

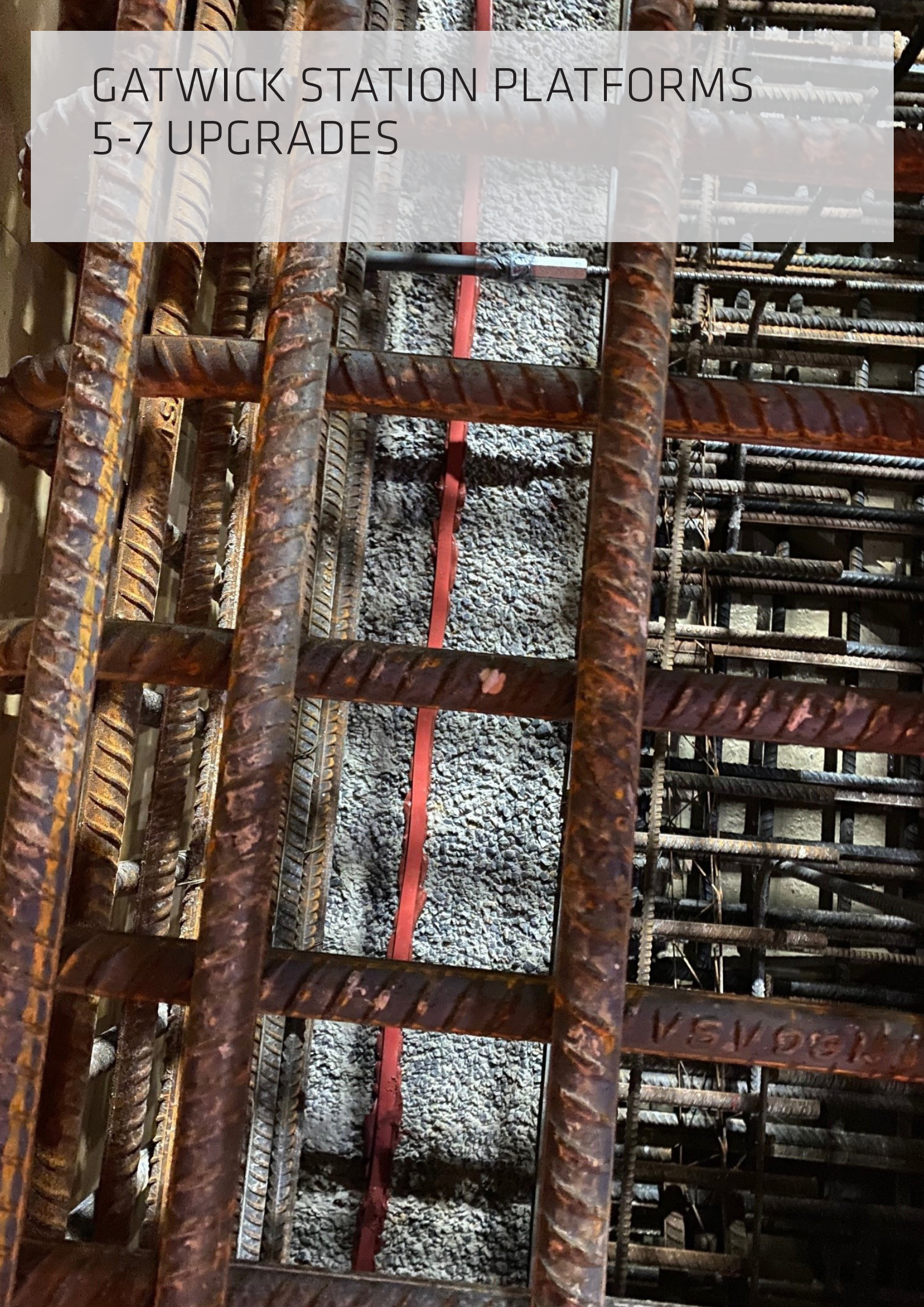


SIKA AT WORK

GATWICK STATION PLATFORMS 5-7 UPGRADES

WATERPROOFING: Sika® Watertight Concrete, SikaSwell® construction joint system

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TIME EFFICIENT UPGRADES TO PLATFORMS 5-7 USING SIKA WATERPROOFING PRODUCTS.

The UK's second busiest airport, Gatwick Airport, is also home to a rail station which handles in excess of 20 million passengers annually – making it one of the 10 busiest stations in the UK outside of London.

Network Rail are currently managing a redevelopment project at Gatwick station, which is being delivered by Costain. Part of this project is a new concourse for the station.



The redevelopment of the station includes improvement works to create a larger, more accessible interchange between the station and airport. As part of the upgrades to platforms 5-7, Costain worked with Sika waterproofing products and Hanson for the concrete mix to ensure the rebuild was robust and would offer significant longevity.

The Requirements

A time-efficient waterproofing installation was required for the upgrades with integral watertight concrete needed for the pours in order to provide a sound waterproofing solution.

The complex geometry of the substructure and pile caps at Gatwick station had to be factored in for the project, therefore Costain needed a system which was easy to use and would get the job done effectively.

Hanson was approached to supply a low carbon mix for use on the project which could offer the necessary benefits needed.

The Solution

A P450 CIIIB mix was offered instead of a traditional C50. The mix achieved 60 N/mm² at 28 days and saved approximately 500 tonnes of carbon when compared with the C50 alternative. The concrete mix was used for elements which didn't require loading for 56 days and could be struck after 48 hours. It also formed several feature walls which look quite striking due to the light colour.

Approximately 1500m³ of Hanson Watertight Concrete powered by Sika® Watertight Concrete system, in conjunction with SikaSwell® construction joint system, was used for the project.

Sika® Watertight Concrete is now the most widely used system of its type in the UK. Compliant with BS 8102:2022, it saves time at design and construction stages of projects as the need for external membranes with their complex detailing and installation is eliminated.

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The Sika® Watertight Concrete System incorporates a range of admixtures to improve resistance to infiltration of water and was the ideal solution for this project. Due to the complex geometry of some of the pile caps, ground beams and slabs on this project, the ease of pouring Sika® Watertight Concrete to create the relevant structure, as well as providing the required Grade 2 waterproofing, meant the construction process ran smoothly and on time.

SikaSwell® construction joint system was employed alongside the watertight concrete for the joint sealing at Gatwick rail station's platforms.

SikaSwell® A-2010 swelling profile is easily bonded to joints and penetrations in concrete with Sikaswell® S-2 adhesive, usually with no additional work required to the reinforcement or formwork. The system is a cost-effective way of sealing of construction joints, is suitable for challenging locations such as the complex geometry involved in this project and can provide back-up security for other waterproofing systems.

Quotes

Chris Sharrod, Area Technical Manager for Hanson, commented: "The project was a challenge from the start with concrete being supplied over Christmas due to railway line closures. Concentrated quality control with excellent feedback from Costain and well co-ordinated supply ensured that the outcome was a success."

Alvaro Jimenez, Senior Engineer at Costain added: "The excellent support provided by Sika has been key to achieve the watertightness of the lift pits, escalator pits and electrical rooms at the Gatwick station project."

"Sika has provided specifications, construction details, pre-start training and site assessments to guarantee the effectiveness of the solution. Sika's technical team also worked in close collaboration with Costain to overcome site issues and adapt the solutions to suit the site sequence and methodology throughout the installation of all products."

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