

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. This product features a very low emission of volatile organic compounds and includes an offset of greenhouse gas emissions.

CO₂ FULLY OFFSET PRODUCTS

Planitop XS is part of the "CO₂ Fully Offset in the Entire Life Cycle" line of products. CO₂ emissions measured throughout the life cycle of products from the ZERO line in 2024, using Life Cycle Assessment (LCA) methodology, verified and certified with EPDs, have been offset through the acquisition of third-party-certified carbon credits in support of forestry protection projects: A commitment to the planet, to people and to biodiversity. For more details on how emissions are calculated and on climate-mitigation projects that are financed through certified carbon credits, visit the Webpage www.mapei.com/ca/en-ca/sustainable-products.

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

- Meets or exceeds requirements for ASTM C928, Type R1 mortar

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 and free of loose particles, efflorescence, paint, tars, grease, asphaltic materials, bond breakers, curing compounds, wax and any foreign substance.
- 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.

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 (less 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	<i>Planitop XS</i> typical value
28 days, dry-cured	< -0.15%	< - 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

Packaging

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

Approximate Coverage**

per 50 lbs. (22.7 kg)

Yield – ASTM C1380.46 cu. ft. (0.013 m³)

** 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-durabilite@mapei.com.

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.**

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

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