Mapesound 90

Professional, Sound-Reduction and Crack-Isolation Sheet Membrane

DESCRIPTION

Mapesound™ *90* is a flexible, thin, 90-mil, lightweight, load-bearing, fabric-reinforced “peel-and-stick” sound-reduction and crack-isolation membrane. After application, ceramic tile or stone can be installed immediately with a recommended MAPEI polymer-modified cement-based mortar, or glue-down wood flooring can be immediately installed with any MAPEI urethane or hybrid-polymer-based wood adhesive.

Mapesound 90 reduces transmission of impact sound (footsteps, dropped objects, etc.) and airborne sound (voice, TV, etc.) through floors when installed under ceramic tile, stone or wood floor coverings. It also helps to prevent existing or future in-plane floor cracks (with movement up to 3/8" [10 mm] wide) from transmitting through grout, ceramic tile or natural-stone assemblies.

FEATURES AND BENEFITS

- Dual protection: Provides sound reduction and crack isolation
- Semi-rigid sheet: Easy to position on floor and cut to size
- Split-back release film: Installs faster than membranes with 1-piece liners
- White surface: Easy to view under lower-light conditions
- Thin-film adhesive backing: Bonds to a variety of substrates
- Time-saving: Prime, peel, stick and then install tile or wood immediately
- No odor: Great for confined spaces
- Contains post-industrial recycled material

INDUSTRY STANDARDS AND APPROVALS

- ASTM C627 (Robinson): See the “Product Performance Properties” chart below.
- ASTM E492-04 (Impact Sound), E90-04 (Airborne Sound), E2179 (Impact Sound): See the “Product Performance Properties” chart below.

- ANSI A118.13 (Bonded Sound Reduction Membranes for Thin-Set Ceramic Tile Installation): *Mapesound 90* exceeds the standards for bonded sound-reduction membranes. See the “Product Performance Properties” chart below.
- ANSI A118.12 (Crack Isolation for Tile & Stone): *Mapesound 90* exceeds the high-performance standard for crack isolation. See the “Product Performance Properties” chart below.

WHERE TO USE

Use under ceramic tile, natural stone and wood flooring in interior residential areas such as homes, apartments and condominiums, and in interior light commercial areas such as office buildings, restaurants and galleries.

Sound reduction (for tile, stone and wood flooring)

- For interior residential and light commercial floors
- Ideal for multi-family or multi-story buildings where noise transmission is a common problem
- Reduces transmission of impact sound (footsteps, dropped objects, etc.) and airborne sound (voice, TV, etc.) through floors covered with tile, stone and wood floor coverings

Crack isolation (for ceramic tile or stone)

- For interior residential and light commercial floors
- Helps to prevent existing or future in-plane substrate cracks (with movement up to 3/8" [10 mm] wide) from transmitting through grout, ceramic tile or natural stone

LIMITATIONS

(for *Mapesound 90* combined with *MAPEI SM Primer*™ or *MAPEI SM Primer Fast*)

- Do not use over cracks or control joints subject to out-of-plane movement; or in-plane movement greater than 3/8" (10 mm).
- Do not cover expansion joints. Refer to most current TCNA Handbook, Detail EJ171; or TTMAC Tile Installation Manual, Detail 301MJ.
- Do not use over substrates containing asbestos, plank wood flooring, presswood, particleboard, chipboard, oriented strand board (OSB), pressure- or oil-treated plywood, Lauan plywood, Masonite, self-stick tile, laminate, metal or fiberglass surfaces, or similar dimensionally unstable materials.
- Do not use where excessive substrate moisture and/or where negative hydrostatic pressure exists. The maximum amount of acceptable moisture in a concrete substrate for *Mapesound 90* primed with *MAPEI SM Primer* is 5 lbs. per 1,000 sq. ft. (2.27 kg per 92.9 m^2) per 24 hours as determined by the ASTM F1869 calcium chloride test. The maximum amount of acceptable moisture in a concrete substrate for *Mapesound 90* primed with *MAPEI SM Primer Fast* is 8 lbs. per 1,000 sq. ft. (3.63 kg per 92.9 m^2) per 24 hours as determined by ASTM F1869 calcium chloride test. When moisture vapor emissions exceed 8 lbs. per 1,000 sq. ft. (3.63 kg per 92.9 m^2) per 24 hours, contact MAPEI’s Technical Services Department for recommendations.
- Do not use on vertical surfaces, under glass tile installations, as a waterproofing or roof deck membrane or wear surface, for submerged applications or floors subject to standing water, or on plywood in exterior applications.
- Unprimed gypsum-based patching or leveling compounds may leave a dusty residue on the surface. Clean the dusty substrate before priming with *MAPEI SM Primer* or *MAPEI SM Primer Fast*.
- *MAPEI SM Primer* or *MAPEI SM Primer Fast* must be applied to the substrate and allowed to dry tacky before *Mapesound 90* is installed.

