



# Self-Leveler

## Self-Leveling Underlayment



Before

After

### DESCRIPTION

*Self-Leveler* is a high-strength, regular-setting, cement-based, self-leveling underlayment and repair mix for use over interior concrete, plywood or other approved floor surfaces. *Self-Leveler* is convenient and easy to use. Once cured, it provides a smooth, level surface on which to install a variety of floor coverings.

### FEATURES AND BENEFITS

- Convenient: Just mix and pour.
- Smooths and flattens interior floors
- Cures to provide a flat, hard, smooth surface to receive a variety of floor-covering materials
- Provides a flat substrate over which to install wood, vinyl, cement and epoxy terrazzo flooring systems, carpet or other floor-covering materials
- Compatible with a wide variety of tile and stone installation mortars, floor-covering adhesives, epoxy and polyurethane adhesives
- Can be installed from 1/8" to 1" (3 mm to 2,5 cm) thick in a single pour
- Ready for ceramic tile or stone in 24 hours
- Ready for other types of floor coverings after 2 to 3 days
- Mix with water only.

### SUITABLE FLOOR COVERINGS

- Ceramic tile and natural stone (after 24-hour cure)
- Engineered or solid wood flooring, carpet, vinyl sheet goods, vinyl tile, vinyl composition tile (VCT), homogenous PVC, and rubber flooring

### SUITABLE SUBSTRATES (properly prepared)

- Sound, dimensionally stable, fully cured concrete at least 28 days old, free from hydrostatic pressure
- Plywood subfloors that are properly bonded
- Ceramic tile, VCT, cement or epoxy terrazzo, and thin layers of old cutback adhesive residue that are well-bonded and dimensionally stable
- Subfloors of exterior-grade plywood in accordance with the most recent edition of TCNA (Tile Council of North America) Handbook's F185 specification

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

### WHERE TO USE

- *Self-Leveler* is well-suited for flattening, smoothing and repairing residential and commercial interior floors before the installation of final floor coverings.



## LIMITATIONS

- For use in dry, interior areas only
- Not a wear surface; must be covered with tile, stone or other final floor-covering material
- Make sure the substrate and ambient room temperatures are between 50°F and 95°F (10°C and 35°C) before application. Temperatures must be maintained within this range for at least 72 hours after the installation of *Self-Leveler*. In cooler conditions, use indirect auxiliary heaters to maintain the ambient and substrate temperatures within the required range. For temperatures above 85°F (29°C), contact MAPEI's Technical Services Department.
- Do not install *Self-Leveler* over particleboard, chipboard, Masonite, Lauan, oriented strand board (OSB), metal, asbestos, gypsum-based patching materials or any other non-dimensionally stable materials.
- Before beginning, test in a small area to ensure compatibility, bond strength and performance of the complete flooring system. Contact MAPEI's Technical Service Department for installation recommendations regarding substrates or conditions not listed.
- Do not install over substrates containing asbestos.
- Before application of *Self-Leveler*, always properly prepare the surface and prime with MAPEI's *Primer T™*.
- Provide for expansion and control joints where specified, including the perimeter of the room, columns, supports and equipment pedestals. Do not bridge expansion and control joints.
- Depending on depth of pour, *Self-Leveler* hardens and is ready to accept installation of ceramic tile and natural stone in 24 hours. Other suitable floor coverings – such as carpet, vinyl sheet goods, vinyl tile, VCT, homogenous PVC, rubber and engineered wood plank – can be installed 2 to 3 days after application.

