

Matacryn[®] TPO

Thin Polymer Overlay Wear System

Matacryn TPO Wear Systems bring strength and durability to bridge decks, multi-use pathways, transit platforms and ramps, and other pedestrian and vehicular traffic assets. Based on methyl methacrylate and polyurethane (MMA/PUMA) chemistry, Matacryn TPO Wear Systems are quick and easy to install with no temperature limitations. They can be customized to meet the wear characteristics of any project with variances in system build, layer thickness, aggregates and top coats.



Flexible, waterproof, crack-bridging layers protect the structure from contaminants and provide a durable traction surface.



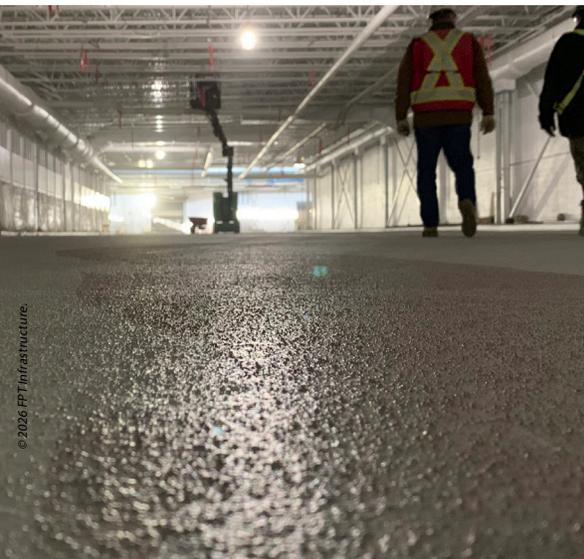
Unique MMA/PUMA chemistry promotes tenacious bond to substrate and unbreakable layer-to-layer adhesion.



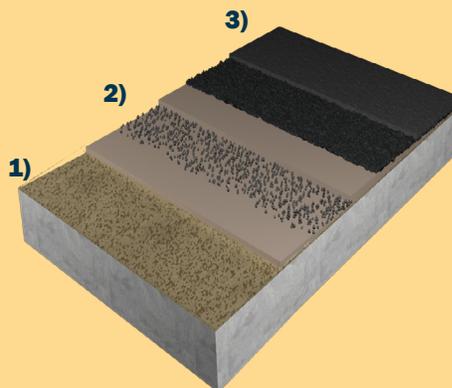
Layer cure times range from 15 to 60 minutes: adequate time to lock in aggregate and fast enough for quick return to service.



Installs at ambient and substrate temperatures ranging from -4 to 95 °F (-20 to 35 °C) to extend the construction season.



Matacryn TPO Wear System Build



- 1) Sealer and/or Primer to condition substrate for application
- 2) One to two layers Wear Coat with aggregate specific to structure use and traffic type
- 3) Seal Coat to lock in aggregate for durability and when needed, UV protection

Matacryn® TPO

William Umstead Memorial Bridge

Manns Harbor, NCDOT Division 1

Opened in 1955, the Willam B. Umstead Memorial Bridge (Dare County Bridge 9) spans 4.35 miles of the Croatan Sound between Manns Harbor and Roanoke Island in Dare County, NC. To preserve and protect the existing concrete deck, North Carolina Department of Transportation developed a special provision and the Matacryn TPO system was approved.

Several key characteristics of the Matacryn TPO Wear System are its tenacious bond (to substrates and itself) and the flexibility of the wear layer – greater than 170% elongation. In addition, it is a watertight system with high chemical resistance. It can also be installed at temperatures below 32 °F (0 °C). These characteristics were crucial in accommodating the conditions of the bridge deck including:

- Multiple types of substrate repair materials including exposed steel grate from the former lift gates on the bridge
- Expansion joints at every support pier
- Vibratory movement of the deck
- Bridge closure for renovation through the winter
- Span over salt water sound

Matacryn Sealer was applied to the prepared the deck, sealing the porous concrete and filling micro-cracks. Matacryn Primer CM was applied with a light sand coat on sealed concrete. Multiple adhesion tests were conducted, passing 250 psi to meet the required bond strength specification. The WLV+ layer was applied at an average 200 mil thickness, with the manual application preventing any material blow off into sensitive waters of Croatan Sound. While wet, aggregate was broadcasted to form the traction wear layer of the TPO system. Finally, a thin coat of WLV+ was applied to seal the system and prevent water and chemical intrusion.

