

Northam River Bridge, Southampton

Project case study



Product

Gussasphalt mastic asphalt

Overview

Innovative, highly durable asphalt, produced at Hanson's Brayford plant in north Devon, has been used to complete a £1.2 million bridge deck refurbishment programme in Southampton.

Northam River Bridge, Southampton

Deck refurbishment



Spraying white coat



Spraying tack coat

All images courtesy Stirling Lloyd Polychem Ltd

Project description

The 148-metre long Northam River Bridge provides a busy transport route into and out of Southampton. Its deck was in poor condition and in urgent need of refurbishment. Consultant engineers Capita, on behalf of Southampton City Council, specified the use of Gussasphalt in conjunction with Stirling Lloyd's Eliminator waterproofing membrane.

Due to problems with the different types of surfacing previously used, and the volume of traffic using the bridge, the proven combination of Eliminator and Gussasphalt was considered ideal to provide a long life and enhanced in-situ performance before any first maintenance would be required. Their ease and speed of application also minimised traffic congestion and avoided costly road closures and diversions during the refurbishment.

Hanson UK produced the Gussasphalt on behalf of Aeschlimann AG – Stirling Lloyd's partner for the promotion of Gussasphalt surfacing – for the main deck refurbishment.

The work involved planing off the existing asphalt and repairing the badly damaged deck before two coats of Eliminator were spray-applied. A Flintag aggregate was included in the second coat while the membrane was still wet to provide an

enhanced shear key interface between the waterproofing and the 55mm-thick surfacing material.

Once the Eliminator had cured, which took less than an hour, a hot melt adhesive was applied to further enhance the bond between the membrane and the Gussasphalt surfacing. The strong bond that the tack coat helps achieve enables the surfacing to act as a composite with the waterproofing and deck, significantly reducing stress within the structure.

Gussasphalt is a dense, machine-laid mastic asphalt that is self-levelling and self-compacting. It comprises a high performance polymer-modified bitumen mixed with gritstone coarse and fine aggregate to provide the stiffness and durability needed for a bridge running surface. High PSV, lightly coated chippings are embedded in the hot surface by rollers to provide surface texture.

The Gussasphalt was produced at Hanson's asphalt plant in Brayford, north Devon, and loaded into Aeschlimann AG mixers for the 130 mile trip to Southampton. To meet the tight programme deadline, the plant was made available for extended hours to enable the mixers to make two trips to site on each of the two production days.

The project was completed with the application of 750m² of Eliminator overcoated with the Safetrack SC coloured surfacing system, in asphalt grey, to provide slip resistant surfacing for the bridge's walkways.

The concrete bridge now has a long-term, low maintenance, waterproofing and surfacing combination that will enable it to continue as a major transport route in Southampton for many years to come.