



Ultratop[®] SP

**High-Performance,
Polishable, Self-Leveling
Topping for a
Fine-Aggregate Finish**



DESCRIPTION

Ultratop SP is a polishable, self-leveling, cementitious topping that provides a fine-aggregate exposed finish. *Ultratop SP* is engineered for fast-track resurfacing of horizontal wear surfaces.

FEATURES AND BENEFITS

- Easily installed from 3/8" to 2" (10 mm to 5 cm)
- Quickly hardens within 2 to 3 hours; polishable in as soon as 24 hours
- For diamond-polishing guidelines, see the technical bulletin "Polishing *Ultratop*" in the Concrete Restoration Systems section of MAPEI's Website.
- Available in gray color
- Although already extended with coarser aggregates, *Ultratop SP* can be extended with decorative aggregate up to 1/4" (6 mm) in size, resulting in unlimited finished appearances.

WHERE TO USE

- For interior use only
- Suitable for light vehicular traffic in commercial, industrial and residential applications
- For professional use only

SUITABLE SUBSTRATES

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

Consult MAPEI's CRS 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, having a minimum ICRI concrete surface profile (CSP) of at least #3.
- 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*[™] 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* is still wet, follow immediately with a full sand broadcast (to rejection) with #16 to #30 mesh sand or #10 to #20 mesh sand. After *Primer SN* has cured for at least 16 hours, vacuum up the excess sand. Alternative primers such as MAPEI's fast-setting *Primer SN Fast* can be used in accordance with Technical Data Sheets. Consult MAPEI's CRS Technical Services Department for recommendations.
- All existing construction/control/expansion joints, or saw cuts, and all moving cracks must be honored up through the topping by installing a suitable joint filler in control joints, a suitable sealant in isolation joints, or a suitable epoxy injection material in cracks. *Ultratop SP* must not be installed over any joints or any cracks if they are not properly honored. If not, the control joint or any cracks will cause *Ultratop SP* to show cracks or pattern reflective after *Ultratop SP* has been installed. MAPEI cannot be responsible for problems that arise from existing cracks, new cracks or joints that may develop after *Ultratop SP* 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.
2. Add *Ultratop SP* powder while slowly stirring. Mix water and *Ultratop SP* powder at a ratio of 3.15 to 3.50 U.S. qts. (2.98 to 3.31 L) of water per 50-lb. (22.7-kg) bag of *Ultratop SP*.
3. The mixing ratio must remain consistent. Settling of the sand aggregate during placement indicates overwatering.

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 to a homogenous, lump-free consistency for about 2 to 3 minutes.
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 SP* can be mixed and poured mechanically with a continuous mixer and pump that can handle cementitious toppings with medium and large aggregate sizes.
2. The machines must be in good working condition per the manufacturer's instructions.
3. Apply the mixture to a large test area before the 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 do not alter and/or decrease the performance of *Ultratop SP*. 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. Temperatures must be maintained within this range for at least 72 hours after the installation of *Ultratop SP*. To ensure a successful installation, follow ACI cold-weather application guidelines in cool conditions, and follow ACI hot-weather application guidelines for temperatures above 85°F (29°C).
3. 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.

4. Set the width of the pour at a distance that is ideal for maintaining a wet edge throughout placement. Quickly pour or pump *Ultratop SP* onto the properly prepared and primed surface in a ribbon pattern. If a wet edge cannot be maintained, reduce the width of the pour.
5. *Ultratop SP* has a flow time of up to 10 minutes at 73°F (23°C) and 50% relative humidity, is semi-leveling and can be applied from 3/8" to 2" (10 mm to 5 cm) neat. 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.
6. Immediately after placing *Ultratop SP*, 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.
7. For unlimited finishes, *Ultratop SP* can be extended with decorative aggregate up to 1/2" (12 mm) in size. Extend *Ultratop SP* 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 SP* coming from the aggregates' dust. In order to avoid dehydration on the mixed *Ultratop SP*, do not go below the minimum mixing water ratio recommended in this document. When extending with decorative aggregate, mixing tests must be performed with *Ultratop SP*, 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 SP* has been installed and polished.
8. For polishing, let *Ultratop SP* 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 requires a high degree of experience and craftsmanship, and this *Ultratop SP* is designed for professional use only. Contact MAPEI's CRS Technical Services Department for recommendations of preferred installers.
9. Typically, *Ultratop SP* 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.
10. Always perform a meaningfully sized mockup exactly as the finished floor will be. The on-site mockup should demonstrate surface preparation, finish, color, sealer, joint design/treatment and application workmanship that must be installed for the client's review and approval.

