



# *Mapefloor*<sup>™</sup> Parking Deck Systems

INSTALLATION MANUAL





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## General Description

The purpose of this manual is to provide background information on coating concrete substrates, and to familiarize the reader with various treatments and procedures as they relate to protective polyurethane and epoxy coating systems. In addition, it will assist the specifier in the selection of the coating system suitable for the specific conditions of the project.

This manual will provide general information to engineers, inspectors, applicators, maintenance and management personnel, and others who are intimately involved in the application of protective polyurethane and epoxy coatings. This manual also aids in troubleshooting challenges, along with outlining repair and prevention techniques.

We hope this manual will assist you with your construction schedules and look forward to a continuing relationship with your company for all your concrete repair, waterproofing and deck-coating requirements.

For questions related to this manual or for recommendations for projects with specific requirements or conditions, please contact MAPEI Technical Services by phone at 1-888-365-0614, by e-mail at [CRS@mapei.com](mailto:CRS@mapei.com) or via the Contact Us page at [www.mapei.com/us/en-us/contact-us](http://www.mapei.com/us/en-us/contact-us).

## Disclaimer

This document is intended for professional use only and is not intended to provide exact information, specifications, or details for specific jobs, but rather to provide general background information. The readers should always consult the relevant product Technical Data Sheets (“TDSs”), Safety Data Sheets (“SDSs”) and Guide Specifications relating to the applicable products and or systems. If in doubt, please contact MAPEI Technical Services.

This document also contains guidelines from: International Concrete Repair Institute (ICRI) / American Concrete Institute (ACI) / Parking Garage Maintenance Manual, National Parking Association.

## Installation Instructions

### Project conditions

For on-grade applications, substrates constructed over unvented metal decks or split-slab applications, contact MAPEI Technical Services for specific project-related recommendations. Concrete mix design and placement, presence of a vapor barrier, environmental factors, and other issues determine the suitability for coating these conditions.

*Mapefloor* parking deck systems are designed to be applied at ambient temperatures between 45°F and 85°F. Usage outside of this recommended temperature range can adversely affect proper application, as well as performance of the cured systems.

In temperatures below 45°F, the individual components of a *Mapefloor* parking deck system will have a thicker viscosity than when manufactured. This will result in products that are harder to mix and apply. If colder temperatures are expected overnight, the unopened, unused components of a *Mapefloor* parking deck system should be stored in a heated space. Precondition all *Mapefloor* parking deck system components to 70°F before mixing and applying.

In temperatures above 85°F, the individual components of a *Mapefloor* parking deck system will have a thinner viscosity than when manufactured. Higher temperatures will also adversely affect the curing and final performance of the applied system. If ambient temperatures are higher than the recommended temperature range for application, the contractor should wait until cooler evening temperatures to apply a *Mapefloor* parking deck system.

Do not install under conditions where the ambient temperature is increasing or in direct sunlight. Both ambient and surface temperatures should be falling at time of application. The dew point is the temperature at which moisture will condense on a surface. The substrate and ambient temperature should be at least 5 degrees Fahrenheit, higher than the dew point before product application and maintained at this level during curing. See the charts below for illustrations of calculating the dew point.

## Dew Point Calculations

### Ambient air temperature (in Fahrenheit)

|                   |     | 20°F | 30°F | 40°F | 50°F | 60°F | 70°F | 80°F | 90°F | 100°F | 110°F | 120°F |
|-------------------|-----|------|------|------|------|------|------|------|------|-------|-------|-------|
| Relative humidity | 90% | 18°F | 28°F | 37°F | 47°F | 57°F | 67°F | 77°F | 87°F | 97°F  | 107°F | 117°F |
|                   | 85% | 17°F | 26°F | 36°F | 45°F | 55°F | 65°F | 75°F | 84°F | 95°F  | 104°F | 113°F |
|                   | 80% | 16°F | 25°F | 34°F | 44°F | 54°F | 63°F | 73°F | 82°F | 93°F  | 102°F | 110°F |
|                   | 75% | 15°F | 24°F | 33°F | 42°F | 52°F | 62°F | 71°F | 80°F | 91°F  | 100°F | 106°F |
|                   | 70% | 13°F | 22°F | 31°F | 40°F | 50°F | 60°F | 68°F | 78°F | 88°F  | 96°F  | 105°F |
|                   | 65% | 12°F | 20°F | 29°F | 36°F | 47°F | 57°F | 66°F | 76°F | 85°F  | 93°F  | 103°F |
|                   | 60% | 11°F | 19°F | 27°F | 36°F | 45°F | 55°F | 64°F | 73°F | 83°F  | 92°F  | 101°F |
|                   | 55% | 9°F  | 17°F | 25°F | 34°F | 43°F | 53°F | 61°F | 70°F | 80°F  | 89°F  | 96°F  |
|                   | 50% | 6°F  | 15°F | 23°F | 31°F | 40°F | 50°F | 59°F | 67°F | 77°F  | 86°F  | 94°F  |
|                   | 45% | 4°F  | 13°F | 21°F | 29°F | 37°F | 47°F | 58°F | 64°F | 73°F  | 82°F  | 91°F  |
|                   | 40% | 1°F  | 11°F | 18°F | 26°F | 35°F | 43°F | 52°F | 61°F | 69°F  | 78°F  | 87°F  |
|                   | 35% | -2°F | 8°F  | 16°F | 23°F | 31°F | 40°F | 48°F | 57°F | 65°F  | 74°F  | 83°F  |
|                   | 30% | -6°F | 4°F  | 13°F | 20°F | 28°F | 36°F | 44°F | 52°F | 61°F  | 69°F  | 77°F  |

For example: If the ambient air temperature is 70°F and relative humidity is 65%, the dew point is 57°F. Therefore, no coating should be applied unless the substrate and ambient temperature is 5 degrees Fahrenheit higher than the dew point, or a minimum of 62°F (57°F + 5°F = 62°F).

Prior to starting work, read and follow the Safety Data Sheets (SDS) and container labels for detailed health and safety information.

Coordinate waterproofing work with other trades. Applicator shall have sole right of access to the specified area for the time needed to complete the application and allow the traffic coatings to cure adequately.

Protect vegetation or other surfaces not to be coated, against damage or soiling. It is much easier to keep coating off adjacent surfaces during application than to remove it after cure.

Maintain the work area in a neat and orderly condition, removing empty containers, rags and rubbish daily from the site.

Keep products away from spark or flame. Do use equipment which may produce sparks during application and until all vapors have dissipated. Post "No Smoking" signs.

## **On-site mock-up sample**

Install a mock-up sample of at least 10 ft. by 10 ft. at the pre-selected area as agreed to by owner's representative, applicator, and manufacturer. This sample will be the standard for judging color and texture on remainder of project and can be used for Dynamic Coefficient of Friction (DCOF) read based on aggregates and installation equipment used. Apply all products/system in accordance with written installation instructions. Do not alter, move, or destroy the on-site sample until work is completed and approved by the owner's representative.

## **Concrete conditions**

Concrete deck surfaces must be free of voids, ridges, fins, and other sharp projections and honeycombs. Concrete surfaces should be clean, sound, and free of laitance, loose aggregate, dirt, oil, grease, wax, curing agents, sealers, form-release agents, and other contaminants that will affect the bonding of the coating.

New concrete must have been cured for at least 28 days and have a minimum compressive strength of 3,000 psi for pedestrian traffic and 4,000 psi for vehicular traffic.

The tensile strength of the concrete substrate after preparation should test at greater than or equal to 200 psi per ACI 503R-93.

If a curing compound must be used, it should be of the sodium silicate base only. All curing compounds require prior approval from MAPEI Technical Services.

The surface of the concrete should be sloped to drains at a minimum of 1/8" per foot.

Ensure that all penetrations and drains are in place before installation of *Mapefloor* parking deck systems to avoid later penetrations after the *Mapefloor* coating is installed.

Before application of *Mapefloor* parking deck systems, concrete surfaces must be visibly dry and have no condensation in accordance with ASTM D4263.

Existing concrete surfaces should be tested for hydrocarbons or other contaminants, such as chloride content and carbonation, through petrographic analysis.

### **Surface preparation / concrete:**

- The concrete surface must be free from contaminants such as oils, tars, asphalts, grease, dirt, etc., prior to coating. Contact the curing and sealing manufacturer for proper removal of specific cure/seal products used.
- Grind all ridges and sharp projections. Repair all voids, honeycombs, bug holes and delaminated areas. Clean and treat all exposed reinforcing steel with MAPEI's *Mapefer™ 1K* corrosion inhibiting coating before applying an appropriate repair mortar, such as MAPEI's *Planitop® 18* or *Planitop 18 ES*. Alternately, repair these areas with a 100% epoxy such as *Primer SN™* mixed with sand at a ratio of one part of epoxy per three to five parts of 20- to 40-mesh sand, until the desired consistency is achieved. Allow epoxy patching to cure for about 1 day at 75°F.
- Shotblasting is the preferred method to remove laitance from concrete surfaces. Acid-etching is not permitted. Take care and use proper procedures to leave the concrete surface as unopened as possible. Shotblasting is also preferred over sandblasting to remove an unacceptable curing compound. Mechanically prepare the surface to an International Concrete Repair Institute (ICRI) minimum concrete surface profile (CSP) of #3.

**Note:** For pedestrian areas with limited space or access for shotblasting, alternative mechanical methods can be used to achieve the recommended minimum concrete surface profile (CSP) of #3.

**Note:** Shotblasting does not remove deep penetrating oils, grease, tar or asphalt stains. Proper cleaning procedures should be followed to ensure proper bonding of the deck coating. Improper shot-blasting can destroy the surface finish of the concrete. Overly blasted concrete can contain voids or pinholes, which can result in blister problems during coating application. It may also require extra coats of additional material to correctly “profile” the



rough surface. Note that the coverage rates for the *Mapefloor* parking deck systems are for a properly prepared concrete deck. Deficiencies will reduce the effective coverage rate of the materials.

**Note:** The hydroblasting is an alternative method of surface preparation for a concrete substrate that will receive a pedestrian traffic system only. Use a minimum of 4,000 psi spray at tip, within 6" of substrate to prepare surface by hydro-blasting to International Concrete Repair Institute (ICRI) minimum concrete surface profile (CSP) of #3. without causing additional surface defects in deck. Rinse thoroughly to ensure all residue is removed from the surface. Allow deck to completely dry prior to application of deck coating materials.

**Note:** Sandblasting is recommended only as a last resort, after shotblasting or when necessary to remove an unacceptable curing compound. Sandblasting can cause "pinholes" in concrete surfaces, which could cause blister problems during coating application and in the finished system. It can be used to remove incompatible striping paint from deck prior to application of surface applied waterproofing.

- Cracks from 1/32" to 1/16" in width should be cleaned, primed with *Primer SN* or *Mapefloor PU Primer* and detailed with *Mapefloor PU 400 FC*, extended at least 2" – or as defined by the engineer – on either side of the crack at an average layer thickness of 20 mils in wet film thickness (WFT).
- Large cracks from 1/16" to 3/8" should be routed out or treated by abrasive blasting, blown clean and filled flush with *Mapeflex™ P2 NS* or *Mapeflex P2 SL*. Ensure that a bond-breaking backer rod or tape is used to avoid three-sided bonding of the polyurethane sealant. Sealant should be applied to the inside of the crack only, and then primed with *Primer SN* or *Mapefloor PU Primer* and detailed with *Mapefloor PU 400 FC* extended at least 2" on either side of the crack at an average thickness of 20 mils WFT. Refer to the appropriate polyurethane sealant's Technical Data Sheet (TDS) for application guidelines not included above.

- Non-moving cracks greater than 3/8" should be routed out and repaired with an appropriate MAPEI epoxy adhesive in accordance with one of the following ACI Repair Application Procedures (RAP): RAP-1, Structural Crack Repair by Epoxy Injection. RAP-2, Crack Repair by Gravity Feed with Resin.
- Seal control joints equal to or less than 1" in width with *Mapeflex P2 NS* or *Mapeflex P2 SL*. Be sure to maintain proper width-to-depth ratio. After the sealant has cured, detail sealed joints with polyurethane basecoat material extended a minimum distance of 2" on either side of joint to yield thickness of 30 dry mils. Cured sealant must be solvent wiped. Allow solvent to flash off prior to installation of basecoat detail stripe.

**Note:** Preparation and treatment of joints greater than 1" in width is beyond the scope of this Installation Manual, and an expansion joint manufacturer should be consulted for those applications.

- Ensure that a 45-degree angle is made with *Mapeflex P2 NS* between floor/wall and floor/column applications.
- Clean the entire surface before application of *Primer SN* or *Mapefloor PU Primer* by sweeping and/or blowing with an electric blower.
- Do not apply a *Mapefloor* parking deck system until all applied sealants have fully cured. Sealants should cure for at least 24 hours before installation of *Primer SN* or *Mapefloor PU Primer*.
- Install keyways in the substrate at all terminations.

