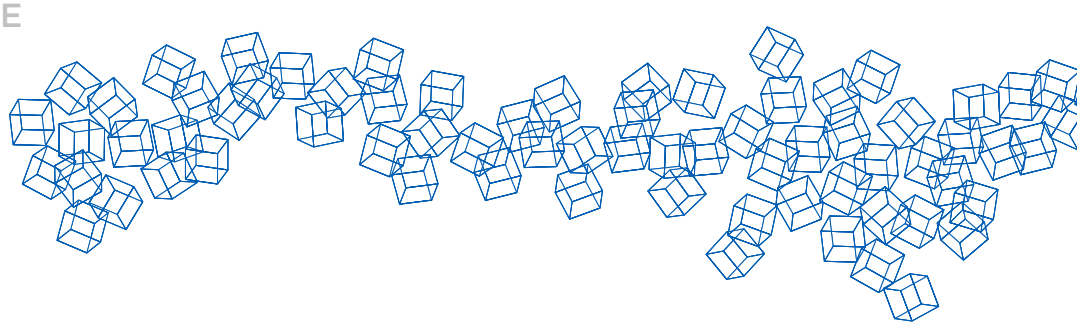

Extending SLUs with aggregate

This installation guide presents information and steps regarding the installation of MAPEI cement-based self-leveling underlayments (SLUs) mixed with water and combined with aggregate.

In general, a pour of a 50-lb. (22.7-kg) bag of self-leveler combined with 15% aggregate will weigh about 70 lbs. (31.8 kg), depending on the type of aggregate used. And 1 square foot (0.09 m^2) of self-leveler – poured at a depth of 5" (12.5 cm), with aggregate taking up half of the depth – will weigh around 57 lbs. (25.9 kg), depending on the type of aggregate used.

For height limits on extending an SLU, check the Technical Data Sheet (TDS) of the respective SLU. For product recommendations, contact MAPEI's Technical Services Department.

Preparation for installation

Because extending cement-based SLUs adds more structural weight, have the substrate's strength evaluated by an engineer to ensure suitability.

For guidance on surface preparation, consult the reference guide "Surface-preparation requirements for self-leveling underlayments" in the Related Documents section of the Floor Covering Installation Systems page on MAPEI's Website. Also see the ASTM F710 standard ("Preparing the Concrete Floor") and ACI 302.2R-06 ("Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials").

After surface preparation has been completed, apply foam tape that is 1/4" (6 mm) in width around the edges of the walls, columns, supports and equipment. This will allow for expansion and prevent the self-leveler from flowing under walls. In addition, adding a bead of caulk along the walls will keep the SLU from flowing into other areas.

Priming is critical in helping the SLU to bond. When applied over porous surfaces that soak up the SLU, primers prevent uneven drying, which can cause cracks.

For help in selecting the appropriate MAPEI primer, consult the reference guide "Primers for self-leveling materials" in the Related Documents section of the Floor Covering Installation Systems page on MAPEI's Website. Also refer to a primer's TDS for the recommended drying time.

Note that MAPEI primers and SLUs are not recommended over any products containing asbestos.

Suitable substrates and installation conditions

- SLUs are for interior floors only.
- To ensure selection of the appropriate SLU, moisture-test concrete floors using the ASTM F1869 (calcium chloride) test for moisture vapor emission rates and using the ASTM F2170 test for relative humidity.
- For SLU extensions with aggregate, concrete subfloors should have an International Concrete Repair Institute (ICRI) concrete surface profile (CSP) of #3 to #4.
- Concrete substrate and ambient room temperatures must be between 50°F and 95°F (10°C and 35°C) before SLU application. Temperatures must be maintained within this range for at least 72 hours after the installation of an SLU.

