

INNOVATIVE TANK INSULATION SYSTEM PROVIDES COST-EFFECTIVE, LONG-TERM SOLUTION FOR TOTAL'S ZEELAND REFINERY

PROJECT DETAILS

Client:	Zeeland Refinery, a Total and Lukoil company
Location:	Nieuwdorp, The Netherlands
Completion Date:	2012
Contract Scope:	System design, Demolition of the existing insulation, Pre-fabrication of the panel systems, Installation, Project management
Applications:	Thermal insulation of storage tanks
Technology:	nVent RAYCHEM TRACER Trac-Loc vertical lock-seam tank insulation system



KEY CHALLENGES

The original mineral wool insulation on an existing 60 metre diameter fuel oil tank had become badly damaged by heavy winds. Water ingress had led to corrosion of the tank's carbon steel shell. Zeeland Refinery's need was to remove and replace the existing system with a watertight solution that could offer long-term benefits in both energy saving and CO2 reduction.

The challenge was to demolish the existing insulation and install the new system in an area exposed to high winds. These severe weather conditions meant that stringent health and safety guidelines were necessary.

In addition, a 36 metre diameter bitumen storage tank was to be renovated. This required insulation which could provide the same long-term benefits and maintain the temperature of its contents at 180°C.

SOLUTION

nVent provided the ideal solution with its nVent RAYCHEM Trac-Loc vertical seam insulation system. This is a system of prefabricated panels where insulation is laminated to an aluminium outer skin. The panels have specially shaped edges that are seamed mechanically to the adjacent panel to create a homogeneous jacket. This not only secures the panels to the tank but also prevents moisture ingress. The system is installed without the need for scaffolding.

For the Zeeland refinery special polyisocyanurate (PIR) insulation was chosen due to its resistance to moisture absorption. For the 36 metre tank a high-temperature PIR was specified to ensure that it could withstand the high maintenance temperature. In total, some 5,633 m² of the 12 metre long panels were required to insulate both tanks.



Trac-Loc-Installation

Once the existing insulation on the 60m tank had been demolished, nVent's teams installed the new system in just four weeks. This is less than a third of the time that would have been taken by conventional methods.

The result is a solution that has met all of Zeeland Refinery's goals in an exceptionally efficient and cost-effective manner. With annual energy savings and a reduction in CO₂, the system will also provide reduced total cost of ownership over its lifetime.

BENEFITS

- Substantial savings in construction time and cost due to prefabrication and eliminating scaffolding
- Increased safety (fewer construction hours spent on-site; no scaffolding or welding)
- Superior resistance against heavy winds and rain (rigid panel construction; panels interlocked 360° around the tank)
- Lower heat loss (special PIR closed cell insulation material)
- No under-insulation corrosion (watertight double seam system; no screws or rivets)
- Long design life and superior aesthetics



Trac-Loc-Installation



nVent's unique Trac-Loc tank insulation system has provided a watertight, long-life solution at the Zeeland Refinery in Nieuwdorp, The Netherlands.

A joint venture between French oil company Total and Russia's Lukoil, the Zeeland Refinery produces seven million tonnes of crude oil and 2.5 million tonnes of heavy oil a year. It is widely recognised as one of the most energy efficient refineries in the world.

Zeeland Refinery is located in the port area in the south western part of the Netherlands and is part of one of the world's largest oil and oil products trading centres. It has a capacity of 180,000 barrels of crude oil per day and one of the largest hydrocracking units in Europe, with a capacity of around 68,000 barrels per day. For more information visit www.zeelandrefinery.nl

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