### **Concrete moisture testing:**

MAPEI recommends ASTM D4263 test procedures for testing substrates to receive deck coatings. New concrete should not be coated for at least 28 days to permit the concrete to cure and dry out. All slab-on-grade applications should be tested to determine if excessive moisture vapor is being transmitted through the slab. Free water and soluble alkaline salts remaining in the concrete may attack fresh coatings and/or eventually cause delamination, blistering, peeling or efflorescence staining. Concrete should be tested for moisture content before coating. While there is no fully reliable

method for determining if concrete is dry enough to coat, there are several test methods that can be performed prior to the installation of a deck-coating system to check for levels of moisture in the concrete substrate. Note that the feel or appearance of the surface can be highly deceiving.

#### Metal surfaces / Drains, flashing, vents, etc.

- Ferrous metal (carbon steel) surfaces must be wire-brushed, ground with wire wheels or sandblasted to a near-white metal blast finish. This is for the removal of all visible rust, mill scale, paint and other foreign matter from the surface. For primers, please contact MAPEI Technical Services.
- For galvanized steel and other non-ferrous metals, remove dust and dirt by blowing off the surface with high-pressure (oil-free) air or wiping with clean dry rags. Oil, grease and protective mill coatings should be removed by solvent cleaning. White rust should be removed from galvanized steel by hand or power brushing. Care should be taken not to damage or remove the galvanizing. Rust should be removed from old, galvanized steel by hand or power tool cleaning. For primers, please contact MAPEI Technical Services.

## Mixing instructions

### Materials

- *Primer SN* two-component epoxy primer
- *Mapefloor PU Primer* two-component, polyurethane primer
- *Mapefloor PU 400 FC* two-component, fast-cure polyurethane waterproofing membrane basecoat
- *Mapefloor Finish 415 NA* two-component, aromatic polyurethane topcoat and intermediate coat
- *Mapefloor Finish 450* two-component, aliphatic polyurethane topcoat
- *Planiseal Traffic Coat* two-part, epoxy binder 100%-solids, low-modulus, skid-resistant topcoat or intermediate coats

## Mixing two-component polyurethane products

Before product use, take appropriate safety precautions. Refer to the SDS for details. Before mixing, review the mixing instructions on each TDS of the associated products. Proper mix ratios are essential for optimum *Mapefloor* system performance.

Use a low-speed drill to mix all materials thoroughly. Mixing at high speed or with the wrong mixer can introduce air bubbles into the coating. These bubbles may develop into blisters during application. If a film of cured material is found on the top of the coating product when opened, remove the film. Never mix cured material into coating.

- *Mapefloor PU Primer*: Premix the Part A and Part B separately. Add Part B to Part A and mix at low speed for 2 to 3 minutes or until a homogenous consistency is achieved.
- *Mapefloor PU 400 FC* basecoat: Premix the Part A to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part A into the Part B container and mix thoroughly to a smooth homogenous consistency and color. Do not mix at high speeds. Never add Part B to Part A, as the mixture will not be homogenous.
- *Mapefloor Finish 415 NA* intermediate coat and topcoats: Premix the Part A resin to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part B hardener into the Part A container and mix thoroughly to a smooth, homogenous consistency and color. Do not mix at high speeds, which can trap air within the mixed material.
- *Mapefloor Finish 450* topcoats: Premix the Part A resin to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part B hardener into the Part A container and mix thoroughly to a smooth, homogenous consistency and color. Do not mix at high speeds, which can trap air within the mixed material.

## Mixing two-component epoxy products

Before product use, take appropriate safety precautions. Refer to the SDS for details. Before mixing, review the mixing instructions on each TDS of the associated products. Proper mix ratios are essential for optimum *Mapefloor* system performance.

Use a low-speed drill to mix all materials thoroughly. Mixing at high speed or with the wrong mixer can introduce air bubbles into the coating. These bubbles may develop into blisters during application. If a film of cured material is found on the top of the coating product when opened, remove the film. Never mix cured material into coating.

- *Primer SN*: Premix the Part A resin to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part B hardener into the Part A container and mix thoroughly to a smooth, homogenous consistency. Do not mix at high speeds, which can trap air within the mixed material.
- *Planiseal Traffic Coat*: Premix both Part A and Part B individually to ensure that all solids are evenly dispersed throughout each component (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part B hardener into the Part A container and mix thoroughly to a smooth, homogenous consistency. Do not mix at high speeds, which can trap air within the mixed material.

## Two-component polyurethane systems

The chart below represents the structure of each two-component polyurethane system introducing the different options for different project requirements. The multilayer two-component polyurethane waterproofing and deck-coating systems are designed to be modified to the individual project requirements. Please contact MAPEI Technical Services for custom solutions on projects with specific requirements or conditions.

Each system will be deeper described in the next paragraph. The following summary briefly describes each configuration.

### Comparison chart

|                          | <i>Mapefloor PE Parking System</i><br>Multi-layer, polyurethane deck-coating system for <b>PEDESTRIAN</b> traffic (walkways, and common areas) in parking garages |             | <i>Mapefloor ME Parking System</i><br>Multi-layer, polyurethane deck-coating system for <b>MEDIUM</b> vehicular traffic |             | <i>Mapefloor HE Parking System</i><br>Multi-layer, polyurethane deck-coating system for <b>HEAVY</b> vehicular traffic |             |
|--------------------------|---|-------------|---|-------------|--|-------------|
| <b>Primers</b>           | <i>Primer SN</i>  |             | <i>Primer SN</i>  |             | <i>Primer SN</i>   |             |
|                          | Epoxy primer  | 10 mils WFT | Epoxy primer  | 10 mils WFT | Epoxy primer   | 10 mils WFT |
|                          | <i>Mapefloor PU Primer</i>  |             | <i>Mapefloor PU Primer</i>  |             | <i>Mapefloor PU Primer</i>   |             |
|                          | Polyurethane primer   | 5 mils WFT  | Polyurethane primer   | 5 mils WFT  | Polyurethane primer  | 5 mils WFT  |
| <b>Basecoat</b>          | <i>Mapefloor PU 400 FC</i>  |             | <i>Mapefloor PU 400 FC</i>  |             | <i>Mapefloor PU 400 FC</i>   |             |
|                          | Polyurethane basecoat   | 20 mils WFT | Polyurethane basecoat   | 25 mils WFT | Polyurethane basecoat  | 25 mils WFT |
| <b>Intermediate coat</b> | —   |             | —   |             | <i>Mapefloor Finish 415 NA</i>   |             |
|                          | —   | —           | —   | —           | Aromatic topcoat   | 15 mils WFT |
| <b>Topcoats</b>          | <i>Mapefloor Finish 415 NA</i>  |             | <i>Mapefloor Finish 415 NA</i>  |             | <i>Mapefloor Finish 415 NA</i>   |             |
|                          | Aromatic topcoat  | 12 mils WFT | Aromatic topcoat  | 15 mils WFT | Aromatic topcoat   | 12 mils WFT |
|                          | <i>Mapefloor Finish 450</i>   |             | <i>Mapefloor Finish 450</i>   |             | <i>Mapefloor Finish 450</i>  |             |
|                          | Aliphatic topcoat   | 12 mils WFT | Aliphatic topcoat   | 15 mils WFT | Aliphatic topcoat  | 12 mils WFT |
|                          | Total excluding primer and aggregate  | 32 mils WFT | Total excluding primer and aggregate  | 40 mils WFT | Total excluding primer and aggregate   | 52 mils WFT |

- Different sizes of quartz-sand aggregates offer different abrasion and slip resistance.
- The total system's mils shown in the above chart is the minimum recommended by MAPEI for each system.

**Note:** Products and system standards: Follow standards updated product's TDS and SDS. As of, ASTM International (ASTM) / International Concrete Repair Institute (ICRI) / Sealant, Waterproofing, and Restoration Institute (SWRI) / UL Laboratories, Inc. (UL) / U. S. Environmental Protection Agency (EPA).

## Application of two-component polyurethane systems

*Mapefloor* two-component polyurethane parking deck systems are designed to provide waterproofing and protection on elevated concrete substrates that are subject to pedestrian and vehicular traffic.

*Mapefloor* parking deck systems are typically specified for use on multi-story parking garages (vehicles less than 4,000 lbs. in axle load capacity), stadiums, walkways and mechanical rooms, each with their own requirements for a protective coating. For this reason, *Mapefloor* two-component polyurethane parking deck systems are designed as layering systems that can be modified to the individual project requirements.

### ***Mapefloor PE* Parking System: For pedestrian traffic**

Multilayer, polyurethane deck-coating system for pedestrian traffic (walkways, and common areas) in parking garages.

#### **Materials**

- Primer: *Primer SN* or *Mapefloor PU Primer*
- Aggregate: *MAPEI Quartz 10*, *MAPEI Quartz 16*, *MAPEI Quartz 35* or *MAPEI Quartz 60*
- Basecoat: *Mapefloor PU 400 FC*
- Topcoat: *Mapefloor Finish 415 NA* or *Mapefloor Finish 450*

| Coat  | Products   | Product Name                        | Wet Film Thickness |
|---|--|-------------------------------------|--------------------|
| <b>Primers</b>                              | Two-component epoxy primer                         | <i>Primer SN</i>                    | 10 mils            |
|   | or<br>two-component polyurethane primer            | or<br><i>Mapectfloor PU Primer</i>  | 5 mils             |
| <b>Basecoat</b>                             | Two-component fast-cure polyurethane basecoat      | <i>Mapectfloor PU 400 FC</i>        | 20 mils            |
| <b>Topcoat</b>                              | Two-component aromatic polyurethane topcoat        | <i>Mapectfloor Finish 415 NA</i>    | 12 mils            |
|   | or<br>two-component aliphatic polyurethane topcoat | or<br><i>Mapectfloor Finish 450</i> |                    |
| <b>Total excluding primer and aggregate</b> |  |                                     | 32 mils            |

\* Actual results will vary, depending on aggregate gradation.

## Mixing

Before product use, take appropriate safety precautions. Refer to the SDS for details. Before mixing, review the mixing instructions on each TDS of the associated products. Proper mix ratios are essential for optimum *Mapectfloor* system performance.

Use a low-speed drill to mix all materials thoroughly. Mixing at high speed or with the wrong mixer can introduce air bubbles into the coating. These bubbles may develop into blisters during application. If a film of cured material is found on the top of the coating product when opened, remove the film. Never mix cured material into coating.

- For *Mapectfloor PU Primer*, premix the Part A and Part B separately. Add Part B to Part A and mix at low speed for 2 to 3 minutes or until a homogenous consistency is achieved.
- For *Primer SN*, premix the Part A resin to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part B hardener into the Part A container and mix thoroughly to a smooth, homogenous consistency. Do not mix at high speeds, which can trap air within the mixed material.
- For the *Mapectfloor PU 400 FC* basecoat, premix the Part A to a homogenous consistency (for 2 to 3 minutes) using a low-



speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part A into the Part B container and mix thoroughly to a smooth homogenous consistency and color. Do not mix at high speeds. Never add Part B to Part A, as the mixture will not be homogenous.

- For the *Mapefloor Finish 415 NA* topcoats, premix the Part A resin to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part B hardener into the Part A container and mix thoroughly to a smooth, homogenous consistency and color. Do not mix at high speeds, which can trap air within the mixed material.
- For the *Mapefloor Finish 450* topcoats, premix the Part A resin to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part B hardener into the Part A container and mix thoroughly to a smooth, homogenous consistency and color. Do not mix at high speeds, which can trap air within the mixed material.

## General instructions

- Refer to the “Installation instructions” section on Page 2 regarding project conditions, concrete conditions and surface preparation before application of the *Mapefloor* Parking Deck System.

## Application of the *Mapefloor PE* Parking System

- Apply *Primer SN* at a minimum thickness of 10 mils WFT or a rate of 160 sq. ft. per U.S. gal. OR apply *Mapefloor PU Primer* at a minimum thickness of 5 mils WFT or at a rate of 320 sq. ft. per U.S. gal.
- Basecoat: Pour the mixed *Mapefloor PU 400 FC* into the surface of the properly prepared substrate and spread it evenly and uniformly with a rubber squeegee at a minimum depth of 20 mils WFT or a rate of 80 sq. ft. per U.S. gal. Apply *Mapefloor PU 400 FC* within 6 to 24 hours of application of *Primer SN* or *Mapefloor PU Primer*. Re-prime if *Mapefloor PU 400 FC* cannot be applied within 24 hours (contact MAPEI Technical Services for re-priming instructions). Steep slopes may require thinner, multiple passes of

coating to achieve the necessary thickness. Allow *Mapefloor PU 400 FC* to cure for at least 3 hours at 75°F or until tack-free.

- **Topcoat:** Apply mixed *Mapefloor Finish 415 NA* or *Mapefloor Finish 450*. Spread evenly and uniformly with a rubber squeegee at a minimum depth of 12 mils WFT or a rate of 134 sq. ft. per U.S. gal. and back-roll to achieve the desired thickness. Apply *Mapefloor Finish 415 NA* or *Mapefloor Finish 450* within 24 hours of application of *Mapefloor PU 400 FC*.
- Immediately broadcast *MAPEI Quartz 16* or *MAPEI Quartz 35* aggregate – evenly distributed – into the wet coating at a rate of 10 to 15 lbs. per 100 sq. ft. and back-roll. Allow 8 to 10 hours for curing.

Pedestrian traffic areas should average 32 mils WFT of the basecoat and topcoat combined, excluding the aggregate and primer.

Do not allow traffic on coated surfaces for at least 72 hours at 75°F and 50% relative humidity.

