

Parking Facility and Stadium Solutions



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Keeping parking structures and stadiums safe, operational and attractive requires quick solutions when these structures become weakened through wear and tear. Downtime means a loss of income for owners and surrounding businesses, and an inconvenience for patrons.

MAPEI can proactively protect this investment and help create a safe environment from the expensive and damaging effects caused by repetitive traffic patterns in driving, parking and turn lanes; water leakage through cracks and joints; pollution; and freeze/thaw cycling.

AT&T Stadium
Dallas, TX



The devastating effects of chloride ingress from de-icing salts and carbonation on steel reinforcement can include cracking, delamination and spalling of concrete, as the steel corrodes and expands. If this process goes unchecked, the corrosion and loss of steel can ultimately lead to loss of structural integrity and more destructive damage. Understanding the reasons for the concrete's delamination and the steel's corrosion will lead to an effective and cost-efficient solution.

MAPEI Concrete Restoration Systems (CRS) specialists, working in conjunction with engineers and contractors, know the importance of keeping these structures operational and safe, and of restoring their value to ownership in the most efficient manner. These experts can identify the specific problems and their causes, and can develop the most effective rehabilitation and protection solutions that will minimize downtime and create long-term cost savings. Whether it be traffic and parking deck coatings, stairwell repair, surface repair and corrosion protection, water

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ingress or structural strengthening, MAPEI's CRS products are engineered to eliminate costly repair downtime and get the facility back to full operation effectively, efficiently and in virtually new condition. In addition, MAPEI's wide range of products is backed by comprehensive warranties and the single-source advantage. For the architect, engineer, owner/operator and contractor, MAPEI has been delivering solutions and field-proven results for more than 80 years.

A. Traffic Deck Membranes and Overlays

1. **Mapefloor™** Parking Deck System is a two-component, polyurethane system designed to provide an elastomeric waterproofing membrane for heavy pedestrian and vehicular traffic. The system includes an epoxy primer, **Primer SN™**, designed to enhance the adhesion of the *Mapefloor* system to the concrete substrate; **Mapefloor PU 400 LV** or **Mapefloor PU 400 FC** basecoat with its high flexibility and crack-bridging properties, for use as the waterproofing membrane; and **Mapefloor Finish 415 NA** aromatic interior topcoat and **Mapefloor Finish 450** aliphatic exterior topcoat, both designed to provide protective wear coats for parking decks and access ramps. For complete system details, consult the installation manual for *Mapefloor* Parking Deck Systems, found in the Related Documents section of the Concrete Restoration Systems page on MAPEI's Website.
2. **Planiseal® Traffic Coat** epoxy overlay and low-viscosity epoxy binder for parking decks protects slabs from moisture intrusion and de-icing salts and provides a durable and attractive wear surface with extended service life. The fast-setting version of this product is **Planiseal Traffic Coat FS**.



Mapefloor system



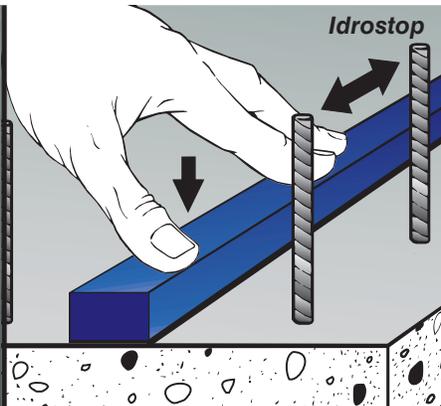
Planiseal Traffic Coat

B. Waterstopping and Waterproofing

1. **Resfoam™ HB 45** and **Resfoam HB 45C** flexible, hydrophobic polyurethane grouts are used for stopping water infiltration in all concrete elements within parking garages. They react with active water and form a closed-cell, nonshrink flexible foam, expanding up to 750% of their original volume, to effectively form a permanent waterproof barrier against water intrusion.
2. **Planiseal® WR** penetrating, water-based silane/siloxane water repellent helps to protect vertical concrete surfaces from water-moisture staining. **Planiseal WR 40** is a clear, water-based, 40%-silane penetrating water repellent and sealer designed to protect concrete and masonry against moisture/chloride intrusion, the effects of freezing/thawing, and such airborne contaminants as acid rain and industrial fumes. **Planiseal WR 100** clear, high-performance, 100%-silane penetrating water repellent and sealer is designed to provide outstanding water repellence on concrete and masonry.



