

Il silenzio è di gomma

Silence is made of rubber

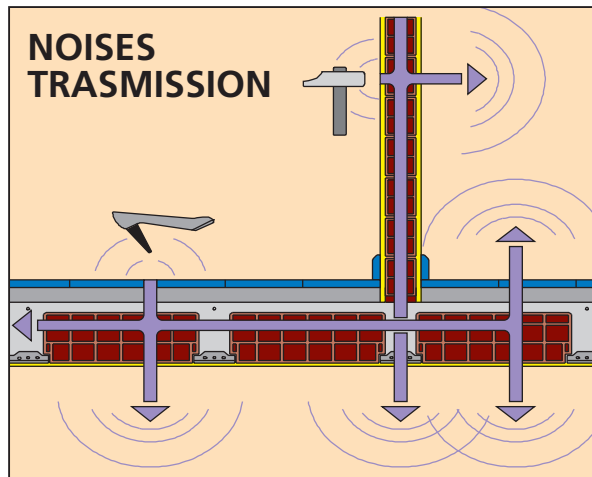


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THE PROBLEM OF NOISE

Increased well-being requirements made us to consider home noises amongst the fundamental parameters in the evaluation and in the choice of a building.

The knowledge of the possible sources of the noise and of how it spreads through the building gave us the possibility to make, already in the design phase, the technical choices that will guarantee the drastic reduction of both **airborne noises transmitted by air** (conversation, radio, TV, traffic, etc.) and those that are **transmitted through the structure of the building itself** (trampling noise and knocks and percussions against walls and floors in general).



Airborne Noises: they are transmitted through the air that is moved directly by the vibrating source (vocal cords, loudspeakers, household appliances, etc.). Usually they affect the environments next to the one in which the source of the noise is localized. In this case the energy is relatively modest.

Impact Noises: they are transmitted and they spread through the whole structure of the building and they are generated by impacts against the structure itself; the transmitted energy is noteworthy and the noise can affect also environments placed at considerable distance from the source.

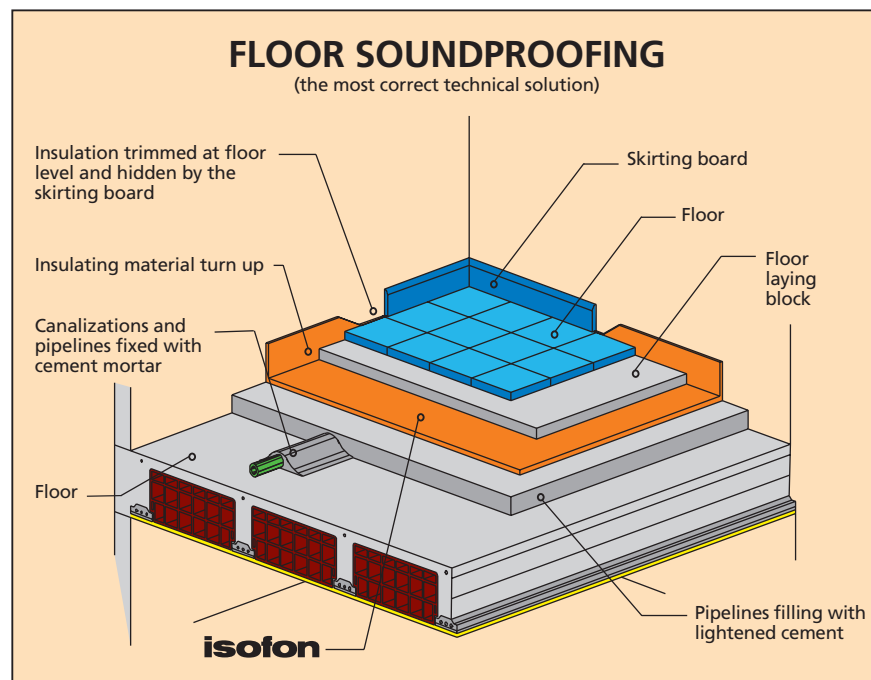
SOUNDPROOFING AGAINST IMPACT NOISES

A correct design shall prevent the transmission of impact energy against the stiff structure of the whole building; at the same time it has to dissipate this mechanical energy by transforming it into thermal energy by means of proper resilient dampers.

