



CONSTRUCTION SYSTEMS APPLIED

SOUND INSULATION IN THE BUILDING INDUSTRY
PARTNERS OF BUSINESS

GENERAL CATALOG

www.androsat.it
info@androsat.it

LINE ACOUSTIC INSULATION

PANISOL[®]
TECNOISOLANTE ACUSTICO BREVETTATO



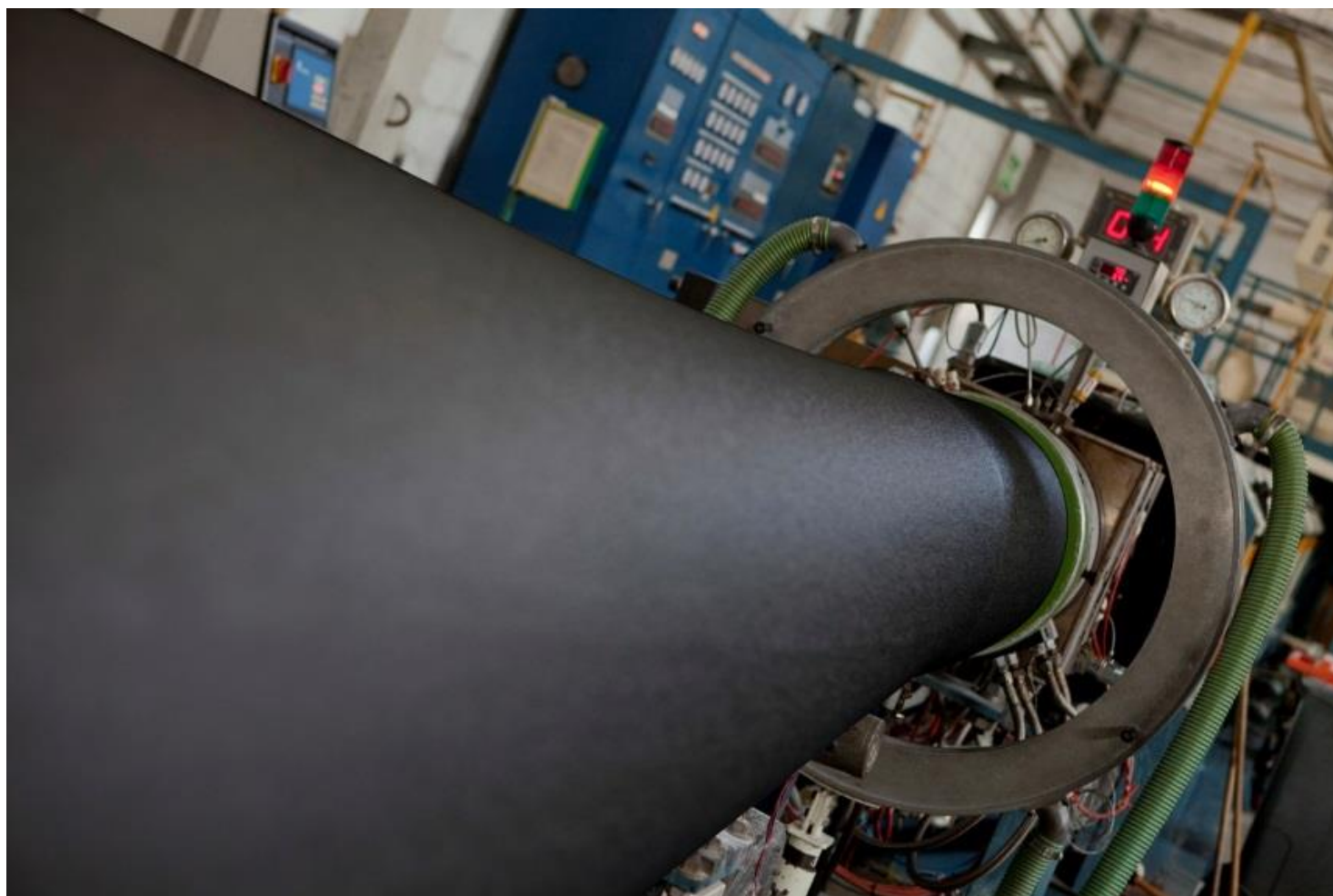
SOLUTIONS FOR THE SOUND INSULATION IN THE BUILDING INDUSTRY

PHONE 0542 684571-FAX 0542 685112-TOZZOLA ANDREA MOBILE +39 333 1009922

WHO WE ARE



of Tozzola Andrea was born as dealership of acoustic insulation (activities took place during the first 7 years) proposing acoustic insulation systems in the building industry. Our sales methodology directed almost exclusively to companies that operate in the construction sector, there has processed over the years from supplier to true **corporate partner**. We are currently in the market as supplier and/or applicators of systems for the construction industry regarding the acoustics. In June 2011 at the end of a search path which lasted 3 years we have refined the project **PANISOL** Line of exclusive products of our production and design. These polyethylene products of second generation have been improved technically and are covered by patents and trademark



1.COMPANY PROFILE



has store with storage of insulating materials, we integrate in our philosophy the path to bring the costumers to meet the final requirements required by the legislation acoustics in force for the constructions. We propose solutions tested on construction site, that gave values correct and that we are able to guarantee. ANDROS not only sells a product, but a result.

SERVICES THAT WE OFFER:

- **ADVICE AND/OR TECHNICAL REPORT PRELIMINARY:** on the basis of the type of structure to isolate (floors or walls) we calculate an acoustic report which indicated the type of PANISOL® to use and the expected result
- **ACOUSTIC PROJECT:** to request is drawn up an acoustic project by competent technician in acoustics
- **Supply of** acoustic insulation to a wall and on the floor
- **SUPPLY AND INSTALLATION** of acoustic insulation to a wall and floor
- **AFTER-SALES SERVICE FREE** in the case of only one supply of acoustic insulation to a wall and on the floor
- **FINAL TESTING:** upon completion of the work are carried out at sample of legitimate testing by a competent technician in acoustics



Laying insulating to treading



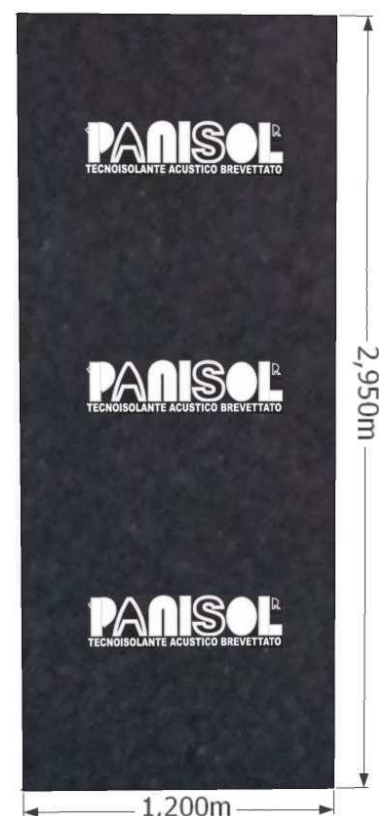
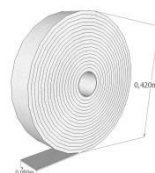
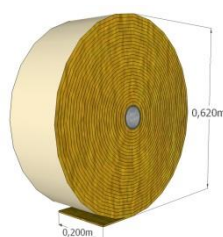
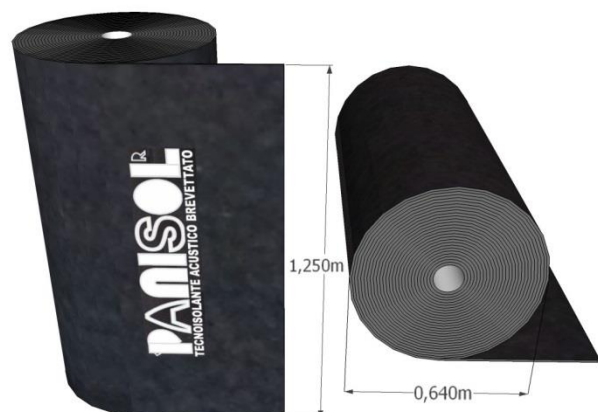
Laying insulating wall

INSULATING LINE PANISOL



Is the owner of **PANISOL** Trademark that represents the line of the soundproofing proposal currently on the market. All insulators are of our production and we are also able to produce insulating tailored to isolations with specific requirements and performance tailored for special soundproofing and /or outside standard.

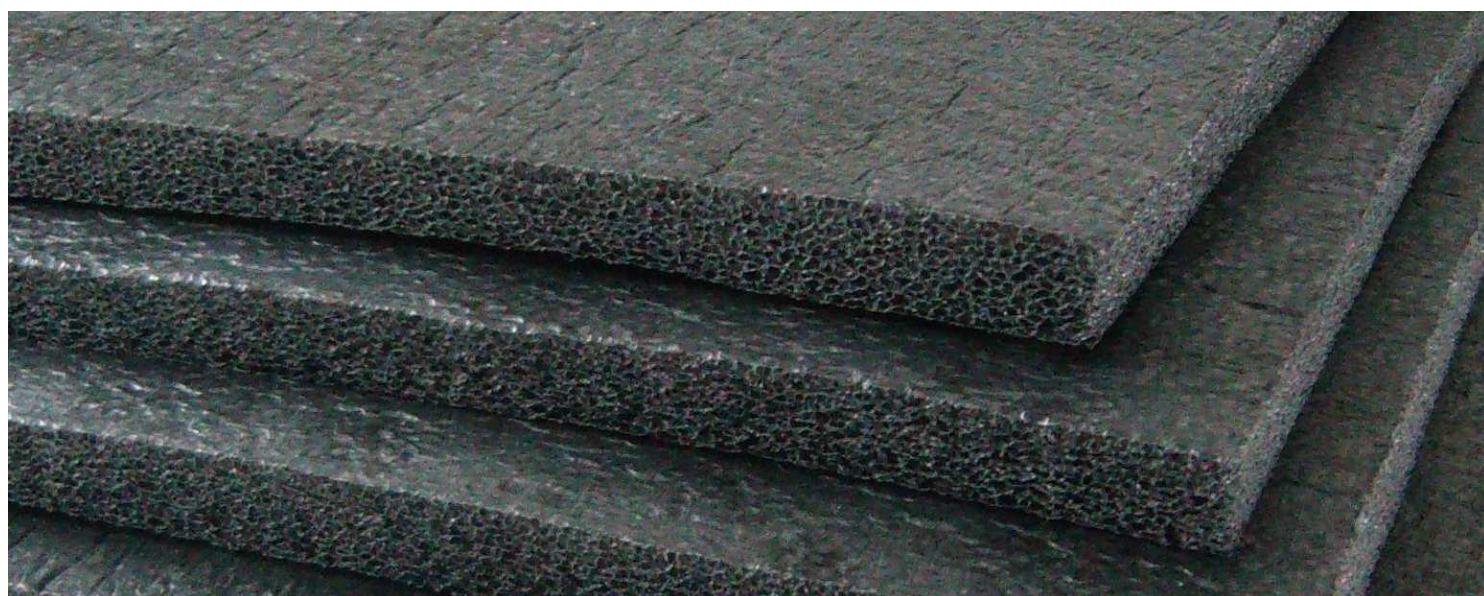
The line **PANISOL** Is composed of acoustic insulation to treading (carpets), acoustic insulation to a wall (panels), additions for the application of systems (bands, under-wall, perimeter bands, coupling bands).



THE POLYETHYLENE FOAM IS A GOOD CHOICE ?

Having to choose between the different types of materials for acoustic insulation on the market, the polyethylene foam amended **PANISOL** result to be the best choice as analysis under summarized:

- **PANISOL®** has the best quality-price ratio-performance compared with other types of materials present on the market for the construction.
- **PANISOL®** is practical, it is easy to lay, it is light and manageable
- **PANISOL®** is rotproof to water and organic agents do not release dusts during the movement
- **PANISOL®** does not lose the characteristics over time as being a high density polyethylene (40Kg/mc)
- **PANISOL®** is a green product

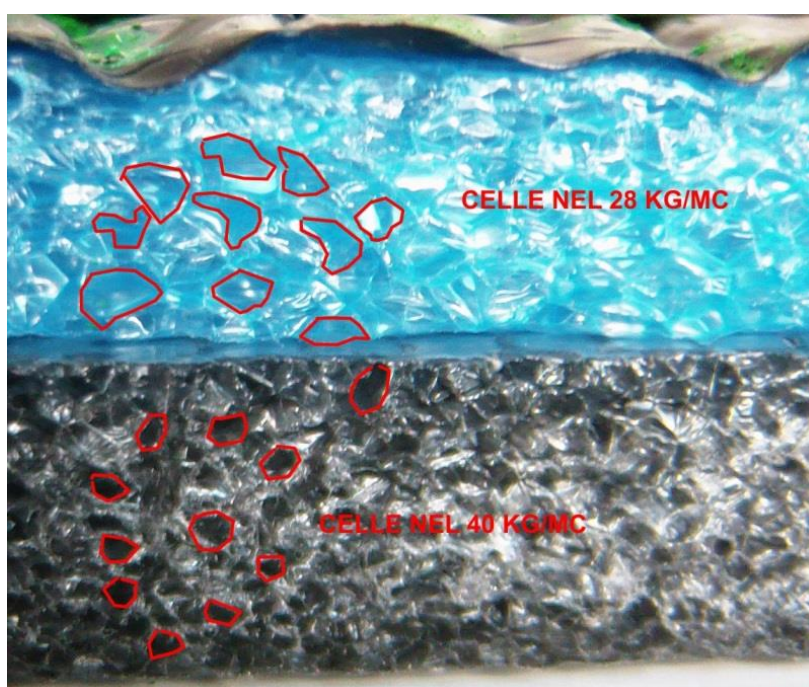


PANISOL IS DIFFERENT

When we speak of polyethylene the most commonly used definitions are, "products that were used in the years 80 ", "products removed from the range because it created problems", "product which is squeezed", "does not work." We specify that there are various types of polyethylenes expanded each with different characteristics:

- **Polyethylenes** by packaging density of 13 kg/mc
- **Polyethylenes** generally used as acoustic insulation in the building density 30 kg/mc

PANISOL Has a density of 40 kg/mc and cell structure ultrafine the flattening is lower than 5 %, On the right the comparison in the internal structure of the product. Currently is the only polyethylene for acoustic insulation with these characteristics in Italy



3.GENERAL FEATURES

DEEPENING THE DISPOSAL

The materials commonly used in building market such as:

- **CROSS-LINKED POLYETHYLENES**
- **RECYCLED TIRES AND NOT**
- **AGGLOMERATIONS OF POLYURETHANE**
- **MINERAL WOOL**
- **COUPLED WITH LEAD AND NOT**



These are products that require disposal through landfill authorized, being classified special waste and/or dangerous with related costs very high. According to the terms of the EEC directive 88/739, 67/548 and subsequent adjustments **PANISOL** is classified as not a hazardous material assimilated to urban waste and therefore completely recyclable.