- Do not use self-leveling products over *Mapesound 90*.
- Do not use premixed products to set tile over *Mapesound 90*.
- Do not install moisture-sensitive tile or stone with water-based setting materials.

Note: On occasion, dimensionally weak natural-stone tile that normally would not be categorized as moisture-sensitive (such as travertine, limestone, marble and agglomerates) can exhibit doming, cupping or curling when wet-set or medium-bed mortar methods of installation are used over impervious sheet membranes such as *Mapesound 90*. Do not use medium-bed setting materials to compensate for irregularities in the substrate or to increase the elevation of the finished installation. A self-leveling underlayment or cured mortar bed should be applied to compensate for these conditions before installation of *Mapesound 90*. When installing natural stone, always do a mockup area of the proposed installation and allow materials to reach full cure to ensure the desired effect. For more information regarding these methods or materials, contact MAPEI's Technical Services Department before installation or design.

SUITABLE SUBSTRATES

(when primed with *MAPEI SM Primer* or *MAPEI SM Primer Fast*)

- Fully cured concrete (at least 28 days old)
- Cement mortar beds and leveling coats
- Cement backer units (CBUs) – see manufacturer's installation guidelines
- Cement terrazzo floors, and well-bonded ceramic tile and natural stone
- Well-bonded vinyl composition tile (VCT)
- APA and CANPLY Group 1 exterior plywood (interior, residential and light commercial in dry conditions only)

Consult MAPEI's Technical Services Department for installation recommendations regarding substrates and conditions not listed.

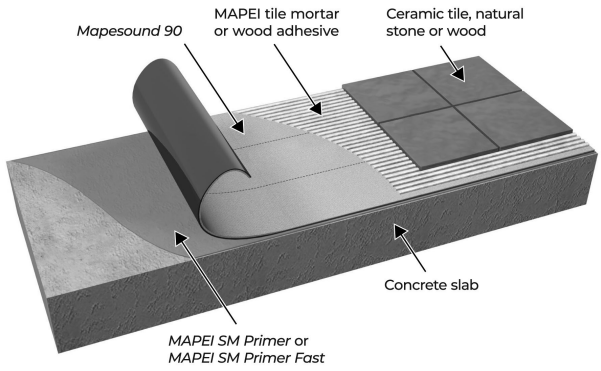
Tile Council of North America (TCNA) Statement on Maximum Allowable Deflection
"Floor systems, whether wood framed or concrete, over which the tile will be installed... shall be in conformance with the International Residential Code (IRC) for residential applications, the International Building Code (IBC) for commercial applications, or applicable building codes. The owner should communicate in writing to the project design professional and general contractor the intended use of the tile installation, including in-service loads or information. Project design professional and general contractor must make necessary allowances for the expected live load, concentrated loads, impact loads and dead loads, including maximum allowable loads during construction and maintenance. The tile contractor shall not be responsible for problems resulting from any structural subfloor installation not compliant with applicable building codes, unless structural subfloor was designed and installed by the tile contractor."

SURFACE PREPARATION

- All suitable substrates must be smooth, structurally sound and free of any substance that could prevent adhesion.
- Do not use chemical means (acid etching or stripping) to prepare approved substrates. Use mechanical methods only.
- To remove any bond-inhibiting materials, concrete substrates should be mechanically cleaned and prepared by diamond-cup grinding or other engineer-approved methods to obtain the International Concrete Repair Institute (ICRI) concrete surface profile (CSP) #2. When concrete requires more mechanical preparation, the profile will typically increase. In such cases, the surface should be made smooth by

applying *Planipatch*® powder mixed with diluted *Planipatch Plus*® liquid (1 part *Planipatch Plus* liquid per 3 parts water). For large areas, consider using one of MAPEI's self-leveling underlayments. See the respective Technical Data Sheets (TDSs) for more information.

