MASTERING ACOUSTICS

Audal

BY DANOSA

"I'm free to be whatever I
Whatever I choose and I'll
sing the blues if I want"

Whatever – Oasis.
Definitely Maybe. 1994

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1. Audal by Danosa

Building with confidence requires solutions that perform where it matters – on site.

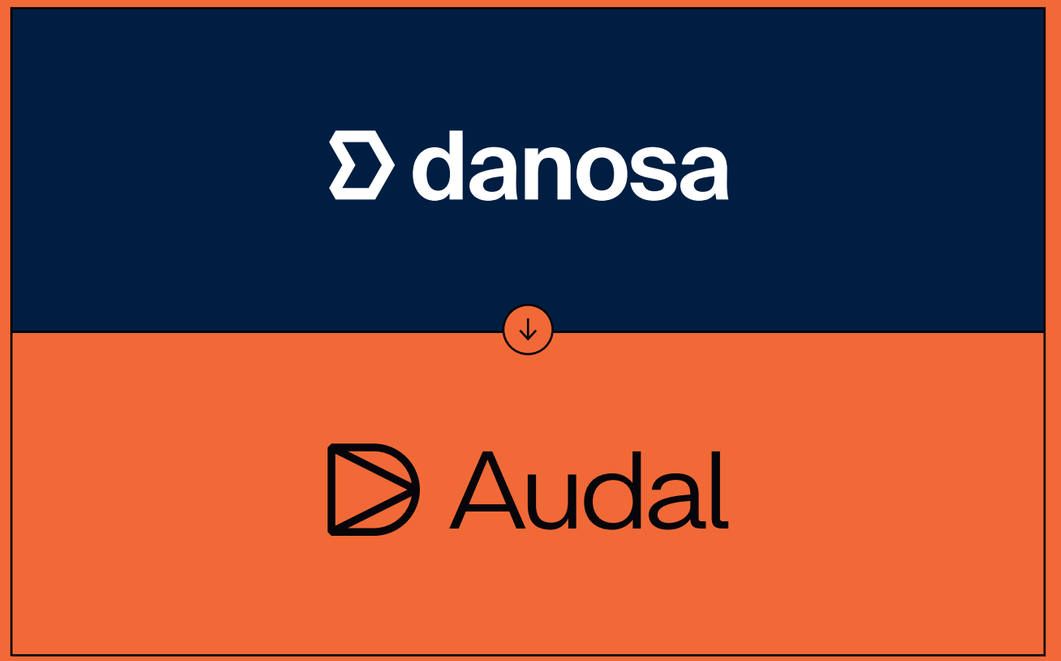
For more than six decades, **Danosa** has built its reputation on three pillars: **technical reliability, support and consistency.**

The company develops integrated waterproofing, thermal insulation and refurbishment solutions designed to create more efficient, sustainable and longer-lasting buildings.

Within this context, acoustics is not an added feature, but an essential element of comfort and spatial quality.

This is why **AUDAL** was created – Danosa's specialist acoustic brand: a dedicated project with its own identity and an exclusive focus on acoustic insulation for buildings.

AUDAL approaches acoustics as a construction system, with robust, specification-ready solutions designed around real building performance.



2. Audal

Choose the sounds you want to enjoy.

Architecture shapes the sound experience of a space.

Sometimes we long for silence. Silence to concentrate, to read, to meditate or simply to quiet our thoughts and rest. At other times, we want our lives to be filled with vibrant sounds: music that moves us, conversations that enrich us, a great film, lively games or bursts of laughter.

But our spaces do not always allow us to choose. Too often, we hear unwanted noise from neighbours or worry about disturbing them with our own.

Sound is difficult to control.
Mastering it takes expertise.

After more than 35 years specialising in acoustic insulation, Danosa is launching its specialist brand Audal™, bringing together all its expertise, innovation and advanced range of products and systems to create perfectly sound-insulated spaces.

So you can always decide whether to enjoy the peace and quiet of silence or the sounds that make you feel your best.

Audal

Acoustic insulation with its own identity

Acoustics is no longer a secondary feature. It defines **comfort, privacy and building quality.** That is why **AUDAL** was created – Danosa's specialist **acoustic insulation** brand. Acoustics does not depend on a single product. It depends on the **system, the details and the installation.**

AUDAL brings structure to that complexity through a clear approach: **rigorous, coherent solutions designed to perform on site.**

With acoustics, results depend on the system.

The way we work

SOPHISTICATED	Technical rigour and construction consistency.
MAGNETIC	Clarity in complex technical decisions.
INNOVATIVE	Continuous performance improvement and adaptation to new building types.
RELIABLE	Consistent performance and predictable results.

High performance

Many acoustic solutions may appear equivalent. But on site, results depend on **how the entire system performs.**

AUDAL brings together a carefully selected portfolio built around real-world performance, designed to integrate seamlessly into **coherent construction systems.**

The goal is not simply insulation, but ensuring **performance, stability and technical compatibility.**

What is Audal?

- Specialisation in **acoustic insulation**
- A portfolio structured around **real-world performance**
- **A systems-based approach:** product, detailing and installation
- A clear way to approach acoustic design

AUDAL approaches acoustics for what it truly is: a technical discipline that demands a systems-based approach and precision

3.

Audal for architects

Audal for architects

Acoustic expertise for designing with confidence. When acoustics fail, **the project pays the price.**

AUDAL was created to **reduce technical uncertainty**, bring structure to solutions and **make specification clearer and easier to justify.** It is not simply another product range. **It is an organised discipline.**

01. Less risk on site

In acoustics, laboratory data alone **does not guarantee the final result.** Variations arise at junctions, during installation and through incompatibilities between systems.

AUDAL approaches the solution as a **complete system**: product, detailing and installation criteria.

To bring real-world performance as close as possible to **the expected design outcome.**

What it offers professionals

- Specialisation in acoustic insulation
- A portfolio structured around real-world performance
- A systems-based approach: product, detailing and installation
- A clear way to approach acoustic design

02.

01.

02. Greater value for the building

Acoustic comfort directly influences
how a building is perceived.

When done well, it goes unnoticed.
When it fails, **it affects everything.**

AUDAL is designed to:

- Guarantee privacy and comfort in real-world use
- Reduce after-sales issues
- Protect the project's reputation
- Enhance the perceived value of the asset

A quieter building is a more valuable building.

AUDAL integrates complete systems, proprietary developments and patented solutions that enable acoustics to be approached with greater control and less uncertainty, both at the design stage and on site.

A specialist service for projects that demand technical rigour and measurable results.

4. The importance of acoustics

The importance of acoustics

Noise is not simply a nuisance. It is an **environmental factor that affects health, rest and performance.**

That is why acoustic comfort is a **critical aspect of building quality.**

Scientific evidence recognises environmental noise as a key determinant of health. The **WHO** highlights effects such as **sleep disruption, chronic stress and cardiovascular risks.**

In architecture, the implications are clear: acoustics shape how a space is experienced and perceived.

Where noise exists, **perceived quality declines and the risk of user dissatisfaction increases.**

HEALTH

REST

PERFORMANCE

A widespread challenge across Europe

More than **one in five Europeans** is exposed to transport noise levels above **55 dB Lden**, a threshold considered harmful to health.

This means many buildings already begin with a significant level of **background environmental noise.**

Addressing this challenge does not depend on a single material, but on **coherent design decisions** involving the building envelope, partitions, junctions and acoustic insulation systems.

Why it matters to the project

Acoustic comfort is something **people notice and remember.** A quiet building is associated with **quality, privacy and well-being.** A noisy one leads to **complaints, issues and a loss of value.**

Key project considerations

Acoustics is not something added later. **It is designed.**

1. User satisfaction	Acoustic comfort enhances the day-to-day experience through better rest, concentration and privacy.
2. Space functionality	Noise undermines how a space performs in real use.
3. Fewer issues	Good acoustic design reduces complaints and minimises the need for corrective work later on.
4. Designing from the outset	Addressing acoustics at the design stage is far more effective than correcting problems afterwards.

5. Types of noises in buildings

Types of noises in buildings

Each type of noise requires a different strategy. An effective solution is not about adding more material, but about using a better system, improved decoupling and more effective sealing.

Airborne noise

Travels through the air and passes through façades, partitions and ceilings. Critical points are often found in **frames, joints and discontinuities within the building envelope.**

conversation · TV or music · baby crying · dogs · traffic

Impact noise

Generated by impacts or foot traffic and transmitted through the **building structure.** Performance often depends on **perimeter detailing and junctions with rigid elements.**

high heels · children running · dropped objects · dragging chairs

Building services noise

Originates from building systems and networks and combines **airborne and structural** transmission. Critical points typically occur at **supports, service shafts and slab penetrations.**

drainpipes · lifts · ventilation · air conditioning · pumps

Anti-vibration control

This is not another type of noise, but rather the **control of structural vibration.** The key is to **decouple equipment at source** while maintaining continuity through flexible joints.

HVAC equipment · booster sets · generators · machinery

How noise travels

The same user complaint – 'I can hear the neighbours' or 'the ceiling keeps rumbling' – can stem from very **different causes.**

The key is **identifying the path the sound takes:** through the air, through the structure or via building services.

In many cases, acoustic performance is not determined by the main enclosure itself, but by **junctions, joints or structural flanking paths.**

Sound does not simply travel through a single element. **It moves throughout the entire construction system.**

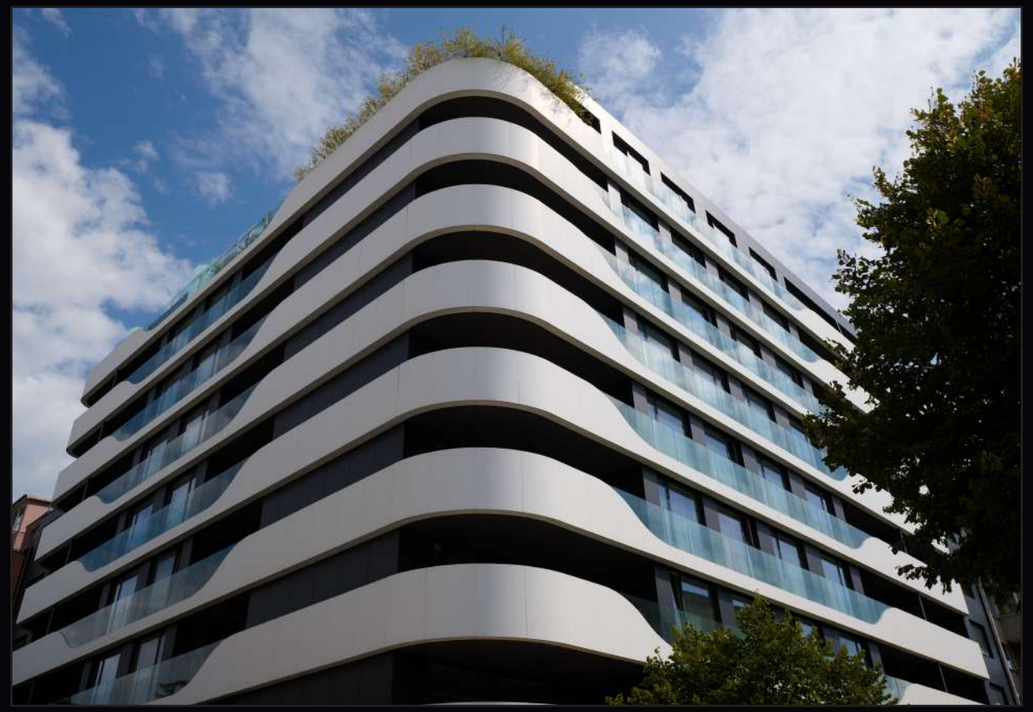
When any one of these principles fails, the building does not perform as intended, even when high-performance materials are used.

Principles of a robust acoustic solution:

- System continuity
- Sound insulation
- Structural decoupling

6. Building type

01. Residential



The home is where acoustic comfort has the most direct impact on quality of life. Conversations between neighbouring dwellings, footsteps from the floor above, building services noise and traffic noise are some of the sound sources that can compromise rest and privacy if insulation is not properly designed.

In residential buildings, acoustic insulation should be approached from a systems perspective that takes into account partitions, floor slabs, façades and construction junctions. AUDAL provides high-value technical solutions that help control noise transmission and ensure consistent acoustic performance, delivering greater confidence for the project and genuine well-being for the people who live in the building.

Spaces	Floors	Linings	Partitions	Ceilings	Building services
TYPE 1 CTE SOLUTION (HEAVYWEIGHT)	SUF1-SUF2	TRA1-TRA0	DIV1	-	BAJ1
TYPE 2 CTE SOLUTION (HYBRID)	SUF1-SUF2	TRA1-TRA0	DIV4	-	BAJ1
TYPE 3 CTE SOLUTION (LIGHTWEIGHT)	SUF1-SUF2	TRA1-TRA0	DIV2	-	BAJ1
FLOORING IN UNHEATED AREAS	SUF3	-	-	-	BAJ1
MUSIC ROOM (RESIDENTIAL)	SUF4-SUF7	TRA3	-	TEF3	BAJ1
HOME CINEMA ROOM (RESIDENTIAL)	SUF5-SUF7	TRA2	-	TEF LT3	BAJ2
MACHINE ROOM	SUF5	TRA3	-	TEF3	BAJ2
LIFT SHAFTS	-	INS LT1	-	-	BAJ2
DIRECT REFURBISHMENT	SUF4-SUF7	TRA LT2-TRALT3	DIV3	TEF LT1-TEF LT3	BAJ2

02. Schools and offices

Offices and administrative spaces involve a high level of communication activity, where speech clarity, concentration and privacy are essential to ensuring an effective working environment. Simultaneous conversations, meeting rooms, phone calls and technical equipment create a complex acoustic environment that can directly affect productivity and user well-being.

Acoustic design in office environments must address insulation between spaces, control sound transmission through floor slabs and façades, and ensure the proper treatment of junctions and building services. AUDAL provides solutions that integrate acoustic insulation into the project through clear technical criteria, creating working environments where noise is controlled and day-to-day activities can take place in comfort and with confidentiality.

