

ELIMINATOR[®] System Protects Historic Bridge Deck

GCP products integral to reconstruction project



Project	Charles Bridge, Prague
Client	Prague Municipality
Contractor	SMP CZ
Applicator	Helifix CZ
GCP Solutions	ELIMINATOR [®] Bridge Deck Waterproofing system, METASET [®] structural adhesive

Project

Safeguarding a historic structure

The iconic Charles Bridge in the Czech Republic is a 650-year-old structure that runs through the heart of Prague, linking the Lesser Quarter (Mala Strana) and the Old Town (Staromestka).

Originally forming the only route across the River Vltava the bridge has been instrumental in Prague's growth and now plays a major role in the city's tourism industry. The bridge has also provided a backdrop for numerous films, music videos and computer games.

Challenge

Preventing weather damage

Wear and tear from the weather, flooding and thousands of tourists caused significant damage to the structure and led to the requirement for major renovation works. Costing €8.7 million (Kč 220 million), the refurbishment project included repairing the upper bridge section, replacing the old concrete deck, installing new waterproofing system, replacing stones in sills, adding new drainage and repairing the structure's pillars.

To extend the life of the bridge, the engineers on the project were keen to use innovative and long lasting solutions for this work. As part of this goal, they were seeking a waterproofing solution that would form a strong bond to the deck of the bridge and the surfacing for long-lasting protection. Consequently, a minimum bond strength of 1.6 MPa to both the new concrete deck and the existing bohemian sandstone of the main structure was required.



Solution



Durable waterproofing in challenging climatic conditions

The ELIMINATOR[®] system from Stirling Lloyd (now GCP Applied Technologies) was chosen due to its ability to provide a tough, durable membrane that would achieve the required bond strength. . Based on unique ESSELAC[®] technology, the ELIMINATOR[®] system can be applied in a wide range of temperatures and climatic conditions which meant that installation of the waterproofing could be carried out throughout the year, a feature which the competing systems were unable to offer.

The granite paving, old concrete deck and previous waterproofing system were removed. Once the new concrete deck was in place and had been left to cure, a primer was applied to seal the concrete.

The ELIMINATOR[®] waterproofing membrane was then spray applied in two separate coats, each in a contrasting colour to provide a visual check to confirm the required thickness was achieved. The ELIMINATOR[®] system cures rapidly, enabling speedy progression of the project.

100mm of concrete was applied, returning the bridge's exposed surface to the aesthetic appearance it had before the refurbishment.

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Last Updated: 2018-08-27

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