- For details, see the "Surface preparation requirements" reference guide in the Tile & Stone Installation Systems section of MAPEI's Website, or contact MAPEI's Technical Services Department.



PRODUCT APPLICATION

- Apply *Mapesound 90* when substrate and ambient temperatures are between 40°F and 95°F (4°C and 35°C).
- Install *Mapesound 90* only in conjunction with undiluted *MAPEI SM Primer* or *MAPEI SM Primer Fast*.
- Allow *MAPEI SM Primer* or *MAPEI SM Primer Fast* to dry tacky before *Mapesound 90* is installed.

Crack isolation (for existing cracks)

1. Individual crack isolation before installing tile

   1.1 *Mapesound 90* may be applied directly to the substrate area that has existing in-plane cracks (with movement up to 3/8" [10 mm] wide).

   1.2 Cut *Mapesound 90* to size so that the length and width of the membrane will cover the entire length and width of the crack, plus 3 times the width of the largest tile being used.

   1.3 Center the cut membrane over the crack's width and length. Mark on the floor where the membrane is to start.

   1.4 Set aside precut sections (or entire rolls) of *Mapesound 90*. Continue with installation instructions at Step 2.3.

2. Full-floor sound reduction (or crack isolation)

   2.1 To effectively achieve sound reduction and to isolate and protect an entire tile installation from existing or future substrate cracks, *Mapesound 90* must be installed over 100% of the substrate that will be covered with ceramic tile, stone or wood flooring. For effective sound reduction, an approved acoustical sealant should fill gaps between the end of tile or wood and the walls, columns, etc.

   2.2 Unroll *Mapesound 90* and cut to size for the substrate to be tiled. For easier handling and installation, each roll may be cut into shorter lengths (such as 10 feet [3.05 m]) before installation. Ensure that all edges

or ends of each roll abut edges or ends of other rolls. To ensure a flat surface and proper sound reduction, do not overlap edges or ends from one roll onto another.

2.3 Number each sheet and mark its starting point on the floor.

2.4 Set aside precut sections of *Mapesound 90*.

2.5 With a roller or brush, prime the floor with *MAPEI SM Primer* or *MAPEI SM Primer Fast* – 1 U.S. gal. (3.79 L) will cover 300 to 350 sq. ft. (27.9 to 32.5 m^2). The surface temperature of the prepared substrate must be at least 5 degrees F (2.8 degrees C) above the dew point to avoid condensation on the substrate surface as *MAPEI SM Primer* or *MAPEI SM Primer Fast* dries.

2.6 Let the primer dry until tacky (for about 10 to 15 minutes).

2.7 Remove 6" (15 cm) of liner from the membrane bottom.

2.8 Apply the membrane (at previously marked starting point) to the tacky substrate.

2.9 Continue removing short lengths of liner and applying the membrane to the tacky floor. Edges of each roll should abut edges of other rolls (but do not overlap pieces).

2.10 For proper bond between *Mapesound 90* and the tacky floor, roll a 75- to 100-lb. (34.0- to 45.4-kg) roller over the installed membrane. For smaller pieces of membrane, use a wood float or steel trowel to apply pressure.

2.11 Cut out wrinkles or trapped objects in the membrane with a razor knife, and replace with small pieces of membrane.

2.12 Layout lines for tile or wood can be easily applied and viewed on the light-colored membrane.

Dry-fit in place.

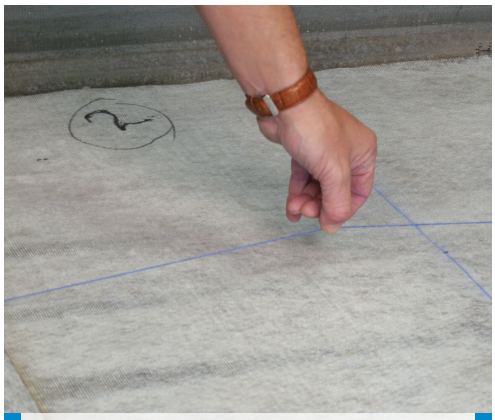
Measure and cut into sheets.

