Ultratop [NA]

High-Performance, Self-Leveling Concrete Topping

NORTH AMERICA [NA]

DESCRIPTION

Ultratop® [NA] is a self-leveling, self-curing, sealed or polished topping that is specially formulated for fast-track resurfacing of horizontal wear surfaces.

FEATURES AND BENEFITS

- Fluid self-leveler; easily installed from 1/4" to 2" (6 mm to 5 cm) neat
- Quickly hardens within 2 to 3 hours and is ready to accept stains, sealers or coatings within 24 hours
- High compressive strength
- *Ultratop* [NA] can be extended with decorative terrazzo aggregate, resulting in unlimited finished appearances.
- Available in white or natural gray
- For diamond-polishing guidelines, see the technical bulletin “Polishing *Ultratop*” in the Construction and Restoration Systems section of MAPEI’s Website.

WHERE TO USE

- Interior use only
- Suitable for light industrial floors, commercial, retail and residential applications
- The installation of *Ultratop* [NA] products is limited to professional installers only. Please contact MAPEI's Technical Services Department for recommendations.

SUITABLE SUBSTRATES

- Concrete must be structurally sound, dry, stable and cured for at least 28 days.

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

SURFACE PREPARATION

- Concrete surfaces must be clean and free of loose particles, efflorescence, paints, tars, grease, asphaltic materials, bond breakers, curing compounds, wax and any foreign substances.
- Mechanically profile and prepare concrete surfaces by engineer-approved methods in accordance with the most current ICRI 310.2R Guidelines.
- Always use caulking or foam tape to round off any sharp corners that protrude into the room receiving the topping, as well as column bases, supports and equipment pedestals, etc., including the use of foam tape around the perimeter of the pour.
- Always prime the prepared surface with MAPEI's *Primer SN*™ [NA] and squeegee it into place, scrub it into the substrate, and then back-roll to ensure a uniform application at a thickness of 15 to 20 wet mils. While *Primer SN* [NA] is still wet, follow immediately with a full sand broadcast (to rejection) with #16 to #30 mesh sand. After *Primer SN* [NA] has cured for at least 16 hours, vacuum up the excess sand. Alternatively, fast-setting MAPEI's *Epoxy Speed* accelerator can be used with MAPEI's *Primer SN* [NA] in accordance with the Technical Data Sheets (TDSs). Consult MAPEI's Technical Services Department for recommendations.
- All existing construction/control/expansion joints, or saw-cuts, and all moving cracks must be properly repaired up through the topping by installing a flexible sealing compound for control/expansion joints or epoxy adhesive for monolithic sealing of cracks in slabs or other materials specifically designed for use in joints or cracks. *Ultratop* [NA] must not be installed over any joints or any cracks if they are not properly repaired or prepared; otherwise, the control joints or cracks will cause *Ultratop* [NA] to show cracks or pattern reflective after *Ultratop* [NA] has been installed. MAPEI cannot be responsible for problems that arise from existing cracks, new cracks or joints that may develop after *Ultratop* [NA] has been installed.

MIXING

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

General mixing:

1. Into a clean mixing container, pour the required amount of cool, clean, potable water. If available water is not cool, chill water to 70°F (21°C).
2. Add *Ultratop* [NA] powder while slowly stirring. Mix water and *Ultratop* [NA] powder at a ratio of 4.75 to 5 U.S. qts. (4.50 to 4.73 L) of water per 50-lb. (22.7-kg) bag of *Ultratop* [NA].
3. The mixing ratio must remain consistent, especially when using *Ultratop* [NA] Natural Gray or when integral color materials are involved. Do not overwater the material.

Barrel mixing (when extended):

1. Using the mixing ratio above, mix with a low-speed, heavy-duty mixing drill (at 300 to 450 rpm) with a helix-style mixing paddle.
2. Mix for about 2 to 2-1/2 minutes to obtain a lump-free mix.
3. 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 the product application and curing.

Pump mixing:

1. *Ultratop* [NA] can be mechanically mixed, using the mixing ratio above, with a continuous mixer and pump (with at least 100 ft. [30.5 m] of hose) or a batch mixer and pump (with at least 50 ft. [15.2 m] of hose).
2. The mixer and pump must be 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 for proper mixing.
3. Use a mesh-screen "sock" at the end of the hose to catch any foreign material that could enter the hopper of the mixer.
4. Apply the mixture to a small test area before general application to ensure a successful installation.

Use of integral colors:

- Integral colors may be used at the discretion of the owner/installer. However, extreme caution must be exercised to ensure that the type and amount of color does not alter and/or decrease the performance of *Ultratop* [NA]. A test pour should be conducted to ensure that performance characteristics – such as set time, flow, water ratio, ease of finishing and curing – are not significantly altered.

PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

1. Before installation, close all doors and windows and turn off HVAC systems to prevent drafts. Protect areas from direct sunlight.
2. Make sure that the substrate and ambient room temperatures are between 50°F and 90°F (10°C and 32°C) before application. To ensure a successful installation, follow American Concrete Institute (ACI) cold-weather application guidelines in cool conditions, and follow ACI hot-weather application guidelines for temperatures above 85°F (29°C).
3. Application of *Ultratop* [NA] over large areas can be made easier and more efficient by using conventional piston, rotor stator or underlayment-type pumps. Contact MAPEI's Technical Services Department for recommendations.
4. For best results, work as a team to provide a continuous flow of wet material to maximize the working/finishing time and achieve a uniform finish throughout.
5. Set the width of the pour at a distance that is ideal for maintaining a wet edge throughout placement. Quickly pour or pump *Ultratop* [NA] onto the properly prepared and primed surface in a ribbon pattern. If a wet edge cannot be maintained, reduce the width of the pour.
6. *Ultratop* [NA] has a flow time of up to 15 minutes at 73°F (23°C) and 50% relative humidity, is semi-leveling and can be applied from 1/4" (6 mm) for unpolished flooring. Pour a minimum thickness of 3/8" (10 mm) for polished flooring. Pour a minimum thickness of 1/2" (12 mm) for floors that are subjected to high loads. Note that temperature and humidity will affect working time, flowability and setting time. Apply enough material to adequately cover all high spots.
7. Immediately after placing *Ultratop* [NA], spread the material with a gauge rake. After achieving the desired depth, use a smoother to obtain an even surface. To avoid air entrapment, do not overwork the material.
8. *Ultratop* [NA] quickly hardens within 2 to 3 hours and is ready to accept stains, water-based coatings or sealers within 24 hours. Sealers and coatings protect surfaces from contaminants and soiling, optimizing the surface integrity and aesthetics.

9. For unlimited finishes, *Ultratop* [NA] can be extended with decorative terrazzo aggregate up to 1/2" (12 mm) in size. Extend *Ultratop* [NA] by weight at the ratio specified on the future project requests. Use washed and dry aggregate in order to avoid color differences on the mixed *Ultratop* [NA] coming from the aggregates' dust. In order to avoid dehydration on the mixed *Ultratop* [NA], do not go below the minimum mixing water ratio recommended in this document. When *Ultratop* [NA] is to be extended with decorative terrazzo aggregate, mixing tests must be performed with *Ultratop* [NA], desired aggregates and integral liquid colors during the mix design process before the samples are submitted to the customer. Using those precautions, the water ratio, coverage, thickness and final texture can be known based on the specific aggregates used. MAPEI cannot be responsible for problems that arise from segregation, cracks or uneven texture and/or color consistency that may develop after the *Ultratop* [NA] has been installed and polished.
10. For polishing, let *Ultratop* [NA] cure for at least 24 hours after placement. The curing time varies depending on temperature and humidity. A densifier can be applied during the polishing process. Pouring and polishing any topping require a high degree of experience and craftsmanship; consider this product to be for professional use only. Contact MAPEI's Technical Services Department for preferred installers.
11. Typically, *Ultratop* [NA] can be stained, sealed or coated after polishing. Follow the recommendations of the stain, sealer or coating manufacturer. Test all surface treatments on a small sample area, before application, to ensure the desired results. Verify that the moisture content meets the specifications of the stain, sealer or coating manufacturer.
12. Always perform a meaningfully sized mockup exactly as the finished floor will be. The on-site mockup should demonstrate the surface preparation, finish, color, sealer, joint design/treatment and application workmanship required for the client’s review and approval.

CURING AND PROTECTION

- *Ultratop* [NA] is self-curing; do not use a damp-curing method or curing-and-sealing compounds.
- During curing, protect *Ultratop* [NA] for at least 24 hours from temperatures above 90°F (32°C) and drafty conditions. Turn off all forced ventilation and radiant-heating systems.
- Avoid walking on the installed surface for at least 2 to 3 hours after installation, depending upon temperature and humidity conditions.
- Protect from traffic, dirt and dust from other trades until the final floor sealer or coating has been installed and completely cured.
- Do not expose *Ultratop* [NA] to rolling loads, such as forklifts or scissor lifts, for at least 48 hours after installation.
- Always apply a protective coating or sealer over *Ultratop* [NA]. Deep applications and cool temperatures may require a longer waiting period before application of subsequent treatments. Follow the recommendations of the stain, coating or sealer manufacturer. Test all surface treatments on a representative sample area, before application, to ensure adequate installation techniques as well as the desired results.

