ARCHITECTURAL SOLUTIONS

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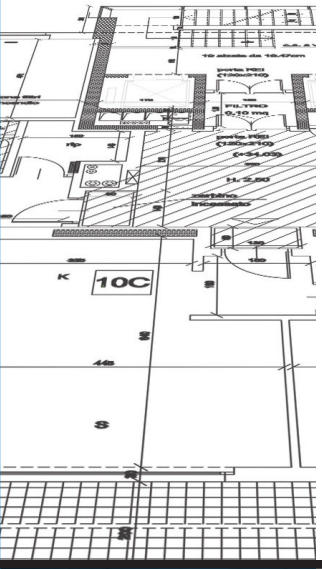
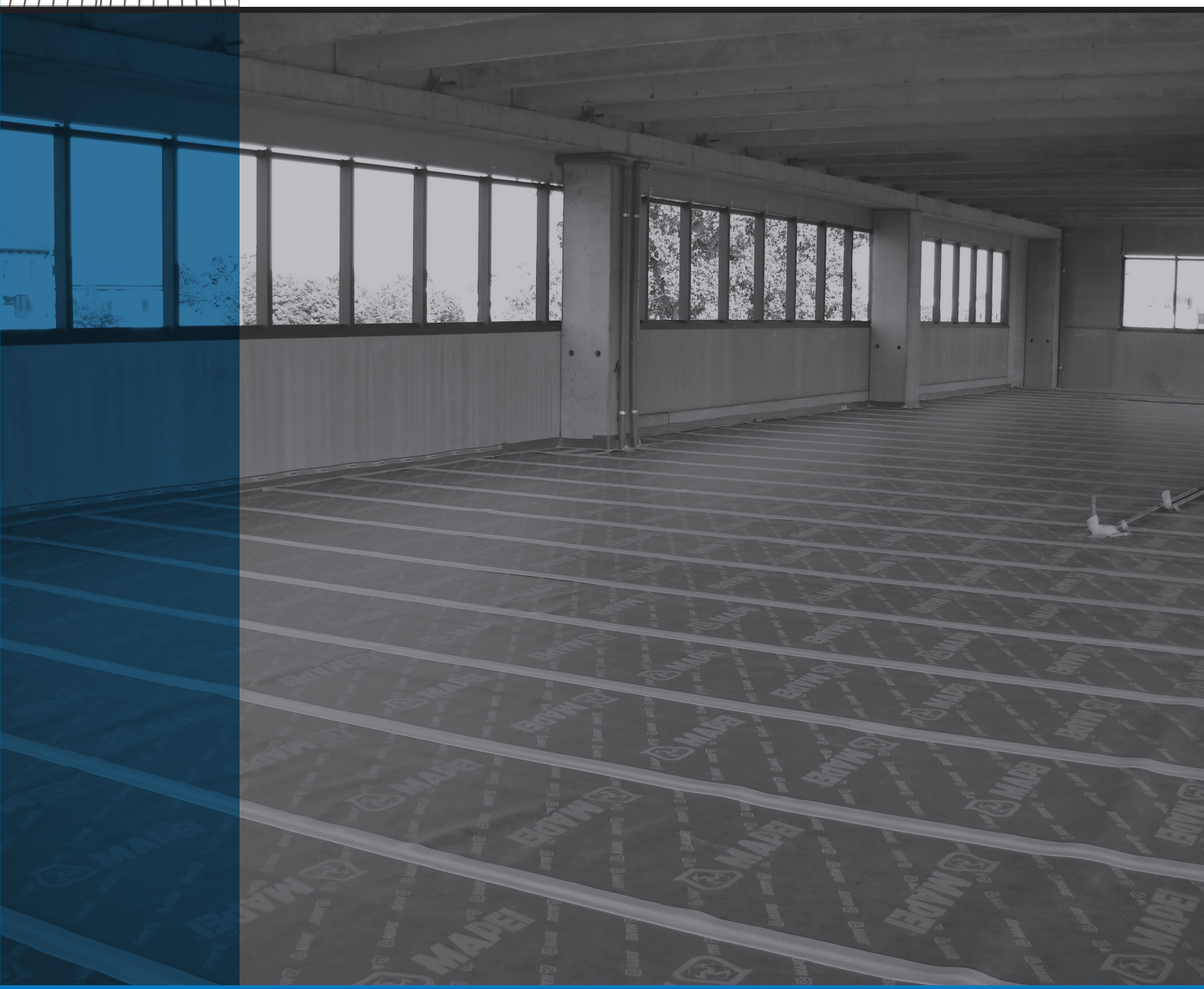
DESIGN GUIDE



INSTALLATION OF SOUNDPROOFING SYSTEMS TO COMBAT NOISE CAUSED BY FOOTSTEPS



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MAPEI®

ADHESIVES • SEALANTS • CHEMICAL PRODUCTS FOR BUILDING

S specifications of INSTALLATION OF SOUNDPROOFING SYSTEMS TO COMBAT NOISE CAUSED BY FOOTSTEPS

S.1 SOUNDPROOFING SYSTEMS FOR FLOATING SCREEDS

Introduction
The Mapesilent®system

Soundproofing systems were devised to increase comfort perceived in buildings according to the requirements of Executive Prime Ministerial Decree D.P.C.M. 5-12-97. Horizontal partitions are usually soundproofed with a floating screed, made by interposing elastic, damping material between the structure of the floor slab (or the levelling layer which embeds piping, wiring, etc.) and the screed on which flooring is installed. The aim of this system is to completely isolate the floor and screed from the entire surrounding structure, and prevent footfall noise being transmitted from the room where it is generated to the room where it is perceived. Apart from offering excellent protection against footfall noise, floating screeds considerably increase the soundproofing of floor slabs against airborne noise.
Soundproofing systems for floating screeds may be used in both new buildings and old buildings under restoration where the existing flooring and substrates are to be removed and replaced.
MAPEI, through constant development of new solutions with the aim of improving thermal-acoustic performance in buildings, has a specific range of certified products available to soundproof floor slabs against noise caused by footsteps.
The Mapesilent® system is a simple, reliable solution to create floating screeds completely isolated from the substrate and, thanks to the characteristics of the materials used to manufacture them, their application allows the requirements imposed by legislation (Executive Prime Ministerial Decree D.P.C.M. 5-12-97) to be complied with, and the most demanding acoustic performance classes (Class I and Class II) contemplated by the technical standard UNI 11367 ("*Acoustic classification of buildings*") to be achieved. Any kind of flooring (ceramic, stone, parquet, PVC, linoleum, rubber, etc.) may be installed on floating screeds insulated using the Mapesilent® system

The Mapesilent® system

Mapesilent Roll

Elasto-plastomeric polymer bitumen membrane, sandwiched together with blue-coloured non-woven fabric and a layer of polyester fibre, available in 10 m by 1 m rolls with a 5 cm border, total nominal thickness 8.0 mm.

Mapesilent Panel

Elasto-plastomeric polymer bitumen membrane, sandwiched together with a layer of polyester fibre, available in 1m x 1m tiles, total nominal thickness 13.0 mm.

Mapesilent Band R

Closed-cell, expanded polyethylene adhesive membrane applied to perimeter walls and around the edges of through-elements in screeds to avoid the formation of acoustic bridges. The product is available in handy 50 m long rolls in widths of 100 mm and 160 mm. The 160 mm version is mainly used for heated floors.

Mapesilent Band

Closed-cell, expanded polyethylene adhesive membrane applied to perimeter walls and around the edges of through-elements in screeds to avoid the formation of acoustic bridges. The product is available in pre-formed 100 mm and 160 mm wide "L" shaped profiles. The 160 mm high version is mainly used for heated floors.

Mapesilent Door

"U"-shaped adhesive, closed-cell, expanded polyethylene membrane applied in correspondence with openings in perimeter walls to avoid the formation of acoustic bridges.

