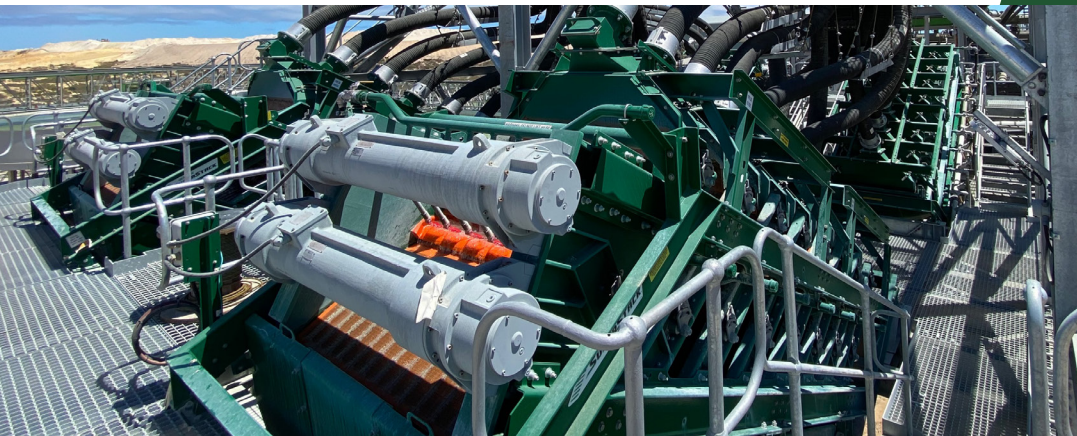


Kropz South Africa

CASE STUDY 248



Emerging phosphate rock producer saves millions on infrastructure costs with high-capacity Derrick® SuperStack®



CUSTOMER NAME

Kropz South Africa

CUSTOMER TENURE

5 years

INDUSTRY

Phosphate

EQUIPMENT

8-Deck SuperStack®

LOCATION

Elandsfontein, South Africa



"The four SuperStacks offer an elegant and cost-optimized solution to increasing throughput of the milling circuit and top-size presentation to the flotation circuit. We look forward to recommissioning the plant and working together with Derrick to maximize overall efficiencies."

Michelle Lawrence | COO of Kropz South Africa

Why Derrick?

Derrick's mission to empower our customers to maximize resource efficiency for a greener world is closely aligned with Kropz's mission to set a new standard in the green mining of fertilizer feed materials. Fertilizer producers have relied on Derrick's fine screening technology for decades. Derrick® equipment's high capacity and smaller footprint reduce installation and infrastructure costs while increasing product recovery and grade.

Overview

Issues with existing machinery and customer dissatisfaction regarding the quality of the product led to the shutdown of a phosphate plant after only a few years of operation. Fluidized bed separators (FBS) were used, which were unsuitable to produce efficient and consistent classification. Kropz

approached Derrick to optimize the grinding circuit's performance and improve the recovery and classification of phosphate particles. Our decades-long reputation for innovating in fine screening technology, coupled with a 5-years long relationship with Kropz, made Derrick an easy choice for their solution.

The Challenge

The first challenge was identifying the needs of Kropz and understanding how their existing closed grinding circuit featuring FBS and Hydrofloat® technology failed to produce the product with necessary specifications. Derrick assisted in conducting full-scale lab test work to establish a performance baseline of their grinding circuit and to pinpoint the accurate Derrick equipment solution.

The Solution

Following the full-scale lab testing, Derrick identified the SuperStack® as the proper solution for Kropz's phosphate plant needs. The unrivaled capacity and performance of the SuperStack would answer for product classification and customer quality assurance. At the same time, the equipment's reduced footprint and low power consumption would save on short-term infrastructure expenditure and long-term operating costs for Kropz, leading to low total cost of ownership.

The Results

Derrick's proposed solution simplified the plant's flowsheet (*Reference Figure 1*) and assisted in achieving its carbon emission reduction goals while producing higher-quality fertilizer to meet its customers' needs. Kropz ordered four high-efficiency, high-capacity SuperStacks – as opposed to more than double the units from the Chinese competitor – saving millions in infrastructure costs as well as commissioning costs. With lower operating expenditures and a generous payback schedule, Kropz could recommission a derelict plant with top-of-the-line technology built to withstand the harshest environments.

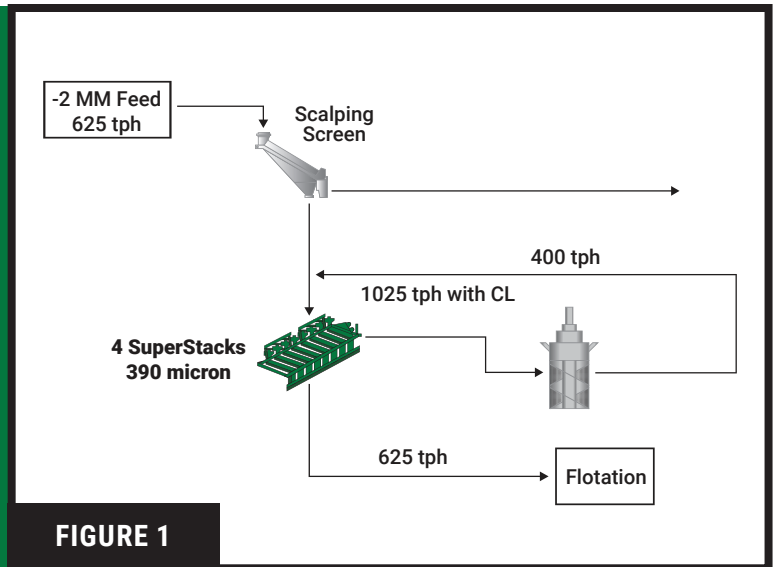


FIGURE 1

KEY INSTALLATION BENEFITS



Millions Saved on Infrastructure (*low CAPEX*) and Power Consumption (*low OPEX*)

• 4 SuperStacks vs. 10 Competitor Units



Simplified Flowsheet



Increased Grade Classification of Phosphates



Met Carbon Emission Goals

DERRICK
SUPERSTACK



8-Deck SuperStack®

Solutions to your most challenging fine screening problems:

- Improved efficiency and capacity in closed grinding circuits
- Improved final concentrate grade and recovery
- Improved size classification and product quality
- Reduced impurities
- Pumping and pipeline protection by removing coarse and abrasive particles
- High-capacity trash removal

Scan here to discover more about the SuperStack Wet Sizing Machine!



SCAN ME



For more information, please contact your local Derrick sales representative.
590 Duke Road • Buffalo, New York 14225 U.S.A. • Office: (716) 683-9010 • Fax: (716) 683-4991
info@derrick.com • www.Derrick.com