**Summary Application Chart: *Mapefloor PE* Parking System\***

| Coat  | Product                           | Coverage Rate             | Wet Film Thickness |
|---|-----------------------------------|---------------------------|--------------------|
| <b>Primers</b>                              | <i>Primer SN</i>                  | 160 sq. ft. per U.S. gal. | 10 mils            |
|   | or<br><i>Mapefloor PU Primer</i>  | 320 sq. ft. per U.S. gal. | 5 mils             |
| <b>Basecoat</b>                             | <i>Mapefloor PU 400 FC</i>        | 80 sq. ft. per U.S. gal.  | 20 mils            |
| <b>Topcoat</b>                              | <i>Mapefloor Finish 415 NA</i>    | 134 sq. ft. per U.S. gal. | 12 mils            |
|   | or<br><i>Mapefloor Finish 450</i> |                           |                    |
| <b>Aggregate</b>                            | <i>MAPEI Quartz 15</i>            | 15 lbs. per 100 sq. ft.   | NA                 |
|   | or<br><i>MAPEI Quartz 35</i>      |                           |                    |
| <b>Total excluding primer and aggregate</b> |                                   |                           | 32 mils            |

\* All coverage rates are approximate and may vary due to the application technique used.

Aggregates broadcast methods

- **Broadcast and back-roll method:** While the coating is still wet (*Mapefloor Finish 415 NA* or *Mapefloor Finish 450*), immediately broadcast *MAPEI Quartz 16* or *MAPEI Quartz 35* or an equivalent at a rate of 10 to 15 lbs. per 100 sq. ft. Then back-roll into the coating to fully encapsulate.

- **Integrated aggregate method:** Mix the topcoat (*Mapecfloor Finish 415 NA* or *Mapecfloor Finish 450*) per instructions. Divide half of the mixed material (2.5 U.S. gals.) into a second pail and add 18 to 20 lbs. of *MAPEI Quartz 16* or *MAPEI Quartz 35* or an equivalent aggregate to one half of the mixed material. Mix for an additional 2 or 3 minutes for uniform consistency. Use a notched squeegee to apply the topcoat at the system's wet mils desired. Back-roll with a 3/8" nap roller, rolling in a crosshatch pattern for equal distribution of aggregate. If the mixture in the pail is not used immediately, it will need to be remixed for a minute to avoid aggregate sinking to the bottom.
- **Aggregate to refusal method:** While the coating is still wet (*Mapecfloor Finish 415 NA* or *Mapecfloor Finish 450*), immediately broadcast *MAPEI Quartz 16* or *MAPEI Quartz 35* or an equivalent at a rate of 20 to 35 lbs. per 100 sq. ft. While the coating is still wet and immediately after the aggregate broadcast, blow away any excess aggregate by a portable blower. Note: Do not over-apply aggregate; it is acceptable to have localized wet spots in the aggregate surface after completion of this method.

**Note:** Application methods and conditions are not under the control of MAPEI. Ensure that an adequate amount of aggregate is utilized to achieve desired slip resistance. Coverage rates are affected by substrate texture, choice and distribution of aggregate, intermediate coat aggregate load and environmental conditions.

### ***Mapecfloor ME Parking System: For medium traffic***

Multilayer, polyurethane deck-coating system for medium vehicular traffic in parking garages

#### **Materials**

- Primer: *Primer SN [NA]* / *Mapecfloor PU Primer [NA]*
- Aggregate: *MAPEI Quartz 10* / *MAPEI Quartz 16* / *MAPEI Quartz 35* / *MAPEI Quartz 60*
- Basecoat: *Mapecfloor PU 400 FC*
- Intermediate coat: *Mapecfloor Finish 415 NA* / *Mapecfloor Finish 450*
- Topcoat: *Mapecfloor Finish 415 NA* / *Mapecfloor Finish 450*

## Mapefloor ME Parking System\*

| Coat  | Product  | Coverage Rate                         | Wet Film Thickness |
|---|--|---------------------------------------|--------------------|
| <b>Primers</b>                              | Two-component epoxy primer                         | <i>Primer SN</i> [NA]                 | 10 mils            |
|   | or<br>two-component polyurethane primer            | or<br><i>Mapefloor PU Primer</i> [NA] | 5 mils             |
| <b>Basecoat</b>                             | Two-component fast-cure polyurethane basecoat      | <i>Mapefloor PU 400 FC</i>            | 25 mils            |
| <b>Topcoat</b>                              | Two-component aromatic polyurethane topcoat        | <i>Mapefloor Finish 415 NA</i>        | 15 mils            |
|   | or<br>two-component aliphatic polyurethane topcoat | or<br><i>Mapefloor Finish 450</i>     |                    |
| <b>Total excluding primer and aggregate</b> |  |                                       | 40 mils            |

\* Actual results will vary, depending on aggregate gradation

## Mixing

Before product use, take appropriate safety precautions. Refer to the Safety Data Sheet for details. Before mixing, review the mixing instructions on each TDS of the associated products. Proper mix ratios are essential for optimum *Mapefloor* system performance.

Use a low-speed drill to mix all materials thoroughly. Mixing at high speeds or with the wrong mixer can introduce air bubbles into the coating. These bubbles may develop into blisters during application. If a film of cured material is found on the top of the coating product when it is opened, remove the film. Never mix cured material into the coating.

- For ***Mapefloor PU Primer*** [NA], premix the Part A and Part B separately. Add Part B to Part A and mix at a low speed for 2 to 3 minutes or until a homogenous consistency is achieved.
- For ***Primer SN*** [NA], premix the Part A resin to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part B hardener into the Part A container and mix thoroughly to a smooth, homogenous consistency.
- For ***Mapefloor PU 400 FC*** basecoat, premix the Part A to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part A into the Part B container and mix thoroughly to a smooth,

homogenous consistency and color. Never add Part B to Part A, as the mixture will not be homogenous.

- For **Mapecolor Finish 415 NA** topcoats, premix the Part A resin to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part B hardener into the Part A container and mix thoroughly to a smooth, homogenous consistency and color.
- For **Mapecolor Finish 450** topcoats, premix the Part A resin to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part B hardener into the Part A container and mix thoroughly to a smooth, homogenous consistency and color.

## General instructions

- Refer to the “Installation instructions” section on Page 2 regarding project conditions, concrete conditions and surface preparation before application of the *Mapecolor* Parking Deck System.

**Note:** In areas of heavy traffic (turning lanes, pay booths, entrances and exits), apply the heavy-traffic system or contact MAPEI Technical Services.

## Application of the *Mapecolor ME* Parking System

- Apply **Primer SN** [NA] at a minimum thickness of 10 mils WFT or a rate of 160 sq. ft. per U.S. gal. or apply **Mapecolor PU Primer** [NA] at a minimum thickness of 5 mils WFT or at a rate of 320 sq. ft. per U.S. gal.
- Basecoat: Pour the mixed **Mapecolor PU 400 FC** onto the surface of the properly prepared substrate and spread it evenly and uniformly with a rubber squeegee at a minimum depth of 25 mils WFT or a rate of 62 sq. ft. per U.S. gal. Apply *Mapecolor PU 400 FC* within 6 to 24 hours of application of *Primer SN* [NA] or *Mapecolor PU Primer* [NA]. Re-prime if *Mapecolor PU 400 FC* cannot be applied within 24 hours (contact MAPEI Technical Services for re-priming instructions). Steep slopes may require thinner, multiple passes of coating to achieve the necessary thickness. Allow *Mapecolor PU 400 FC* to cure for at least 3 hours at 75°F (24°C) or until tack-free.

- Topcoat: Apply mixed **Mapecfloor Finish 415 NA** or **Mapecfloor Finish 450**. Spread evenly and uniformly with a rubber squeegee at a minimum depth of 15 mils WFT or a rate of 106 sq. ft. per U.S. gal. and back-roll to achieve the desired thickness. Apply **Mapecfloor Finish 415 NA** or **Mapecfloor Finish 450** within 24 hours of application of **Mapecfloor PU 400 FC**.
- Immediately broadcast **MAPEI Quartz 16** or **MAPEI Quartz 35** aggregate – evenly distributed – into the wet coating at a rate of 10 to 15 lbs. per 100 sq. ft. and back-roll. Allow 8 to 10 hours for curing.

Medium traffic areas should average 40 mils WFT of the basecoat and topcoat combined, excluding the aggregate and primer.

Do not allow traffic on coated surfaces for at least 72 hours at 75°F and 50% relative humidity.

#### Summary Application Chart: **Mapecfloor ME Parking System\***

| Coat  | Product                                | Coverage Rate             | Wet Film Thickness |
|---|--|---------------------------|--------------------|
| <b>Primers</b>                              | <i>Primer SN [NA]</i>                  | 160 sq. ft. per U.S. gal. | 10 mils            |
|   | or<br><i>Mapecfloor PU Primer [NA]</i> | 320 sq. ft. per U.S. gal. | 5 mils             |
| <b>Basecoat</b>                             | <i>Mapecfloor PU 400 FC</i>            | 62 sq. ft. per U.S. gal.  | 25 mils WFT        |
| <b>Topcoat</b>                              | <i>Mapecfloor Finish 415 NA</i>        | 106 sq. ft. per U.S. gal. | 15 mils            |
|   | or<br><i>Mapecfloor Finish 450</i>     |                           |                    |
| <b>Aggregate</b>                            | <i>MAPEI Quartz 15</i>                 | 15 lbs. per 100 sq. ft.   | NA                 |
|   | or<br><i>MAPEI Quartz 35</i>           |                           |                    |
| <b>Total excluding primer and aggregate</b> |  |                           | 40 mils            |

\* All coverage rates are approximate and may vary due to the application technique used.

#### Aggregates broadcast methods

- **Broadcast and back-roll method:** While the coating is still wet (*Mapecfloor Finish 415 NA* or *Mapecfloor Finish 450*), immediately broadcast **MAPEI Quartz 16** or **MAPEI Quartz 35** or an equivalent at a rate of 10 to 15 lbs. per 100 sq. ft. Then back-roll into the coating to fully encapsulate.
- **Integrated aggregate method:** Mix the topcoat (*Mapecfloor Finish 415 NA* or *Mapecfloor Finish 450*) per instructions. Divide half of

the mixed material (2.5 U.S. gals.) into a second pail and add 18 to 20 lbs. of *MAPEI Quartz 16* or *MAPEI Quartz 35* or an equivalent aggregate to one half of the mixed material. Mix for an additional 2 or 3 minutes for uniform consistency. Use a notched squeegee to apply the topcoat at the system's wet mils desired. Back-roll with 3/8" nap roller, rolling in a crosshatch pattern for equal distribution of aggregate. If the mixture in the pail is not used immediately, it will need to be remixed for a minute to avoid aggregate sinking to the bottom.

- **Aggregate to refusal method:** While the coating is still wet (*Mapefloor Finish 415 NA* or *Mapefloor Finish 450*), immediately broadcast *MAPEI Quartz 16* or *MAPEI Quartz 35* or an equivalent at a rate of 20 to 35 lbs. per 100 sq. ft. While the coating is still wet and immediately after the aggregate broadcast, blow away any excess aggregate by a portable blower. Note: Do not over-apply aggregate; it is acceptable to have localized wet spots in the aggregate surface after completion of this method.

**Note:** Application methods and conditions are not under the control of MAPEI. Ensure that an adequate amount of aggregate is utilized to achieve desired slip resistance. Coverage rates are affected by substrate texture, choice and distribution of aggregate, intermediate coat aggregate load and environmental conditions.

### ***Mapefloor HE Parking System: For heavy traffic***

Multilayer, polyurethane deck-coating system for heavy vehicular traffic in parking garages

#### **Materials**

- Primer: *Primer SN [NA]* / *Mapefloor PU Primer [NA]*
- Aggregate: *MAPEI Quartz 10* / *MAPEI Quartz 16* / *MAPEI Quartz 35* / *MAPEI Quartz 60*
- Basecoat: *Mapefloor PU 400 FC*
- Intermediate coat: *Mapefloor Finish 415 NA* / *Mapefloor Finish 450*
- Topcoat: *Mapefloor Finish 415 NA* / *Mapefloor Finish 450*

## Mapefloor HE Parking System\*

| Coat  | Products   | Product Name                          | Wet Film Thickness |
|---|--|---------------------------------------|--------------------|
| <b>Primers</b>                              | Two-component epoxy primer                         | <i>Primer SN [NA]</i>                 | 10 mils            |
|   | or<br>two-component polyurethane primer            | or<br><i>Mapefloor PU Primer [NA]</i> | 5 mils             |
| <b>Basecoat</b>                             | Two-component fast-cure polyurethane basecoat      | <i>Mapefloor PU 400 FC</i>            | 25 mils            |
| <b>Intermediate coat</b>                    | Two-component aromatic polyurethane coat           | <i>Mapefloor Finish 415 NA</i>        | 15 mils            |
| <b>Topcoat</b>                              | Two-component aromatic polyurethane topcoat        | <i>Mapefloor Finish 415 NA</i>        | 12 mils            |
|   | or<br>two-component aliphatic polyurethane topcoat | or<br><i>Mapefloor Finish 450</i>     |                    |
| <b>Total excluding primer and aggregate</b> |  |                                       | 52 mils            |

\* Actual results will vary, depending on aggregate gradation.

