

# Nypave PX 50

## WARM MIX ASPHALT APPLICATIONS

Nypave PX 50 is a highly modified 40/60 pen binder produced from selected bitumen feedstock. It is rheologically modified to deliver enhanced performance characteristics – including lower temperature compaction and rapid hardening of asphalt.

SITE NAME:	A66 AT CRACKENTHORPE, CUMBRIA, UK
ASSIGNMENT:	Reinstate a busy road on a tight schedule
CLIENT:	Highways England
MAIN CONTRACTOR /SURFACING CONTRACTOR:	Kier /Hanson Contracting
DATE:	October-December 2015



## Background

In winter 2015, full-depth refurbishment works were due on one of Cumbria's busiest roads – the A66 at Crackenthorpe, west of Appleby. Installation needed to take place within the shortest possible timescale and with minimal disruption to the general public.

Carriageway closures were restricted to the hours between 22:00 and 08:00. During this time, the challenge was to lay two layers of base course at 90 mm each and a binder course of 70 mm, adding up to a total of 250 mm, plus a Tuffgrip<sup>1)</sup> thin surfacing of 40 mm. The team had to arrive at 19:30, carry

out planing out and replacement work, and then get away in time for traffic to be running by the cut-off point the following morning.

The amount of work that needed to be completed during each shift – moving 350 tonnes – was significant, and time was short. The winter climate posed a further challenge, and materials that could be compacted well despite cold temperatures and harden rapidly would be required.

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## Solution

Taking the harsh conditions and strict time restraints into account, Hanson proposed low-temperature asphalt solutions – as opposed to conventional hot ones – to Keir, the major contractor working for Highways England. Hanson produced the warm asphalt using Nynas' Nypave PX 50.

Nypave PX 50 enabled the asphalt to be mixed at 140°C, instead of the usual 170°C. It could also be trafficked at a high temperature (the material being stable at circa 90°C, giving a further 30°C benefit).

The lower temperature asphalt mixture could be mixed more quickly and laid and compacted in the cold weather at a lower temperature, while also hardening more rapidly and therefore allowing more layers to be placed over a set time period. This allowed Hanson to replace a larger length of carriageway during the allotted timeframe.

## Details

Lower temperature asphalts are principally promoted for the energy and emission savings in their production, but rapid cooling and subsequent rapid turnaround are additional benefits.

The asphalt proved absolutely fit for purpose, and a second specialist product sourced from Nynas, Nytherm PMB 75, was also used for the 40mm thick Tuffgrip<sup>1)</sup> surface layer on the A66. This specially modified binder allows production of high-performance asphalt mixtures at lower temperatures, which display enhanced compactability in cold weather.

Use of products such as Nypave PX 50 and Nytherm PMB 75 will enable more highway resurfacing to take place during the colder months. Additionally, their ability to allow asphalt to be produced and laid at lower temperatures will lower emissions.

- 1) Tuffgrip is a thin surfacing system for highways and other paved areas from Hanson UK. It uses high quality Polished Stone Value (PSV) aggregates and specially-developed polymer modified binders.

