

ENGINE EXHAUST SILENCER **SM EVO 2**

OUR AREAS OF APPLICATION

ENERGY - INDUSTRY - RAILWAY - MILITARY - MARINE - NUCLEAR



- › Performance guarantee 30 to 60 dB(A)
- › Reduced mass and size
- › Optimized pressure drops
- › Improved engine efficiency



Sizing
optimized



Solution
compact



Design
custom-made



In Stock

THE NOISE AT THE EXHAUST OF COMBUSTION ENGINES IS A MAJOR ACOUSTIC CHALLENGE

Combustion engines used in industrial facilities, both for energy production and backup, generate particularly high noise levels at the exhaust. These acoustic emissions are often the source of noise pollution, mechanical stresses on structures, and regulatory non-compliance.

The noise is mainly generated at each opening of the exhaust valve, when high-pressure combustion gases are suddenly expelled into the manifold. This impulsive phenomenon gives rise to pressure waves that propagate inside the exhaust line.

These significant noises affect both operator safety, the acoustic comfort of work environments, and the durability of equipment.

OUR SOLUTION : SM EVO 2 SILENCER

Controlling exhaust noise requires treatment at the source, as close as possible to the engine. The installation of a silencer reduces noise emissions, limits mechanical stresses, preserves the lifespan of components, and ensures compliance with regulatory requirements. The SM EVO 2 embodies the new generation of exhaust silencers for internal combustion engines. Developed to combine high acoustic and aerodynamic performance, compactness, and ease of integration, it incorporates significant improvements over the previous generation

The SM EVO 2 is available in three attenuation classes 30,40, and 50 dB(A) which can be combined to cover all engine configurations and meet the specific acoustic requirements of each site. Thanks to internal optimization of gas flow, it limits pressure losses and helps improve engine efficiency in a compact size.

Its lightweight structure facilitates handling, installation, and maintenance operations.

SM EVO 2 is designed for quick integration, in either horizontal or vertical position. Standard connection is made by flanges, with counter-flanges, gaskets, and bolts supplied. Specific connection options are available upon request.

Our standard range has been designed following an advanced engineering approach:

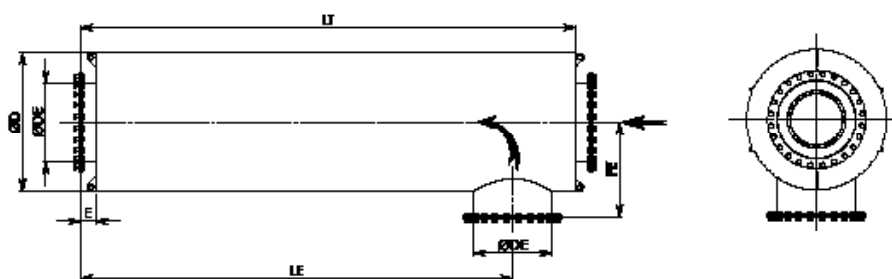
- › Design of silencers through numerical calculation element and finite volume methods (FEA, CFD)
- › Reactive attenuation based on the reflection and interference of sound waves implemented by resonance chambers, impedance breaks, and resonators allows for targeted optimization of low frequencies.
- › Selection and characterization in an independent laboratory of a mineral wool, chosen for its acoustic properties, its hydrophobicity, its rot resistance, and its high-temperature resistance.
- › Dissipative attenuation allows the processing of mid and high frequencies through absorption, using porous materials, with acoustic energy dissipating into thermal energy through friction.
- › Validation through laboratory tests and real conditions.



PRODUCT FEATURES

Features	SM30 EVO 2	SM40 EVO 2	SM50 EVO 2
Acoustic attenuation	30 dB(A)	40 dB(A)	50 dB(A)
Shell material	Standard carbon steels, special steels resistant to very high temperatures, and stainless steels.		
Soundproofing	High-density non-combustible mineral wool		
Nominal Diameter DN	from 50 to 800 mm	from 50 to 800 mm	from 150 to 800 mm
Outside Diameter DE	from 60 to 812 mm	from 60 to 812 mm	from 168 to 812 mm
Diameter D	from 520 to 1400 mm	from 280 to 1300 mm	from 180 to 1200 mm
Total Length LT	from 551 to 4612 mm	from 827 to 5694 mm	from 2297 to 6838 mm
Inlet Length LE	from 448 to 4069 mm	from 721 to 5152 mm	from 2132 to 6292 mm
Inlet E	from 50 to 120 mm	from 80 to 102 mm	from 101 to 140 mm
Inlet Depth PE	from 140 to 700 mm	from 210 to 750 mm	from 360 to 800 mm
Net mass without flanges	8 to 1078 kg	22 to 1451 kg	135 to 2217 kg
Net mass with flanges	12 to 1248 kg	26 to 1622 kg	147 to 2388 kg
Gross mass without flanges	12 to 1127 kg	26 to 1505 kg	153 to 2274 kg
Gross mass with flanges	16 to 1297 kg	30 to 1676 kg	165 to 2445 kg
Temperature	up to 500 °C, (beyond on request)		