### Mixing

Before product use, take appropriate safety precautions. Refer to the Safety Data Sheet for details. Before mixing, review the mixing instructions on each TDS of the associated products. Proper mix ratios are essential for optimum *Mapefloor* system performance.

Use a low-speed drill to mix all materials thoroughly. Mixing at high speeds or with the wrong mixer can introduce air bubbles into the coating. These bubbles may develop into blisters during application. If a film of cured material is found on the top of the coating product when it is opened, remove the film. Never mix cured material into coating.

- For ***Mapefloor PU Primer*** [NA], premix the Part A and Part B separately. Add Part B to Part A and mix at a low speed for 2 to 3 minutes or until a homogenous consistency is achieved.
- For ***Primer SN*** [NA], premix the Part A resin to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part B hardener



into the Part A container and mix thoroughly to a smooth, homogenous consistency.

- For the **Mapefloor PU 400 FC** basecoat, premix the Part A to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part A into the Part B container and mix thoroughly to a smooth, homogenous consistency and color. Never add Part B to Part A, as the mixture will not be homogenous.
- For **Mapefloor Finish 415 NA** topcoats, premix the Part A resin to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part B hardener into the Part A container and mix thoroughly to a smooth, homogenous consistency and color.
- For **Mapefloor Finish 450** topcoats, premix the Part A resin to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part B hardener into the Part A container and mix thoroughly to a smooth, homogenous consistency and color.

## General instructions

- Refer to the “Installation instructions” section on Page 2 regarding project conditions, concrete conditions and surface preparation before application of the *Mapefloor* Parking Deck System.

**Note:** In areas of extreme heavy-duty traffic contact MAPEI Technical Services.

## Application of the *Mapefloor HE* Parking System

- Apply **Primer SN** [NA] at a minimum thickness of 10 mils WFT or a rate of 160 sq. ft. per U.S. gal. or apply *Mapefloor PU Primer* [NA] at a minimum thickness of 5 mils WFT or at a rate of 320 sq. ft. per U.S. gal.
- Basecoat: Pour the mixed **Mapefloor PU 400 FC** onto the surface of the properly prepared substrate and spread it evenly and uniformly with a rubber squeegee at a minimum depth of 25 mils WFT or a rate of 62 sq. ft. per U.S. gal. Apply *Mapefloor PU 400 FC* within 6 to 24 hours of application of *Primer SN* [NA] or *Mapefloor*

*PU Primer* [NA]. Re-prime if *Mapefloor PU 400 FC* cannot be applied within 24 hours (contact MAPEI Technical Services for re-priming instructions). Steep slopes may require thinner, multiple passes of coating to achieve the necessary thickness. Allow *Mapefloor PU 400 FC* to cure for at least 3 hours at 75°F or until tack-free.

- Intermediate coat: Apply mixed **Mapefloor Finish 415 NA**. Spread evenly and uniformly with a rubber squeegee at a depth of 15 mils WFT or a rate of 106 sq. ft. per U.S. gal. and back-roll to achieve the desired thickness. Apply *Mapefloor Finish 415 NA* within 24 hours of application of *Mapefloor PU 400 FC*. Immediately broadcast **MAPEI Quartz 16** or **MAPEI Quartz 35** aggregate – evenly distributed – into the wet coating at a rate of 10 to 15 lbs. per 100 sq. ft. and back-roll. Allow 8 to 10 hours for curing.
- Topcoat: Apply an additional coat of **Mapefloor Finish 415 NA** or **Mapefloor Finish 450** at a depth of 12 mils WFT or a rate of 134 sq. ft. per U.S. gal. Immediately broadcast **MAPEI Quartz 16** or **MAPEI Quartz 35** aggregate – evenly distributed – into the wet coating at a rate of 10 to 15 lbs. per 100 sq. ft. and back-roll.

Heavy traffic areas should average 52 mils WFT of the basecoat and topcoat combined, excluding the aggregate and primer.

Do not allow traffic on coated surfaces for at least 72 hours at 75°F and 50% relative humidity.

**Summary Application Chart: Mapefloor ME Parking System\***

| Coat  | Product   | Coverage Rate             | Wet Film Thickness |
|---|---|---------------------------|--------------------|
| <b>Primers</b>                              | <i>Primer SN</i> [NA]   | 160 sq. ft. per U.S. gal. | 10 mils            |
|   | or<br><i>Mapefloor PU Primer</i> [NA]                               | 320 sq. ft. per U.S. gal. | 5 mils             |
| <b>Basecoat</b>                             | <i>Mapefloor PU 400 FC</i>  | 62 sq. ft. per U.S. gal.  | 25 mils            |
| <b>Intermediate coat</b>                    | <i>Mapefloor Finish 415 NA</i>                                      | 106 sq. ft. per U.S. gal. | 15 mils            |
| <b>Topcoat</b>                              | <i>Mapefloor Finish 415 NA</i><br>or<br><i>Mapefloor Finish 450</i> | 134 sq. ft. per U.S. gal. | 12 mils            |
| <b>Aggregate</b>                            | <i>MAPEI Quartz 15</i><br>or<br><i>MAPEI Quartz 35</i>              | 15 lbs. per 100 sq. ft.   | NA                 |
| <b>Total excluding primer and aggregate</b> |   |                           | 52 mils            |

\* All coverage rates are approximate and may vary due to the application technique used.

### Aggregates broadcast methods

- **Broadcast and back-roll method:** While the coating is still wet (*Mapecfloor Finish 415 NA* or *Mapecfloor Finish 450*), immediately broadcast *MAPEI Quartz 16* or *MAPEI Quartz 35* or an equivalent at a rate of 10 to 15 lbs. per 100 sq. ft. Then back-roll into the coating to fully encapsulate.
- **Integrated aggregate method:** Mix the topcoat (*Mapecfloor Finish 415 NA* or *Mapecfloor Finish 450*) per instructions. Divide half of the mixed material (2.5 U.S. gals.) into a second pail and add 18 to 20 lbs. of *MAPEI Quartz 16* or *MAPEI Quartz 35* or an equivalent aggregate to one half of the mixed material. Mix for an additional 2 or 3 minutes for uniform consistency. Use a notched squeegee to apply the topcoat at the system's wet mils desired. Back-roll with 3/8" nap roller, rolling in a crosshatch pattern for equal distribution of aggregate. If the mixture in the pail is not used immediately, it will need to be remixed for a minute to avoid aggregate sinking to the bottom.
- **Aggregate to refusal method:** While the coating is still wet (*Mapecfloor Finish 415 NA* or *Mapecfloor Finish 450*), immediately broadcast *MAPEI Quartz 16* or *MAPEI Quartz 35* or an equivalent at a rate of 20 to 35 lbs. per 100 sq. ft. While the coating is still wet and immediately after the aggregate broadcast, blow away any excess aggregate by a portable blower. Note: Do not over-apply aggregate; it is acceptable to have localized wet spots in the aggregate surface after completion of this method.

**Note:** Application methods and conditions are not under the control of MAPEI. Ensure that an adequate amount of aggregate is utilized to achieve desired slip resistance. Coverage rates are affected by substrate texture, choice and distribution of aggregate, intermediate coat aggregate load and environmental condition.

## Two-component hybrid systems

The chart below represents the structure of each two-component hybrid waterproofing system using polyurethane and epoxy products with different system options for different project requirements, to provide a high-protective skid-resistant overlay with regular or large aggregates. The multilayer two-component hybrid systems using polyurethane and epoxy products for parking deck systems are designed to be modified to the individual project's requirements. Please contact MAPEI Technical Services for custom solutions regarding projects with specific requirements or conditions.

Each system will be described more fully in the next paragraph. The following summary briefly describes each configuration.

### Comparison chart of two-component hybrid systems

|                          | <b>Mapecolor HM Traffic System</b><br>Multi-layer, hybrid traffic coating system for <b>MEDIUM</b> vehicular traffic |             | <b>Mapecolor HH Traffic System</b><br>Multi-layer, hybrid traffic coating system for <b>HEAVY</b> vehicular traffic |                   | <b>Mapecolor HX Traffic System</b><br>Multi-layer, hybrid traffic coating system for <b>EXTREME</b> vehicular traffic |                   |
|--------------------------|--|-------------|---|-------------------|---|-------------------|
| <b>Primers</b>           | <i>Primer SN</i>   |             | <i>Primer SN</i>  |                   | <i>Primer SN</i>  |                   |
|                          | Epoxy primer   | 10 mils WFT | Epoxy primer  | 10 mils WFT       | Epoxy primer  | 10 mils WFT       |
|                          | <i>Mapecolor PU Primer</i>   |             | <i>Mapecolor PU Primer</i>  |                   | <i>Mapecolor PU Primer</i>  |                   |
|                          | Polyurethane primer  | 5 mils WFT  | Polyurethane primer   | 5 mils WFT        | Polyurethane primer   | 5 mils WFT        |
| <b>Basecoat</b>          | <i>Mapecolor PU 400 FC</i>   |             | <i>Mapecolor PU 400 FC</i>  |                   | <i>Planiseal Traffic Coat</i>   |                   |
|                          | Polyurethane basecoat  | 20 mils WFT | Polyurethane basecoat   | 25 mils WFT       | Epoxy two-component   | 25 mils WFT       |
| <b>Intermediate coat</b> | <i>Planiseal Traffic Coat</i>  |             | <i>Planiseal Traffic Coat</i>   |                   | <i>Planiseal Traffic Coat</i>   |                   |
|                          | Epoxy two-component  | 15 mils WFT | Epoxy two-component   | 15 mils WFT       | Epoxy two-component   | 20 mils WFT       |
| <b>Topcoats</b>          | <i>Mapecolor Finish 415 NA</i>   |             | <i>Planiseal Traffic Coat</i>   |                   | <i>Planiseal Traffic Coat</i>   |                   |
|                          | Aromatic topcoat   | 12 mils WFT | Epoxy two-component   | 12 mils WFT       | Epoxy two-component   | 15 mils WFT       |
|                          | <i>Mapecolor Finish 450</i>  |             | <i>Mapecolor Finish 450</i>   |                   | <i>Mapecolor Finish 450</i>   |                   |
|                          | Aliphatic topcoat  | 12 mils WFT | Optional lock-coat  | 10 to 15 mils WFT | Optional lock-coat  | 10 to 15 mils WFT |
|                          | Total excluding primer and aggregate   | 47 mils WFT | Total excluding primer and aggregate  | 52 mils WFT       | Total excluding primer and aggregate  | 60 mils WFT       |

- Different quartz-sand aggregate sizes offer different abrasion and slip resistance.
- The total system's mils in the above chart is the minimum recommended by MAPEI for each system.

**Note:** In addition to the above systems, a primer-less epoxy coating system can be recommended on projects with specific requirements. Refer to Page 40 for more information.

**Note:** Products and system standards: Follow the standard updated TDSs and SDSs for products. As of, ASTM International (ASTM) / International Concrete Repair Institute (ICRI) / Sealant, Waterproofing, and Restoration Institute (SWRI) / UL Laboratories, Inc. (UL) / U. S. Environmental Protection Agency (EPA).

## Application of two-component hybrid systems

*Mapecfloor* two-component hybrid traffic coating systems are designed to provide waterproofing and/or protection on elevated concrete substrates that are subject to vehicular traffic using polyurethane and epoxy products, to provide a high-protective skid-resistant overlay with regular or large aggregates. *Mapecfloor* traffic coating systems are typically specified for use on multi-story parking garages, stadiums, walkways, mechanical rooms and areas of extreme traffic, each site type with its own requirements for a protective coating. For this reason, *Mapecfloor* two-component hybrid traffic coating systems are designed as layering systems that can be modified to the individual project's requirements.

### ***Mapecfloor HM Traffic System: For medium traffic***

Multilayer, hybrid traffic coating system for medium vehicular traffic

#### **Materials**

- Primer: *Primer SN [NA]* / *Mapecfloor PU Primer [NA]*
- Aggregate: *MAPEI Quartz 10* / *MAPEI Quartz 16* / *MAPEI Quartz 35* / *MAPEI Quartz 60*
- Basecoat: *Mapecfloor PU 400 FC*
- Intermediate coat: *Planiseal Traffic Coat*
- Topcoat: *Mapecfloor Finish 415 NA* / *Mapecfloor Finish 450*

## Mapefloor HM Parking System\*

| Coat  | Products   | Product Name                          | Wet Film Thickness |
|---|--|---------------------------------------|--------------------|
| <b>Primers</b>                              | Two-component epoxy primer                         | <i>Primer SN [NA]</i>                 | 10 mils            |
|   | or<br>two-component polyurethane primer            | or<br><i>Mapefloor PU Primer [NA]</i> | 5 mils             |
| <b>Basecoat</b>                             | Two-component fast-cure polyurethane basecoat      | <i>Mapefloor PU 400 FC</i>            | 20 mils            |
| <b>Intermediate coat</b>                    | Two-component low-modulus, epoxy coat              | <i>Planiseal Traffic Coat</i>         | 15 mils            |
| <b>Topcoat</b>                              | Two-component aromatic polyurethane topcoat        | <i>Mapefloor Finish 415 NA</i>        | 12 mils            |
|   | or<br>two-component aliphatic polyurethane topcoat | or<br><i>Mapefloor Finish 450</i>     |                    |
| <b>Total excluding primer and aggregate</b> |  |                                       | 47 mils            |

\* Actual results will vary, depending on aggregate gradation.