Mapesilent Tape

Closed-cell, expanded polyethylene, adhesive sealing tape, for sealing overlaps between the elements which make up the system.

S.1 SOUNDPROOFING SYSTEMS FOR FLOATING SCREEDS

S.1.1 SOUNDPROOFING SYSTEMS FOR FLOATING SCREEDS Procedure

Checking and preparing the substrate

Make sure that the surface is sufficiently clean and that there is enough space to install the insulating/soundproofing layer and a screed ≥ 40 mm thick.

If the substrate is uneven, or if there is through-piping in the substrate, a regulating layer must be installed to form a uniform surface to position the insulating/soundproofing material.

Cover the entire surface with a continuous separation or slip layer which acts as a vapour barrier (e.g. 3/10 mm polyethylene or a similar material). Overlap the edges of adjacent sheets by approximately 20 cm and tape the overlaps with strips of tape to form a continuous layer. This layer may be positioned either before or after the insulating/soundproofing material. Assess the most suitable position according to site requirements.

Application of the soundproofing layer

Position the **Mapesilent Roll** along the foot of the wall with the fibre part (the lighter side) facing downwards, and following the same direction as the longest wall. Position the next lengths of **Mapesilent Roll** along the foot of the wall, making sure all the 5 cm borders overlap.

After checking that the various lengths of **Mapesilent Roll** are in the correct position, seal all the overlaps with **Mapesilent Tape**. Go over the tape with a rigid roller to make sure it adheres perfectly.

Around the perimeter walls of the room and any element which passes through the screed, apply **Mapesilent Band** R (or **Mapesilent Band**) by removing the protective film on the back to expose the adhesive part. Around the corners of the room, trim the lower part of the strip to form a 90° angle. When applying the various pieces of strip around the perimeter, make sure there are no gaps between them or acoustic bridges will be formed. After applying all the pieces around the perimeter, finish the operation by pressing firmly along the entire length of each piece to guarantee that it comes into contact with the substrate and transfers the adhesive correctly.

Cut and apply pieces of **Mapesilent Tape** in the corners and on the fillet joints between the various pieces of **Mapesilent Band** R (or **Mapesilent Band**) so that the joints are perfectly protected. Also apply tape on the overlaps between the **Mapesilent Roll** and **Mapesilent Band** R (or **Mapesilent Band**).

Once work has been completed, the **Mapesilent Tape** must be visible on all the overlaps between the elements which make up the system.There must be absolutely no contact points with the substrate, to avoid the formation of acoustic bridges.

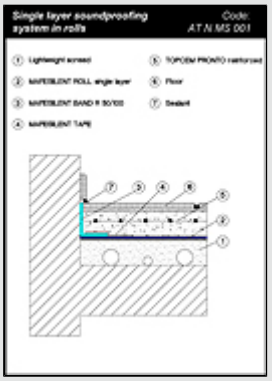
Making the floating screed

Floating screeds applied over insulating/soundproofing systems must be at least 40 mm thick, although this thickness must be verified according to the final use of the room and the compressibility of the insulating/soundproofing material used. We also recommend inserting electro-welded, zinc-plated mesh at the mid-point of the screed when laying the screed material if better crack-resistance and a more even distribution of loads are required (see section ***R.1.1.3.10***).

To make normal-setting, quick-drying floating screeds, use **Topcem** binder (see section ***R.1.1.3.6***) mixed with water and aggregates with a suitable grain size, or **Topcem Pronto** pre-blended mortar (see section ***R.1.1.3.7***), mixed with water only.

To make rapid-setting and drying floating screeds, use **Mapecem** binder (see section ***R.1.1.3.8***) mixed with water and aggregates with a suitable grain size, or **Mapecem Pronto** pre-blended mortar (see section ***R.1.1.3.9***) mixed with water only.

N. B.: Cut any protruding pieces of **Mapesilent Band** R (or **Mapesilent Band**) and/or **Mapesilent Door** to the finished flooring level after completing installation and grouting of the flooring. Then seal any gaps between the skirting and the floor with a suitable elastic sealant according to the type of flooring installed.



S.1 SOUNDPROOFING SYSTEMS FOR FLOATING SCREEDS

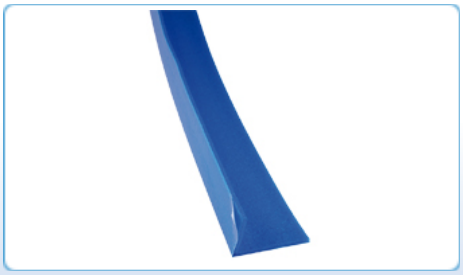
S.1.1.1 Single-layer sheet system

Supply and application of a soundproofing system to reduce noise caused by footsteps on floors, using a polymer-based elasto-plastomeric bitumen membrane sandwiched together with non-woven fabric and a layer of polyester fibre (such as **Mapesilent Roll** produced by MAPEI S.p.A.), inclusive of all required special pieces: shaped perimeter profiles in closed-cell, expanded polyethylene (such as **Mapesilent Band** R produced by MAPEI S.p.A.) and closed-cell, expanded polyethylene sealing tape (such as **Mapesilent Tape** produced by MAPEI S.p.A.) required to complete the system, certified according to current norms and standards (UNI EN ISO 717-2:2007, UNI EN ISO 140-8 and UNI EN 29052-1:1993).
The system must have the following technical and performance characteristics:

nominal thickness d:	8.0 mm
reduction of noise caused by footsteps measured after installation ΔL_w:	37 dB
reduction of noise caused by footsteps under laboratory conditions ΔL_w (*):	21 dB
effective dynamic stiffness S':	47 MN/m³
apparent dynamic stiffness S'$_t$:	15 MN/m³
thermal resistance R:	0.145 m² K/W

(*) measured in an independent laboratory on a 14 cm thick normalised reinforced concrete floor slab with a surface area of 10 m² (according to UNI EN ISO 140-8 standards).
All other operations included and calculated in the price for work completed according to specification

.....(€/m²)



S.1.2 DOUBLE-LAYER SHEET SYSTEM
Procedure

Checking and preparing the substrate

Make sure that the surface is sufficiently clean and that there is enough space to install the insulating/soundproofing layer and a screed ≥ 40 mm thick.

If the substrate is uneven, or if there is through-piping in the substrate, a regulating layer must be installed to form a uniform surface to position the insulating/soundproofing material.

Cover the entire surface with a continuous separation or slip layer which acts as a vapour barrier (e.g. 3/10 mm polyethylene or a similar material). Overlap the edges of adjacent sheets by approximately 20 cm and tape the overlaps to form a continuous layer. This layer may be positioned either before or after the insulating/soundproofing material. Assess the most suitable position according to site requirements.

Application of the soundproofing layer

Position the first layer of **Mapesilent Roll**, placing the elements with the fibre part (the lighter side) facing upwards, and following the same direction as the longest wall. Position the next lengths of **Mapesilent Roll** along the foot of the wall, making sure all the 5 cm borders overlap.

Position the second layer of **Mapesilent Roll** with the fibre part facing downwards so that the fibre side of the two layers are facing each other. To prevent the formation of acoustic bridges, we recommend staggering the second layer with respect to the first layer and laying it in the same direction.

After checking that the various lengths of **Mapesilent Roll** are in the correct position, seal all the overlaps with **Mapesilent Tape**. Go over the tape with a rigid roller to make sure it adheres perfectly.

Around the perimeter walls of the room and any element which passes through the screed, apply **Mapesilent Band** R (or **Mapesilent Band**) by removing the protective film on the back to expose the adhesive part. Around the corners of the room, trim the lower part of the strip to form a 90° angle. When applying the various pieces of strip around the perimeter, make sure there are no gaps between them or acoustic bridges will be formed. After applying all the pieces around the perimeter, finish the operation by pressing firmly along the entire length of each piece to guarantee that it comes into contact with the substrate and transfers the adhesive correctly.

