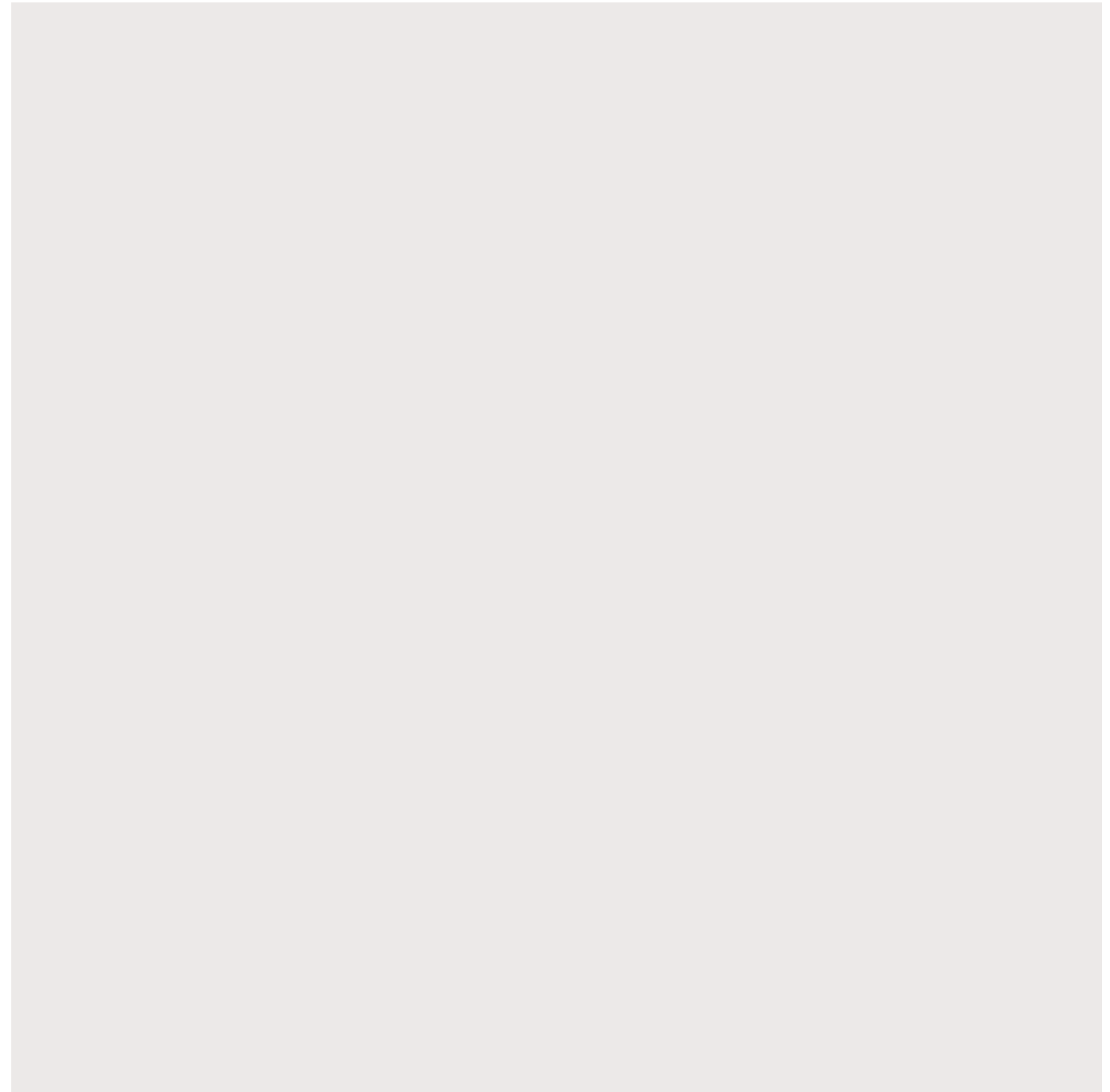
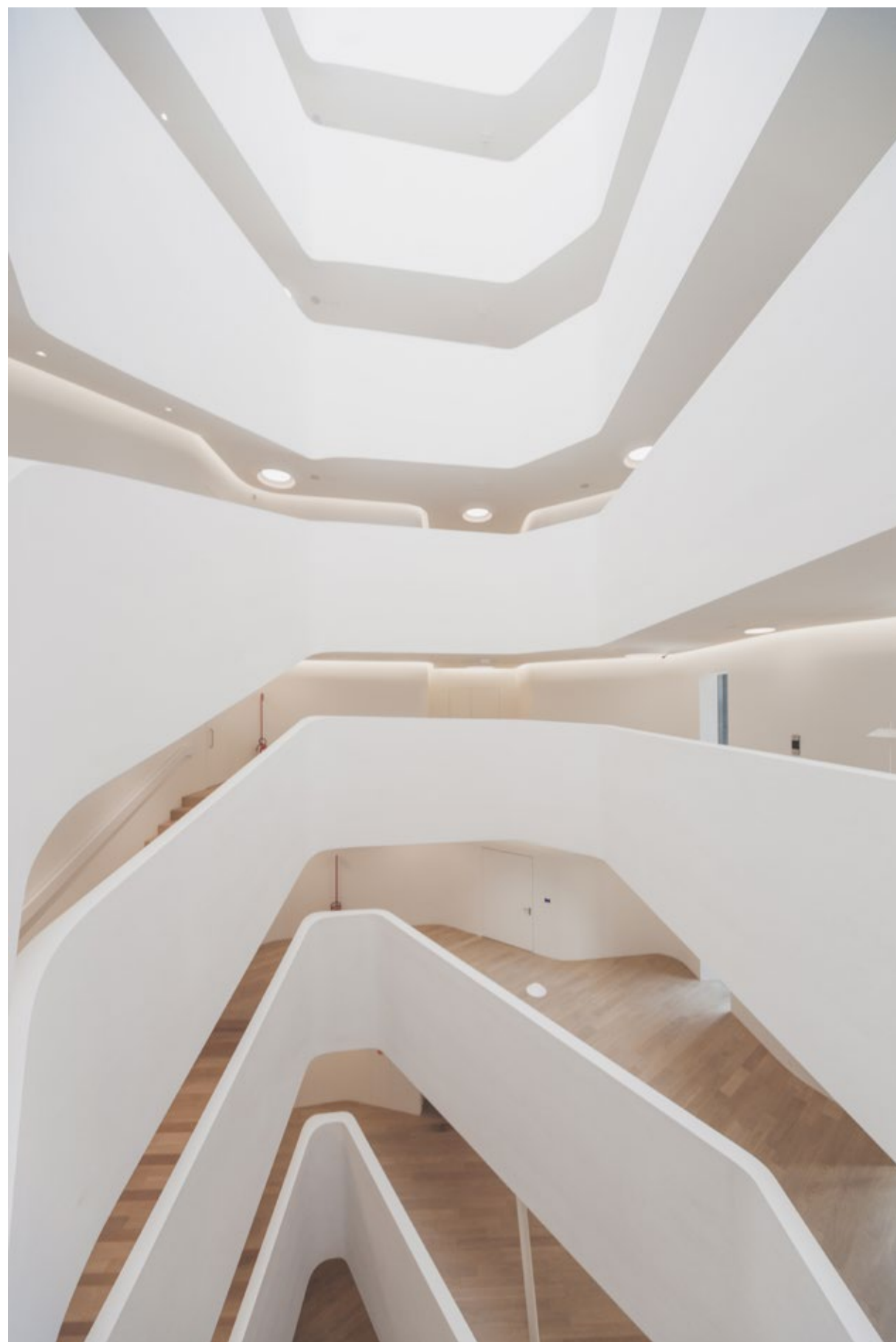




INN Acoustic



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Summary

Acoustics.

