

u-boot silence

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**Mantle for sound
insulation**

LEGEND:



Acoustic insulation

Acoustic insulation - Intro



In recent years the awareness of home comfort has become increasingly widespread. Developers and end users require outstanding performance and quality characteristics, appropriate to their expectations and demand specific warranties from the manufacturer and the designer.

While on the subject of energy saving leaps and bounds have been made in recent years, the problem of acoustic comfort is still underestimated. Recent studies have also shown that people who live in areas not adequately insulated acoustically have trouble sleeping, irritability, reduced productivity at work.

For these reasons, non-compliance with minimum noise insulation performance may compromise the very validity of the certificate of habitability and produce a considerable loss of property value.

TABLE A	CLASSIFICATION OF HOUSING ENVIRONMENTS
Category A	Buildings used as residences or similar;
Category B	Buildings used as offices or similar;
Category C	Buildings used as hotels, pensions and similar activities;
Category D	Buildings used as hospitals, clinics, nursing homes and similar;
Category E	Buildings used for school activities at all levels and similar ;
Category F	Buildings used for recreational or religious activities or similar;
Category G	Buildings used for commercial activities or similar;

TABLE B	PASSIVE ACOUSTIC REQUIREMENTS OF BUILDINGS, THEIR COMPONENTS AND TECHNOLOGICAL SYSTEMS				
Category	R_w	$D_{2m,n,T,w}$	$L_{n,w}$	L_{ASmax}	L_{Aeq}
1. D	55	45	58	35	25
2. A , C	50	40	63	35	35
3. E	50	48	58	35	25
4. B , F , G	50	42	55	35	35

TABLE C	ACOUSTIC CLASSIFICATION OF BUILDINGS EVALUATION AND VERIFICATION PROCEDURE				
Classes	R_w	$D_{2m,n,T,w}$	$L_{n,w}$	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

The noise in buildings, depending on its origin, is classified as:

- **airborne** (it propagates through the air, such as radio, TV, shouting between people);
- by **impact** (it propagates through structures such as shock, stamping, machinery vibration, falling objects, etc..)
- by **technical installations** (drains, burners, air conditioners, fans).

The **D.P.C.M. 05/12/97** has introduced a classification of residential areas (Table A) which has fixed the passive acoustic requirements for buildings, their components and technological systems with the purpose to reduce human exposure to noise and thus improve the conditions of acoustic comfort (Table B).

The **UNI 11367:2010 "Acoustics in buildings - Rating of sound housing units - assessment and verification procedure in place"** standard establishes, on the other hand, the procedure for assessment and verification in place of sound insulation of buildings and sets, similarly to what happens for the energy needs, a classification on the basis of their performance at the sound reduction level (Table C).

U-Boot Silence - The solution

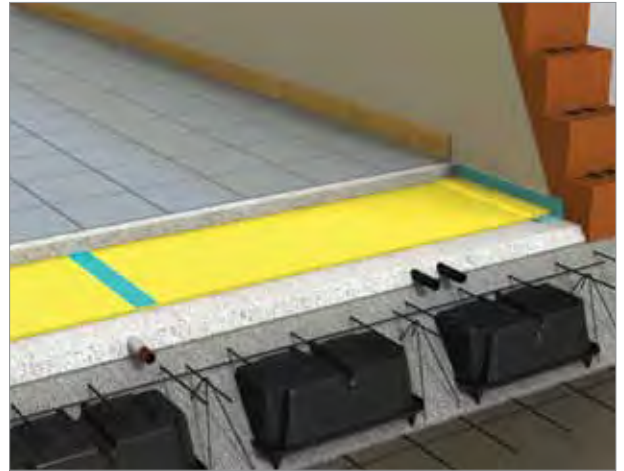


U-Boot Silence is the sound insulation mantle specifically designed to be used on slabs lightened with the U-Boot Beton® system, which "silences" for good the annoying airborne noise and by impact.

The application of **U-Boot Silence** on these lightened slabs delivers excellent insulation performance by placing the building into **Class I** (UNI 11367:2010) for the airborne noise and impact.

Advantages

- Excellent performance of sound insulation from airborne and impact noise.
- Acoustic requirements exceeded minimum DPCM of 12.05.97 (Tab.B).
- Classification of the building in Class I (UNI 11367:2010) for airborne and impact noise.
- Excellent relationship between mechanical strength and dynamic stiffness.
- Guarantee of durability.
- Cheap, quick and easy to install.
- Great elasticity and dimensional stability even under permanent loads.
- High capacity for shock absorption.
- Strong resistance to abrasions and lacerations.
- Waterproof, rot proof and resistant to microorganisms.
- Excellent resistance to foot traffic and perforation.



Applications

Sound insulation for any type of living environment: office buildings, commercial and industrial, housing, civil and residential (Tab.A).



