

# HVAC Equipment Issues



- Noise Pollution
- GWP Potential (Coolants),
- Control of Equipment
- Performance and Predictive Main

**Affecting Environment**

**Affecting People**

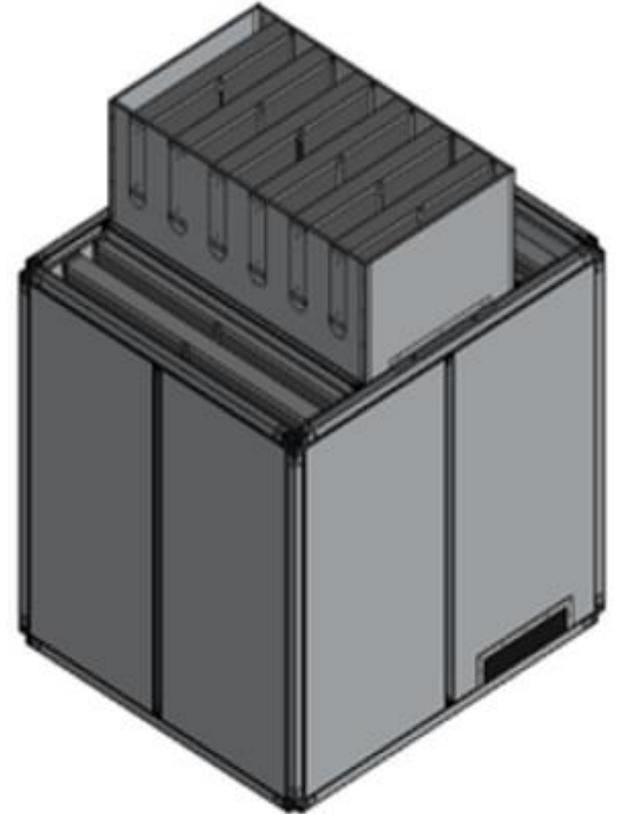
**Affecting Buildings**

**Affecting Social Life**



The  
Solution!

# Silent-Mode Acoustic Enclosure



# Acoustic enclosures for HVAC Systems

Noise reduction up to -25 dB(A) without efficiency loss.

Protection against environmental influences and unauthorized access.

Enclosures for new systems and retrofitting of existing heat pumps, air conditioning, refrigeration systems, compressors, battery charging stations etc.

Modularly adaptable to any system size.

Made in aluminium, fully recyclable

**Silent Mode**

*Silence for the next*



## ***“Silent-Mode Systems can be used to help along planning approvals and demonstrate compliance for mechanical equipment installations”***

Silent-Mode is a manufacturer and installer of high quality Environmental Enclosures for outdoor mechanical equipment.

Our products provide a simple, yet effective solution to control equipment noise, whilst enhancing aesthetics and improving security.

Silent-Mode products are ideal for air source heat pumps, split air conditioning equipment and many other outdoor mechanical applications; at home, office, or workplace

Our Enclosures work on three clear principals; sound insulation, sound absorption and incident sound wave noise cancellation. All of which contribute to high noise performance characteristics.

Not only this, we devised a unique process to enable air to move freely in and out of our Enclosure Systems without compromising equipment efficiencies inside - thus optimising air flow volume and most importantly ensuring no recirculation occurs.

All of our Enclosure products offer unique and cost effective solution to control excessive noise, protect against vandalism and reduce equipment degeneration. All packaged in an unobtrusive and attractive design.

## **Your Benefits**

**Whisper Quiet** - Our Environmental Enclosures achieve an exceptional noise reduction performance of 18-25 dBA. Guaranteed to give you peace and quiet, whilst ensuring your installation complies with the most stringent planning regulations.

**Compact & Discreet** - Ideal solutions for spatially restricted locations such as terraces, patio areas and roof spaces. Our huge range of external colours and finishes will improve the appearance of your heat pump or air-con installation by 'disguising' the equipment.

**Vandal Proof** - Designed to be safe, secure and weatherproof and ideal for security sensitive locations.

**Simple & Efficient** - Simple solutions are always best. Our Enclosures have unique internal airway paths to ensure airflow onto the equipment inside is never ever compromised. Summer or Winter.

**Installation Service** - Our experienced technicians offer a friendly and professional installation service to make sure things go smoothly and on time.



