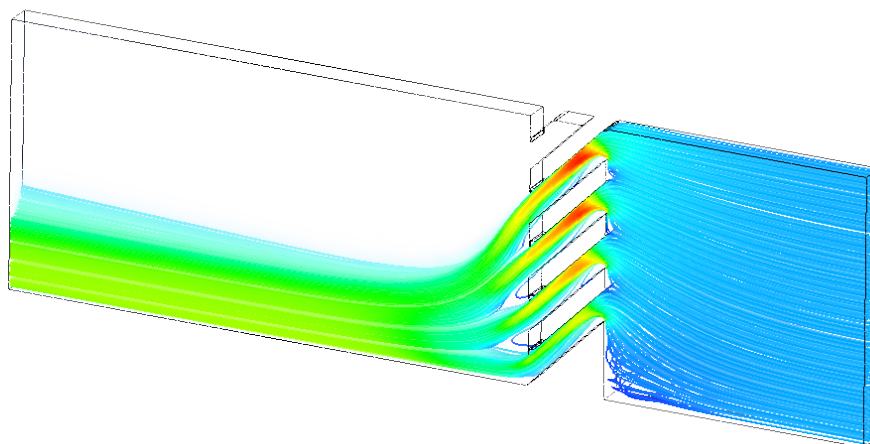
By choosing Groupe Boët, you are choosing expertise, innovation, and quality.

The different simulation steps:



CFD* study of the aerodynamic behavior of an acoustic grille using ANSYS FLUENT:

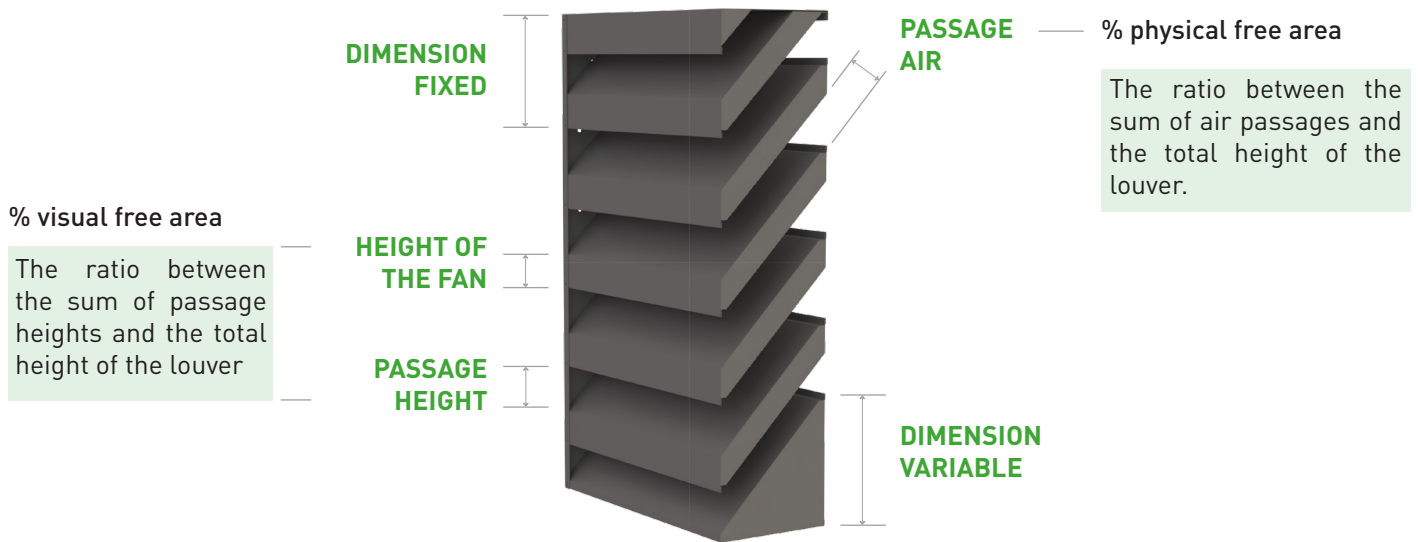
*Computational Fluid Dynamics (numerical fluid dynamics)



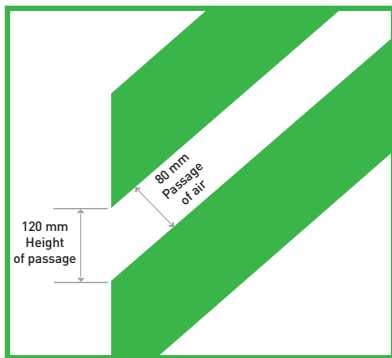
Ansys is the world leader in numerical simulation software, offering innovative solutions to optimize product design and performance. Ansys Fluent, in particular, is recognized as the benchmark for fluid dynamics simulation (CFD). By using Ansys, we ensure that we work with the best tool on the market, thus guaranteeing precise and reliable results for our simulations.

Definition of aerodynamic performance:

It's important to clearly distinguish between the percentage of physical free area and the percentage of visual free area.



Example for the LD300



Consideration of the K coefficient

The aerodynamic sizing of an acoustic ventilation louver is based on the K coefficient specific to each type of louver and not on a percentage of free air area, whether physical or visual.

Thus, a louver with a high percentage of free air area does not guarantee low pressure losses (compared to a louver with a reduced free air area).

The importance of pressure losses in sizing a louver :

As previously mentioned, the percentage of free air area, whether physical or visual, alone does not ensure the proper sizing of a louver. The pressure losses caused by installing a louver can be calculated using the following formula:

$$\Delta P = K * \frac{\rho * V^2}{2}$$

With:

$\rho = 1.204 \text{ kg/m}^3$ at 20°C

V -> The flow velocity upstream of the louver in m/s

K -> The aerodynamic coefficient specific to each louver model

ADVICE

For your projects where the installation of acoustic louvers at the intake/discharge is necessary, it is important to note that the pressure losses are cumulative.

A chiller unit has an allowable pressure loss of 100 Pa. Acoustic louvers are planned at the intake and at the discharge. In this configuration, the sum of the pressure losses generated by each grille must not exceed 100 Pa - Example: 40 Pa at intake and 50 Pa at discharge.