Cut and apply pieces of **Mapesilent Tape** in the corners and on the fillet joints between the various pieces of **Mapesilent Band** R (or **Mapesilent Band**) so that the joints are perfectly protected. Also apply tape on the overlaps between the **Mapesilent Roll** and **Mapesilent Band** R (or **Mapesilent Band**).

Once work has been completed, the **Mapesilent Tape** must be visible on all the overlaps between the elements which make up the system.There must be absolutely no contact points with the substrate, to avoid the formation of acoustic bridges.

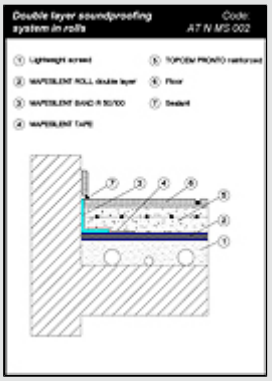
Making the floating screed

Floating screeds applied over insulating/soundproofing systems must be at least 40 mm thick, although this thickness must be verified according to the final use of the room and the compressibility of the insulating/soundproofing material used. We also recommend inserting electro-welded, zinc-plated mesh at the mid-point of the screed when laying the screed material if better crack-resistance and a more even distribution of loads are required (see section ***R.1.1.3.10***).

To make normal-setting, quick-drying floating screeds, use **Topcem** binder (see section ***R.1.1.3.6***) mixed with water and aggregates with a suitable grain size, or **Topcem Pronto** pre-blended mortar (see section ***R.1.1.3.7***), mixed with water only.

To make rapid-setting and drying floating screeds, use **Mapecem** binder (see section ***R.1.1.3.8***) mixed with water and aggregates with a suitable grain size, or **Mapecem Pronto** pre-blended mortar (see section ***R.1.1.3.9***) mixed with water only.

N.B.: Cut any protruding pieces of **Mapesilent Band** R (or **Mapesilent Band**) and/or **Mapesilent Door** to the finished flooring level after completing installation and grouting of the flooring. Then seal any gaps between the skirting and the floor with a suitable elastic sealant according to the type of flooring installed.



S.1 SOUNDPROOFING SYSTEMS FOR FLOATING SCREEDS

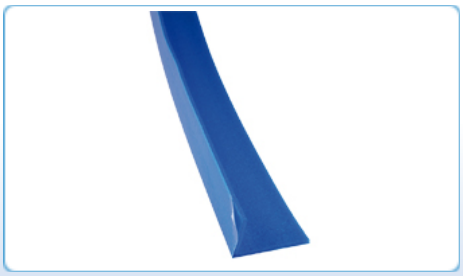
S.1.2.1 Double-layer sheet system

Supply and application of a soundproofing system to reduce noise caused by footsteps on floors, using a double layer of polymer-based elasto-plastomeric bitumen membrane sandwiched together with non-woven fabric and a layer of polyester fibre (such as **Mapesilent Roll** produced by MAPEI S.p.A.), inclusive of all required special pieces: shaped perimeter profiles in closed-cell, expanded polyethylene (such as **Mapesilent Band** R produced by MAPEI S.p.A.) and closed-cell, expanded polyethylene sealing tape (such as **Mapesilent Tape** produced by MAPEI S.p.A.) required to complete the system, certified according to current norms and standards (UNI EN ISO 717-2:2007, UNI EN ISO 140-8 and UNI EN 29052-1:1993).
The system must have the following technical and performance characteristics:

nominal thickness d:	8.0+8.0 mm
reduction of noise caused by footsteps measured after installation ΔL_w:	> 37 dB
effective dynamic stiffness S':	23.5 MN/m³
thermal resistance R:	0.290 m² K/W

All other operations included and calculated in the price for work completed according to specification

.....(€/m²)



S.1.3 SINGLE-LAYER PANEL SYSTEM
Procedure

Checking and preparing the substrate

Make sure that the surface is sufficiently clean and that there is enough space to install the insulating/soundproofing layer and a screed ≥ 40 mm thick.

If the substrate is uneven, or if there is through-piping in the substrate, a regulating layer must be installed to form a uniform surface to position the insulating/soundproofing material.

Cover the entire surface with a continuous separation or slip layer which acts as a vapour barrier (e.g. 3/10 mm polyethylene or a similar material). Overlap the edges of adjacent sheets by approximately 20 cm and tape the overlaps to form a continuous layer. This layer may be positioned either before or after the insulating/soundproofing material. Assess the most suitable position according to site requirements.

Application of the soundproofing layer

Apply the **Mapesilent Panel** panels with the fibre side (the lighter side) facing downwards. Make sure the panels are perfectly aligned and the edges are butted together. If panels need to be cut to shape before positioning them, trim approximately 5 mm from the bitumen membrane to prevent it coming into contact with the perimeter wall and causing acoustic bridges.

After checking that the various panels are in the correct position, seal all the overlaps with **Mapesilent Tape**. Go over the tape with a rigid roller to make sure it adheres perfectly.

Around the perimeter walls of the room and any element which passes through the screed, apply **Mapesilent Band** R (or **Mapesilent Band**) by removing the protective film on the back to expose the adhesive part. Around the corners of the room, trim the lower part of the strip to form a 90° angle. When applying the various pieces of strip around the perimeter, make sure there are no gaps between them or acoustic bridges will be formed. After applying all the pieces around the perimeter, finish the operation by pressing firmly along the entire length of each piece to guarantee that it comes into contact with the substrate and transfers the adhesive correctly.

Cut and apply pieces of **Mapesilent Tape** in the corners and on the fillet joints between the various pieces of **Mapesilent Band** R (or **Mapesilent Band**) so that the joints are perfectly protected. Also apply tape on the overlaps between the **Mapesilent Panel** and **Mapesilent Band** R (or **Mapesilent Band**).

Once work has been completed, the **Mapesilent Tape** must be visible on all the overlaps between the elements which make up the system.There must be absolutely no contact points with the substrate, to avoid the formation of acoustic bridges.

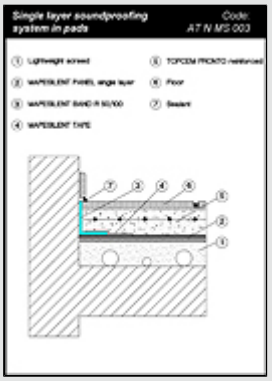
Making the floating screed

Floating screeds applied over insulating/soundproofing systems must be at least 40 mm thick, although this thickness must be verified according to the final use of the room and the compressibility of the insulating/soundproofing material used. We also recommend inserting electro-welded, zinc-plated mesh at the mid-point of the screed when laying the screed material if better crack-resistance and a more even distribution of loads are required (see section ***R.1.1.3.10***).

To make normal-setting, quick-drying floating screeds, use **Topcem** binder (see section ***R.1.1.3.6***) mixed with water and aggregates with a suitable grain size, or **Topcem Pronto** pre-blended mortar (see section ***R.1.1.3.7***), mixed with water only.

To make rapid-setting and drying floating screeds, use **Mapecem** binder (see section ***R.1.1.3.8***) mixed with water and aggregates with a suitable grain size, or **Mapecem Pronto** pre-blended mortar (see section ***R.1.1.3.9***) mixed with water only.

N.B.: Cut any protruding pieces of **Mapesilent Band** R (or **Mapesilent Band**) and/or **Mapesilent Door** to the finished flooring level after completing installation and grouting of the flooring. Then seal any gaps between the skirting and the floor with a suitable elastic sealant according to the type of flooring installed.