SPACES	Floors	Linings	Partitions	Ceilings	Building services
OFFICES, CONSULTING ROOMS AND CLASSROOMS	SUF1-SUF2	TRA1	DIV6.3-DIV6.2	TEF5	BAJ2

04. Commercial premises

AND RETAIL

In the hospitality sector, acoustic comfort forms an integral part of the guest experience. Conversations between rooms, movement through corridors, the operation of building services and activity in communal areas can all affect rest and comfort if sound transmission between spaces is not properly controlled.

Acoustic design in hotels requires solutions that ensure privacy between rooms, control impact noise through floor slabs and provide effective insulation from building services noise and activity within the building. AUDAL provides high-performance acoustic systems that help ensure genuine guest comfort while protecting the perceived quality of the establishment.

Spaces	Floors	Linings	Partitions	Ceilings	Building services
BAR/RESTAURANT (DAYTIME)	SUF2	TRA1	-	TEF1	BAJ2
BAR/RESTAURANT (NIGHT-TIME)	SUF4	TRA2	-	TEF2	BAJ2
PUB/KARAOKE (RESIDENTIAL BUILDING)	SUF5	TRA3	-	TEF3	BAJ2
NIGHTCLUB/WEDDING VENUE (RESIDENTIAL AREA)	SUF5	TRA3	-	TEF4	BAJ2
NIGHTCLUB (INDUSTRIAL AREA)	SUF5	TRA2	-	TEF5	BAJ2
CLOTHING SHOPS	SUF1	TRA0	-	TEF5	BAJ1
GAMING ARCADES	SUF1	TRA1	-	TEF2	BAJ2
VETERINARY CLINICS	SUF2	TRA2	DIV2-DIV3	TEF2	BAJ1
SUPERMARKETS	SUF4	TRA1	-	TEF1	BAJ2
BAKERIES/PASTRY SHOPS	SUF2	TRA1	-	TEF2	BAJ2
GYMS	SUF5	TRA3	DIV3	TEF3	BAJ2
DAY NURSERIES/PLAY CENTRES	SUF2	TRA0	DIV6.3	TEF1	BAJ1

05. Hospitals Clinics

Healthcare environments require highly controlled acoustic conditions, where silence, privacy and clarity of communication are essential to both patient well-being and the effective operation of medical staff. Clinical conversations, medical equipment activity, continuous movement and technical building services create a demanding acoustic environment.

Acoustic design in hospitals and clinics must ensure insulation between patient rooms, consultation areas and technical spaces, while also controlling noise transmission from building services and high-activity areas. AUDAL provides solutions that allow acoustic insulation to be seamlessly integrated into healthcare projects, ensuring comfort, confidentiality and consistent building performance.

Spaces	Floors	Linings	Partitions	Ceilings	Building services
PLASTERBOARD	SUF1-SUF3	TRA1	DIV2	TEF5	BAJ1
FLOOR IN UNHEATED AREAS	SUF 3	TRA1	DIV2	TEF5	BAJ1
COMMUNAL AREAS/MACHINE ROOM	SUF5	TRA3	-	TEF3	BAJ1
LOBBY	SUF1-SUF2	TRA0	-	TEF1	BAJ1
MRI ROOMS	SUF2*	TRA1*	DIV3*	TEF1*	BAJ2

**For MRI rooms, the use of lead sheets within the building envelope is recommended for radiation shielding..*

06. Cultural

Spaces designed for musical performance or stage activities generate high sound levels that can easily be transmitted to adjacent spaces or beyond the building itself. Rehearsals, performances and training activities require construction solutions capable of containing sound within the space.

Acoustic design in these types of buildings must focus on insulation from other building uses and from the surrounding urban environment, controlling sound transmission through walls, floor slabs and construction junctions. AUDAL provides high-performance solutions that help contain the sound energy generated within these spaces and ensure harmonious coexistence with the surrounding environment.

Spaces	Floors	Linings	Partitions	Ceilings	Building services
MAIN BUILDING	SUF2	TRA1	DIV5	TEF1	BAJ1
MUSIC BOOTHS	SUF4	TRA2	DIV3	TEF2	BAJ2
CLASSROOMS	SUF2	TRA2	DIV3	TEF1-TEF5	BAJ1
CINEMAS	SUF5	TRA2	DIV5	TEF2	BAJ2
DANCE SCHOOLS	SUF5	TRA2	DIV3	TEF2	BAJ2
MUSIC ACADEMIES	-	TRA2	DIV3	TEF2	BAJ1
TRAINING CENTRES	SUF1-SUF2	TRA0	DIV2	TEF1-TEF5	BAJ1

07. Audiovisual industry

Recording studios, television studios and radio stations require acoustically controlled environments where sound generated within the space does not interfere with adjacent areas and is not affected by external noise. Audiovisual activities demand highly sensitive acoustic conditions and technical equipment that requires a stable and isolated environment.

Acoustic design in these spaces must provide a high level of insulation from external noise and between different areas within the studio itself, preventing structural transmission, vibration and acoustic interference. AUDAL provides construction solutions that make it possible to create acoustically secure building envelopes, ensuring stable working conditions for audiovisual production.

Spaces	Floors	Linings	Partitions	Ceilings	Building services
RADIO STUDIOS	SUF7	TRA0	DIV2	TEF1	BAJ1
TV STUDIOS	SUF 5	TRA3	-	TEF3	BAJ2
RECORDING STUDIOS	SUF5	TRA3	DIV4	TEF4	BAJ2

7.

Solutions

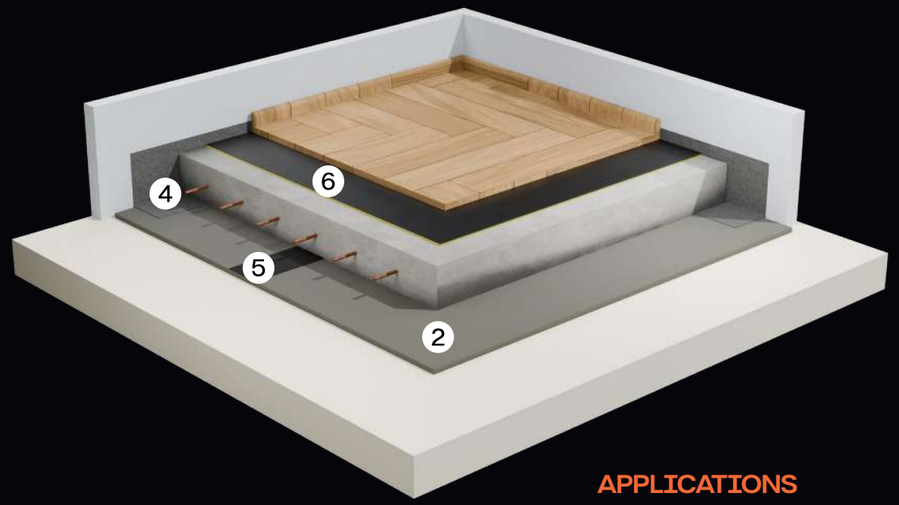
Floors | Linings | Partitions | Ceilings |
Building services | Roofs

SUF 1

THICKNESS: 7 cm

Airborne noise = Ra 55 dBA
DnTA 50–62 dBA

Impact noise = L'nTw 58–42 dB
ΔLw > 28 dB



1. Floor slab
2. Acoustic insulation: **IMPACTODAN® 5**
3. Compression layer: > 5 cm
4. Acoustic insulation: **Perimeter Isolation Strip**
5. Acoustic insulation: **Sealing tape 70**
6. Acoustic insulation: **CONFORDAN® 900**
7. Laminate wood flooring

APPLICATIONS

Public buildings such as hotels.
Private residential buildings.
Educational buildings: schools, universities and nurseries.
Administrative and corporate buildings.
Healthcare buildings: hospitals and care homes.
Daytime and public-access commercial premises.
Radio studios.
Music schools: standard classrooms and auditoriums.

FLOATING FLOOR WITH WOOD FINISH SUF 1

WORK SPECIFICATION

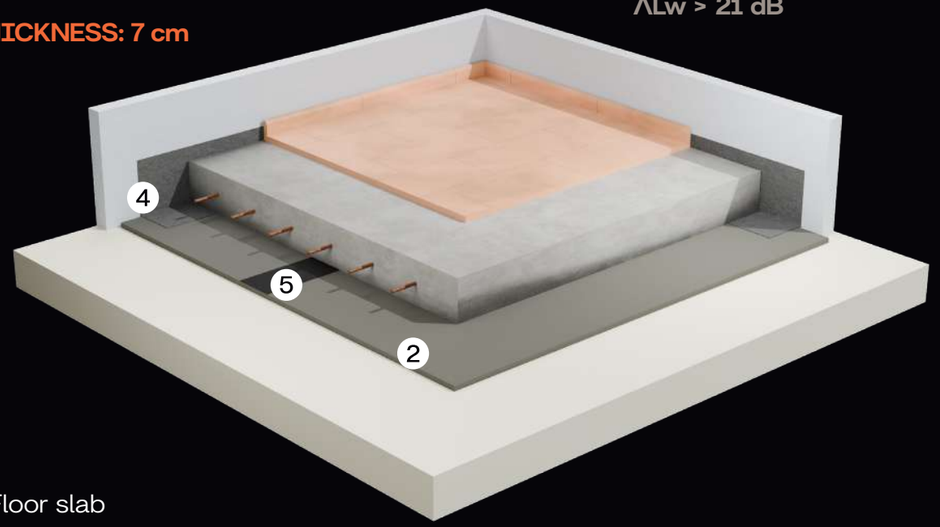
Acoustic insulation system over floor slabs consisting of a 10 mm-thick closed-cell cross-linked polyethylene acoustic foam membrane, IMPACTODAN® 10, with a Type III environmental product declaration, joined using self-adhesive 3 mm-thick cross-linked polyethylene tape, overlap tape 70; building services isolated using perimeter isolation strip; compression layer of at least 50 mm and a finish comprising CONFORDAN® 900, a 4 mm acoustic damping and anti-resonance insulation layer with a Type III environmental product declaration, together with laminate wood flooring installed as a floating floor system. Installation system according to D.I.T. 439R/25.

SUF 2

THICKNESS: 7 cm

Airborne noise = Ra 55 dBA
DnTA 50–62 dBA

Impact noise = L'nTw 63–50 dB
ΔLw > 21 dB



1. Floor slab
2. Acoustic insulation: **IMPACTODAN® 10**
3. Compression layer: > 5 cm
4. Acoustic insulation: **Perimeter Isolation Strip**
5. Acoustic insulation: **Sealing tape 70**
6. Cementitious adhesive
7. Ceramic flooring
8. Grout

APPLICATIONS

Public buildings such as hotels.
Private residential buildings.
Educational buildings: schools, universities and nurseries.
Administrative and corporate buildings.
Healthcare buildings: hospitals and care homes.
Daytime commercial premises: cafés, restaurants and bars.
Public premises.
Radio studios.
Music schools: standard classrooms and auditoriums.

FLOATING FLOOR WITH CERAMIC FINISH SUF 2

WORK SPECIFICATION

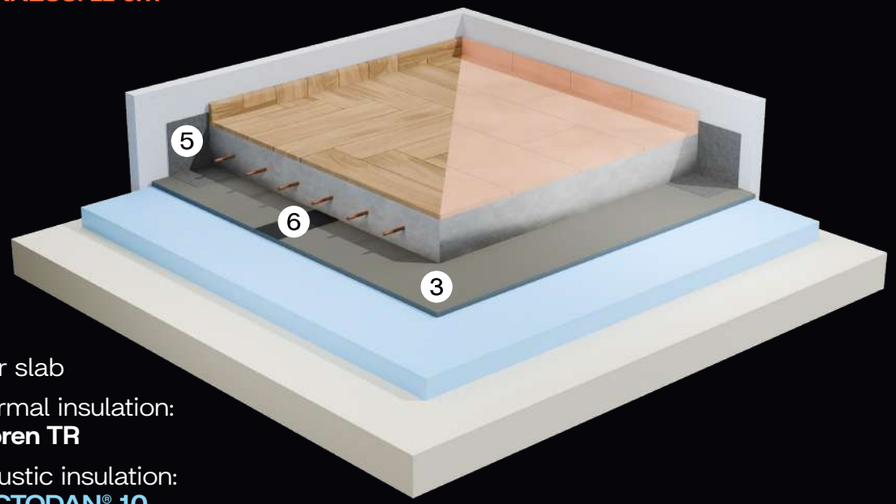
Acoustic insulation system over floor slabs for ceramic finishes consisting of a 10 mm-thick closed-cell cross-linked polyethylene acoustic foam membrane, IMPACTODAN® 10, with a Type III environmental product declaration, joined using self-adhesive 3 mm-thick cross-linked polyethylene tape, overlap tape 70; perimeter isolation strip used to separate the structure from building services; ready for ceramic floor installation. Installation system according to D.I.T. 439R/25.

SUF 3

THICKNESS: 11 cm

Airborne noise = Ra 56 dBA
DnTA 55–64 dBA

Impact noise = L'nTw 58–42 dB
ΔLw > 21 dB



1. Floor slab
2. Thermal insulation: **Danopren TR**
3. Acoustic insulation: **IMPACTODAN® 10**
4. Compression layer: > 5 cm
5. Acoustic insulation: **Perimeter Isolation Strip**
6. Acoustic insulation: **Sealing tape 70**
7. Cementitious adhesive
8. Ceramic flooring
9. Grout

APPLICATIONS

Public or private residential buildings with floor slabs exposed to unheated spaces or external environments.