*Other diameters and lengths on request

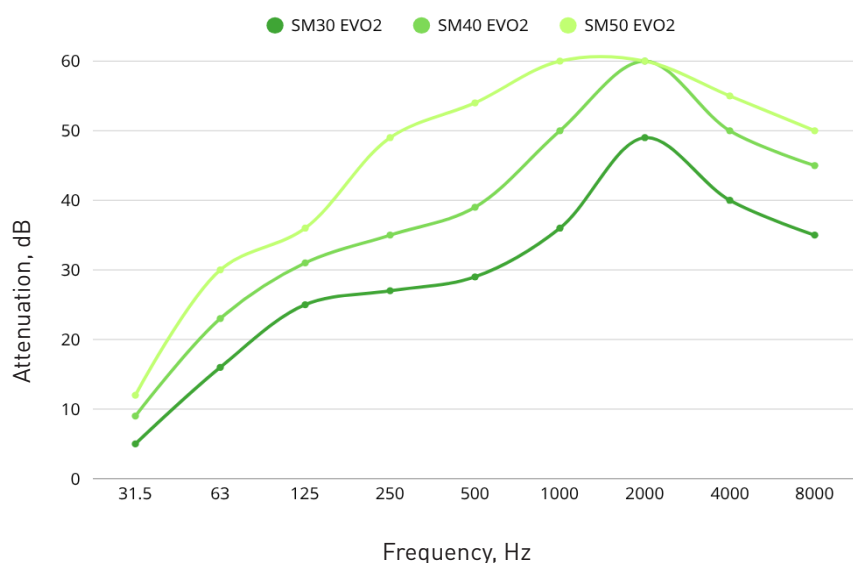


> Dimensions given without flanges

> Dimensional tolerances according to ISO 13920 class B

ACOUSTIC PERFORMANCE OF SM EVO 2 SILENCERS

Average intrinsic attenuation of the range based on a dominant spectrum at 125 Hz.



Frequencies in Hz	SM30 EVO2	SM40 EVO2	SM50 EVO2
31.5 Hz	5 dB	9 dB	12 dB
63 Hz	16 dB	23 dB	30 dB
125 Hz	25 dB	31 dB	36 dB
250 Hz	27 dB	35 dB	49 dB
500 Hz	29 dB	39 dB	54 dB
1000 Hz	36 dB	50 dB	60 dB
2000 Hz	49 dB	60 dB	60 dB
4000 Hz	40 dB	50 dB	55 dB
8000 Hz	35 dB	45 dB	50 dB

ITEM CODING

For example : SM 30 EVO 2 DN 50

SM

Engine Silencer Product Family

30, 40, 50

Acoustic performance

EVO 2

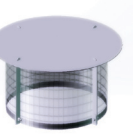
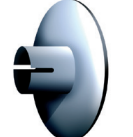
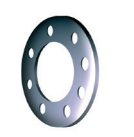
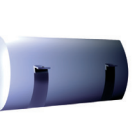
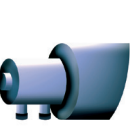
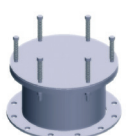
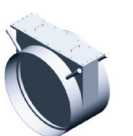
Evolution 2 Range

DN 50, 100, 125, 150 ... 800

Nominal inlet and outlet diameter

THE AVAILABLE OPTIONS

Please contact us

Outlets	 Flap rain guard	 Smooth elbow	 Whistle cut	 Cap rain guard
Connections	 Smooth ends	 Split ends	 Flanges	 Drains
Supports	 Type V	 Type VP	 Type H	 Type HC
Options	 Spark arrestor	 Flap blast-proof	 Pad anti-vibration	 Catalyst

STANDARDS AND QUALIFICATIONS

Quality certification :

- › ISO 9001:2015
- › ISO 19443:2018

Manufacturer's file

Design and construction codes

- › EN 13445
- › CODAP & CODETI
- › RCC-M
- › ASME
- › 15 085

Non-Destructive Testing

- › Dye Penetrant Testing
- › Radiography
- › PMI
- › Ultrasound

EXAMPLE OF A CASE STUDY – APPLICATION IN A DATA CENTER

In one of our recent projects, a critical site was equipped with several emergency Diesel generator sets (2000 kVA, 16 cylinders), operating in stand-by mode. Their sound environment was 112 dB(A) at 1m from the exhaust.

The challenge:

Comply with a demanding acoustic constraint: 65 dB(A) at 1 meter under full load, during weekly tests.

The solution:

- › Installed silencer: SM 50 EVO 2 DN500
- › Positioning: exhaust line, direct engine outlet
- › Orientation: vertical discharge via chimney on the container roof
- › Technology: hybrid reactive + dissipative design for optimal attenuation across the entire sound spectrum
- › Thermal resistance: 500°C at the inlet, carbon steel body with integrated thermal insulation integrated

The result: 61 dB(A) measured at 1 meter under full load

- › A controlled environment, silent operation, guaranteed continuity.

Upon request, our acoustic engineers will assist you and carry out a study

of the acoustics of your installation in order to determine the optimal solution.

