

Nypave FX 25 PL

HOT MIX ASPHALT APPLICATIONS

Nypave FX 25 PL is a specially designed binder for mixtures characterised by a high modulus of rigidity (HMR, French class EME), produced in accordance with EN 12591 and Nynas quality specifications.

SITE NAME:	NEW ROAD, NOWE ZAWADY, POZNAN, POLAND
TASK:	Constructing a dual carriageway link road
CLIENT:	ZDM Poznań
MAIN CONTRACTOR:	Poldrog Pila
ASPHALT PRODUCER:	Poldrog Pila
SURFACING CONTRACTOR	Poldrog Pila
DATE:	October 2010

Requirements

There was a need to improve traffic flow in an important part of the City of Poznań, connecting the Śródka roundabout with the crossroads at Prymasa Hłonda and Główna streets. It was decided to build a 1.13km long dual carriageway; the value of the contract being PLN40 million.

Solution

In view of the projected intense traffic flows, with a high proportion of heavy vehicles, an asphaltic concrete pavement characterised by a high modulus of rigidity (HMR, French class EME) was specified, using Nypave FX 25 PL bitumen binder. This binder is from the Nynas Performance Programme's 'Extra' range, specially designed for mixtures of high modulus of rigidity.

Details

The design of a pavement characterised by a high modulus of rigidity (HMR) is intended to provide base and binder courses of asphaltic concrete with exceptional qualities of load bearing, longevity and resistance to deformation. Also of resistance to thermal and fatigue cracking.



With regard to the Poznań link road, the following mechanical requirements were specified for the pavement:

- an integrated modulus of rigidity of at least 16,000MPa at 10°C
- resistance to rutting of the base course, maximum 7.5%
- resistance to rutting of the binder course, maximum 5%.

A mix of asphaltic concrete was designed based on 0 - 16mm crushed basalt stone aggregate plus Nypave FX 25 PL binder, to ensure that the high parameters of the specification were met.

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The pavement comprises a binder course of 80mm above a 120mm thick base course. With noise limitation in mind, a 30mm thin layer surface course of stone mastic asphalt (SMA) was applied, containing Nypol 86. Compaction was carried out using two vibratory steel rollers of 10 and 8t respectively.

The chosen solution (to use a pavement of high modulus of rigidity) meant that the base and binder courses could be reduced from the traditional 250mm thickness to 200 mm; while maintaining high load bearing capability, durability and longevity, plus resistance to surface cracking.

