

Success Story

Industry: Quarrying, Mining and Construction

Application: Overland Conveyor Head Pulley

Cost Savings: € 4 538 304

Introduction

A quarrying company was experiencing bearing failures due to contamination on each side of the conveyor head pulley. This caused increased maintenance cost, reduced lifetime of the bearing and a downtime in production every 18 months. NSK analysed the bearing and recommended to use bearings in High Tough steel (HTF). After the bearings were put into service they lasted 6 years.

Key Facts

- Conveyor Head Pulley
- Highly abrasive conditions including water and grit
- Failure of the bearing through contamination with consequential loss of production
- NSK Solution: bearings in High Tough Quality (HTF)
- Changing to bearings in HTF steel increased the life time circle to 6 years
- Cost savings generated based on reduced maintenance and downtime cost



↑ Quarry Conveyor

Value Proposals

- NSK performed a bearing analysis showing root cause as ingress of water and grit
- Application assessment showed highly abrasive conditions
- Technical support provided for improved bearing performance
- NSK recommended to replace the bearings by products with HTF material
- HTF Bearings were put into service and lasted 6 years instead of 18 months

Product Features

- NSK High Tough Steel (HFT) bearings have been designed for outstanding toughness under harsh conditions
- Longer service life and superior resistance against wear, seizure and heat
- Resistance with contaminated lubrication
- Innovative heat treatment technology
- HTF material can be applied for cylindrical, tapered and spherical roller bearings
- Up to 7 times service life with contaminated lubrication compared to conventional bearings
- Up to 20 % improvement of seizure resistance



↑ Bearings in High-Tough Quality (HTF)

Cost Saving Breakdown

Before	Cost p.a.	NSK Solution	Cost p.a.
 6 People, working 12 hours @ 32 € per hour	€ 2.304	No maintenance necessary	€ 0
 7,000 tons per hour x 12 hour stoppage x 4 times x 13.5 € per ton	€ 4.536.000	No lost production stoppages	€ 0
Total Costs	€ 4 538 304		€ 0