

# Bagsværd Bridge

Bagsværd, Denmark (2019)

PRODUCT USED:

**Maturix<sup>®</sup> Smart Concrete<sup>®</sup> Sensors**

**CONTRACTOR:**

Zacho-Lind A/S

## BACKGROUND

As all contractors know, an efficient construction schedule is a cost-saving schedule. However, sometimes unforeseen events can happen, where construction takes longer than expected. That in turn can reduce the chances of meeting project deadlines while extending the budget, which isn't likely to impress clients. To avoid this situation and minimize delays to the overall schedule, contractors do their best to capitalize on efficiencies that can save time where possible.

With that in mind, Danish contracting firm Zacho-Lind A/S sought a solution that would provide insight into the strength development of their concrete and help them improve their efficiency while making it easier to document concrete temperature for the construction of the Bagsværd Bridge.

## SOLUTION

This search led the contractor to the Maturix Smart Concrete Sensors. With these sensors, the contractor was able to get accurate insights into the strength development of their concrete while also logging temperature data in real time directly to a cloud-based platform. This let the contractor know exactly when their concrete hit critical strength thresholds, allowing them to strip forms quicker and helping them to increase their efficiency in a way that shortened their expected timeline.

To start this new, more efficient process, Zacho-Lind A/S simply set up their project on the cloud-based monitoring platform, fixed industry-standard type K thermocouple wires to the reinforcing steel in the desired positions, and plugged them into the reusable Maturix<sup>®</sup> Sensors. From there, the sensors transmitted temperature data to the platform, where all data was then logged and could be viewed through a web browser on any connected device. Then, by adding the maturity curve for the concrete mix design, they were able to leverage the non-destructive and highly accurate test method *ASTM C1074 — Standard Practice for Estimating Concrete Strength by the Maturity Method*. Under this method, the sensors converted the temperature and time data to maturity hours, letting the contractor know the exact strength of their concrete in real time. Using the Maturix Sensors, the contractor was able to simplify their temperature control plan and recognize that they had achieved the target strength of their concrete well before their expected 14 days, allowing them to strip forms seven days earlier. By shaving seven full days off the schedule, the contractor was then able to move on to the next stages of construction, which resulted in completing the Bagsværd Bridge ahead of schedule.

