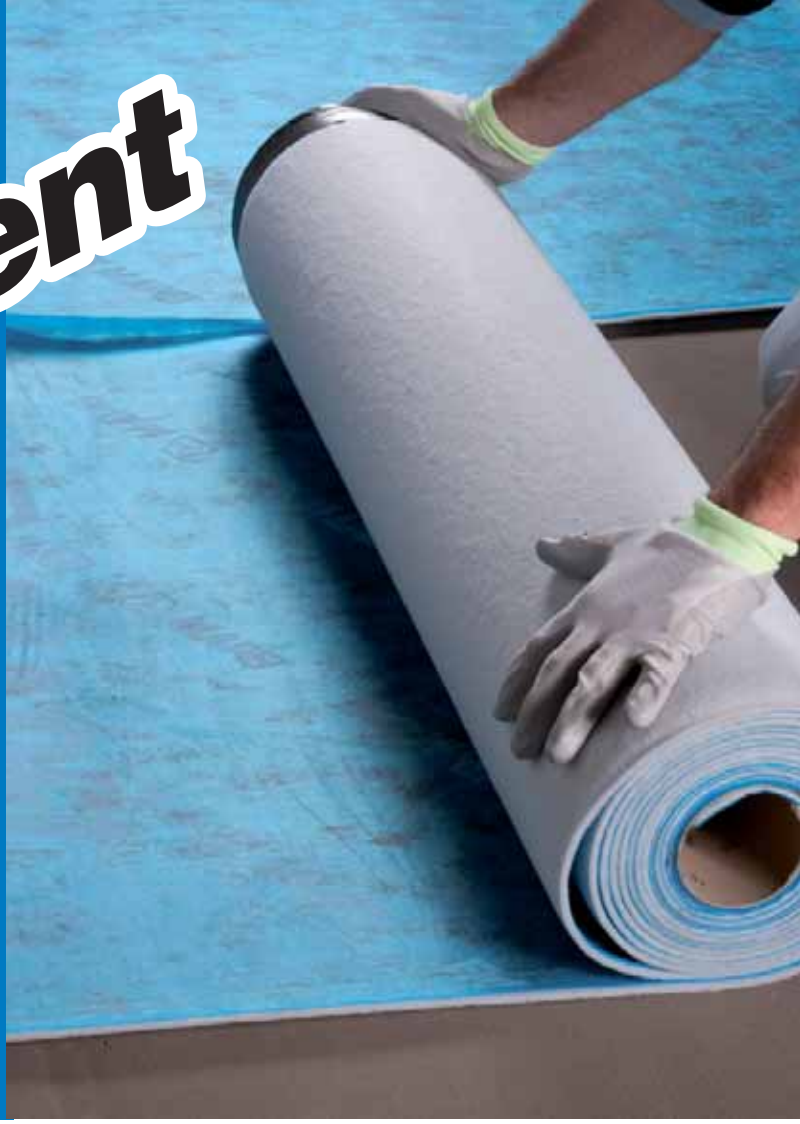
MAPEI

Mapesilent Roll

Dry soundproofing system formed by sheets for floating screeds



WHERE TO USE

Dry soundproofing system with a reduced thickness (8 mm), to reduce noise transmitted by footsteps between adjacent housing units. Applied on floating screeds before laying all kinds of flooring material (ceramic tiles, stone, resilient and fabric floor coverings, wooden floors, etc.).

Mapesilent Roll is applied between the structure and the floating screed.

Some application examples

Soundproofing all types of floor slabs.

TECHNICAL CHARACTERISTICS

Mapesilent Roll sheets are made up of a bitumen and special polymer-based elasto-plastomeric membrane sandwiched together with a resilient layer of polyester fibre and a surface coated with a layer of blue non-woven polypropylene fabric.

Each roll has a 5 cm wide border used for overlapping adjacent sheets to avoid infiltrations from the fresh screed and, therefore, rigid contact points with the substrate which could form acoustic bridges.

Because of its low thickness, **Mapesilent Roll** has no effect on the final project dimensions and elevations. Also, its high resistance to footsteps and tools dropped accidentally on the layer prevents it being damaged and reducing its soundproofing capacity.

