



Ultraplan[®] M20 Plus

**Quick-Setting,
High-Compressive-
Strength, Self-Leveling
Underlayment**



DESCRIPTION

Ultraplan M20 Plus is a calcium aluminate-based, quick-setting, self-leveling underlayment and topping. It is specially formulated for the resurfacing and construction of interior horizontal surfaces as a high-compressive-strength underlayment with maximum resistance to wheel tracking and indentations. *Ultraplan M20 Plus* is suitable for use as a commercial wear topping in warehouse and alternate industrial applications where an exceptional flat and smooth concrete surface is desired.

FEATURES AND BENEFITS

- Very high compression strength for maximum durability
- Fast-setting and abrasion-resistant
- For use as an underlayment or decorative topping

INDUSTRY STANDARDS AND APPROVALS

- Meets compression and flatness requirements of ASTM F710-17, Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
- Meets compression and flatness requirements of ASTM F2873-13, Standard Practice for the Installation of Self-Leveling Underlayment and the Preparation of Surface to Receive Resilient Flooring

Green certifications

- CRI Green Label Plus #GLP01646. Refer to the CRI's Website at www.carpet-rug.org for additional information.
- Living Building Challenge (LBC) Red List Free: This product has been verified per the most current Red List on the LBC's Website.

WHERE TO USE

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

- Fast-track resurfacing and construction of horizontal wear surfaces
- For use over radiant-heated floors or to encapsulate hydronic or electric radiant-heated floors
- Interior, residential applications (such as rental apartments, condominiums and homes)
- Interior, commercial applications (such as office buildings, hotel rooms/hallways, restaurants and cafeterias)
- Interior, heavy-commercial applications (such as hotel lobbies, convention centers, airports, shopping malls, grocery stores and department stores)
- Interior, institutional applications (such as hospitals, schools, universities, libraries and government buildings)

LIMITATIONS

- Do not mix with other self-leveling underlayments.
- Do not install over flooring products, over adhesives or over substrates containing asbestos.
- For interior use only
- If *Ultraplan M20 Plus* will be installed as a topping or final wear layer, the substrate must be primed with *Planibond*[®] EBA along with a sand broadcast to rejection. *Ultraplan M20 Plus* may be stained using traditional methods, but due to the nature of polymer-modified cementitious materials, one should expect variations in color, stainability and the general finish. MAPEI makes no representation about variations in color or consistency of finish.
- Do not polish the surface of *Ultraplan M20 Plus*.
- Install *Ultraplan M20 Plus* in temperatures between 50°F and 85°F (10°C and 29°C).
- Do not install over moving control joints (with active cracks) or over expansion joints.

- If the substrate has a moisture vapor emission rate (MVER) exceeding 5 lbs. per 1,000 sq. ft. (2.27 kg per 92.9 m²) per 24 hours using a calcium chloride test (reference ASTM F1869), and a relative humidity (RH) reading greater than 80% (ASTM F2170), use a MAPEI epoxy moisture barrier. Consult MAPEI's Technical Services Department for product recommendations.
- Do not install *Ultraplan M20 Plus* over sheet vinyl or self-stick vinyl tile; luxury vinyl tile or luxury vinyl plank (LVT or LVP); glue-down wood flooring; particleboard; chipboard; hardboard (Masonite); Lauan panels; crack-isolation or sound-control membranes; gypsum-based patching materials; or any other nondimensionally 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 mix with any other self-leveling underlayment.

SUITABLE SUBSTRATES

- Sound, dimensionally stable, fully cured concrete at least 28 days old and free from hydrostatic pressure
- Well-bonded and dimensionally stable ceramic tile, porcelain tile, quarry tile, natural stone, vinyl composition tile (VCT), cement, epoxy-based moisture barriers 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 in accordance with the most recent edition of the Tile Council of North America's F185 specification. Before a MAPEI underlayment is applied over plywood flooring, ASTM C847 specifications for finished flooring, load, use and/or deflection may require a synthetic lath such as *Mapelath™* or an appropriate diamond mesh on top of the primed surface.
- 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

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

SURFACE PREPARATION

- All substrates must be properly prepared, primed, structurally sound, stable, solid and dry.
- Concrete surfaces must be mechanically profiled to an International Concrete Repair Institute (ICRI) concrete surface profile (CSP) of #3.
- 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 a floor below.

Refer to MAPEI's reference guide "Surface-Preparation Requirements for Self-Leveling Underlayments" for details on proper surface preparation.

MIXING

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

General mixing

1. Mix water and *Ultraplan M20 Plus* powder at a mixing ratio of 5.5 to 5.8 U.S. qts. (5.20 to 5.49 L) of cool, clean, potable water per 50 lbs. (22.7 kg) of powder.
2. Measure and pour the required amount of water for the number of bags to be mixed into a clean mixing vessel (mixing barrel or plastic pail measuring 5 U.S. gals. or 18.9 L). For best results, the water temperature should be at about room temperature (70°F or 21°C). The mixing ratio must remain consistent; do not overwater the mixture.
3. Slowly add *Ultraplan M20 Plus* powder into the pre-measured water. Use a high-speed drill and an oval paddle mixer to mix *Ultraplan M20 Plus* to a homogenous, lump-free consistency. Continue to mix for 2 to 3 minutes. Do not overmix. Overmixing or moving the mixer up and down during the mixing process could trap air or cause pinholing during the application and curing process.