## Mixing

Before product use, take appropriate safety precautions. Refer to the Safety Data Sheet for details. Before mixing, review the mixing instructions on each TDS of the associated products. Proper mix ratios are essential for optimum *Mapefloor* system performance.

Use a low-speed drill to mix all materials thoroughly. Mixing at high speeds or with the wrong mixer can introduce air bubbles into the coating. These bubbles may develop into blisters during application. If a film of cured material is found on the top of the coating product when it is opened, remove the film. Never mix cured material into coating.

- For ***Mapefloor PU Primer [NA]***, premix the Part A and Part B separately. Add Part B to Part A and mix at a low speed for 2 to 3 minutes or until a homogenous consistency is achieved.
- For ***Primer SN [NA]***, premix the Part A resin to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part B hardener into the Part A container and mix thoroughly to a smooth, homogenous consistency.
- For the ***Mapefloor PU 400 FC*** basecoat, premix the Part A to a homogenous consistency (for 2 to 3 minutes) using a low-speed

drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part A into the Part B container and mix thoroughly to a smooth, homogenous consistency and color. Never add Part B to Part A, as the mixture will not be homogenous.

- For **Planiseal Traffic Coat**, premix the Part A to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Mix Part A with Part B thoroughly to a smooth, homogenous consistency and color.
- For **Mapefloor Finish 415 NA** topcoats, premix the Part A resin to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part B hardener into the Part A container and mix thoroughly to a smooth, homogenous consistency and color.
- For **Mapefloor Finish 450** topcoats, premix the Part A resin to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part B hardener into the Part A container and mix thoroughly to a smooth, homogenous consistency and color.

## General instructions

- Refer to the “Installation instructions” section on Page 2 regarding project conditions, concrete conditions and surface preparation before application of the *Mapefloor* Parking Deck System.

**Note:** In areas of heavy traffic (turning lanes, pay booths, entrances and exits), apply the heavy-traffic system or contact MAPEI Technical Services.

## Application of the *Mapefloor HM* Traffic System

- Apply *Primer SN* [NA] at a minimum thickness of 10 mils WFT or a rate of 160 sq. ft. per U.S. gal. or apply *Mapefloor PU Primer* [NA] at a minimum thickness of 5 mils WFT or at a rate of 320 sq. ft. per U.S. gal.
- Basecoat: Pour the mixed **Mapefloor PU 400 FC** onto the surface of the properly prepared substrate and spread it evenly and uniformly with a rubber squeegee at a minimum depth of 20 mils WFT or a rate of 80 sq. ft. per U.S. gal. Apply *Mapefloor PU 400 FC* within 6 to 24 hours of application of *Primer SN* [NA] or *Mapefloor PU Primer* [NA]. Re-prime if *Mapefloor PU 400 FC* cannot be applied within 24 hours (contact MAPEI Technical Services for re-

priming instructions). Steep slopes may require thinner, multiple passes of coating to achieve the necessary thickness. Allow *Mapefloor PU 400 FC* to cure for at least 3 hours at 75°F or until tack-free.

- Intermediate coat: Apply mixed ***Planiseal Traffic Coat***. Spread evenly and uniformly with a rubber squeegee at a depth of 15 mils WFT or a rate of 106 sq. ft. per U.S. gal. Then back-roll to achieve the desired thickness. Apply *Planiseal Traffic Coat* within 24 hours of application of *Mapefloor PU 400 FC*. Immediately broadcast ***MAPEI Quartz 16*** or ***MAPEI Quartz 35*** aggregate – evenly distributed – into the wet coating at a rate of 10 to 15 lbs. per 100 sq. ft. and back-roll. Allow 8 to 10 hours for curing.
- Topcoat: Apply an additional coat of ***Mapefloor Finish 415 NA*** or ***Mapefloor Finish 450*** at a depth of 12 mils WFT or a rate of 134 sq. ft. per U.S. gal. Immediately broadcast ***MAPEI Quartz 16*** or ***MAPEI Quartz 35*** aggregate – evenly distributed – into the wet coating at a rate of 10 to 15 lbs. per 100 sq. ft. and back-roll.

Medium traffic areas should average 47 mils WFT of the basecoat and topcoat combined, excluding the aggregate and primer.

Do not allow traffic on coated surfaces for at least 72 hours at 75°F and 50% relative humidity.

**Summary Application Chart: *Mapefloor HM Traffic System\****

| Coat  | Product   | Coverage Rate             | Wet Film Thickness |
|---|---|---------------------------|--------------------|
| <b>Primers</b>                              | <i>Primer SN</i> [NA]   | 160 sq. ft. per U.S. gal. | 10 mils            |
|   | or<br><i>Mapefloor PU Primer</i> [NA]                               | 320 sq. ft. per U.S. gal. | 5 mils             |
| <b>Basecoat</b>                             | <i>Mapefloor PU 400 FC</i>  | 80 sq. ft. per U.S. gal.  | 20 mils            |
| <b>Intermediate coat</b>                    | <i>Planiseal Traffic Coat</i>                                       | 106 sq. ft. per U.S. gal. | 15 mils            |
| <b>Topcoat</b>                              | <i>Mapefloor Finish 415 NA</i><br>or<br><i>Mapefloor Finish 450</i> | 134 sq. ft. per U.S. gal. | 12 mils            |
| <b>Aggregate</b>                            | <i>MAPEI Quartz 15</i><br>or<br><i>MAPEI Quartz 35</i>              | 15 lbs. per 100 sq. ft.   | NA                 |
| <b>Total excluding primer and aggregate</b> |   |                           | 47 mils            |

\* All coverage rates are approximate and may vary due to the application technique used.



### Aggregates broadcast methods

- **Broadcast and back-roll method:** While the coating is still wet (*Mapefloor Finish 415 NA, Mapefloor Finish 450 or Planiseal Traffic Coat*), immediately broadcast *MAPEI Quartz 16* or *MAPEI Quartz 35* or an equivalent at a rate of 10 to 15 lbs. per 100 sq. ft. Then back-roll into the coating to fully encapsulate.
- **Integrated aggregate method:** Mix the topcoat (*Mapefloor Finish 415 NA, Mapefloor Finish 450 or Planiseal Traffic Coat*) per instructions. Divide half of the mixed material (2.5 U.S. gals.) into a second pail and add 18 to 20 lbs. of *MAPEI Quartz 16* or *MAPEI Quartz 35* or an equivalent aggregate to one half of the mixed material. Mix for an additional 2 or 3 minutes for uniform consistency. Use a notched squeegee to apply the topcoat at the system's wet mils desired. Back-roll with 3/8" nap roller, rolling in a crosshatch pattern for equal distribution of aggregate. If the mixture in the pail is not used immediately, it will need to be remixed for a minute to avoid aggregate sinking to the bottom.
- **Aggregate to refusal method:** While the coating is still wet (*Mapefloor Finish 415 NA, Mapefloor Finish 450 or Planiseal Traffic Coat*), immediately broadcast *MAPEI Quartz 16* or *MAPEI Quartz 35* or equivalent at a rate of 20 to 35 lbs. per 100 sq. ft. While the coating is still wet and immediately after the aggregate broadcast, blow away any excess aggregate by a portable blower. Note: Do not over-apply aggregate; it is acceptable to have localized wet spots in the aggregate surface after completion of this method.

**Note:** Application methods and conditions are not under the control of MAPEI. Ensure that an adequate amount of aggregate is utilized to achieve desired slip resistance. Coverage rates are affected by substrate texture, choice and distribution of aggregate, intermediate coat aggregate load and environmental conditions.

### **Mapefloor HH Traffic System: For heavy traffic**

Multilayer, hybrid traffic coating system for heavy-vehicular traffic

#### **Materials**

- *Primer: Primer SN [NA] / Mapefloor PU Primer [NA]*

- Aggregate: *MAPEI Quartz 10 / MAPEI Quartz 16 / MAPEI Quartz 35 / MAPEI Quartz 60*
- Basecoat: *Mapefloor PU 400 FC*
- Intermediate coat: *Planiseal Traffic Coat*
- Topcoat: *Planiseal Traffic Coat*
- Optional lock-coat: *Mapefloor Finish 415 NA / Mapefloor Finish 450*

### **Mapefloor HH Traffic System\***

| Coat   | Products   | Product Name                          | Wet Film Thickness |
|--|--|---------------------------------------|--------------------|
| <b>Primers</b>   | Two-component epoxy primer                         | <i>Primer SN [NA]</i>                 | 10 mils            |
|  | or<br>two-component polyurethane primer            | or<br><i>Mapefloor PU Primer [NA]</i> | 5 mils             |
| <b>Basecoat</b>  | Two-component fast-cure polyurethane basecoat      | <i>Mapefloor PU 400 FC</i>            | 25 mils            |
| <b>Intermediate coat</b>                               | Two-component low-modulus, epoxy coat              | <i>Planiseal Traffic Coat</i>         | 15 mils            |
| <b>Topcoat</b>   | Two-component low-modulus, epoxy coat              | <i>Planiseal Traffic Coat</i>         | 12 mils            |
| <b>Option lock-coat</b>                                | Two-component aromatic polyurethane topcoat        | <i>Mapefloor Finish 415 NA</i>        | 10 to 15 mils      |
|  | or<br>two-component aliphatic polyurethane topcoat | or<br><i>Mapefloor Finish 450</i>     |                    |
| <b>Total excluding primer, lock-coat and aggregate</b> |  |                                       | 52 mils            |

\* Actual results will vary, depending on aggregate gradation.

## **Mixing**

Before product use, take appropriate safety precautions. Refer to the Safety Data Sheet for details. Before mixing, review the mixing instructions on each TDS of the associated products. Proper mix ratios are essential for optimum *Mapefloor* system performance.

Use a low-speed drill to mix all materials thoroughly. Mixing at high speeds or with the wrong mixer can introduce air bubbles into the coating. These bubbles may develop into blisters during application. If a film of cured material is found on the top of the coating product

when it is opened, remove the film. Never mix cured material into coating.

- For **Mapefloor PU Primer** [NA], premix the Part A and Part B separately. Add Part B to Part A and mix at a low speed for 2 to 3 minutes or until a homogenous consistency is achieved.
- For **Primer SN** [NA], premix the Part A resin to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part B hardener into the Part A container and mix thoroughly to a smooth, homogenous consistency.
- For the **Mapefloor PU 400 FC** basecoat, premix the Part A to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part A into the Part B container and mix thoroughly to a smooth, homogenous consistency and color. Never add Part B to Part A, as the mixture will not be homogenous.
- For **Planiseal Traffic Coat**, premix the Part A to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Mix Part A with Part B thoroughly to a smooth homogenous consistency and color.
- For **Mapefloor Finish 415 NA** topcoats, premix the Part A resin to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part B hardener into the Part A container and mix thoroughly to a smooth, homogenous consistency and color.
- For **Mapefloor Finish 450** topcoats, premix the Part A resin to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part B hardener into the Part A container and mix thoroughly to a smooth, homogenous consistency and color.

## General instructions

- Refer to the “Installation instructions” section on Page 2 regarding project conditions, concrete conditions and surface preparation before application of the *Mapefloor* Parking Deck System.

**Note:** In areas of heavy traffic (turning lanes, pay booths, entrances and exits), apply the heavy-traffic system or contact MAPEI Technical Services.

### **Application of the *Mapefloor HH* Traffic System**

- Apply **Primer SN** [NA] at a minimum thickness of 10 mils WFT or a rate of 160 sq. ft. per U.S. gal. OR apply **Mapefloor PU Primer** [NA] at a minimum thickness of 5 mils WFT or at a rate of 320 sq. ft. per U.S. gal.
- Basecoat: Pour the mixed **Mapefloor PU 400 FC** onto the surface of the properly prepared substrate and spread it evenly and uniformly with a rubber squeegee at a minimum depth of 25 mils WFT or a rate of 62 sq. ft. per U.S. gal. Apply **Mapefloor PU 400 FC** within 6 to 24 hours of application of **Primer SN** [NA] or **Mapefloor PU Primer** [NA]. Re-prime if **Mapefloor PU 400 FC** cannot be applied within 24 hours (contact MAPEI Technical Services for re-priming instructions). Steep slopes may require thinner, multiple passes of coating to achieve the necessary thickness. Allow **Mapefloor PU 400 FC** to cure for at least 3 hours at 75°F or until tack-free.
- Intermediate coat: Apply mixed **Planiseal Traffic Coat**. Spread evenly and uniformly with a rubber squeegee at a depth of 15 mils WFT or a rate of 106 sq. ft. per U.S. gal. Then back-roll to achieve the desired thickness. Apply **Planiseal Traffic Coat** within 24 hours of application of **Mapefloor PU 400 FC**. Immediately broadcast **MAPEI Quartz 16** or **MAPEI Quartz 35** aggregate – evenly distributed into the wet coating at a rate of 10 to 15 lbs. per 100 sq. ft. and back-roll. Allow 8 to 10 hours for curing.
- Topcoat: Apply mixed **Planiseal Traffic Coat**. Spread evenly and uniformly with a rubber squeegee at a depth of 12 mils WFT or a rate of 134 sq. ft. per U.S. gal. Then back-roll to achieve the desired thickness. Apply **Planiseal Traffic Coat** within 24 hours of application of the previous coat. Immediately broadcast **MAPEI Quartz 16**, **MAPEI Quartz 35** or a larger aggregate – evenly distributed – into the wet coating at a rate of desired broadcast method. Allow 8 to 10 hours for curing.

