

Petrochemical, Gas-to-Liquid Refinery

Triple Element Filter Assemblies, S. Africa

Industry Sector:	Petrochemical
Application:	Catalyst Recovery
Product:	Triple Element Filters (TEFs)
Primary Motive:	Replacement
Location:	South Africa
Project Date:	April 2015



Customer Overview:

South African national oil company, producing some of the cleanest fuels in the market by using leading environmentally friendly processes.

Customer's Problem:

The customer needed to replace its existing filters as they had reached the end of their service life.

Porvair Solution:

Porvair's scope of supply included innovative 2.4 metre-long TEF assemblies, manufactured in the UK, as well as sintered metal mesh fuse assemblies manufactured in tandem at the US factory in Ashland, Virginia.

Project Overview:

Porvair was engaged to supply highly efficient and durable sintered metal powder TEFs to the customer through its Johannesburg-based agents.

The agents fitted the TEFs and mesh fuses into tubesheets and installed them into 5 locally manufactured vessels.

The complete vessels were then shipped to the refinery. These systems are now helping in the recovery of catalyst fines used in the hydrogen clean-up process. These very small particles are used in the Fluid Catalytic Cracking process (FCC) of most large, modern oil refineries and in the hydrogen process stream on site.

The assemblies were selected by the customer for their ability to operate reliably at temperatures in excess of 400°C (752°F) and at a pressure of around 25bar (363psi).

The vessels are located above the Catalyst Reduction Reactor (CRR), enabling the TEF assemblies to be cleanable in situ; therefore operating in a cyclic back flush operation to remove the catalyst cake from the filter surface of the TEFs. The disengaged catalyst then falls back into the CRR during backflushing.

As a consequence, the TEFs are able to operate for a prolonged period in an aggressive environment, which only requires periodic removal to be chemically cleaned before then being re-installed and operating once more at the same high performance level.

The customer engaged Porvair to execute this project based on their previous and reliable performance for the TEF quality and service provided. The project was completed exactly on schedule and within cost.

Product and System Information:

- Sinterflo® P sintered metal powder triple element filters
- Sinterflo® M sintered metal mesh composite fuses

Other Opportunities:

Global petrochemical refineries