CUSTOM SOLUTIONS

With its in-depth knowledge of demanding industrial environments, the Groupe Boët designs and manufactures custom acoustic solutions, perfectly adapted to the technical constraints of its clients.

Thanks to advanced expertise in acoustic engineering and the use of advanced digital simulation tools, the Groupe Boët develops high-performance industrial silencers, configurable according to the specifications of each set of requirements.



Beyond acoustic treatment, our offer includes complementary functions essential for system integration:

- › Gas treatment devices (CO, NO_x, PM...)
- › Industrial spark arrestors,
- › Ducts, pipes, and chimneys,
- › Measurement hatches compliant with NFX standard,
- › Monitoring interfaces and instrumentation on board.

Each project benefits from tailored support, provided by our multidisciplinary design office, which analyzes operating conditions upstream and proposes optimized solutions in terms of functional integration, acoustic performance, and mechanical robustness.

The project engineers of the Groupe Boët ensure management from design to commissioning with a strong commitment to quality, deadlines, and performance compliance.

VALUE ENGINEERING FOR OPTIMIZED SOLUTIONS

By adopting an approach based on "value engineering," the Groupe Boët ensures solutions perfectly adapted to the technical and economic needs of its clients. This methodology guarantees performance at the highest level, optimized costs, fully controlled integration, and a measurable reduction in the energy consumption of your equipment, thus enabling sustainable and quantifiable savings.

**We place our expertise, adaptability, and
our responsiveness at the service of the success of your projects.**

The management of each project is based on key principles that guarantee a smooth and high-quality customer experience:

- › **A single point of contact:** A dedicated account manager supports you at every stage to simplify communication and ensure optimal coordination.
- › **Expertise:** With our technical expertise in aeroacoustics, we design high-performance and optimized solutions.
- › **Flexibility:** We adapt our solutions and our organization to the specific needs of your project, regardless of its level of complexity.

› **Responsiveness:** Thanks to our agile structure, we respond quickly and efficiently to unforeseen events and specific requests.

› **Experience & in-house expertise:** With complete in-house management of the process—from design to installation—we guarantee total control over quality and deadlines.

The Groupe Boët does everything possible to make your project a success, thanks to a proven methodology and a constant commitment to your satisfaction.

THEY TRUST US ...



THE GROUPE BOËT, YOUR EXPERT IN ACOUSTIC SOLUTIONS

Born more than 150 years ago, Groupe Boët has been a leading European player in the comprehensive management of all your emissions: Acoustics, Aerodynamics, Vibration, Pollution Control.

We size, design, manufacture, and install innovative and tailor-made aeroacoustic solutions for a wide range of industries.

Our achievements, validated solutions, and longevity in the market attest to our legitimacy and our ability to meet the requirements of the most complex acoustic projects.



Based in Tourcoing, in the north of France, Groupe Boët designs and manufactures high-performance acoustic and aerodynamic solutions for demanding industrial environments. Our headquarters houses part of our production facilities, allowing us to remain close to our clients while ensuring local and controlled manufacturing. To support our partners internationally, we rely on subsidiaries in England and Spain, as well as production units in Eastern Europe, ensuring responsiveness, competitiveness, and proximity, wherever your facilities are located.

Groupe Boët brings together a multidisciplinary team composed of:

- > **4 PhDs in acoustics**
- > **15 general engineers**
- > **7 designers - planners**
- > **1 PhD in aerodynamics**
- > **10 acoustic engineers**

Our experts rely on the most advanced simulation and sizing tools on the market (Ansys, Fluent, AcouS STIFF, IMMI, SolidWorks, Tekla...) to design tailor-made solutions that meet the most complex acoustic, thermal, and mechanical constraints.

Our technical expertise, capacity for innovation, and field commitment make Groupe Boët a leading player in industrial acoustic engineering.

OTHER PRODUCTS OF GROUPE BOËT

SCR SYSTEMS



OTHER SILENCERS



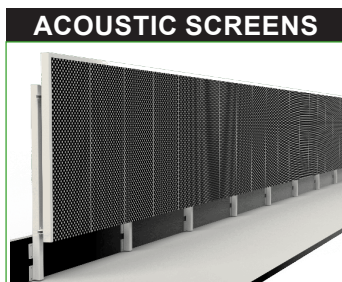
ACOUSTIC LOUVRES



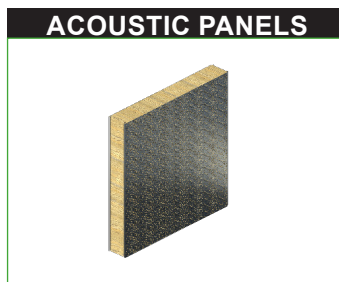
ENCLOSURE



ACOUSTIC SCREENS



ACOUSTIC PANELS





With nearly 150 years of expertise, a strong local and international presence, and a team of passionate specialists, the Groupe Boët has established itself as a trusted partner in the field of aeroacoustic solutions. Through tailor-made systems, full process control, and a continuous commitment to innovation, we address the most complex challenges, delivering reliable performance, long-term energy efficiency, and optimal customer satisfaction.

Choosing to work with us means opting for technical excellence and a partnership built on quality, flexibility, and responsiveness.

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