

TOPFLOW
STEEL FIBRES

Proven performance

BOND STREET TUBE STATION, LONDON W1

The challenge

To connect Crossrail with the London tube system new passenger foot tunnels were to be engineered beneath Oxford Street and Bond Street. To achieve the engineering design the Costain/Laing O'Rourke JV needed to place 1,500m³ of high strength concrete 40 metres below the street through the Marylebone Lane shaft. Concrete was to be pumped up to 180m, often downhill, along a twisting, turning and confined route. Very difficult site access and into the new tunnels meant that crack control mesh could not be stored on site or fixed safely. Speed of placing concrete into the variety of structures was required underground and the need to limit noise and dust in the confined workspace were all major issues. Programme and budget overruns from the earlier tunnelling and site mixed spray concrete lining works needed to be brought back on track.

Our solution

A Topflow variant with hook end 0735 steel fibres was designed by the London RMX technical team to meet the engineering design requirements. The TOPFLOW mix contained steel fibres to eliminate the need for crack reduction mesh, and featured an SF2 consistence to self compact and eliminate the need for noisy compaction pokers below ground. The Topflow mix should pump well over long distances and be retarded to give a three hour open life, allowing time for pump lines to be moved during the longest pours.

Results and benefits

1,500m³ of TOPFLOW STEEL FIBRES were successfully supplied over a 20 week programme. Tunnel invert beds for passenger footways, complex internal structures and trapezoidal escalator barrels were constructed quickly and efficiently. Budgets reigned in with TOPFLOW STEEL FIBRES yielding a £50/m³ cost saving over site mixed spray concrete alternatives. On completion of the TOPFLOW pours Senior Tunnel Engineer, Aled Daviessent, gave his congratulations and thanks to the London RMX Team and a referral for TOPFLOW STEEL FIBRES on the next tunnel job.