The technique used is the one of the '**floating floors**', that creates a discontinuity between the floor and the supporting floor through the insertion of an elastic material extended also under the partition walls. The 'floating floor', by interrupting the monolithic nature of the structure, contribute also to the damping of airborne noises.

The characteristics of the material fit for this purpose shall be the following:

- **resilient**, to absorb and dampen the impacts before they affect the structure of the building;
- **good compression resistance**, according to the loads to be supported (3.000 Nm^{-2} as an average);
- capable of keeping his chemical and physical **properties unaltered in time**.



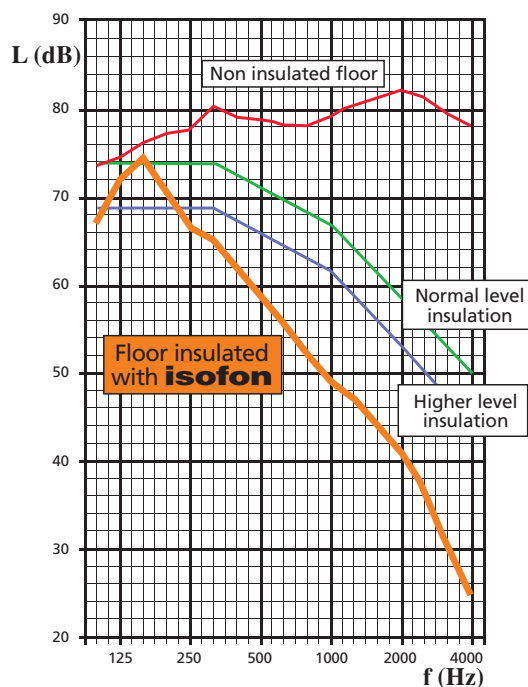
NATIONAL REGULATION IN FORCE

The Italian Regulation in this sector of Soundproofing Building Construction have as a reference:

- Circular Letter no. 1769 dated 30.04.1966 of the LL.PP. Ministry - "Assessment and test criteria of the acoustic requirements in buildings";
- Ministerial Decree 12.12.1975 - "Updated technical regulations concerning school buildings";
- Resolution no. 13358 dated 15.12.1977 of Regione Lombardia;
- Ministerial Decree dated 01.03.1991 - Official Gazette no. 57 dated 08.03.1991;
- Law no. 447 dated 26.10.1995 - suppl. to the Official Gazette no. 254 dated 30.11.1995 "Outline Act on Noise Pollution";
- D.C.P.M. (Decree of the President of The Council of Ministers) dated 05.12.1997 - Official Gazette no. 279 dated 22.12.1997 "Establishment of passive acoustic requirements of buildings";

D.P.C.M. dated 05.12.1997 establishes the passive acoustic requirements measured during the installation, which shall be granted by buildings in general and by their specific components (horizontal and vertical insulated partitions, systems, etc.), depending on their use.

isofon SINCE 1962 GRANTS ENVIRONMENTAL COMFORT AND COMPLIANCE WITH LAW PROVISIONS



isofon is a product made up essentially of rubber bound with latex and layed on a bituminized paper support; it is design to obtain high acoustic dampings and very good 'floating floors'. Its characteristics are the following:

- It is inalterable in time, it preserves its elasticity, it returns to the initial conditions when the load to which it was subjected is removed;
- It resists considerable unitary loads without losing its efficacy and without undergoing settlings;
- In normal operating conditions it does not require special concrete load distribution blocks;
- It requires a small thickness which means space saving and very light weight on the floors;
- A minimum labour is required.

isofon floating floors are far beyond the requirements fixed by the Italian Regulations for the qualification of "high" level insulation (see graphic).