- Optional lock-coat: Apply and back-roll an additional coat of **Mapefloor Finish 415 NA** or **Mapefloor Finish 450** at a depth of 10 to 15 mils WFT or a rate of 160 to 106 sq. ft. per U.S. gal.

Medium traffic areas should average 52 mils WFT of the basecoat and topcoat combined, excluding the aggregate, optional lock-coat and primer.

Do not allow traffic on coated surfaces for at least 72 hours at 75°F and 50% relative humidity.

### Summary Application Chart: *Mapefloor HH Traffic System\**

| Coat  | Product   | Coverage Rate                    | Wet Film Thickness |
|---|---|----------------------------------|--------------------|
| <b>Primers</b>                              | <i>Primer SN [NA]</i>   | 160 sq. ft. per U.S. gal.        | 10 mils            |
|   | or<br><i>Mapefloor PU Primer [NA]</i>                               | 320 sq. ft. per U.S. gal.        | 5 mils             |
| <b>Basecoat</b>                             | <i>Mapefloor PU 400 FC</i>  | 62 sq. ft. per U.S. gal.         | 25 mils            |
| <b>Intermediate coat</b>                    | <i>Planiseal Traffic Coat</i>                                       | 106 sq. ft. per U.S. gal.        | 15 mils            |
| <b>Topcoat</b>                              | <i>Planiseal Traffic Coat</i>                                       | 134 sq. ft. per U.S. gal.        | 12 mils            |
| <b>Option lock-coat</b>                     | <i>Mapefloor Finish 415 NA</i><br>or<br><i>Mapefloor Finish 450</i> | 106 to 160 sq. ft. per U.S. gal. | 10 to 15 mils      |
| <b>Aggregate</b>                            | <i>MAPEI Quartz 15</i><br>or<br><i>MAPEI Quartz 35</i>              | 15 lbs. per 100 sq. ft.          | NA                 |
| <b>Total excluding primer and aggregate</b> |   |                                  | 52 mils            |

\* All coverage rates are approximate and may vary due to the application technique used.

#### Aggregates broadcast methods

- **Broadcast and back-roll method:** While the coating is still wet (*Mapefloor Finish 415 NA*, *Mapefloor Finish 450* or *Planiseal Traffic Coat*), immediately broadcast *MAPEI Quartz 16* or *MAPEI Quartz 35* or an equivalent at a rate of 10 to 15 lbs. per 100 sq. ft. Then back-roll into the coating to fully encapsulate.
- **Integrated aggregate method:** Mix the topcoat (*Mapefloor Finish 415 NA*, *Mapefloor Finish 450* or *Planiseal Traffic Coat*) per

instructions. Divide half of the mixed material (2.5 U.S. gals.) into a second pail and add 18 to 20 lbs. of *MAPEI Quartz 16* or *MAPEI Quartz 35* or an equivalent aggregate to one half of the mixed material. Mix for an additional 2 or 3 minutes for uniform consistency. Use a notched squeegee to apply the topcoat at the system's wet mils desired. Back-roll with 3/8" nap roller, rolling in a crosshatch pattern for equal distribution of aggregate. If the mixture in the pail is not used immediately, it will need to be remixed for a minute to avoid aggregate sinking to the bottom.

- **Aggregate to refusal method:** While the coating is still wet (*Mapefloor Finish 415 NA*, *Mapefloor Finish 450* or *Planiseal Traffic Coat*), immediately broadcast *MAPEI Quartz 16* or *MAPEI Quartz 35* or an equivalent at a rate of 20 to 35 lbs. per 100 sq. ft. While the coating is still wet and immediately after the aggregate broadcast, blow away any excess aggregate by a portable blower. Note: Do not over-apply aggregate; it is acceptable to have localized wet spots in the aggregate surface after completion of this method.

**Note:** Application methods and conditions are not under the control of MAPEI. Ensure that an adequate amount of aggregate is utilized to achieve desired slip resistance. Coverage rates are affected by substrate texture, choice and distribution of aggregate, intermediate coat aggregate load and environmental conditions.

### ***Mapefloor HX Traffic System: For extreme traffic***

Multilayer, hybrid traffic coating system for extreme vehicular traffic

#### **Materials**

- Primer: *Primer SN [NA]* / *Mapefloor PU Primer [NA]*
- Aggregate: *MAPEI Quartz 10* / *MAPEI Quartz 16* / *MAPEI Quartz 35* / *MAPEI Quartz 60*
- Basecoat: *Planiseal Traffic Coat*
- Intermediate coat: *Planiseal Traffic Coat*
- Topcoat: *Planiseal Traffic Coat*
- Optional lock-coat: *Mapefloor Finish 415 NA* / *Mapefloor Finish 450*

## Mapecfloor HX Traffic System\*

| Coat  | Products   | Product Name                           | Wet Film Thickness |
|---|--|--|--------------------|
| <b>Primers</b>  | Two-component epoxy primer                         | <i>Primer SN [NA]</i>                  | 10 mils            |
|   | or<br>two-component polyurethane primer            | or<br><i>Mapecfloor PU Primer [NA]</i> | 5 mils             |
| <b>Basecoat</b>   | Two-component low-modulus, epoxy coat              | <i>Planiseal Traffic Coat</i>          | 25 mils            |
| <b>Intermediate coat</b>  | Two-component low-modulus, epoxy coat              | <i>Planiseal Traffic Coat</i>          | 20 mils            |
| <b>Topcoat</b>  | Two-component low-modulus, epoxy coat              | <i>Planiseal Traffic Coat</i>          | 15 mils            |
| <b>Option lock-coat</b>   | Two-component aromatic polyurethane topcoat        | <i>Mapecfloor Finish 415 NA</i>        | 10 to 15 mils      |
|   | or<br>two-component aliphatic polyurethane topcoat | or<br><i>Mapecfloor Finish 450</i>     |                    |
| <b>Total excluding primer, optional lock-coat and aggregate</b> |  |  | 60 mils            |

\* Actual results will vary, depending on aggregate gradation.

## Mixing

Before product use, take appropriate safety precautions. Refer to the Safety Data Sheet for details. Before mixing, review the mixing instructions on each TDS of the associated products. Proper mix ratios are essential for optimum *Mapecfloor* system performance.

Use a low-speed drill to mix all materials thoroughly. Mixing at high speeds or with the wrong mixer can introduce air bubbles into the coating. These bubbles may develop into blisters during application. If a film of cured material is found on the top of the coating product when it is opened, remove the film. Never mix cured material into coating.

- For ***Mapecfloor PU Primer*** [NA], premix the Part A and Part B separately. Add Part B to Part A and mix at a low speed for 2 to 3 minutes or until a homogenous consistency is achieved.

- For **Primer SN** [NA], premix the Part A resin to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part B hardener into the Part A container and mix thoroughly to a smooth, homogenous consistency.
- For **Planiseal Traffic Coat**, premix the Part A to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Mix Part A with Part B thoroughly to a smooth, homogenous consistency and color.
- For **Mapefloor Finish 415 NA** topcoats, premix the Part A resin to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part B hardener into the Part A container and mix thoroughly to a smooth, homogenous consistency and color.
- For **Mapefloor Finish 450** topcoats, premix the Part A resin to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part B hardener into the Part A container and mix thoroughly to a smooth, homogenous consistency and color.

## General instructions

- Refer to the “Installation instructions” section on Page 2 regarding project conditions, concrete conditions and surface preparation before application of the *Mapefloor* Parking Deck System.

**Note:** In areas of heavy traffic (turning lanes, pay booths, entrances and exits), apply the heavy-traffic system or contact MAPEI Technical Services.

## Application of the *Mapefloor HX* Traffic System

- Apply **Primer SN** [NA] at a minimum thickness of 10 mils WFT or a rate of 160 sq. ft. per U.S. gal. or apply **Mapefloor PU Primer** [NA] at a minimum thickness of 5 mils WFT or at a rate of 320 sq. ft. per U.S. gal.
- Basecoat: Pour the mixed **Planiseal Traffic Coat** onto the surface of the properly prepared substrate and spread it evenly and uniformly with a rubber squeegee at a minimum depth of 25 mils WFT or a rate of 62 sq. ft. per U.S. gal. Apply *Planiseal Traffic Coat* within 6 to 24 hours of application of *Primer SN* [NA] or *Mapefloor PU Primer* [NA]. Re-prime if *Planiseal Traffic Coat* cannot be applied within 24 hours (contact MAPEI Technical Services for re-priming instructions). Steep slopes may require thinner, multiple passes of coating to achieve the necessary thickness. Allow *Planiseal Traffic Coat* to cure for at least 2 to 3 hours at 75°F or until tack-free.



- Intermediate coat: Apply mixed **Planiseal Traffic Coat**. Spread evenly and uniformly with a rubber squeegee at a depth of 20 mils WFT or a rate of 80 sq. ft. per U.S. gal. Then back-roll to achieve the desired thickness. Apply **Planiseal Traffic Coat** within 24 hours of application of the previous coat. Immediately broadcast **MAPEI Quartz 16, MAPEI Quartz 35** or large aggregate – evenly distributed into the wet coating at a rate of 10 to 15 lbs. per 100 sq. ft. and back-roll. Allow 2 to 3 hours for curing.
- Topcoat: Apply mixed **Planiseal Traffic Coat**. Spread evenly and uniformly with a rubber squeegee at a depth of 15 mils WFT or a rate of 106 sq. ft. per U.S. gal. Then back-roll to achieve the desired thickness. Apply **Planiseal Traffic Coat** within 24 hours of application of the previous coat. Immediately broadcast **MAPEI Quartz 16, MAPEI Quartz 35** or larger aggregate – evenly distributed – into the wet coating at a rate of desired broadcast method. Allow 8 to 10 hours for curing.

**Note:** Aggregate specification for special requirements: Select angular large aggregate, Oklahoma flint rock or basalt having less than 0.2% moisture, with a minimum Mohs hardness of 7 and free of dirt, clay, etc.

- Optional lock-coat: Apply and back-roll an additional coat of **Mapefloor Finish 415 NA** or **Mapefloor Finish 450** at a depth of 10 to 15 mils WFT or a rate of 160 to 106 sq. ft. per U.S. gal.

Medium-traffic areas should average 60 mils WFT of the basecoat and topcoat combined, excluding the aggregate, optional lock-coat and primer.

Do not allow traffic on coated surfaces for at least 72 hours at 75°F and 50% relative humidity

## Summary Application Chart: *Mapefloor HX Traffic System\**

| Coat  | Product   | Coverage Rate                    | Wet Film Thickness |
|---|---|----------------------------------|--------------------|
| <b>Primers</b>  | <i>Primer SN [NA]</i>   | 160 sq. ft. per U.S. gal.        | 10 mils            |
|   | or<br><i>Mapefloor PU Primer [NA]</i>                               | 320 sq. ft. per U.S. gal.        | 5 mils             |
| <b>Basecoat</b>   | <i>Planiseal Traffic Coat</i>                                       | 62 sq. ft. per U.S. gal.         | 25 mils            |
| <b>Intermediate coat</b>  | <i>Planiseal Traffic Coat</i>                                       | 80 sq. ft. per U.S. gal.         | 20 mils            |
| <b>Topcoat</b>  | <i>Planiseal Traffic Coat</i>                                       | 106 sq. ft. per U.S. gal.        | 15 mils            |
| <b>Option lock-coat</b>   | <i>Mapefloor Finish 415 NA</i><br>or<br><i>Mapefloor Finish 450</i> | 106 to 160 sq. ft. per U.S. gal. | 10 to 15 mils      |
| <b>Aggregate</b>  | <i>MAPEI Quartz 15</i><br>or<br><i>MAPEI Quartz 35</i>              | 15 lbs. per 100 sq. ft.          | NA                 |
| <b>Total excluding primer, optional lock-coat and aggregate</b> |   |                                  | 60 mils            |

\* All coverage rates are approximate and may vary due to the application technique used.

### Aggregates broadcast methods

- **Aggregate to refusal method with flint rock:** For special project requirements, select angular large aggregate, Oklahoma flint rock or basalt having less than 0.2% moisture, with a minimum Mohs hardness of 7 and free of dirt, clay, etc. at about 160 lbs. per 100 sq. ft. Allow to cure and remove excess aggregate by power-blowing, sweeping or vacuuming.
- **Broadcast and back-roll method:** While the coating is still wet (*Mapefloor Finish 415 NA*, *Mapefloor Finish 450* or *Planiseal Traffic Coat*), immediately broadcast *MAPEI Quartz 16* or *MAPEI Quartz 35* or an equivalent at a rate of 10 to 15 lbs. per 100 sq. ft. Then back-roll into the coating to fully encapsulate.
- **Integrated aggregate method:** Mix the topcoat (*Mapefloor Finish 415 NA*, *Mapefloor Finish 450* or *Planiseal Traffic Coat*) per instructions. Divide half of the mixed material (2.5 U.S. gals.) into a second pail and add 18 to 20 lbs. of *MAPEI Quartz 16* or *MAPEI Quartz 35* or an equivalent aggregate to one half of the mixed material. Mix for an additional 2 or 3 minutes for uniform

consistency. Use a notched squeegee to apply the topcoat at the system's wet mils desired. Back-roll with 3/8" nap roller, rolling in a crosshatch pattern for equal distribution of aggregate. If the mixture in the pail is not used immediately, it will need to be remixed for a minute to avoid aggregate sinking to the bottom.