## SURFACE PREPARATION

1. Fill in deep areas, holes and cracks with appropriate concrete restoration materials, especially when installing on a second-story floor or above where fluid material could leak to a floor below (contact MAPEI's Technical Services Department for details).
2. Thoroughly clean the surface of any substance that could interfere with bonding of *Self-Leveler*, including dirt, paint, tar, asphalt, wax, oil, grease, latex compounds, sealers, curing compounds, form release agents, loose toppings, foreign substances and adhesive residue.
3. Surfaces must be thoroughly cleaned, structurally sound, stable and solid, properly prepared, bonded, primed (with *Primer T*), and free from dirt and dust.
4. Consult the floor-covering or coating manufacturer's recommendations regarding the maximum allowable moisture vapor emission rate (MVER) and retained moisture content in the substrate. For substrates with an MVER exceeding 5 lbs. per 1,000 sq. ft. (2,27 kg per 92,9 m<sup>2</sup>) per 24 hours, using a calcium chloride test (reference ASTM F1869), install a suitable MAPEI moisture-reduction barrier. Note: The maximum allowable MVER is always determined by the complete system installed, including primers, underlayments/toppings, floor coverings and sealers. The wide variety of substrate conditions, floor coverings and adhesives available requires careful analysis of the intended final floor use, as well as compliance with each manufacturer's recommendations for MVER, retained moisture content and adhesive selections.
5. Concrete surfaces must be mechanically profiled and prepared by shotblasting, sandblasting, water-jetting, scarifying, diamond-grinding or other engineered approved methods. Reference International Concrete Restoration Institute (ICRI) CSP 3 standards for acceptable profile height).
6. After cleaning and mechanically profiling the substrate, test for MVER using calcium chloride test reference ASTM F1869. When using *Self-Leveler* as an underlayment with other finished floor systems (such as resilient, VCT and ceramic), always follow manufacturers' recommendations regarding maximum allowable moisture content and MVER before installation. Refer to the "Suitable Substrates" section for details regarding MVER conditions and treatments. In cases where the MVER exceeds 5 lbs. per 1,000 sq. ft. (2,27 kg per 92,9 m<sup>2</sup>) per 24 hours, using a calcium chloride test (reference ASTM F1869), install a suitable MAPEI moisture-reduction barrier. Apply a small test area to ensure compatibility with the moisture-reduction barrier before general installation. Once the barrier is cured, apply *Primer T* before the application of *Self-Leveler*.
7. Concrete substrate and ambient room temperatures must be between 50°F and 95°F (10°C and 35°C) before application. Temperatures must be maintained within this range for at least 72 hours after the installation of *Self-Leveler*.
8. If application is taking place over plywood flooring, installation requirements (finished flooring, load, use and/or deflection) specify the use of a lath or diamond mesh (meeting the requirements of ASTM C847), installed according to TCNA F185 guidelines, on top of the primed surface before *Self-Leveler* is applied. Anticipate better performance when using lath. Differential or excessive movement within plywood substrate may lead to hairline cracks at plywood joints.
9. Prime the floor with *Primer T* and let it dry (see Technical Data Sheet for information). Do not apply primer over standing water.

## MIXING

Before starting, take appropriate safety precautions and choose all appropriate safety equipment. See Material Safety Data Sheet (MSDS) for product details at [www.mapei.com](http://www.mapei.com).

- Read all instructions thoroughly before beginning.

### General mixing

1. Into a clean mixing container, add 5 to 5.28 U.S. qts. (4,73 to 5,0 L) of cool, clean, drinkable water. If water is not cool, chill it to 70°F (21°C).
2. Add 50 lbs. (22,7 kg) of *Self-Leveler* powder while slowly mixing with an egg-beater style mixer and electric drill. Once all powder has been added to the water, mix at a high speed (at about 900 to 1,100 rpm) for 2 minutes.
3. Note: The water/powder ratio must remain consistent from container to container. Do not overwater material. For best results, use MAPEI's *Self-Leveling Tool Kit* (contact MAPEI's Technical Services Department for details).

### Barrel mixing

1. Using the water/powder ratio in the "General mixing" instructions, mix using a high-speed mixer (at about 1,100 rpm) with an "egg-beater" mixing paddle.
2. Mix to a lump-free consistency (about 2 minutes). Do not overmix. Overmixing or moving the mixer up and down during the mixing process could trap air, which could shorten the pot life or cause "pinholing" during application and curing.

### Pump mixing (professional use only)

1. *Self-Leveler* can be mechanically "pump"-mixed, using the water/powder ratio shown in "General mixing" instructions. Use a continuous mixer and pump (with at least 140 ft. [42,7 m] of hose) or with a batch mixer and pump (with at least 110 ft. [33,5 m] of hose).
2. Mixer and pump must be in good working condition. Periodic cleaning of pumping equipment is required per the manufacturer's instructions.
3. Pressure-test the rotor and stator for proper mixing.
4. Use a mesh screen "sock" at the end of the hose to catch any foreign material that could enter the hopper of the mixer.

## APPLYING

1. Read all instructions thoroughly before installation.
2. Application of *Self-Leveler* over large areas can be easier and more efficient by using conventional piston, rotor-stator or underlayment types of pumps. Contact MAPEI's Technical Services Department for recommendations.
3. Before application to the entire floor, test all installation materials on a small sample area to ensure desired results.
4. Before installation, close doors and windows, and turn off HVAC systems to prevent drafts during application and until pour has cured. Protect areas from direct sunlight.
5. For best results, work as a team to provide a continuous flow of wet material to avoid trapping air or creating a cold joint between mixed batches.
6. Set the width of the pour at a distance that is ideal for maintaining a wet edge throughout placement. Quickly pour or pump *Self-Leveler* onto the

properly prepared and primed surface in a ribbon pattern. If a wet edge cannot be maintained, reduce the width of the pour.

