SIKA AT WORK
REFURBISHMENT OF DUITLANN DEN BOSCH BRIDGE, NETHERLANDS

WATERPROOFING: Sikafloor®, Sikalastic®
JOINT SEALING: Sikaflex®

BUILDING TRUST

LIGHT WEIGHT WATERPROOFING SYSTEM FOR LIGHT TRAFFIC BRIDGE DECK

PROJECT DESCRIPTION
In February 2020 the University of Applied Science Bern, Institute for Timber Construction Biel, Sika Switzerland and Sika Services AG agreed on an “Innosuisse Project” related to “direct trafficable waterproofing systems on timber decks”. The purpose of the research project is to provide light weight bridge structures serving light traffic. In 2023, the City of Den Bosch, Netherlands agreed to use the system on the refurbishment of the Duitlann Den Bosch Bridge which is a small pedestrian and bicycle bridge with a deck size of approx. 25 m^2.

Sika supplied and applied the bridge deck waterproofing system.

PROJECT REQUIREMENTS
The waterproofing system on the cross-laminated-timber-deck shall be compatible with the wooden deck, durable, elastic and watertight and UV-stable to keep the chosen red color. It must be abrasion resistant when directly exposed to pedestrian and bicycle traffic.

SIKA SOLUTION
In the Duitlann Den Bosch Bridge project, the existing bridge structure remained; the deck has been replaced. The new deck is prefabricated in 3 parts in the workshop of the timber construction company, Hupkes Wijma B.V. .

Sika bridge deck waterproofing system has been spray applied to the prefabricated bridge deck elements before it was installed on site. The system is composed of:
- Sikafloor®-150 two-component solvent free and unfilled prime
- Sikalastic®-8800 two-component hot spray, solvent free membrane
- Sikalastic®-8800 two-component hot spray, solvent free membrane, with injection of aggregates
- Sikafloor®-359 N two-component aliphatic PU topcoat, solvent containing.

Because the spray application was indoor, at the workshop, it was completely independent from weather and ambient conditions.

After the waterproofing system was cured, the wooden bridge deck elements were then installed onsite. The construction joints were sealed with Sikaflex® Pro 3.

To collect data a moisture monitoring system has been installed in the timber structure and the deck.

TIMBER BRIDGE DECK WATERPROOFING

PROJECT PARTICIPANTS
Project owner: City of Den Bosch, Netherlands
Engineer: University of Applied Science Bern, Institute for Timber Construction Biel
Applicator: Sika Service AG
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