S.1 SOUNDPROOFING SYSTEMS FOR FLOATING SCREEDS

S.1.3.1 Single-layer panel system

Supply and application of a soundproofing system to reduce noise caused by footsteps on floors, using a layer of polymer-based elasto-plastomeric bitumen membrane sandwiched together with a layer of polyester fibre (such as **Mapesilent Panel** produced by MAPEI S.p.A.), inclusive of all required special pieces: shaped perimeter profiles in closed-cell, expanded polyethylene (such as **Mapesilent Band** R produced by MAPEI S.p.A.) and closed-cell, expanded polyethylene sealing tape (such as **Mapesilent Tape** produced by MAPEI S.p.A.) required to complete the system, certified according to current norms and standards (UNI EN ISO 717-2:2007, UNI EN ISO 140-8 and UNI EN 29052-1:1993).

The system must have the following technical and performance characteristics:

nominal thickness d:	13.0 mm
reduction of noise caused by footsteps measured after installation ΔL_w:	42 dB
reduction of noise caused by footsteps under laboratory conditions ΔL_w (*):	24 dB
effective dynamic stiffness S':	21 MN/m³
apparent dynamic stiffness (S'$_t$):	10 MN/m³
thermal resistance R:	0.313 m² K/W

(*) measured in an independent laboratory on a 14 cm thick normalised reinforced concrete floor slab with a surface area of 10 m² (according to UNI EN ISO 140-8 standards).

All other operations included and calculated in the price for work completed according to specification

.....(€/m²)

S.1.4 COMBINED SHEET-PANEL SYSTEM
Procedure

Checking and preparing the substrate

Make sure that the surface is sufficiently clean and that there is enough space to install the insulating/soundproofing layer and a screed ≥ 40 mm thick.

If the substrate is uneven, or if there is through-piping in the substrate, a regulating layer must be installed to form a uniform surface to position the insulating/soundproofing material.

Cover the entire surface with a continuous separation or slip layer which acts as a vapour barrier (e.g. 3/10 mm polyethylene or a similar material). Overlap the edges of adjacent sheets by approximately 20 cm and tape the overlaps to form a continuous layer. This layer may be positioned either before or after the insulating/soundproofing material. Assess the most suitable position according to site requirements.

Application of the soundproofing layer

Position the first layer of soundproofing using **Mapesilent Roll**, placing the elements with the fibre part (the lighter side) facing upwards, and following the same direction as the longest wall. Position the next lengths of **Mapesilent Roll** along the foot of the wall, making sure all the 5 cm borders overlap.

Apply the second layer of soundproofing by placing **Mapesilent Panel** panels with the fibre side (the lighter side) facing downwards. Make sure the panels are perfectly aligned and the edges are butted together. If panels need to be cut to shape before positioning them, trim approximately 5 mm from the bitumen membrane to prevent it coming into contact with the perimeter wall and causing acoustic bridges. We recommend staggering the second layer with respect to the first layer and laying it in the same direction.

After checking that the various panels are in the correct position, seal all the overlaps with **Mapesilent Tape**. Go over the tape with a rigid roller to make sure it adheres perfectly.

Around the perimeter walls of the room and any element which passes through the screed, apply **Mapesilent Band** R (or **Mapesilent Band**) by removing the protective film on the back to expose the adhesive part. Around the corners of the room, trim the lower part of the strip to form a 90° angle. When applying the various pieces of strip around the perimeter, make sure there are no gaps between them or acoustic bridges will be formed. After applying all the pieces around the perimeter, finish off the operation by pressing firmly along the entire length of each piece to guarantee that it comes into contact with the substrate and transfers the adhesive correctly.

Cut and apply pieces of **Mapesilent Tape** in the corners and on the fillet joints between the various pieces of **Mapesilent Band** R (or **Mapesilent Band**) so that the joints are perfectly protected. Also apply tape on the overlaps between the **Mapesilent Panel** and **Mapesilent Band** R (or **Mapesilent Band**).

Once work has been completed, the **Mapesilent Tape** must be visible on all the overlaps between the elements which make up the system.There must be absolutely no contact points with the substrate, to avoid the formation of acoustic bridges.

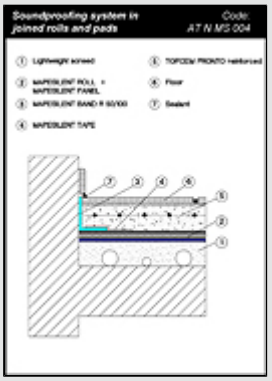
Making the floating screed

Floating screeds applied over insulating/soundproofing systems must be at least 40 mm thick, although this thickness must be verified according to the final use of the room and the compressibility of the insulating/soundproofing material used. We also recommend inserting electro-welded, zinc-plated mesh at the mid-point of the screed when laying the screed material if better crack-resistance and a more even distribution of loads are required (see section ***R.1.1.3.10***).

To make normal-setting, quick-drying floating screeds, use **Topcem** binder (see section ***R.1.1.3.6***) mixed with water and aggregates with a suitable grain size, or **Topcem Pronto** pre-blended mortar (see section ***R.1.1.3.7***), mixed with water only.

To make rapid-setting and drying floating screeds, use **Mapecem** binder (see section ***R.1.1.3.8***) mixed with water and aggregates with a suitable grain size, or **Mapecem Pronto** pre-blended mortar (see section ***R.1.1.3.9***) mixed with water only.

N.B.: Cut any protruding pieces of **Mapesilent Band** R (or **Mapesilent Band**) and/or **Mapesilent Door** to the finished flooring level after completing installation and grouting of the flooring. Then seal any gaps between the skirting and the floor with a suitable elastic sealant according to the type of flooring installed.



S.1 SOUNDPROOFING SYSTEMS FOR FLOATING SCREEDS

S.1.4.1 Combined sheet-panel system

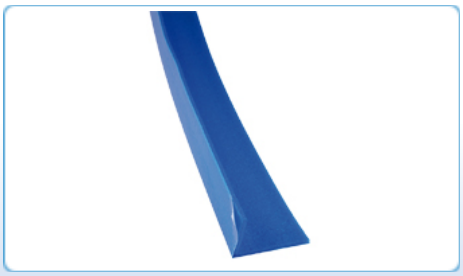
Supply and application of a soundproofing system to reduce noise caused by footsteps on floors, by combining a layer of sheets of polymer-based elasto-plastomeric bitumen membrane with a polyester fibre backing (such as **Mapesilent Roll** produced by MAPEI S.p.A.) with a layer of panels of polymer-based elasto-plastomeric bitumen membrane with a polyester fibre backing (such as **Mapesilent Panel** produced by MAPEI S.p.A.), inclusive of all required special pieces: shaped perimeter profiles in closed-cell, expanded polyethylene (such as **Mapesilent Band** R produced by MAPEI S.p.A.) and closed-cell, expanded polyethylene sealing tape (such as **Mapesilent Tape** produced by MAPEI S.p.A.) required to complete the system, certified according to current norms and standards (UNI EN ISO 717-2:2007, UNI EN ISO 140-8 and UNI EN 29052-1:1993).
The system must have the following technical and performance characteristics:

nominal thickness d:	8.0+13.0 mm
reduction of noise caused by footsteps measured after installation ΔL_w:	> 42 dB
effective dynamic stiffness S':	14.5 MN/m³
thermal resistance R:	0.458 m² K/W

All other operations included and calculated in the price for work completed according to specification

.....(€/m²)






S.1.5 DOUBLE-LAYER PANEL SYSTEM
Procedure

Checking and preparing the substrate

Make sure that the surface is sufficiently clean and that there is enough space to install the insulating/soundproofing layer and a screed ≥ 40 mm thick.

If the substrate is uneven, or if there is through-piping in the substrate, a regulating layer must be installed to form a uniform surface to position the insulating/soundproofing material.