7. *Self-Leveler* has an approximate flow time of 10 minutes at 73°F (23°C), is self-leveling and can be applied from 1/8" to 1" (3 mm to 2,5 cm) in a single application. Temperature and humidity affect the working time, flowability and setting time. Apply enough material to adequately cover all high spots.
8. Immediately after placing the *Self-Leveler*, spread with a gauge rake. After achieving the desired depth, smooth the surface with a smoother to obtain an even surface. Do not overwork the material, which could trap air.
9. For professional use only: *Self-Leveler* may be extended with 1/4" to 3/8" (6 to 10 mm) of clean, saturated surface-dry (SSD) aggregate on the primed surface at no more than half of the total pour depth. Pour *Self-Leveler* over placed aggregate and rake aggressively to ensure full contact and bond with substrate. Immediately pour 1/4" (6 mm) of *Self-Leveler* over the raked aggregate to provide a smooth, level surface. Alternately, one may add aggregate (up to 30% by weight) directly to the *Self-Leveler* when mixing; in this case, add the aggregate after reaching a homogenous mix of *Self-Leveler* and water. Note: Use only clean, nonreactive aggregates.

## EXPANSION AND CONTROL JOINTS

1. Provide for expansion and control joints where specified, including the perimeter of the room, columns, supports and equipment pedestals. If control and expansion joints do not exist in the substrate, provide for them in the system.
2. Do not bridge the substrate's expansion and control joints. Ensure that such joints are honored completely through *Self-Leveler* and primer (*Primer T*).
3. Cut joints in *Self-Leveler* at least 1/4" (6 mm) wide within 24 hours of placement.

## CURING

*Self-Leveler* is self-curing; do not use a damp-curing method or curing and sealing compounds.

## CLEANUP

Wash hands and tools with water promptly before material hardens. Cured material must be mechanically removed.

## PROTECTION

- Protect from foot traffic for 24 hours.
- Applications in cooler temperatures may require extra curing time before the installation of floor-covering materials.
- Protect *Self-Leveler* from excessive heat or draft conditions during curing. Turn off all forced ventilation and radiant-heating systems. Protect for up to 24 hours after completion.
- Protect installation from traffic, dirt, dust and other trades until *Self-Leveler* has completely cured and the final flooring has been installed.
- Do not expose *Self-Leveler* to heavy loads for at least 72 hours after installation.



## Product Performance Properties

Laboratory Tests	Results
<b>Self-Leveler (before mixing)</b>	
Physical state	Powder
Color	Gray
<b>Self-Leveler (mixed)</b>	
Mixing ratio	5 to 5.28 U.S. qts. (4,73 to 5,0 L) of water per 50 lbs. (22,7 kg) of powder
Density	About 128 lbs. per cu. ft. (2,1 kg per L)
pH	11
Application temperature range	50°F to 95°F (10°C to 35°C)
Pot life at 73°F (23°C)	20 minutes
Flowing time at 73°F (23°C)	10 to 15 minutes
Final set at 73°F (23°C)	4 to 5 hours
Time required before installation of tile or stone	Typically 24 hours
Time required before installation of impervious floor covering	Up to 1/4" (6 mm) thickness, typically 24 hours; 1/4" to 1/2" (6 to 12 mm) thickness, typically 2 to 3 days, depending on temperature and humidity
<b>Data relating to Self-Leveler</b> (material and hardening conditions at 73°F [23°C] and 50% relative humidity without curing)	
Compressive strength – ASTM C109 (CAN/CSA-A5)	
7 days	> 2,700 psi (18,6 MPa)
28 days	> 4,200 psi (29,0 MPa)
Flexural strength – ASTM C348	
7 days	> 850 psi (5,86 MPa)
28 days	> 1,050 psi (7,24 MPa)
Pull-out strength (Direct Tensile Bond test – rupture in concrete substrate) (CAN/CSA-A23.2-6B)	
7 days	> 300 psi (2,07 MPa)
28 days	> 350 psi (2,41 MPa)

## Shelf Life and Application Properties

Shelf life	1 year in original bag in a dry, heated and covered area
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## CSI Division Classification

Cast Underlayment	03 54 00
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## Packaging

Product Code	Size
17850136	Bag: 50 lbs. (22,7 kg)

## Approximate Product Coverage\* per thickness for a 50-lb. (22,7-kg) bag

Thickness	Yield
1/8" (3 mm)	48 sq. ft. (4,46 m <sup>2</sup> )
1/4" (6 mm)	24 sq. ft. (2,23 m <sup>2</sup> )
1/2" (12 mm)	12 sq. ft. (1,11 m <sup>2</sup> )
1" (2,5 cm)	6 sq. ft. (0,55 m <sup>2</sup> )

\* Coverage/thickness data shown are given for estimating purposes only. Actual jobsite coverage may vary according to substrate conditions, type of equipment, thickness applied and applications methods used.

# Self-Leveler

Refer to MAPEI's MSDS for specific data related to VOCs, health and safety, and handling of product.

## STATEMENT OF RESPONSIBILITY

Before using, user shall determine the suitability of the product for its intended use and user alone assumes all risks and liability whatsoever in connection therewith. **ANY CLAIM SHALL BE DEEMED WAIVED UNLESS MADE IN WRITING TO US WITHIN FIFTEEN (15) DAYS FROM DATE IT WAS, OR REASONABLY SHOULD HAVE BEEN, DISCOVERED.**

We proudly support the following industry organizations:



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