

Contiga A/S Precast Plant

Tinglev, Denmark (2020)

PRODUCT USED:

Maturix[®] Smart Concrete[®] Sensors

OWNER:

HeidelbergCement Group

BACKGROUND

As the largest precast concrete plant in all the Nordic countries, Contiga A/S in Tinglev, Denmark, has more than 35,000 m² (376,737 ft²) of production hall space. Throughout the years of using this extensive plant, the HeidelbergCement Group has maintained a keen focus on innovation and a willingness to push the limits when it comes to production technologies. For instance, in 2017, when Contiga A/S was experiencing plateaus in productivity and above-average defects from wire slippage and concrete demolding, the group explored how they could monitor their precast concrete elements. More specifically, they looked into using sensors that leveraged the maturity method (i.e., ASTM C1074), a non-destructive type of testing known for its reliability in predicting concrete strength.

SOLUTION

In reviewing the different sensor technologies using this method, the group decided that the reusability and real-time monitoring of the Maturix Smart Concrete Sensors was a good fit. As a result, they chose to incorporate the technology in their daily production for the last three years. By incorporating Maturix[®], the HeidelbergCement Group lowered the production time of their precast elements as they were able to monitor concrete strength development in real time. Their production teams simply installed type K thermocouple wires in the desired areas, plugged them into the transmitting sensors, and started the production monitoring from their cloud-based portal. Afterwards, they were able to leverage the sensors to understand precise demolding times that allowed them to increase their production capacity by more than 15%. They were also able to reduce waste related to the lack of strength development and early demolding by 35%.

They were even able to lower costs associated with heating, which is a common practice in precast production as applying it to concrete accelerates chemical reaction. Typically, heating uses an enormous amount of energy and is a significant cost to production. However, over time, Maturix Sensors have been able to help the HeidelbergCement Group better understand how to handle the heating for each individual workstation and concrete element. As a result, Maturix helped them figure out when they should turn off heat and where the cold zones in the precast plant were. In turn, this allowed the company to cut costs related to heating by 20–25%.