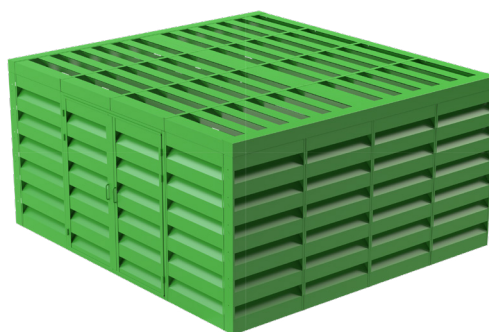
HIGH-PERFORMANCE CUSTOM SOLUTIONS

- The acoustic ventilation louvers from Groupe Boët meet technical requirements and architectural constraints for all types of buildings (offices, industrial, boiler rooms, data centers...)
- They can be used as acoustic screens around technical installations.
- Acoustic louvers can be integrated directly into building walls and facades.
- An acoustic louver allows air to circulate, thanks to its low pressure losses, while effectively protecting the environment from unwanted noise.
- We also offer doors built from acoustic ventilation louvers that fit perfectly into a complete solution (more information on page 10).

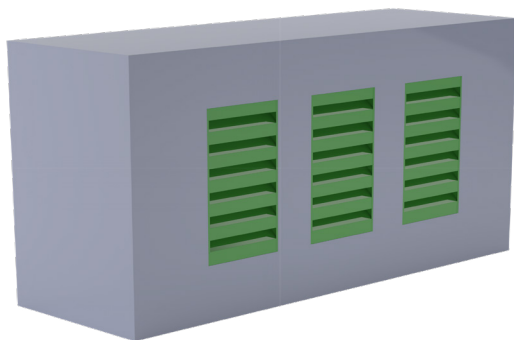
OUR APPLICATIONS



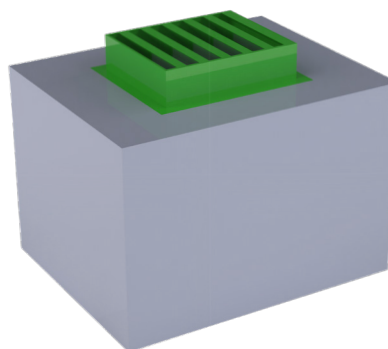
**Screen made of louvers
with or without door**



**Enclosure in acoustic louvers
with door**



Facade cladding in louvers



**Ventilation system for air intake and/or
exhaust equipped with acoustic louvers**



A COMPLETE RANGE MEETING MULTIPLE NOISE ISSUES

LD range: In case of significant acoustic constraints

Model	Acoustic attenuation index	63	125	250	500	1K	2K	4K	8K*	Thickness	Mass/m²
LD 100	Rw = 9 dB	3	3	4	6	9	12	12	12	100mm	20 kg/m²
LD 150	Rw = 14 dB	3	5	7	10	14	17	15	16	150mm	30 kg/m²
LD 300	Rw = 17 dB	4	6	8	12	20	20	15	14	300mm	50 kg/m²
LD 600	Rw = 23 dB	5	8	12	21	29	31	24	25	600mm	100 kg/m²

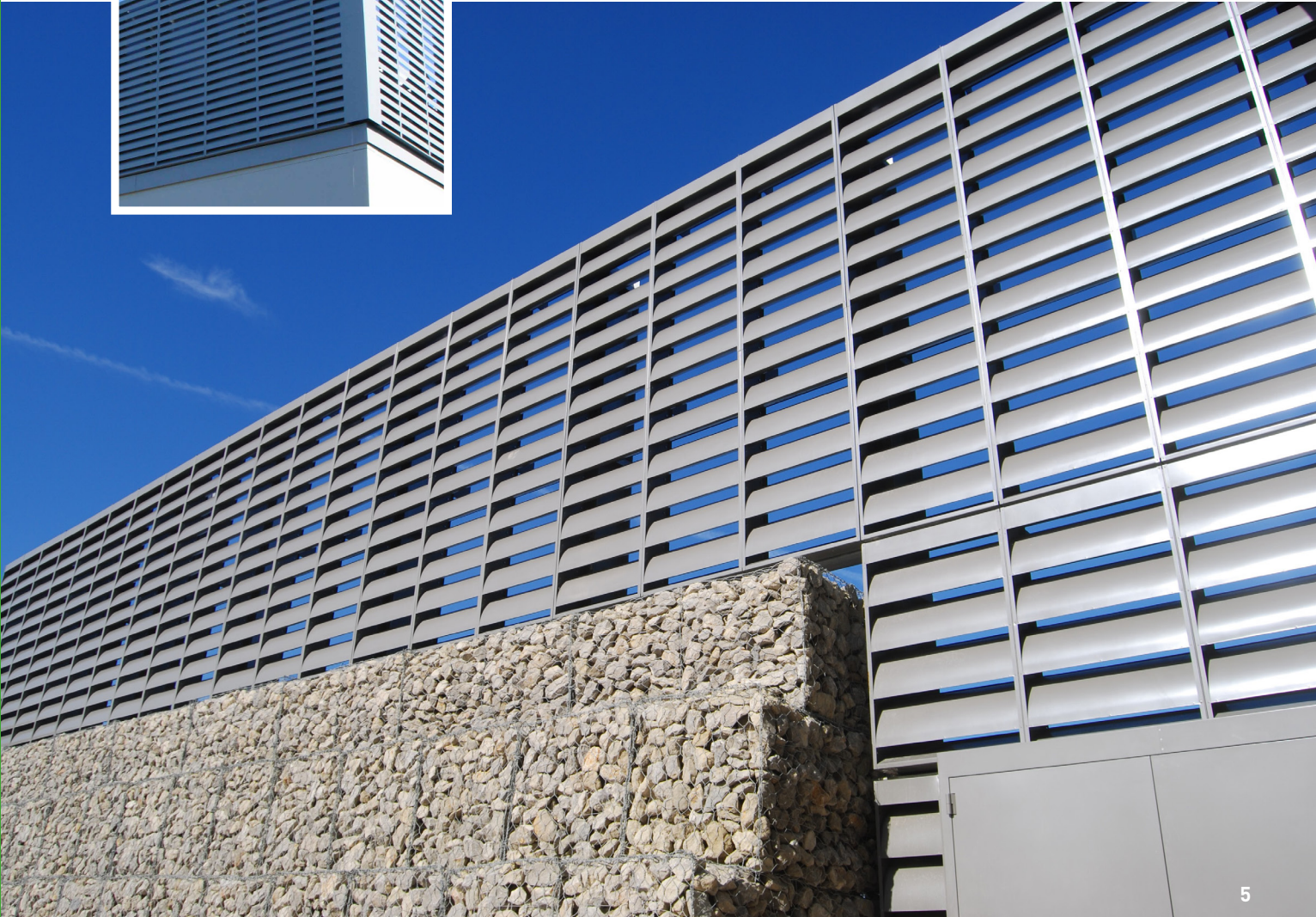
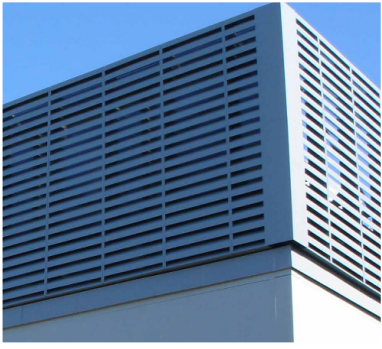
* Measured in Insertion loss according to NF EN ISO 3741