Product Performance Properties

Laboratory Tests	Results
Compressive strength – ASTM C109 (CAN/CSA-A5) at 73°F (23°C) and 50% relative humidity	
1 day	> 2,500 psi (17.2 MPa)
7 days	> 4,400 psi (30.3 MPa)
28 days	> 6,000 psi (41.4 MPa)
Flexural strength – ASTM C348 (CAN/CSA-A23.2-8C) at 73°F (23°C) and 50% relative humidity	
28 days	> 1,000 psi (6.90 MPa)
VOCs (Rule #1168 of California's SCAQMD)	0 g per L

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.

Shelf Life and Product Characteristics before mixing

Shelf life	9 months when stored in original, unopened packaging in a dry, covered and well-ventilated place at 73°F (23°C)
Physical state	Powder
Color	Gray

Application Properties

Mixing ratio	3.15 to 3.50 U.S. qts. (2.98 to 3.31 L) of water per 50-lb. (22.7-kg) bag of powder
Density	About 131.1 lbs. per cu. ft. (2.10 kg per L)
Application temperature range	50°F to 90°F (10°C to 32°C)
Flowing time at 73°F (23°C)	10 minutes
Final set at 73°F (23°C)	< 100 minutes
Time required before installation of stains or coatings	24 hours

CSI Division Classifications

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

Packaging

Size
Bag: 50 lbs. (22.7 kg)

Approximate Coverage* per 50 lbs. (22.7 kg)

Yield	0.44 cu. ft. (0.01 m ³)
Coverage at 3/8" (10 mm) thickness	14.1 sq. ft. (1.31 m ²)
Coverage at 1/2" (12 mm) thickness	10.6 sq. ft. (0.98 m ²)

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

CURING AND PROTECTION

- *Ultratop SP* is self-curing; do not use a damp-curing method or curing-and-sealing compounds.
- During curing, protect *Ultratop SP* for at least 24 hours from temperatures above 90°F (32°C) and drafty conditions.
- Avoid walking on the installed surface for at least 3 to 4 hours after installation, depending upon temperature and humidity conditions.
- Protect from traffic, dirt and dust from other trades until the final floor polishing practices have been completed.
- Do not expose *Ultratop SP* 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 SP*. Deep applications and cool temperatures may require a longer waiting period before the application of subsequent treatments. Test all surface treatments on a representative sample area, before application, to ensure adequate installation techniques as well as the desired results.

Ultratop[®] SP



CLEANUP

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

LIMITATIONS

- Do not install in environments requiring chemically resistant industrial toppings.
- Do not install over substrates containing asbestos.
- Do not install for exterior use.
- 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.
- High temperatures and low humidity conditions will decrease working time.
- Honor all expansion, isolation and control joints throughout the entire system. Reflective cracks may appear due to vibration, substrate flexure or existing joints and 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 SP* may not be capable of restraining movement from the substrate; reflective cracks may appear due to vibration or substrate flexure.
- The color of *Ultratop SP* 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.

- Indentations, gouging and similar damage can be caused by steel-wheeled (high point-loading) or by dragging sharp or heavy metal objects over the floor.
- For concrete substrates with 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), install an appropriate MAPEI moisture-reduction barrier system: *Planiseal MB* followed by the application of *Primer SN* or *Primer SN Fast* with sand broadcast. Contact MAPEI's CRS Technical Services Department for recommendations.
- A sizeable jobsite mockup is required before full application to ensure desired results.
- Alterations to the product – such as adding integral coloring, decorative aggregates, stains and dyes – are not warranted.
- *Ultratop SP* is not warranted without the use of *Primer SN* or *Primer SN Fast* along with a properly graded sand broadcast.

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 products may contribute to green building standards and certification systems, contact sustainability_USA@mapei.com (USA) or sustainability-durabilite@mapei.com (Canada).

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.**

We proudly support the following industry organizations:



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

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