Lifts up to 3" (7.5 cm)

Barrel mixing

1. Using the appropriate mixing ratio, use a high-speed mixer with a mixing paddle.
2. Pour the required amount of cool, clean potable water into the mixing barrel. If available water is not cool, chill the water to 70°F (21°C).
3. Add the SLU powder while slowly stirring.
4. Add 15 lbs. (6.80 kg) of washed, nonreactive, pea-gravel aggregate (measuring 1/4" to 3/8", or 6 to 10 mm, in diameter) per 50-lb. (22.7-kg) bag of self-leveler. Typically, this mixing procedure involves two bags of an SLU with the water ratio per bag.
5. Mix to a homogenous consistency, or for about 90 to 120 seconds. Do not overmix.
6. Pour out the SLU-aggregate mixture and rake aggressively, ensuring full contact and bond with the substrate.

   Note: Adding aggregate will usually cause the initial pour to have a textured surface. A second application of primer and SLU may be applied to smooth the surface.

Pump mixing

1. MAPEI's self-levelers can be mechanically mixed, using the appropriate mixing ratio and 15 lbs. (6.80 kg) of pea-gravel aggregate (measuring 1/4" to 3/8", or 6 to 10 mm, in diameter) per 50-lb. (22.7-kg) bag of SLU, with a continuous mixer and pump.
2. To ensure a suitable mix and flow, test the mixed material from the pump hose's end in a small test area before general application. Note that the pump must be approved for aggregate up to 3/8" (10 mm) in diameter.

   Note: A 1-gallon (3.79-L) bucket filled will aggregate will generally weigh 15 to 17 lbs. (6.80 to 7.71 kg).

Lifts over 3" (7.5 cm)

Pre-placed aggregate

1. For fills that will exceed MAPEI's initial recommended self-leveler height of 3" to 5" (7.5 to 12.5 cm), pre-place clean, washed, dry, nonreactive aggregate – at 50% to 60% of the total pour depth – over the primed surface. Pea gravel should measure from 1/8" to 3/8" (3 to 10 mm) in diameter, and rocks should measure from 3/4" to 1" (19 mm to 2.5 cm) in diameter.
2. Pour the MAPEI self-leveler over the placed aggregate. Rake aggressively to ensure full contact and bond with the substrate.

   Note: Pre-placed aggregate will usually cause the initial pour to have a textured surface. A second application of primer and SLU may be applied to smooth the surface.

   Note: For levelers that can be extended up to 5" (12.5 cm), see the TDSs.

   Note: A 1-gallon (3.79-L) bucket filled with aggregate will generally weigh 15 to 17 lbs. (6.80 to 7.71 kg), depending on the type of aggregate used. And, as a general rule, 35 to 40 lbs. (15.9 to 18.1 kg) of aggregate will take up half the depth of 1 sq. ft. (0.09 m^2) of self-leveler measuring 5" (12.5 cm) deep.

Secondary lifts

1. The self-leveler must be sound and secure to the substrate.

   Note: For proper drying and strength, secondary SLU lifts must be preceded by the longer waiting times that are indicated for moisture-sensitive/resilient installations. For these times, refer to the TDSs of MAPEI's SLU products.
2. The first lift must be properly primed before application of the second lift.
3. Follow Steps 1 to 4 in the "Applications" section of MAPEI's installation guide "Standard installation of SLUs" or check the TDS for the SLU being used.
4. Secondary lifts can be applied as many times as needed, provided that the engineer evaluation permits this.

Curing

- MAPEI self-levelers are self-curing. Do not use a damp-curing method, or curing and sealing compounds.
- Protect MAPEI's SLUs from excessive heat and draft conditions during curing. Turn off all forced ventilation and radiant-heating systems. Protect the installation for up to 24 hours after completion.
- Avoid walking on the installed surface for at least 4 to 5 hours after installation, depending upon temperature and humidity conditions.
- Protect the installation from traffic, dirt and dust from other trades until MAPEI's SLU is completely cured and the final flooring has been installed.
- Do not expose MAPEI's SLUs to rolling dynamic loads, such as forklifts or scissor lifts, for at least 72 hours after installation.
- Curing times will vary when levelers are extended. A moisture test may be needed to ensure the curing suitability of moisture-sensitive flooring materials.

Cleanup

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

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MAPEI Headquarters of North America
1144 East Newport Center Drive
Deerfield Beach, Florida 33442
1-888-US-MAPEI (1-888-876-2734) /
(954) 246-8888