Thanks to **isofon**, floors, partitions and insulated systems, according to measurements carried out during the installation, achieve better passive acoustic requirements than the limit values provided for by D.P.C.M. dated 05.12.1997.

isofon provides the thermal insulation of the structure, with a thermal conductivity of $\lambda = 0,0562 \text{ Wm}^{-1}\text{k}^{-1}$

SPECIFICATIONS

isofon SERIES R:

Soundproofing material to be placed between the floor and the finished floor, made up of a small mattress of vulcanized granulated rubber and shreds, hot bound with latex and laid at constant thickness on bituminized paper support.

Thickness: mm _____.

isofon SERIES R SUPER:

Soundproofing material to be placed between the floor and the finished floor covering, made up of a small mattress of vulcanized granulated rubber and shreds hot bound with latex and laid at constant thickness on tearing-proof and pedestrian non-woven film support

Thickness: mm _____.

isofon SERIES K:

Soundproofing material to be placed between the floor and the finished floor covering, made up off panels made of vulcanized granulated rubber and shreds, which are hot bound with latex and laid at constant thickness between two sheets of bituminized paper.

Thickness: mm _____.

isofon ANTI-TRAMPLING PRODUCTS

isofon soundproofing products always available in our warehouse are the following:

Series R UNDERFLOOR ROLLS

isofon R 20 and R 20 super
cm 100 x 1000 thickness abt. mm 4

isofon R 30 and R 30 super
cm 100 x 1000 thickness abt. mm 6

isofon R 40 and R 40 super
cm 100 x 500 thickness abt. mm 8

isofon R 50 and R 50 super
cm 100 x 500 thickness abt. mm 10

Series K WALL PANELS

isofon K 40
cm 100 x 100 thickness abt. mm 8

isofon K 50
cm 100 x 100 thickness abt. mm 10

Series S UNDERWALL STRIPS

isofon S 10
cm 10 x 100 thickness abt. mm 8

isofon S 15
cm 15 x 100 thickness abt. mm 8

isofon S 20
cm 20 x 100 thickness abt. mm 8

isofon S 25
cm 25 x 100 thickness abt. mm 8

isofon S 33
cm 33 x 100 thickness abt. mm 8

Upon request we can supply panels and rolls of different dimensions.

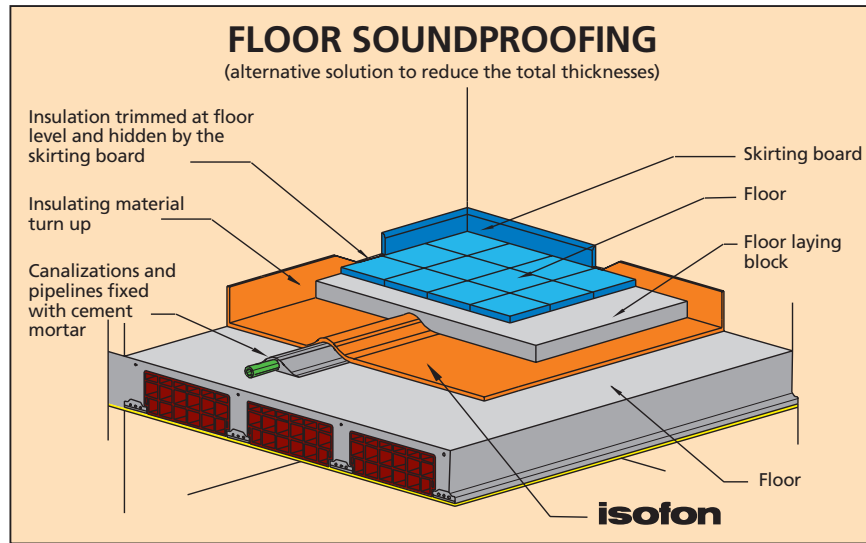


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LAYING INSTRUCTIONS

The laying of **isofon** is extremely simple and rapid. By following the below listed suggestions it will be possible to enhance the material technical specifications.

