



Planitop XS[®]

**One-Component, Fast-Setting,
Extended-Working-Time,
Vertical and Overhead Repair
Mortar**



DESCRIPTION

Planitop XS is an extended-working-time variation of *Planitop X*. Shrinkage-compensated, fiber-reinforced, polymer-modified and containing a corrosion inhibitor, *Planitop XS* features *Planitop X*'s outstanding workability and versatility.

FEATURES AND BENEFITS

- Formulated with extended working time (double the working time of *Planitop X*) and fast-curing, reducing downtime and expediting return to service
- Shrinkage-compensated
- Outstanding workability, easily blending into the concrete surface to help disguise the repaired area
- Light gray color resembles originally placed concrete
- From 1/16" to 4" (1.5 mm to 10 cm) in vertical thickness
- From 1/16" to 2" (1.5 mm to 5 cm) in overhead thickness

INDUSTRY STANDARDS AND APPROVALS

- ASTM: Meets or exceeds requirements for ASTM C928, Type R1, at 73°C (23°C) and 50% relative humidity

Green certifications

- 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

- Interior/exterior applications

- For repairing all vertical and overhead concrete surfaces, such as tunnels, bridges, overpasses, retaining walls, beams, building facades, parking garages, ceilings and balconies
- For repairing defects in concrete surfaces, such as the filling of honeycombs, voids and cavities
- For reconstructing architectural features requiring a moldable and sculptable mortar
- For small repairs (≤ 0.5 cu. ft. or 0.001 m³) with light foot traffic

SURFACE PREPARATION

- Concrete surface must be clean, sound and free of loose particles, efflorescence, paint, tars, grease, asphaltic materials, bond breakers, curing compounds, wax and any foreign substance or any conditions that might affect proper bonding of the product, resulting in possible cracking, discoloration or changes in overall performance.
- Mechanically profile clean, sound and stable concrete surfaces to obtain a concrete surface profile (CSP) equal to or greater than #5 per ICRI Guideline #310.2R-2013.

MIXING

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

1. The mixing ratio is 1 U.S. gal. (3.79 L) of water per 50 lbs. (22.7 kg) of *Planitop XS*.
2. Into a clean container, pour 3 U.S. qts. (2.84 L) of cool, clean, potable water.



3. Add 50 lbs. (22.7 kg) of *Planitop XS* to the water slowly and continuously, while mixing with a low-speed drill and appropriate mixing paddle. Add as much of the remaining 1 U.S. qt. (0.95 L) of water as needed.
4. Mix for 3 to 4 minutes to obtain a lump-free, homogenous consistency.

PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

1. Before application, ensure that prepared concrete is saturated surface-dry (SSD).
2. Apply a scrubcoat of *Planitop XS*.
3. Apply *Planitop XS* directly to the scrubcoat before it dries out.
4. Apply *Planitop XS* by float, working from the center of the repair to the outer edge. Finish the application similar to the surrounding concrete.
5. Apply at a thickness between featheredge and 4" (10 cm).

CURING

- Protect *Planitop XS* from high wind or direct sunlight during curing.
- Protect the surface with wet burlap or a continuous mist spray for at least 4 to 6 hours after placement.
- Alternatively, immediately after finishing, apply a water-based curing compound conforming to ASTM C309.

CLEANUP

- Fresh *Planitop XS* is easily removed from tools and equipment with water. Cured *Planitop XS* must be mechanically removed.

LIMITATIONS

- Do not install over substrates containing asbestos.
- Use at temperatures between 45°F and 85°F (7°C and 29°C).
- Utilize American Concrete Institute (ACI) cold-weather or hot-weather guidelines when required.
- Use only unopened, undamaged bags of *Planitop XS*.
- Do not attempt to re-temper *Planitop XS* after it has been mixed.
- Do not use solvent-based curing compounds.
- *Planitop XS* is primarily used as a vertical/overhead repair mortar. However, it can be used for small horizontal repairs (greater than or equal to 0.5 cu. ft. or 0.001 m³) with light foot traffic.

Product Performance Properties*

Laboratory Tests		Results
Tensile bond strength — ASTM C1583 (CSA CAN/A23.2-6B) (failure in concrete substrate)		
28 days		> 290 psi (2 MPa)
Compressive strength — ASTM C109		
1 day		> 3,000 psi (20.7 MPa)
7 days		> 4,000 psi (27.6 MPa)
28 days		> 5,000 psi (34.5 MPa)
Flexural strength — ASTM C348		
1 day		> 500 psi (3.45 MPa)
28 days		> 800 psi (5.52 MPa)
Tensile strength — ASTM C307		
28 days		> 450 psi (3.10 MPa)
Modulus of elasticity (MOE) — ASTM C469		
28 days		3.23 x 10 ⁶ psi (22.3 GPa)
Permeability to chlorides — ASTM C1202		
28 days		Very low — 100 to 1,000 coulombs
Scaling resistance — ASTM C672		
28 days		0 loss, no scaling (50 cycles)
Freeze/thaw resistance — ASTM C666		
28 days		> 98.5% (300 cycles)
Slant/shear bond strength — ASTM C882 (modified)		
1 day		> 1,000 psi (6.90 MPa)
28 days		> 1,500 psi (10.3 MPa)
Volume change — Exceeds ASTM C928 requirements		ASTM C928 specification
28 days, dry-cured	< -0.15%	<i>Planitop XS</i> typical value < - 0.06
28 days, wet-cured	< +0.15%	+ 0.04%
VOCs (Rule #1168 of California's SCAQMD)		0 g per L

* All tests were performed at 73°F (23°C) and 50% relative humidity with a mixture of 1 U.S. gal. (3.79 L) of water per 50-lb. (22.7 kg) bag of Planitop XS. An increase in the water content will alter listed properties.

Shelf Life and Product Characteristics before mixing

Shelf life	1 year when stored in original, unopened packaging at 73°F (23°C) in a dry and covered area
Physical state	Powder
Color	Light gray
Dry-solids content	100%

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	1 U.S. gal. (3.79 L) of water per 50 lbs. (22.7 kg) of <i>Planitop X</i>
Working time	20 minutes
Initial set — ASTM C191	> 40 minutes
Final set — ASTM C191	< 60 minutes

CSI Division Classifications

Cast-in-Place Concrete	03 30 00
Cementitious Decks and Underlayment	03 50 00
Concrete Restoration and Cleaning	03 90 00

Planitop XS



Packaging

Size
Bag: 50 lbs. (22.7 kg)
Pail: 50 lbs. (22.7 kg)

Approximate Coverage* per 50 lbs. (22.7 kg)

Yield – ASTM C138
0.46 cu. ft. (0.013 m ³)

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

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).

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Edition Date: February 7, 2020
 MK 3000072-CA (20-1055)