- **Aggregate to refusal method:** While the coating is still wet (*Mapefloor Finish 415 NA, Mapefloor Finish 450 or Planiseal Traffic Coat*), immediately broadcast *MAPEI Quartz 16* or *MAPEI Quartz 35* or an equivalent at a rate of 20 to 35 lbs. per 100 sq. ft. While the coating is still wet and immediately after the aggregate broadcast, blow away any excess aggregate by a portable blower. Note: Do not over-apply aggregate; it is acceptable to have localized wet spots in the aggregate surface after completion of this method.

**Note:** Application methods and conditions are not under the control of MAPEI. Ensure that an adequate amount of aggregate is utilized to achieve desired slip resistance. Coverage rates are affected by substrate texture, choice and distribution of aggregate, intermediate coat aggregate load and environmental conditions.

## Primer-less, epoxy coat system

Two-lift, epoxy coating system for vehicular traffic in parking garages

The primer-less, two-component epoxy traffic coat system provides a high-protective skid-resistant overlay with regular or large aggregates. A polyurethane product can be used as a UV resistant topcoat and/or lock-coat. This system is typically specified for use on multi-story parking garages, stadiums, walkways and areas of extreme traffic, each with its own requirements for protective coatings. For this reason, the primer-less, two-component epoxy traffic coat system is designed as a layering system that can be modified to individual project requirements. This traffic coat system is not a waterproofing system; please contact MAPEI Technical Services for custom solutions on projects with specific requirements or conditions.

**Note:** Products and system standards: Follow the standard updated TDSs and SDSs of product per ASTM International (ASTM) / International Concrete Repair Institute (ICRI) / Sealant, Waterproofing, and Restoration Institute (SWRI) / UL Laboratories, Inc.(UL) / U. S. Environmental Protection Agency (EPA).

### Materials

- Aggregate: Angular large aggregate, Oklahoma flint rock or basalt having less than 0.2% moisture, with a minimum Mohs hardness of 7 and free of dirt, clay, etc.
- Optional aggregate: *MAPEI Quartz 10*
- Epoxy coat: *Planiseal Traffic Coat*
- Optional lock-coat: *Mapefloor Finish 415 NA / Mapefloor Finish 450*

### Primer-less epoxy coat system

| Coat   | Products  | Product Name  | Wet Film Thickness |
|--|---|---|--------------------|
| <b>First coat</b>                              | Two-component low-modulus, epoxy coat   | <i>Planiseal Traffic Coat</i>                                       | 20 mils            |
| <b>Second coat</b>                             | Two-component low-modulus, epoxy coat   | <i>Planiseal Traffic Coat</i>                                       | 20 mils            |
| <b>Topcoat</b>                                 | Two-component aromatic polyurethane topcoat<br>or<br>two-component aliphatic polyurethane topcoat | <i>Mapefloor Finish 415 NA</i><br>or<br><i>Mapefloor Finish 450</i> | 10 to 15 mils      |
| <b>Total excluding aggregate and lock-coat</b> |   |   | 40 mils            |

\* Actual results will vary, depending on aggregate gradation.

**Note:** The low-modulus epoxy *Planiseal Traffic Coat* can be installed up to 40 mils in WFT per lift with a total WFT system of 80 mils, excluding aggregates and lock-coat. Please contact MAPEI Technical Services for custom solutions.

## Mixing

Before product use, take appropriate safety precautions. Refer to the Safety Data Sheet for details. Before mixing, review the mixing instructions on each TDS of the associated products. Proper mix ratios are essential for optimum *Mapecfloor* system performance.

Use a low-speed drill to mix all materials thoroughly. Mixing at high speed or with the wrong mixer can introduce air bubbles into the coating. These bubbles may develop into blisters during application. If a film of cured material is found on the top of the coating product when it is opened, remove the film. Never mix cured material into coating.

- For ***Planiseal Traffic Coat***, premix the Part A to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Mix Part A with Part B thoroughly to a smooth, homogenous consistency and color.
- For ***Mapecfloor Finish 415 NA*** topcoats, premix the Part A resin to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part B hardener into the Part A container and mix thoroughly to a smooth, homogenous consistency and color.
- For ***Mapecfloor Finish 450*** topcoats, premix the Part A resin to a homogenous consistency (for 2 to 3 minutes) using a low-speed drill (at 300 to 450 rpm) and appropriate paddle. Pour the Part B hardener into the Part A container and mix thoroughly to a smooth, homogenous consistency and color.

## General instructions

- Refer to the “Installation instructions” section on Page 2 regarding project conditions, concrete conditions and surface preparation before application of the *Mapecfloor* Parking Deck System.

**Note:** In areas where a waterproofing traffic coat system is required, a two-component polyurethane traffic coat system can be used. Otherwise, contact MAPEI Technical Services for recommendations.

## Application of the primer-less epoxy coat system

- First coat: Apply mixed **Planiseal Traffic Coat** onto the surface of the properly prepared substrate and spread it evenly and uniformly with a rubber squeegee at a minimum depth of 20 mils WFT or a rate of 80 sq. ft. per U.S. gal. Immediately broadcast **MAPEI Quartz 10** or large aggregate – evenly distributed into the wet coating at a rate of 10 to 15 lbs. per 100 sq. ft. Allow 2 to 3 hours for curing.
- Second coat: Apply mixed **Planiseal Traffic Coat**. Spread evenly and uniformly at a depth of 20 mils WFT or a rate of 80 sq. ft. per U.S. gal. Then back-roll to achieve the desired thickness. Apply **Planiseal Traffic Coat** within 24 hours of application of the previous coat. Immediately broadcast **MAPEI Quartz 10** or large aggregate – evenly distributed into the wet coating at a rate of 10 to 15 lbs. per 100 sq. ft. and back-roll. Allow 4 to 5 hours for curing.

**Note:** Aggregate specification for special requirements: Select angular large aggregate, Oklahoma flint rock or basalt having less than 0.2% moisture, with a minimum Mohs hardness of 7 and free of dirt, clay, etc.

- Optional lock-coat: Apply and back-roll an additional coat of **Mapefloor Finish 415 NA** or **Mapefloor Finish 450** at a depth of 10 to 15 mils WFT or a rate of 160 to 106 sq. ft. per U.S. gal.

The low-modulus epoxy *Planiseal Traffic Coat* can be installed up to 40 mils in WFT per lift with a total WFT system of 80 mils, excluding aggregates and lock-coat. Please contact MAPEI Technical Services for custom solutions.

Do not allow traffic on coated surfaces for at least 72 hours at 75°F and 50% relative humidity.

## Summary Application Chart: Primer-less epoxy coat system\*

| Coat  | Products  | Coverage Rate                    | Wet Film Thickness |
|---|---|----------------------------------|--------------------|
| First coat  | <i>Planiseal Traffic Coat</i>                                       | 80 sq. ft. per U.S. gal.         | 20 mils            |
| Second coat   | <i>Planiseal Traffic Coat</i>                                       | 80 sq. ft. per U.S. gal.         | 20 mils            |
| Option lock-coat  | <i>Mapefloor Finish 415 NA</i><br>or<br><i>Mapefloor Finish 450</i> | 106 to 160 sq. ft. per U.S. gal. | 10 to 15 mils      |
| Aggregate   | <i>MAPEI Quartz 10</i> or angular large aggregate                   | 10 to 15 lbs. per 100 sq. ft.    | NA                 |
| <b>Total excluding optional lock-coat and aggregate</b> |   |                                  | 40 mils            |

\* All coverage rates are approximate and may vary due to the application technique used.

### Aggregates broadcast methods

- **Aggregate to refusal method with flint rock:** For special project requirements, select angular large aggregate, Oklahoma flint rock or basalt having less than 0.2% moisture, with a minimum Mohs hardness of 7 and free of dirt, clay, etc., at about 160 lbs. per 100 sq. ft. Allow to cure and remove excess aggregate by power-blowing, sweeping or vacuuming.
- **Broadcast and back-roll method:** While the coating is still wet (*Mapefloor Finish 415 NA, Mapefloor Finish 450 or Planiseal Traffic Coat*), immediately broadcast *MAPEI Quartz 16* or *MAPEI Quartz 35* or an equivalent at a rate of 10 to 15 lbs. per 100 sq. ft. Then back-roll into the coating to fully encapsulate.
- **Integrated aggregate method:** Mix the topcoat (*Mapefloor Finish 415 NA, Mapefloor Finish 450 or Planiseal Traffic Coat*) per instructions. Divide half of the mixed material (2.5 U.S. gals.) into a second pail and add 18 to 20 lbs. of *MAPEI Quartz 16* or *MAPEI Quartz 35* or an equivalent aggregate to one half of the mixed material. Mix for an additional 2 or 3 minutes for uniform consistency. Use a notched squeegee to apply the topcoat at the system's wet mils desired. Back-roll with 3/8" nap roller, rolling in a crosshatch pattern for equal distribution of aggregate. If the mixture in the pail is not used immediately, it will need to be remixed for a minute to avoid aggregate sinking to the bottom.

- **Aggregate to refusal method:** While the coating is still wet (*Mapefloor Finish 415 NA*, *Mapefloor Finish 450* or *Planiseal Traffic Coat*), immediately broadcast *MAPEI Quartz 16* or *MAPEI Quartz 35* or an equivalent at a rate of 20 to 35 lbs. per 100 sq. ft. While the coating is still wet and immediately after the aggregate broadcast, blow away any excess aggregate by a portable blower. Note: Do not over-apply aggregate; it is acceptable to have localized wet spots in the aggregate surface after completion of this method.

**Note:** Application methods and conditions are not under the control of MAPEI. Ensure that an adequate amount of aggregate is utilized to achieve desired slip resistance. Coverage rates are affected by substrate texture, choice and distribution of aggregate, intermediate coat aggregate load and environmental conditions.

## Detail drawings

Detail drawings are utilized in the specification and design of *Mapefloor* Parking Deck coating and waterproofing systems in both new and retrofit applications. They are ready to use upon request, but they are provided to show a generally recommended procedure for dealing with the condition shown. They will not and cannot provide a specific solution for every condition. For questions, drawing requests or recommendations for projects with specific requirements or conditions, please contact MAPEI Technical Services by phone at 1-888-365-0614, by email at [CRS@mapei.com](mailto:CRS@mapei.com) or via the Contact Us page at [www.mapei.com/us/en-us/contact-us](http://www.mapei.com/us/en-us/contact-us).

## Repair procedures

### Adhesion testing

Always perform field-adhesion tests on a mockup sample before recoating an entire existing coating system. The ASTM D4541 test for “pull-off” strength is a good standard for measuring adhesion, particularly if there is a question of compatibility between two coating systems. Another field test involves the use of fiberglass or a similar fabric. Prime the affected area with *Primer SN [NA]* or *Mapefloor PU Primer [NA]*, allow curing, and then apply *Mapefloor PU 400 FC* basecoat. Work the fabric into the wet *Mapefloor PU 400 FC*, allowing a 6" piece of fabric to remain unattached. After *Mapefloor PU 400 FC* cures, pull back on the unattached end of



the fabric toward the test area to get a qualitative indication of bond strength (without value).

### **Reflecting cracking**

Routinely inspect the existing coating for reflective cracks, or cracks occurring directly over underlying cracks or joints. Remove any unbonded coating along the length of the crack. Rout out the crack, clean the walls of the crack with a solvent and bevel the edge of the bonded coating alongside the crack. Caulk the joint with a polyurethane sealant flush with the concrete surface. After the caulking has cured, prime the sealant, exposed concrete surface and bonded coating with an appropriate recoat primer. Once the recoat primer has cured per manufacturer directions, apply the appropriate *Mapefloor* parking deck system as directed in this Installation Manual.

### **Coating delamination**

Remove any loose, unbonded coating and inspect the concrete surface as well as the back of the delaminated coating. Check the concrete surface for soundness and the back of the delaminated coating to determine the cause of delamination. Typically, the failure is caused by poor or inadequate surface preparation, surface cleanliness, insufficient thickness of one (or more) of the coating during initial application, or a missed open time window on the primer or the basecoat. After determining the cause and appropriate corrective measures, proceed with the steps outlined in the paragraphs below titled "Aggregate loss and wear-through."

### **Blistering**

When a concrete deck is damp or wet during initial application, or if the deck is damp between application of the primer, basecoat or topcoat, blisters caused by escaping moisture may occur. When these blisters are cut open, there will be a trace of moisture under them or, at the least, a water mark on the back of the blister itself. Blisters should be cut out to release the escaping moisture and, when the surface is dry, appropriate repairs should be made.