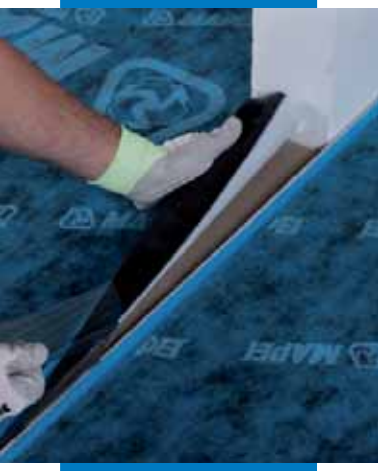
Mapesilent Roll offers a simple, reliable and efficient method to form an isolating screed which is perfectly insulated from the support structure (floor slab + separating walls). By sandwiching the polymer bitumen membrane with polyester fibres, noises are absorbed and reduced so that certain types of floor slab, including those in the table below, meet the requirements according to current norms and standards regarding acoustic insulation against footstep noise.
In order to avoid the formation of acoustic bridges, a soundproofing system using **Mapesilent Roll** also requires the use of other products from the range: **Mapesilent Band R** and **Mapesilent Tape**, as described below.

RECOMMENDATIONS

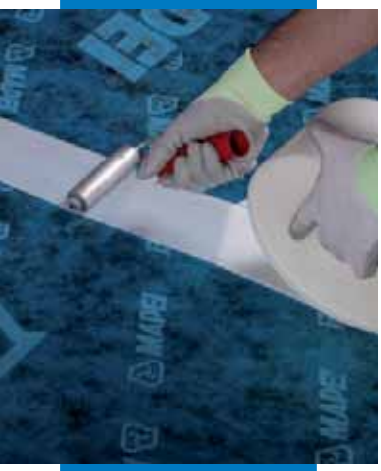
- Must not be used for soundproofing purposes directly below the final coating (in this case, use **Mapesonic CR**).

- The thickness and, where required, reinforcement of screeds installed on top of **Mapesilent Roll**, must be calculated according to the stresses on the surface when in service and on the type of coating laid on the floor.

Mapesilent Roll



Unroll the sheets of Mapesilent Roll, place it against the bottom of the wall and start laying it with the fibre side (the light-coloured side) underneath, following the longer side of the room. Lay the second sheet at the bottom of the wall, taking care to remove the protective film from the back of the border used to overlap with the adjacent sheet (approximately 5 cm), to guarantee the continuity of the layer



After checking that the sheets of Mapesilent Roll overlap perfectly, seal all overlaps using Mapesilent Tape

Performance of the 5 soundproofing system configurations available

N°	MAPESILENT configuration	$m'_{floor\ slab}$ (kg/m²)	$L_{n,w,eq}$ (dB)	m'_{screed} (kg/m²)	S' (MN/m³)	f_0 (Hz)	ΔL_w (dB)	K (dB)	$L'_{n,w}$ (dB)
1	**MAPESILENT ROLL** single layer	300	77.3	120	47	100.1	24.0	2	55.3
2	**MAPESILENT ROLL** double layer				23.5	70.8	28.5		50.8
3	**MAPESILENT PANEL** single layer				21	66.9	29.2		50.1
4	**MAPESILENT ROLL + MAPESILENT PANEL**				14.5	55.6	31.6		47.7
5	**MAPESILENT PANEL** double layer				10.5	47.3	33.7		45.6

$m'_{floor\text{-}slab}$ = surface mass of the floor slab + lightweight screed
$L_{n,w,eq}$ = sound pressure level of footsteps on a floor slab
m'_{screed} = surface mass of screed + flooring
S' = dynamic rigidity useful for calculation (Σ S' sandwiched materials according to EN 12354:2)
f_0 = resonance frequency of the system according to EN 12354-2 [$f_o = 160\sqrt{s'/m'_{screed}}$]
ΔL_w = reduction index of the level of sound pressure caused by footsteps according to EN 12354-2
K = correction factor for lateral transmission
$L'_{n,w}$ = sound pressure level of footsteps

The mass of the floor slab ($m'_{floor\ slab}$) and the floating screed (m'_{screed}) were calculated considering the following stratigraphic layout: lime-cement render (1 cm), brick-cement structure (20+4 cm), lightweight screed (500 kg/m³ - 6 cm), floating screed made from TOPCEM PRONTO (5 cm) and ceramic tiles (1 cm)

PREPARATION OF THE SUBSTRATE

Make sure the substrate is flat and strong and that there are no rough spots. Any excess material which makes the surface uneven must be removed.

Uneven surfaces and areas where plant fittings pass through (such as electric cables and pipework) the substrate must be evened out before laying **Mapesilent Roll**.

To make screeds and even out laying surfaces please refer to the catalogues which illustrate the various ranges of MAPEI products for the preparation of substrates or contact the MAPEI Technical Assistance Department.

APPLICATION PROCEDURE

Lay out the rolls of **Mapesilent Roll** with the polyester fibre (the lighter-coloured side) towards the screed. Carry out the same procedure with the other rolls, taking care to overlap the entire 5 cm wide border to guarantee continuity of the underlying fibre layer. When overlapping the borders, remove the protective film from the back.
Seal all the joints between the rolls of **Mapesilent Roll** with **Mapesilent Tape** (closed-cell foam polyethylene adhesive sealing tape).

