



InnoLayer Impactalay®

High-Performance Acoustic Underlayment System

PRODUCT OVERVIEW

InnoLayer Impactalay® is a high-performance acoustic underlayment system engineered to reduce impact-borne vibration transmission and airborne sound propagation in floor constructions. The system is based on the combination of a constant high-mass acoustic barrier layer and a resilient acoustic foam layer with controlled dynamic stiffness.

This configuration allows the acoustic behavior of the system to be optimized according to the requirements of different floor finishes without altering the mass-based insulation mechanism.

InnoLayer Impactalay® is available in two engineered variants, sharing the same acoustic barrier layer while differing in resilient layer thickness. The differentiation is achieved through dynamic response control, rather than changes in surface softness or load-bearing capacity.

Acoustic Performance

InnoLayer Impactalay® provides combined impact sound insulation and airborne sound insulation within a single underlayment layer.

Acoustic Parameter	Typical Performance
Impact sound insulation	$L_{n,w} \approx 38 \text{ dB}$
Airborne sound insulation	$R_w + C_{tr} \approx 49 \text{ dB}$
Test standards	ISO 140-7 / ISO 10140
Compliance	PCT / PT (Scotland)

Technical Construction

Layer composition (top to bottom)

1. Non-woven protective facing (NW)
2. Resilient acoustic foam layer
3. High-mass acoustic barrier layer (4 mm)
4. Non-woven backing layer (NW)

The acoustic barrier thickness is identical in both product variants.

Performance differentiation is achieved solely by adjusting the thickness of the resilient layer, which governs the dynamic stiffness and vibration transmission behavior of the system.

InnoLayer Impactalay® C 11 mm – Carpet & Soft Finish Version

InnoLayer Impactalay® C 11 mm is optimized for applications where soft floor finishes are used and where effective impact noise reduction is required beneath compliant surface layers.

Typical applications

- Carpeted floors
- Textile and soft floor coverings
- Residential and hospitality areas
- Refurbishment projects with limited build-up height

Key characteristics

- Controlled resilient behavior compatible with soft floor finishes
- Effective attenuation of footfall-induced vibrations
- Contributes to airborne sound insulation in lightweight floor systems
- Simple cutting and installation under carpet systems

InnoLayer Impactalay® D 16 mm – Rigid Floor Finish Version

InnoLayer Impactalay® D 16 mm is optimized for use beneath rigid floor finishes, where vibration control is required without introducing excessive surface compliance.

The increased thickness of the resilient layer is intended to reduce the dynamic stiffness of the underlayment system, thereby limiting vibration transmission between the floor finish and the structural substrate.

Typical applications

- Parquet flooring
- Engineered wood
- Laminate flooring
- Rigid floating floor systems

Key characteristics

- Reduced dynamic stiffness for improved vibration decoupling
- Improved control of impact-induced vibration transmission
- Operates within a controlled elastic deformation range under service loads
- Suitable for residential and commercial environments with rigid floor finishes

Engineering Principle

The acoustic behavior of InnoLayer Impactalay® is governed by the interaction between a constant high-mass barrier layer and a resilient layer with controlled dynamic stiffness.

Increasing the thickness of the resilient layer reduces the system's dynamic stiffness, thereby limiting impact-induced vibration transmission between the floor finish and the structural substrate. This effect is particularly relevant for rigid floor finishes, where vibration control is required without softening the walking surface.

The design does not aim to increase surface softness. Load-bearing behavior is primarily governed by the floor finish and the distribution of applied loads, while the resilient layer operates within its elastic working range to provide consistent vibration isolation.

Technical Specifications

Property	InnoLayer Impactalay® C 11 mm	InnoLayer Impactalay® D 16 mm
Total thickness	11 mm	16 mm
Resilient layer thickness	7 mm	12 mm
Acoustic barrier thickness	4 mm	4 mm
Surface density	7.60 kg/m²	8.15 kg/m²
Sheet size	500 × 1000 mm	500 × 1000 mm
Product type	Acoustic overlay matting system	Acoustic overlay matting system
Installation	Loose laid / bonded	Loose laid / bonded
Suitable finishes	Carpet, soft coverings	Parquet, laminate, engineered wood

Installation Notes

- Subfloor must be clean, dry, and level prior to installation
- For rigid floor finishes, full surface support must be ensured
- Joints should be tightly butted to minimize flanking transmission paths
- Installation of the final floor finish must comply with the floor covering manufacturer's guidelines

Advantages of InnoLayer Impactalay®

- Combined impact and airborne sound insulation in a single layer
- Two engineered variants optimized for soft and rigid floor finishes
- Constant barrier layer ensures consistent mass-based acoustic behavior
- Resilient layer thickness selected for dynamic stiffness control, not surface softness
- Operates within controlled elastic deformation limits under service loads
- Non-hardening, non-crumbling resilient core
- Suitable for height-restricted refurbishment projects
- Simple, fast, and installer-friendly installation

Disclaimer

Acoustic performance values are based on laboratory testing under controlled conditions. Actual on-site performance may vary depending on floor construction, flanking transmission paths, and installation quality. Suitability for specific applications should be verified by a qualified acoustic or building professional.