- remove stones, nails, plaster flasks, etc., from the floor;
- connect the pipelines to the floor, if any, with cement mortar;
- lay the **isofon** panels or rolls by overlapping them for about 5 cm. using the proper overlapped parts; the rolls must be laid with the rubber shavings towards the bottom;
- **isofon** must be turned over along the walls for a height equal to the one that the finished floor will have in order to avoid any contact between the wall and the floor;
- after making the laying block, trim off the exceeding material.

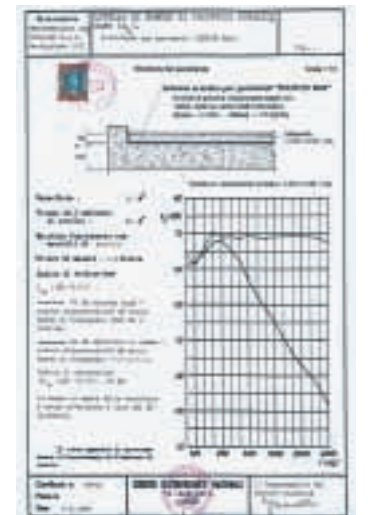
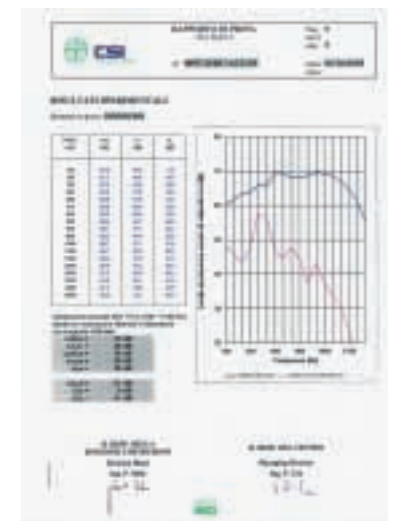
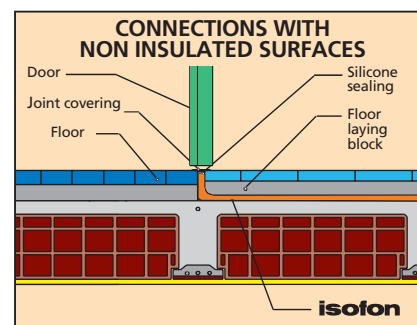
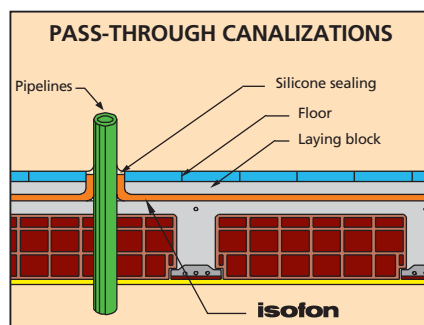
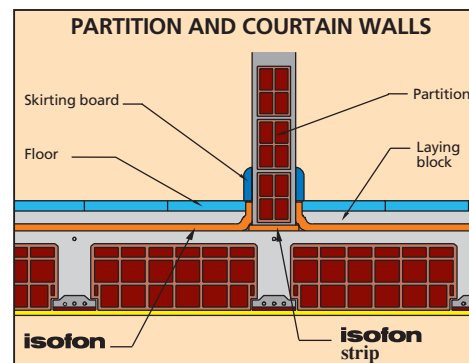
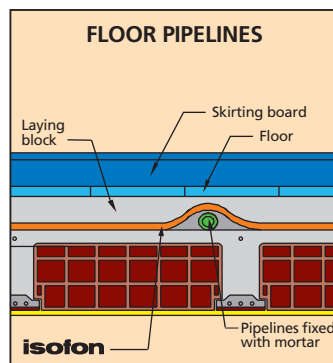


It is extremely important that any stiff connection between the floor and floor and between floor and walls is avoided, in order to achieve the high noise reduction that **isofon** guarantees. The foreman has to be avoided of this.

CONSTRUCTION DETAILS

In the construction details shown in the picture, we suggest the most correct technical methods to solve some situations that usually take place on the building yard are shown.

In many practical cases the one shall have to face, the main criterion shall always be that of interposing, between the noise or vibrations source and the rest of the building structure, insulating resilient material.



**PREFABBRICATI
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