

Success Story

Industry: Steel and Metals

Application: Hot Strip Mill

Cost Savings: € 154 000

Introduction

A large manufacturer of steel wanted to increase replacement intervals for 4-row Tapered Roller Bearings used in the hot strip mill. Due to severe operation conditions, standard bearings provided 1.400 hours of operation. The key target was to decrease spend on bearings and costs for bearing replacement and maintenance. NSK checked the bearing units and the operating conditions. As a result new 4-row bearings with modified internal design and contact angle were delivered for testing. New bearing lifetime was increased up to 2.200 hours.

Key Facts

- 4-row Tapered Roller Bearings
- Frequent line stoppage
- NSK Solution: Modified internal design of bearings
- Increased lifetime
- Reduced down-time
- Cost saving for bearings and maintenance works



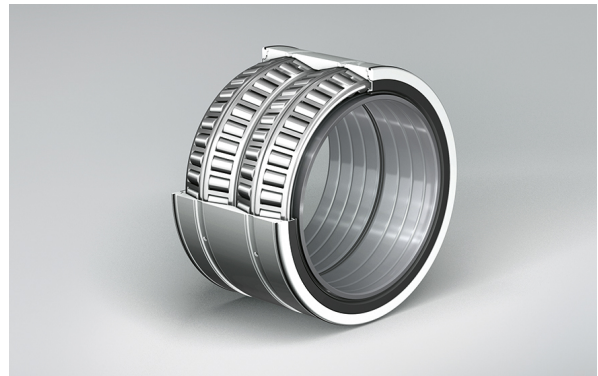
↑ Finishing Section of Hot Strip Mill

Value Proposals

- NSK engineers inspected the machine and operating conditions
- The analysis showed that the existing bearing solution was not adequate for the application
- NSK recommended additional modification of the bearing internal design for operation under severe conditions and the contact angle was changed
- A training was provided regarding root cause failure and further prevention of similar issues
- The customer benefited from increased bearing lifetime and reduction in maintenance costs

Product Features

- Steel material technology
- Special NSK heat-treatment technology
- Optimum chemical composition design technology
- Bearing life is 3 times longer than that of conventional bearing
- Reduced non-metallic inclusions on raceway surface inhibiting generation of surface cracks



↑ NSK 4-row Tapered Roller Bearing

Cost Saving Breakdown

Before	Cost p.a.	NSK Solution	Cost p.a.
 Bearing replacement costs	€ 432.000	Bearing replacement costs	€ 288.000
 Additional maintenance costs compared to NSK solution	€ 10.000	Reduced maintenance time and no additional costs	€ 0
Total Costs	€ 442 000		€ 288 000