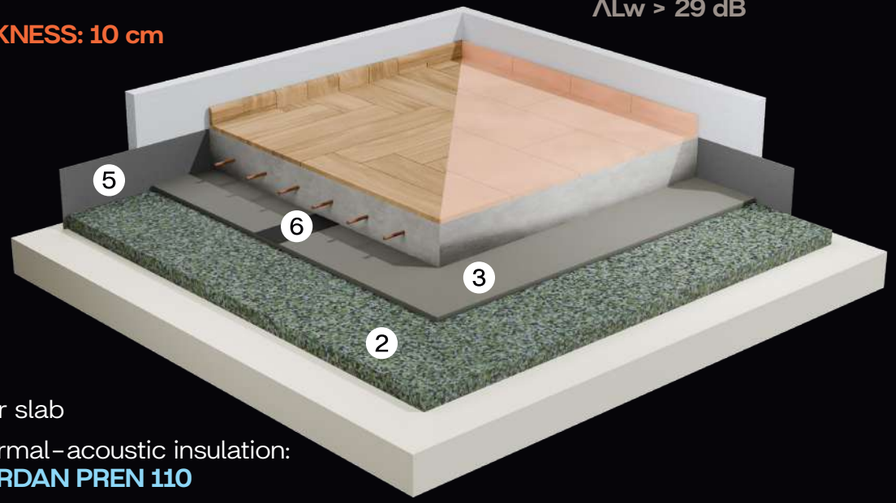
THERMO-ACOUSTIC FLOATING FLOOR SUF 3

WORK SPECIFICATION

Thermal and acoustic insulation system over floor slabs exposed to external air, consisting of DANOPREN® TR extruded polystyrene panels with a total thickness of 100 mm and half-lap perimeter joints, with a Type III environmental product declaration; a 10 mm-thick closed-cell cross-linked polyethylene acoustic foam membrane, IMPACTODAN® 10, with a Type III environmental product declaration, joined using self-adhesive 3 mm-thick cross-linked polyethylene tape, overlap tape 70; a compression layer with a minimum thickness of 50 mm separated from the structure and building services through the use of perimeter isolation strip; ready for ceramic flooring installation using cementitious adhesive. Installation system according to D.I.T. 439R/25.

SUF 4

THICKNESS: 10 cm



1. Floor slab
2. Thermal-acoustic insulation: **ABSORDAN PREN 110**
3. Acoustic insulation: **IMPACTODAN® 10**
4. Compression layer: > 5 cm
5. Acoustic insulation: **Perimeter Isolation Strip**
6. Acoustic insulation: **Sealing tape 70**
7. Cementitious adhesive
8. Ceramic flooring
9. Grout

Airborne noise = Ra 62 dBA
DnTA 55–64 dBA

Impact noise = L'nTw 58–42 dB
ΔLw > 29 dB

APPLICATIONS

Night-time venues:
restaurants, pubs and bars.
Supermarkets.
Bakeries.
Mechanical workshops.
Music schools: music booths.
Nightclubs in shopping centres.

FLOATING FLOOR FOR NOISY ENVIRONMENTS SUF 4

WORK SPECIFICATION

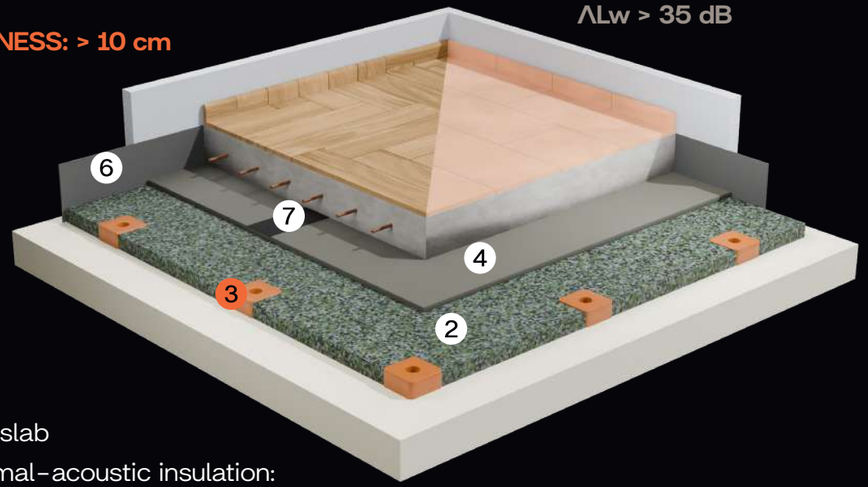
Low-frequency acoustic insulation system over floor slabs consisting of a 30 mm-thick polyurethane foam panel with a density of 110 kg/m^3, installed edge-to-edge over the floor slab, ABSORDAN PREN 110, protected by a 10 mm-thick closed-cell cross-linked polyethylene acoustic membrane, IMPACTODAN® 10, joined using self-adhesive 3 mm-thick cross-linked polyethylene tape, overlap tape 70; a compression layer of at least 60 mm reinforced with steel mesh, separated from the structure and building services through the use of perimeter isolation strip 200, ready to receive the floor finish.

SUF 5

THICKNESS: > 10 cm

Airborne noise = Ra 66 dBA
DnTA > 60 dBA

Impact noise = L'nTw > 35 dB
ΔLw > 35 dB



1. Floor slab
2. Thermal-acoustic insulation: **ABSORDAN PREN 110**
3. Rubber isolator: **holdB IMPACT 150/250**
4. Acoustic insulation: **IMPACTODAN® 10**
5. Compression layer: > 5 cm
6. Acoustic insulation: **Perimeter Isolation Strip**
7. Acoustic insulation: **Sealing tape 70**
8. Cementitious adhesive
9. Ceramic flooring
10. Grout

APPLICATIONS

Gyms.
Sports centres.
Loading areas or heavy-duty spaces.
Commercial premises with high operational loads.

FLOATING FLOOR FOR NOISY ENVIRONMENTS SUF 5

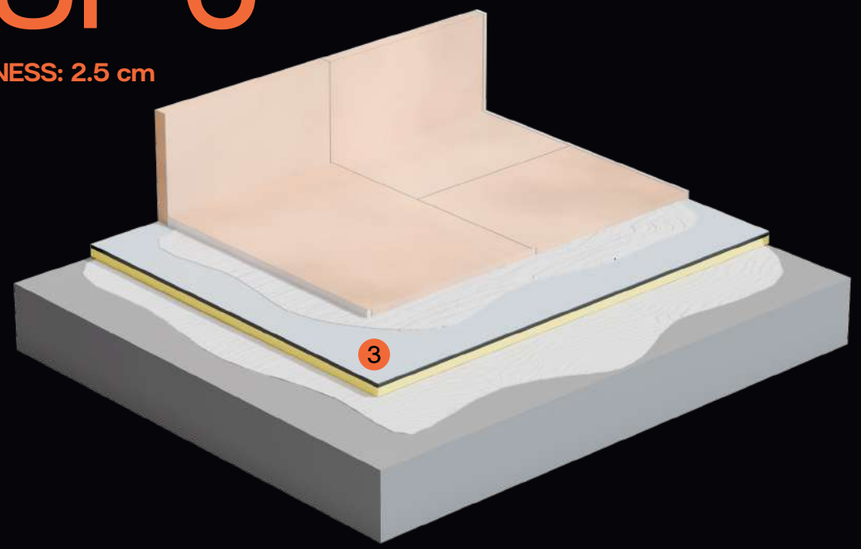
WORK SPECIFICATION

Low-frequency acoustic insulation system over floor slabs consisting of an arrangement of holdB Impact 150-O or 250-R rubber isolators – depending on operational load requirements – installed between ABSORDAN PREN 110/30, a 30 mm-thick polyurethane foam panel with a density of 110 kg/m^3, laid edge-to-edge over the floor slab and protected by a 10 mm-thick closed-cell cross-linked polyethylene acoustic foam membrane, IMPACTODAN® 10, joined using self-adhesive 3 mm-thick cross-linked polyethylene tape, overlap tape 70; a compression layer of at least 60 mm reinforced with steel mesh, separated from the structure and building services through the use of perimeter isolation strip 200, ready to receive ceramic flooring with cementitious adhesive.

SUF 6

THICKNESS: 2.5 cm

Impact noise = ΔLw 22 dB



1. Existing floor slab or flooring
2. Cementitious adhesive: **ARGOCOLA® Élite 500**
3. Acoustic insulation: **CONFORDAN® 900 HS**
4. Cementitious adhesive: **ARGOCOLA® Élite 500** for tiles < 90 cm; **ARGOCOLA® Élite 600** for tiles > 90 cm
5. Ceramic flooring
6. Flexible grout: **ARJUNT® Universal**

APPLICATIONS

Refurbishment of hotel flooring.
Refurbishment of residential flooring.
Commercial premises with ceramic finishes.
Additional insulation in wet areas over floating floors.
Wood-effect ceramic surfaces.

BASIC FLOATING FLOOR SUF 6

WORK SPECIFICATION

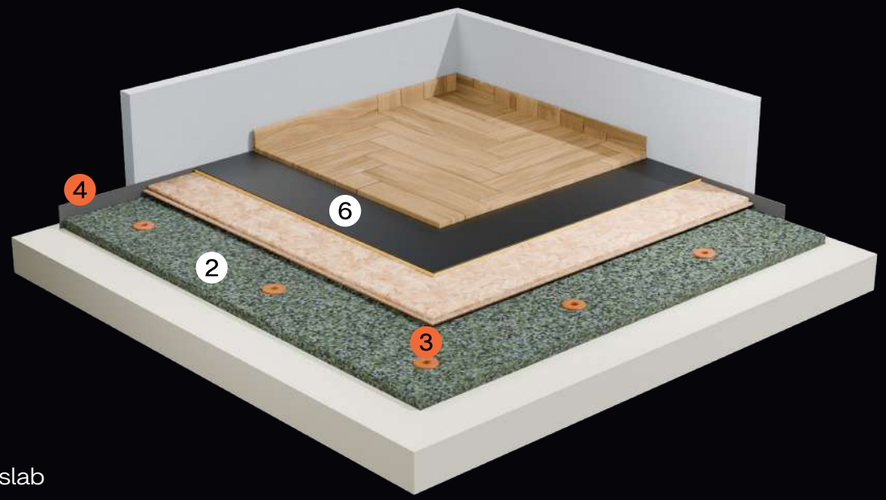
Acoustic insulation system over levelled ceramic flooring consisting of a levelled substrate that is clean, stable and free from grease or loose residues; a 7 mm-thick multilayer membrane, CONFORDAN® 900 HS, with a Type III environmental product declaration, laid edge-to-edge or continuously with masking tape and fixed to the substrate using ARGOCOLA® Élite 500 C2TES1 insulation adhesive, applied with a notched trowel in the short direction to ensure air evacuation, fully compacting the system and eliminating wrinkles in the membrane. Ceramic finish with a maximum tile side length of 1.5 m using ARJUNT® Universal grout mortar mixed to a paste consistency with 25% DANOMIX® Látex and 75% water.

SUF 7

THICKNESS: 5 cm

Airborne noise = Rw > 60 dBA

Impact noise = L'nTw 45 dB
ΔLw > 25 dB



1. Floor slab
2. Thermo-acoustic insulation: **ABSORDAN® PREN 110**
3. Rubber isolator: **holdB IMPACT 30-O**
4. Acoustic insulation: **FONODAN® 50**
5. 18 mm wooden board
6. Acoustic insulation: **CONFORDAN® 900**
7. Wood flooring

APPLICATIONS

Music room. Acoustic refurbishment for residential properties. Rehearsal room adaptations. Streaming room.

LIGHTWEIGHT DAMPED FLOATING FLOOR SUF 7

WORK SPECIFICATION

Thermo-acoustic and anti-vibration floating floor system installed over an existing floor slab, consisting of holdB IMPACT 30-O elastomeric isolators acting as separation elements between the structure and flooring according to floor load requirements, installed between ABSORDAN PREN 110, a 30 mm-thick polyurethane foam panel with a density of 110 kg/m³, laid edge-to-edge over the floor slab and protected by an 18 mm wooden board; FONODAN® 50, a self-adhesive dual-layer tape used as a damping element at rigid junctions to minimise resonance; CONFORDAN® 900 acoustic membrane comprising a self-adhesive high-density membrane and cross-linked polyethylene, installed as an impact sound improvement and sound reduction layer beneath timber flooring, with a timber floor finish.

RHS 1

THICKNESS: 5 cm

Impact noise = ΛLw 17 dB

1. Existing floor
2. Acoustic insulation: **CONFORDAN ECO**
3. Wood flooring

APPLICATIONS

Residential refurbishments. Commercial premises. Restaurants and cafés. Hotel rooms. Care homes.

REFURBISHMENT BASIC WOOD FLOOR RHS 1

WORK SPECIFICATION

2.5 mm CONFORDAN® ECO cross-linked polyethylene damping insulation with laminate wood flooring installed as a floating floor system.

RHS 2

THICKNESS: 1.2 cm

Impact noise = ΔLw 22 dB

1. Existing floor
2. Acoustic insulation: **CONFORDAN BT**
3. Wood flooring

APPLICATIONS

Residential refurbishments.
Commercial premises.
Restaurants and cafés.
Hotel rooms.
Care homes.

REFURBISHMENT COMFORT WOOD FLOOR RHS 2

WORK SPECIFICATION

3 mm CONFORDAN® BT cross-linked polyethylene damping insulation with laminate wood flooring installed as a floating floor system.

RHS 3

THICKNESS: 1.7 cm

Impact noise = ΛLw 23 dB

1. Existing floor
2. Acoustic insulation: **CONFORDAN 900**
3. Wood flooring

APPLICATIONS

Residential refurbishments.
Commercial premises.
Restaurants and cafés.
Hotel rooms.
Care homes.

REFURBISHMENT PREMIUM WOOD FLOOR RHS 3

WORK SPECIFICATION

3 mm CONFORDAN® BT cross-linked polyethylene damping insulation with laminate wood flooring installed as a floating floor system.

TRA 0

THICKNESS: 8.5 cm

Airborne noise = ΔRA > 3 dBa

1. Façade enclosure
2. Plasterboard structure
3. Thermo-acoustic rock wool insulation with vapour barrier
4. Acoustic insulation: **FONODAN® 50**
5. Double layer of 12.5 mm plasterboard

APPLICATIONS

Interior façade lining systems for: Hotels. Public or private residential buildings. Schools, universities and nurseries. Administrative and corporate buildings. Hospitals, outpatient clinics, health centres and care homes.