## *“High noise reduction without equipment performance losses and many other advantages”*

Noise reduction up to 25 dB(A) over the entire frequency spectrum 63 Hz to 8,000 Hz.

Choice of different airflow principles.

Modularly adaptable to any system size by using standard modules

Design the acoustics enclosures to the required air volume (pressure loss <15 Pascal).

Protection of the systems against environmental influences (rain, snow, hail, dust, sand) and unauthorized access.

Screen protection of the equipment

Made of aluminium including UV, weather, fungus- and fire resistant insulation. All components are recyclable.

Lockable service doors around the equipment for unrestricted access to the equipment for service and maintenance.

Light construction, construction also possible on foil roofs with corresponding wind load protection.

Easy and fast installation for retrofitting existing equipment or new installations.

Sound reduction based on 3 basic acoustic principles: 1. Sound insulation, 2. Refraction of air vibrations, 3. Prevention of sound reflection and masking effects.

Choice of different RAL colors or graphic patterns (optional) to adapt the enclosure to the environment.

Cost-effective solution for the construction HVAC systems in acoustically problematic areas.



# How we work

Decisive for the performance of HVAC systems is the air flow, for this reason, the air openings (air inlet / outlet) are dimensioned due to the Manufacturer specifications.

In this way, we achieve optimum performance of the systems, with whisper-quiet operation and a pressure drop of <20 Pascal across the various types of systems.

We offer everything from the complete design to the service from a single source. If you plan an offer for specific applications, the easiest way is to follow the steps below:

## Step 1

Send us information about the manufacturer, brand and model (exact name) of the equipment for which a enclosure is to be used. Further information on the location of the system and any existing acoustic report are helpful, but are not needed in a first phase. Send us the information via e-mail or let us know by phone.

## Step 2

### Acoustic enclosure specifications

Based on the details of the system, we will calculate the enclosures dimension and provide you with detailed information. This information includes:

Noise reduction data, air flow information, dimensions, sketch design, price and delivery times.

## Step 3

### Production and delivery

If you agree with the offer and order the system we go into production.



*"Simply but efficient"*

*Noise reduction until  
25 dB(A)*



## Prices

### Acoustic Enclosures **standard size** (Systems with horizontal air flow)

The following standard sizes are available. Different sizes can be delivered without any problems.

We are happy to prepare corresponding offers.