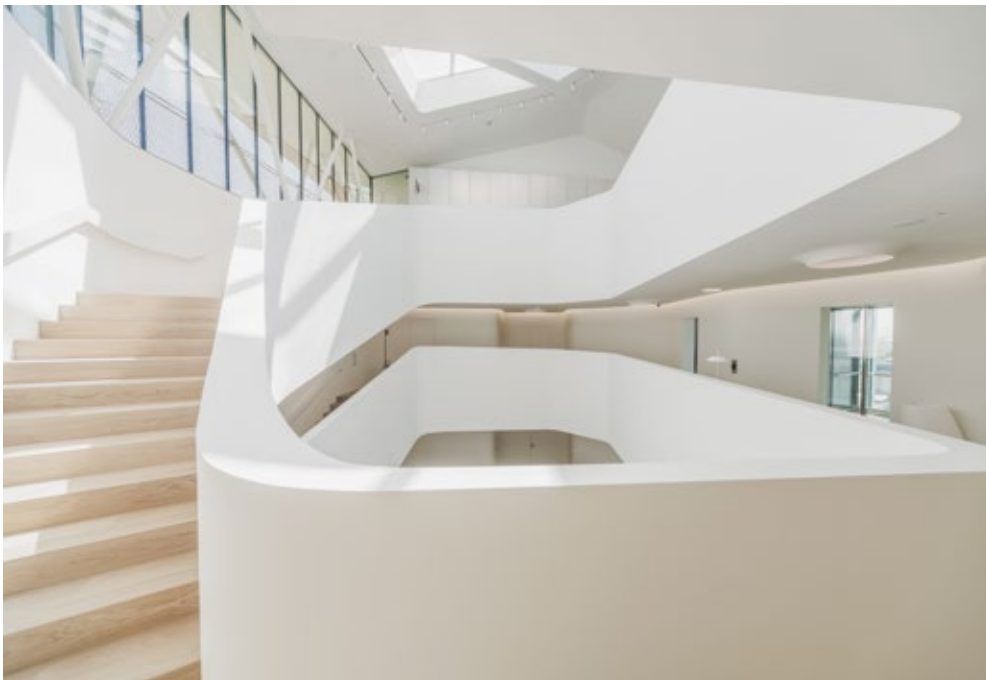
The search for perfect acoustics in listening spaces is a daily challenge for architects and engineers.

Since ancient times, acoustics, i.e. the perfect sound experience, has been a fundamental quality requirement for works intended for the listener. From open-air amphitheatres used for plays, where sound had to be delivered without dispersing, to majestic churches where sound had to be heard in every part of the space, and to 19th century theatres which did not have amplification systems. Whereas in the past, geometric shapes determined the acoustic result, today, with **INN Acoustic** this limit has also been surpassed.

INN Acoustic by Isoldesign has been created to meet the designers' need for an effective, modular and aesthetically unrestricted acoustic product. It is a product that leaves room for creativity in customised shapes, colours and textures.

INN Acoustic has been developed and produced in Italy in the knowledge that each project is unique and requires solutions that are easy to apply, adaptable to multiple situations and able to integrate with other existing or new surfaces.

Designing acoustics has always been a complex task, but one that is possible.



INN Acoustic is a system that corrects or modulates the reverberation time, meeting the real wellbeing requirements in everyday environments.

The use of sustainable materials and nanotechnology applied to natural materials makes it possible to meet a wide variety of needs, with applications not only on ceilings but also on walls with shock-proof characteristics. Careful research into construction and finishing materials, with customisable grain sizes, colours and textures, has made it possible to solve installation and maintenance problems, setting a new aesthetic standard and guaranteeing 100% acoustic effectiveness on the installed surface.

INN Acoustic Monolithic is an excellent solution for bold architectural acoustics, while **INN Acoustic Modular** is the unique and original choice for fast installations with outstanding aesthetic value.

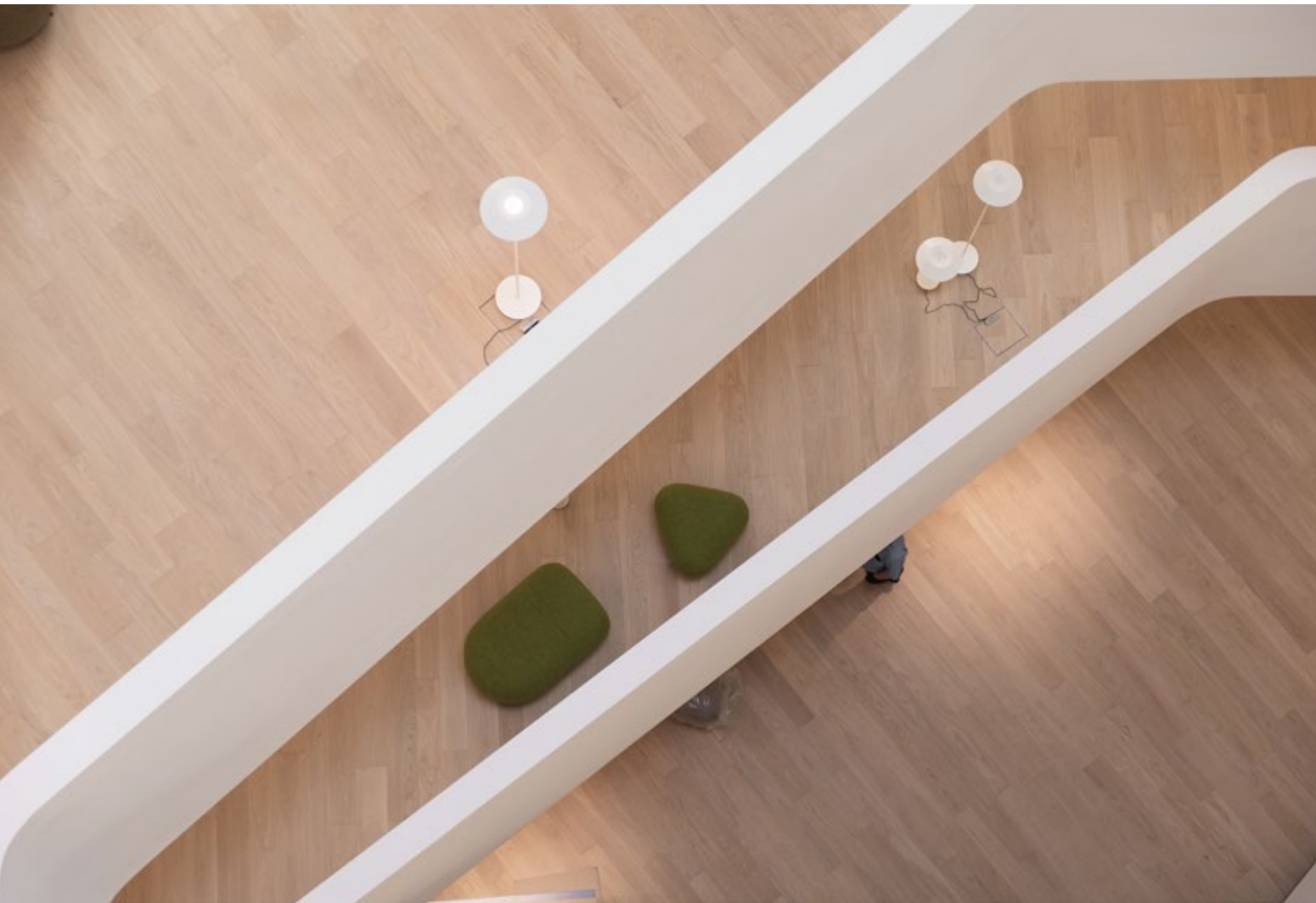
Freedom to design with acoustics.

