BRUKS Siwertell
BULK HANDLING & WOOD PROCESSING



SIWERTELL SHIP UNLOADER - TAIWAN

CORROSIVE CARGO MIX CALLS FOR UNIQUE UNLOADER

When Formosa Petrochemical Corporation needed to increase its throughput capacity at the port of Mailiao in Taiwan, it once again turned to Bruks Siwertell, to provide a future-proof unloader capable of handling both coal - the terminal's main import - and sea salt.

Challenge

Formosa Petrochemical Corporation (FPC), part of the Taiwanese conglomerate, Formosa Plastics Group, required a machine capable of handling a combination of both coal and salt. Bruks Siwertell is no stranger to the handling of coal in all sizes and properties; but many grades of coal contain a large amount of water. Combined with this stray moisture, salt can massively accelerate corrosion and rust on metal surfaces, which is why sea-facing metal surfaces rust much quicker.

Constructing a reliable steel machine that can withstand this corrosive mixture, can therefore be extremely challenging, but our long and strong partnership with the customer meant that it trusted our proven capabilities. FPC also required a bilingual human machine interface (HMI), both English and Taiwanese, documentation.

Solution

With FPC, Bruks Siwertell developed a solution based on its proven track record and the operator's valuable experience in handling salt. FPC operate five Siwertell ship unloaders at the port already; four ST 790 coal unloaders and one ST 790 combined coal/salt unloader.

The latest is an ST 940-DOB unloader, capable of handling coal at a continuous rated capacity of 2,000t/h and salt at 2,200t/h. However, it is an unloader with a difference. A new inlet feeder was developed for the purpose of optimizing the unloading of salt. The key was making it robust enough to cut through the hard, compacted salt, as well as being efficient enough to ensure a high discharge rate.

Further project-specific additions were stainless-steel piping, rollers, electrical housings and cable reels, along with various ceramic components including liners and drive drums. Together, these ensure that the unloader was more than capable of handling large volumes of coal and the corrosive

FACTS

CATEGORIES:

- Ship Unloading

MATERIALS:

- Coal
- Other

CUSTOMER:

Formosa Petrochemical Corporation

ADDITIONAL FACTS:

Unloader model	ST-940-DOB
Unloading capacity	2,000t/h coal and 2,200t/h salt
Maximum ship size	180,000 dwt
Total weight	1,127t

PRODUCTS:

- Ship unloading

LOCATION:

Mai Liao Power Plant, Taiwan

FOR MORE INFORMATION, PLEASE CONTACT US

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effects of salt.

Results

The unloader entered operations February 2018 and has exceeded handling performance expectations with both coal and salt. Tests have demonstrated its low power consumption and high through-ship performance in line with specifications. It now handles salt along with a previously-installed machine positioned adjacent to it, representing a more-than-doubling of FPC's salt-handling capacity, and allowing two unloaders to discharge a vessel at one time.

Thanks to the flexibility of the new unloader, it has proven capable of augmenting the capacity of Mailiao's five dedicated coal-handling unloaders whenever it is required to do so, serving vessels up to 180,000 dwt.

The newly developed and optimized inlet feeder allows for the high throughput of coal and salt without incident, ensuring long and trouble-free maintenance intervals for its operators.