LC range: In case of significant airflow constraints

Model	Acoustic attenuation index	63	125	250	500	1K	2K	4K	8K*	Thickness	Mass/m²
LC 305	Rw = 12 dB	3	5	8	11	12	13	12	11	305mm	40 kg/m²
LC 610	Rw = 20 dB	5	7	11	17	22	21	21	20	610mm	80 kg/m²

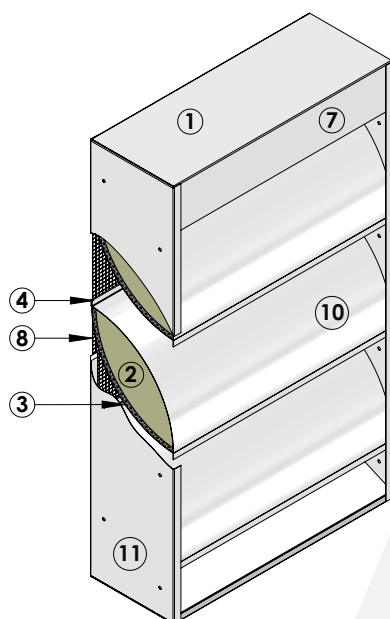
* Measured in Insertion loss according to NF EN ISO 3741

Airflow performance is available in our product sheets pages 7 to 12

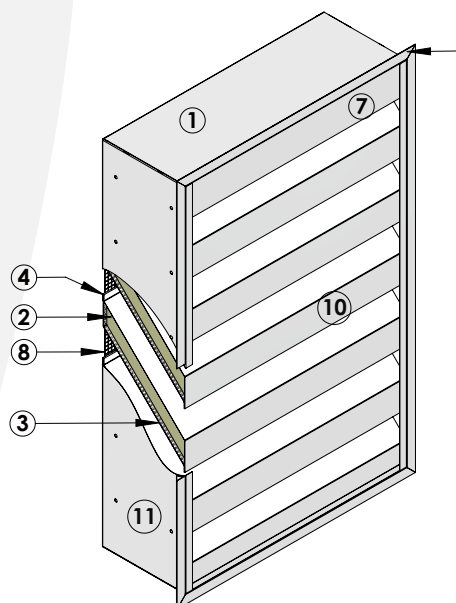


FEATURES AND BENEFITS OF OUR ACOUSTIC LOUVERS

LC range



LD range



- ① Manufactured in galvanized steel (on request in stainless steel or aluminum)
- ② Acoustic/absorbent complex that is non-flammable, rot-proof, and weather-resistant
- ③ Perforated sheet protecting the absorbent complex and thus ensuring optimal absorption
- ④ Design intended to prevent the penetration of rain/snow
- ⑤ Custom dimensions to fit any opening/section
- ⑥ Assembly of louvers of different sizes = Guarantee of perfect blade alignment
- ⑦ Lacquered finish – Polyester Powder Paint – RAL color of your choice (optional)
- ⑧ Anti-bird mesh in galvanized steel fixed to the back of the louver (optional)
- ⑨ Mounting angle or finish

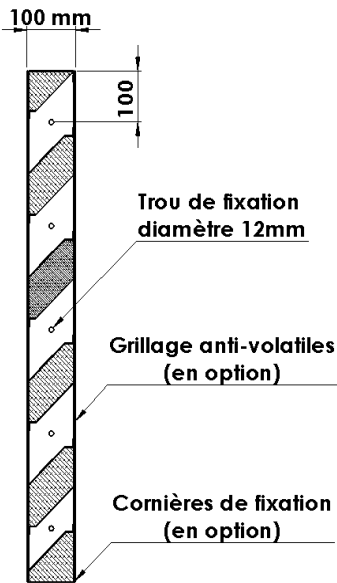
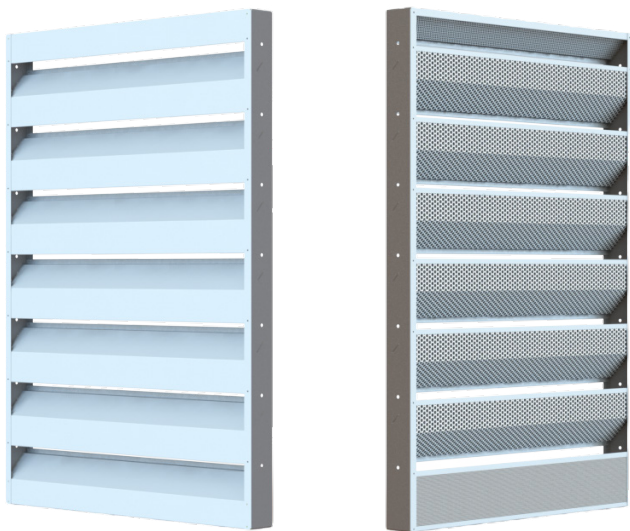
LC range

- ⑩ Profiled blade vanes allowing for optimal attenuation combined with low pressure losses
- ⑪ Thickness of 305mm (single louver) or 610mm (double louver)

LD range

- ⑩ Straight blades allowing excellent acoustic performance over a wide frequency band
- ⑪ Thicknesses ranging from 100 to 600 mm depending on the required performance