The sound-absorbing solution for acoustic comfort without compromise

INN Acoustic Monolithic is the monolithic sound-absorbing solution with a continuous, limitless surface. It can be applied as a false ceiling or wall coating. Thanks to its mineral wool core and sound-permeable nanotechnology mineral coating, it guarantees high sound absorption. It is a true revolution in the field of architectural acoustics, currently the best non-visible solution for acoustic comfort. The infinite surface, which is CE and PDO certified, provides a flexible solution that allows the integration of mechanical or lighting systems of any kind, leaving complete freedom of design. It is a continuous surface which is solid, durable, versatile and easy to maintain.



Even the boldest architectural solutions can benefit from the acoustic properties of **INN Acoustic Monolithic**.



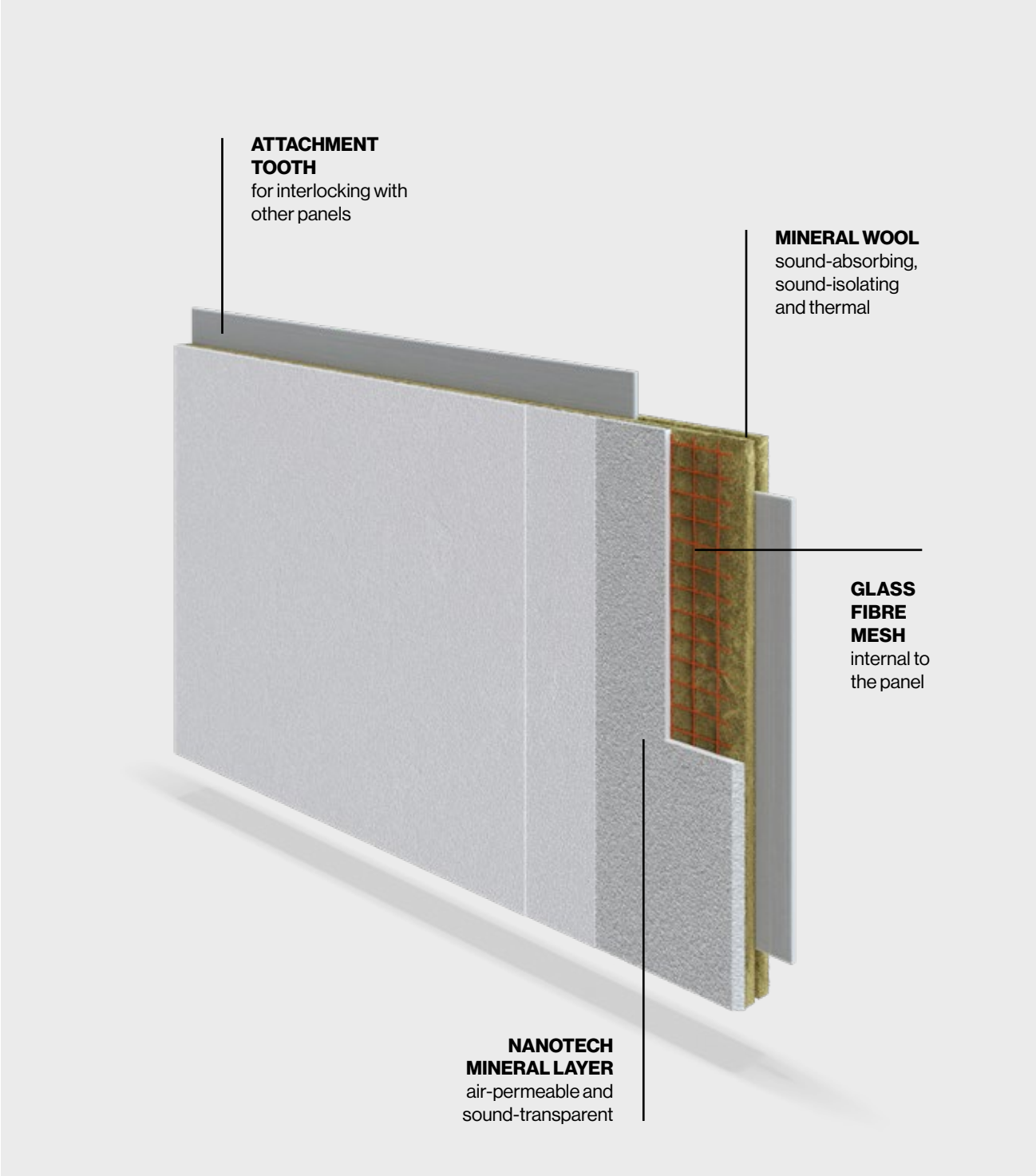
INN Acoustic Monolithic can be used on all surfaces in a room, except the floor, whatever their shape.

The high sound absorption capacity of **INN Acoustic Monolithic** allows you to modulate the amount needed to achieve the desired acoustic objective.



