

Case Study

Donington Park - Track Resurfacing and Redevelopment of Old Hairpin

National Contracting

Client: **Clear Channel Entertainment**

Value: **£ 900,000**

Duration: **14 weeks**

Completion: **February 2004**

Project Brief

To completely resurface Donington Park's 4km circuit, including new kerbing, a gravel trap run-off at the Old Hairpin, improved pit-lane access and white lining.

Background to the Contract

After meeting the rigorous demands of a spectrum of motorsport events (from the British Motorcycle Grand Prix and the British Touring Car Championship to the British Superbikes) the track had become uneven and was unable to meet the stringent requirements of Donington Park and its consulting engineers.

In addition to the fact that the skid resistance value of the old surface had fallen below minimum requirements, overall

ride-ability needed to be improved, additional run-off at the Old Hairpin was required, as well as better access between the pit-lane and track for starting wheels.

With challenging weather conditions, and a whole season of prestigious motorsport events ahead, it was critical that the contract was finished within the set time scale.





The Technical Challenge

The Donington Park contract was divided into 2 main parts: the redevelopment of Old Hairpin (included extending the gravel trap by 15metres; relocating adjacent tyre barriers, safety fencing, retaining wall, Marshall post and access gates; demolishing an existing toilet facility; landscaping the spectator area embankment and constructing a new foul sewage pumping station) and secondly the resurfacing of the circuit and included the full-width reconstruction of 30metres of track between Coppice Corner and McLeans; surfacing of an infield access track using 100mm of compacted planings from the old track surface; surfacing the pre-trial in the Paddock; and resurfacing the full Grand Prix Loop.

The Surfacing Solution

The new track surface was laid at 40mm thick using Delugrip RSM, chosen for its ability to provide a dense, impermeable and deformation-resistant surface with a macrotexture designed to assist bulk surface water run-off. Delugrip RSM uses a combination of aggregates with different wear characteristics which effectively help to maintain macrotexture and maximise skid resistance in all conditions.

In order to ensure smoothness and minimise joints Tarmac employed four pavers (two in echelon with one on stand-by) and a mini-paver for those areas where the circuit widened. The pavers were supported by four larger tandem rollers, one small tandem and two deadweight rollers, and the joints were located off the racing lines and braking zones. Compliance checks were carried out during laying, using the TRL pendulum skid meter, as well as transverse and rolling straight edges - with a 3mm tolerance throughout.

Materials

The resurfacing contract generated over 5,000 tonnes of planings, a portion of which was subsequently recycled and reused in the reconstruction of the infield access. Resurfacing the 4km of track required 4,850 tonnes of asphalt and 8km of white lining. The extensions to the gravel trap required 3,400 tonnes of gravel.

Comment

"The track was really rippled before and you had to think about what line to take to avoid the bumps, but now its completely smooth. The surface is consistent now and that's important to me because I race here regularly. My prediction for this new track is that it should shave off one second [from the lap time] easily -well that's what I'm hoping for!"

Matt Llewellyn
Ducati British Superbike Rider - Lloyds Racing

