International

Stock Bridge concrete deck

Case study 2013

Focus product: Intercrete® 4852

Location: Kensington, Victoria, Australia

Surface preparation: High pressure water wash and diamond grinding

Project owner: Melbourne City Council

Applicator: Mattioli Bros

Fabricator: Citywide Service Solutions

ISO12944 environment: C3

Project size: 500m^2

Background

The Stock Bridge was built in 1941 for the purpose of transporting purchased stock across from the Newmarket saleyards to Newell's Paddock, rather than along the public road. The materials for the bridge, a steel structure with a concrete deck, came from a footbridge that had spanned the Yarra River at Punt Road from 1899 to 1938. The bridge now connects the suburbs of Footscray with Kensington and spans 120m in length over the Maribyrnong river. Today, the historic bridge is a bustling 2-way pedestrian bridge frequented by local residents and cyclists.

Over the number of years, the original 500m^2 concrete deck of this historic bridge began to wear, revealing exposed aggregate and a wave of deep valleys along edges where concrete had been screed.

"The Intercrete 4852 system was chosen for its excellent abrasion resistance and fast return to service capabilities. The client required an aesthetically pleasing flooring system that could be applied and returned to service with minimal downtime so the public wasn't inconvenienced. Intercrete 4852 has achieved this brief along with providing a repair system with outstanding long term durability, which has exceeded the client expectations"

David Johnstone - Concrete Specialist (AkzoNobel)

The solution

The deck needed a pedestrian trafficable and waterproof coating system. Approved applicators, Mattioli Bros, decided to grind the concrete substrate flat to provide a sound, laitance free surface. The substrate was then primed with Intercrete 4850 single component, acrylic bonding agent, with the deep voids filled with Intercrete 4801 high strength, shrinkage compensated, structural repair mortar. Intercrete 4852 self smoothing, epoxy/polymer flooring system was applied at a nominal thickness of 3mm, then kiln dried sand was broadcast to refusal for slip resistance. Once cured, the Intercrete 4852 has a compressive strength of 45MPa.

Construction joints were re-cut and caulked with a flexible polyurethane sealant. The remediation works covered half the lane section at any time, and the bridge remained in service. The bridge was back in full service in 2 weeks.

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