Cover the entire surface with a continuous separation or slip layer which acts as a vapour barrier (e.g. 3/10 mm polyethylene or a similar material). Overlap the edges of adjacent sheets by approximately 20 cm and tape the overlaps to form a continuous layer. This layer may be positioned either before or after the insulating/soundproofing material. Assess the most suitable position according to site requirements.

Application of the soundproofing layer

Apply the first layer of **Mapesilent Panel** with the fibre side (the lighter side) facing upwards. Make sure the panels are perfectly aligned and the edges are butted together. If panels need to be cut to shape before positioning them, trim approximately 5 mm from the bitumen membrane to prevent it coming into contact with the perimeter wall and causing acoustic bridges.

Position the second layer of **Mapesilent Panel** with the fibre part facing downwards. If panels need to be cut to shape before positioning them, trim approximately 5 mm from the bitumen membrane. We recommend staggering the second layer with respect to the first layer to avoid the formation of acoustic bridges.

After checking that the various panels are in the correct position, seal all the overlaps with **Mapesilent Tape**. Go over the tape with a rigid roller to make sure it adheres perfectly.

Around the perimeter walls of the room and any element which passes through the screed, apply **Mapesilent Band** R (or **Mapesilent Band**) by removing the protective film on the back to expose the adhesive part. Around the corners of the room, trim the lower part of the strip to form a 90° angle. When applying the various pieces of strip around the perimeter, make sure there are no gaps between them or acoustic bridges will be formed. After applying all the pieces around the perimeter, finish off the operation by pressing firmly along the entire length of each piece to guarantee that it comes into contact with the substrate and transfers the adhesive correctly.

Cut and apply pieces of **Mapesilent Tape** in the corners and on the fillet joints between the various pieces of **Mapesilent Band** R (or **Mapesilent Band**) so that the joints are perfectly protected. Also apply tape on the overlaps between the **Mapesilent Panel** and **Mapesilent Band** R (or **Mapesilent Band**).

Once work has been completed, the **Mapesilent Tape** must be visible on all the overlaps between the elements which make up the system.There must be absolutely no contact points with the substrate, to avoid the formation of acoustic bridges.

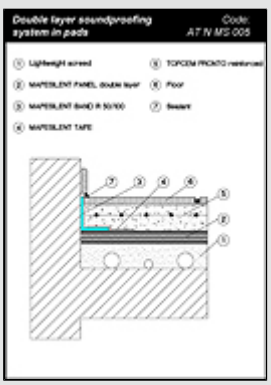
Making the floating screed

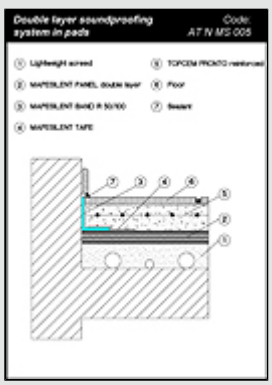
Floating screeds applied over insulating/soundproofing systems must be at least 40 mm thick, although this thickness must be verified according to the final use of the room and the compressibility of the insulating/soundproofing material used. We also recommend inserting electro-welded, zinc-plated mesh at the mid-point of the screed when pouring the screed material if better crack-resistance and a more even distribution of loads are required (see section ***R.1.1.3.10***).

To make normal-setting, quick-drying floating screeds, use **Topcem** binder (see section ***R.1.1.3.6***) mixed with water and aggregates with a suitable grain size, or **Topcem Pronto** pre-blended mortar (see section ***R.1.1.3.7***), mixed with water only.

To make rapid-setting and drying floating screeds, use **Mapecem** binder (see section ***R.1.1.3.8***) mixed with water and aggregates with a suitable grain size, or **Mapecem Pronto** pre-blended mortar (see section ***R.1.1.3.9***) mixed with water only.

N.B.: Cut any protruding pieces of **Mapesilent Band** R (or **Mapesilent Band**) and/or **Mapesilent Door** to the finished flooring level after completing installation and grouting of the flooring. Then seal any gaps between the skirting and the floor with a suitable elastic sealant according to the type of flooring installed.





S.1 SOUNDPROOFING SYSTEMS FOR FLOATING SCREEDS

S.1.5.1 Double-layer panel system

Supply and application of a soundproofing system to reduce noise caused by footsteps on floors, using a double layer of polymer-based elasto-plastomeric bitumen membrane sandwiched together with a layer of polyester fibre (such as **Mapesilent Panel** produced by MAPEI S.p.A.), inclusive of all required special pieces: shaped perimeter profiles in closed-cell, expanded polyethylene (such as **Mapesilent Band** R produced by MAPEI S.p.A.) and closed-cell, expanded polyethylene sealing tape (such as **Mapesilent Tape** produced by MAPEI S.p.A.) required to complete the system, certified according to current norms and standards (UNI EN ISO 717-2:2007, UNI EN ISO 140-8 and UNI EN 29052-1:1993).
The system must have the following technical and performance characteristics:

nominal thickness d:	13.0+13.0 mm
reduction of noise caused by footsteps measured after installation ΔL_w:	> 42 dB
effective dynamic stiffness S':	10.5 MN/m³
thermal resistance R:	0.626 m² K/W

All other operations included and calculated in the price for work completed according to specification

.....(€/m²)

S.2 UNDERFLOOR SOUNDPROOFING SYSTEM

Introduction
The Mapesonic CR system

Soundproofing systems were devised to increase wellbeing perceived in buildings according to the requirements of Executive Prime Ministerial Decree D.P.C.M. 5-12-97. Horizontal partitions are usually soundproofed by creating a floating screed or by applying elastic material directly under the new flooring. The second solution is usually adopted in existing buildings during restoration work when soundproofing against the noise of footsteps is required, and it would be either impossible or too expensive to demolish and remove the existing flooring and build a new, soundproof, floating screed. In these circumstances, it is still possible to intervene by applying **Mapesonic CR**, and then installing the ceramic, stone, multi-layered parquet or resilient flooring on top.

The Mapesonic CR system

Mapesonic CR

Under-floor soundproofing system using cork, rubber and high quality polyurethane rolls, available in 2 mm and 4 mm thickness. **Mapesonic CR** may be applied on top of cementitious substrates or old ceramic and natural stone floors before installing any type of ceramic, stone, multi-layered parquet and resilient flooring.

Mapesonic Strip

Self-adhesive tape positioned around the perimeter of rooms and pillars to prevent the formation of acoustic bridges.

Ultrabond Eco V4SP

General-purpose adhesive in water dispersion with very low emission level of volatile organic compounds (VOC) and extended open time for resilient flooring.

Ultrabond Eco S955 1K

One-component, isocyanate and solvent-free, sililated polymer-based adhesive with very low emission of volatile organic compounds (VOC) for all types of parquet.

S.2 UNDERFLOOR SOUNDPROOFING SYSTEM

S.2.1 THIN UNDERFLOOR SHEET SYSTEM
Procedure

Checking and preparing the substrate

Make sure the surface is clean, flat and strong and, if applied on old flooring, that it is well adhered to the substrate. Repair the flooring if required. Thoroughly clean the surface, using a system according to the type of substrate or existing flooring.

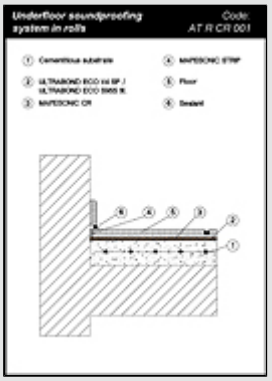
Application of the soundproofing layer

Apply Mapesonic Strip around the perimeter of the room to isolate the new flooring, then bond the sheets of **Mapesonic CR**.

Bond the sheets on absorbent substrates using **Ultrabond Eco V4SP** general-purpose acrylic adhesive (see section ***B.1.1.3***). For non-absorbent substrates, apply the sheets using one-component, sililated polymer-based adhesive such as **Ultrabond Eco S955 1K** (see section ***C.1.2.3***).