PANISOL[®] 100% 

DEEPENING CE MARKING

The CE marking is the visual symbol that demonstrates that the product complies with the directive 89/106/EEC, from the moment that it responds to harmonized technical specifications (harmonized standards or European technical approvals) produced on the mandate CE.

IN THE ABSENCE OF HARMONIZED STANDARDS or European technical approvals relating to the product, this IS NOT SUBJECT TO CE MARKING

FOR THE PRODUCTS OF THE LINE **PANISOL OF POLYETHYLENE-BASED ARE NOT AVAILABLE AT THE MOMENT (2014) SPECIFIC RULES can therefore be used without CE marking.**

FOR MORE INFORMATION PLEASE VISIT THE OFFICIAL SITE:

<http://www.aedilitia.itc.cnr.it>

REGULATORY FRAMEWORK

Ensure the acoustic comfort in residential environments and working days and is in fact a necessity not only linked to an improved standard of living of life, but it is a compulsory regulated for over a decade by regulations. With the publication of the law 447/95 and the relative DPCM 05 /12/1997, that defines the quality and the limits of passive noise inside the buildings, the acoustic isolation and became mandatory, whatever its intended use.

ACOUSTIC REQUIREMENTS PASSIVE - law DPCM 05 /12/1997

DESTINATION	CAT	Noise Level of the floor $L_{n,w}$ (dB)	Soundproofing Power R_w (dB)	Acoustic insulation facades $D_{2m,n,T,w}$ (dB)	Noise installations L_{ASmax}
Buildings used as residence	A	≤ 63	≥ 50	≥ 40	≤ 35
Office buildings	B	≤ 55	≥ 50	≥ 42	≤ 35
Buildings used for hotels, pensions	C	≤ 63	≥ 50	≥ 40	≤ 35
Buildings used for hospitals, Clinics, nursing homes	D	≤ 58	≥ 55	≥ 45	≤ 35
Buildings used for school activities at all levels	E	≤ 58	≥ 50	≥ 48	≤ 35
Buildings used for recreational activities or worship	F	≤ 55	≥ 50	≥ 42	≤ 35
Buildings used for commercial activities	G	≤ 55	≥ 50	≥ 42	≤ 35

$L_{n,w}$ (db):

Index of the noise level of the floor.

Maximum sound level that you must register in a room when on the upper floor is produced a noise normalized of treading.

R_w (db):

Index of soundproofing power.

Minimum level of resistance to the passage of noise of a structure that divides two distinct units.

$D_{2m,n,T,w}$ (db):

Index of the acoustic insulation of facade.

Minimum level of resistance to the passage of noise of a perimeter wall

L_{ASmax} :

Index of the noise level of technological systems.

Maximum sound level of noise produced by technological systems with discontinuous function (lifts, flushing)

ACOUSTIC CLASSIFICATION UNIT REAL ESTATE UNI-ISO 11.367



CLASSE	R'_w	D'_{2mnTw}	L'_{nw}	L_{id}	L_{ic}
I	≥ 56	≥ 43	≤ 53	≤ 30	≤ 25
II	≥ 53	≥ 40	≤ 58	≤ 33	≤ 28
III	≥ 50	≥ 37	≤ 63	≤ 37	≤ 32
IV	≥ 45	≥ 32	≤ 68	≤ 42	≤ 37

5. LAW'S PARAMETERS

ACOUSTIC CLASSIFICATION UNI-ISO 11.367

To adapt to the european standards the reference legislation is changing.

THE UNI has drawn up a voluntary standard that will allow you to qualify acoustically buildings.

The acoustic classification will be based on measurements in work carried out by technically competent in acoustics. The requirements that must be checked are:

- Index of evaluation of the acoustic insulation normalized a facade.
- Index of evaluation of soundproofing power apparent partitions of vertical and horizontal between different real estate units;
- Index of evaluation of the sound pressure level of treading normalized between overlapping spaces and/or adjacent belonging to different real estate units;
- Sound level entered from plants to continuous operation;
- Sound level entered from plants to discontinuous operation.

Class	Acoustic Insulation normalized facade D2m,nT,w	Acoustic insulation Power apparent partitions of vertical and horizontal R'w db	Sound pressure level of treading normalized L' nw db	Sound Level correct entered from plants to continuous operation Lic dB(A)	Sound Level correct entered from plants to discontinuous operation Lid dB(A)
I	≥ 43	≥ 56	≤ 53	≤ 25	≤ 30
II	≥ 40	≥ 53	≤ 58	≤ 28	≤ 33
III	≥ 37	≥ 50	≤ 63	≤ 32	≤ 37
IV	≥ 32	≥ 45	≤ 68	≤ 37	≤ 42

For all-residential buildings-directional office-receptive (hotels, pensions like) -recreational-worship-commercial

COMPARISON WITH THE VALUES IN THE MAIN EUROPEAN REGULATIONS

In Italy the normative values currently in force to reach may seem very high, a comparison with other European countries is a valid help to understand how instead are lower than the average european

STATE	AIR INSULATION (Minimum Value in dB)		NOISE BY TREADING (Maximum Noise in dB)	
ITALY	50		63	
DENMARK	55		53	
NORWAY	55		53	
GERMANY	Villa 57	53 Condominium	Villa 48	53 Condominium
SWEDEN	53		56	
ENGLAND/WALES	45		62	
SPAIN	50		65	
FRANCE	53		58	
SWITZERLAND	In Property 55	52 Lease	In Property 50	53 Lease
AUSTRIA	In Property 60	55 Lease	In Property 43	48 Lease



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CONSTRUCTION SYSTEMS APPLIED

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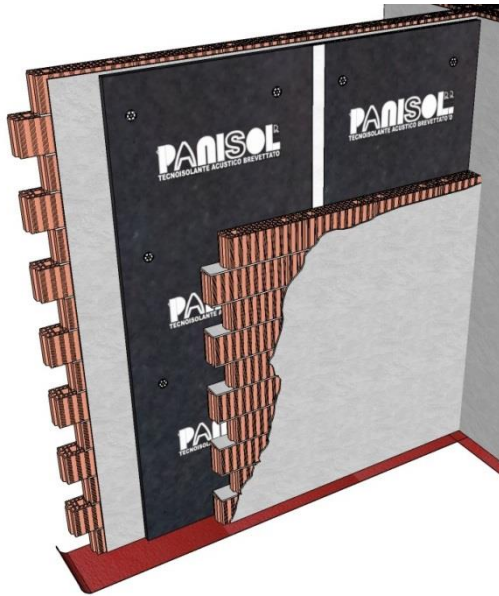
DEALER AND PROPRIETOR
PANISOL[®]
ACOUSTIC TECNOISOLANTE PATENTED
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LAW'S PARAMETERS.6

INSULATION PARTITION WALLS

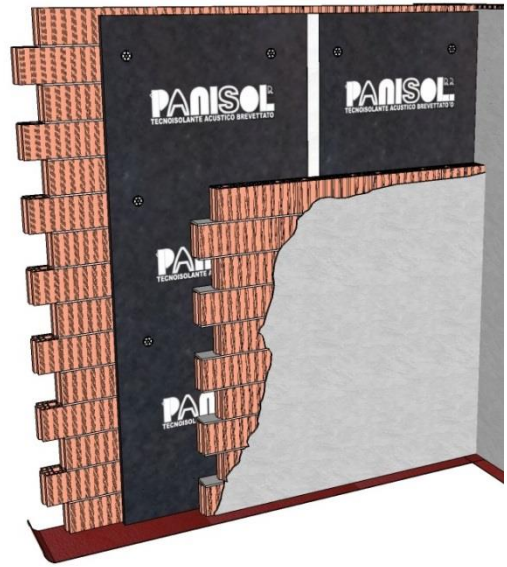
SCHEMATIC TABLE CONFIGURATIONS WALLS R'W 50 CLASS III ACOUSTICS

BASIC Solution NARROW



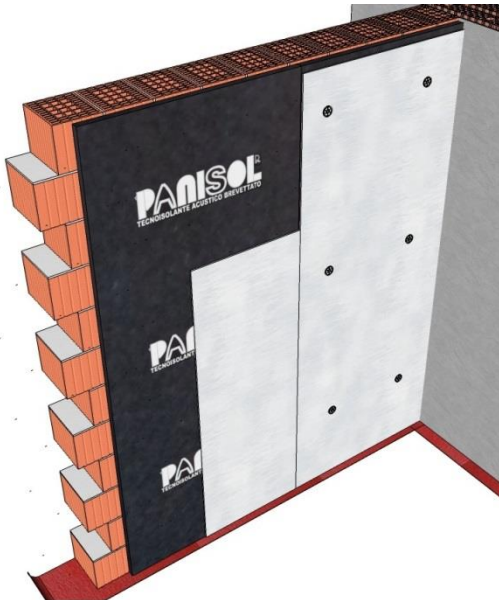
- Plaster 1.5 cm
- Masonry block semifull type cm 8
- Plaster 1.00 cm
- **PANISOL P40**
- Masonry block semifull type cm 8
- Plaster 1.5 cm
- **Weight masonry finished about 215 Kg/sq m**
- **WALL THICKNESS 24/25 CM**
- Value of testing on site between R'W 50 to R'W 52

BASIC Solution NORMAL



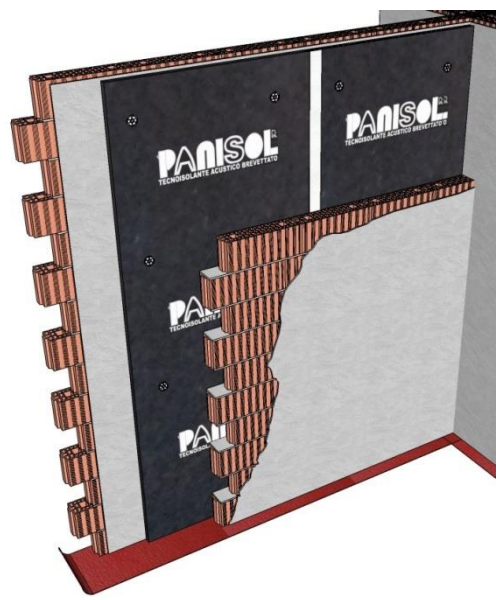
- Plaster 1.5 cm
- Masonry block semifull type cm 12
- **PANISOL P40**
- Masonry block semifull cm 8
- Plaster 1.5 cm
- **Weight masonry finished about 230 Kg/sq m**
- **WALL THICKNESS 27/28 CM**
- Value of testing on site between R'W 50 to R'W 52

AGAINST-PLATING



- Plaster 1.5 cm
- Masonry block semifull cm 25
- **PANISOL P20C**
- Plasterboard Sheet 12.5 mm
- **Weight masonry finished about 295 Kg/sq m**
- **WALL THICKNESS 30/31.5 CM**
- Value of testing on site between R'W 50 to R'W 52

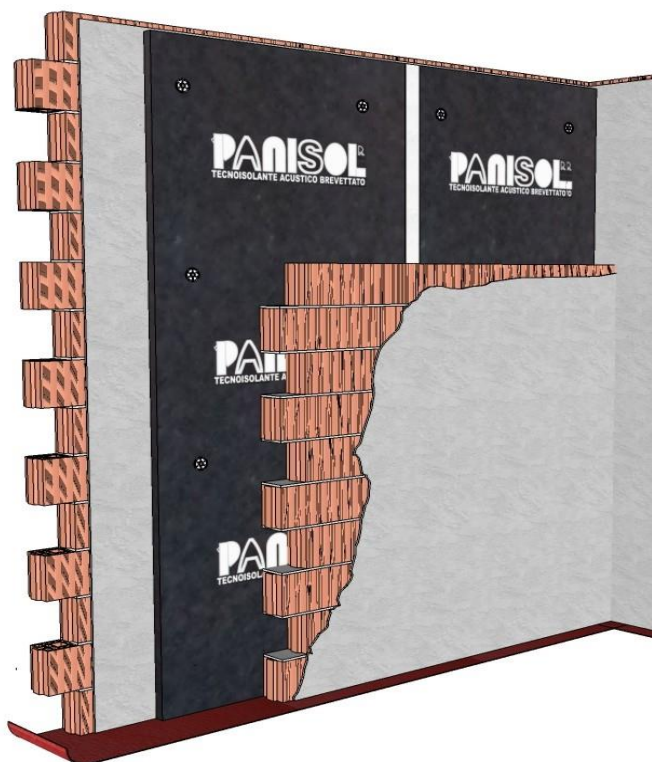
TOP Solution



- Plaster 1.5 cm
- Masonry block semifull cm 12
- Plaster 1.00 cm
- **PANISOL P40**
- Masonry block semifull cm 12
- Plaster 1.5 cm
- **Weight masonry finished about 275 Kg/sq m**
- **WALL THICKNESS 32/34 CM**
- Value of testing on site between R'W 52 to R'W 54

SCHEMATIC TABLE CONFIGURATIONS WALLS DPCM 05 /12/97 UNI ISO 11.367 ACOUSTIC CLASS III

CLASS III **R'W 50**



BRIEF DESCRIPTION: RECOMMENDED SOLUTION

To obtain a value of R'w CLASS III
You need to build the masonry on a weight
Final for SQM finished minimum 210 kg/sq m

- Plaster 1.50 cm
- **Masonry block semifull type Cm 12**
- Plaster inside cm 1.00 (Recommended)
- **PANISOL P40**
- **Masonry block semifull type CM 8**
- Plaster 1.5 cm
- **Weight masonry finished about 245 Kg/sq m without Plaster inside**
- **WALL THICKNESS 27/28 CM**
- **Value of testing on site between R'w 51 to R'w 53**

PLEASE NOTE:

This solution is guaranteed one may also make two bricks semifull type 8cm with plaster inside cm 1.00 mandatory, are not allowed many imperfections in Working and then undertakes to comply with the requirements listed below:

- OBSERVE THE SHIMS OF THE PLASTERS AND THE PLASTER INSIDE IF THERE
- USE THE BRICKS WITH CHECKING THE WEIGHT AS TECHNICAL CARDS INDEPENDENTLY FROM THE MANUFACTURER
- INSTALL THE INSULATION IN A CORRECT WAY
- DO NOT PERFORM LEGHOLD TO ENTER DRAINS AND VENTS WITH CUTTING OF THE INSULATION, ARE PERMITTED ELECTRICAL INSTALLATIONS FREELY
- CLOSE WITH SAND AND CEMENT THE LEGHOLD
- IF IN ANY DOUBT CALL THE AGENT IN YOUR AREA OR TO THE GEOM. TOZZOLA +39 333 1009922 RESPECTING THESE CONDITIONS THERE WILL BE A FINAL RESULT COMPLIES



CONSTRUCTION SYSTEMS APPLIED
www.androsat.it info@androsat.it

PANISOL[®]
ACOUSTIC TECHNOINSULATION PATENTED

All of the above have been tested **ON SITE OF CONSTRUCTION** and gave values correct, in the masonry. You can also use intermediate solutions refer to the section site:
ONLINE CALCULATION ACOUSTIC WALLS.