If better insulation or soundproofing are required, the efficiency of the insulating material may be increased by laying a double layer with the white sides laid against each other, by applying the first layer white side up.

The perimeter of the room to be soundproofed must be insulated using **Mapesilent Band R** (closed-cell foam polyethylene adhesive tape applied around the perimeter of walls and elements which pass through the screed, to avoid the formation of acoustic bridges).

Mapesilent Band R is available in 100 and 160 mm wide rolls. The 160 mm version is used mainly on heated floors.

Seal all the joints between the various pieces of **Mapesilent Band R** and between **Mapesilent Band R** and **Mapesilent Rolll**.

Once the final floor covering has been laid, and immediately before attaching the skirting boards, cut the excess pieces of **Mapesilent Band R**, seal the spaces between the skirting boards and the floor with a suitable flexible sealant.

Do not install the system if the temperature is too high or too low, and in all cases, do not carry out any operations which could perforate the soundproofing system.

TECHNICAL DATA (typical values)

Test method	Technical characteristics	Unit of measure	Value
EN 29073-2	Thickness	mm	8.0 (before sandwiching)
EN 1849-1	Weight	kg/m^2	1.8
EN 12311-1	Longitudinal tensile strength	N/50 mm	700
EN 12311-1	Transversal tensile strength	N/50 mm	500
EN 12691	Impact strength	mm	900
EN 12730	Static perforation strength	kg	15
EN 1928	Impermeability to water	kPa	≥ 100
EN 13501-1	Fire resistance		F
EN 12667	Thermal resistance	m^{2}K/W	0.145
EN 29052-1	Apparent dynamic stiffness (S'$_t$)	MN/m^3	15[1]
	Dynamic stiffness for calculation purposes (S')	MN/m^3	47[1]
EN ISO 140-8 EN ISO 717-2	Reduction of noise due to footsteps (ΔL_w) on a normalised floor slab	dB	21.0[2]
EN ISO 12354-2	Estimated reduction of noise due to footsteps (ΔL_w)	dB	24.0[3]
Sound level measurement	Reduction of noise caused by footsteps (ΔL_w) measured on site	dB	37.0[4]

[1] ***Certified by Giordano Institute - R.C. n° 256817/2009***
[2] ***Certified by I.N.R.I.M. - R.P. n° 09-0125-01/2009***
[3] ***Simplified calculation method valid for 100 kg/m^2 floating screeds with ceramic flooring***
[4] ***Sound level measurements taken in situ on a brick-cement floor slab were carried out by a qualified Environmental Acoustics Technician***

Cut the lower part of Mapesilent Band R to form a 90° angle

Place the rolls of Mapesilent Band R side by side. Remove the protective film from the back and bond around all the perimeter of the room

PACKAGING
10x1 m long rolls with 5 cm wide border.
Pallets containing 16 rolls for a total area of 160 m^2.

STORAGE
12 months in its original packaging in a dry place protected from direct sunlight with the exception of **Mapesilent Band R** and **Mapesilent Tape**, which can be stored for 9 months.
Do not stack the pallets on top of each other.
Contact with solvents or organic liquids may damage the product.
For further and complete information about the safe use of our product please refer to our latest version of the Material Safety Data Sheet.

PRODUCT FOR PROFESSIONAL USE.

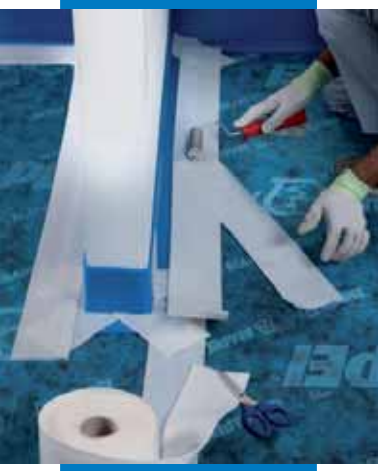
WARNING
Although the technical details and recommendations contained in this product data sheet correspond to the best of our knowledge and experience, all the above information must, in every case, be taken as merely indicative and subject to confirmation after long-term practical application; for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application. In every case, the user alone is fully responsible for any consequences deriving from the use of the product.

Please refer to the current version of the Technical Data Sheet, available from our website www.mapei.com

All relevant references for the product are available upon request and from www.mapei.com

Mapesilent Roll

Cut and apply Mapesilent Tape in all the corners and around the blended-in areas of Mapesilent Band R to guarantee that the joints are perfectly protected



Apply Mapesilent Tape along the overlaps of Mapesilent Band R and Mapesilent Roll and the joints between the various sections of Mapesilent Band R

(GB) A.G. BETA

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