With a roller or brush, apply the primer.

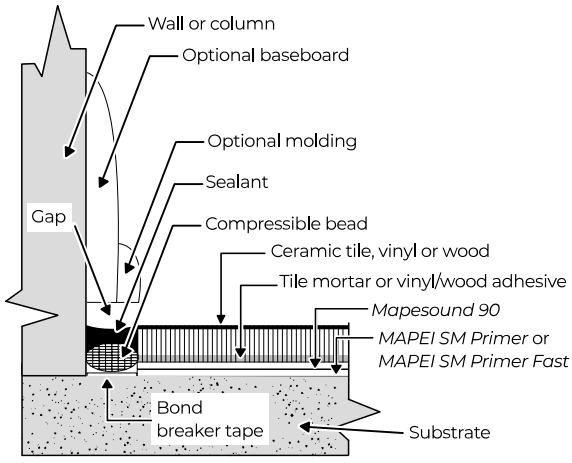
Remove the liner and apply down over the primed substrate.

Ensure proper bond using a roller.

Cut out wrinkles or trapped objects.



Snap a chalk line to prep for tile installation.



TILE INSTALLATION

Use an appropriate MAPEI latex polymer-modified mortar meeting ISO 13007 classification C2E and ANSI A118.4 and ANSI A118.11 industry standards to set tile, or use a urethane adhesive to install wood. For moisture-sensitive tile or stone, use MAPEI's *Planicrete® W* flexible setting compound.

Note: For installation of tile larger than 18" x 18" (46 x 46 cm), longer mortar-cure times may be required before tile can be grouted or walked upon. For shorter turnaround times when installing larger tile, use a MAPEI rapid-set mortar such as *Ultraflex*® *LFT Rapid*, *Ultracontact*™ *RS* or *Granirapid*®. Select an appropriate MAPEI cement grout meeting ISO 13007 classification CG2WA or CG2WAF and ANSI A118.6 or ANSI A118.7 industry standards, or an epoxy grout meeting ISO 13007 classification RG and ANSI A118.3 industry standards.

Glue-down wood flooring (for sound reduction)

1. Follow Steps 2.1 through 2.12 above.
2. Apply a MAPEI urethane or hybrid-polymer-based wood adhesive (*Ultrabond ECO*® *975*, *Ultrabond ECO 980* or *Ultrabond ECO 985*). Follow the wood-flooring manufacturer's instructions and recommended trowel size.

EXPANSION JOINTS

- Do not cover any substrate movement joints with *Mapesound 90*, mortar or tiles. Provide for movement joints where specified. Refer to the most current TCNA handbook for ceramic tile installation, Detail EJ171-07, or TTMAC Tile Installation Manual, Detail 301MJ.
- When necessary, cut tiles along both edges of the expansion joints. Do not allow tile or mortar to overlap the joints.
- Protect tilework with metal strips (edge metal) along both edges of structural building expansion joints.
- Install the specified compressible bead and sealant into all expansion and control joints.

GROUTING

- Select an appropriate MAPEI cement grout meeting ISO 13007 classification CG2WA or CG2WAF and ANSI A118.6 or ANSI A118.7 industry standards, or an epoxy grout meeting ISO 13007 classifications R2/RG or RG, as well as ANSI A118.3 industry standards. For additional information, instructions and protection recommendations, see the respective TDS for the MAPEI grout selected.

CLEANUP

- Remove excess *MAPEI SM Primer* or *MAPEI SM Primer Fast* with mineral spirits.

PROTECTION

- Provide for dry, heated storage on site and deliver materials at least 24 hours before application.
- Store at between 40°F and 95°F (4°C and 35°C).
- Do not store *Mapesound 90* in direct sunlight.
- Protect installation from contamination and damage before and during tilework.
- Always provide proper protection of finished floors when heavy equipment (such as fork lifts or scissor lifts) is used over installations with sheet membrane underlayments during construction.