Pump mixing

1. The mixer and pump must be designed for cement materials and in good working condition. Periodic cleaning of pumping equipment is required per the manufacturer's instructions. Be sure to pressure-test the rotor and stator before mixing. 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.
2. *Ultraplan M20 Plus* can be mechanically mixed to a ratio of 5.5 to 5.8 U.S. qts. (5.20 to 5.49 L) of cool, clean, potable water per 50 lbs. (22.7 kg) of powder. For best results, the water temperature should be at about room temperature (70°F or 21°C). Use 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).
3. 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: Cool-weather conditions may require a longer mixing time or additional hose length to ensure the best product performance.

PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

1. Concrete substrates and ambient room temperatures should be maintained between 50°F and 85°F (10°C and 29°C) during application as well as for 3 days before and after application.
2. Before product 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.

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Product Performance Properties at 73°F (23°C) and 50% RH

Laboratory Tests	Results
Cured density	128 lbs. per cu. ft. (2.06 kg per L)
pH (of wet mixture)	11
VOCs (Rule #1168 of California's SCAQMD)	0 g per L
VOCs (Section 01350 of California's CDPH)	Passed
Compressive strength – ASTM C-109 Modified	
7 days	> 4,000 psi (27.6 MPa)
28 days	> 5,000 psi (34.5 MPa)
Flexural strength – ASTM C348 (CAN/CSA-A23.2-8C)	
28 days	> 1,280 psi (8.83 MPa)

Shelf Life and Product Characteristics before mixing

Shelf life	1 year in original, unopened packaging stored at 73°F (23°C) and 50% RH
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

Application temperature range	50°F to 85°F (10°C to 29°C)
Mixing ratio	5.5 to 5.8 U.S. qts. (5.20 to 5.49 L) of water per 50 lbs. (22.7 kg) of powder
Flow time	Up to 15 minutes
Single-lift application range	1/8" to 2" (3 mm to 5 cm)
Minimum thickness over highest point in floor	1/8" (3 mm)
Waiting time for secondary applications	1 day
Drying time before installation of non-moisture-sensitive floor coverings at 70°F (21°C) at 2" (5 cm) thickness*	3 hours
Drying time before installation of moisture-sensitive floor coverings at 70°F (21°C) at 2" (5 cm) thickness*	16 hours

* Note that shorter drying times may be obtained at thinner application levels.

Approximate Coverage** per 50 lbs. (22.7 kg)

Thickness	Coverage
1/8" (3 mm)	48 sq. ft. (4.46 m ²)
1/4" (6 mm)	24 sq. ft. (2.23 m ²)
1/2" (12 mm)	12 sq. ft. (1.11 m ²)
3/4" (19 mm)	8 sq. ft. (0.83 m ²)
1" (2.5 cm)	6 sq. ft. (0.56 m ²)
1.5" (3.8 cm)	4 sq. ft. (0.37 m ²)
2" (5 cm)	3 sq. ft. (0.28 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
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Packaging

Size
Plastic bag: 50 lbs. (22.7 kg)

Ultraplan M20 Plus



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- Quickly pour or pump *Ultraplan M20 Plus* onto the properly prepared and 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.
- Shortly after placing *Ultraplan M20 Plus*, use a gauge rake to spread the material and assist in gauging it to the desired depth. After achieving the desired depth, use a smoother to obtain an even surface.

CURING

- Ultraplan M20 Plus* is self-curing; do not use a damp-curing method, or curing and sealing compounds.
- Cool-weather conditions may extend curing or setting times. Warmer weather conditions may accelerate working, curing and setting times.

CLEANUP

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

PROTECTION

- Protect *Ultraplan M20 Plus* from direct sunlight, excessive heat and drafty conditions during curing. Turn off all forced ventilation and radiant heating systems and protect the installation for up to 24 hours after completion.
- 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 *Ultraplan M20 Plus* is completely cured and final flooring has been installed.
- Do not expose *Ultraplan M20 Plus* to rolling dynamic loads, such as fork lifts or scissor lifts, for at least 3 days after installation.

RELATED DOCUMENTS

Reference Guide: "Surface-Preparation Requirements for Self-Leveling Underlayments"*

Product Selection Guide: "Primers for Self-Leveling Materials"*

* At www.mapei.com

Refer to the 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 meets the health and well-being requirements of product certification programs, contact the MAPEI Sustainability Team at 1-800-992-6273.

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 or 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.**

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Edition Date: July 3, 2019
MK 3000083 (19-1966)

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

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