



# FOAMGLAS®

## Botlek Rubis Terminal

## PROJECT PROFILE

Over five thousand square metres of FOAMGLAS® under Rubis storage tanks in the Botlek area of Rotterdam

Rubis Terminal is a French bulk-storage and blending specialist, specialising in the petrochemical and energy sectors. In recent years Rubis has developed many new sites in northern Europe. In spring 2008 the first construction phase was completed with a total storage capacity of 82,000 m<sup>3</sup>. Since then the second phase has commenced to increase the capacity to 130,000 m<sup>3</sup>.

The terminal plays a key role in the storage and transhipment of goods in Rotterdam. Rubis' clients are guaranteed high flexibility by a direct link with railways, and maritime and inland shipping. In the dynamic and competitive chemicals sector, Rubis benefits from efficiency advantages and rapid turnaround in the new terminal. One of the important products within a wide range is Biofuel.

### Reducing energy losses

In view of the rapid turnaround the Rubis tanks are not heated. They are, however, fully insulated with 100mm of FOAMGLAS® HLB 1000 as tank-base insulation.

FOAMGLAS® HLB tank base insulation plays a significant role in conditioning tank contents and reducing energy losses. Typical energy savings can be up to 70% or more. The tank base is protected from the elements from underneath its structure and the contents are therefore protected as well.

#### Owner

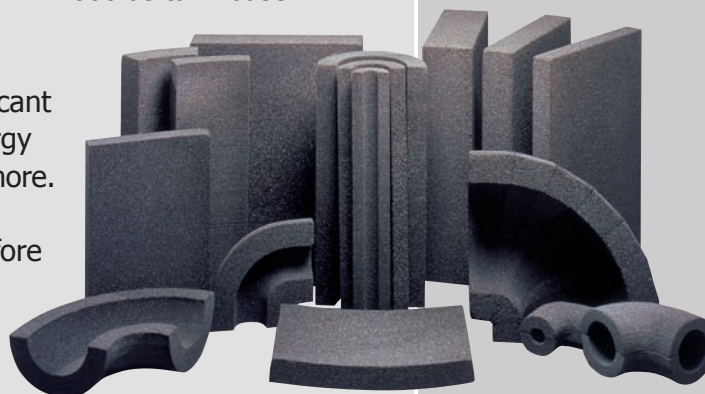
Rubis Terminal B.V.  
Port number 4145  
Botlek-Rotterdam

#### Civil & Insulation Contractor

Geka Bouw B.V.  
Dordrecht

#### Insulation Distributor/Fabricator

Pittsburgh Corning  
Nederland B.V.





## Specification

The FOAMGLAS® HLB is bedded onto the fluid-resistant concrete foundations with PC86T adhesive. An asphalt-sand layer on the FOAMGLAS® acts as a levelling and pressure-distribution layer on which the storage tanks are built. The basis of the whole system is Pittsburgh Corning specification i28-20.

## Safety factor

FOAMGLAS® HLB 1000 has a minimum guaranteed compressive strength of 69 tonnes/m<sup>2</sup> and an average compressive strength of 100 tonnes/m<sup>2</sup>. Here an average safety factor of 4 on the minimum compressive strength is maintained. The whole system is tested under water pressure. To this end about 13,000m<sup>3</sup> water is temporarily 'borrowed' from the harbour and pumped from one tank to the next. These tests are aimed at testing the tanks for leak-tightness while at the same time ensuring any final settling on the foundation.

## Engineering & Construction

The main contractor and executor of the piling, ground and concrete operations was GEKA Bouw, a subsidiary of CFE Nederland B.V.. GEKA Bouw is well known for foundation techniques, civil engineering, concrete construction, and the design and construction of industrial buildings. It is one of the oldest pile-driving companies in the Netherlands and has been active in the Dutch market since 1885.

The FOAMGLAS® was laid by Nieuwets Isolatie under the supervision of GEKA Bouw. The 4 stainless steel chemical tanks (Ø16m, 15m high) were constructed by French company STCM-CTIS. Alongside the engineering company involved, GEKA Bouw was also responsible for part of the construction. The 6 steel mineral-oil tanks were constructed by Verwater (Ø30m, 8m high).

## FOAMGLAS® Industry

[www.foamglas.com](http://www.foamglas.com)

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