When a concrete deck has been shotblasted, pinhole blisters may occur. The surface preparation opens the concrete surface, creating tiny holes and air pockets, and outgassing can occur anywhere in a *Mapefloor* parking deck system. When a polyurethane coating is

applied and bridges these holes, the trapped air expands and causes small blisters in the coating. Reduce the occurrence of blisters by allowing the newly mechanically prepared deck to outgas for 16 to 48 hours after preparation. If this timeframe cannot be accommodated before application, apply two coats of primer or slightly increase the amount of primer. Also, always apply the basecoat late in the day when the deck is cooler and the heat of the day has passed (for specific temperatures, see the “Installation instructions” section of this manual).

Lastly, apply the basecoat in multiple thinner coats to achieve the proper thickness. Applying a *Mapecfloor* parking deck system in thinner coats can reduce this occurrence. Random use of a “wet film mil” gauge during application can verify that proper coverage rates are accomplished.

### **Aggregate loss and wear-through**

Loss of aggregate in heavy-traffic areas – such as ticket booths, turn lanes and ramps – can be expected over time. In these heavy-traffic areas, the topcoat may begin to show wear-through and possibly delaminate from the basecoat over time.

When underlying coats of a *Mapecfloor* parking deck system are worn through to an exposed concrete substrate, mechanically clean these areas with a power wire brush or light scarification to achieve a roughened surface, prime the affected area, and apply a basecoat and topcoat as required. When aggregate has been lost, or when underlying coats of a *Mapecfloor* parking deck system are exposed, prime with an appropriate recoat primer. Perform a test section to ensure that the appropriate recoat primer does not wrinkle the existing coating. If this happens, apply the mixture as thinly as possible.

Once the recoat primer has cured per manufacturer directions, apply the appropriate *Mapecfloor* parking deck system as directed in this Installation Manual.

## Maintenance instructions

The service life of parking deck coating systems is very much dependent on periodic visual inspections and planned maintenance, including cleaning, snow and ice removal, as well as repairs to both the traffic membrane system and concrete substrate. Consult ACI 362.2R-00, “Guide for Structural Maintenance of Parking Structures,” for guidelines and conditions not listed.

### Inspections

On walk-through inspections, observe and document the general appearance and cleanliness of the installed deck coating, giving particular attention to heavy-wear areas such as ticket booths, ramps and turn lanes. These inspections will form the basis for any preventive maintenance required and should be performed on both a monthly and a semi-annual basis.

Monthly inspections should include visual assessment of any physical damage to the *Mapefloor* parking deck system, which should be documented and repaired as deemed necessary. A semi-annual inspection should be more comprehensive and include, but not be limited to, the following:

- Watch for proper flow of water to drains, culverts or scuppers. Identify any stained areas, indicative of standing water, particularly in freeze/thaw climates. Inspect from the underside, if possible, for evidence of cracks or leaks.
- Inspect all existing penetrations and expansion joints to ensure that they are properly sealed and that there is no loss of elastic properties or separation from adjacent substrates.
- Observe critical deck junctures – such as parapet and building walls, curbs, columns and parking bumpers – to determine whether any excessive structural movement may have caused cracking in the *Mapefloor* parking deck system.
- Look for any tears, cracks or loss of adhesion in the topcoat. Determine whether the membrane is affected or compromised.

Observe and document whether any low spots exist where ponding has occurred or could occur.

- Inspect the deck coating for stains from oil, grease and other automotive fluids. Spot-remove such stains with an appropriate cleansing method, such as general-purpose oil-removing compounds, liquid detergents and caustic soda solutions. Firmly scrub the affected areas to remove all contaminants. Limit the use of compounds containing high levels of VOCs.
- Clean the installed *Mapefloor* parking deck system with a 1,200-psi pressure washer and detergent to remove surface debris as well as any residual liquid contaminants. A stiff-bristle broom or scrubbing machine may be used for areas with excessive buildup or on areas that are difficult to clean. Rinse the deck thoroughly with clean, potable water and vacuum-dry to remove loose contaminants. Collect and dispose of effluent waste in accordance with local, state and federal regulations.

### **Recoat guidelines**

This section provides general information and procedures for recoating existing coating systems with *Mapefloor* parking and traffic deck coatings. When recoating an existing *Mapefloor* system or one from another manufacturer, performing a Field Adhesion Test is highly recommended, both with and without primer. For information on repairs or when bidding a competitive recoat specification, contact MAPEI Technical Services for additional recommendations.

- Inspect the existing coating system and remove all existing surface-applied membrane material that is loose or marginally bonded.
- Check exposed concrete surfaces for soundness. Detect concrete spalls in surfaces by tapping with a hammer or dragging a heavy chain and listening for a hollow sound. The hollow sound indicates problem areas. All spalled portions must be removed before further preparation. Removal can be completed with chipping hammers or other suitable tools.
- Where concrete was removed, follow ICRI guidelines for preparation and installation of repair materials.

- For smaller repairs such as divots, popouts, etc., follow the concrete repair recommendations of this Installation Manual.
- After the concrete, cementitious repair materials or epoxy patching material has been placed and properly cured, solvent-clean the existing membrane perimeter adjacent to patch a minimum distance of 1 inch. When patching concrete, new concrete patches and cementitious repair materials must be prepared by shotblasting or a cup grinder before application of a primer. Verify dryness of concrete patches for a dry surface in accordance with ASTM D4263, "Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method," as outlined in the "Concrete moisture testing" section of this Installation Manual.
- All exposed metals to be coated should be mechanically prepared to a clean, white metal finish. For primers, please contact the MAPEI's Technical Services Department.

## General information

*Mapefloor* parking deck and traffic coating systems are designed to be applied between the ambient temperatures of 45°F to 85°F; for optimum installation, the ambient temperature should be between 70°F and 80°F. Store materials at 70°F to 80°F for two days before installation and ensure that the substrate temperature does not fall below 45°F when applying polyurethanes, or below 50°F when applying 100%-solids epoxies. Colder temperatures will increase the viscosity of *Mapefloor* system components and thereby increase the materials' resistance to mixing and flowing, as well as curing times, while decreasing coverage.

- Calculating theoretical coverage: Any liquid, when applied at a thickness of 1 mil, will cover 1,604 sq. ft. per U.S. gal. To determine the yield per gallon, divide the area by the thickness numbers. Or, to determine the thickness, divide the area by the yield per gallon. Example chart below.

| Area          | ÷ | Thickness                 | = | Yield                    |
|---------------|---|---------------------------|---|--------------------------|
| 1,604 sq. ft. |   | 25 mils                   |   | 64 sq. ft. per U.S. gal. |
| Area          | ÷ | Yield                     | = | Thickness                |
| 1,604 sq. ft. |   | 100 sq. ft. per U.S. gal. |   | 16 mils                  |

- All quantities indicated in this Installation Manual assume surfaces with an ICRI CSP of #3. Quantity estimates of materials can be affected by the surface profile changes, whether material is left in containers or whether the contractor applies more material than is required. Actual coverage will be less than theoretical coverage.
- Never coat wet or moist surfaces. When in doubt, utilize a moisture meter or perform a plastic mat test (reference ASTM D4263-83). Allow to dry before application.
- Shotblasting, or other mechanical means approved by the project engineer, is required on all concrete surfaces before application of *Mapefloor* parking deck systems. Consult a representative from MAPEI Technical Services for specific job recommendations or for alternate methods of surface preparation.
- Mix all material components thoroughly before use. Read label instructions carefully.
- Do not mix combinations of different coating materials without consulting a representative from MAPEI Technical Services.
- Establish a designated area for entering and leaving the installation area. This area should have a removable carpet mat that can be used to clean all dust and debris from footwear. Change the carpet when needed.
- A designated mixing area should be established next to the staging area. The substrate in this area should be protected by drop cloths to ensure that the concrete is not contaminated with unmixed materials before installation.

- The contractor should have backup equipment readily available – such as a drill motor, mixing paddles, mixing vessels, caulk guns, squeegees, roller cages and roller covers – to ensure that the application is uninterrupted once it begins.
- It is much easier to use caution or to use drop cloths or masking to keep a coating off an adjacent surface during application, than to remove the coating after it cures.
- Remember that, when priming, *Mapefloor PU 400 FC* must be applied over the primer within 24 hours; otherwise, repriming is required.
- When repriming, never allow the primer to overlap areas that have been coated with polyurethanes; otherwise, separation and blistering may occur.
- When extended UV light exposure is present, use *Mapefloor Finish 450* as the topcoat.
- Never apply primers or polyurethane elastomeric coatings if rain is imminent.

## Chemical resistance

- *Mapefloor* parking deck systems are resistant to many common chemicals. These systems are widely used in parking garages, mechanical rooms and other locations where they could be exposed to incidental chemical contact. These systems are not recommended for area with long-term ponding water, or for chemical processing areas that would involve long-term exposure to concentrated chemicals.
- Any coating system will stain if not properly maintained. Wash the system surface on a regular schedule to remove dirt, oils and other debris that may damage the coating. Spills of unknown chemicals should be cleaned up immediately, in accordance with local, state and federal laws. Consult the “Maintenance instructions” section in this Installation Manual.

For questions, requests for chemical resistance lists or recommendations for projects with specific requirements or conditions, please contact MAPEI Technical Services by phone at

1-888-365-0614, or by email at [CRS@mapei.com](mailto:CRS@mapei.com) or via the Contact Us page at [www.mapei.com/us/en-us/contact-us](http://www.mapei.com/us/en-us/contact-us).

## **Snow and ice removal**

Piled snow and ice can significantly increase the load capacity on parking decks, sometimes exceeding the deck's design load. This overloading can cause structural cracks in the deck substrate and subsequent failure in the traffic deck membrane system. Some precautionary measures can help in maintaining your parking deck system:

- Remove all piled or accumulated snow and ice as soon as practically possible.
- Avoid the use of uncovered metal blades on snowplows to prevent physical damage to *Mapefloor* parking deck systems. A heavy rubber blade edge should be mounted to the metal edge of the plow blade to protect the surface. In addition, care should be taken to protect expansion joint systems, with plowing done at a 45-degree angle to the joint so that the blade does not get caught up in the joint opening. All vehicles with chains and studded tires should be prohibited.
- Sand or other grit, such as rock salt, should not be used to improve traction on the installed *Mapefloor* parking deck system.
- Calcium magnesium acetate may be used as a de-icing chemical.

For additional information, refer to the most updated edition of the Parking Garage Maintenance Manual, available from the National Parking Association in Washington, D.C.

## **Safety, storage and cleanup**

### **Safety**

- Ensure that Safety Data Sheets for all system components are present at every jobsite.
- Use extreme caution when working on sloped areas, as wet coatings can be slippery.
- Inform personnel of the potential problems associated with breathing vapors and contact with the material on the skin or in



eyes. Provide adequate ventilation, and workers always should wear protective clothing and have approved chemical cartridge-type masks available. Footwear must be safety shoes with steel-toe protection.

- Be aware of possible damage to adjacent property. The *Mapefloor* parking deck system may blemish auto finishes and other surfaces such as brick, paint and plastic. Use drops cloths or masking as required.
- Keep all personnel out of areas being coated for 48 hours after the job is completed.
- Seal all air inlets, doorways and windows into nearby occupied areas to prevent vapors from entering these spaces.
- Keep products away from heat, sparks and flame, and disallow spark-producing equipment during application. Post “No Smoking” signs.
- All electrical equipment and outlets must be grounded. Any equipment that could produce a static charge, such as spray guns and compressed air nozzles, must be grounded.
- Have fire extinguishers as prescribed by the Occupational Safety and Health Administration (OSHA) within easy access of work areas where solvent coatings are being used. Dry chemical and CO<sub>2</sub> (carbon dioxide) extinguishers are effective in controlling small solvent fires.
- Read all warnings and instructions on container labels and on the SDSs.
- The above information is based on standard industrial practices and meant only to outline the hazards, not be all-inclusive. Nothing contained within this document should supersede local laws, codes, ordinances or other regulations, or the instructions of other manufacturers for the use of their products. Consult OSHA regarding further details and compliance. Consult the SDSs regarding conditions not addressed here.

## Storage

- All components of *Mapefloor* parking deck systems should be stored in cool, shaded areas, preferably at an ambient temperature of 70°F. Consult each product's TDS for specific storage requirements.
- When work is stopped, ensure that all primers and coatings are stored in their tightly sealed containers. Do not keep any open containers in confined spaces.

## Cleanup

- Never use solvents that contain alcohol with *Mapefloor* parking deck systems.

## Conclusion

We hope that this manual will assist you with your construction schedules and look forward to a continuing relationship with your company for all of your concrete repair, waterproofing and deck-coating requirements. For questions related to this manual, or recommendations for projects with specific requirements or conditions, please contact MAPEI Technical Services by phone at 1-888-365-0614, by email at [CRS@mapei.com](mailto:CRS@mapei.com) or via the Contact Us page at [www.mapei.com/us/en-us/contact-us](http://www.mapei.com/us/en-us/contact-us).

The above information is based on standard industrial practices and is meant to outline the hazards. Local conditions on specific jobs may require other precautions. Common sense and care in evaluating the possibility of hazards are essential. Nothing contained herein should supersede local laws, codes, ordinances or regulations, or the instructions of other manufacturers for the use of their products. The standards and regulations published by OSHA, U.S. Department of Labor, where applicable, should be consulted for further detail and compliance.





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