LD100



Weight: 20 kg/m²
Minimum dimensions: 300 x 600 mm
Maximum dimensions: 2450 x 2800 mm

Acoustic performance

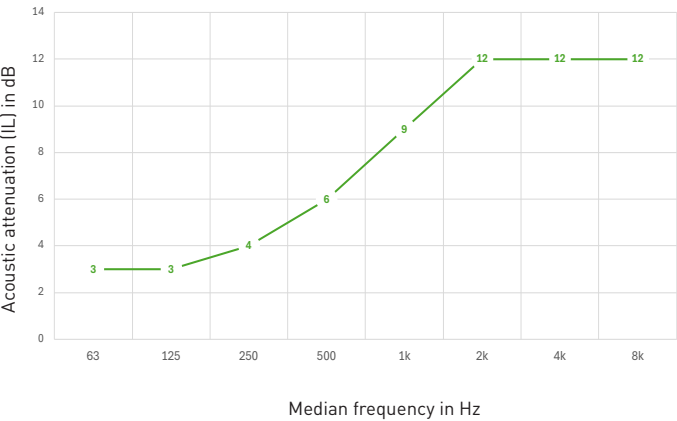
Center frequency per octave band (in Hz)	63	125	250	500	1K	2K	4K	8K
Attenuation acoustic (IL*)	3	3	4	6	9	12	12	12
Sound reduction index (dB) according to ISO 717-1	R _w (C;Ctr) = 9 (0;-2) dB							

* Insertion Loss

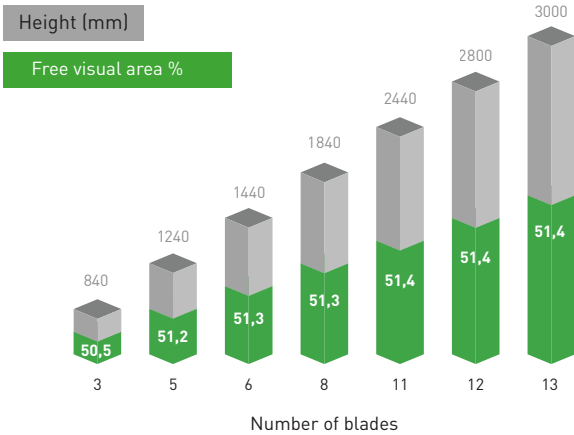
Airflow performance

Face velocity (m/s)	1,5	2	2,5	3	3,5	4	4,5	5
Total pressure loss (Pa)*	23	40	63	91	123	161	204	252
Coefficient aerodynamic K	16,7							

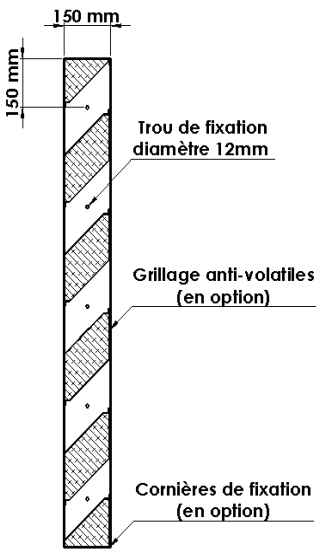
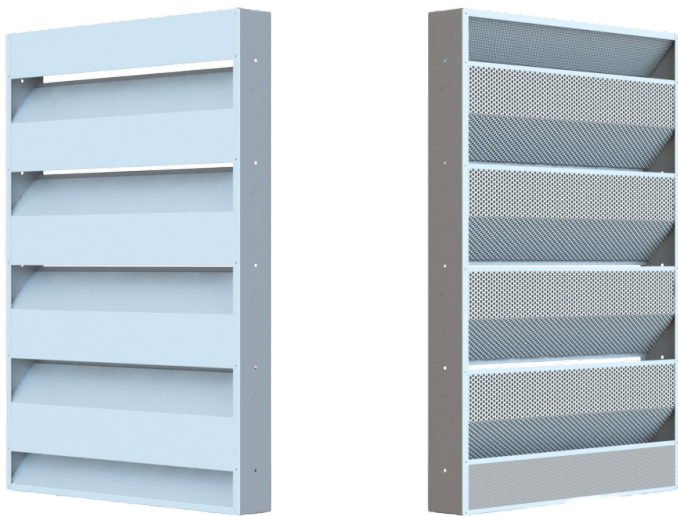
*In free duct at 20°C for a height of 1240 mm



Free visual area according to dimensions



LD150



Weight: 30 kg/m²
Minimum dimensions: 300 x 600 mm
Maximum dimensions: 2450 x 2800 mm

Acoustic performance

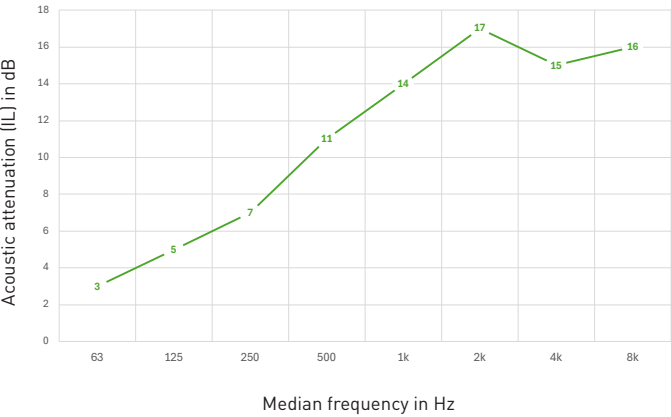
Center frequency per octave band (in Hz)	63	125	250	500	1K	2K	4K	8K
Attenuation acoustic (IL*)	3	5	7	11	14	17	15	16
Sound reduction index (dB) according to ISO 717-1	$R_w [C;Ctr] = 14 (-1;-3) \text{ dB}$							

