

Ultraplan HFL

High-Flow, Fast-Setting, Self-Leveling Underlayment



DESCRIPTION

Ultraplan® HFL is a high-flow, high-compression-strength, calcium-aluminate-cement-based, self-leveling underlayment. Its unique flow properties allow for easy placement and a super-flat finished surface with minimal effort. *Ultraplan HFL's* fast setting time allows for floor-covering installation within 3 hours of placement.

FEATURES AND BENEFITS

- High-flow characteristics
- High compression strength
- Fast-setting

INDUSTRY STANDARDS AND APPROVALS

- Meets compression and flatness requirements of ASTM F710, Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
- Meets compression and flatness requirements of ASTM F2873, Standard Practice for the Installation of Self-Leveling Underlayment, and the Preparation of Surface to Receive Resilient Flooring
- Meets A118.16 American National Standard Specifications for Flowable Hydraulic Cement Underlayment / Self-Leveling Underlayment and A108.21 Interior Installation of Flowable Hydraulic Cement Underlayment / Self-Leveling Underlayment– 2021

WHERE TO USE

- For leveling, smoothing and repairing interior residential or commercial floors before installation of flooring systems and coverings

LIMITATIONS

- Do not install over any flooring products, adhesives or substrates containing asbestos.
- For interior use only
- Do not use in thicknesses greater than 1" (2.5 cm).
- Do not use as a final wear surface. *Ultraplan HFL* must be covered with a finished floor system.
- Install self-leveling underlayment only in temperatures between 50°F and 90°F (10°C and 32°C). For temperatures above 90°F (32°C), follow American Concrete Institute (ACI) hot-weather application guidelines to ensure a successful installation.
- Do not install over moving control joints (with active cracks) or over expansion joints.
- Do not install self-leveling underlayment over sheet vinyl; self-stick vinyl tile; luxury vinyl tile/plank (LVT/LVP); glue-down wood flooring; particleboard; hardboard (Masonite); Lauan panels; waterproofing, crack-isolation or sound-control membranes; gypsum-based patching materials; or any other non-dimensionally stable materials.
- Do not install if the maximum allowable deflection of the supporting surface exceeds L/360 (or L/720 for installations involving natural stone or their agglomerates) when exposed to live or dead loads.
- Do not use in areas subjected to prolonged exposure to moisture. Contact MAPEI's Technical Services Department for waterproofing recommendations.
- Do not use as a moisture-mitigation product. Cement-based self-leveling underlayments do not reduce moisture vapor transmissions emanating from high-moisture concrete substrates. If the flooring or installation system requires protection from elevated moisture levels, moisture mitigation must be done before the self-leveler is installed. Contact MAPEI's Technical Services Department for moisture-mitigation recommendations.

SURFACE PREPARATION

- All substrates must be properly prepared, structurally sound, stable, dry and primed with the appropriate MAPEI primer.
- Surface profiling of concrete is not required if *Ultraplan HFL* will only be exposed to light or moderate traffic conditions. For high traffic, heavy rolling loads and maximum depth of fill conditions, an International Concrete Repair Institute (ICRI) concrete surface profile (CSP) of #3 to #4 is required beneath the selected primer. Alternatively, a textured primer may be used instead of mechanical profiling. Make sure to follow all written instructions and guidelines found on the Technical Data Sheet and other related documentation for the selected primer.
- On concrete substrates, fill in deep areas, holes and cracks with an appropriate MAPEI patching compound or screed. Fluid self-leveler may leak through to a floor below or other unwanted cavities.
- On plywood substrates, fill joints with an acrylic-based caulking compound to prevent underlayment from leaking onto the floor below.

Refer to MAPEI's reference guide "Surface-preparation requirements for self-leveling underlayments" for details on proper surface preparation.

SUITABLE SUBSTRATES

- Well-bonded and dimensionally stable ceramic tile, porcelain tile, quarry tile, natural stone, vinyl composition tile (VCT), epoxy-based moisture barriers, cement terrazzo and epoxy terrazzo
- Properly installed cement backer units
- Durable, sound, stable and fully cured cement-based mortar beds
- Engineer-approved plywood or oriented strand board (OSB) subfloors with a maximum of 19.2" (48.77 cm) on center joist placement and that meets requirements of L/360
- Existing nailed-down wood flooring (including plank wood subfloors, strip wood subfloors or nailed-down solid wood flooring) that has been covered over with at least one layer of 5/8" (16 mm) plywood, glued and screwed
- Gypsum-based underlayments
- Mapeheat™ Membrane, Mapeguard® UM and similar crack-isolation and uncoupling membranes

MIXING

Before product use, take appropriate safety precautions. Refer to the Safety Data Sheet for details.

General mixing

1. Measure and pour the required amount of cool, clean potable water – as shown in the chart below regarding “Mixing ratio” – for the number of bags to be mixed into a clean mixing vessel (a mixing barrel or 5-gal. [18.9-L] plastic pail). For best results, the water temperature should be at about room temperature (73°F or 23°C). The mixing ratio must remain consistent. Do not overwater.
2. Slowly add the powder into the pre-measured water. Use a high-speed drill (at 800 to 1,000 rpm) and an oval paddle mixer to mix the underlayment to a homogenous, lump-free consistency. Continue to mix according to the mixing time requirements shown in the chart below. Do not overmix. Overmixing or moving the mixer up and down during the mixing process could trap air, shorten the pot life or cause pinholing during the application and curing process.

Pump mixing

1. *Ultraplan HFL* can be mechanically mixed – as shown in the chart below regarding “Mixing ratio” – with a continuous mixer and pump (and at least 140 ft. or 42.7 m of hose) or a batch mixer and pump (and at least 110 ft. or 33.5 m of hose). Periodic cleaning of pumping equipment may be required per the manufacturer’s instructions.
2. Use a mesh screen “sock” at the end of the hose to catch any foreign material that may have fallen into the hopper during mixing. 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.

PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

1. Concrete substrates and ambient room temperatures should be maintained at between 50°F and 90°F (10°C and 32°C) for 72 hours before, during and after application.
2. Before installation, close doors and windows, and turn off HVAC systems to prevent drafts during application and until the underlayment is cured. Protect areas from direct sunlight.
3. Quickly pour or pump onto the properly primed surface in a ribbon pattern. Set the width of the pour at a distance that is ideal for maintaining a wet edge throughout placement. If a wet edge cannot be maintained,

reduce the width of the pour. For best results, work as a team to provide a continuous flow of wet material, to avoid trapping air or creating a cold joint. Apply enough material to adequately cover all high spots.

4. Shortly after placing the self-leveling underlayment, spread the material with a gauge rake to assist in gauging out the self-leveling underlayment to the desired depth. After achieving the desired depth, smooth the surface with a smoother to obtain evenness.

CURING

Ultraplan HFL is self-curing; do not use a damp-curing method or curing/sealing compounds. Cool-weather conditions may extend curing or setting times. Warmer weather conditions may accelerate the flow, curing and setting times.

PROTECTION

- Protect the self-leveling underlayment from direct sunlight, excessive heat or drafty conditions during curing. Turn off all forced ventilation and radiant heating systems, and protect the installation for up to 24 hours after application.
- Avoid walking on the installed surface for at least 2 to 3 hours after installation, depending upon temperature and humidity conditions.
- Protect the installation from traffic, dirt and dust from other trades until self-leveling underlayment is completely cured and final flooring has been installed.
- Do not expose self-leveling underlayment to rolling dynamic loads, such as fork lifts or scissor lifts, for at least 72 hours after installation.

CLEANUP

Use water to wash hands and tools promptly before the material hardens. Cured material must be mechanically removed.

Product Performance Properties

Laboratory Tests	Results
Compressive strength – ASTM C349	
1 day	> 3,000 psi (20.7 MPa)
28 days	> 6,000 psi (41.4 MPa)
pH	11
VOC content	0 g per L
Cured density	124 lbs. per cu. ft. (2.00 kg per L)
Flexural strength – ASTM C348 (CAN/CSA-A23.2-8C)	
28 days	≈ 1,085 psi (7.48 MPa)

Shelf Life and Product Characteristics

before mixing

Shelf life	1 year when stored in original, unopened packaging at 73°F (23°C) and 50% relative humidity
Physical state	Powder
Color	Gray

Protect containers from freezing in transit and storage. Provide for heated storage on site and deliver all materials at least 24 hours before work begins.

Application Properties

at 73°F (23°C) and 50% relative humidity

Mixing ratio	6 to 6.25 U.S. qts. (5.68 to 5.91 L) of water per 50 lbs. (22.7 kg) of powder
Mixing time	2 to 3 minutes
Profile required	Concrete surface profile (CSP) of #2 to #3
Application temperature range	50°F to 90°F (10°C to 32°C)
Working time	Up to 15 minutes
Single-lift application range	1/16" to 1" (1.5 mm to 2.5 cm)
Minimum thickness over highest point in floor	1/16" (1.5 mm)
Maximum thickness	1" (2.5 cm)
Waiting time for secondary applications of self-leveling underlayment	24 hours
Drying time before installation of tile/stone flooring and high-moisture-resistant adhesives at 73°F (23°C)	3 hours
Drying time before installation of moisture-sensitive flooring at 73°F (23°C)	12 hours

Packaging

Size
Plastic bag: 50 lbs. (22.7 kg)

Approximate Coverage*
per 50 lbs. (22.7 kg)

Thickness	Coverage
1/16" (1.5 mm)	104 sq. ft. (9.66 m ²)
1/8" (3 mm)	52 sq. ft. (4.83 m ²)
1/4" (6 mm)	26 sq. ft. (2.42 m ²)
1/2" (12 mm)	13 sq. ft. (1.21 m ²)
1" (2.5 cm)	6.5 sq. ft. (0.60 m ²)

* Coverage shown is for estimating purposes only. Actual jobsite coverage may vary according to substrate conditions, type of equipment, thickness applied and application methods used.

CSI Division Classification

Cast Underlayment	03 54 00
--------------------------	----------

RELATED DOCUMENTS

- Reference guide: "Surface-preparation requirements for self-leveling underlayments"***

***At www.mapei.com

ADDITIONAL INFORMATION

Refer to the Safety Data Sheet (SDS) for specific data related to health and safety as well as product handling.

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) or sustainability-durabilite@mapei.com (Canada).

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 Technical Data Sheet. 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.

LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement nor replace requirements per the TDS in effect at the time of the MAPEI product installation. For the most up-to-date TDS and warranty information, please visit our website at www.mapei.com. **ANY ALTERATIONS TO THE WORDING OR REQUIREMENTS CONTAINED IN OR DERIVED FROM THIS TDS SHALL VOID ALL RELATED MAPEI WARRANTIES.**

Before using, the user must determine the suitability of our products for the intended use, and the user alone assumes all risks and liability. **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.**

CONTACT INFORMATION

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

Technical Services

U.S. and Puerto Rico:
 Flooring: 1-800-992-6273
 Concrete and heavy construction: 1-888-365-0614
Canada:
 1-800-361-9309

Customer Service

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

Edition Date: December 12, 2024 MK 3000510 (24-3431)

For the most current product data and BEST-BACKEDSM warranty information, visit www.mapei.com.

All Rights Reserved. © 2024 MAPEI Corporation.

