

Weymouth Relief Road Pumped concrete

Product

A bespoke concrete mixture incorporating evoBuild low carbon GGBS

Client

Dorset County Council

Contractor

Skanska

Overview

Heidelberg Materials supplied a bespoke low carbon concrete mix with evoBuild GGBS and Sika admixtures for the £87 million A354 Weymouth Relief Road. The mix delivered reliable pumpability, long open time and consistent strength for nine bridges and major deck pours. The project also reduced embodied CO₂ and supported wider environmental improvements along the route.



Project description

Heidelberg Materials, with Sika concrete admixtures in the mix, supplied all the concrete to the long awaited A354 Weymouth relief road. The £87 million, 10km scheme was constructed by Skanska, together with its design partners Owen Williams, for Dorset County Council. The new road is predominately a two lane single carriageway, with areas accommodating climber lanes where appropriate. It is designed to relieve congestion along both the A354 Weymouth / Dorchester road and the A453 to the east and surrounding areas.

With nine bridges on this project, the majority of the concrete was pumped. To ensure good delivery through the line and to avoid blockages, Heidelberg Materials supplied a concrete mix incorporating a superplasticising admixture by Sika. This ensured that the concrete had a high consistency without segregation together with increased strength.

Another big factor in choosing this admixture, was that the concrete needed to retain a long 'open' time, meaning that it retained its consistency for a long time before starting to set or harden. This was particularly important for two reasons.

Firstly, in the summer especially, the traffic coming from either Dorchester or Weymouth, where the two nearest Heidelberg Materials plants are situated, could be extremely heavy, so travel times with concrete in the trucks can be long and unpredictable. Secondly, when pouring such large masses as the bridge decks, the slower rate of set enabled the concrete to be placed without the fear of the formation of cold joints and ensured that the concrete remained plastic long enough to be fully compacted.

Environmental considerations were high on the agenda in the planning of the relief road. A nature conservation area was being created at Lorton Valley, and sympathetic landscaping and planting was carried out adjacent to the road. A 1,000 car park and ride facility will cut pollution and improve air quality in the area. New pedestrian, cycling and equestrian facilities are also included.

Heidelberg Materials also assisted with reducing the level of embodied CO₂ in the concrete mix by incorporating evoBuild low carbon GGBS.