ANDREA TOZZOLA
COMPETENT TECHNICAL ACOUSTICS

ACOUSTIC INSULATION AIR - RANGE PANISOL

INSULATING

PANEL

PANISOL®P20

PANISOL®P30

PANISOL®P40



PANEL

PANISOL®P10C

PANISOL®P20C

ADDITIONS

UNDER-WALL BAND

PANISOL®T SERIES



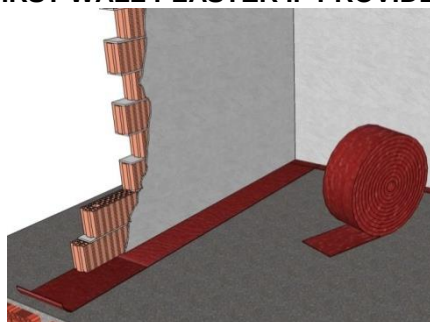
COUPLING-BAND

PANISOL® P 70/80G



ACOUSTIC AIR INSULATION CONSTRUCTION SYSTEM

1. LAYING UNDER-WALL BAND
FIRST WALL PLASTER IF PROVIDED



3 SECOND WALL AND PLASTERS



2. MOUNTING PANEL AND BANDS



9. AIR INSULATION

INSULATION PARTITION WALLS SEQUENCE OF CORRECT LAYING

INSTALL THE INSULATING PANELS **PANISOL** RESTING IN THE INTRADOS OF THE FLOOR



PULL OVER AND TRIMMED WITH PRECISION SEAL THE EDGES AND JOINED WITH THE BAND P70/80G



VERIFY THAT THE INSTALLATION HAS NO IMPERFECTIONS



INSULATION PARTITION WALLS

PANELS INSTALLATION COMPLETED



FINAL INSTALLATIONS WITH ADHESIVE BANDS

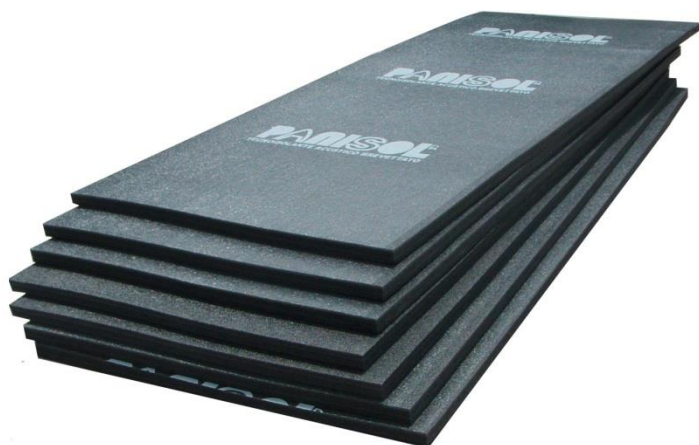


11.AIR INSULATION



PANISOL[®]
ACOUSTIC INSULATING

P40



**SPECIFIC PRODUCT FOR THE
ACOUSTIC AND THERMAL INSULATION
OF VERTICAL PARTITIONS IN REAL
ESTATE**

PROPERTY TECHNIQUES

INDEX OF SOUNDPROOFING POWER - R 'W	*54 Db
THERMAL CONDUCTIVITY	0.040 w/mk
THERMAL RESISTANCE	1.00 M² k/w
COEFFICIENT OF RESISTANCE TO THE SPREAD OF STEAM - μ	> 2000

FORMAT AND PACKAGE

	THICKNESS	40 MM
	HEIGHT	2950 MM
	WIDTH	1200 MM
	PANEL SURFACE	3.54 SQM
	PANELS FOR PACKAGE	7 N°
	PACKAGE DEVELOPMENT SURFACE	24.78 SQM

FITTING ADVICE



For install the system is
recommended the use of this
equipment:

- ✓ BATTERY DRILL
- ✓ FOLDING LADDER
- ✓ HAMMER
- ✓ CUTTER
- ✓ PLASTIC BLOCKS COAT TO
BEAT

- ✓ SELF-SUPPORTING PANEL SOUNDPROOFING foam material made of closed cell
- ✓ PANEL composed of lamination with 4 layers of polyethylene foam from 25 KG/MC + /- 3 kg
- ✓ FULL HEIGHT PANEL the sealing in the berths is made with the use of adhesives closure tapes PANISOL P70/80G.
- ✓ PANEL LIGHT, easy to handle you trim with a simple cutter, thanks to these features allows you to have a rapid installation and economic.
- ✓ THE SOUNDPROOFING PERFORMANCE allow cut off the wall and install all necessary for al tyoe of plants.
- ✓ DPCM 05 /12/97 DIVISION BETWEEN ACCOMMODATION PAIR IT WITH MASONRY WITH A TOTAL WEIGHT OF 215 KG/SQ M MINIMUM GUARANTEE THE ACHIEVEMENT OF THE PARAMETER OF LAW
- ✓ * R'W 54 MEASURED VALUE ON SITE ON DOUBLE WALL BRICKS SEMI-FULL BRICKS 12 CM - n° 3 PLASTER
TOTAL WALL 240 KG/SQ M approx.



FEATURES AND BENEFITS

- ✓ EASY INSTALL LIGHTWEIGHT AND EASY TO HANDLE
- ✓ SELF-SUPPORTING PANEL
- ✓ ROT FROM WATER AND ORGANIC AGENTS
- ✓ DO NOT LOSE THE CHARACTERISTICS OVER TIME
- ✓ DOES NOT RELEASE DUSTS DURING MOVEMENT

SPECIFICATIONS FOR THE CONTRACT

TECHNICAL DOCUMENTATION IMAGES MOVIES
ANDROS of TOZZOLA ANDREA
DEALER AND PROPRIETOR LINE PANISOL
Via Belfiore 2 - 40026 IMOLA (BO)
www.androsat.it info@androsat.it

Insulating Layer in panels full-height (1200x2950) composed of polyethylene foam extruded with closed cells, coupled to film NO-TEARING (type PANISOL[®]). To install inside double masonry. The masonry must have a weight for sqm minimum of 215 kg including plaster. Thickness.....mm



PANISOL[®]
ACOUSTIC INSULATING

P400T - P150T

DE-SOLID BAND UNDERWALL SERIES T

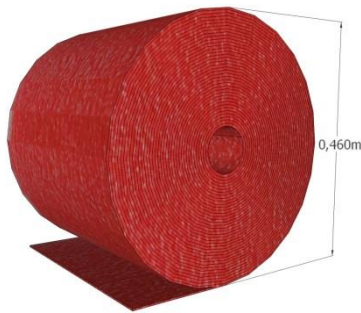


- ✓ DE-SOLID BAND SOUNDPROOFING foam polyethylene extruded ultra high density
- ✓ DECOUPLING ELEMENT to interpose between FLOOR and WALL.
- ✓ USABLE for the partition and perimeter walls, and internal compartmentation of real estate units
- ✓ DAMPING FUNCTION which decreases the lateral transmission of vibrations that hit the wall.

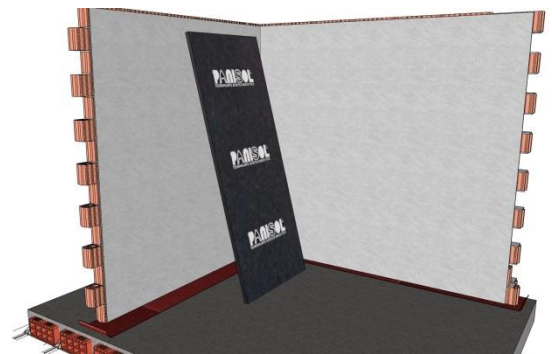
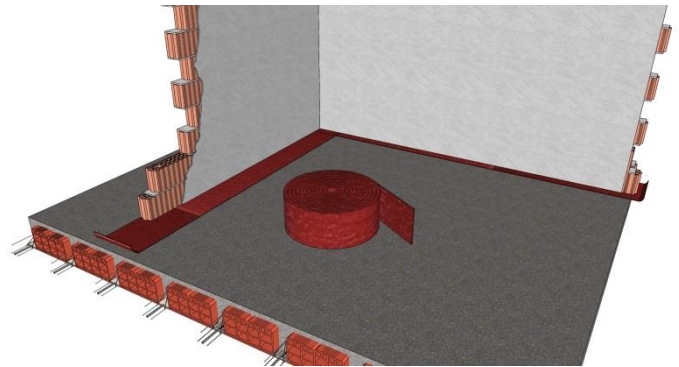
PROPERTY TECHNIQUES

REDUCTION IN THE THICKNESS UNDER LOAD IN TIME	≤ 5%
THERMAL CONDUCTIVITY	0.040 w/mk
THERMAL RESISTANCE	1.00 M ² k/w
COEFFICIENT OF RESISTANCE TO THE SPREAD OF STEAM - μ	> 2000
DENSITY +/- 2 KG	100 KG/MC

FORMAT AND PACKAGE



THICKNESS	3 MM
HEIGHT	FROM 400 TO 100 MM
THELENGTH	50 ML
DEVELOPE NT ROLL	50 ML
ROLLS FOR PACKAGE	5 N°
SURFACE DEVELOPE NT	250ML 50ML



FITTING ADVICE



For mounting is recommended the use of this equipment:

- ✓ CUTTER

FEATURES AND BENEFITS

- ✓ EASE OF LAYING LIGHTWEIGHT AND EASY TO HANDLE
- ✓ SELF-SUPPORTING PANEL
- ✓ ROT FROM WATER AND ORGANIC AGENTS
- ✓ DO NOT LOSE THE CHARACTERISTICS OVER TIME
- ✓ DOES NOT RELEASE dusts DURING MOVEMENT

SPECIFICATIONS FOR THE CONTRACT

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"De-solid Band underwall composed of polyethylene foam extruded with closed cells, High density (type PANISOL[®] T Series). Decoupling element Band to position under the masonry in the real estate units, between floor and wall. Thickness mm



PANISOL[®]

ACOUSTIC INSULATING

P70/80G

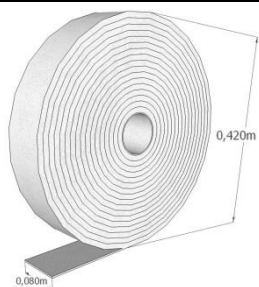
COUPLING BAND

- ✓ ADHESIVE BAND IN POLYETHYLENE made of closed cell foam material
- ✓ SPECIFIC FUNCTION limit the transmission of noise between the various juxtaposing of insulating material.
- ✓ BAND WITH COUPLED on top with no-tearing film
- ✓ APPLICABLE BOTH IN VERTICAL AND HORIZONTAL may be used independently in the application of acoustic insulation to treading and acoustic insulation in wall

TECHNICAL PROPERTIES

REDUCTION IN THE THICKNESS UNDER LOAD IN TIME	≤ 10%
THERMAL CONDUCTIVITY	0,040 w/mk
THERMAL RESISTANCE	1,00 m ² k/w
COEFFICIENT OF RESISTANCE TO THE SPREAD OF STEAM - μ	> 2000
DENSITY +/- 2 KG	23 KG/MC

FORMAT AND PACKAGE



THICKNESS	3 MM
HEIGHT	70/80 MM
LENGHT	50 ML
ROLL DEVELOPMET	100 ML
ROLLS FOR PACKAGE	5 N°
SURFACE DEVELOPMENT	500ML 100ML



FITTING ADVICE



For install the system is recommended the use of this equipment:

- ✓ CUTTER

FEATURES AND BENEFITS

- ✓ EASY INSTALL LIGHTWEIGHT AND EASY TO HANDLE
- ✓ ROT FROM WATER AND ORGANIC AGENTS
- ✓ DO NOT LOSE THE CHARACTERISTICS OVER TIME
- ✓ DOES NOT RELEASE DUSTS DURING MOVEMENT

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 DEALER AND PROPRIETOR LINE PANISOL
 Via Belfiore 2 - 40026 IMOLA (BO)
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Band insulating adhesive polyethylene extruded foam, closed cell. To use for attach in the approaches between two insulators to avoid noise of flanking both for applications to the floor and/or the wall.

Potere fonoisolante apparente secondo ISO140-4: 2000 Misurazione in opera dell'isolamento acustico per via aerea tra ambienti

Cliente: ANDROS di Tozzola Andrea

Data della prova: 25/07/2013

Descrizione e identificazione della struttura edilizia e delle condizioni di misurazione:

La misura di potere fonoisolante è stata eseguita sulla parete che divide

il soggiorno dell'unità B9 (emittente) al piano secondo e

il soggiorno dell'unità B8 (ricevente) al piano secondo

dell'edificio in esame "Corpo C Scala B" sito in Via Galvani a OZZANO EMILIA - BO.

