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RECYCLABLE ACOUSTIC INSULATION: EDILTECO TAKES IMPACT SOUND INSULATION INTO THE FUTURE

Fully recyclable acoustic insulation products, even when combined with polyester, with low dynamic stiffness and designed according to a more sustainable and circular construction approach. Edilteco develops solutions that combine performance, durability and respect for the environment.

Impact sound acoustic insulation is evolving towards **fully recyclable solutions**, capable of ensuring high and long-lasting performance over time. The shift from traditional cross-linked PE materials to a new-generation polyethylene with elastomeric compounds makes it possible to improve dynamic stiffness, load resistance and stability. These solutions are part of a flooring system approach, where the interaction between the different layers plays an essential role. Recycling and end-of-life recovery now represent a growing technical and environmental challenge for designers, contractors and the entire construction sector.

Impact Sound Insulation: Why Recyclability Is Now a Technical Requirement

The evolution of design criteria: from performance to life cycle

For many years, impact sound insulation was described almost exclusively through a single figure: **noise reduction**. A value expressed in decibels, a declared performance, a result to be achieved. That figure remains essential, but today it is no longer enough.

The role of the flooring system designer

Anyone designing a flooring system knows very well that a resilient underlay must not only provide insulation. It must continue to do so over time, under load, within a real build-up, in contact with screeds, finishes and operating conditions that are often very different from one another. Edilteco, which has been developing solutions for years to make flooring systems more efficient and sustainable, works in this direction on several fronts: in acoustics, with fully recyclable resilient acoustic insulation products; in subfloors, with premixed products that reduce free water and ensure controlled drying; and in thermal insulation, with materials containing a high percentage of recycled

content. In the field of acoustic insulation, this research translates into a clear objective: not to focus solely on initial performance, but to develop materials capable of providing high insulation, long-term stability and full recyclability. In other words: **high insulation, long-lasting insulation and complete recyclability**.

Limits of traditional non-recyclable cross-linked PE underlays

Most of the underlays still used today are based on non-recyclable cross-linked PE. These materials have performed well, but they have one clear limitation: they are not recyclable. This means that, at the end of their life cycle, they become waste. This aspect was overlooked for years, but today it can no longer be ignored.

The paradigm shift with Edilteco: fully recyclable acoustic insulation products

Today, the market is undergoing an important transition. It is no longer just a matter of improving acoustic performance, but of designing materials that are **fully recyclable**. This is where Edilteco's work comes in: the company has developed a complete range of acoustic insulation products made with new-generation polyethylene combined with technical rubber compounds, fully recyclable even in the versions coupled with calibrated-density polyester. This means that not only the main material, but all the layers of the product are designed to be recovered.

From theory to practice

The real difference becomes clear when the material reaches the end of its life cycle. When a material is truly recyclable, it can be **collected and reintroduced into the production cycle**. Edilteco is also working in this direction: insulation products made with fully recyclable materials can be recovered, preventing them from becoming waste. By contrast, the same cannot be done with non-recyclable materials, such as many cross-linked PE underlays. This is where a technical choice also becomes a **responsible choice**.