The selected flooring may then be directly installed when the adhesive is dry.

N.B.: Cut any protruding pieces of Mapesonic Strip to the finished flooring level after completing installation and grouting of the flooring. Then seal any gaps between the skirting and the floor with a suitable elastic sealant according to the type of flooring installed.



S.2 UNDERFLOOR SOUNDPROOFING SYSTEM

S.2.1.1 Thin underfloor sheet system

Supply and application of a thin underfloor soundproofing system with the capacity of reducing noise caused by footsteps (such as **Mapesonic CR** produced by MAPEI S.p.A.), after positioning suitable insulating strip around the perimeter of the room (such as Mapesonic Strip produced by MAPEI S.p.A.). Apply the membrane directly on the substrate, after thoroughly cleaning and preparing the substrate, using acrylic adhesive in water dispersion (such as **Ultrabond Eco V4SP** produced by MAPEI S.p.A.) for absorbent substrates, or one-component, sililated polymer-based adhesive (such as **Ultrabond Eco S955 1K** produced by MAPEI S.p.A.) for non-absorbent substrates.
The soundproofing mat must have the following characteristics:

thickness:	2 or 4 mm (according to the level of soundproofing required)
material:	recomposed cork and rubber with polyurethane binder
elongation at failure (%):	20
tensile strength (N/mm²):	0.6
EMICODE:	EC1 Plus

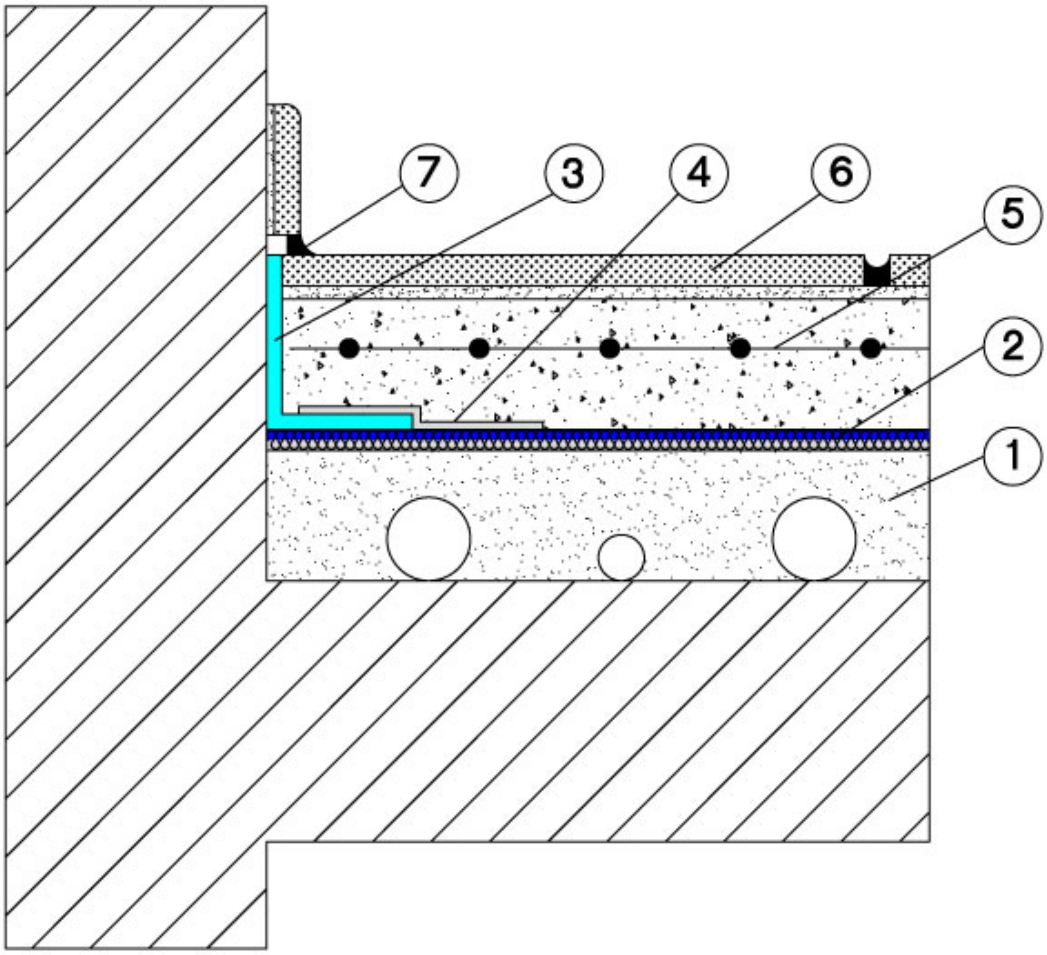
All other operations included and calculated in the price for work completed according to specification

……(€/m²)

Single layer soundproofing system in rolls

Code: AT N MS 001

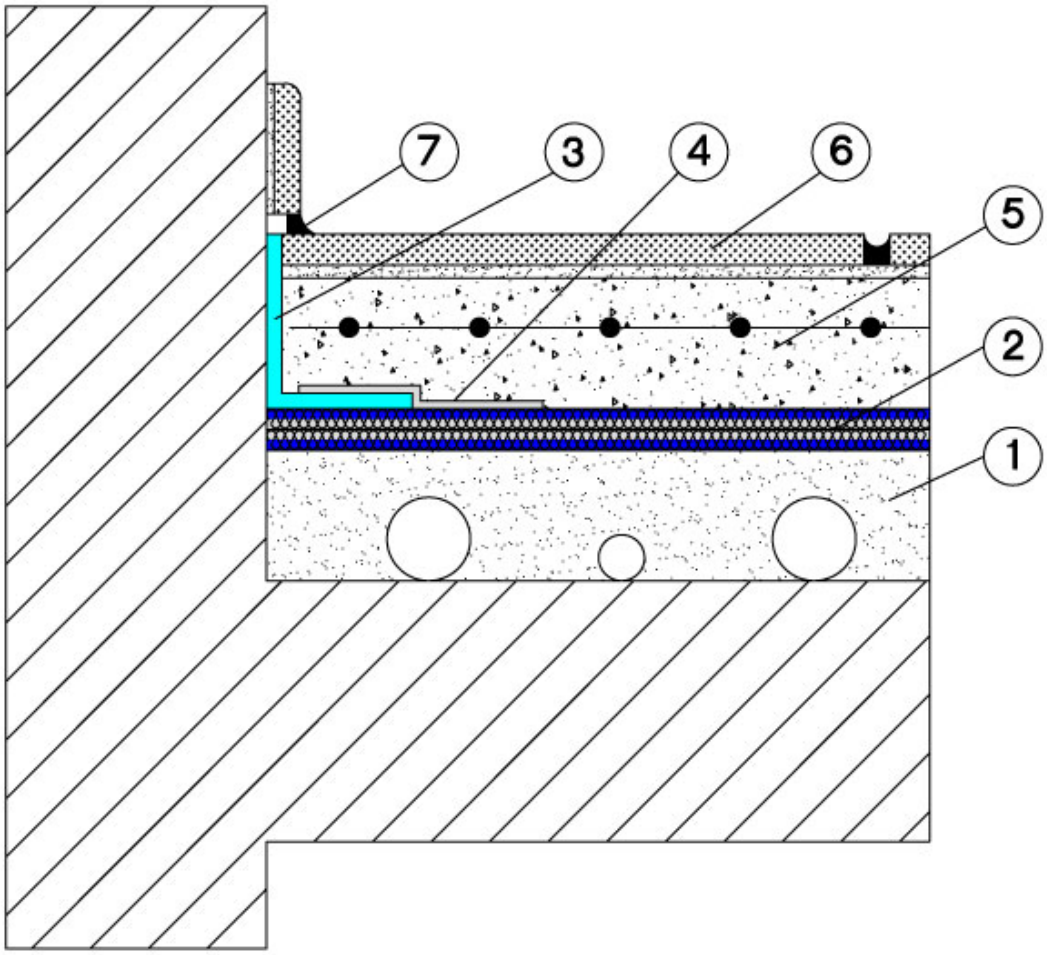
1. Lightweight screed
2. MAPESILENT ROLL single layer
3. MAPESILENT BAND R 50/100
4. MAPESILENT TAPE
5. TOPCEM PRONTO reinforced
6. Floor
7. Sealant



