

Nyfoam 85 is a special bitumen product with excellent, predictable foaming properties; produced to comply with EN 12591 Paving Grade Bitumen. It can be used as the binder component within Nynas Bitufoam® technology.

SITE LOCATION:	INDUSTRIAL SITE WITHIN THE PORT OF ANTWERP, BELGIUM
TASK:	Processing foundation material contaminated by coal and mineral residue
CLIENT:	BEL Road Building Service Etten-Leur
DATE:	December 2011 - June 2012

Background

A new tank terminal to store petroleum products was to be built on former storage land in the Port of Antwerp, where the ground was contaminated with coal and mineral residue. A solution was sought for processing 45,000t of contaminated foundation material on site into a new foundation layer; to reduce waste and limit costs.

Solution

Cold in situ reuse of the foundation employing Nynas Bitufoam® technology incorporating Nyfoam 85 foam bitumen seemed to the Port of Antwerp to present the best answer. The contamination of the foundation material made it impossible to stabilise the subsoil with cement. Leaching behaviour and water sensitivity were two very important factors to take into consideration: with Nyfoam 85 offering a watertight and durable solution.

Details

BEL used Nyfoam 85 as the binder to stabilise the existing foundation into a new foundation layer. Nyfoam 85 is ideal for continuously graded, contaminated building material. Instead of transporting the material to landfill, it was reused on site and processed into a high quality foundation with controlled leaching – a durable solution which was extremely economical.



The material was coated with a finely dispersed foam giving a durable and environmentally responsible solution. It allowed a flexible but high strength foundation to be produced. Another advantage was that the layer thickness of the warm asphalt layer could be reduced by around 30%.

During the work, the correct percentage of foamed bitumen had first to be determined by experiment, together with the correct quantity of water to be added. Only after processing could the client see what the foam bitumen was doing and adapt the recipe if required.

The project was carried out in various phases between December 2011 and June 2012. Around 1500t of foundation material was processed every day; and in total, some 1600t of Nyfoam bitumen was used.

Nyfoam 85

COLD AND SEMI WARM APPLICATIONS

Nynas Bitufoam® technology has been used on a large scale for over 14 years, for processing foundations which contain – for example – furnace slag, lava slag, contaminated rubble granulate, asphalt granulate contaminated with tar, and so on.

Another advantage of the technique is that the foundation layer can be driven over by heavy traffic immediately. In addition there are great environmental advantages: the in situ application gives a saving of around 50% of CO₂ and the waste material is recycled into a high quality construction material.