* Insertion Loss

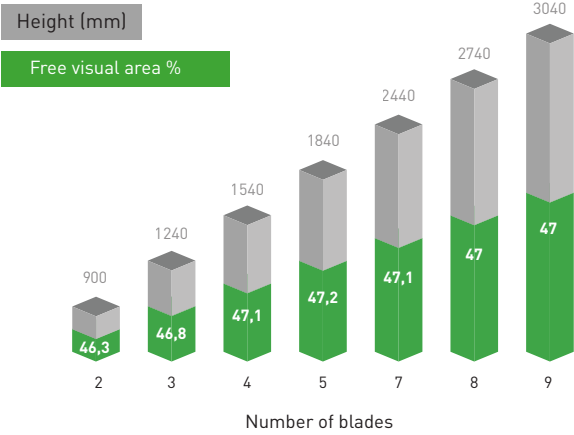
Airflow performance

Face velocity (m/s)	1,5	2	2,5	3	3,5	4	4,5	5
Total pressure loss (Pa)*	23	40	63	90	123	160	203	251
Coefficient aerodynamic K	16,7							

*In free duct at 20°C for a height of 1240 mm

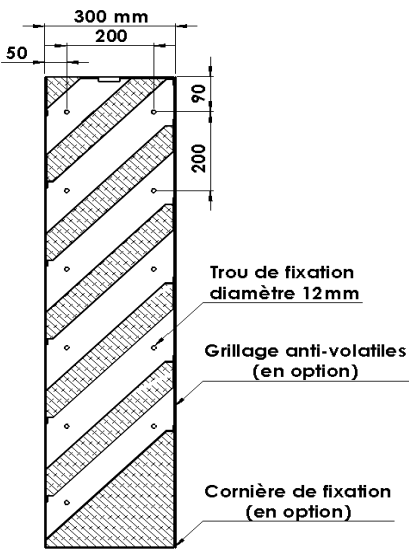
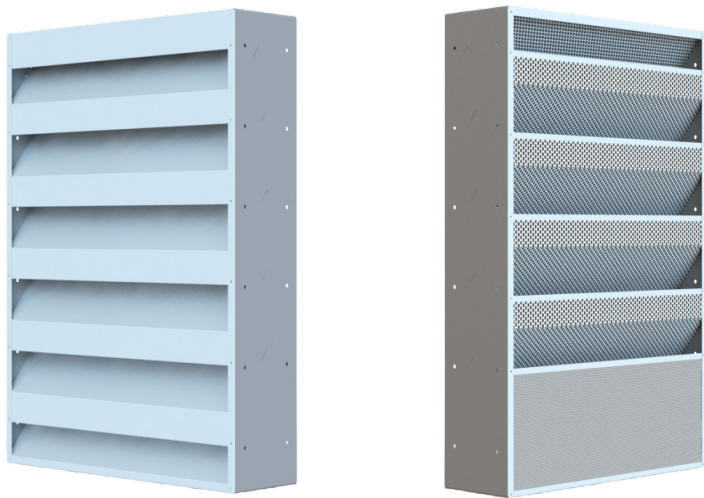


Free visual area according to dimensions



*In free duct at 20°C for a height of 1240 mm

LD300



Weight: 50 kg/m²
Minimum dimensions: 300 x 600 mm
Maximum dimensions: 2450 x 2800 mm

Acoustic performance

Center frequency per octave band (in Hz)	63	125	250	500	1K	2K	4K	8K
Attenuation acoustic (IL*)	4	6	8	12	20	20	15	14
Sound reduction index (dB) according to ISO 717-1	$R_w [C;Ctr] = 17 (-1;-4) \text{ dB}$							

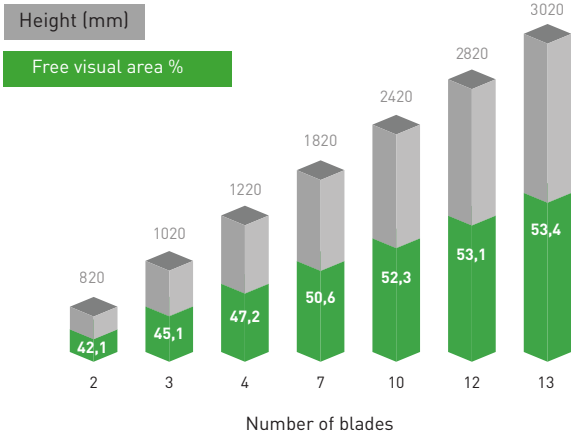
* Insertion Loss

Airflow performance

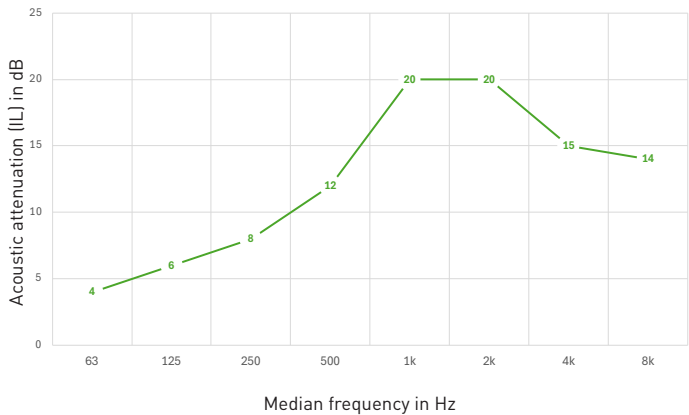
Face velocity (m/s)	1,5	2	2,5	3	3,5	4	4,5	5
Total pressure loss (Pa)*	20	36	56	81	111	144	183	226
Coefficient aerodynamic K	15							