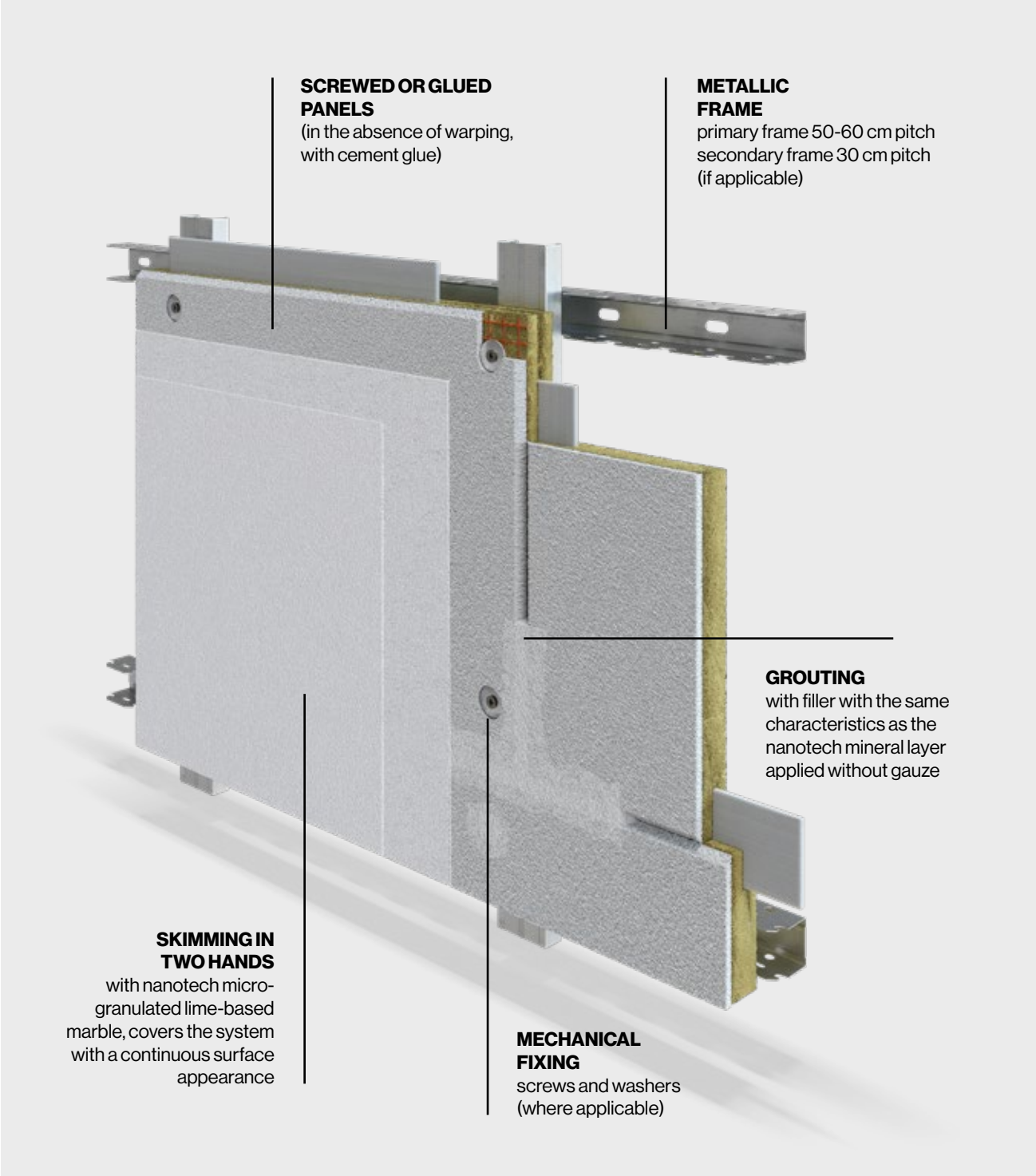
The panel

The **INN Acoustic Monolithic** modules are prefabricated and ready for installation. The interlocking system of the panels (male/female) ensures that they are extremely easy to install, perfectly flat and mechanically strong.



The system

The complete **INN Acoustic Monolithic** system is composed as shown in the diagram. The panels can be applied to walls or ceilings, or fixed to metal frames with self-tapping screws and washers, or glued with suitable cement glue and secured with dowels.





INN Acoustic Monolithic is not limited to conventional finishes: it can assume the finish appearance desired by using customisations that go far beyond solid colours. With a technique similar to fresco painting, the desired decorations can be achieved. Here is an example of **INN Acoustic Monolithic** applied to a ceiling with travertine decoration.







The work carried out in this church, featuring curvilinear surfaces with a variable radius, shows the opportunities for compromise-free adaptation of **INN Acoustic Monolithic** to organic architectural forms without altering their original appearance.



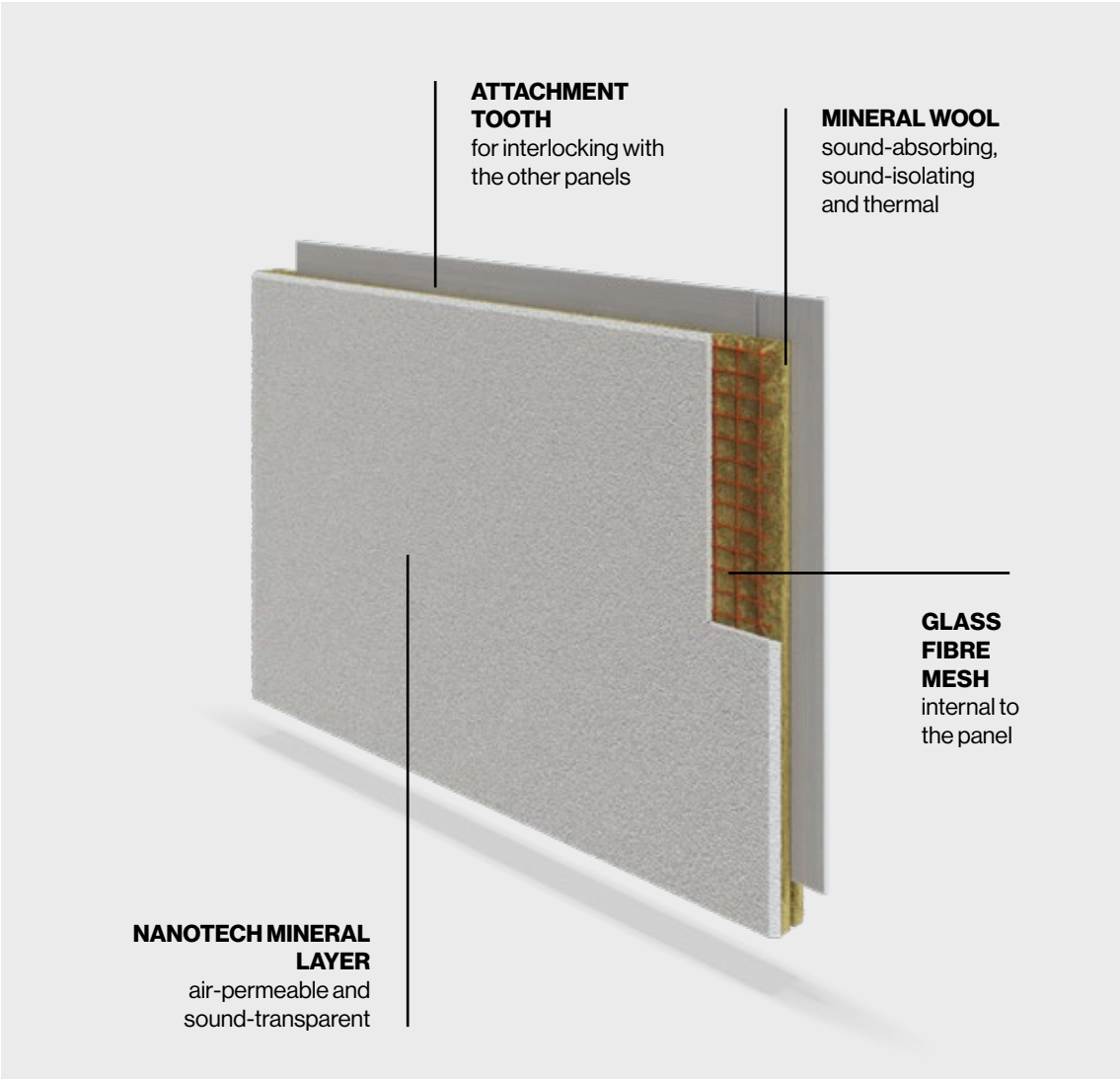
INN Acoustic Monolithic fits discreetly into existing rooms, maintaining the design lines while restoring the desired acoustic comfort.