Double layer soundproofing system in rolls

Code: AT N MS 002

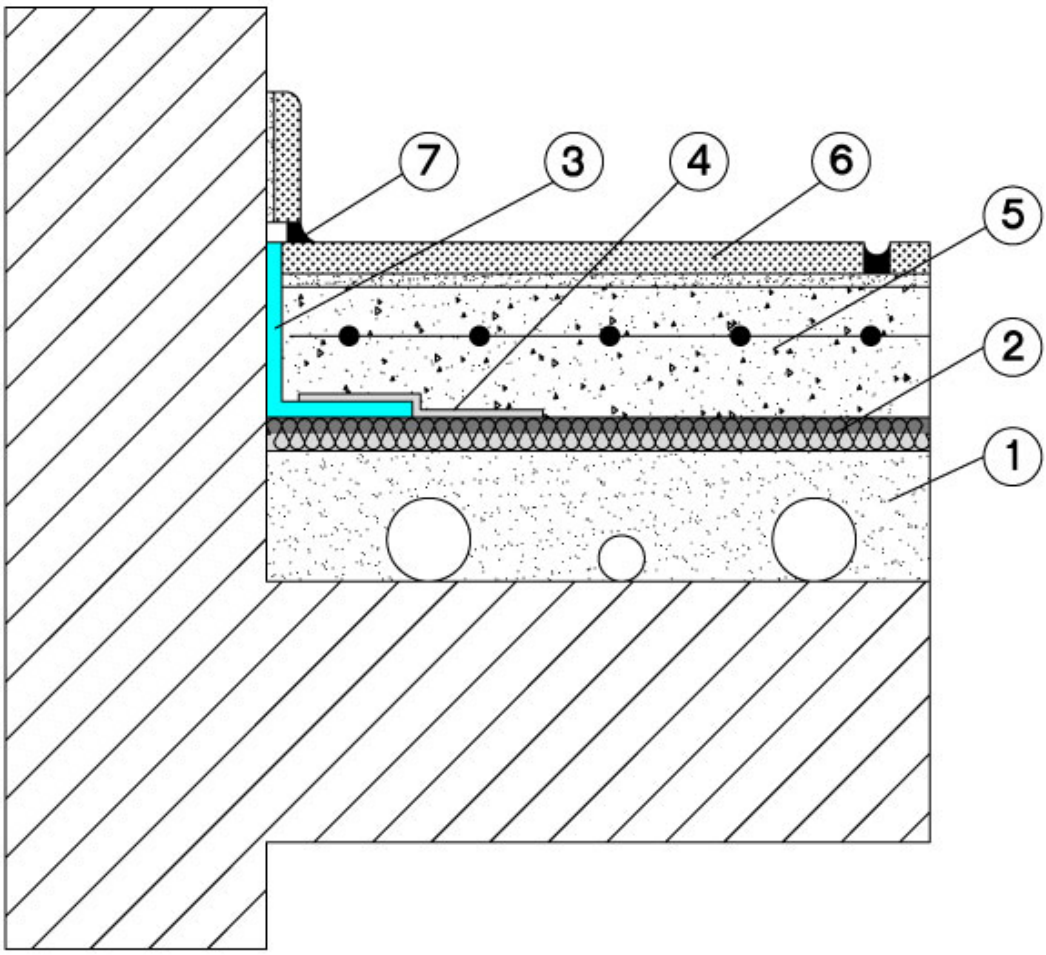
1. Lightweight screed
2. MAPESILENT ROLL double layer
3. MAPESILENT BAND R 50/100
4. MAPESILENT TAPE
5. TOPCEM PRONTO reinforced
6. Floor
7. Sealant



Single layer soundproofing system in pads

Code: AT N MS 003

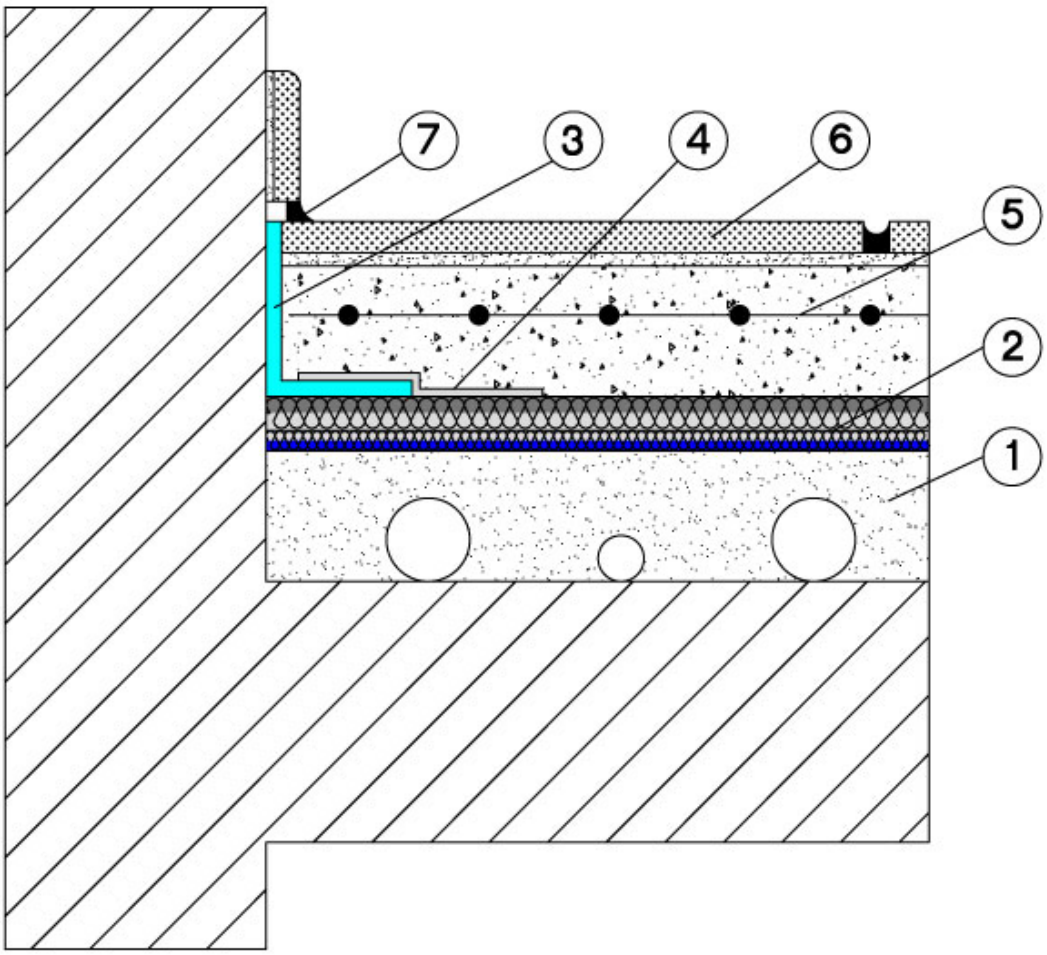
1. Lightweight screed
2. MAPESILENT PANEL single layer
3. MAPESILENT BAND R 50/100
4. MAPESILENT TAPE
5. TOPCEM PRONTO reinforced
6. Floor
7. Sealant