*In free duct at 20°C for a height of 1240 mm

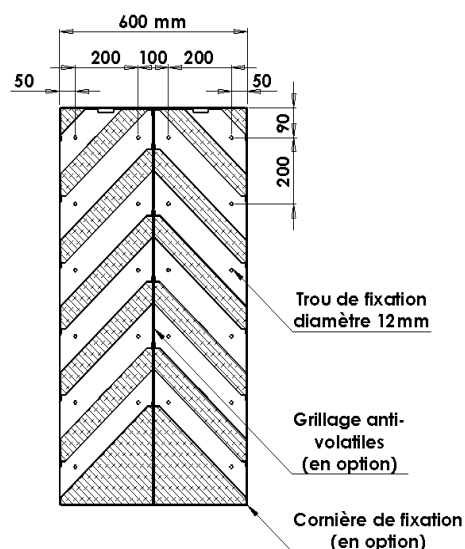
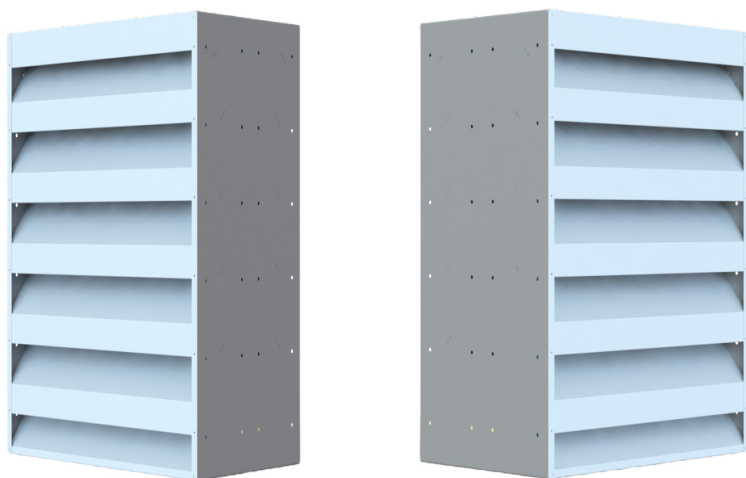
Free visual area according to dimensions



*In free duct at 20°C for a height of 1220 mm



LD600



Weight: 100 kg/m²

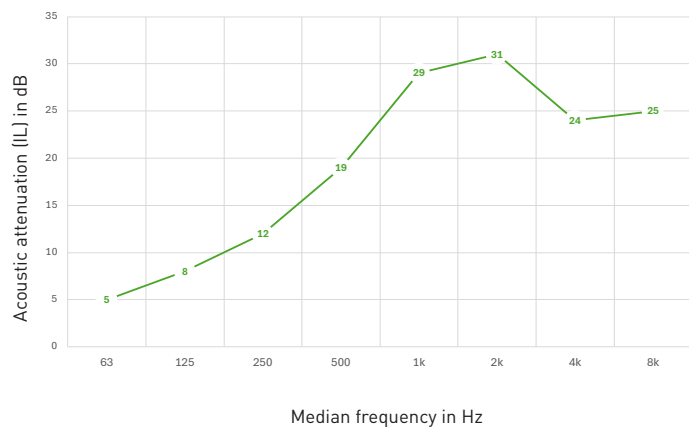
Minimum dimensions: 300 x 600 mm

Maximum dimensions: 2450 x 2800 mm

Acoustic performance

Center frequency per octave band (in Hz)	63	125	250	500	1K	2K	4K	8K
Attenuation acoustic (IL*)	5	8	12	19	29	31	24	25
Sound reduction index (dB) according to ISO 717-1	$R_w [C;Ctr] = 23 (-1;-5) \text{ dB}$							

* Insertion Loss

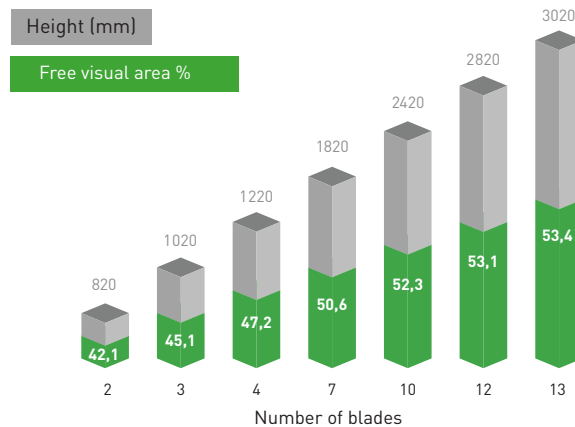


Airflow performance

Face velocity (m/s)	1,5	2	2,5	3	3,5	4	4,5	5
Total pressure loss (Pa)*	40	72	112	162	222	288	366	452
Coefficient aerodynamic K	30							

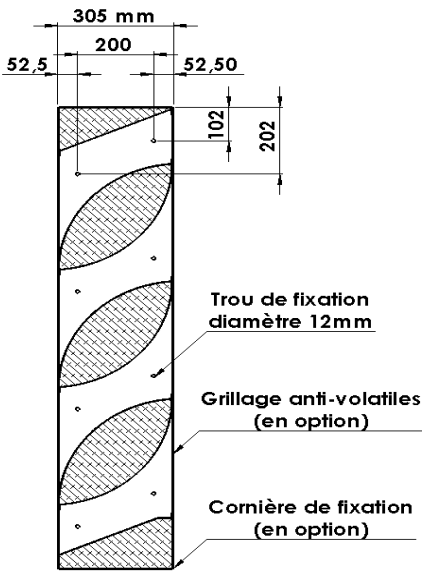
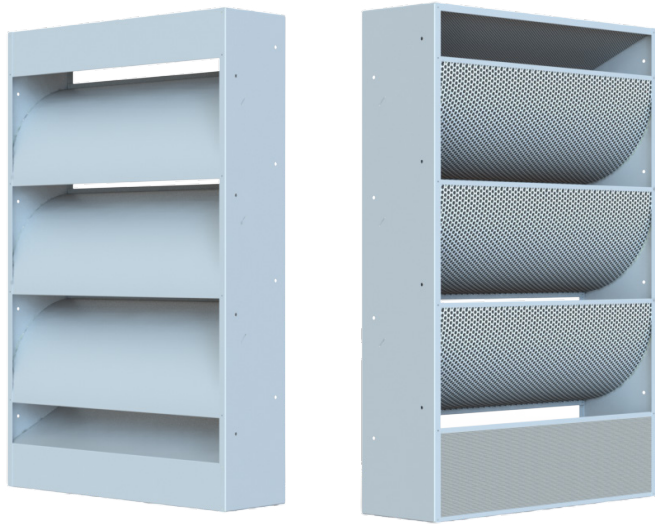
*In free duct at 20°C for a height of 1240 mm

Free visual area according to dimensions



*In free duct at 20°C for a height of 1220 mm

LC305



Weight: 40 kg/m²
Minimum dimensions: 300 x 600 mm
Maximum dimensions: 2450 x 2800 mm

Acoustic performance

Center frequency per octave band (in Hz)	63	125	250	500	1K	2K	4K	8K
Attenuation acoustic (IL*)	3	5	8	11	12	13	12	11
Sound reduction index (dB) according to ISO 717-1	$R_w (C;Ctr) = 12 (0;-1) \text{ dB}$							