La parete in esame risulta realizzata con la seguente stratigrafia:

- intonaco tradizionale a base di malta cementizia
- muratura in laterizio porizzato di spessore 12 cm
- rinzafo a base di malta cementizia
- pannelli PANISOL P40
- muratura in laterizio porizzato di spessore 12 cm
- intonaco tradizionale a base di malta cementizia

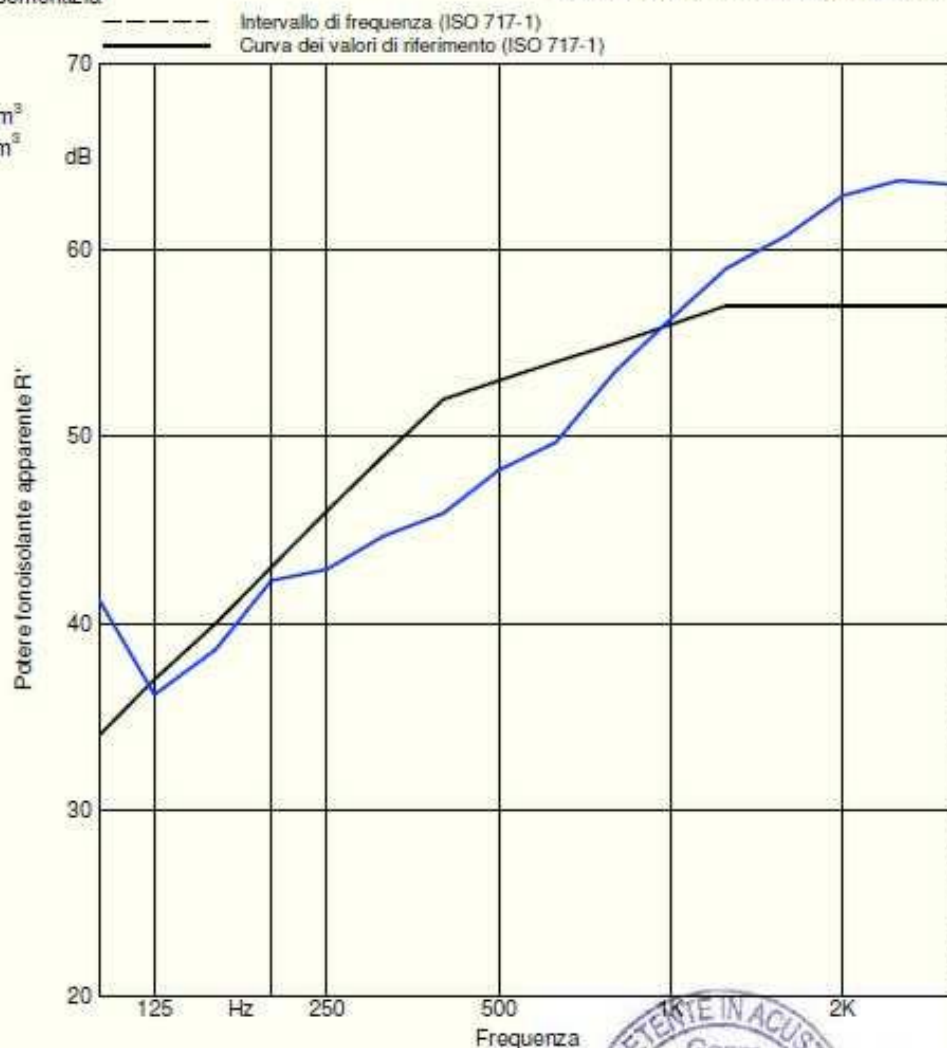
Somma degli scarti sfavorevoli: 27.0 dB

Area S del provino: 12.4m²

Volume dell'ambiente emittente: 52.5m³

Volume dell'ambiente ricevente: 50.0m³

Frequenza Hz	R' dB
100	41.3
125	36.2
160	38.6
200	42.3
250	42.9
315	44.7
400	45.9
500	48.2
630	49.7
800	53.5
1000	56.3
1250	59.0
1600	60.8
2000	62.9
2500	63.7
3150	63.5



Valutazione secondo la ISO 717-1

$R'_w (C; C_p) = 53 \quad (-1; -4) \text{ dB}$

Valutazione basata su risultati di misurazioni in opera ottenuti mediante un metodo tecnico progettuale



N° del resoconto di prova: 1982

Nome dell'istituto di prova: ACUSTUDIO tel. 045 6100806

Data: 01/08/2013

Tecnici in acustica ambientale: Geom. BALTIERI ROBERTO

Potere fonoisolante apparente secondo ISO140-4: 2000 Misurazione in opera dell'isolamento acustico per via aerea tra ambienti

Cliente: ANDROS di Tozzola Andrea

Data della prova: 25/07/2013

Descrizione e identificazione della struttura edilizia e delle condizioni di misurazione:
La misura di potere fonoisolante è stata eseguita sulla parete che divide
il soggiorno dell'unità B7 (emittente) al piano secondo e
il soggiorno dell'unità B8 (ricevente) al piano secondo
dell'edificio in esame "Corpo C Scala B" sito in Via Galvani a OZZANO EMILIA - BO.

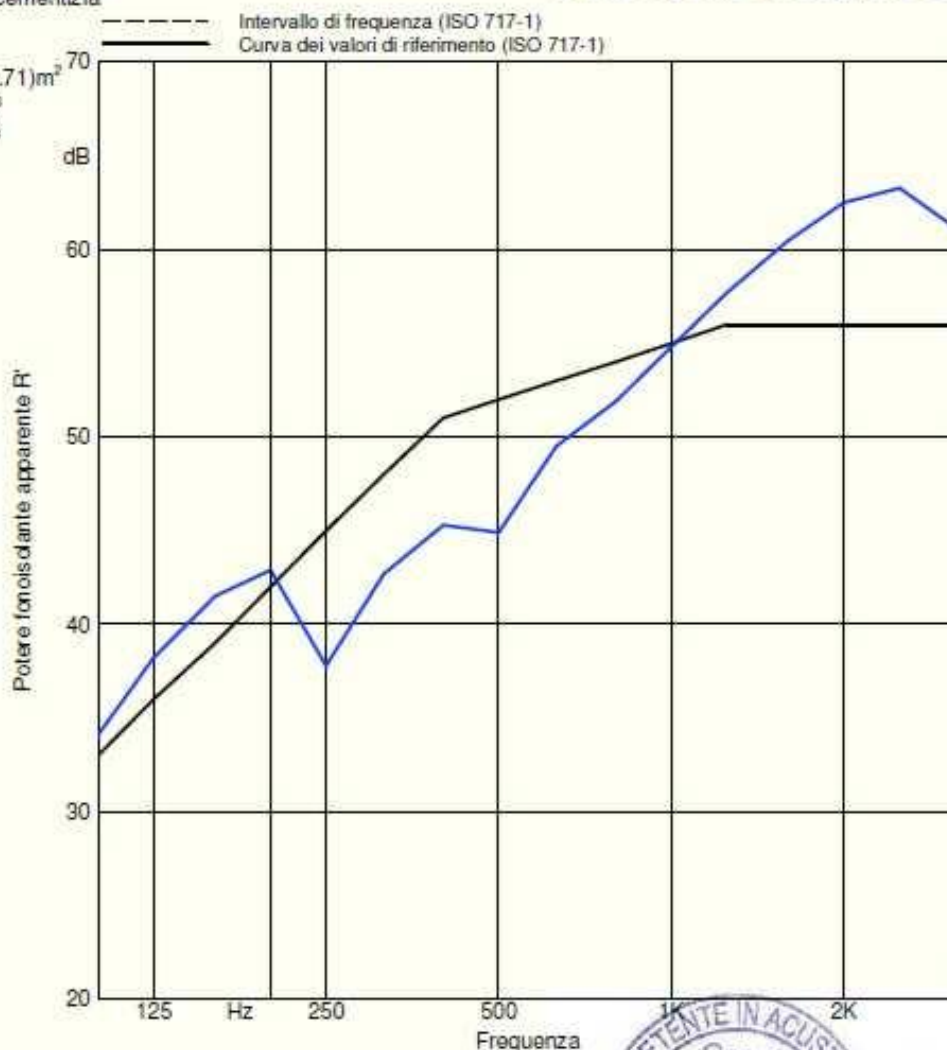
La parete in esame risulta realizzata con la seguente stratigrafia:

- intonaco tradizionale a base di malta cementizia
- muratura in laterizio porizzato di spessore 12 cm
- rinzafo a base di malta cementizia
- pannelli PANISOL P40
- muratura in laterizio porizzato di spessore 12 cm
- intonaco tradizionale a base di malta cementizia

Somma degli scarti sfavorevoli: 31.1 dB

Area S del provino: 5.4 (sostituita con 6.71) m²
Volume dell'ambiente emittente: 79.0 m³
Volume dell'ambiente ricevente: 50.3 m³

Frequenza Hz	R' dB
100	34.1
125	38.2
160	41.5
200	42.9
250	37.8
315	42.7
400	45.3
500	44.9
630	49.5
800	51.9
1000	54.8
1250	57.7
1600	60.5
2000	62.5
2500	63.3
3150	61.1



Valutazione secondo la ISO 717-1

$R'_w (C; C_p) = 52 \quad (-2; -5) \text{ dB}$

Valutazione basata su risultati di misurazioni in opera ottenuti mediante un metodo tecnico progettuale



N° del resoconto di prova: 1981

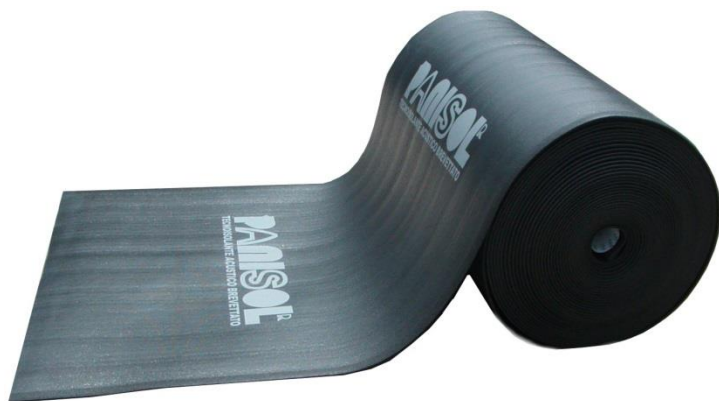
Nome dell'istituto di prova: ACUSTUDIO tel. 045 6100806

Data: 01/08/2013

Tecnici in acustica ambientale: Geom. BALTIERI ROBERTO

FLOOR INSULATION-THE RANGE PANISOL

INSULATING



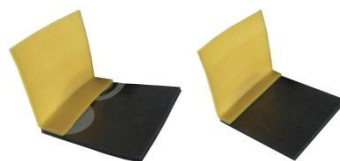
CARPET

PANISOL® P3
PANISOL® P5

PANISOL® P8L
PANISOL® P10

ADDITIONS

PERIMETER BAND PANISOL® P200F

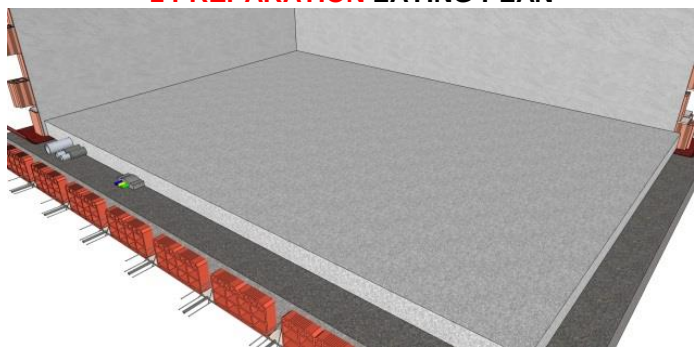


COUPLING BAND PANISOL® P 70/80G



ACOUSTIC IMPACTIVE INSULATION CONSTRUCTION SYSTEM

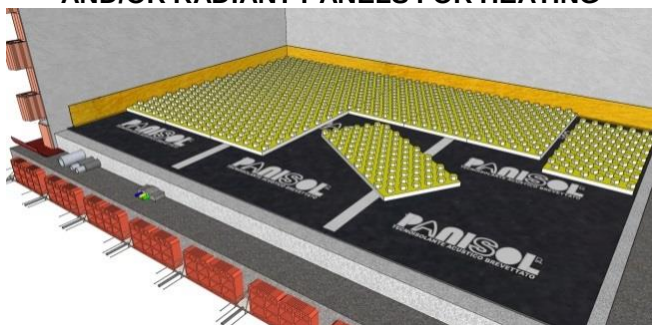
1 PREPARATION LAYING PLAN



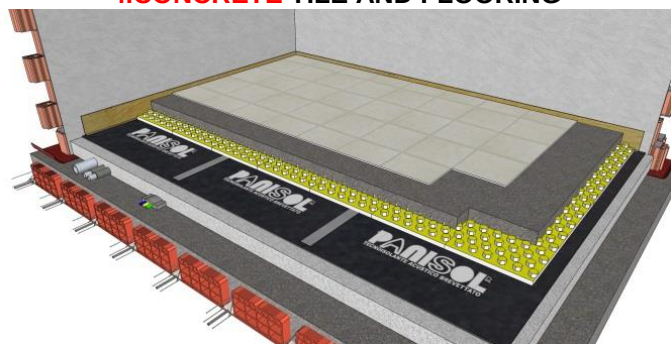
2 MOUNTING INSULATING AND BANDS



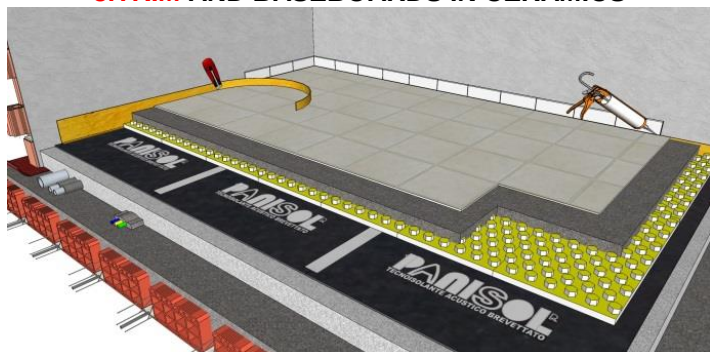
3 FOR EVENTUAL THERMAL APPLICATION/INSULATION AND/OR RADIANT PANELS FOR HEATING



4. CONCRETE TILE AND FLOORING



5. TRIM AND BASEBOARDS IN CERAMICS



All the solutions have been tested on site of construction and gave values conform to forecast calculation on the various stratigrafies floor, refer to the section site:

ONLINE CALCULATOR
FORECAST ACOUSTIC
INSULATION TO
TREADING



17. IMPACTIVE INSULATION

INSULATION BY TREADING SEQUENCE OF CORRECT LAYING

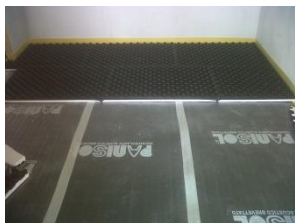
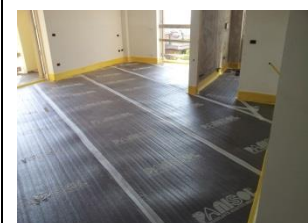
The inclusion of impactive insulation on the floor is placed in the majority of the case above the cast filling/allurement/compensation. The drafting of the insulating mantle PANISOL must be made with accurate for perfectly cover background and the angles.