INN Acoustic Modular

The quick and easy solution for acoustic comfort

INN Acoustic Modular enables pre-finished prefabricated modules to be quickly and easily applied on flat ceiling and wall surfaces. This solution differs aesthetically from **INN Acoustic Monolithic** due to the geometric patterns emphasized by the combination of the panels, which can be modulated as desired to give character to the room, with regular or staggered mesh installation, highlighted by a bevel on the sides of the panel. The colour must be chosen on ordering as the panels will arrive on site already finished.

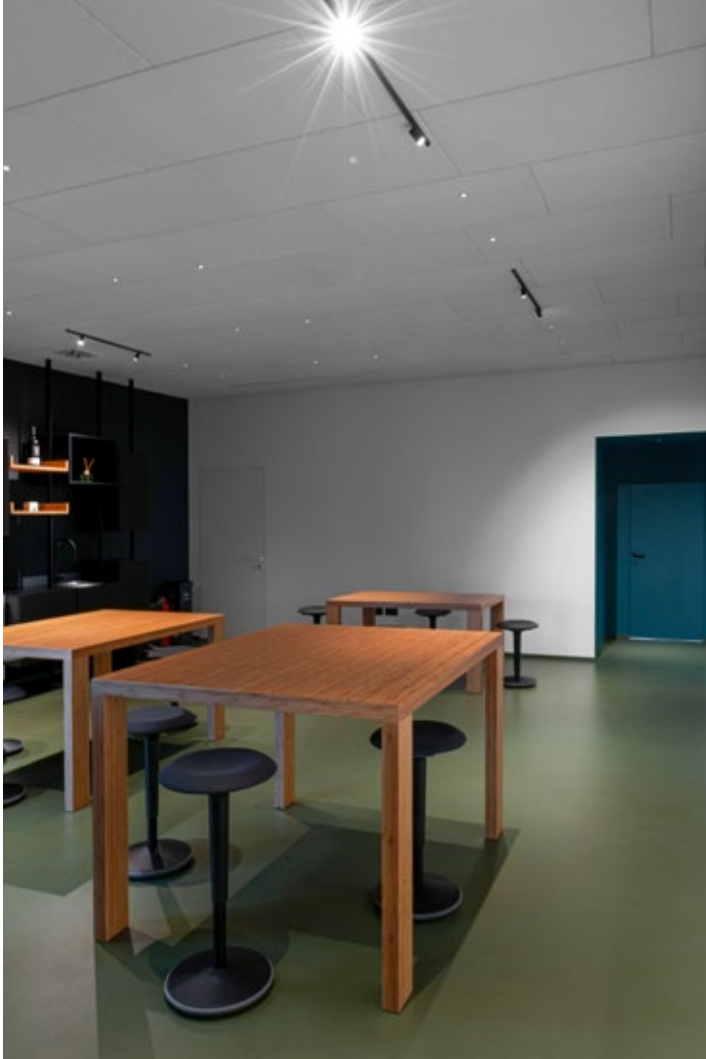


The surface of **INN Acoustic Modular** features geometric patterns generated by the juxtaposition of the panels. It can be applied both to walls and ceilings, is CE and PDO certified, and is a flexible solution that also allows the integration of any type of lighting systems, leaving full design freedom to architects, engineers and interior designers.



INN Acoustic Modular is the original pre-finished sound-absorbing panel for application on a metal frame or to be glued. It can be applied to the ceiling or wall, with visible joints, and is quick to install. It ensures high acoustic performance with a minimalist, clean and contemporary appearance.

With **INN Acoustic Modular** intervention is quick and easy, allowing systems to be integrated easily. The sense of placement and alignment can also be modulated to give character and personality to the space, making it more appropriate to the specific requirements.



With **INN Acoustic Modular** there are no limits to how much technical equipment can be inserted. Recessed spotlights, light bars or ventilation grids can be easily included.





Eco-sustainable acoustics

INN Acoustic is a product made with environmentally sustainable technology, composed of 80% recycled materials such as glass, marble and ceramics, bonded with modified stabilised silicate resins.

The product is free from VOCs (volatile organic compounds) and does not contain hydrocarbons or other pollutants.

The main culprits of VOCs are substances in coatings, especially paints and protective products. Solvents such as hydrocarbons, ethyl acetate, acetone, etc. are generally emitted from protective or decorative films and are used as catalysts in various types of resins (organic binders).

INN Acoustic, however, is bonded with modified stabilised silicates and consists of a very high-density mineral wool panel, a 7 mm air-permeable sound-transparent nanotech mineral layer and a 0.4-0.7 mm marble granulate nanotech skim coat bonded with stabilised potassium silicate. The binder of these materials is a stabilised potassium silicate with pH 13. This avoids the use of preservatives such as formaldehyde and gives the product A2-s1,d0 fire certification (organic component equal to 0).

The finishing material is supplied already in a colour of your choice and does not require any colour additions or subsequent painting.



With **INN Acoustic Monolithic**, the acoustics have no predefined form. The sound-absorbing surface of a room can be tailor-made according to the project, allowing the designer to give character to the room without sacrificing shape or colour. Customised, acoustically high-performance sound-absorbing elements can be created, which can make any project stand out.



It can also be applied in cloud form with the desired shapes, without any dimensional limits, with the option of integrating any lighting fixtures.

Advantages of INN Acoustic Monolithic



The surface of **INN Acoustic Monolithic** in the version with the finest finish, in the colour white, can be used as a **projection screen** with an excellent refraction and viewing angle, thus taking on a dual function in conference rooms. Project forms can be faithfully followed without limits, and **without training for installation** thanks to its ease of application. Its surface is 100% sound-absorbent and breathable, making it also suitable for wet environments such as swimming pools. **INN Acoustic Monolithic** can improve the well-being of people spending time in the premises thanks to **ION**, the permanent ionising treatment that purifies the air.

INN Acoustic Monolithic offers numerous advantages. It can coexist with plasterboard, enabling unique surfaces to be created with the **same finish**. In addition to providing acoustic performance, the mineral wool on the back side of its panels contributes both to thermal insulation, with high **transpiration capacity**, and to **acoustic insulation** between adjacent rooms.

In the event of damage, only a small part needs to be repaired, i.e. the affected area, without having to fix a much larger area. Grouting is carried out with **INN Putty** which is formulated with the same components as the surface mousse, in order to guarantee evenly-distributed **sound absorption** on **100%** of the installed surface, thus differentiating itself from other products that have to sacrifice about **25% to 30%** of their surface **sound absorption**.