Office building



Hospital



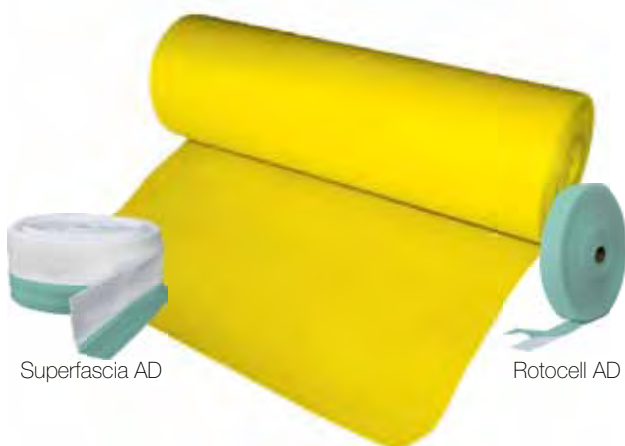
Residential building

Technical data

U-Boot Silence is made of 100% closed cell polyethylene, density 35 kg/m³, low elastic module. The mantle is yellow, with a smooth surface. The chemical cross-linking gives it a particular elastic structure, which is essential for optimum sound insulation.

The unique mechanical properties make it suitable for medium loads different elasticity depending on the weight.

Coil dimensions	m	1,50 x 60
Density	Kg./ m ³	35
Weight	Kg./ m ²	0,27
Thickness	mm	8
Sqm per roll	m ²	90
Color	-	yellow
Package	-	bag



Superfascia AD

Rotocell AD

U-Boot Silence can be placed on the slabs with ease, the joints are welded with a special adhesive strip (Rotocell AD), while the superfascia AD is used all around the perimeter between floor/wall.

Installation

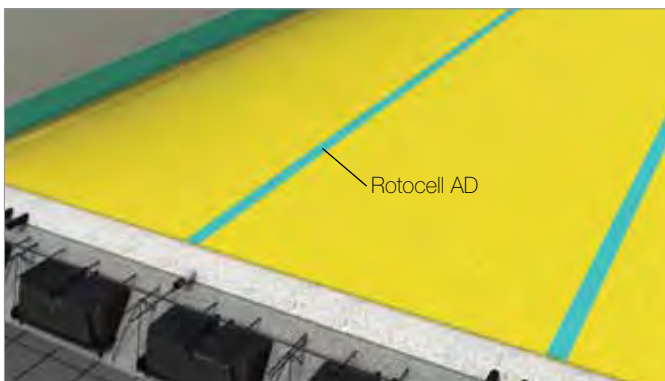
The installation must be done in a rigorous manner and with particular care to avoid sound transmission to occur that would compromise the final result. The installation steps are: preparation of the substrate, laying of U-Boot Silence, making of the floating screed.



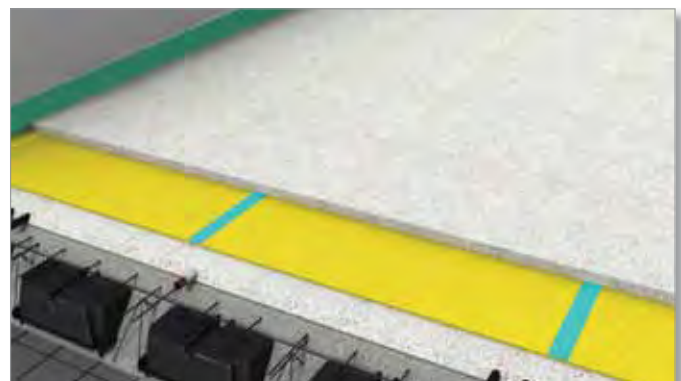
- 1 Prepare the installation surface (which will be placed on the soundproofing mantle **U-Boot Silence**) so as to be smooth, clean and free of foreign objects that may cause perforation of the mantle or reduce the performance.



- 2 Fix the edging strip to the wall at "at least" the same height as that of the screed plus that of the final flooring, folding the selvage horizontally to create an "L" between the wall and the horizontal surface. Make sure the material ensures the complete desolidarisation between screed and structural elements of the work at all corners and thresholds.



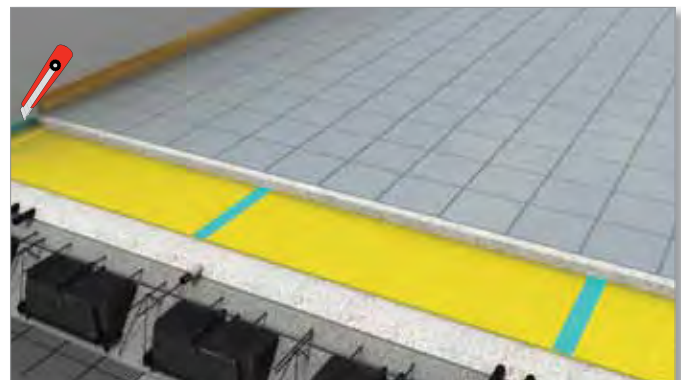
- 3 Lay the acoustic mantle **U-Boot Silence** taking care to properly pull the edges of the carpet, then seal up the junction with insulating tape Rotocell AD. Please remember that the lack, even just partial, of the tape may cause sound transmission.