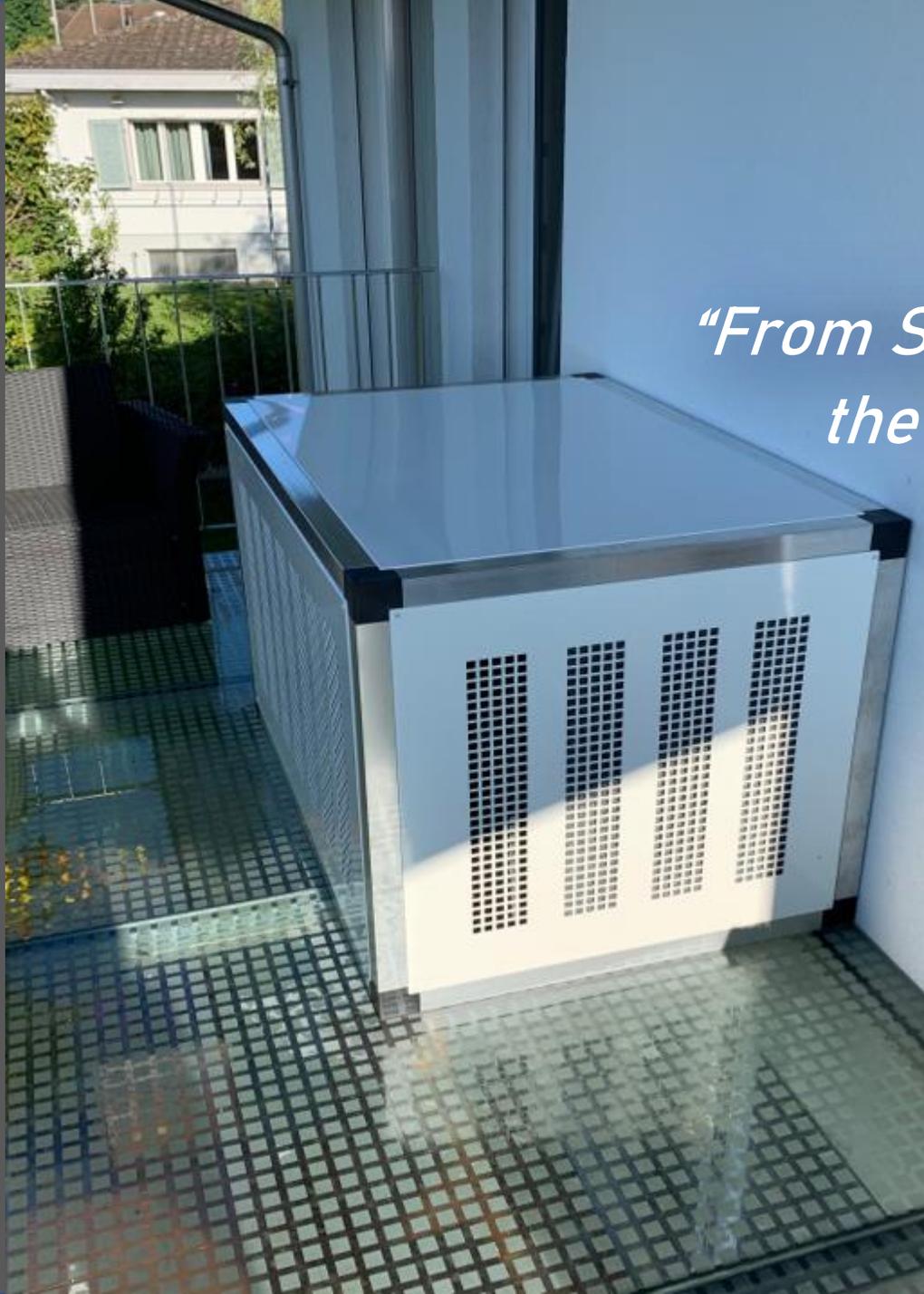
Enclosure / Application	Enclosure Size L x B x H in mm	Number of Service doors around the systems	Max. HVAC System size L x B x H in mm	Airflow	Max. Airflow m3/h	Noise reduction in dB(A)	Price Euro (1) ex. VAT	Price Euro (2) ex. VAT
H-Serie 1 / Heat pumps, Aircon units	1'350 x 900 x 900	6	900 x 320 x 800	Horizontal	2'500	-20	1'600	2'000
H-Serie 2 / Heat pumps, Aircon units	1'750 x 900 x 900	6	1'200 x 320 x 800	Horizontal	3'200	-20	1'750	2'150
H-Serie 3 / Heat pumps, Aircon units	1'750 x 900 x 1'300	6	1'200 x 320 x 1'100	Horizontal	4'500	-22	2'150	2'550
H-Serie 4 / Heat pumps, Aircon units	1'750 x 1'350 x 1'300	8	1'200 x 490 x 1'100	Horizontal	5'200	-22	2'550	2'950
H-Serie 5 / Heat pumps, Aircon units	1'750 x 1'350 x 1'800	8	1'200 x 490 x 1'650	Horizontal	7'600	-25	2'750	3'150
H-Serie 6 / Heat pumps, Aircon units	1'750 x 1'350 x 2'200	8	1'200 x 490 x 1'950	Horizontal	8'900	-25	2'950	3'350
Other sizes on request								

Price 1 = delivery disassembled as a kit with tailored but not built-in insulation.

Price 2 = delivery disassembled as a kit with built-in insulation and pre-assembled door locks.

Construction site delivery from EU warehouse Italy to all regions in Europe (EU countries) (1 EPAL pallet + package with profiles) = 380.00 Euro

*“From Small to **Big** – “with  
the same principle”*



## Prices

### Acoustic Enclosures **standard size** (Systems with vertical air flow)

The following standard sizes are available. Different sizes can be delivered without any problems.

We are happy to prepare corresponding offers.



Enclosure / Application	Enclosure Size L x B x H in mm	Number of Service doors around the systems	Max. HVAC System size L x B x H in mm	Airflow	Max. Airflow m3/h	Noise reduction in dB(A)	Price Euro (1) ex. VAT	Price Euro (2) ex. VAT
V-Serie 1 / VRF, VRV single units	1'750 x 1'750 x 2'550	16	900 x 900 x 1'700 (1x)	Vertikal	9'800	-25	6'300	6'900
V-Serie 2 / VRF, VRV 2er groups	2'850 x 1'750 x 2550	20	900 x 900 x 1'700 (2x)	Vertikal	18'200	-25	7'800	8'600
V-Serie 3 / VRF, VRV 3er groups	3'950 x 1'750 x 2'550	24	900 x 900 x 1'700 (3x)	Vertikal	29'400	-25	9'300	10'300
V-Serie 4 / VRF, VRV 4er groups	5'050 x 1'750 x 2'550	26	900 x 900 x 1'700 (4x)	Vertikal	39'200	-25	10'830	12'000
Other sizes on request								

Price 1 = delivery disassembled as a kit with tailored but not built-in insulation.