BASIC ACOUSTIC LINING TRA 0

WORK SPECIFICATION

Acoustic insulation lining system consisting of an existing enclosure rendered with 1.5 cm mortar and lined with a double 12.5 mm plasterboard system mechanically fixed to steel channels and studs, with the junction between the boards and structure protected using FONODAN® 50, a 3.9 mm-thick self-adhesive multilayer strip; internal acoustic absorbent layer comprising 150 mm-thick rock wool panels with a vapour barrier.

TRA 1

THICKNESS: 8.6 cm

Airborne noise
RA 62 dBA
ΛRA 27 dBA
DnTA > 60 dBA

1. Façade enclosure
2. 1.5 cm skim coat or render
3. Acoustic insulation: **FONODAN® 50**
4. Plasterboard structure
5. Acoustic insulation: rock wool
6. 12.5 mm plasterboard
7. Acoustic insulation: **M.A.D® PRO 70**
8. 12.5 mm plasterboard

APPLICATIONS

Daytime commercial premises: cafés, restaurants and bars.
Public-access venues: auditoriums and cinemas.
Ground-floor commercial premises: workshops and bakeries.
Nightclubs in standalone buildings.

LINING SYSTEM FOR DAYTIME VENUES TRA 1

WORK SPECIFICATION

Acoustic insulation lining system for venues with sound emissions between 85 and 90 dBA and night-time operating hours, consisting of a 50 mm structure enhanced at junctions with structural elements using FONODAN® 50 self-adhesive anti-resonance strips with a Type III environmental product declaration; mineral wool between studs with a density of 70 kg/m³ and a thickness of 40 mm; 12.5 mm plasterboard fixed to the structure using self-tapping sheet-metal screws and sealed; M.A.D.® PRO 70 acoustic membrane with an aluminised film finish, weighing 7 kg/m² and 4 mm thick, with bs1d0 fire classification and a Type III environmental product declaration, stapled to the first board; second 12.5 mm plasterboard layer fixed to the structure using self-tapping sheet-metal screws; fully sealed and installed, ready to receive the final finish (not included in this item). Measured according to the actual installed surface area.

TRA 2

THICKNESS: 10.1 cm

Airborne noise
RA 66 dBA
ΛRA 31 dBA
DnTA > 63 dBA

1. Façade enclosure
2. Render/skim coat
3. Acoustic insulation: **ACUSTIDAN PRO®**
4. Plasterboard structure
5. Acoustic insulation: rock wool
6. 12.5 mm plasterboard
7. Acoustic insulation: Danosa Acoustic Membrane **M.A.D.® PRO 70**
8. 12.5 mm plasterboard
9. Anti-resonance strip: **FONODAN® 50**

APPLICATIONS

Night-time venues with sound emissions of 85–90 dBA:
Pubs, restaurants and cocktail bars.
Music classrooms in schools.
Music schools: individual practice rooms.
Nightclubs in shopping centres.

LINING SYSTEM FOR NIGHT-TIME VENUES TRA 2

WORK SPECIFICATION

15 mm low-frequency three-layer insulation system with bs1d0 fire classification, ACUSTIDAN® PRO 12/3, fixed to the rendered wall using GLUE-DAN® Acustic adhesive; 50 mm structure enhanced at junctions with structural elements using FONODAN® 50 self-adhesive anti-resonance strips with a Type III environmental product declaration; mineral wool between studs with a density of 70 kg/m^3 and a thickness of 40 mm; 12.5 mm plasterboard fixed to the structure using self-tapping sheet-metal screws and sealed; M.A.D.® PRO 70 acoustic membrane with an aluminised film finish, weighing 7 kg/m^2 and 4 mm thick, with bs1d0 fire classification and a Type III environmental product declaration, fixed to the board with staples; second 12.5 mm plasterboard layer fixed to the structure using self-tapping sheet-metal screws; fully sealed and installed, ready to receive the final finish (not included in this item). Measured according to the actual installed surface area.

TRA 3

THICKNESS: 14 cm

Airborne noise
RA 70 dBA
ΔRA 35 dBA
DnTA > 69 dBA

1. Façade enclosure
2. 1.5 cm skim coat or render
3. Acoustic insulation: **SONODAN® PLUS Self-adhesive**
4. Plasterboard structure
5. 12.5 mm plasterboard
6. Acoustic insulation: Danosa Acoustic Membrane **M.A.D.® PRO 70 / M.A.D.® PRO 100**
7. 12.5 mm plasterboard
8. **Anti-resonance strip: FONODAN® 50**

APPLICATIONS

Machine rooms in residential buildings, including hotels, hospitals, educational facilities and office buildings.
Music venues: pubs, karaoke bars, nightclubs, party venues and wedding halls.
Music recording studios.

HIGH-NOISE LINING SYSTEM TRA 3

WORK SPECIFICATION

Acoustic lining system for music venues with sound emissions above 90 dBA, consisting of: A 40 mm-thick multilayer panel providing low-, mid- and high-frequency sound absorption, SONODAN® PLUS SELF-ADHESIVE, with a Type III environmental product declaration, fixed to the rendered wall using GLUE-DAN® Acustic adhesive; a 50 mm structure enhanced at junctions with structural elements using FONODAN® 50 self-adhesive anti-resonance strips with a Type III environmental product declaration; a 12.5 mm plasterboard layer fixed to the structure using self-tapping sheet-metal screws and sealed; M.A.D.® PRO 70 acoustic membrane with an aluminised film finish, weighing 7 kg/m² and 4 mm thick, with bs1d0 fire classification and a Type III environmental product declaration, stapled to the first board; a second 12.5 mm plasterboard layer fixed to the structure using self-tapping sheet-metal screws, fully sealed and installed, ready to receive the final finish.

TRA 4

THICKNESS: 5.2 cm

Airborne noise
RA 50 dBA
ΛRA 12 dBA

1. Partition wall
2. **GLUEDAN® ACUSTIC** adhesive or PVC fixings
3. Acoustic insulation: **ABSORDAN® PREN 80**
4. **GLUEDAN® ACUSTIC** adhesive or PVC fixings
5. 15 mm plasterboard

APPLICATIONS

Direct thermo-acoustic solutions for new-build projects.
Refurbishment of existing partition walls.
Enhanced acoustic performance for commercial premises.
DIY projects.

DIRECT THERMO-ACOUSTIC LINING TRA 5

WORK SPECIFICATION

Direct thermo-acoustic insulation system for vertical partitions consisting of ABSORDAN® PREN 80 flexible polyurethane foam agglomerate panels fixed to the substrate using a double application of GLUEDAN® ACUSTIC adhesive; finished with a 15 mm plasterboard layer fixed directly to the agglomerate panel using the same double adhesive application.

TRA 5

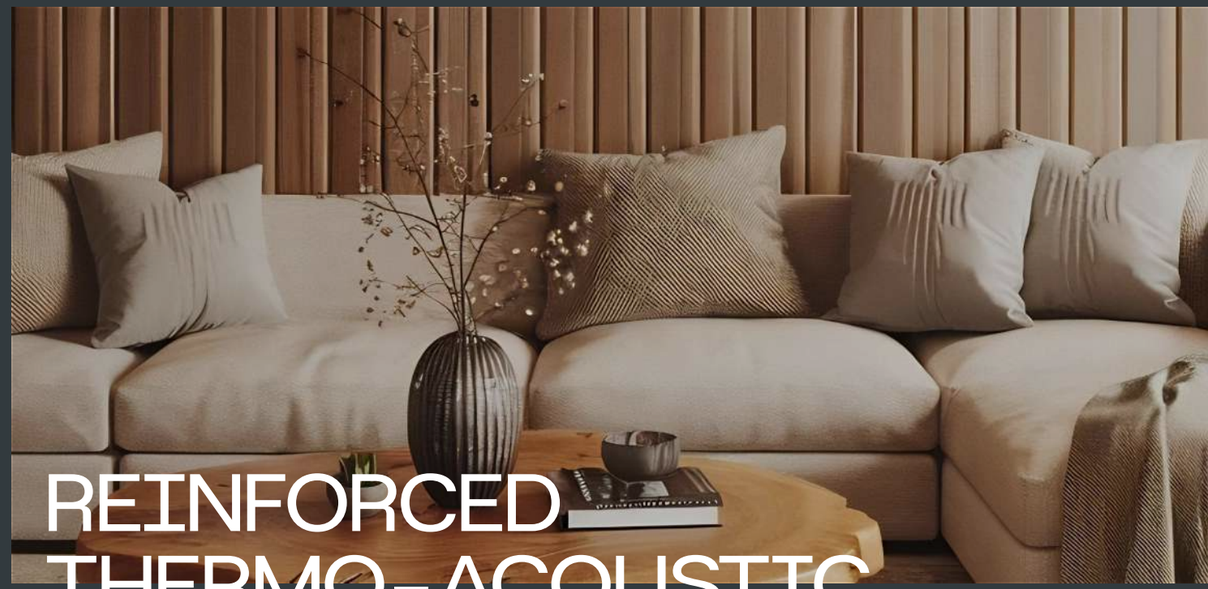
THICKNESS: 7 cm

Airborne noise
RA 55 dBA
ΔRA > 19 dBA

1. Partitions
2. Acoustic insulation: **FONODAN® 50**
3. Contact adhesive: **GLUEDAN ACUSTIC**
4. Acoustic insulation: **ABSORDAN PREN®**
5. Contact adhesive: **GLUEDAN ACUSTIC**
6. 12.5 mm plasterboard
7. Acoustic insulation: **M.A.D.® PRO 100**
8. Plasterboard/decorative panel

APPLICATIONS

Direct thermo-acoustic solutions
for new-build projects.
Refurbishment of existing partition walls.
Enhanced acoustic performance
for commercial premises.
DIY projects.



REINFORCED THERMO-ACOUSTIC LINING TRA 5

WORK SPECIFICATION

Direct thermo-acoustic insulation system for vertical partitions consisting of ABSORDAN® PREN 80 flexible polyurethane foam agglomerate panels fixed to the substrate using a double application of GLUEDAN® ACUSTIC adhesive; a 13 mm plasterboard layer fixed directly to the agglomerate panel using the same double adhesive application. M.A.D.® PRO 100 acoustic membrane stapled in place and finished with a 13 mm plasterboard layer or decorative panel.

TRA LT1

THICKNESS: 7 cm

Airborne noise
ΔRA 7 dBA

1. Partitions
2. Acoustic insulation:
M.A.D.® 6 Self-adhesive
3. 12.5 mm plasterboard

APPLICATIONS

Refurbishment of existing lightweight vertical partitions in offices, homes, consulting rooms, etc.

BASIC LOW-THICKNESS LINING TRA LT1

WORK SPECIFICATION

Acoustic insulation system for refurbishing lightweight vertical partitions consisting of: 6 mm M.A.D.® 6 self-adhesive acoustic membrane stapled to the first board; second 12.5 mm plasterboard layer fixed to the structure using self-tapping sheet-metal screws.

TRA LT2

THICKNESS: 6 cm

Airborne noise
ΔRA > 10 dBA

1. Existing partition wall
2. Acoustic insulation: **DANOFON**
3. Omega profiles
4. **FONODAN 50**
5. 12.5 mm plasterboard
6. Acoustic insulation membrane: **M.A.D. PRO 70**
7. 12.5 mm plasterboard

APPLICATIONS

Minimal-thickness lining system.
Refurbishment of existing vertical partitions.
Hotel rooms and corridors.

DIRECT ACOUSTIC LINING TRA LT2

WORK SPECIFICATION

Minimal-thickness acoustic insulation system for vertical partitions consisting of a multilayer DANOFON® element comprising a high-density membrane between two layers of cotton absorbent material, mechanically fixed to the existing wall; FONODAN® 70 anti-resonance strip positioned around the perimeter of the metal lining structure; M.A.D.® PRO 70 Danosa Acoustic Membrane, 4 mm thick with bs1d0 fire classification, stapled to the first board; a second 12.5 mm plasterboard layer fixed to the structure using self-tapping sheet-metal screws, fully sealed and installed.

TRA LT3

THICKNESS: 7.5 cm

Airborne noise
RA 63 dBA
ΔRA 28 dBA

1. Partitions
2. Acoustic mineral wool insulation
3. Acoustic insulation: **FONODAN® 50**
4. Plasterboard structure
5. Acoustic insulation: **M.A.D.® PRO 100**
6. 15 mm plasterboard

APPLICATIONS

Refurbishment of existing vertical partitions.
Lightweight, low-thickness lining systems.
Thermo-acoustic enhancement of vertical partitions.

BASIC THERMO-ACOUSTIC LINING TRA LT3

WORK SPECIFICATION

Thermo-acoustic lining system consisting of a metal structure installed over FONODAN® 50 dual-layer anti-resonance strips positioned around the perimeter of the metal lining structure; internal absorbent material comprising mineral wool with a density of 70 kg/m^3; 15 mm plasterboard fixed over M.A.D.® PRO 100, an acoustic membrane with an aluminised film finish, weighing 10 kg/m^2 and 5 mm thick with bs1d0 fire classification, fixed to the structure using self-tapping sheet-metal screws.

TRA LT4

THICKNESS: 5 cm

Airborne noise
ΔRA > 8 dBA

1. Partitions
2. Acoustic insulation: **ACUSTIDAN PRO 12/3**, fixed using **GLUEDAN ACUSTIC** acoustic adhesive or PVC fixings
3. Omega profiles
4. Acoustic insulation: **FONODAN® 50**
4. Plasterboard structure
5. 12.5 mm plasterboard

APPLICATIONS

Refurbishment of existing vertical partitions. Lining solution for applications requiring an ultra-slim system.