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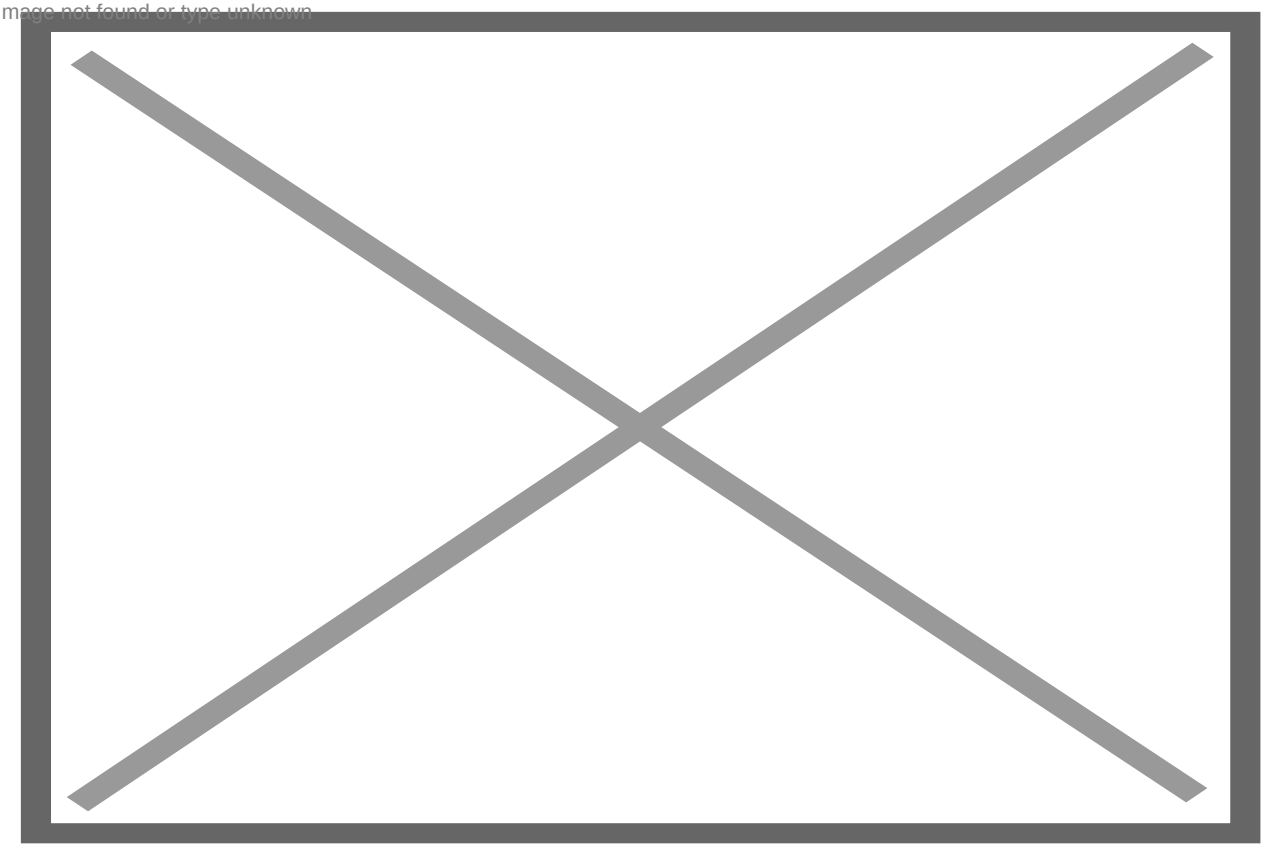

Environmental footprint and acoustic insulation: choosing recyclable materials for impact sound insulation helps reduce the building's environmental impact throughout its entire life cycle, without compromising performance and durability.

Performance and durability: being green is not enough

Of course, sustainability alone is not enough. An acoustic insulation product must perform, and it must continue to do so **over time**.

The most advanced solutions developed by Edilteco offer:

• **very low dynamic stiffness**, essential for impact sound insulation;
• **greater dimensional stability**;
• **resistance to compression cycles**;
• **long lasting performance** thanks to the technical rubber compound.

This means that the material does not only perform on the day it is installed, but continues to do so over the years.

The technician as the key player in a possible choice

There is one point worth highlighting. For years, it was thought that choosing a more sustainable solution meant spending more or making the work more complicated. **Today, this is no longer the case**. With Edilteco's new acoustic solutions, it is possible to design systems that combine performance, durability and sustainability, without moving away from the practical requirements of the construction site. How many times has there been the intention to do something for the environment, but it was not possible? Today, this can also be done in the field of acoustics. Not as a theoretical choice, but as a concrete technical choice.

Looking to the future with a system-based approach

Edilteco is investing precisely in this direction: acoustic solutions that provide **high levels of insulation**, maintain their performance over time and can be recovered at the end of their life cycle.

This is the same approach that also guides the company in the development of subfloors with reduced free water and thermal insulation materials with recycled content, because the future of construction does not depend on a single product, but on more coherent, more controlled and more sustainable systems.

It is a technology that today's market, if it truly wants to be future-oriented, must begin to consider very carefully.

Conclusions: acoustic insulation between performance and sustainability

Acoustic insulation has always been linked to comfort. Today, it is something more. It is a choice that concerns the **quality of the building**, its **durability** and its **environmental impact**. And perhaps, for the first time, those working with flooring systems can truly contribute to sustainability without changing the way they work. Simply by **making better choices**.

Impact Sound Insulation: the DBRED FONOTECH range in the evolving context of materials

Within the evolution of solutions for impact sound insulation, the market today offers different technologies, with varying levels of **performance, durability and sustainability**. In this context, Edilteco's DBRED FONOTECH range stands out: a range of underlays in rolls, available in both coupled and uncoupled versions, designed for use in floating floor systems. The products are made of polyethylene and can be coupled with needle-punched, resin-bonded polyester fibre, offering a

good balance between elasticity, ease of installation and adaptability to the designed build-ups. Alongside these solutions, the sector is evolving towards fully recyclable materials designed according to circular economy principles, with the aim of combining **acoustic performance, long-term stability and end-of-life management.**

Main characteristics

• DBRED FONOTECH (3–4–5–10 mm)
Versatile solutions for acoustic insulation in different application contexts.

• DBRED FONOTECH PLUS (7–14 mm total)
Thicker version, suitable for situations requiring higher acoustic performance.

