

Success Story

Industry: Steel and Metals

Application: Cold Rolling Mill

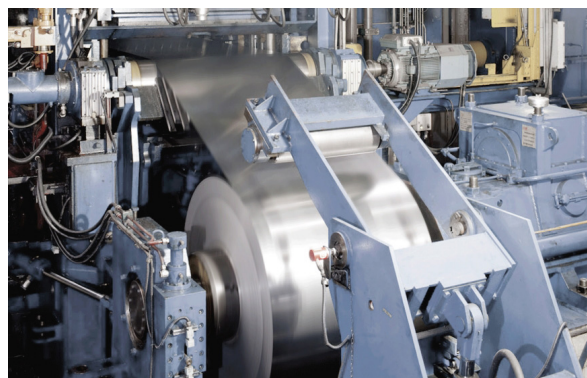
Cost Savings: € 26 400

Introduction

A major steel producer was not satisfied with the performance of the four-row tapered roller bearings that were installed in its cold rolling mill: steel shavings from the production process were getting into the bearings and having a detrimental effect on reliability. NSK performed a detailed analysis of the bearings on site together with a failed bearing and lubrication review. This prompted a recommendation to utilise NSK's Tough technology steels which have a far better resistance to damage caused by debris ingress.

Key Facts

- Cold rolling mill
- Damage of the bearings due to ingress of steel shavings from the production process
- NSK solution: Bearings of WTF steel
- More than 3× longer life-time
- Reduced downtime
- Cost savings for bearings and maintenance



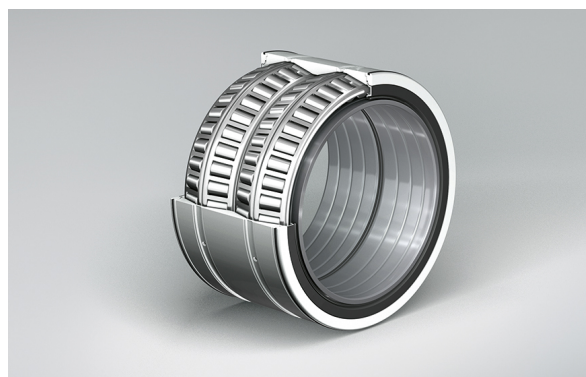
↑ Steel foil

Value Proposals

- Analysis of the bearings, the grease, the structure and the design of the billet mill
- NSK bearings made of WTF steel are designed for extreme operating conditions such as those involving solid and liquid contamination
- Technical support including on site engineering consultancy and lab based bearing analysis

Product Features

- Steel material technology
- Special NSK heat-treatment technology
- Optimum chemical composition design technology
- Available for four-row cylindrical and four-row tapered roller bearings
- Bearing life is 3 times longer than that of conventional bearing
- Reduced non-metallic inclusions on raceway surface inhibiting generation of surface cracks
- Grain boundaries have been strengthened to help prevent the propagation of cracks



↑ 4-row WTF (water tough) bearing

Cost Saving Breakdown

Before	Cost p.a.	NSK Solution	Cost p.a.
 Bearing Life of the previous bearings: 4 months Lost production costs: € 1.000/h downtime × number of replacements × 4 unexpected downtimes per year	€ 44.000	Bearing Life of the new bearings: 12 months Lost production costs: € 1.000/h downtime × number of replacements × 1 unexpected downtime per year	€ 17.600
Total Costs	€ 44 000		€ 17 600