After the positioning of the insulation on the floor will be joining the juxtapositions with adhesive band PANISOL P70/80G, and then apply the perimeter band carved yellow PANISOL P200F by creating a "L", and recommended the use of staples



The application of thermal insulation and/or support panels for the under-floor heating systems must be positioned above the acoustic insulating. In these cases, the perimeter band PANISOL P200F can be installed with the pre-incision closer (3cm) at the bottom while ensuring a greater thickness available for insulating package-screed-finishing

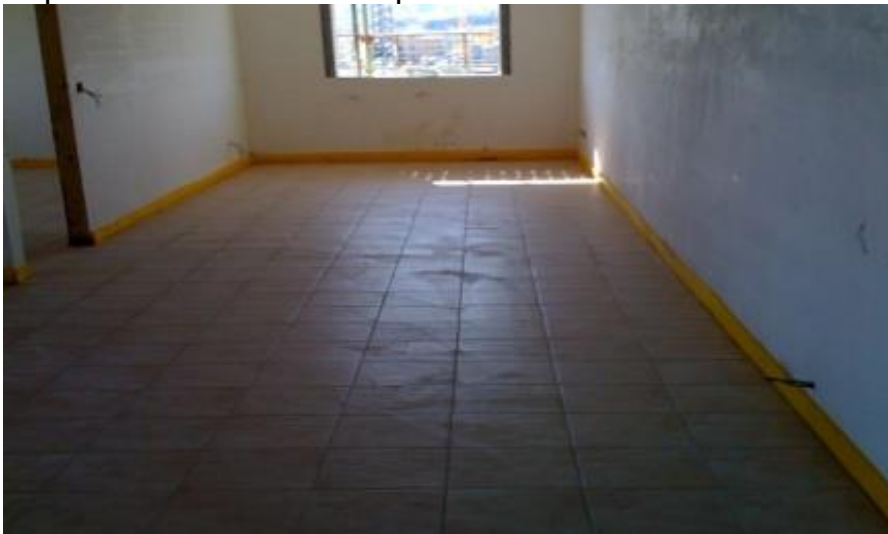


SOUND INSULATION BY TREADING SUBSEQUENT PROCESSING

Provide a sand cement or self-leveling of the minimum thickness of 4/5 cm, for lower shims will be required to reinforce with special welded mesh or synthetic fibers. In the presence of thermal insulating and/or panels for floor heating, it is recommended to increase the thickness of 1-2 cm. **IMPORTANT: THE BAND OF THE PERIMETER MUST BE TRIMMED ONLY AFTER THE FITTING, AND THE PLUGGING OF THE FLOORING CERAMIC SEE PHOTO BELOW**



The laying of the skirting ceramic and ceramic coatings with low band, MUST BE ACHIEVED WITHOUT THE HARD CONTACT WITH THE FLOOR IT IS THEREFORE RECOMMENDED THAT THE PLASTERING WITH ELASTIC MATERIAL SUCH AS SILICONE/ACRYLIC. This machining will prevent to connect the horizontal plane to the vertical structures to allow the insulation to perform its dampening function.



**SKIRTING BOARDS IN CERAMIC FILLING SILICONIZED
HORIZONTAL CORRECT PROCESSING**



CONCLUSIONS

THE SOUNDPROOFING IS A METHOD OF WORKING. THE INSULATING CORRECTLY MOUNTED IN THE CORRECT WAY, AND THE SUBSEQUENT WORKING CORRECT LEAD TO CORRECT RESULTS.

19.IMPACTIVE INSULATION



PANISOL[®]
ACOUSTIC INSULATING

P8L



RESILIENT FLOORING SPECIFICALLY FOR THE ACOUSTIC INSULATION TO TRAMPLING

- ✓ CARPET IN POLYETHYLENE made in a closed cell foam material
- ✓ PRODUCT OF HIGH DENSITY 40 KG/MC + /- 2 KG/MC which makes it extremely resistant to compression and tensile mechanical.
- ✓ COUPLED PRODUCT on top with special NO-TEARING film
- ✓ PANISOL P8L is a product, easy to handle, lightweight with a good degree of elasticity
- ✓ THE HIGH DENSITY AND THE CELL-STRUCTURE VERY FINE allows to preserve the features in the time
- ✓ * IN MATERIALS IN CLOSED CELLS the dynamic stiffness apparent $S't$ coincides with the dynamic stiffness effective S'
- ✓ ** CALCULATIONS AND TESTING WORK related to floor brick 20+4 290kg/sqm, lightened 10cm 300 kg/mc, screed 5 cm 1800 Kg/mc

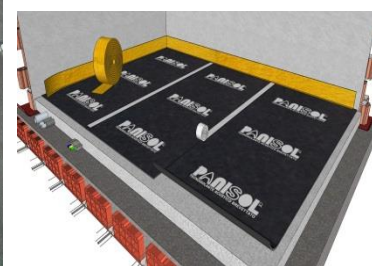
PROPERTY TECHNIQUES

* REAL DYNAMICS STIFFNESS S'	49 MN/mc
DENSITY' + /- 2 Kg/mc	40 KG/mc
REDUCTION IN THE THICKNESS UNDER LOAD IN TIME	≤ 5%
THERMAL CONDUCTIVITY	0.040 w/mk
THERMAL RESISTANCE	0.2 M ² k/w
COEFFICIENT OF RESISTANCE TO THE SPREAD OF STEAM - μ	> 2000
** SOUND INSULATION INDEX TO treading - l'_{nw}	55 Db

FORMAT AND PACKAGE



THICKNESS	8 MM
HEIGHT	1250 MM
LENGTH	40.00 ML
WIDTH	1200 MM
DEVELOPMENT ROLL	50 SQMT
TYPE OF PACKAGE	PE BAG WHITE



FITTING ADVICE



For mounting and recommended the use of this equipment:

- ✓ CUTTER

FEATURES AND BENEFITS

- ✓ EASE OF LAYING LIGHTWEIGHT AND EASY TO HANDLE
- ✓ ROT FROM WATER AND ORGANIC AGENTS
- ✓ DO NOT LOSE THE CHARACTERISTICS OVER TIME
- ✓ DOES NOT RELEASE DUSTS DURING MOVEMENT

SPECIFICATIONS FOR THE CONTRACT

Resilient Layer polyethylene extruded foam, closed cell high density (40 kg/mc + /- 3 kg/mc) coupled or not with special film with no-tearing function (type PANISOL[®]). To place with the film facing upwards. Thickness mm. Dynamic Stiffness ≥ MN/mc

TECHNICAL DOCUMENTATION IMAGES MOVIES
ANDROS of TOZZOLA ANDREA
DEALER AND PROPRIETOR LINE PANISOL
Via Belfiore 2 - 40026 IMOLA (BO)
www.androsat.it info@androsat.it

IMPACTIVE INSULATION.20



PANISOL[®]
ACOUSTIC INSULATING

P200F



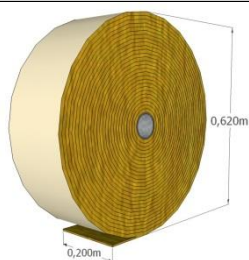
DE-SOLID BAND PERIPHERAL "L"

- ✓ PERIMETER BAND IN POLYETHYLENE made from closed cell foam material
- ✓ ACOUSTIC BARRIER to prevent the passage of the flanking noises, apply between the insulating layer and the masonry.
- ✓ DOUBLE PRECUT 5CM AND 3 CM the function of the double precut and to be able to apply the band in the presence of a package more high and possibly leave the part in a vertical position with the adhesive film that allows the dissection facilitated at the moment of the scrap to paving has been completed.

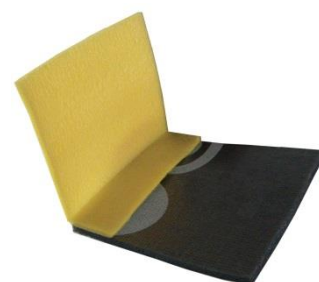
PROPERTY TECHNIQUES

REDUCTION IN THE THICKNESS UNDER LOAD IN TIME	≤ 5%
THERMAL CONDUCTIVITY	0.040 w/mk
THERMAL RESISTANCE	1.00 M ² k/w
COEFFICIENT OF RESISTANCE TO THE SPREAD OF STEAM - μ	> 2000
DENSITY IT is + /- 2 KG	30 KG/MC

FORMAT AND PACKAGE



THICKNESS	5 MM
HEIGHT	200 MM
THELENGTH	50 ML
DEVELOPMENT ROLL	50 ML
ROLLS PER BOX	5 NO.
SURFACE DEVELOPMENT	250ML



FITTING ADVICE



For mounting and recommended the use of this equipment:

- ✓ CUTTER
- ✓ CLINCHER MANUAL (OPTIONAL) and recommended the use of clips of reinforcement in the assembly because they can meet the delays for subsequent processing to the insertion of the insulation

FEATURES AND BENEFITS

- ✓ EASE OF LAYING LIGHTWEIGHT AND EASY TO HANDLE
- ✓ SELF-SUPPORTING PANEL
- ✓ ROT FROM WATER AND ORGANIC AGENTS
- ✓ DO NOT LOSE THE CHARACTERISTICS OVER TIME
- ✓ DOES NOT RELEASE dusts DURING MOVEMENT

SPECIFICATIONS FOR THE CONTRACT

TECHNICAL DOCUMENTATION IMAGES MOVIES
ANDROS of TOZZOLA ANDREA
DEALER AND PROPRIETOR LINE PANISOL
Via Belfiore 2 - 40026 IMOLA (BO)
www.androsat.it info@androsat.it

Band insulating adhesive polyethylene extruded foam, closed cell. To use as perimeter joint to avoid noises flanking apply between the insulating layer and the masonry.



PANISOL[®]
ACOUSTIC INSULATING

P70/80G



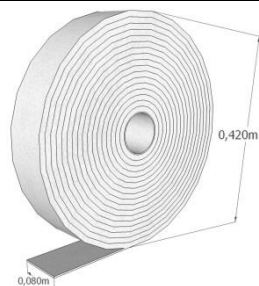
COUPLING BAND

- ✓ ADHESIVE BAND IN POLYETHYLENE made of closed cell foam material
- ✓ SPECIFIC FUNCTION limit the transmission of noise between the various juxtaposing of insulating material.
- ✓ BAND WITH COUPLED on top with no-tearing film
- ✓ APPLICABLE BOTH IN VERTICAL AND HORIZONTAL may be used independently in the application of acoustic insulation to treading and acoustic insulation in wall

TECHNICAL PROPERTIES

REDUCTION IN THE THICKNESS UNDER LOAD IN TIME	≤ 10%
THERMAL CONDUCTIVITY	0,040 w/mk
THERMAL RESISTANCE	1,00 m ² k/w
COEFFICIENT OF RESISTANCE TO THE SPREAD OF STEAM - μ	> 2000
DENSITY +/- 2 KG	23 KG/MC

FORMAT AND PACKAGE



THICKNESS	3 MM
HEIGHT	70/80 MM
LENGHT	50 ML
ROLL DEVELOPMET	100 ML
ROLLS FOR PACKAGE	5 N°
SURFACE DEVELOPMENT	500ML 100ML



FITTING ADVICE



For install the system is recommended the use of this equipment:

- ✓ CUTTER

FEATURES AND BENEFITS

- ✓ EASY INSTALL LIGHTWEIGHT AND EASY TO HANDLE
- ✓ ROT FROM WATER AND ORGANIC AGENTS
- ✓ DO NOT LOSE THE CHARACTERISTICS OVER TIME
- ✓ DOES NOT RELEASE DUSTS DURING MOVEMENT

SPECIFICATIONS FOR THE CONTRACT

TECHNICAL DOCUMENTATION IMAGES MOVIES
ANDROS of TOZZOLA ANDREA
DEALER AND PROPRIETOR LINE PANISOL
Via Belfiore 2 - 40026 IMOLA (BO)
www.androsat.it info@androsat.it

Band insulating adhesive polyethylene extruded foam, closed cell. To use for attach in the approaches between two insulators to avoid noise of flanking both for applications to the floor and/or the wall.

PROBLEMATIC SITUATION

FILL LAYER WITH HIGH PLANTS OR JET OUT WHAT TO DO?