Price 2 = delivery disassembled as a kit with built-in insulation and pre-assembled door locks.

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*"One for Two"*  
*Two **GALLETTI** Chillers*  
*Inside*

## Acoustic enclosures base frame

The sound hoods are based on a self-supporting aluminium frame system profiles with a thickness of 50 mm. The basic framework can be modularly adapted to any system size and can be used for new installations of existing systems.

The structure of the basic framework is simple and can be set up in a few minutes, depending on the size of one or two persons, without special tools.

The basic structure consists of:

- 1) Corner Fastener
- 2) Corner Profiles
- 3) Omega Profiles
- 4) Omega Fastener

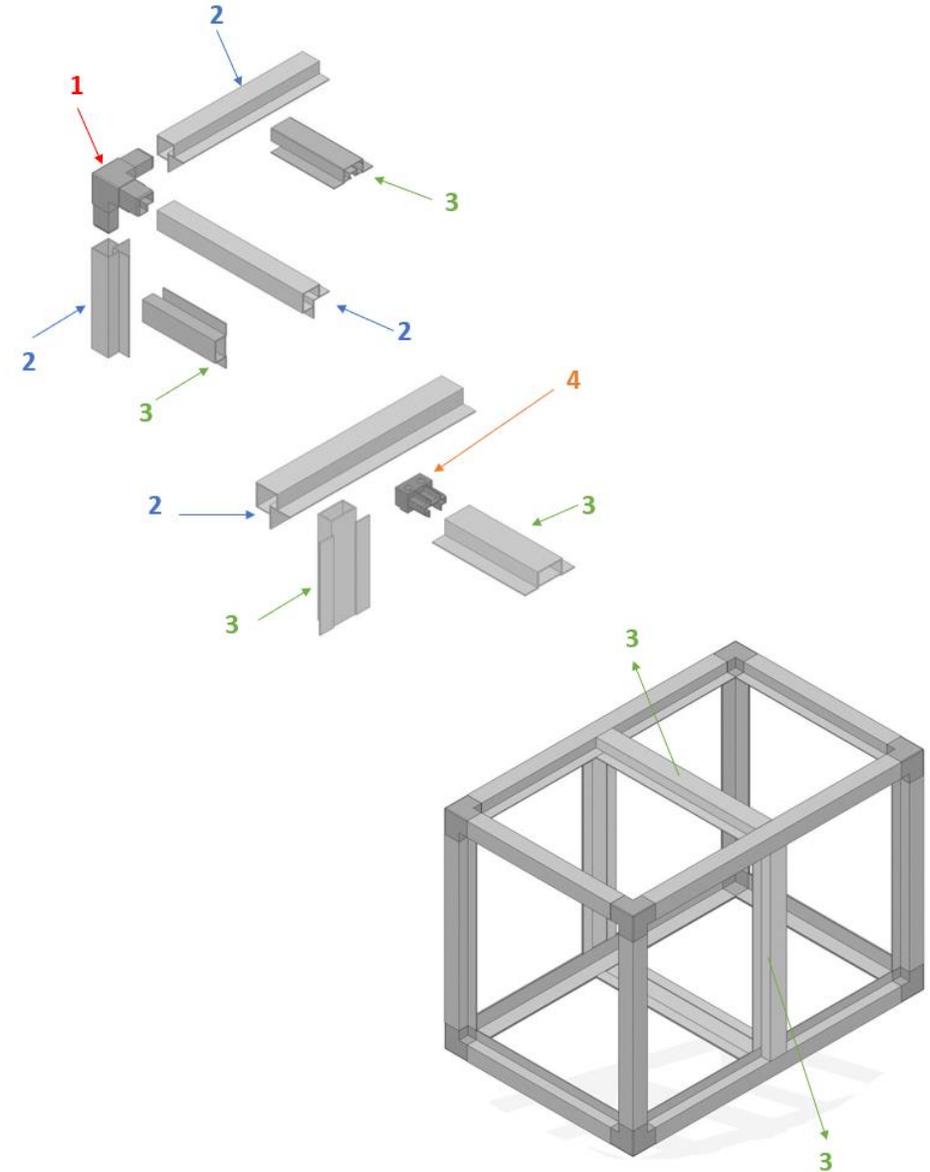
All components are made of aluminium with a profile thickness of 50 mm.

