PROVEN PERFORMANCE

TOPFLOW
C40/50 WITH LOW SHRINK ADDITIVE
Topflow - the highly fluid self compacting concrete (SCC) that provides fast on-site results

THE CHALLENGE
With constant wear and tear of traffic over the years, The Humber bridge needed extensive maintenance. The bridge was originally designed to sway to compensate for the on/off loading of traffic, plus the effects of the weather, but a weakening of the supports had allowed the bridge deck to begin moving in a lateral direction. Engineers designed a solution to restrict this movement by incorporating a series of concrete anchorage points in both towers, tied together using high tensile steel bars (macalloy bars) to support the main road deck. These points had to be poured within the deck, presenting C Spencer with the challenge of not only constructing the form work but also pouring the concrete in such an enclosed space.

OUR SOLUTION
During a series of meetings with C Spencer, Tarmac’s northern technical teams were informed about the requirements of the project. A concrete was required that could flow sufficiently enough to fill the form work from one access point because of the restrictions within the deck. In addition to this, the product needed to be of sufficient strength to support the loads imposed upon it and with reduced shrinkage so the void would remain sufficiently filled to support the road on the main deck. After a series of laboratory trials the team came up with a solution - TopFlow C40/50 with a low shrink additive. This could be pumped over a considerable distance from the road via a series of drops and restrictive turns into position.

RESULTS AND BENEFITS
As a result Tarmac assisted C Spencer with a series of pours. Because of the high fluidity, higher strength and self-compacting features of this bespoke mix design the product was poured without any issues. Also, even though this wasn’t a main requirement, a superior surface finish that mimicked the form-work exactly without any blemishing or voiding was achieved. C Spencer were extremely happy with the results and commented that the early strike cubes that were taken on the first pour had achieved over 50% of their design strength in 3 days (in onsite conditions). This allowed C Spencer to be able to strike the form work earlier than expected, thus helping to speed up project.

For more details contact topflow@tarmac.com or call 0800 1 218 218

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