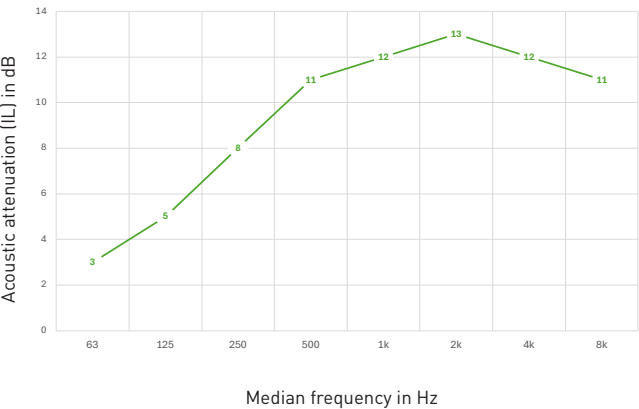
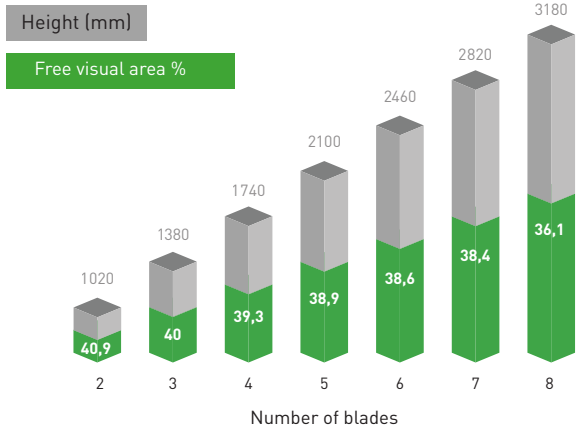
* Insertion Loss

Airflow performance

Face velocity (m/s)	1,5	2	2,5	3	3,5	4	4,5	5
Total pressure loss (Pa)*	14	24	38	54	74	97	122	151
Coefficient aerodynamic K	10							

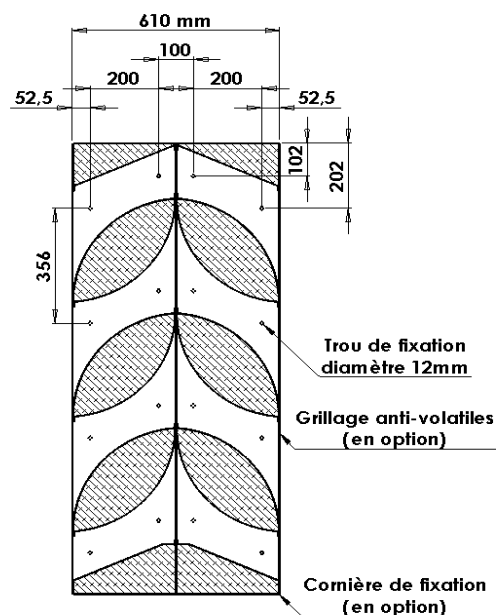
*In free duct at 20°C for a height of 1240 mm

Free visual area according to dimensions



*In free duct at 20°C for a height of 1380 mm

LC610



Weight: 80 kg/m²

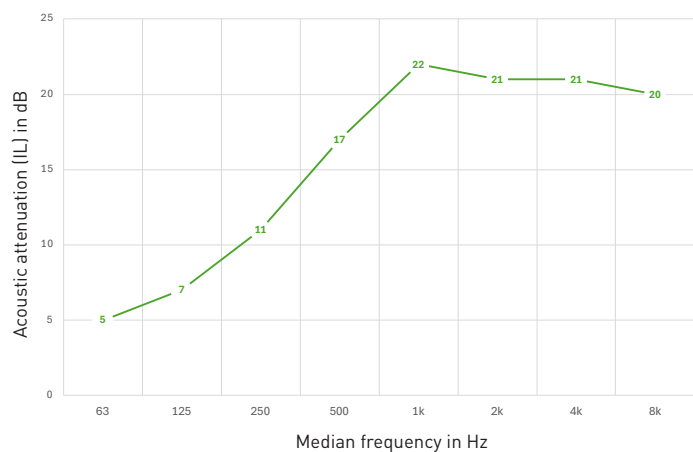
Minimum dimensions: 300 x 600 mm

Maximum dimensions: 2450 x 2800 mm

Acoustic performance

Center frequency per octave band (in Hz)	63	125	250	500	1K	2K	4K	8K
Attenuation acoustic (IL*)	5	7	11	17	22	21	21	20
Sound reduction index (dB) according to ISO 717-1	$R_w [C;Ctr] = 20 [-1;-4] \text{ dB}$							

* Insertion Loss

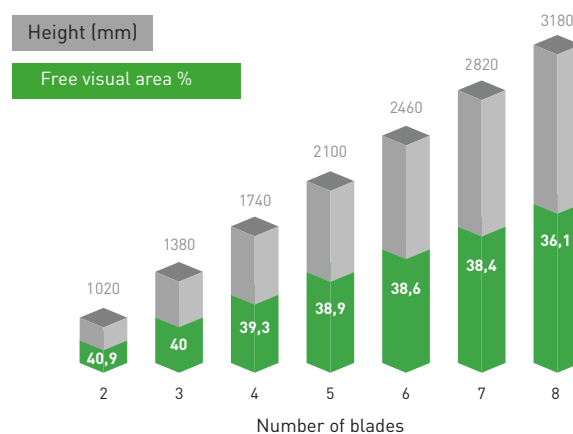


Airflow performance

Face velocity (m/s)	1,5	2	2,5	3	3,5	4	4,5	5
Total pressure loss (Pa)*	24	41	64	92	126	165	207	257
Coefficient aerodynamic K	17							

*In free duct at 20°C for a height of 1240 mm

Free visual area according to dimensions



*In free duct at 20°C for a height of 1380 mm

DOOR BLOCKS WITH ACOUSTIC VENTILATION LOUVERS

In addition to its range, Groupe Boët also designs and manufactures door blocks made from acoustic ventilation louvers. This configuration thus allows the integration of a door block on a façade made of acoustic louvers, while maintaining architectural uniformity. This can also be used to create natural acoustic ventilation, simply by replacing an existing door.