Over time, the finishing layers applied for the cooling of the rooms, increase the absorption capacity of the installation.

The system is certified to class A2-s1, d0 on both sides.

The interlocking ridge and the interposed mesh mean that **INN Acoustic Monolithic has no need for expansion joints**. The colour of its pre-mixed finishing surface in the **INN Fin** finishing coat is not limited to RAL and NCS, but can be further customised. It is the only system that guarantees that the surface is perfectly flat thanks to the ridge around the perimeter.

Advantages of INN Acoustic Modular



INN Acoustic Modular is ceiling- and wall-mounted with a shatterproof feature. Application involves a single step, so the product is ready for use immediately. It provides a variable graphic effect in the lines, due to the installation system adopted, and to create a colour effect, there is the option of using different shades on each of the panels and applying them in the desired combination.

It is breathable, thermally-insulating and has no thermal bridges. It allows the application of integrated light fittings and plates with control or power supply inserts.

The ridge around the perimeter of the **INN Acoustic Modular** keeps it perfectly flat and allows concealed fixing, ensuring sound insulation without interference thanks to the interlocking system. It is flame-retardant on both sides. It can be supplied with the application of the additional **ION**, which gives it ionising capacity and thus sanitises the air in the room where it is installed. It is made almost entirely from natural products and does not release dust or components that are harmful to health.



INN Acoustic Monolithic can be used effectively in a multimedia setting. The large wall, including the screen, is made of **INN Acoustic Monolithic**.

Installation

INN Acoustic Monolithic on a frame or with cement glue, on the ceiling or wall.

The installation of **INN Acoustic Monolithic** on a metal frame, on the ceiling or wall, is done quickly and cleanly with screws and washers on the previously-fitted frame.

The ridge around the perimeter ensures that the panels are completely flat, reducing the areas to be grouted to a minimum. The installation of **INN Acoustic Monolithic** with **cement glue** on the ceiling or wall is similar to that for the metal frame in adhesion. After the glue has been spread on the installation surface, the panels are applied and secured with dowels and washers to the surface to be covered.

For both types of application, this is followed by the grouting and skimming of the surface.



The primary metal frame is laid with a 50-60 cm pitch and the secondary with a 30 cm pitch. This step ensures that the panel is properly anchored, and, in the wall application, also makes it shatterproof.



1A.
The panels are then applied to the metal frame, securing them with self-tapping screws and washers. A perimeter ridge (male-female system) facilitates the support of the next panel when fixing panels with screws.



1B.
This is followed by grouting with **INN Putty** supplied by us, which has the same composition as the panel mousse, so that sound absorption is maintained over the entire surface. The necessary elasticity is also guaranteed, which avoids the use of elasticated joints.



2.
When the grout is perfectly dry, you can proceed with a first skim coat using our specially formulated product, **INN Fin**.



3.
Finally, once the first skim coat is perfectly dry, you can proceed with the final coat, again using **INN Fin**. The finish is supplied coloured in a paste.

Glued INN Acoustic Monolithic



1.
Application with **INN Colfiss** cement glue and panel fixing with dowels and washers.



2.
Grout joints and screw holes with **INN Putty** then when completely dry, apply a first coat of **INN Fin** skim coat.



3.
When completely dry, apply second coat of **INN Fin** skim coat.

**INN Acoustic Modular
installation on a metal frame or
with cement glue**

Modular can be dry-laid on the ceiling or wall.

For installation on a **metal frame**, the panels are applied with screws on the perimeter ridge at the metal frame. The ridge allows for precise, easy and quick coplanar installation.

For installation with **cement glue** after the glue has been applied to the rear surface of the panel, the panels are applied and fastened with dowels on the ridge screwed into the pocket.

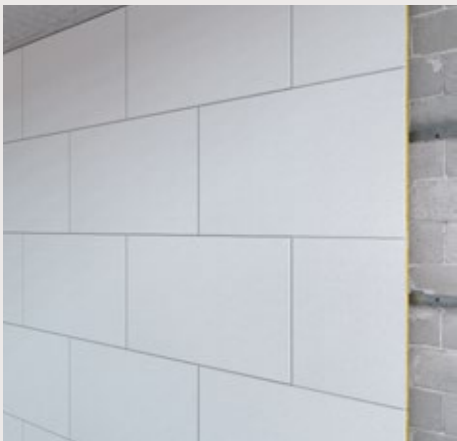
The panel can be applied in a staggered or aligned sequence.



1.
Fastening panels to the frame with screws on the ridge.



2.
Quick and easy panel installation.



3.
Finished coating.

Glued INN Acoustic Modular



1.
INN Colfiss cement glue application and fixing panels with suitable dowels and plugs.



2.
Quick and easy panel installation.



3.
Finished coating.

**Examples of special
processes with
INN Acoustic Monolithic and
INN Acoustic Modular**



Example of spotlight holes.



Example of LED line insertion.



Example of trapdoor insertion.



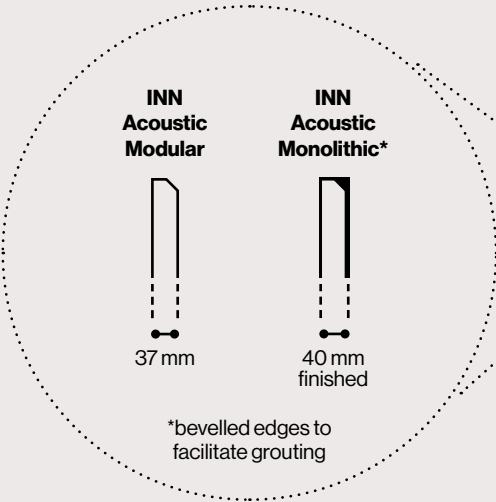
Example of corner guard application on edge.



Technical specifications

MEASUREMENTS

INN Acoustic is a monolithic system that is created on-site by laying pre-finished standard modules delivered to the construction site as shown on page 4, which is subsequently finished in a continuous surface. Concave and convex curves can also be created with this system.



Product dimensions have a tolerance of ±0.5% of the indicated value

CHARACTERISTICS

Material	Mineral wool
Reaction to fire	Euroclass A2-s1, d0
Thermal resistance	λ_D 0.038 W/mK
Mould resistance	YES
Light reflection	90.5%
Impact resistance	YES wall-mounted at low height
Sound Insulation	Rw = 24 dB

Air Cleaning	2000 Ions cm³ with ION system
Vapour permeability	YES
Soundproofing	YES
Cleaning	YES, Vacuum cleaner
Specific weight on-site	11 kg/sq.m. approx.
Certifications	LEED COMFORT - CAM - BLUE ANGEL - CE - PDO

INTEGRATIONS

Light points

Light track
Recessed spotlights
LED strip

Mechanical terminals

Inspection hatches
Air conditioning vents
Hanging points

FINISHES

The final coating can be customised by surface, grain size and colour. It is also possible to integrate lighting points or other elements.

GRAIN SIZE



Fine



Large

TEXTURE

The surface texture can be customised using an artisan process that is considered artistic, which gives the entire surface of the system an exceptional decorative appearance.



