



PROVEN PERFORMANCE

TOPROC UW, WESTON-SUPER-MARE SEA DEFENCES

TOPROC
UW

Product TOPROC UW (UNDER WATER)
Client NORTH SOMERSET COUNCIL
Main contractor BIRSE CIVILS LTD.
Location WESTON-SUPER-MARE SEA DEFENCES
Date of completion 2008

The ultimate high performance, low washout concrete.

THE CHALLENGE

Birse was contracted by North Somerset Council to bring the existing sea defences at Weston-super-Mare up to the recommended standard of protection against flooding. The project was broken down into two phases, with the first phase located at Marine Lake, a man made seawater bathing lagoon. The concrete and rock causeway impounded the lake and played an important role in helping repel the advancing tide. It was originally planned that this refurbishment could be achieved by fixing a structural covering of precast concrete revetment panels. However, the difficulty of handling and placing the panels, some of which would weigh in excess of 20 tonnes in the intertidal zone, made a precast option difficult. Therefore, with technical support from Tarmac, Birse Civils were able to find a readymix concrete solution that would meet all their requirements. The challenge for Birse Coastal and Tarmac was considerable as this

part of the Severn Estuary is raked twice a day by a 15m tidal range, the second largest in the world, which meant the material needed to be able to resist washout. As the concrete was to be installed on an incline of one in two, it needed to be capable of full compaction without slumping down the slope as well as receive and retain a tamped free finish. Long-term durability was also essential, with the concrete face having to resist impact loads from waves and tidal abrasion throughout its life.

OUR SOLUTION

To ensure that the solution met both performance and aesthetic demands, Tarmac worked closely with Birse Coastal prior to the award of the contract, to provide a solution with Toproc UW, a cohesive concrete, with low permeability and resistance to washout. Its thixotropic nature meant the mix had sufficient workability to allow placements and finishing while resisting the slippage which was a risk on the sloping seafront. Toproc

UW also has excellent, well-proven abrasion resistance and typically achieves a comprehensive strength of 25N/mm² to 30 N/mm² within 24 hours and 60 N/mm² to 80 N/mm² at 28 days. Tarmac supplied 2,500m³ of readymix concrete to the foreshore area of the site from its Weston-super-Mare readymix concrete plant located east of the town centre. This included 1,200 m² of specialist Toproc UW designed specifically for underwater applications. The proximity of Tarmac's readymix concrete plant to the site was vitally important, ensuring all the Toproc UW concrete was supplied and laid during the narrow tidal window.

RESULTS AND BENEFITS

Tarmac ensured the concrete was laid on budget and to schedule under challenging conditions. Toproc UW proved to be a viable and economical alternative to precast panels and ensured all the performance specifications for the new sea defences were met.

TOPROC

For more details contact your toproc@tarmac.com or call **0800 1 218 218**

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