

## CASE STUDY

# Material and Coating Upgrade of Recycle Pumps

Celanese Chemical Co. Ltd in Nanjing, China, had two Sulzer pumps type GSG80-260B-5S installed. The two pumps were applied in recycle process in the HPI industry. Through the acetic acid that has been pumped, their flow material and surface coating was corroded and eroded which resulted into poor reliability of the pumps. In addition, efficiency dropped and vibration increased. Sulzer retrofit engineers upgraded the flow material components including surface coating material.



The upgraded pump at site

**“** One year after upgrading the flow material components, the pumps run still smoothly, performances are very good and vibrations in a normal range. The lifespan of the pumps will be at least three years. The customer is satisfied with our retrofit. **”**

Statement of the Sulzer project leader

### The Sulzer difference

Sulzer is the worlds leading manufacturer of engineered pumps.

Customer can save cost by utilizing our engineering experience. We have the ability to retrofit and upgrade existing pump systems no matter who the original supplier is. We will give optimum solution to correct pump system design problems and improve reliability.

### The challenge

- The surface of balance drum and wear ring needed to be repaired from corrosion and erosion.
- Engineers needed to find a solution to make the pumps more resistant against the acetic acid that was pumped.
- The pump efficiency dropped and vibration increased.

### The solution

Firstly, the engineers replaced stainless steel with duplex steel flow components, which is a more resistant material against corrosion and ensures improved reliability.

Secondly, a base of nickel alloy deloro 60 replaced stellite 6 in the surface coating of wear ring and balance drum. The new coating is resistend against flow corrosion and erosion, reduces wear and routine maintenance.

### Customer benefit

The pump lifespan was prolonged after the upgraded flow material components, including surface coating material of wear ring and balance drum. The material upgrade increased pump reliability and extended maintenance intervals, from twice a year to at least three years and at the same time vibration problems were eliminated.

## Product data

The flow parts material are changed from ASTM Gr CF8M to ASTM Gr CF3M. The original surface coating of balance drum and wear rings is STELLITE 6, which is corrosive and led to increased balance chamber pressure.

The engineer used Deloro 60 surface coating to replace Stellite 6 on balance drum and wear rings. The reliability is improved and maintenance term shortened.

### Contact

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### Applicable markets

CSS, HPI

### Applicable products

Retrofit

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

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