Soundproofing system in joined rolls and pads

Code: AT N MS 004

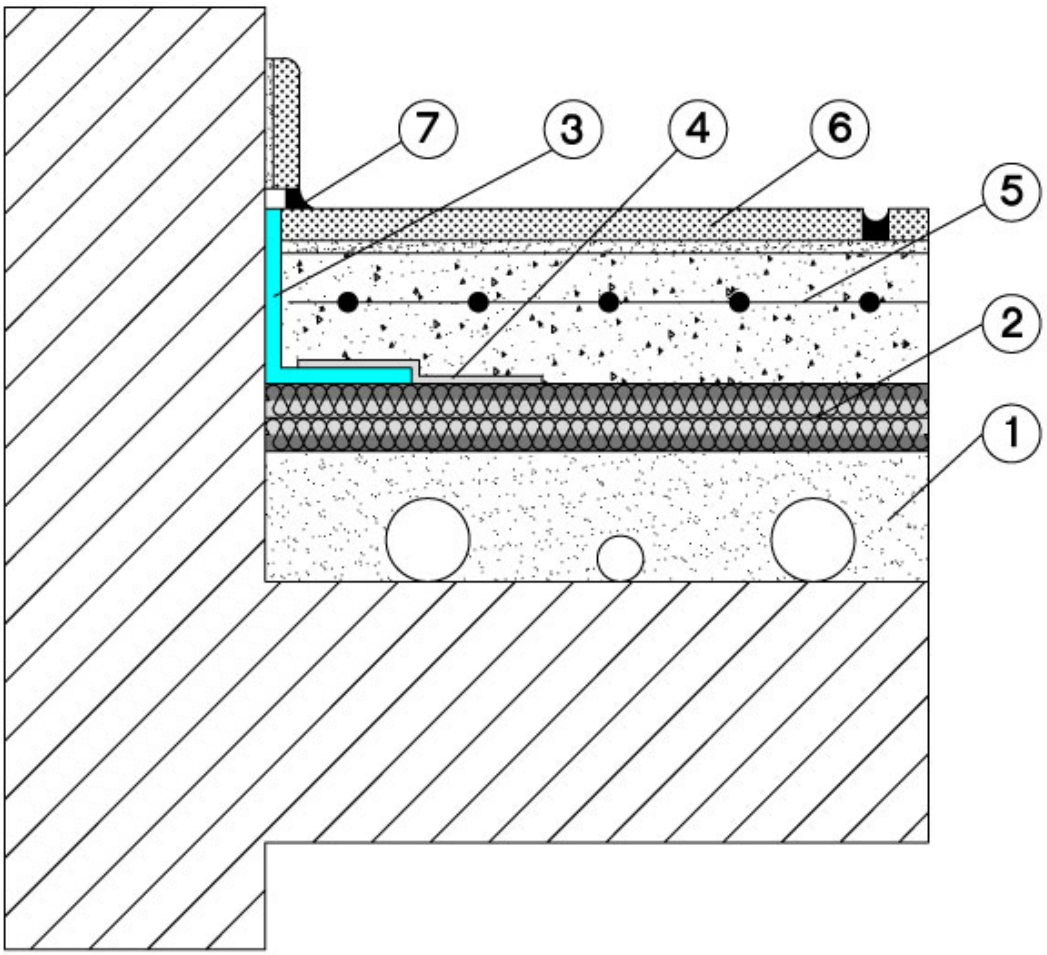
1. Lightweight screed
2. MAPESILENT ROLL + MAPESILENT PANEL
3. MAPESILENT BAND R 50/100
4. MAPESILENT TAPE
5. TOPCEM PRONTO reinforced
6. Floor
7. Sealant



Double layer soundproofing system in pads

Code: AT N MS 005

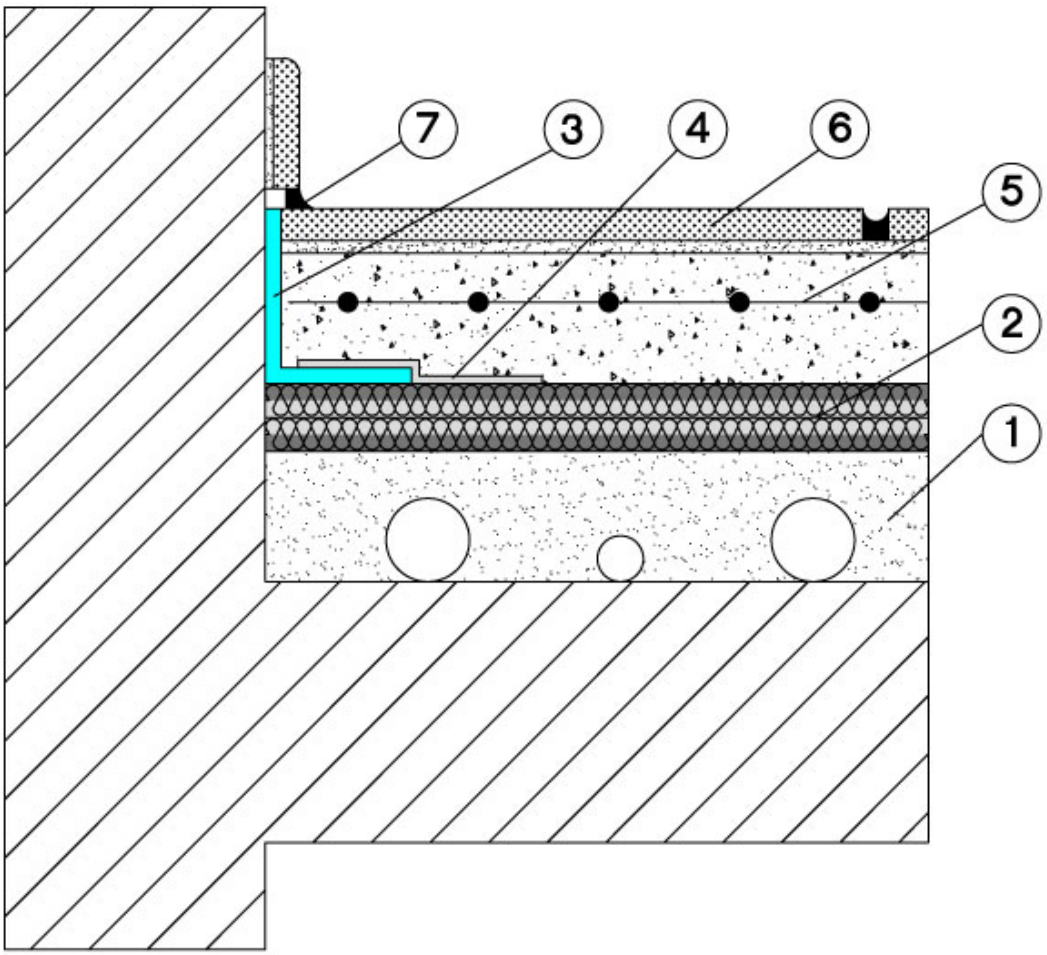
1. Lightweight screed
2. MAPESILENT PANEL double layer
3. MAPESILENT BAND R 50/100
4. MAPESILENT TAPE
5. TOPCEM PRONTO reinforced
6. Floor
7. Sealant



Double layer soundproofing system in pads

Code: AT N MS 005

1. Lightweight screed
2. MAPESILENT PANEL double layer
3. MAPESILENT BAND R 50/100
4. MAPESILENT TAPE
5. TOPCEM PRONTO reinforced
6. Floor
7. Sealant



Underfloor soundproofing system in rolls

Code: AT R CR 001

1. Cementitious substrate
2. ULTRABOND ECO V4 SP / ULTRABOND ECO S955 1K
3. MAPESONIC CR
4. MAPESONIC STRIP
5. Floor
6. Sealant