CLEANUP

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

LIMITATIONS

- Do not install over substrates containing asbestos.
- *Ultratop* [NA] accepts a wide variety of acid-based, acrylic-based and colloidal-based stains; penetrating and topical sealers; and epoxy and urethane coatings. Due to the wide variety of products available, always perform mockups to verify optimal results and timing for staining, sealing or coating.

- Before application of *Ultratop* [NA], always properly prepare the surface and prime with *Primer SN* [NA] with sand broadcast method (see the TDS for details).
- Use *Ultratop* [NA] at a minimum thickness of 1/2" (12 mm) when light vehicular loads are expected.
- Use only between the temperatures of 50°F and 90°F (10°C and 32°C). In cool conditions, follow ACI cold-weather application guidelines, and for temperatures above 85°F (29°C), follow ACI hot-weather application guidelines to ensure a successful installation.
- Honor all expansion, isolation and control joints throughout the entire system. Reflective cracks may appear due to vibration, substrate flexure or existing joints or cracks.
- Do not bridge unrepaired cracks or expansion, isolation or control joints. It is also common for cementitious overlays to develop cracks and/or micro-cracks. Cementitious overlay products such as *Ultratop* [NA] may not be capable of restraining movement from the substrate; reflective cracks may appear due to vibration or substrate flexure.
- The color of *Ultratop* [NA] Natural Gray may be subject to subtle smoothing marks or color differences caused by product dripping from placing and smoothing equipment. This is a normal aspect of colored materials and can be addressed with proper placement techniques.
- For concrete substrates with a moisture vapor emission rate (MVER) exceeding 5 lbs. per 1,000 sq. ft. (2.27 kg per 92.9 m^2) per 24 hours, using a calcium chloride test (reference ASTM F1869), install an appropriate MAPEI moisture-reduction barrier system, followed by the application of *Primer SN* [NA] with sand broadcast within 24 hours.
  Note: The maximum allowable MVER is always determined by the complete system installed, including primers and sealers.
- *Ultratop* [NA] is intended for foot traffic, rubber-wheeled forklift traffic and similar uses. Indentations, gouging and similar damage can be caused by steel-wheeled and small-wheeled (high point-loading) as well as hard-wheeled traffic, or dragging sharp or heavy metal objects over the floor. *Ultratop* [NA] is not suitable for such excessive service conditions, heavy manufacturing, chemical or industrial applications; for these applications, use a topping designed for the specific environment.
  Note: To ensure installation success, test a small area for compatibility, bond strength and performance.
- *Ultratop* [NA] is not warranted without the use of *Primer SN* [NA] and a properly graded sand broadcast.
- Alterations to the product – such as adding integral coloring, decorative aggregates, stains and dyes – are not warranted.

Product Performance Properties

Laboratory Tests	Results
Compressive strength – ASTM C109 (CAN/CSA-A5)	
1 day **28 days**	> 2,500 psi (17.2 MPa) > 6,100 psi (42.1 MPa)
Flexural strength – ASTM C348 (CAN/CSA-A23.2-8C)	
28 days	> 1,230 psi (8.48 MPa)
VOC content	0 g per L

Shelf Life and Product Characteristics

before mixing

Shelf life	1 year in an unopened, original bag in a dry, covered and well-ventilated place at 73°F (23°C)
Physical state	Powder
Colors	Natural gray; white

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

Mixing ratio	4.75 to 5 U.S. qts. (4.50 to 4.73 L) of water per 50 lbs. (22.7 kg) of *Ultratop* [NA]
Density	128 lbs. per cu. ft. (2.06 kg per L)
Application temperature range	50°F to 90°F (10°C to 32°C)
Flow time at 73°F (23°C)	15 minutes
Final set at 73°F (23°C)	2 to 3 hours
Time required before installation of stains, coatings or sealers	Typically 4 to 24 hours depending on the stain/coating/sealer, temperature and humidity

CSI Division Classifications

Concrete Topping	03 53 00
Cast-in-Place Concrete	03 30 00

Packaging

Size and Color
Bag: Natural Gray, 50 lbs. (22.7 kg)
Bag: White, 50 lbs. (22.7 kg)

Approximate Coverage*

per 50 lbs. (22.7 kg)

Coverage at 1/4" (6 mm) thickness	24 sq. ft. (2.23 m^2)
Coverage at 1/2" (12 mm) thickness	12 sq. ft. (1.11 m^2)
Yield	0.5 cu. ft. (0.014 m^3)

** Coverage shown is for estimating purposes only. Actual jobsite coverage may vary according to substrate conditions and setting practices.*

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.

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