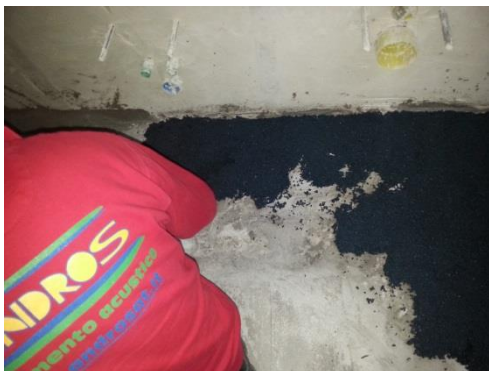


The application of the insulation to treading in rolls like the photo above may be inappropriate, in that even though we are able to create the conditions for obtaining the requirement of soundproofing, but these can create static problem on the screed and the subsequent flooring ceramics. The cause are the air pockets that form between the ridge of the pipes and the filler layer

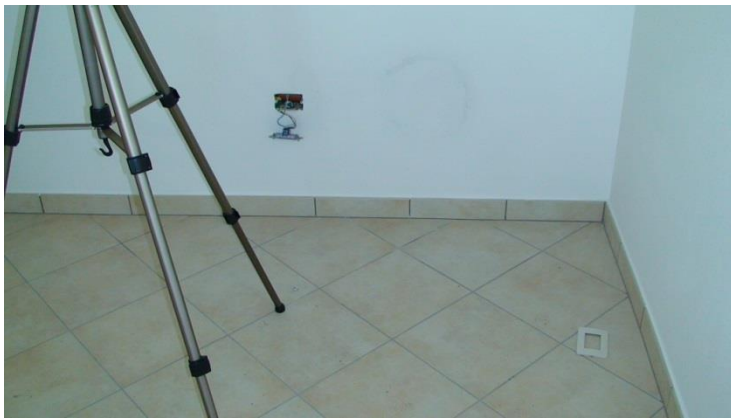
POSSIBLE SOLUTIONS

ARMED THE SCREED WITH WELDED MESH

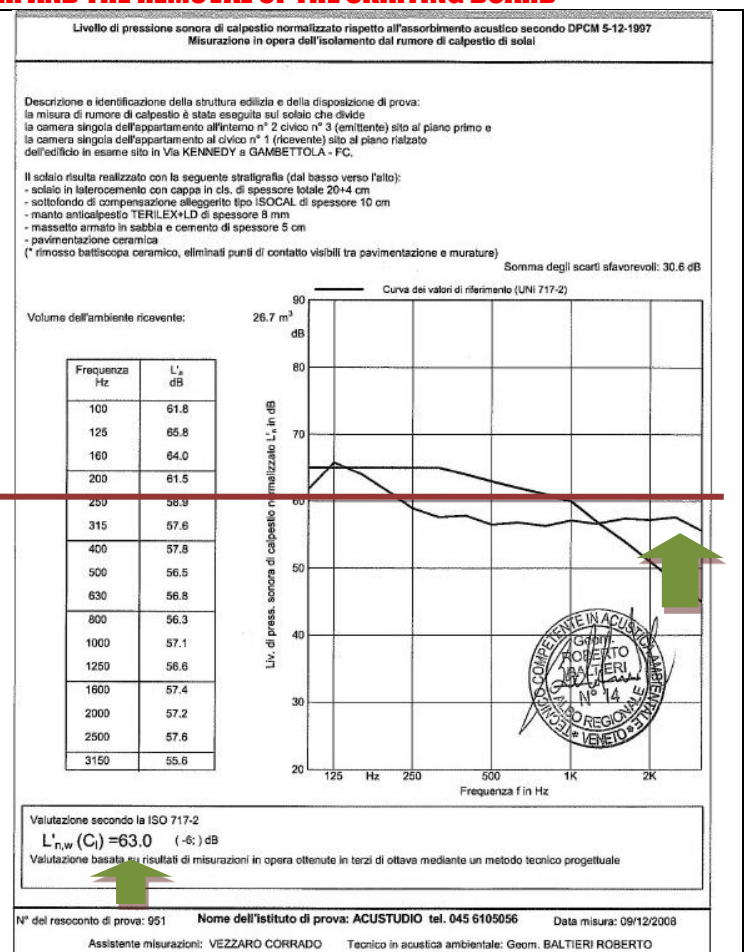
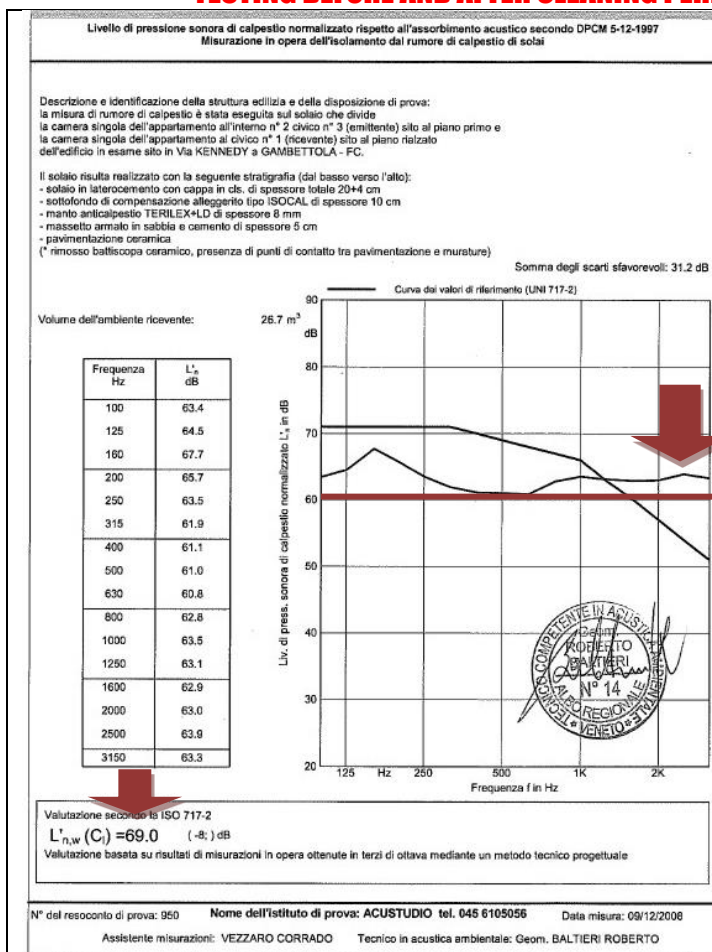
In more complicated cases, ANDROS adopts as a solution for the creation of a resilient rubber provided in buckets and trowel of we can show from photo above. Of course, these type of insulation is more expensive and need to 24 hours to obtain walkability



23.IMPACTIVE INSULATION



TESTING BEFORE AND AFTER CLEANING PERIMETER AND THE REMOVAL OF THE SKIRTING BOARD



TESTING

As you can see from the pictures on the previous page the most common errors and the major cause of non-conformity in acoustic testing in isolation to treading are:

- 1- The incorrect mounting of the insulation
- 2- The surfacings perimeter and/or horizontal in ceramic coatings

If we analyze the testing done **before** in the state of rigidity of the flooring and **AFTER** disassembly of perimeter skirting and the cleaning with the separation of the flooring from the structure of the manufactured masonry or partitioning we can notice a significant improvement, in the case illustrated has allowed us to move from a non-conformity to a correct result. Then we are able to understand by analysing the spectrum of the results if the non-conformity is caused by defects in the setting of the insulation or working wrong subsequently by craftsmen who work.

8. RISULTATI

L'indice di valutazione del rumore di calpestio misurato secondo la norma UNI EN ISO 140-7 relativo al solaio che divide la camera singola dell'appartamento all'interno n° 2 civico n° 3 (emittente) sito al piano primo e la camera singola dell'appartamento al civico n° 1 (ricevente) sito al piano rialzato ha dato il seguente risultato:

Prova n° 950

$$L'_{n,w} = 69 \text{ dB} *$$



(* rimosso battiscopa ceramico, presenza di punti di contatto tra pavimentazione e murature)

L'indice di valutazione del rumore di calpestio misurato secondo la norma UNI EN ISO 140-7 relativo al solaio che divide la camera singola dell'appartamento all'interno n° 2 civico n° 3 (emittente) sito al piano primo e la camera singola dell'appartamento al civico n° 1 (ricevente) sito al piano rialzato ha dato il seguente risultato:

Prova n° 951

$$L'_{n,w} = 63 \text{ dB} *$$



(* rimosso battiscopa ceramico, eliminati punti di contatto visibili tra pavimentazione e murature)

9. CONSIDERAZIONI

I valori limite inseriti nella presente relazione sono stati ricavati dal DPCM 5 dicembre 1997, più precisamente nella tabella "B" allegata allo stesso Decreto.

L'indice di valutazione relativo al rumore di calpestio normalizzato misurato in opera e relativo alla struttura esaminata in presenza di punti di contatto tra pavimentazione e murature risulta non conforme ai limiti imposti dal Decreto:

$$69 \text{ dB (valore misurato)} > 63 \text{ dB (valore limite)}$$

L'indice di valutazione relativo al rumore di calpestio normalizzato misurato in opera e relativo alla struttura esaminata in assenza di punti di contatto (visibili) tra pavimentazione e murature risulta conforme ai limiti imposti dal Decreto:

$$63 \text{ dB (valore misurato)} = 63 \text{ dB (valore limite)}$$

CONCLUSIONS

ANDROS HAS PERFORMED OVER THE COURSE OF 10 YEARS OF ACTIVITIES OVER 1,000 TESTS ON SITE OF CONSTRUCTION

The amount of testing performed are index of a professionalism difficult to find in other companies that operate in the field. Over the years we have had the opportunity to analyze a number of structures is very important to understand exactly the main causes of non-conformity detected even on our insulating. We had the opportunity to test the majority of acoustic insulation currently on the market and always looking for the best conditions for feedback precise technical on the performance of various materials used.

Livello di pressione sonora di calpestio normalizzato rispetto all'assorbimento acustico secondo la ISO 140-7 Misurazione in opera dell'isolamento dal rumore di calpestio dei solai

Cliente: **ANDROS**

Data della prova: 05/11/2013

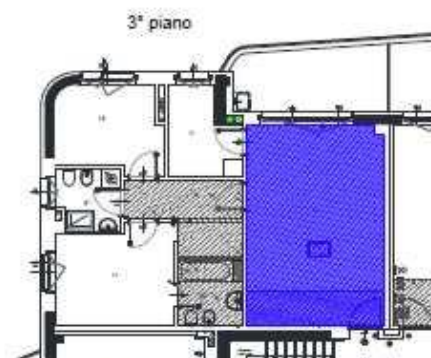
Descrizione e identificazione della struttura edilizia e delle condizioni di misurazione:

EDIFICIO RESIDENZIALE - via Zuretti, 55 - Milano - IMPRESA COSTRUTTRICE BORIO MANGIAROTTI

Divisione orizzontale tra appartamenti: soggiorno piano 3 - soggiorno piano 2

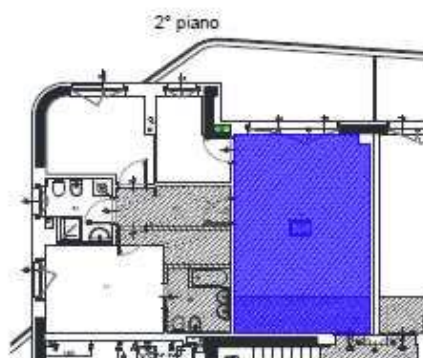
Stratigrafia di solaio: 1) intonaco a vista; 2) solaio strutturale in c.a. 26 cm; 3) massetto alleggerito impianti 12 cm; 4) Panisol

P8L s' 49 MN/mc; 5) pavimento radiante; 6) sottofondo pavimento 5 cm; 7) pavimento in gres

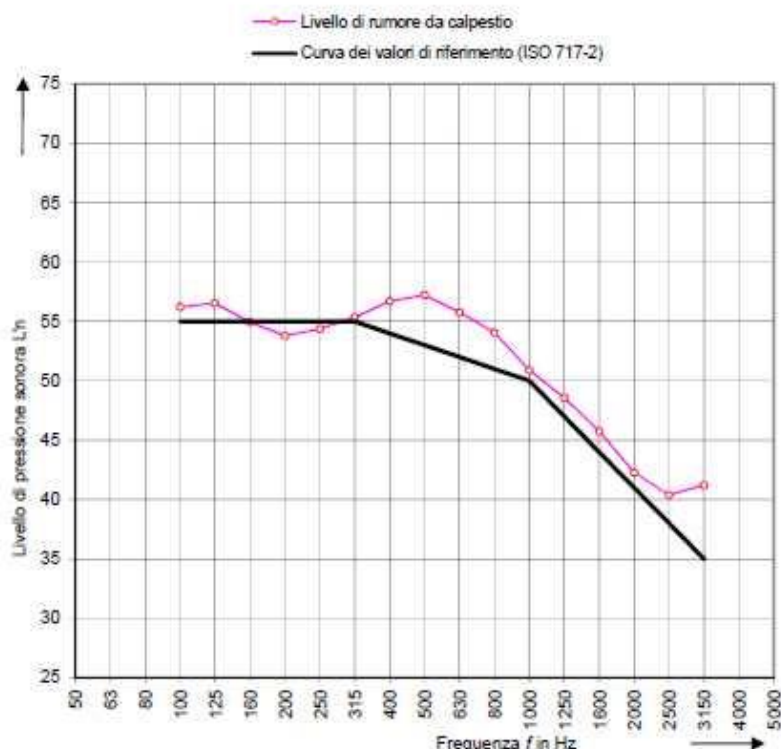


Volume dell'ambiente ricevente:

79 mc



Frequenza (Hz)	L'n (1/3 ott) (dB)
50	
63	
80	
100	56,2
125	56,5
160	54,9
200	53,8
250	54,4
315	55,3
400	56,7
500	57,2
630	55,8
800	54,1
1000	50,9
1250	48,6
1600	45,8
2000	42,3
2500	40,4
3150	41,2
4000	
5000	



Valutazione secondo la ISO 717-2:

L'n,w (Ci) = 53 (-2) dB;

Valutazione basata su risultati di misurazioni in opera ottenuti mediante un metodo tecnico progettuale.

N° del resoconto di prova: RC0059U

Data: 05/11/2013

Nome dell'organismo di prova:

Firma:

Rohde & Schwarz
Safety Italia S.r.l.