MINIMAL THICKNESS LINING TRA LT4

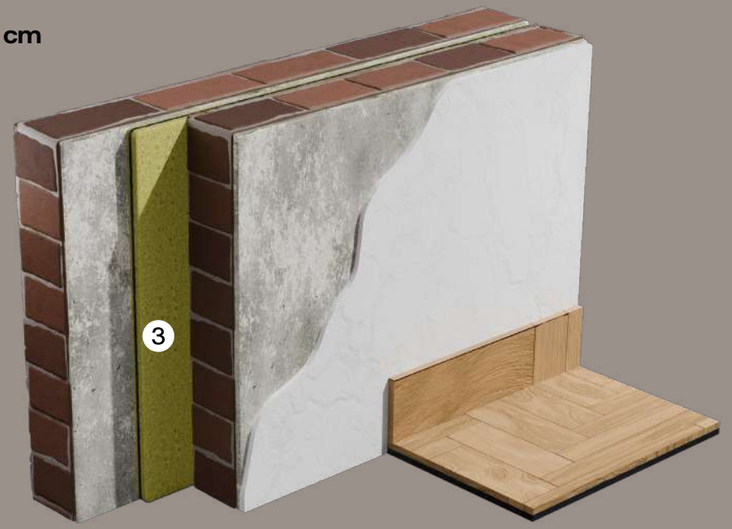
WORK SPECIFICATION

Minimal-thickness acoustic lining system for vertical partitions consisting of double 12.5 mm plasterboard fixed to the structure using self-tapping sheet-metal screws and sealed; FONODAN® 50 dual-layer anti-resonance strips positioned around the perimeter of the metal lining structure. ACUSTIDAN® PRO 12/3, comprising a high-density aluminium-faced membrane with bs1d0 fire classification together with cotton absorbent material, mechanically fixed to the existing wall in accordance with the manufacturer's instructions.

DIV 1

THICKNESS: 23 cm

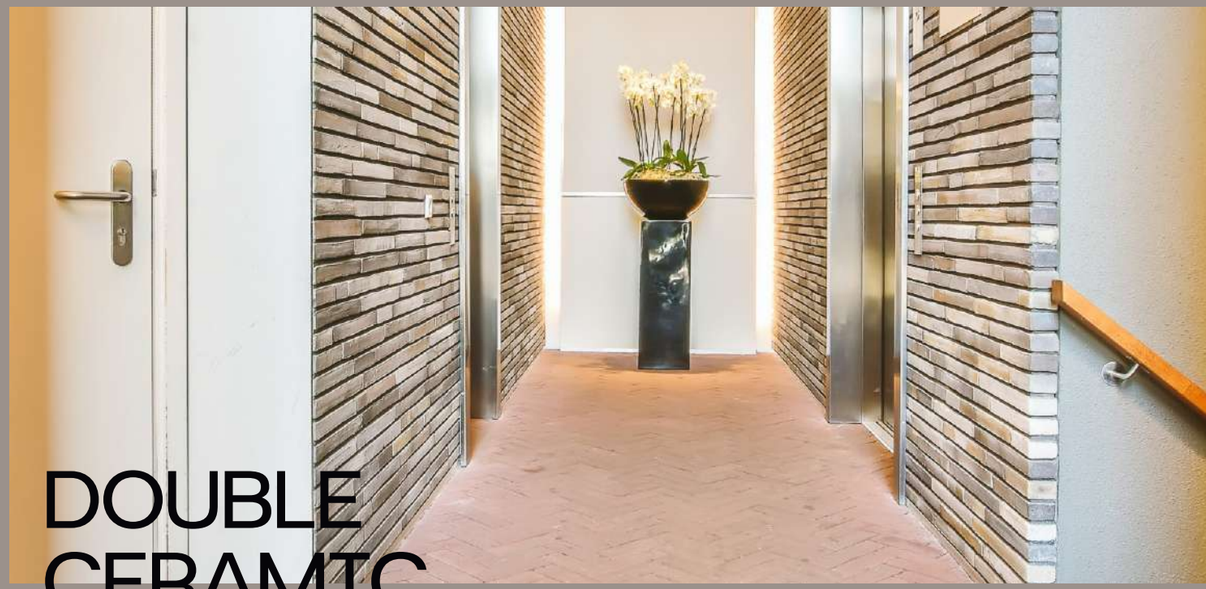
Airborne noise
RA 54 dBA
DnTA > 50 dBA



1. Gypsum skim coat
2. Double-hollow ceramic brick
3. Acoustic insulation: DANOFON®
4. Acoustic insulation fixings
5. Double-hollow ceramic brick
6. Gypsum skim coat

APPLICATIONS

Public or private residential buildings.
Public buildings such as hotels.
Healthcare buildings: hospitals, outpatient clinics, health centres and care homes.
Educational buildings: schools, universities and nurseries.



DOUBLE CERAMIC PARTITION WALL DIV1

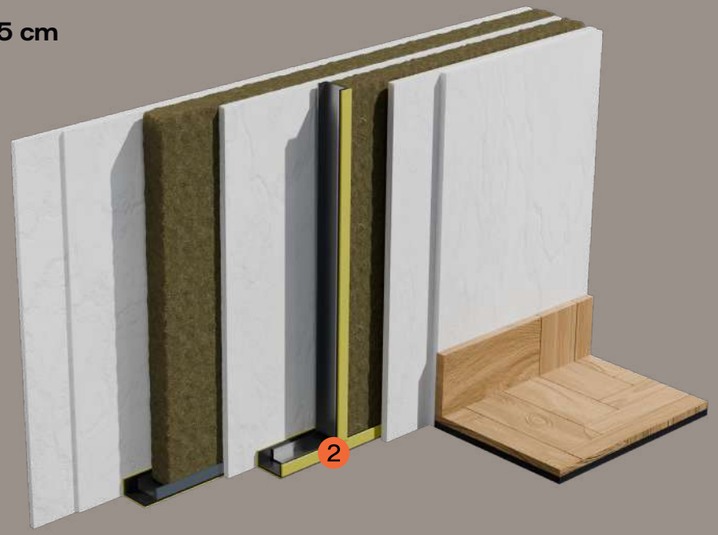
WORK SPECIFICATION

Acoustic masonry partition system consisting of a double partition wall made of 7 cm double hollow ceramic bricks rendered with a 1.5 cm skim coat, separated from the structure using wall isolation strips around the entire perimeter; 28 mm multilayer DANOFON® panel mechanically fixed to the substrate using 40 acoustic insulation fixings.

DIV 2

THICKNESS: 15.5 cm

Airborne noise
RA 54 dBA
DnTA > 52 dBA



1. Double layer of 12.5 mm plasterboard
2. Acoustic insulation: FONODAN® 50
3. Metal framing with mineral wool
4. 15 mm plasterboard
5. Acoustic insulation: rock wool

APPLICATIONS

Public or private residential buildings. Public buildings such as hotels. Educational buildings: schools, universities and nurseries. Healthcare buildings: hospitals, outpatient clinics, health centres and care homes. Administrative and corporate buildings. Auditoriums, theatres and music schools: teaching classrooms.

DOUBLE PLASTERBOARD PARTITION WALL

DIV2

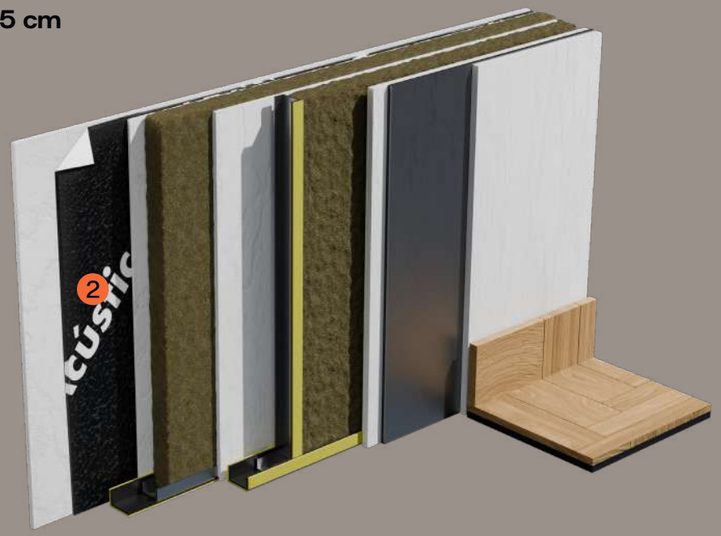
WORK SPECIFICATION

Acoustic double plasterboard partition system consisting of a double 12.5 mm plasterboard layer fixed with self-tapping sheet-metal screws to a 50 mm structure enhanced at junctions with structural elements and between framing and boards using FONODAN® 50 self-adhesive anti-resonance strips with a Type III environmental product declaration; internal absorbent material comprising rock wool with a density of 70 kg/m^3; 15 mm plasterboard fixed to the first structure with self-tapping sheet-metal screws and separated by at least 1 cm from the opposing 15 mm plasterboard layer; a second structure enhanced at junctions with structural elements and between framing and boards using FONODAN® 50 self-adhesive anti-resonance strips with a Type III environmental product declaration; internal absorbent material comprising rock wool with a density of 70 kg/m^3; double 12.5 mm plasterboard layer fixed to the second structure using self-tapping sheet-metal screws.

DIV 3

THICKNESS: 15.5 cm

Airborne noise
RA 59 dBA
DnTA > 58 dBA



1. 12.5 mm plasterboard
2. Acoustic insulation: M.A.D.® PRO 70
3. 12.5 mm plasterboard
4. Metal framing with mineral wool
5. 15 mm plasterboard
6. Acoustic insulation: rock wool

APPLICATIONS

Gyms.
Hotels.
Radio studios.
Auditoriums, theatres and music schools: main buildings and music booths.

PARTITION WALL BETWEEN NOISY SPACES DIV3

WORK SPECIFICATION

Acoustic double plasterboard partition system consisting of a 12.5 mm plasterboard layer fixed to the structure with self-tapping sheet-metal screws and sealed; M.A.D.® PRO 70 acoustic membrane with an aluminised film finish, weighing 7 kg/m^2 and 4 mm thick with bs1d0 fire classification, stapled to the first board; a second 12.5 mm plasterboard layer fixed to the structure with self-tapping sheet-metal screws; internal absorbent material comprising rock wool with a density of 70 kg/m^3; 15 mm plasterboard fixed to the first structure with self-tapping sheet-metal screws and separated by at least 1 cm from the opposing 15 mm plasterboard layer; installation of a second structure with internal absorbent material comprising rock wool with a density of 70 kg/m^3; 12.5 mm plasterboard fixed to the structure with self-tapping sheet-metal screws and sealed; M.A.D.® PRO 70 acoustic membrane with an aluminised film finish, weighing 7 kg/m^2 and 4 mm thick, stapled to the first board; and a second 12.5 mm plasterboard layer fixed to the structure using self-tapping sheet-metal screws.

DIV 4

THICKNESS: 40 cm

Airborne noise
RA 74 dBA
DnTA > 70 dBA

1. 12.5 mm plasterboard
2. Acoustic insulation: Danosa Acoustic Membrane M.A.D.® PRO 100
3. 12.5 mm plasterboard
4. Acoustic insulation: SONODAN® PLUS Self-adhesive
5. Plasterboard structure
6. Double hollow partition wall with skim coat

APPLICATIONS

Music recording studios.
Cinemas. Auditoriums. Theatres.
Separating walls between recording booths.

HIGH-PERFORMANCE PARTITION WALL DIV4

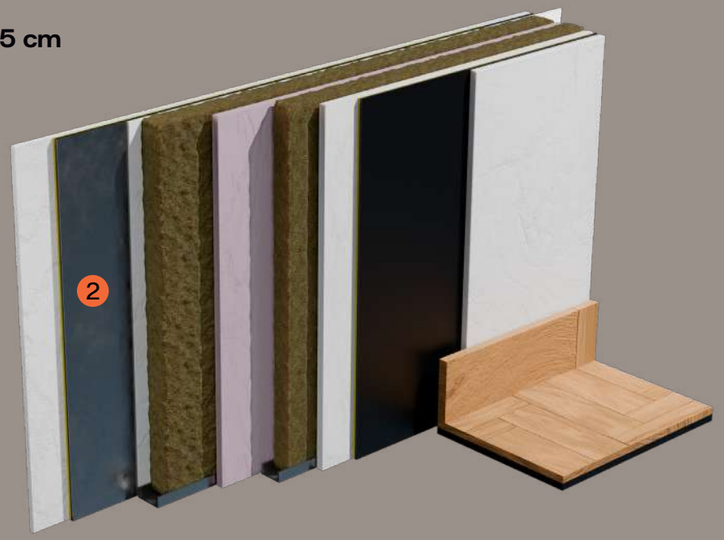
WORK SPECIFICATION

High-performance acoustic partition system consisting of a double hollow ceramic partition wall rendered on both sides with a 1.5 cm gypsum skim coat; lining systems on both sides of the partition comprising SONODAN® PLUS SELF-ADHESIVE, a 40 mm-thick multilayer insulation system designed for low-, mid- and high-frequency performance; a 50 mm plasterboard structure; 12.5 mm plasterboard fixed to the structure using self-tapping sheet-metal screws and sealed; M.A.D.® PRO 100 acoustic membrane with an aluminised film finish, weighing 10 kg/m^2 and 5.4 mm thick with bs1d0 fire classification, stapled to the first board; a second 12.5 mm plasterboard layer fixed to the structure using self-tapping sheet-metal screws; fully sealed and installed, ready to receive the final finish.

DIV 5

THICKNESS: 15.5 cm

Airborne noise
RA 59 dBA
DnTA > 58 dBA



1. 12.5 mm plasterboard
2. Acoustic insulation: M.A.D.® PRO 100
3. 12.5 mm plasterboard
4. Metal framing with mineral wool
5. 15 mm FOC plasterboard
6. Acoustic insulation: rock wool

APPLICATIONS

Cinemas.
Auditoriums and theatres: main buildings.
Music schools and music booths.

FIRE-RESISTANT PARTITION WALL BETWEEN NOISY SPACES DIV5

WORK SPECIFICATION

Fire-resistant acoustic double plasterboard partition system consisting of a 12.5 mm plasterboard layer fixed to the structure with self-tapping sheet-metal screws and sealed; M.A.D.® PRO 100 acoustic membrane with an aluminised film finish, weighing 10 kg/m^2 and 5.4 mm thick with bs1d0 fire classification, stapled to the first board; a second 12.5 mm plasterboard layer fixed to the structure with self-tapping sheet-metal screws; internal absorbent material comprising rock wool with a density of 70 kg/m^3; 15 mm FOC plasterboard fixed to the first structure using self-tapping sheet-metal screws and separated by at least 1 cm from the opposing 15 mm FOC plasterboard layer; installation of a second structure with internal absorbent material comprising rock wool with a density of 70 kg/m^3; a 12.5 mm plasterboard layer fixed to the structure with self-tapping sheet-metal screws and sealed; M.A.D.® PRO 100 acoustic membrane with an aluminised film finish, weighing 10 kg/m^2 and 5.4 mm thick with bs1d0 fire classification, stapled to the first board; and a second 12.5 mm plasterboard layer fixed to the structure with self-tapping sheet-metal screws; fully sealed and installed, ready to receive the final finish.

