TARMAC

TOPFLOW CUSTOM

Proven performance

HAMMERSMITH FLYOVER, LONDON

The challenge

Hammersmith Flyover was opened in 1961 but over 50 years de-icing salts had seriously compromised its structure. In order to extend the life of this crucial piece of West London infrastructure Costain was required to install a number of cables inside the bridge deck to replace the corroded reinforcement of the original structure. A critical part of this were the Long Tendon Anchor Blocks at the end of the internal cables. Six weeks before these were due to be poured Costain realised that the formwork was too congested and awkwardly placed for a conventionalconcrete to be used. A self-compacting concrete was obviouslythe answer. Upon checking it was found that standard self compacting concretes have a WCR of 0.45-0.5 which with the cover available would not comply with the XD3 exposure class required.

Our solution

The London technical department worked with our partners at Chryso to develop an SCC with a WCR of 0.40 which could still achieve a 700mm flow and 2 hours open life. Costain constructed a mock up formwork, (cover picture), with perspex panels to see how the TOPFLOW performed. The trial, which took place at our Kings Cross plant was a complete success. The TOPFLOW was observed travelling comfortably up 50mm perspex tubes, placed in the formwork, although there were two lengths of 6mm rebar in the centre of each tube. Costain agreed we had designed an SCC which would be easy to place and meet their exposure class requirements.

Results and benefits

The Long Tendon Anchor Blocks were successfully poured and the cables are now securely anchored in the bridge deck. Costain were not only happy that their flow and exposure class requirements were met, but also commented on the ease of placement and high quality of the surface finish of the TOPFLOW concrete. The original contract for the Long Tendon Anchor Blocks was for 25m³. Costain were so pleased with the performance of the custom TOPFLOW that they found a number of further uses for it and ended up taking more than 250m³.

For more details visit: **tarmac.com/topflow**

Building our future

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