By altering the length of the corner profiles and omega profiles, the footprint of the can be adapted to different plant types. The base area results from the dimensions of the plant, the air flow and the required air volume flows.

The built-up frame forms the basic framework to insert service doors and the roof panels which are installed around the system.

The base frame forms the basic framework to insert service doors and the roof panels which are installed around the system.

By moving or installing additional Omega profiles (3), the dimensions of the service doors and the roof can be flexibly adapted to the respective systems.



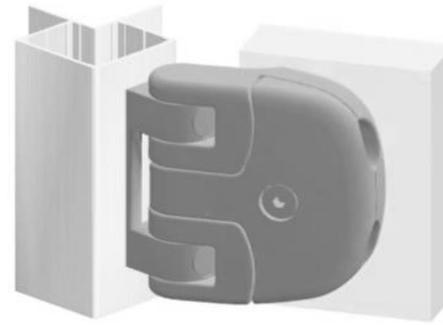
# Door Locks - free access for Maintenance and Service

All doors as well as the roof construction are equipped with turnbuckles with a universal key.

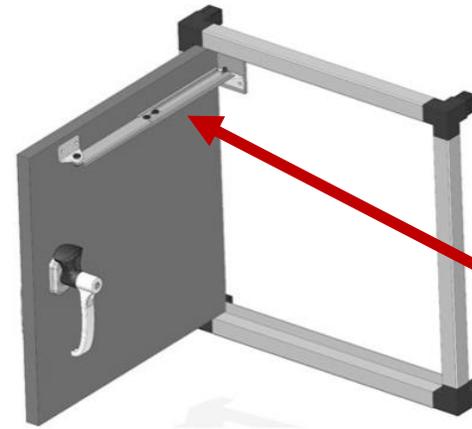
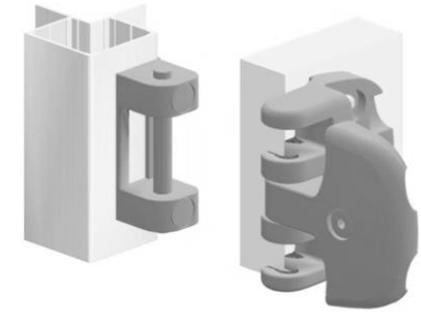
These turnbuckles additionally strengthen the stability of the basic construction.

The doors and the roof construction can be opened for service purposes without dismantling parts of the enclosure.

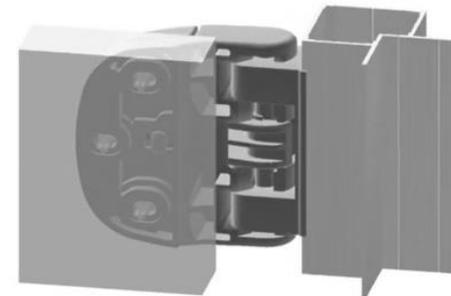
The systems thus remain accessible for service, maintenance or conversion work 360°.



Depending on the space available, the doors can be opened like a **cupboard door** (left picture) or simply as an **entire lift-out** (picture below).



Optionally possible **wind load protection of the doors** when mounting on flat roofs.



Door lock **seen from inside**

# Enclosure insulation

Around the plant, service doors are attached which are secured by door locks.

The service doors and roof construction are constructed of 1.5 mm canted aluminium panels.

The inside of the formwork is equipped with a sound insulation based on sound-absorbing polyethylene foam panels with a thickness of 40 to 50 mm.

Its sound-absorbing properties make this foam one of the most innovative materials for sound control in the industry.

The material is water, UV and shape-resistant and does not build up any bacteria (fungi).

«FR version» of this insulation is fireproof.