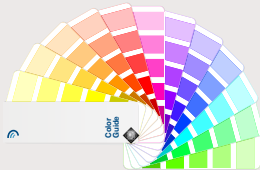
Texture



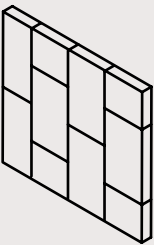
Marmorino

COLOUR

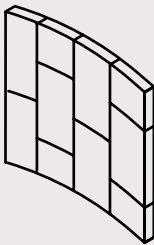
Solid colour that can be selected from the RAL or NCS colour chart. 95% dyed to maintain a matt surface. Heat-treated colouring of the mass with full-coverage, bright shades that do not fade over time. Further colour customisation possible.



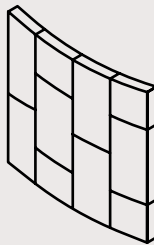
TYPE OF APPLICATION



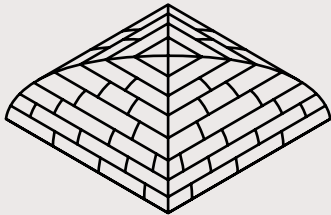
Application on
flat surface



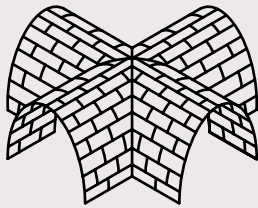
Application on
concave surface



Application on
convex surface



Application on
dome



Application on
vault

REVERBERATION TIME

Preliminary estimate of the square metres of INN Acoustic to be applied to achieve the desired reverberation time

Tr	INN Acoustic m²	effectiveness per m³:
0.50 s	1	3.3
0.60 s	1	4.3
0.70 s	1	5.3
0.80 s	1	6.6
0.90 s	1	8.3
1.00 s	1	10

E.g.: in a room of 200 m³, to obtain an Rt (reverberation time) of 0.70 s, the following procedure will be followed: 200:5.3 m³ = 37.74 m² INN Acoustic surface area for ceiling or wall installation.

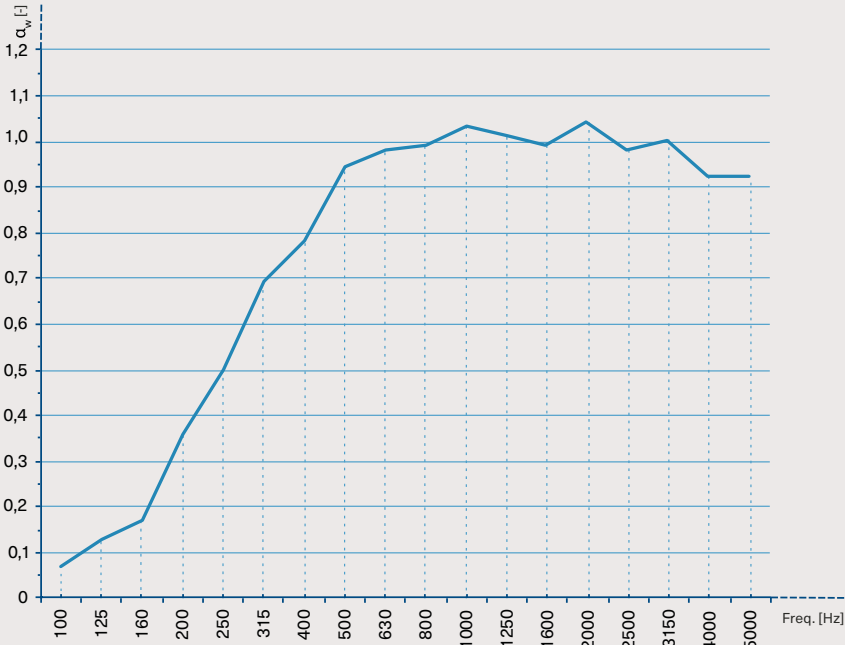
s = seconds

INN ACOUSTIC MONOLITHIC ACOUSTIC ABSORPTION

Sound absorption coefficient for bonded applications

Mounting type A according to EN ISO 354
Reference standards: EN ISO 354:2003 / EN ISO 11654:1997

Freq. (Hz)	α_w (-)
100	0.07
125	0.13
160	0.17
200	0.36
250	0.50
315	0.69
400	0.78
500	0.94
630	0.98
800	0.99
1000	1.03
1250	1.01
1600	0.99
2000	1.04
2500	0.98
3150	1.00
4000	0.92
5000	0.92

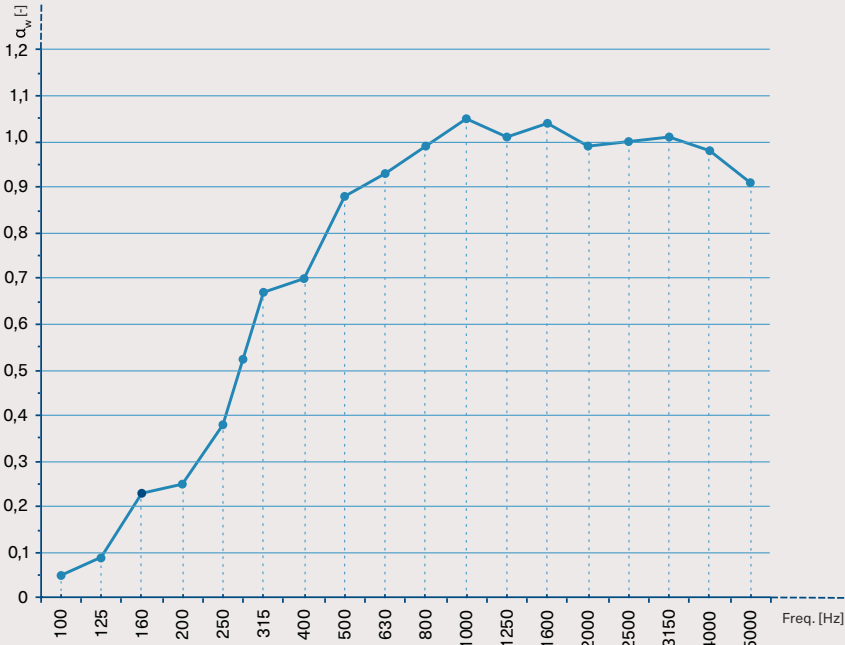


INN ACOUSTIC MODULAR ACOUSTIC ABSORPTION

Sound absorption coefficient for bonded applications

Mounting type A according to EN ISO 354
Reference standards: EN ISO 354:2003 / EN ISO 11654:1997