Structural Floor in CLS

Livello di pressione sonora di calpestio normalizzato rispetto all'assorbimento acustico secondo la ISO 140-7 Misurazione in opera dell'isolamento dal rumore di calpestio dei solai

Cliente: **ANDROS**

Data della prova: 05/11/2013

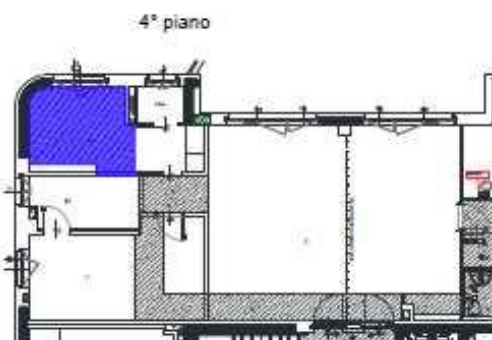
Descrizione e identificazione della struttura edilizia e delle condizioni di misurazione:

EDIFICIO RESIDENZIALE - via Zuretti, 55 - Milano - IMPRESA COSTRUTTRICE BORIO MANGIAROTTI

Divisione orizzontale tra appartamenti: cucina piano 4 - camera da letto piano 3

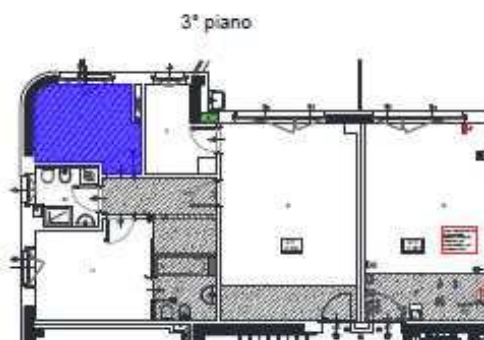
Stratigrafia di solaio: 1) intonaco a vista; 2) solaio strutturale in c.a. 26 cm; 3) massetto alleggerito impianti 12 cm; 4) Panisol

P8L s' 49 MN/mc; 5) pavimento radiante; 6) sottofondo pavimento 5 cm; 7) pavimento in gres

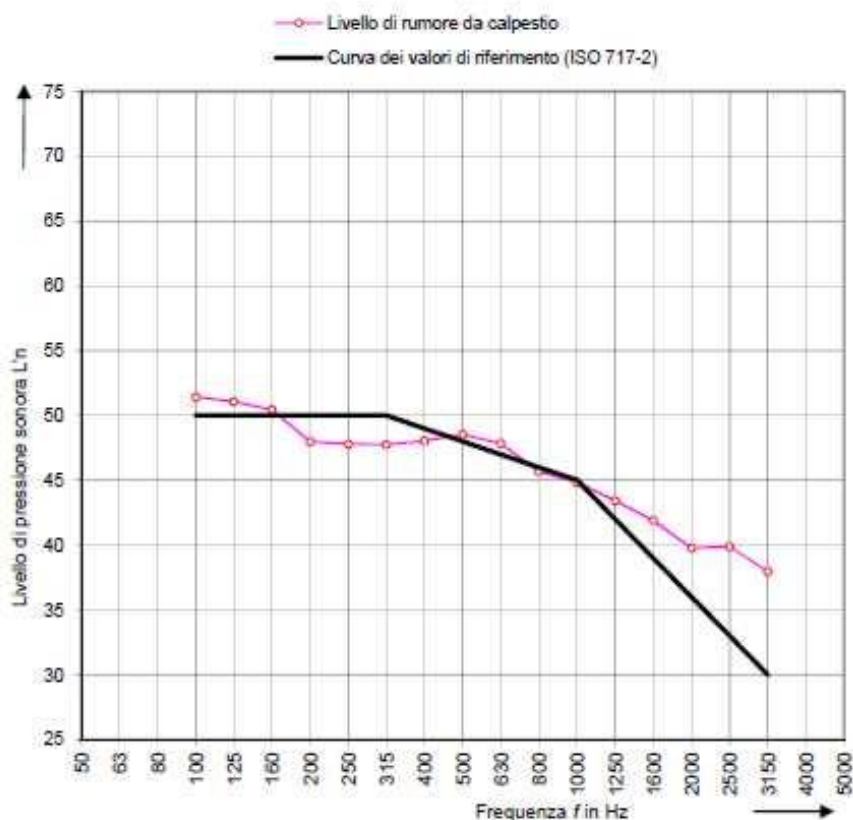


Volume dell'ambiente ricevente:

25 mc



Frequenza (Hz)	L'n (1/3 ott) (dB)
50	
63	
80	
100	51,4
125	51,1
160	50,4
200	48,0
250	47,8
315	47,7
400	48,1
500	48,5
630	47,8
800	45,7
1000	44,8
1250	43,4
1600	41,9
2000	39,8
2500	39,9
3150	38,0
4000	
5000	



Valutazione secondo la ISO 717-2:

$L'_{n,w} (C_i) = 48 (-4) \text{ dB}$

Valutazione basata su risultati di misurazioni in opera ottenuti mediante un metodo tecnico progettuale

N° del resoconto di prova: RC0058U

Data: 05/11/2013

Nome dell'organismo di prova:

Firma:

Roméo
Safety Italia S.r.l.

FLOOR CLAY-CEMENT 20+4

Livello di pressione sonora di calpestio normalizzato rispetto all'assorbimento acustico secondo ISO140-7: 2000
Misurazione in opera dell'isolamento dal rumore di calpestio di solai

Cliente: ANDROS di Tozzola Andrea

Data della prova: 25/07/2013

Descrizione e identificazione della struttura edilizia e delle condizioni di misurazione:

La misura di rumore di calpestio è stata eseguita sul solaio che divide il soggiorno dell'unità B11 (emittente) al piano terzo e il soggiorno dell'unità B8 (ricevente) al piano secondo dell'edificio in esame "Corpo C Scala B" sito in Via Galvani a OZZANO EMILIA - BO.

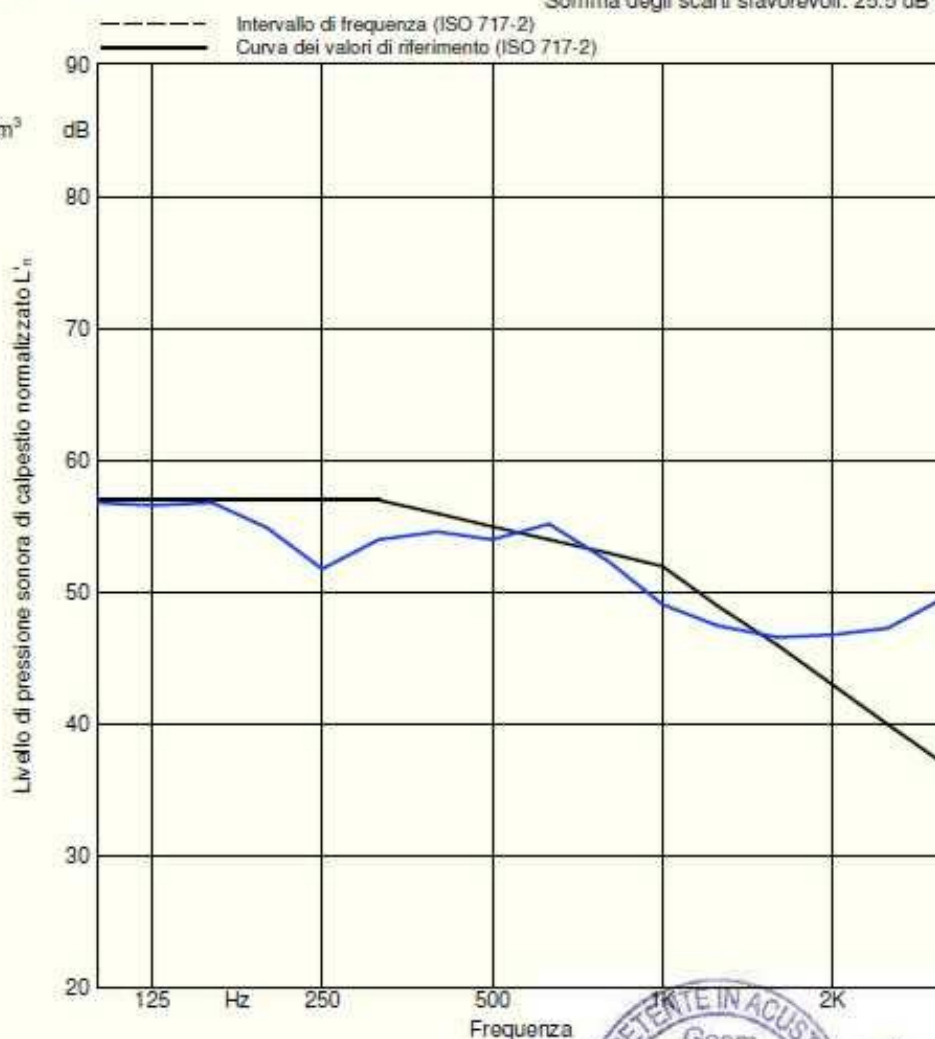
Il solaio in esame risulta realizzato con la seguente stratigrafia (dal basso verso l'alto):

- intonaco tradizionale a base di malta cementizia
- solaio in laterocemento con cappa in cls. di spessore totale 20+4 cm
- sottofondo di compensazione alleggerito di spessore 10 cm
- manto anticalepestio PANISOL P8L
- pannelli in polistirene per impianto di riscaldamento a pavimento
- massetto armato in sabbia e cemento di spessore 5 cm
- pavimentazione ceramica
- assenza di battiscopa

Somma degli scarti sfavorevoli: 25.5 dB

Volume dell'ambiente ricevente: 50.0m³

Frequenza Hz	L _n dB
100	56.8
125	56.6
160	56.8
200	54.9
250	51.8
315	54.0
400	54.6
500	54.0
630	55.2
800	52.4
1000	49.1
1250	47.5
1600	46.6
2000	46.8
2500	47.3
3150	49.6



Valutazione secondo la ISO 717-2

$L'_{n,w} (C_1) = 55 \quad (-5;) \text{ dB}$

Valutazione basata su risultati di misurazioni in opera ottenuti mediante un metodo tecnico progettato



N° del resoconto di prova: 1984

Nome dell'istituto di prova: ACUSTUDIO tel. 045 6100806

Data: 01/08/2013

Tecnici in acustica ambientale: Geom. BALTIERI ROBERTO

FLOOR CLAY CEMENT 20+4

Livello di pressione sonora di calpestio normalizzato rispetto all'assorbimento acustico secondo ISO140-7: 2000
Misurazione in opera dell'isolamento dal rumore di calpestio di solai

Cliente: ANDROS di Tozzola Andrea

Data della prova: 22/06/2012

Descrizione e identificazione della struttura edilizia e delle condizioni di misurazione:

La misura di rumore di calpestio è stata eseguita sul solaio che divide
la camera singola dell'unità 7 (emittente) al piano primo e
la camera singola dell'unità 3 (ricevente) al piano rialzato
dell'edificio in esame sito in Via Degli Orti a IMOLA - BO.

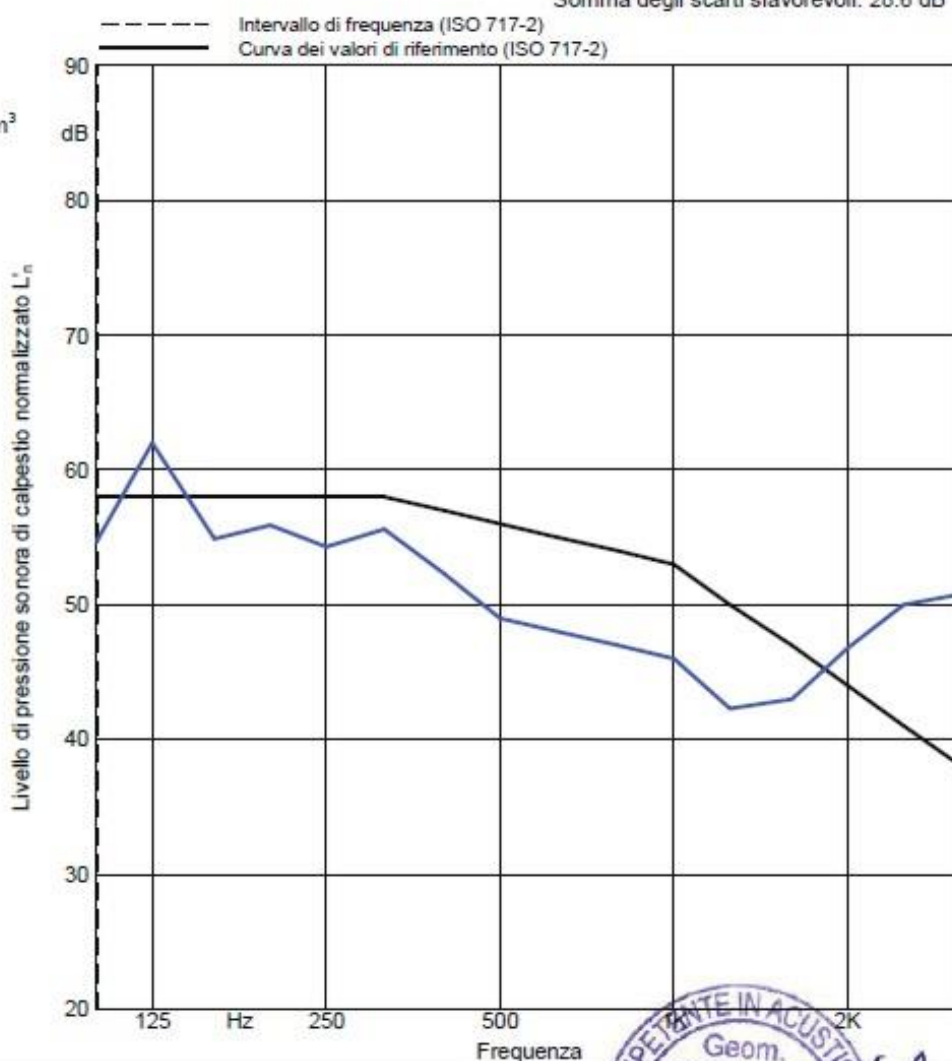
Il solaio in esame risulta realizzato con la seguente stratigrafia (dal basso verso l'alto):

- intonaco tradizionale a base di malta cementizia
- solaio in laterocemento con cappa in cls. di spessore totale 20+4 cm
- sottofondo di compensazione alleggerito di spessore 10 cm
- manto anticalpestio PANISOL P8L
- massetto armato in sabbia e cemento di spessore 5 cm
- pavimentazione ceramica
- assenza di battiscopa

Somma degli scarti sfavorevoli: 28.6 dB

Volume dell'ambiente ricevente: 33.2m³

Frequenza Hz	L' _n dB
100	54.7
125	62.0
160	54.9
200	55.9
250	54.3
315	55.6
400	52.3
500	49.0
630	48.0
800	47.0
1000	46.0
1250	42.3
1600	43.0
2000	46.8
2500	50.0
3150	50.8



Valutazione secondo la ISO 717-2

L'_{n,w} (C_i) = 56 (-5;) dB

Valutazione basata su risultati di misurazioni in opera ottenuti mediante un metodo tecnico progettato



N° del resoconto di prova: 1865

Nome dell'istituto di prova: ACUSTUDIO tel. 045 6100806

Data: 28/06/2012

Tecnici in acustica ambientale: Geom. BALTIERI ROBERTO

CLAY-CEMENT FOOR 20+4 SKIRTING CERAMIC PUTTY

Livello di pressione sonora di calpestio normalizzato rispetto all'assorbimento acustico secondo EN ISO140-7: 2000
Misurazione in opera dell'isolamento dal rumore di calpestio di solai

Cliente: ANDROS di Tozzola Andrea

Data della prova: 22/06/2012

Descrizione e identificazione della struttura edilizia e delle condizioni di misurazione:

La misura di rumore di calpestio è stata eseguita sul solaio che divide

il soggiorno dell'unità 9 (emittente) al piano secondo e

il soggiorno dell'unità 7 (ricevente) al piano primo

dell'edificio in esame sito in Via Degli Orti a IMOLA - BO.