DIV 6.1

THICKNESS: 8.3 cm

AIRBORNE NOISE	Rw (C, Ctr)	RA
Without acoustic membranes	44 dB	38.4 dBA
With M.A.D. PRO 50	49 dB	42.7 dBA
With M.A.D. PRO 70	49 dB	43.7 dBA
With M.A.D. PRO 100	51 dB	45.7 dBA

1. 15 mm plasterboard
2. Acoustic insulation: M.A.D.® PRO
3. 45 mm mineral wool acoustic insulation
4. Anti-resonance strip: FONODAN® 70

APPLICATIONS

Office partitions, consulting rooms and room dividers in spaces with low noise levels

LIGHTWEIGHT PARTITION WALL – SINGLE INSULATION DIV6.1

WORK SPECIFICATION

Lightweight panel partition system consisting of a metal framing channel installed over FONODAN® 70 dual-layer self-adhesive anti-resonance strips positioned around the perimeter of the lining structure; 15 mm plasterboard panels installed on the metal framework, with M.A.D.® PRO 100 acoustic membrane on one side, featuring an aluminised film finish and weighing 10 kg/m² with a thickness of 5 mm, installed on the internal face of the panel prior to installation; internal absorbent material included (e.g. mineral wool).

DIV 6.2

THICKNESS: 8.6 cm

AIRBORNE NOISE	Rw (C, Ctr)	RA
Without acoustic membranes	41 dB	36.3 dBA
With M.A.D. PRO 50	52 dB	46.4 dBA
With M.A.D. PRO 70	54 dB	48.4 dBA
With M.A.D. PRO 100	57 dB	52.9 dBA

1. 15 mm plasterboard
2. Acoustic insulation: M.A.D.® PRO
3. 45 mm mineral wool acoustic insulation
4. Anti-resonance strip: FONODAN® 70

APPLICATIONS

Office partitions, consulting rooms and room dividers in spaces with moderate noise levels. Student halls of residence.

LIGHTWEIGHT PARTITION WALL – DOUBLE INSULATION DIV6.2

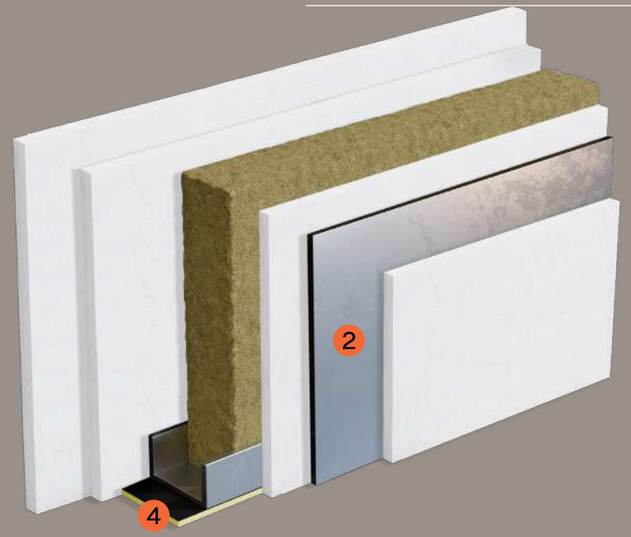
WORK SPECIFICATION

Lightweight panel partition system consisting of a metal framing channel installed over FONODAN® 70 dual-layer self-adhesive anti-resonance strips positioned around the perimeter of the lining structure; 15 mm plasterboard panels installed on the metal framework, with M.A.D.® PRO 100 acoustic membranes on both sides, featuring an aluminised film finish and weighing 10 kg/m^2 with a thickness of 5 mm, installed on the internal face of each panel prior to installation; internal absorbent material included (e.g. mineral wool).

DIV 6.3

THICKNESS: 10.5 cm

AIRBORNE NOISE	Rw (C, Ctr)	RA
Without acoustic membranes	58 dB	53.2 dBA
With M.A.D. PRO 50	61 dB	56.1 dBA
With M.A.D. PRO 70	62 dB	57.1 dBA
With M.A.D. PRO 100	63 dB	58.1 dBA



1. 15 mm plasterboard
2. Acoustic insulation: M.A.D.® PRO
3. 45 mm mineral wool acoustic insulation
4. Anti-resonance strip: FONODAN® 70

APPLICATIONS

Corridor partitions in hotels and care homes. Hotel partitions. Classrooms.

DOUBLE-BOARD PARTITION WALL – SINGLE INSULATION DIV6.3

WORK SPECIFICATION

Lightweight panel partition system consisting of a metal framing channel installed over FONODAN® 70 dual-layer self-adhesive anti-resonance strips positioned around the perimeter of the lining structure; double 12 mm plasterboard layers on each side installed on the metal framework, with M.A.D.® PRO acoustic membrane with an aluminised finish installed on one internal face of the panel prior to installation; internal absorbent material included (e.g. mineral wool).

DIV 7

THICKNESS: 7.9 cm

Airborne noise
RA 55 dBA

1. Lightweight panel
2. Acoustic insulation: M.A.D.® PRO 100
3. Acoustic insulation: FONODAN® 70
4. Metal framing channel
5. Acoustic mineral wool insulation
6. Acoustic insulation: M.A.D.® PRO 100
7. Lightweight panel

APPLICATIONS

Auditoriums, theatres and music schools: teaching classrooms.
Public buildings such as hotels.
Educational buildings: schools, universities and nurseries.
Administrative and corporate buildings.

LIGHTWEIGHT PANEL PARTITION WALL DIV7

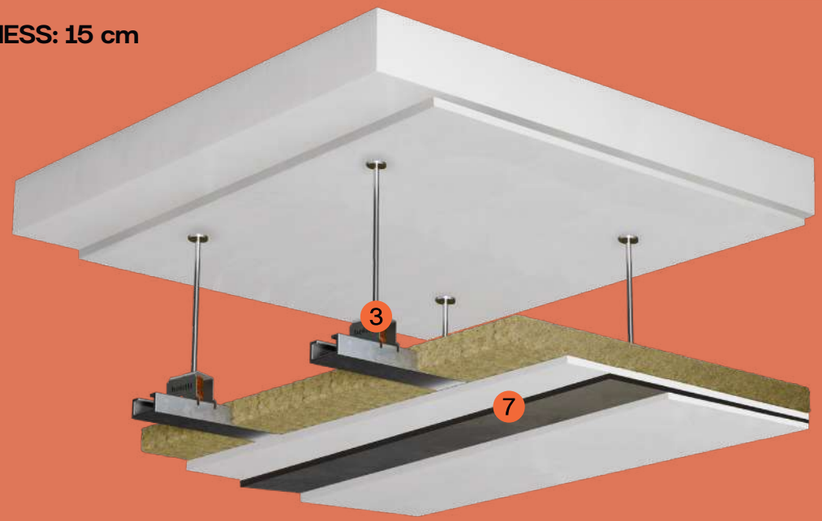
WORK SPECIFICATION

Lightweight panel partition system consisting of a metal framing channel installed over FONODAN® 70 dual-layer self-adhesive anti-resonance strips positioned around the perimeter of the lining structure; 15 mm wooden panels installed on the metal framework, with M.A.D.® PRO 100 acoustic membrane featuring an aluminised film finish, weighing 10 kg/m² with a thickness of 5 mm, installed on the internal face of the panel prior to installation; internal absorbent material included (e.g. mineral wool).

TEF 1

THICKNESS: 15 cm

Airborne noise
RA 66 dBA
DnTA > 60 dBA



1. Floor slab
2. Skim coat
3. Elastomeric isolator: **holdB 47/60 O**
4. Plasterboard structure
5. Acoustic insulation: rock wool
6. 12.5 mm plasterboard
7. Acoustic insulation: **M.A.D.® PRO**
8. 12.5 mm plasterboard

APPLICATIONS

Daytime venues with sound emissions of 80–90 dBA: cafés, restaurants, bars and nurseries.
Theatres, auditoriums and music schools: main buildings and classrooms.
Ground-floor commercial premises: supermarkets, print shops, workshops and bakeries.
Cinemas.
Radio studios.

FLOATING CEILING FOR DAYTIME VENUES 80–90 dB TEF1

WORK SPECIFICATION

Mass floating ceiling system for venues with sound emissions between 80 and 90 dBA during daytime operating hours, consisting of a rendered floor slab; holdB 47/60-O fixed to the joist with a steel anchor for screws or Ø6 threaded rod; double plasterboard framing system with mineral wool laid over the structure, with a density of 70 kg/m^3 and a thickness of 40 mm; 12.5 mm plasterboard fixed to the structure using self-tapping sheet-metal screws and sealed; CONFORDAN® 900 self-adhesive dual-layer membrane or M.A.D.® PRO 70 acoustic membrane with an aluminised film finish, weighing 7 kg/m^2 and 4 mm thick with bs1d0 fire classification; second 12.5 mm plasterboard layer fixed to the structure using self-tapping sheet-metal screws.

TEF 2

THICKNESS: 17 cm

Airborne noise
RA 69 dBA
DnTA > 65 dBA

1. Floor slab
2. Rendered finish
3. **GLUEDAN® ACUSTIC** adhesive and PVC fixings
4. Acoustic insulation: **ACUSTIDAN®PRO 12/3**
5. **holdB PRO 47/60-O** hybrid elastomeric spring isolator
6. Plasterboard structure
7. Acoustic insulation: rock wool
8. 12.5 mm plasterboard
9. Acoustic insulation: **M.A.D.® PRO 70**
10. 12.5 mm plasterboard

APPLICATIONS

Night-time venues with sound emissions of 80–90 dBA: pubs, restaurants and cocktail bars.
Music classrooms in schools.
Music schools: individual practice rooms.
Nightclubs in shopping centres.
Music booths.
Nightclubs in shopping centres.

WORK SPECIFICATION

Mass floating ceiling system for venues with sound emissions between 80 and 90 dBA during night-time operating hours, consisting of a rendered floor slab; multilayer panel with bs1d0 fire classification comprising a high-density elastomeric membrane and a blanket of cotton and recycled textile fibres bonded with phenolic resin, with an aluminised ACUSTIDAN® PRO 12/3 finish, fixed using GLUEDAN® ACUSTIC adhesive and mechanically secured with PVC fixings (length according to substrate, 5–6 fixings/m^2); holdB PRO 47/60-O isolator fixed to the joist with a steel anchor for screws or Ø6 threaded rod; double plasterboard framing system with mineral wool laid over the structure, with a density of 70 kg/m^3 and a thickness of 40 mm; 12.5 mm plasterboard fixed to the structure using self-tapping sheet-metal screws and sealed; M.A.D.® PRO 70 acoustic membrane with an aluminised film finish, weighing 7 kg/m^2 and 4 mm thick with bs1d0 fire classification and a Type III environmental product declaration, fixed to the board using staples; second 12.5 mm plasterboard layer fixed to the structure using self-tapping sheet-metal screws.

TEF 3

THICKNESS: 19 cm

Airborne noise
RA 74 dBA
DnTA > 70 dBA

1. Floor slab
2. Skim coat
3. **GLUEDAN® ACUSTIC** adhesive and PVC fixings
4. Acoustic insulation: **SONODAN® PLUS Self-adhesive**
5. **holdB PRO 47/60-O** hybrid elastomeric spring isolator
6. Plasterboard structure
7. 12.5 mm plasterboard
8. Acoustic insulation: Danosa Acoustic Membrane **M.A.D.® PRO 70**
9. 12.5 mm plasterboard

APPLICATIONS

Night-time venues with sound emissions of 90–100 dBA: music venues, pubs, karaoke bars, wedding halls, etc.

FLOATING CEILING FOR VENUES WITH NOISE LEVEL > 90 dB

TEF3

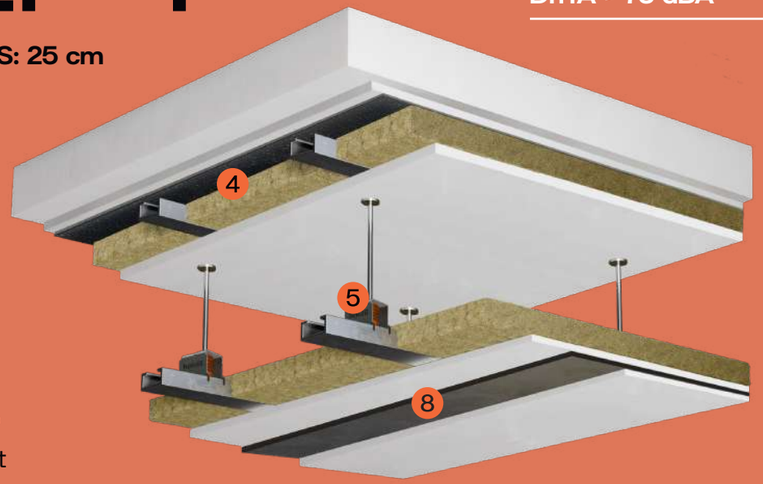
WORK SPECIFICATION

Mass floating ceiling system for the acoustic insulation of music venues with sound emissions above 90 dBA, consisting of a rendered floor slab; SONODAN® PLUS SELF-ADHESIVE, a 40 mm-thick multilayer insulation system for low-, mid- and high-frequency performance, fixed using GLUEDAN® ACUSTIC adhesive and mechanically secured with PVC acoustic insulation fixings; holdB PRO 47/60-O isolator fixed to the joist with a steel anchor for screws or Ø6 threaded rod; double plasterboard framing system; 12.5 mm plasterboard fixed to the structure using self-tapping sheet-metal screws and sealed; M.A.D.® PRO 70 acoustic membrane with an aluminised film finish, weighing 7 kg/m^2 and 4 mm thick with bs1d0 fire classification, fixed to the board using staples; second 12.5 mm plasterboard layer fixed to the structure using self-tapping sheet-metal screws.

