

Premium

Nynas Endura Z2

HOT AND WARM APPLICATIONS

When the Port of Hamburg needed to lay a new asphalt surface, they opted for a specially developed, highly modified binder. This enabled them to guarantee a long-term solution that offers good durability with an optimal balance between rigidity and flexibility.

SITE NAME:	PORT OF HAMBURG
ASSIGNMENT:	Maintenance work in the port area
CLIENT NAME:	Hamburg Port Authority
ASPHALT PRODUCER:	Hamburg Asphalt Mixing plants
DATE:	Summer 2012 (as an example of projects carried out in the last ten years)

Background

The Port of Hamburg is one of the biggest ports in Europe. Every year it handles around nine million containers, with a total throughput of goods totalling more than 130 million tonnes. The stresses placed on the quaysides and other parts of the port are very substantial, not least when you consider that one single truck with containers can weigh up to 120 tonnes. It can also become very hot during the summer months, which does of course affect the surface. Ahead of a major upgrade in 2003 of the areas where containers are loaded and unloaded, which cover several hundred thousand square metres, it was agreed that they would invest in asphalt. To meet the tough demands involved, the contractor, Hamburg Asphalt Mixing plants (HAM), opted for a polymer-modified binder supplied by Nynas.



Solution

The Port of Hamburg consists of a large number of installations with different owners. Maintenance works take place on an ongoing basis in order to offer the best possible availability, and most areas of the port now have asphalt surfaces. In connection with the relatively extensive maintenance works carried out in 2012, they used the setup from 2003 as a starting point. This means that Nynas was engaged to deliver Nynas Endura Z2 for both binder course and surface course for an area covering approximately 50,000 square metres. The consultant who planned the work wanted to make sure that there would not be any problems during the course of the project. It was also considered to be cost-efficient, despite a relatively high initial cost, as polymer modification provides such good durability.

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Details

The contractor HAM and Nynas worked in close collaboration to develop precisely the right mix of aggregate and binder. The challenge in 2003 was to come up with a solution that could withstand the heavy axle loadings and point loads every day for many years into the future. The review conducted seven years later revealed that the surface - 300 mm gravel road base, 80 mm asphalt binder course and 60 mm stone mastic asphalt surface course - was still functioning in accordance with the client's requirements. This is an example of different adaptations of the design, depending on the existing construction. The stability and good performance of the surface after many years of heavy loading explain why it has been used as a reference for maintenance projects in ports in other countries.