Custom solutions

- Custom construction adapting to any type of opening
- Surface-mounted or tunnel installation
- Single or double leaves
- Galvanized or lacquered finish (polyester powder coating – RAL color of your choice)
- Anti-bird mesh
- Minimum dimensions:
 - 500 x 700mm
- Maximum dimensions:
 - Single door: 1300 x 2750mm
 - Double door: 2600 x 2750mm

A wide range of equipment available

All equipment is assembled and tested at the factory:

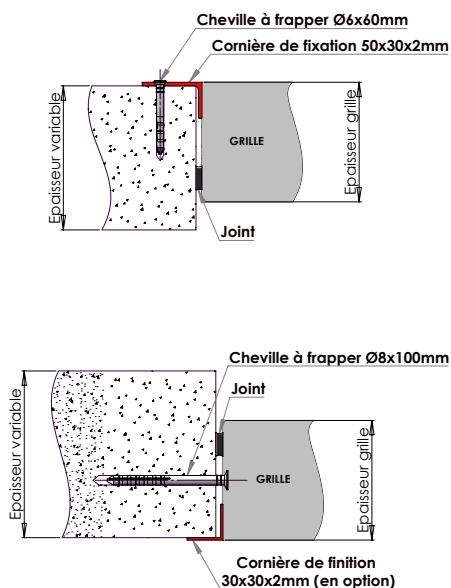
- Pull handles / Lever handles / Panic bars
- Door closers (with arm and with slide rail)
- Panic bars 1 point, 2 points, 3 points
- Locks
- Fireman's espagnolette / Europad



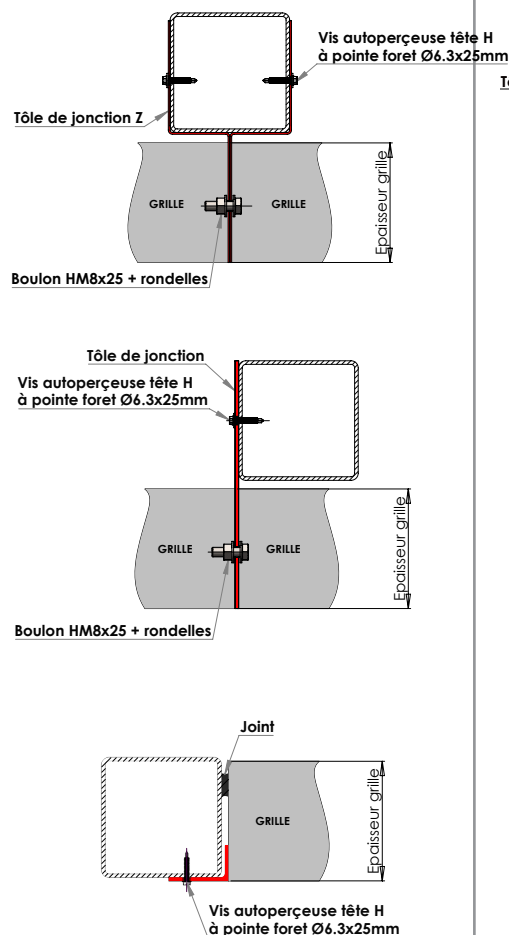
SIMPLE AND QUICK INSTALLATION: QUICKFIX

- Our acoustic ventilation louvers are delivered ready to install
- Pre-drilled frames allow for simple and quick installation
- Our louvers are custom-designed and adapt to any type of opening
- Our angle bar system (optional) provides an excellent finish around the entire perimeter of the opening
- On request, we can provide all the joining and fixing profiles required for assembling the louvers

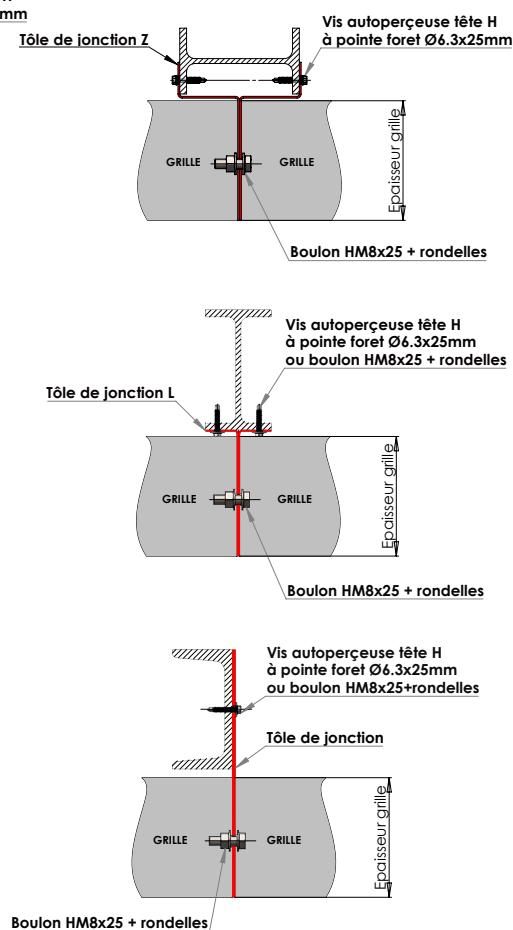
FIXING ON CONCRETE / SOLID BREEZE BLOCK



FIXING ON TUBULAR STRUCTURE



MOUNTING ON IPE / HEA



THEY TRUST US

ALSTOM



ENGIE
Axima



COFELY INEO
GDF SUEZ



CATERPILLAR®



LIEBHERR



EIFFAGE



OTHER PRODUCTS IN OUR RANGE

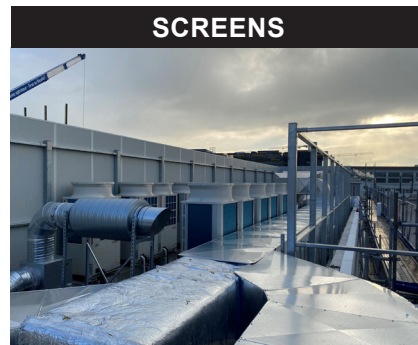
DOORS



VENTILATIONS



SCREENS



ENCLOSURES



SILENCERS




GROUPE BOËT

23 Rue d'Amsterdam - 59200 Tourcoing - FRANCE
T: +33 (0)3 20 05 88 88 - www.groupe-boet.com