TEF 4

THICKNESS: 25 cm

Airborne noise
RA 79 dBA
DnTA > 75 dBA



1. Floor slab
2. Skim coat
3. **GLUEDAN® ACUSTIC** adhesive and PVC fixings
4. Acoustic insulation: **SONODAN® PLUS Self-adhesive**
5. **holdB PRO 47/60-O** hybrid elastomeric spring isolator
6. Plasterboard structure
7. 12.5 mm plasterboard
8. Acoustic insulation: Danosa Acoustic Membrane **M.A.D.® PRO 70**
9. 12.5 mm plasterboard

APPLICATIONS

Night-time venues with sound emissions of 100–105 dBA: live music venues, nightclubs, wedding halls, etc.

HIGH-PERFORMANCE FLOATING CEILING TEF4

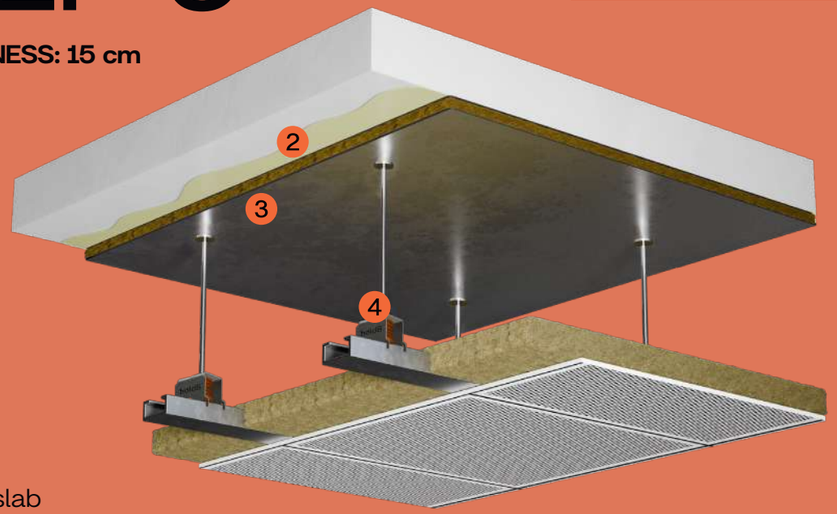
WORK SPECIFICATION

Mass floating ceiling system for the acoustic insulation of music venues with sound emissions of up to 105 dBA, consisting of a rendered floor slab; direct lining with 15 mm plasterboard fixed to the slab by means of a structure incorporating SONODAN® PLUS Self-Adhesive, a 40 mm-thick multilayer insulation system for low-, mid- and high-frequency performance, fixed using GLUEDAN® ACUSTIC adhesive and mechanically secured with PVC fixings; holdB PRO 47/60-R isolator connected to the structure through the plasterboard; double plasterboard framing system with mineral wool laid over the structure, with a density of 70 kg/m^3 and a thickness of 40 mm; 12.5 mm plasterboard fixed to the structure using self-tapping sheet-metal screws and sealed; Danosa M.A.D.® 6 acoustic membrane, 5.6 mm thick, fixed to the board using staples; second 12.5 mm plasterboard layer fixed to the structure using self-tapping sheet-metal screws.

TEF 5

THICKNESS: 15 cm

Airborne noise
RA > 50 dBA



1. Floor slab
2. **GLUEDAN® ACUSTIC** adhesive and PVC fixings
3. Acoustic insulation: **ACUSTIDAN® PRO 12/3**
4. Elastomeric isolator: **holdB 47/60 O**
5. Plasterboard structure
6. Acoustic mineral wool insulation
7. Suspended ceiling tile

APPLICATIONS

Offices.
Classrooms.
Consulting rooms.
Meeting rooms.

ACCESSIBLE SUSPENDED CEILING TEF5

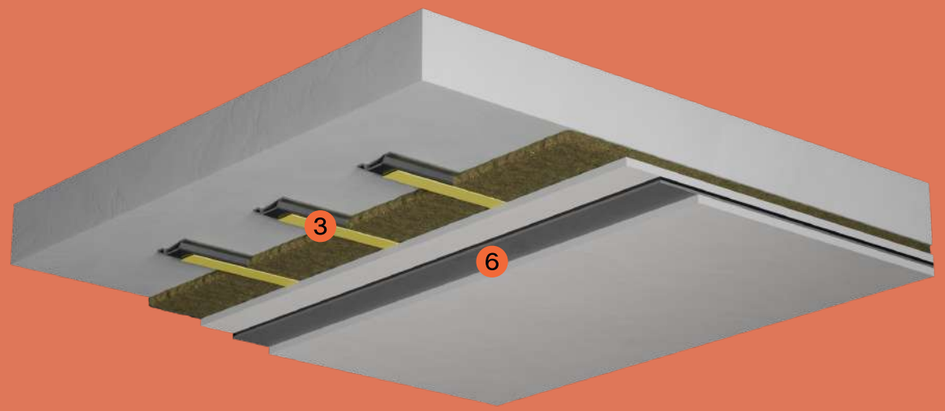
WORK SPECIFICATION

Accessible suspended ceiling system consisting of a rendered floor slab; low-frequency absorption achieved through a dual-layer membrane resonator, ACUSTIDAN® PRO 12/3, fixed using GLUEDAN® Acustic adhesive and mechanically secured with PVC fixings (length depending on substrate, 5–6 fixings/m^2). Steel framing structure suspended from the slab using hangers and threaded rods, with mineral wool laid over the framework with a density of 70 kg/m^3 and a thickness of 40 mm; plasterboard panels or acoustic treatment finishes for accessible suspended ceilings.

TEF LT1

THICKNESS: 5.0 cm

Airborne noise
ΔRA 12–7 dBA



1. Floor slab
2. Omega-type profile
3. Acoustic insulation: **FONODAN® 50**
4. Rock wool acoustic insulation
5. 12.5 mm plasterboard
6. Acoustic insulation: **M.A.D. PRO 50**
7. 12.5 mm plasterboard

APPLICATIONS

Ceilings in homes, offices and existing premises requiring improved acoustic performance in a minimal-thickness solution.

DIRECT THERMO-ACOUSTIC CEILING TEF LT1

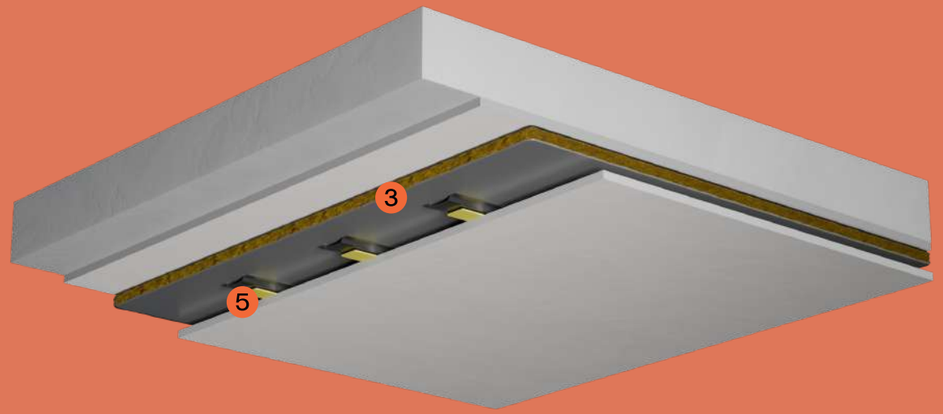
WORK SPECIFICATION

Refurbishment with a direct ceiling system and minimal thickness consisting of a rendered floor slab and/or sealing of existing openings. Fixed to the existing slab using omega profiles over FONODAN® 50 dual-layer membrane; double plasterboard framing system with mineral wool of 70 kg/m^3 filling the cavity between the profiles. 12.5 mm plasterboard fixed to the structure using self-tapping sheet-metal screws and sealed; M.A.D. PRO 50 bitumen-based acoustic membrane with bs1d0 fire classification; second 12.5 mm plasterboard layer fixed to the structure using self-tapping sheet-metal screws.

TEF LT2

THICKNESS: 4.7 cm

Airborne noise
ΔRA 9–11 dBA



1. Floor slab
2. Skim coat
3. Acoustic insulation: **ACUSTIDAN PRO 12/3®**
4. Omega-type profiles
5. Acoustic insulation: **FONODAN 50**
6. 12.5 mm plasterboard

APPLICATIONS

For homes, offices and existing premises requiring a minimal-thickness solution with high performance.

BASIC DIRECT CEILING WITH MINIMAL THICKNESS TEF LT2

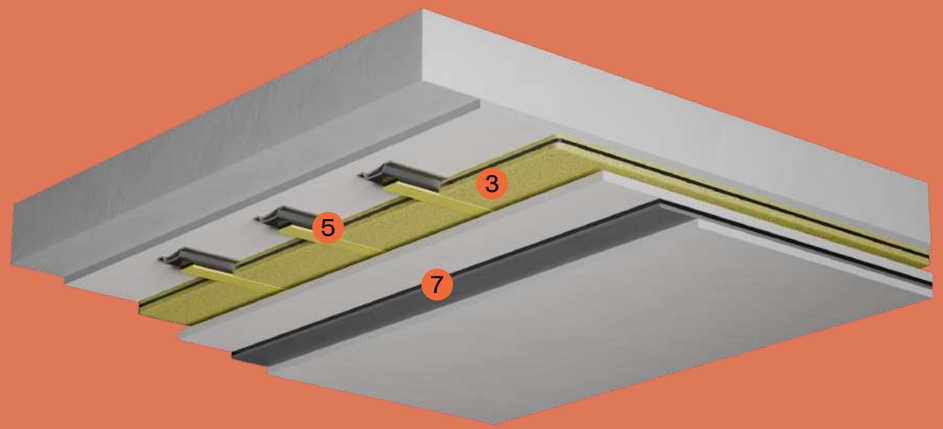
WORK SPECIFICATION

Rendered floor slab and/or sealing of existing openings. Low-frequency absorption through a dual-layer membrane resonator, ACUSTIDAN® PRO 12/3, installed using damped low-profile fixings. Dual-layer anti-resonance strip positioned within the metal structure, with omega-type profiles for plasterboard mounted on damped fixings. 12.5 mm plasterboard fixed using self-tapping sheet-metal screws, fully sealed and installed.

TEF LT3

THICKNESS: 7 cm

Airborne noise
ΔRA 12 dBA



1. Floor slab
2. Skim coat
3. Acoustic insulation: **DANOFON®**
4. Omega-type profile
5. Acoustic insulation: **FONODAN® 50**
6. 12.5 mm plasterboard
7. Acoustic insulation: **M.A.D. PRO 70**
8. 12.5 mm plasterboard

APPLICATIONS

For homes, offices and existing premises requiring a minimal-thickness solution with high performance

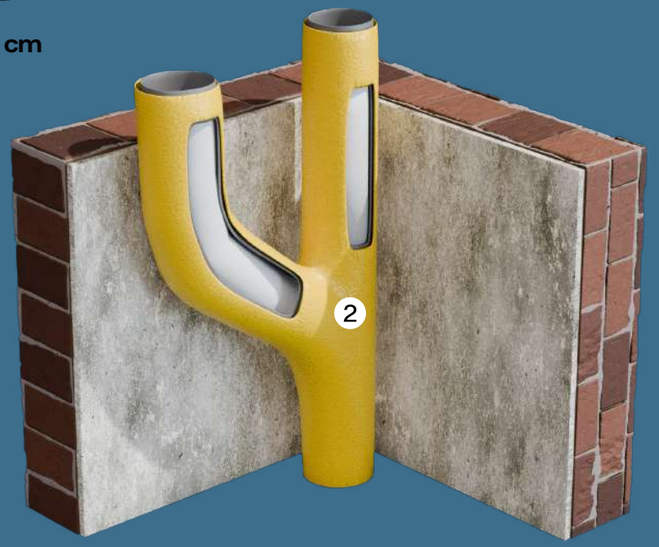
WORK SPECIFICATION

Refurbishment of a direct comfort ceiling consisting of a rendered floor slab and/or sealing of existing openings. Multilayer DANOFON® product comprising a high-density acoustic membrane with cotton layers on both sides, installed using damped low-profile fixings. Dual-layer anti-resonance strip positioned within the metal structure, with omega-type profiles for plasterboard mounted on damped fixings. 12.5 mm plasterboard fixed to the structure using self-tapping sheet-metal screws and sealed; Danosa M.A.D.® 4 acoustic membrane, 4 mm thick, fixed to the board using staples; second 12.5 mm plasterboard layer fixed to the structure using self-tapping sheet-metal screws.

BAJ 1

THICKNESS: 1.5 cm

IL 17 dBA



1. Drainpipe
2. Thermo-acoustic insulation: **FONODAN® BJ**
3. Lining system

APPLICATIONS

Machine rooms.
Ground-floor commercial premises: supermarkets, print shops, bakeries and production workshops, mechanical workshops and gyms.
Daytime venues: cafés, dining areas and nurseries.
Night-time venues: restaurants, pubs, etc.
Music venues: pubs, karaoke bars, nightclubs, wedding halls, etc.
Theatres, auditoriums and music schools.
Radio studios.

DRAINPIPES IN RESIDENTIAL BUILDINGS BAJ1

WORK SPECIFICATION

Thermo-acoustic insulation system for drainpipes in residential buildings consisting of a dual-layer strip formed by a self-adhesive high-density elastomeric membrane and chemically cross-linked polyethylene, with a total thickness of 3.9 mm, FONODAN® BJ, bonded to the substrate; including installation of a reinforcement clamp and a proportional quantity of elbow reinforcement strip for doubling bends and junctions, ready for lining installation.