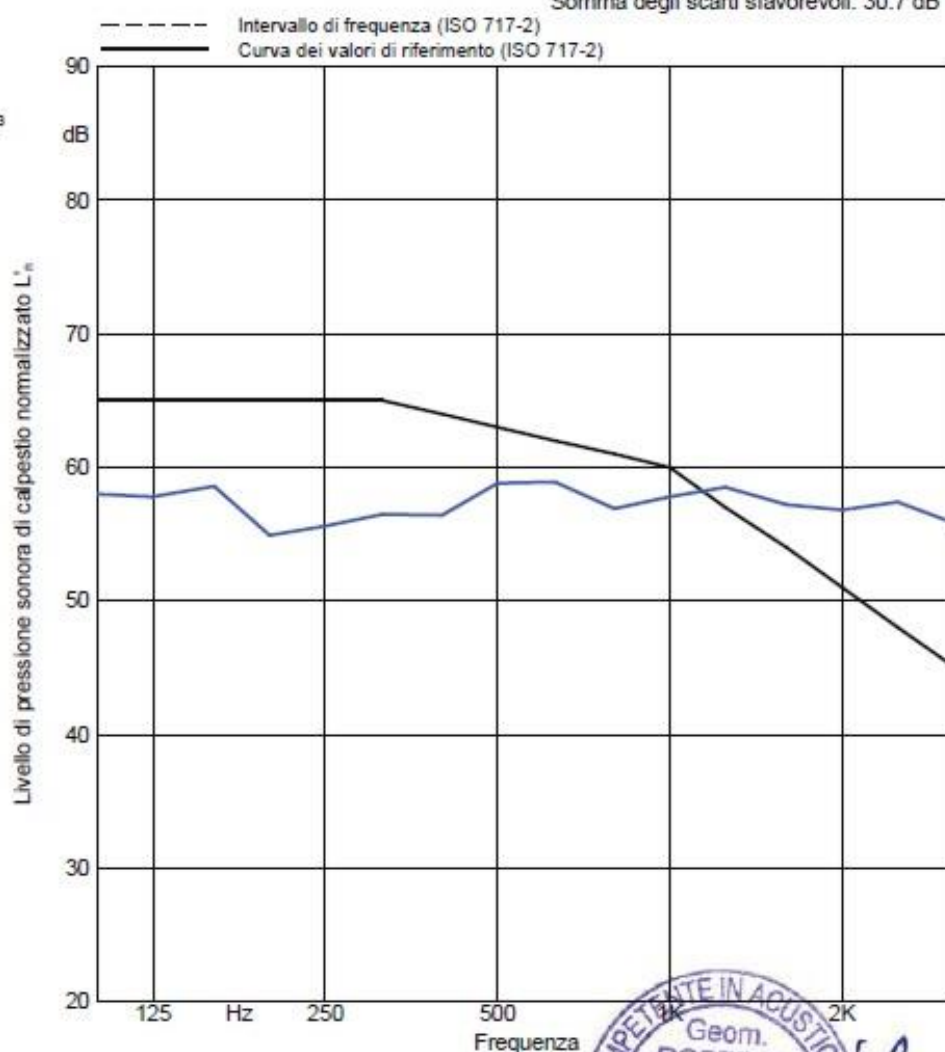
Il solaio in esame risulta realizzato con la seguente stratigrafia (dal basso verso l'alto):

- intonaco tradizionale a base di malta cementizia
- solaio in laterocemento con cappa in cls. di spessore totale 20+4 cm
- sottofondo di compensazione alleggerito di spessore 10 cm
- manto anticalpestio PANISOL P8L
- massetto armato in sabbia e cemento di spessore 5 cm
- pavimentazione ceramica
- battiscopa ceramico

Somma degli scarti sfavorevoli: 30.7 dB

Volume dell'ambiente ricevente: 55.8m³

Frequenza Hz	L _n dB
100	58.0
125	57.8
160	58.6
200	54.9
250	55.6
315	56.5
400	56.4
500	58.8
630	58.9
800	56.9
1000	57.8
1250	58.5
1600	57.2
2000	56.8
2500	57.4
3150	55.8



Valutazione secondo la ISO 717-2

L_{n,w} (C_i) = 63 (-9;) dB

Valutazione basata su risultati di misurazioni in opera ottenuti mediante un metodo tecnico progettuale



N° del resoconto di prova: 1867

Nome dell'istituto di prova: ACUSTUDIO tel. 045 6100806

Data: 28/06/2012

Tecnici in acustica ambientale: Geom. BALTIERI ROBERTO

WOODEN FLOOR INTERACTING DOUBLE CARPET

Livello di pressione sonora di calpestio normalizzato rispetto all'assorbimento acustico secondo UNI EN ISO 140-7:2000
Misurazione in opera dell'isolamento dal rumore di calpestio di solai

Cliente: GRUPPO INTEC

Data della prova: 28/02/2012

Descrizione e identificazione della struttura edilizia e delle condizioni di misurazione:

La misura di rumore di calpestio è stata eseguita sul solaio che divide il soggiorno dell'unità al civico n° 25/5 (emittente) al piano secondo e la camera matrimoniale dell'unità al civico n° 25/4 (ricevente) al piano secondo dell'edificio in esame sito in Via Tombesi Dall'Ova, 25 a RAVENNA - RA.

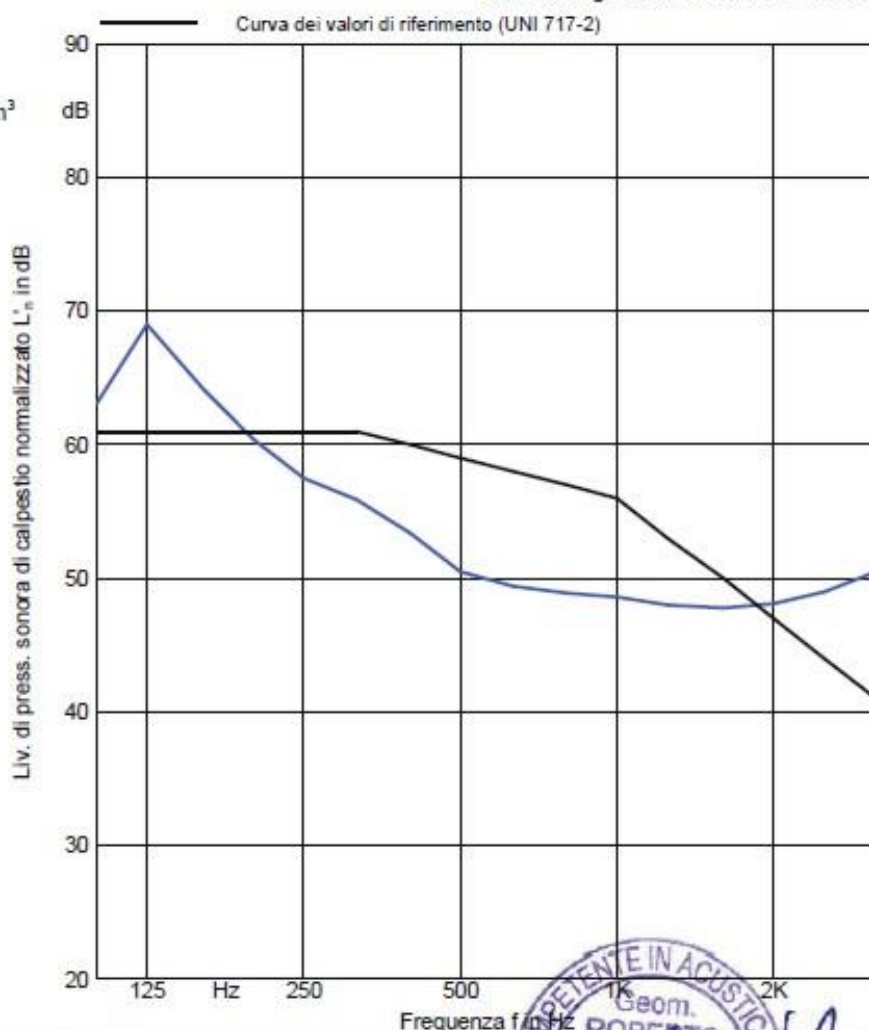
Il solaio in esame risulta realizzato con la seguente stratigrafia:

- travi portanti in legno 28*18 cm
- assito in legno di spessore 2,5 cm
- cappa in cls. di spessore 6 cm densità 2500 Kg/mc
- sottofondo alleggerito tipo Isocal di spessore 5 cm densità 500 Kg/mc
- manto anticalpestio PANISOL P8L doppio strato
- pannelli in polistirene per impianto di riscaldamento a pavimento
- massetto armato in sabbia e cemento di spessore medio 6 cm
- assenza di pavimentazione

Somma degli scarti sfavorevoli: 28.9 dB

Volume dell'ambiente ricevente: 36.7 m³

Frequenza Hz	L _n dB
100	63.1
125	69.0
160	64.2
200	60.4
250	57.5
315	55.9
400	53.4
500	50.5
630	49.4
800	48.9
1000	48.6
1250	48.0
1600	47.8
2000	48.1
2500	49.0
3150	50.5



Valutazione secondo la ISO 717-2 dell'indice di livello di rumore di calpestio del solaio normalizzato rispetto all'assorbimento acustico

L_{n,w} (C_i) = 59 (-2;) dB

Valutazione basata su risultati di misurazioni in opera ottenute in terzi di ottava mediante un metodo tecnico progettuale



N° del resoconto di prova: 1730

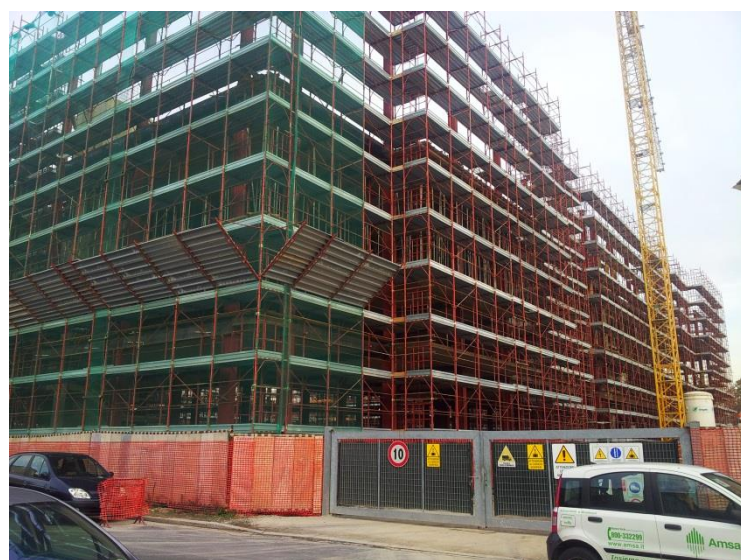
Nome dell'istituto di prova: ACUSTUDIO tel. 045 6100806

Data: 02/03/2012

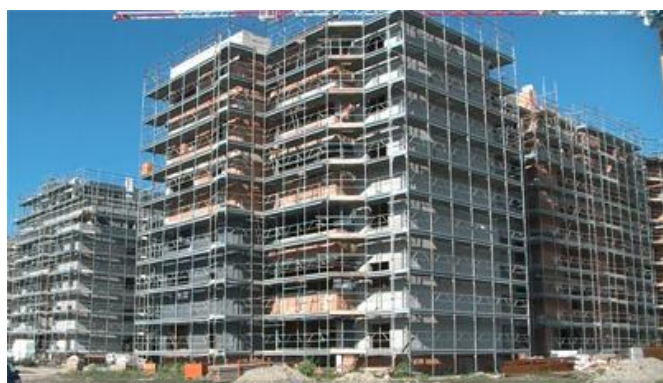
Tecnici in acustica ambientale: Geom. BALTIERI ROBERTO - Per. Ind. COMPRI MATTEO

THE FOLLOWING ARE SOME OF THE INTERVENTIONS MORE SIGNIFICANT IN COURSE AND EXECUTED IN THE LAST 2 YEARS 2013/2014

MILANO 288 APARTMENTS QUINTILIANO STREET MECENATE DISTRICT AIR AND IMPACTIVE INSULATION



BOLOGNA 184 APARTMENTS TRIUMVIRATO STREET AIR AND IMPACTIVE INSULATION



MILANO 504 APARTMENTS PAAI SOUTH DISTRICT IMPACTIVE INSULATION



As a result of the experience obtained in the course of the years performing and participating in the first person to more than 1000 tests in opera, the holder of the ANDROS, Tozzola Andrea has achieved certification to pursue the activity of technical acoustics
Below the certificate

Provincia di Bologna

SERVIZIO AMMINISTRATIVO AMBIENTE



ATTESTATO DI RICONOSCIMENTO DI TECNICO COMPETENTE IN ACUSTICA, DI CUI ALLA LEGGE 26 OTTOBRE 1995, N. 447.

Esaminata la domanda del Sig. **Tozzola Andrea**;
nato a **Imola (Bo)** il **29/09/1968**;
codice fiscale **TZZNDR68P29E289E**;

Verificato il possesso documentale dei requisiti di legge;

Visto l'art. 2 della Legge 447/95;

Visto il Decreto del Presidente del Consiglio dei Ministri 31 marzo 1998;

Visto l'art. 124 della L.R. Emilia Romagna. n. 3/99;

Vista la deliberazione della Giunta Provinciale n. 404 del 19/9/1999, esecutiva ai sensi di legge;

SI RICONOSCE

al Sig. **TOZZOLA ANDREA** il possesso dei requisiti di legge per lo svolgimento dell'attività di tecnico competente in acustica, di cui alla legge 26 ottobre 1995, n. 447.

Bologna, li 24/09/2009



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Page 7-16	● AIR INSULATION
Page 17-31	● IMPACTIVE INSULATION
Page 32-33	● CREDITS

NOTES