3. **Mapeband™ TPE** professional-grade, flexible band for sealing and waterproofing expansion joints and cracks subject to movement up to 7/32" (5.5 mm).
4. **Planiseal® Plug** fast-setting water-stop mortar patches and seals small water leaks in 2 minutes on both horizontal and vertical concrete surfaces.
5. **Idrostop™** hydrophilic, expandable rubber strip is used to provide watertight construction joints between concrete beds and elevation walls.
6. **Mapelastic®** flexible waterproofing membrane is for columns, walls and overhead slabs. It is designed for use where concrete surfaces are subject to vibration and subsequent cracking.



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C. Structural Repair and Patching

1. **Planitop® X** and **Planitop XS** are designed for the fast-setting, hand-applied repairs of vertical and overhead structural concrete elements, like columns, overhead beams and slabs, and vertical walls.
2. **Planitop® 11** one-component, pumpable and pourable concrete mix is ideal for partial and full-depth repairs on horizontal, vertical and overhead bridge elements from 1" to 8" (2.5 to 20 cm).



3. **Planitop® 11 SCC** one-component, cementitious, self-consolidating, polymer-modified concrete mix is designed for form-and-pour and form-and-pump applications on horizontal, vertical and overhead bridge structures. Containing silica fume and a corrosion inhibitor, it can be placed from 1" to 8" (2.5 to 20 cm).
4. **Planitop® 12 SR** spray- and trowel-applied concrete repair mortar is for overhead structural repairs of beams and slabs where extensive rehabilitation is required.
5. **Planitop® 15** fiber-reinforced, fluid mortar containing silica fume is for both form-and-pour and form-and-pump applications on overhead beams and columns. Designed for repairs up to 2" (5 cm), it can be extended 50% by weight for repairs up to 4" (10 cm).
6. **Planitop® 18** fast-setting, horizontal repair mortar allows vehicular traffic within 1 hour.
7. **Planitop® 18 ES** one-component, rapid-hardening repair mortar with extended working time can be opened to vehicular traffic in as little as six hours and meets the requirements for an ASTM C928 R3 repair mortar. **Planitop 18 TG** is a one-component, shrinkage-compensated, very rapid-hardening, trowel-grade, cementitious repair mortar with a corrosion inhibitor.



8. **Planitop® 23** two-component, vertical, overhead and horizontal repair mortar can be applied to a depth of 4" (10 cm) in two lifts.



9. **Mapecrete™ Film** evaporation retardant and finishing aid is designed to retard moisture evaporation on freshly placed concrete surfaces, helping to prevent “plastic shrinkage” and cracking.
10. **Planibond® AE** is a high-strength, moisture-tolerant, zero-VOC, two-part, non-sag, epoxy anchoring gel. **Planibond AE Fast** is a rapid-setting, high-strength, moisture-tolerant, two-component, 100%-solids, epoxy anchoring gel designed for a wide variety of vertical/horizontal bonding and repair applications. Both products are used as a cap seal for pressure-injection epoxy grouting and to seal cracks and set anchor bolts.
11. **Epojet™ LV** low-viscosity epoxy injection resin is for hairline, structural crack repair.



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D. Corrosion Protection

1. **Planibond® 3C** and **Mapefer™ 1K** offer a choice of a three-component or one-component corrosion-inhibiting coating for embedded steel reinforcement to inhibit oxidation and rust formation.
2. **Mapeshield™ I** pure zinc galvanic anode is formulated to stop and prevent corrosion of reinforcing steel. It is available in two different lengths and with 10- and 20-year duration capabilities.
3. **Mapeshield™ CI 100** surface-applied corrosion inhibitor is designed to penetrate concrete structures and protect embedded steel reinforcement.



E. Structural Strengthening

1. **MapeWrap™** fiber-reinforced polymer (FRP) structural strengthening systems consist of flexible carbon and fiberglass fiber fabrics that are applied with dedicated epoxy resins, to be used for the repair and maintenance of deteriorated concrete elements (columns and beams) for upgrading load-bearing capacity and for rectifying original design flaws.
2. **Carboplate™** and **Maperod™** pre-impregnated carbon fiber plates and rods repair and upgrade beams and slabs for flexural strengthening, and reinforce structures subject to vibration.
3. **MapeWrap™ C Fiocco** high-strength cord, made from uni-directional carbon fiber threads, is designed to be impregnated with *MapeWrap 21* to provide structural and functional restoration of concrete and masonry elements.



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