Product Performance Properties (for *Mapesound 90*)

Thickness	0.090" or 90 mils
Maximum crack movement capacity	3/8" (10 mm) wide, in-plane
Fabric color	White
VOCs (Rule #1168 of California's SCAQMD)	0 g per L
Shelf life	1 year when stored in a dry area in original shipping container at between 40°F and 95°F (4°C and 35°C)

ANSI A118.12 (Crack-Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation)
4.1 – Fungus and microorganism resistance:
    4.1.2 – 14-day incubation: Pass
    5.1.6 – After accelerated aging: Pass
5.2 – Point load test:
    5.2.3 – Point load resistance after 28-day cure: Pass
5.3 – Robinson floor test ASTM C627: Pass
5.4 – System crack resistance test:
    5.4.9 – Standard performance: Exceeds
    5.4.9 – High performance: Exceeds

ANSI A118.13 (American National Standard Specification for Bonded Thin-Set Ceramic Sound Reduction Membranes for Thin-Set Ceramic Tile Installations)
4.1 – Fungus and microorganism resistance:
    4.1.2 – 14-day incubation: Pass
5.0 – Tests for system performance
5.1 – Shear strength to ceramic tiles and cement mortars
    5.1.3 – Seven-day shear strength: Pass
    5.1.4 – Seven-day water immersion shear strength: Pass
    5.1.5 – Four-week shear strength: Pass
5.2 – Robinson floor test ASTM C627: Pass
5.3 – Sound transmission reduction test
    5.3.8 – Testing according to Section 4 of ASTM E2179: Pass

	ASTM C627 Service Rating (Robinson)
	Residential and Light Commercial Applications
Measured rating	Light Commercial
MAPEI grout	*Keracolor® S Sanded Grout*
12" x 12" (30 x 30 cm) solid-body, unglazed solid body porcelain (with 1/4" [6 mm] expansion joints)	Yes
MAPEI mortar	*Ultraflex 2*
Mapesound 90	Yes

MAPEI SM Primer or MAPEI SM Primer Fast	Yes
6" (15 cm) concrete slab	Yes

ASTM Standards for Sound Reduction; MAPEI Corporation and MAPEI Inc. certify that the following sound tests (for tile) were conducted and results supplied by NGC Testing Services, Buffalo, NY.

		Sound-Reduction Ratings Over 6" (15 cm) Concrete Slab
		Solid Porcelain Tile[1]
ASTM test method	Type of sound-transmission measurement	Suspended ceiling[2]
E492-09 / E989-06 (IIC)	Impact sound	66
E90-04 / E413-10 (STC)	Airborne sound	64

For sound-reduction ratings, higher numbers are preferred over lower numbers.
[1] *12" x 12" (30 x 30 cm) solid body, unglazed, porcelain tile installed with MAPEI's* Ultraflex 2 *mortar (with 1/4" x 3/8" [6 x 10 mm] square-notched trowel) and* Keracolor S Sanded Grout
[2] *Drywall grid suspension system consisting of 5/8" (16 mm) Type X gypsum board (2.3 lbs./sq. ft. [11.2 kg/m^2] attached with screws 12" [30 cm] on center to suspended grid suspension system; and 12" [30 cm] plenum with 3-1/2" (8.9 cm) lay-in fiberglass insulation (0.16 lb./sq. ft. [0.78 kg/m^2]).*

Packaging and Coverage

Size	Weight	Coverage
Roll: 39.4" x 35 ft. (100 cm x 10.7 m)	37.5 lbs. (17.0 kg)	115 sq. ft. (10.7 m^2)

ADDITIONAL INFORMATION

For information on MAPEI's commitment to sustainability and transparency, as well as how MAPEI products may contribute to green building standards and certification systems, contact sustainability_USA@mapei.com (USA).

WARNING

The test results shown in the TECHNICAL DATA table were obtained in compliance with test methods and curing cycles, if applicable, defined in the industry standards referenced on the TDS. Please note that the use

of test procedures or methods other than those indicated in the table could lead to different values and that, in such cases, any liability of our company is excluded.

CONTACT INFORMATION

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1-800-361-9309

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1-800-42-MAPEI (1-800-426-2734)

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