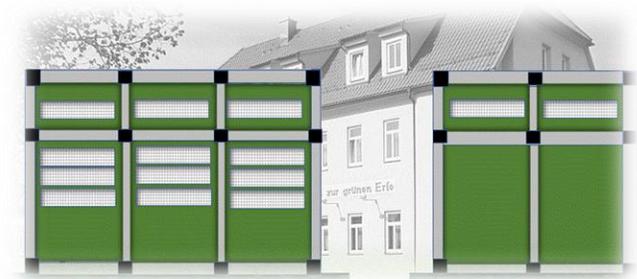
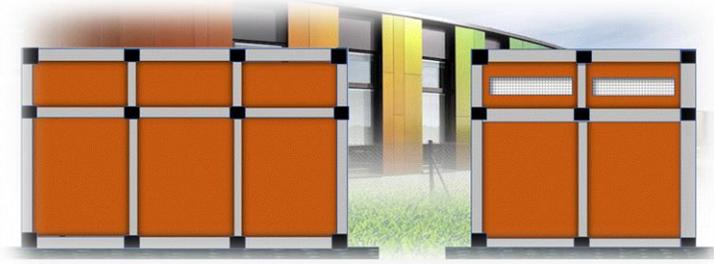
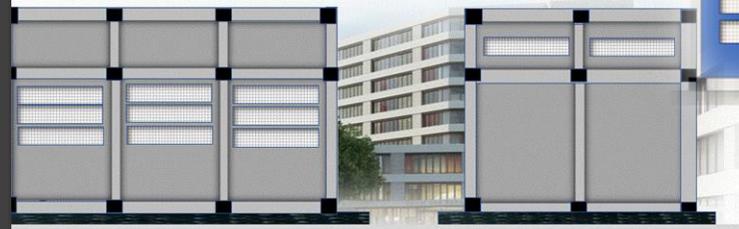
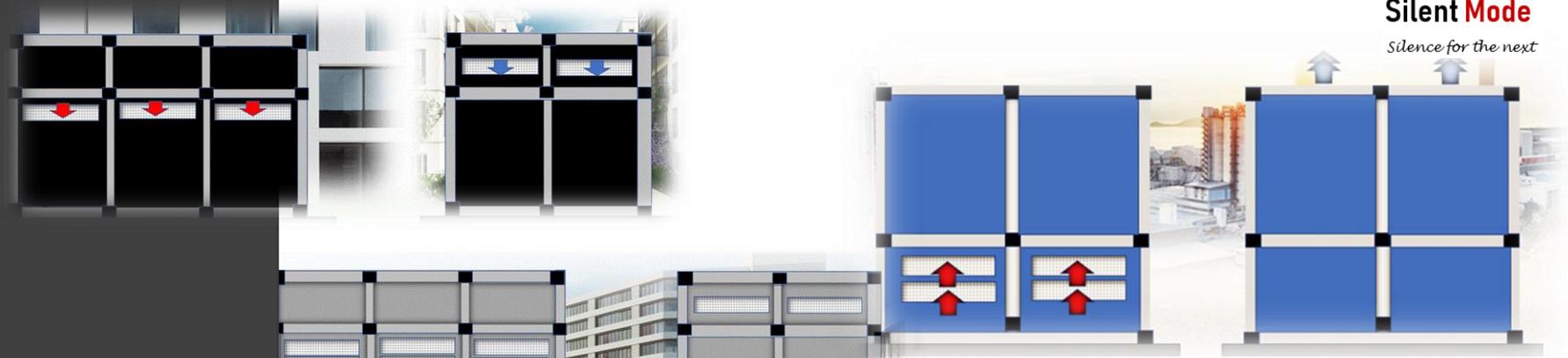
Water UV, Mold, Fungi and fireproof insulation



**Silent Mode**

*Silence for the next*

Silent Mode  
silence for the next



*From the raw sketch to the personalized acoustic enclosure in just a few steps...*

## Choice of RAL color

I want to find out what color a physical object has  
(example facade)  
How can I do that?

We recommend comparing the color of the object  
with the color patterns in a physical color fan.  
Please note that this may be a RAL color or a  
color from another color system used by a single  
paint manufacturer, for example.

You should also keep in mind that the color on the  
object could fade over time. RAL offers an  
electronic device that determines an RAL color by  
'scanning' the object.







## We look forward to your inquiry..

We deliver from our stock in Italy to:

Italy, France, Austria, Switzerland, Germany,  
Spain, Greece, UK, Russia, Slovenia, Benelux  
countries, Scandinavia, UAE, Turkey etc.

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