- 4 Proceed with the casting of the slab with concrete of high strength and good consistency. The screed should be well beaten (especially on the sides and corners), constipated throughout its thickness, stricken off and floated (by hand or by helicopter) in a workmanlike manner.



- 5 After waiting for the curing of the screed, it is possible to proceed with the flooring. **Warning: the exceeding edging strip should not be trimmed before the laying of the final flooring has been completed.**



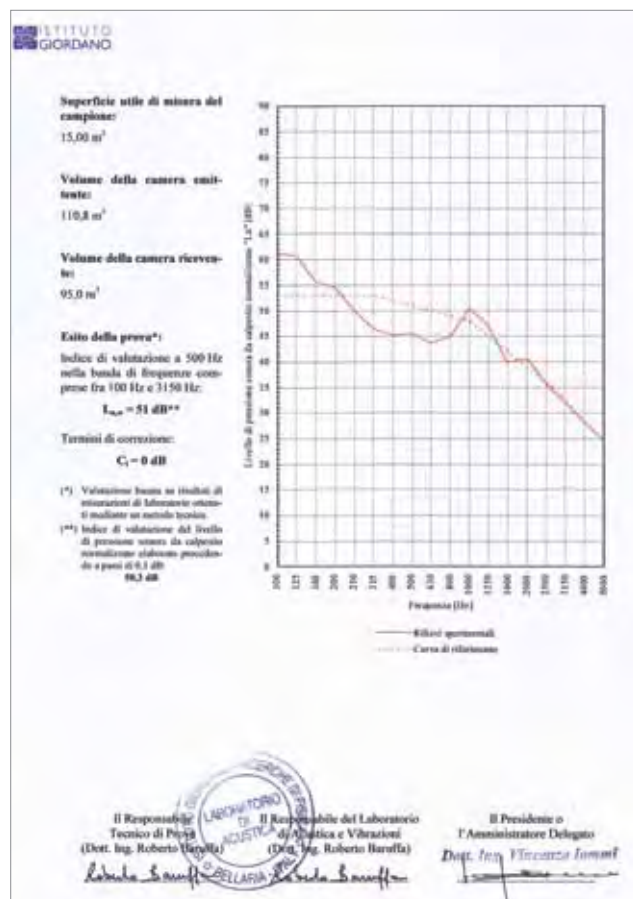
- 6 Once final flooring has been completed, cut the excess part of the Superfascia AD with a cutter at the level of the floor, whose head should then be masked by the baseboard.

Laboratory Tests

Empirical evidence on the level of sound insulation have been obtained by laboratory tests, carried out according to **UNI EN ISO 1403:2006, 140-6:2000, 717-1:2007, 717-2:2007** standards, on a plate slab lightened with the construction system U-Boot Beton®.

The results of unfinished slabs, are better than traditional masonry systems both in terms of airborne noise and by impact.

Even more important is the outcome of the acoustic tests of the slabs lightened with U-Boot Beton® on which was created a floating floor with a soundproofing mantle U-Boot Silence, which showed values corresponding to **Class I** (UNI 11367:2010)



Impact noise



Airborne noise

Specifications

Implementation of sound insulation of slabs such as "U-Boot Beton®" from noise of footsteps and airborne, made with the technique of the "floating floor" through the use of the sound insulation mantle "U-Boot Silence" by Daliform Group made, of 100% closed cell polyolefin chemical cross-linked polyethylene, density 35 kg/m.³, thickness 8 mm, low elastic module, color yellow. The product comes in rolls of H 1.5 m x L 60 m. The installation must be performed aligning the heads of the side flaps and sealing of joints by applying the adhesive strip "Rotocoll AD". The surface must be perfectly superimposed to the appropriate perimeter buffering "Superfascia AD." The layer on which to lay the product must be perfectly dry, clean and free of bumps.

On top of the insulation layer is laid a concrete screed, at least 4 cm thick, on which will then be made the flooring planned. The excess of insulating material present along the perimeter will be trimmed only once the floor is finished, masked by the application of the baseboard, which will be detached from the floor in order not to determine "sound transmission".

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To obtain updated technical cards, support material, new photos and case studies, go to www.daliform.com

The technical consultancy is only valid for the Daliform Group construction systems.

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