• DBRED FONOTECH 5.6 ANTISCRATCH (11 mm)
Variant designed to provide surface scratch resistance while maintaining good insulation performance.

A version with a reflective, tear-resistant, aluminium-coated overlapping film is also available, improving mechanical resistance and facilitating installation on site.

Application areas

The range is suitable for use on floor slabs with floating screed systems, contributing to the reduction of impact sound and the improvement of acoustic comfort, in line with performance requirements and installation conditions.

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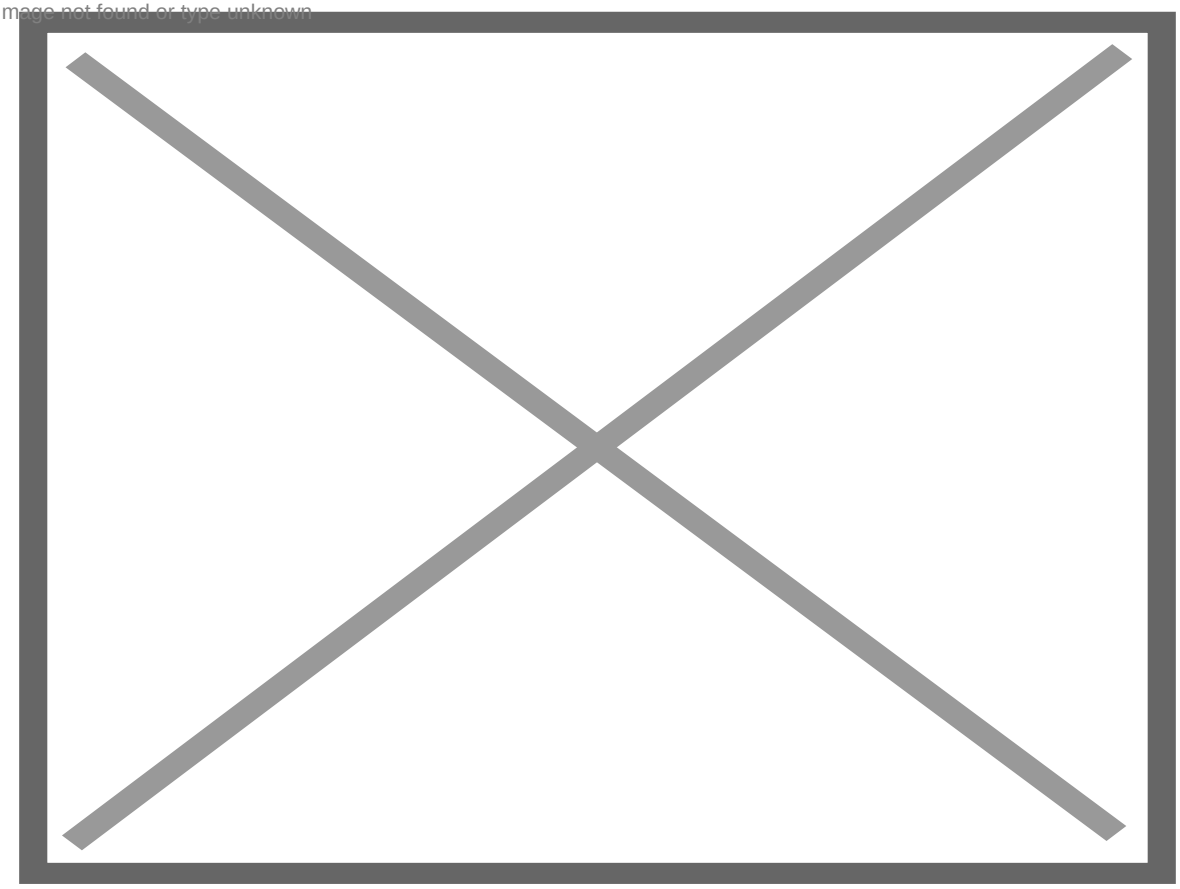

Technical FAQs – Impact Sound Insulation and Recyclable Materials

What is meant by impact sound insulation?
It is the ability of a flooring system to reduce the transmission of impact noise between overlapping rooms.

Why is dynamic stiffness essential?
Low dynamic stiffness values improve the attenuation of impact sound in floating systems.

What is the difference between cross-linked PE and recyclable polyethylene?
Cross-linked PE cannot be remelted and recovered, whereas non-cross-linked polyethylene is recyclable.

Can acoustic insulation products be recycled at the end of their life cycle?
Only if they are designed with compatible and separable materials, as in fully recyclable solutions.

How does installation affect acoustic performance?
Incorrect installation can significantly compromise the performance of the flooring system.

Do the materials maintain their performance over time?
It depends on their resistance to compression cycles and on the stability of the material.