BAJ 2

IL 17 dBA

THICKNESS: 1.5 cm

1. Drainpipe
2. Thermo-acoustic insulation: **ACUSTIDAN PRO® 12/3**
3. Lining system

APPLICATIONS

Machine rooms.
Ground-floor commercial premises: supermarkets, print shops, bakeries and production workshops, mechanical workshops and gyms.
Daytime venues: cafés, dining areas and nurseries.
Night-time venues: restaurants, pubs, etc.
Music venues: pubs, karaoke bars, nightclubs, wedding halls, etc.
Theatres, auditoriums and music schools.
Radio studios.

DRAINPIPES IN NOISY ENVIRONMENTS BAJ2

WORK SPECIFICATION

Thermo-acoustic insulation system for drainpipes in commercial premises consisting of a dual-layer strip formed by a high-density elastomeric membrane and an absorbent layer made from cotton fibres and recycled textiles, with a total thickness of 20 mm, ACUSTIDAN® 16/4, fixed to the substrate using packing tape and a reinforcement clamp, ready for lining installation.

INS LT1

THICKNESS: 1.5 cm

Airborne noise
RA > 55 dBA
ΔRA > 5 dBA

1. Existing wall
2. Acoustic adhesive:
GLUE-DAN® ACUSTIC
3. Acoustic insulation:
ACUSTIDAN® PRO 12/3

APPLICATIONS

Lift shafts.
Machine rooms.
Transformer rooms.
Utility rooms.

ACOUSTIC LINING FOR LIFT SHAFTS INS LT1

WORK SPECIFICATION

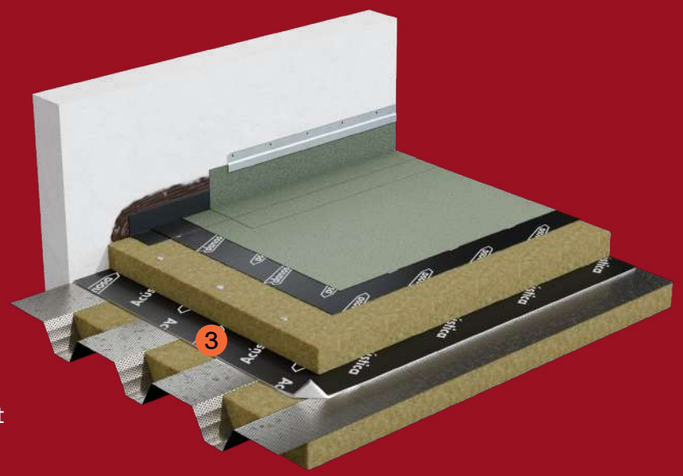
Acoustic lining system for lift shafts and machine rooms consisting of a three-layer composite made up of a high-density elastomeric membrane and a blanket of cotton fibres and recycled textiles bonded with phenolic resin, with an aluminised film finish and bs1d0 fire classification, ACUSTIDAN® PRO 12/3, suitable for direct installation using GLUE-DAN® Acustic adhesive or mechanical fixing with PVC fixings (length according to substrate, 5–6 fixings/m^2) to the existing wall.

ACI 1A

THICKNESS: 12 cm

Airborne noise RA

45–48 dBA



1. Perforated profiled steel deck support
2. Thermo-acoustic mineral wool insulation for valley infill
3. Acoustic insulation and vapour barrier **M.A.D.® PRO 100**
4. Thermo-acoustic mineral wool insulation
5. Waterproofing membrane: ESTERDAN® FM 30 P ELAST
6. Waterproofing membrane: POLYDAN® 180-50/GP ELAST
7. Bituminous primer: IMPRIDAN® 100
8. Reinforcement strip: E 30 P ELAST
9. Termination strip: POLYDAN® 180-50/GP ELAST
10. DANOSA® metal profile
11. Elastic sealant: ELASTYDAN® PU 40 GREY

APPLICATIONS

Logistics and industrial buildings. Public-access buildings: shopping centres, stadiums, airports, railway stations, convention centres, theatres, sports centres and nightclubs.

WORK SPECIFICATION

Vapour barrier and M.A.D.® PRO 100 acoustic membrane with an aluminised film finish, weighing 10 kg/m^2 and 5 mm thick, installed above the crests of the profiled steel deck; exposed mineral wool panels with a total thickness of 100 mm and density of 150 kg/m^3, fixed to the substrate with steel fixings (2 fixings per panel); two-layer waterproofing system comprising a mechanically fixed elastomer-modified bitumen membrane with plastic film finish and reinforced polyester felt reinforcement, weighing 3 kg/m^2, ESTERDAN® FM 30 P ELAST, and a high-durability SBS elastomer-modified bitumen membrane, self-protected with black slate granules and reinforced polyester felt reinforcement, weighing 5 kg/m^2, POLYDAN® 180-50/GP ELAST, torch-bonded to the previous layer.

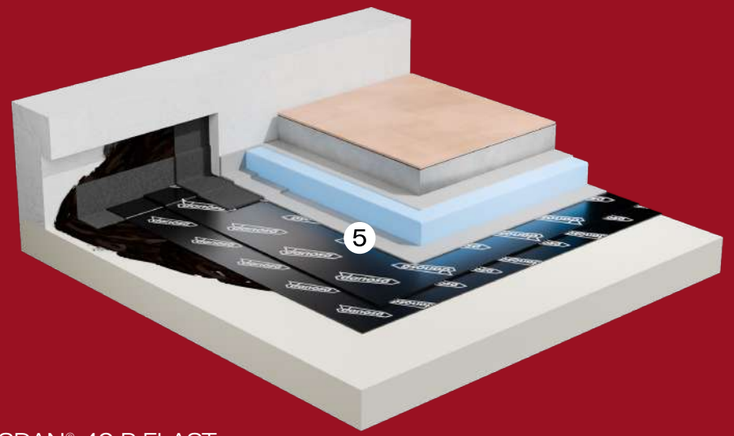
Fixings shall be double-threaded with anti-corrosion treatment for 15 or 30 Kesternich cycles depending on internal and external humidity conditions, and shall carry the corresponding ETA or EAD certification. Fixing density shall depend on building height, exposure, prevailing winds, parapet height, whether the building is open or enclosed, etc., with additional fixings provided around perimeters, edges and corners. The distance between fixings shall be no less than 18 cm and no greater than 36 cm. Where an increased fixing density is required, additional rows (one or two) shall be installed using ESTERDAN® FM 30 P ELAST as an auxiliary membrane.

ACU 3

THICKNESS: 15 cm

Airborne noise RA

> 55 dBA



1. Waterproofing substrate
2. Bituminous primer: CURIDAN®
3. Waterproofing membrane: GLASDAN® 40 P ELAST
4. Waterproofing membrane: ESTERDAN® 40 P ELAST
5. Acoustic insulation: **IMPACTODAN® 10**
6. Thermal insulation: DANOPREN® TR
7. Geotextile separation layer: DANOFELT® PY 200
8. Protective mortar: ARGOSEC® M-25 Élite
9. Cementitious adhesive: ARGOCOLA® Élite 500
10. Ceramic flooring
11. Grout mortar: ARJUNT®
12. Bituminous primer: CURIDAN®
13. Reinforcement strip: E 30 P ELAST
14. Termination strip: ESTERDAN® PLUS 40/GP ELAST
15. Protective skirting

APPLICATIONS

Logistics and industrial buildings. Public-access buildings: shopping centres, stadiums, airports, railway stations, convention centres, theatres, sports centres and nightclubs.

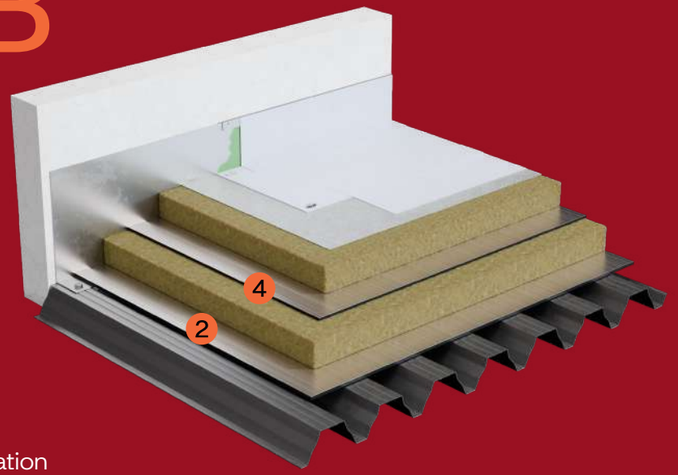
ACOUSTIC ROOFING – TECHNICAL ACU3

WORK SPECIFICATION

Walkable inverted flat roof system consisting of a water-based bituminous primer, CURIDAN®, applied at 0.3 kg/m²; GLASDAN® 40 P ELAST, an SBS elastomer-modified bitumen membrane with a plastic film finish and glass fibre felt reinforcement, weighing 4 kg/m², torch-bonded to the substrate; ESTERDAN® 40 P ELAST, an SBS elastomer-modified bitumen membrane with a plastic film finish and polyester felt reinforcement, weighing 4 kg/m², torch-bonded to the previous layer; IMPACTODAN® 10, a 10 mm-thick cross-linked polyethylene foam membrane with a Type III environmental product declaration, installed beneath the slope-forming mortar layer and separated from parapets using Perimeter Isolation Strip 200; thermal insulation consisting of DANOPREN® TR extruded polystyrene panels with a total thickness of 100 mm and half-lap perimeter joints, with a Type III environmental product declaration; separating layer consisting of DANOFELT® PY 200 polyester geotextile; ready for installation of the final floor finish (minimum 40 mm cement screed).

ACII 1B

THICKNESS: 21 cm



Airborne noise RA

45–48 dBA

1. Waterproofing substrate
2. Acoustic insulation and vapour barrier: **M.A.D.® PRO 100**
3. Thermo-acoustic mineral wool insulation
4. Acoustic insulation and vapour barrier: **M.A.D.® PRO 50**
5. Thermo-acoustic mineral wool insulation
6. DANECRAN® 100 separation layer
7. Waterproofing membrane: DANOPOL® HS 1.5 COOL ROOFING
8. Perimeter mechanical fixing for the waterproofing system
9. DANOPOL® ADHESIVE
10. Termination strip: DANOPOL® HS 1.5 COOL ROOFING
11. Laminated retaining profile: DANOSA TYPE B
12. Elastic sealant: ELASTYDAN® PU 40 GREY

APPLICATIONS

Logistics and industrial buildings. Public-access buildings: shopping centres, stadiums, airports, railway stations, convention centres, theatres, sports centres and nightclubs.

ACOUSTIC DECK ROOF WITH PVC ACU3

WORK SPECIFICATION

Non-accessible flat deck roof system consisting of M.A.D.® PRO 100, a vapour barrier and acoustic membrane with an aluminised film finish, weighing 10 kg/m^2 and 5 mm thick, installed over the crests of the profiled metal deck; exposed mineral wool panels with a total thickness of 100 mm and a density of 150 kg/m^3, fixed to the substrate using steel fixings (2 fixings per panel); M.A.D.® PRO 50 acoustic membrane with an aluminised film finish, weighing 5 kg/m^2; exposed mineral wool panels with a total thickness of 100 mm and a density of 150 kg/m^3, fixed to the substrate using steel fixings (2 fixings per panel); waterproofing membrane consisting of 1.5 mm PVC thermoplastic sheets reinforced with polyester mesh, DANOPOL® HS 1.5 COOL ROOFING, mechanically fixed to the substrate. Fixings shall be double-threaded with anti-corrosion treatment for 15 or 30 Kesternich cycles depending on internal and external humidity conditions, and shall carry the corresponding ETA or EAD certification.

8.

Criteria for interpreting acoustic data.

What actually performs in practice.

A high Rw value in laboratory testing does not guarantee compliance in the finished building

In acoustics, there are two realities:

Laboratory

Controlled conditions that allow **solutions to be compared.**

Building

Real-world conditions where **junctions, flanking transmission and installation quality all have an impact.**

The test demonstrates **potential.**
The building reveals the **performance of the complete system.**

Laboratory Potential value

Measurements taken under stable conditions, with ideal junctions and no on-site construction variables.

Allows solutions to be compared with consistency and precision.

Rw (dB) · Ln,w (dB) · ΔLw (dB)

Building Actual value

On-site verification reflects the real performance **of the installed system.**

Construction introduces variables that laboratory testing cannot replicate:

structural flanking transmission · tolerances · service penetrations · coordination between trades

What to look for in technical data sheets

- The **correct descriptor** for the type of noise involved
- The **complete system**, not just the product
- Compatibility with the other construction layers

Specification tool

Understanding acoustic descriptors

Not all acoustic indices measure the same thing. Understanding them helps avoid incomplete comparisons and specification errors.

Comparing laboratory values is useful. Verifying performance in the completed building is essential.

Laboratory data sheet values

Rw (dB) – airborne sound insulation under test conditions

Rw + C – internal noise (voices, TV)

Rw + Ctr – external noise (traffic)

Ln,w (dB) – impact sound under laboratory conditions

ΔLw (dB) – impact sound improvement

αw – sound absorption

In-building values

DnT (dB) – sound insulation between rooms

DnT,A (dBA) – adjusted for human perception

D2m,nT,Atr (dB) – actual façade sound insulation

L'nT,w (dB) – impact sound performance on site

RT / T60 (s) – reverberation time

Not every dB value means the same thing
Rw allows solutions to be compared under ideal conditions. However, the chosen descriptor must match both the **type of noise and the intended use of the building.** Focusing only on the highest number can lead to **incomplete decisions.**

How to specify for compliance

The building is **a system**, not a technical data sheet.

Sound does not simply travel through a single element. **Sound travels through junctions, structure and connections.**

In design, you do not specify a dB value. You specify **a complete construction system.**

System · details · installation criteria.

To achieve compliance in the building

Complete system
product + layers + junctions

Flanking control
lateral transmission kept under control

Installation criteria
execution aligned with the project design

For real acoustic comfort, the target must be translated into the **correct descriptor**, not simply the highest laboratory value.

Audal

AUDAL does not sell dB values on a data sheet. It specifies systems designed to achieve dB performance in real buildings.

Each solution integrates decoupling, sealing and flanking control, with details developed for both design and installation.

Specialised acoustic expertise designed to reduce technical uncertainty and protect the final result.

Audal

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