

ArcelorMittal Nippon Steel India



CASE STUDY 246

Derrick® SuperStack® reduces ultra fines, improves blaine number, and increases the life of one of Asia's longest continuous slurry pipelines



CUSTOMER NAME

ArcelorMittal Nippon Steel India

CUSTOMER TENURE

8 years

INDUSTRY

Iron Ore

EQUIPMENT

2W56-60R-8STK,
8-Deck SuperStack

LOCATION

Dabuna, Odisha, India



Why Derrick?

Recognizing the opportunity to optimize operations and maximize the client's resource efficiency, Derrick® proposed cutting-edge SuperStack® technology as the ideal solution. Its superior performance, aligned with AM/NS India's commitment to Indian Green Renewable Energy, made it the clear choice.

Overview

ArcelorMittal, a multinational steel manufacturing corporation, partnered with Nippon Steel to acquire Essar Steel's Indian iron ore assets. With operations in Dabuna, Odisha, India, ArcelorMittal Nippon Steel (AM/NS India) manage a 253km long continuous iron ore slurry pipeline, one of Asia's longest, connecting the Dabuna beneficiation plant to the Paradeep pellet plant.

AM/NS India is committed to advancement with sustainability and envisions creating "Smarter Steels, Brighter Futures".

The Challenge

AM/NS India desired to increase the beneficiation plant capacity from 8 MTPA to 12 MTPA. Knowing that the existing hydrocyclone based classification system is one of the bottlenecks, which is inefficient in producing desired product, particularly too much ultrafines and coarse particles. The ultrafines negatively affects the final iron ore pellet quality and limits the grinding capacity, while the coarse particles may cause excessive wear and premature failing of their 253km long continuous iron ore slurry pipeline. AM/NS India sought a

better classification solution to reduce the generation of ultra fines (-45 micron) in the ball mill grinding circuit, reduce the amount of +150 micron particles to ensure the protection of the slurry pipeline, and improve the blaine number of the concentrate slurry.

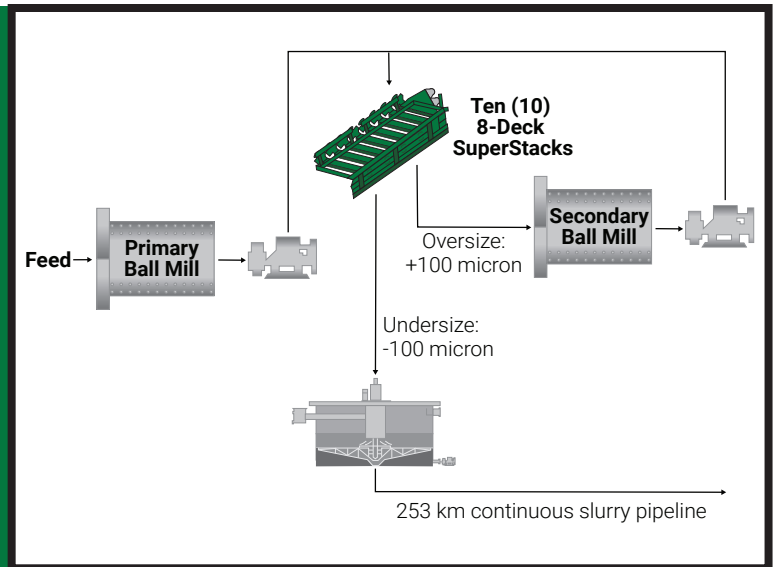
The Solution

Derrick's SuperStack, equipped with innovative Front-to-Back screen panels, offered a safe, environment-friendly, and efficient option for meeting AM/NS India's stringent requirements. Through comprehensive lab testing and third-party verification, Derrick demonstrated exceptional capabilities. Derrick experience and expertise in closed grinding circuit and pipeline protection applications were also highly valued by AM/NS India.

The Results

Derrick swiftly delivered and installed ten SuperStack machines. The implementation yielded remarkable outcomes, including up to a 15% increase in mill capacity, improved pellet quality, and enhanced pipeline protection for one of Asia's longest continuous slurry pipelines. Slimes reduction and optimized resource efficiency further contributed to AM/NS India's operational success.

By leveraging Derrick's advanced technology and their commitment to customer satisfaction, AM/NS India achieved significant cost savings, increased productivity, and a more sustainable approach to iron ore processing.



KEY INSTALLATION BENEFITS



Achieved 90% overall screening efficiency, minimizing +150 micron particles to less than 5% in the pipeline feed



Reduced slimes (10 micron) by 30% and reduced blaine number by 15%



Increased pellet plant capacity, improved pellet quality, improved filtration capacity, and optimized resource utilization



Enhanced pipeline protection and minimized environmental impact

DERRICK
SUPERSTACK®



8-Deck
SuperStack®

Derrick® Corporation has once again redefined high capacity, high efficiency, fine particle wet screening with the introduction of the SuperStack®. With 8 decks operating in parallel and an innovative Front-to-Back (FTB) tensioning system, the SuperStack has a demonstrated capacity up to 3 times that of the best fine screens currently available. All of this added capacity comes with only a slight increase in the space required per machine, significantly reducing the total capital and installation cost as well as OPEX for any screening installation.

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



SCAN ME



For more information, please contact your local Derrick sales representative.
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