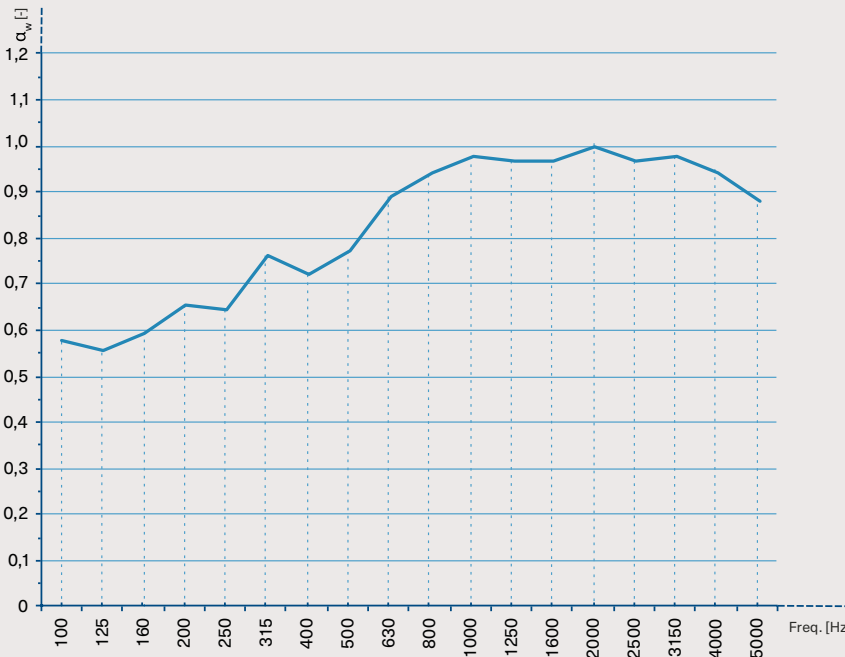
Freq. (Hz)	α_w (-)
100	0.05
125	0.13
160	0.17
200	0.36
250	0.50
315	0.69
400	0.78
500	0.94
630	0.98
800	0.99
1000	1.03
1250	1.01
1600	0.99
2000	1.04
2500	0.98
3150	1.00
4000	0.92
5000	0.92



Sound absorption coefficient for low profile screwed-on applications

Mounting type E250 according to EN ISO 354
Reference standards: EN ISO 354:2003 / EN ISO 11654:1997

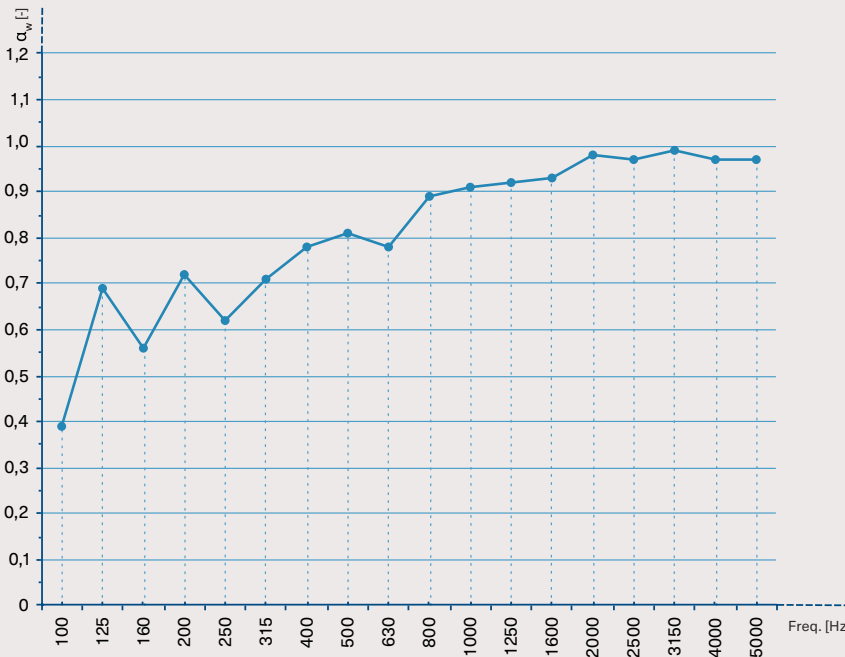
Freq. (Hz)	α_w (-)
100	0.57
125	0.55
160	0.59
200	0.65
250	0.64
315	0.76
400	0.72
500	0.77
630	0.89
800	0.94
1000	0.98
1250	0.97
1600	0.97
2000	1.00
2500	0.97
3150	0.98
4000	0.94
5000	0.88



Sound absorption coefficient for applications with air cavity

Mounting type E250 according to EN ISO 354
Reference standards: EN ISO 354:2003 / EN ISO 11654:1997

Freq. (Hz)	α_w (-)
100	0.39
125	0.69
160	0.56
200	0.72
250	0.62
315	0.71
400	0.78
500	0.81
630	0.78
800	0.89
1000	0.91
1250	0.92
1600	0.93
2000	0.98
2500	0.97
3150	0.99
4000	0.97
5000	0.97



References

Below are some of the main references:

A2A – Brescia (BS)

AXA – Lugano (CH)

San Teonisto Auditorium – Treviso (TV)

Auto Torino – Turin (TO)

Banca d'Italia – Vicenza (VI)

Benetton Group – Treviso (TV)

Milan Stock Exchange – Milan (MI)

Bolton Group – Milan (MI)

BVA DOXA – Milan (MI)

Ca' Scarpa, Exhibition Space – Treviso (TV)

Ca' D'ORO S.p.A. – Aussa Corno (UD)

Calzedonia S.p.A. – Villafranca Veronese (VR)

Caprizza – Bergamo (BG)

Cinema Modernissimo – Bologna (BO)

Church Of The Good Shepherd – Vatican

Church of Jesus Christ – Urbino (PU)

Church of San Sebastiano – Thiene (VI)

Parish Church S.Egidio Abate – Cavezzo (MO)

Church Santa Maria Beltrade – Milan (MI)

Church Ss. Annunziata – Cefalù (PA)

German-Hungarian College – Rome (RM)

Diesel S.p.A. – Breganze (VI)

ELITech – Turin (TO)

Former Convent – Cocconato D'Asti (AT)

Excelsior Palace Hotel – Rapallo (GE)

Facebook Milan – Milan (MI)

GlaxoSmithKline – Verona (VR)

Bulgari Hotel *** 6 stars** – Rome (RM)

Hotel Saint Martin – Rome (RM)

Hotel Six Senses *** 5 stars** – Rome (RM)

Hotel Windsor - Gavio Group – Laigueglia (SV)

Hyphen – Affi (VR)

Intesa San Paolo (Dome) – Milan (MI)

J.P. Morgan – Milan (MI)

Maroso Impianti – Pianezze (VI)

OX S.R.L. – Naples (NA)

“Pico Verde” Water Park – Sommacampagna (VR)

Radici Group – Villa d'Ogna (BG)

Restaurant “Bistrot Cannavacciuolo” – Turin (TO)

Restaurant Origgio – Caronno Portusella (VA)

Restaurant Usteria – Lecco (LC)

Samac Appalti – Rome (RM)

Samsung Milan – Milan (MI)

Chiampo Sanctuary – Chiampo (VI)

Valmadrera Middle School – Lecco (LC)

Segreteria dello Studente – Torino (TO)

Sidastico S.p.A. – Fara Vicentino (VI)

Railway Station – Luxembourg

Stone Island – Ravarino (MO)

Carani Theatre – Sassuolo (MO)

Terna S.p.A. – Rome (RM)

Unicredit Bank – Milan (MI)

Unipol – Bologna (BO)

Private villa – Ispra (VA)





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