

Bridge Rehabilitation and Repair

More than 30 years of research and development have helped Transpo Industries become leaders for solutions with bridge problems.

One of the vital links in New York City is the Triborough Bridge, joining the boroughs of Manhattan, Queens and the Bronx. Built in 1936, the bridge required rehabilitation. In 1997, as part of a \$550 million project planned by the owner, The Metropolitan Transit Authority (MTA), the Harlem River Lift Bridge and the East River suspension span received new steel orthotropic bridge decks. For that first phase, the East River span, with eight lanes of traffic over a 2780-foot length, the contractor (a joint venture of American Bridge/Koch/Skan-ska) chose Transpo's T-48 Polysulfide Epoxy Polymer Concrete Overlay as the material for the finished wearing surface.

For the Harlem River lift span, the contractor chose the same product. At first the idea was to use the T-48 overlay applied at a thickness of 3/8 inch with an asphalt overlay. After discussions with the owner, engineers and contractor, it was decided that the asphalt was not needed, thanks to an already-established five-year history of durability on the Poplar Street Bridge in St. Louis. At that site, the overlay was approximately 200,000 square feet with traffic volumes over 150,000 vehicles per day, many of them tractor-trailer trucks. By eliminating the asphalt on the Harlem River lift span, the dead load would be reduced and service life increased.

Product Range

The secret of the T-48 system lies in the quality of the polysulfide epoxy (with high UV resistance) that offers an elongation of 45 percent. It is easy to install on concrete, steel and FRP



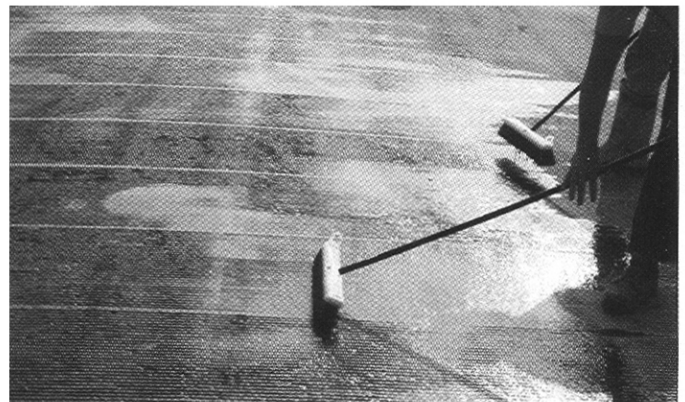
decks. Contractors' own workers usually apply the material and they have been pleasantly surprised by the ease of application. On the Triborough Bridge project, for example, the overlay was applied with a multiple coat broom and seed method. The T-48 Thin Overlay System is an epoxy resin that will penetrate cracks with superior bonding characteristics. Workers apply it as slurry, eliminating the need to relocate joints, end dams or drain structures. Once broadcast, the aggregate provides a water-proof, skid- and wear-resistant surface that has proved ideal for

both vehicular and pedestrian traffic. An added advantage is that the relatively brief curing time ensures that traffic gets back in its usual lanes promptly.

T-17 Patching Material from Transpo has won praise for its success on new construction and in the rehabilitation of bridge decks, bearing pads, expansion joints and other concrete structures. That is a Methyl Methacrylate polymer concrete that is a 100 percent reactive, pre-packaged, two-component, solvent-free material system. Its rapid cure time means a quick return to normal service for bridge users. Its ease of application, in all working conditions and with no special equipment, has pleased many contractors and their crews.

If there are large moving cracks in bridge decks, or if you have expansion joints to fill, Transpo's Rubbercrete T-22 may be the solution. It is a composite mix of two-component, polysulfide epoxy resin, with blended crumb rubber. The high flexibility of this material and its strong bond can accept up to 40 percent tensile and compressive elongation. What does that mean? It means that the use of this composite will facilitate safe joint movement caused by traffic loading and thermal cycles. Rubbercrete is impervious to moisture, salts, chlorides and other corrosive substances.

Transpo Industries offers other products in related fields. There are safety products such as omni-directional breakaway support systems for highway signs and work-zone and median glare safety shields, plus measuring equipment and traffic counters. The T-18 Overlay System is lightweight, waterproof MMA polymer concrete and the T-17 Patch is a rapid-setting permanent



polymer concrete. T-70 Sealate seals concrete cracks in bridge decks, on airport runways and in parking garages. T-48 Chip Seal is easy to apply, waterproof and highly skid resistant.

Transpo Industries is a company constantly improving, researching and growing. Arthur Dinitz, chairman and CEO, is co-chair of the AASHTO/AGC/ARTBA joint committee on new materials and technologies and President Mike Stenko chairs the ACI committee on polymers in concrete. ♣