

CONDOR Heat Resistant Grade Belt Cleaner

Project: JSW STEEL, BELLARY

JSW Steel is India's leading private sector steel producer and among the world's most illustrious steel companies. Their Vijayanagar project, is the largest steel plant in India and the first integrated steel plant to reach 10 MTPA capacity within a single location.

THE PROBLEM

In the Coke Oven section of the plant, hot coke post quenching is directly fed on to the belt conveyor. These belts are made from special grade Cover rubber for extreme heat resistance. The temperature varies from 150° to 220° Celsius. The typical design of the conveyor did not provide for installation of a cleaner on the return side. The only possible position to install a cleaner was on the discharge drum, but belt cleaners offered in the market could not withstand such extreme temperature of coke. The plant was facing huge problems due to the severe carry back of fine coke dust from the conveyor. Fugitive material filling the air made access difficult. Large amount of carry back resulted in spillage of material beneath the conveyor, and material deposit on the carrying rollers.

The plant experimented many products from various manufacturers, but none proved to be effective in these extreme conditions.

THEJO'S SOLUTION

Thejo was given the opportunity to address this problem, and immediately identified a large potential if a solution were to be found.

Engineers were deployed to study the application. The operating parameters and installation difficulty was studied and transferred to the design & engineering team.



Belt carrying hot coke. Notice blisters on the belt surface



Belt carrying hot coke. Notice blisters on the belt surface



Condor HR Cleaner installed on the belt

CONDOR Heat Resistant Grade Belt Cleaner

After detailed review, Condor Primary Cleaner with specially formulated and customised Heat Resistant Polyurethane blade was proposed, for the discharge pulley. Thejo's R&D, developed a Special heat resistant polyurethane blade for the application. After lab trials and tests, product was approved for manufacture.

Specifications of the cleaner is as below:-

<i>Belt Width</i>	:	<i>1200mm</i>
<i>Type of Cleaner</i>	:	<i>Thejo make CONDOR Primary Belt Cleaner</i>
<i>Type of Blade</i>	:	<i>Special Grade HR Grade PU Blades</i>
<i>Part No.</i>	:	<i>Part No</i>
<i>Blade Width</i>	:	<i>1050mm (single blade)</i>

CONCLUSION

The cleaner achieved a service life of 12 months and was projected to perform further for 3-4 months.

Conveyor stoppages, for cleaning at discharge points and replacement of scrapper blades, have reduced drastically. Efficiency and availability of the line has increased with the reduction in downtime.

The cleaner succeeded in meeting the objective of effective cleaning under extreme heat conditions. The plant installed CONDOR Primary Cleaners with HR Grade PU blades for all critical, hot coke handling conveyors.



Condor HR cleaner installed on the belt- view from side



Belt and cleaner in action- view from side



Belt and cleaner in action- view from the front