

MOTION & CONTROL™

**NSK**

# **SOLUTIONS FOR THE CEMENT AND MINING INDUSTRIES**

BRANDS OF **NSK EUROPE**

**NSK**

RHP bearings



[www.nsk.com/eu-en/](http://www.nsk.com/eu-en/)



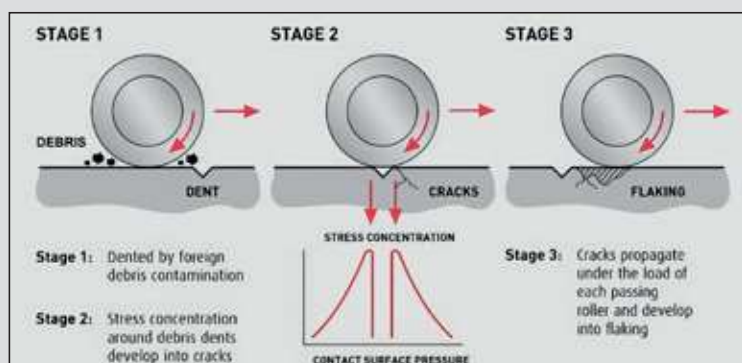
# IN CONDITIONS WHERE LUBRICATION IS LIKELY TO BECOME CONTAMINATED, NSK TOUGH STEEL DELIVERS AS MUCH AS 10 TIMES THE OPERATING LIFE OF GENERAL CARBURISED STEEL ALTERNATIVES

In the cement and mining industry, where conditions mean that lubricants are at constant risk of contamination, the service life of conventional bearings may actually be as little as 20% of the catalogue life.

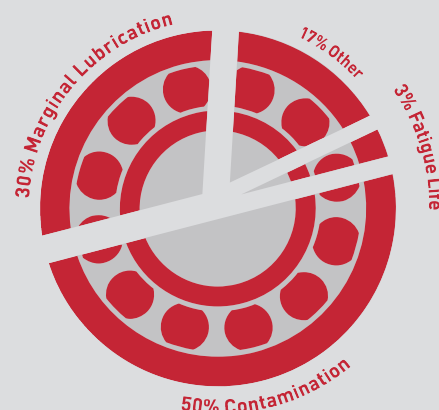
Under such conditions, however, NSK Tough Steel delivers as much as 10 times longer bearing operating life than conventional carburized steel alternatives.

Reliability is the key to hitting production targets. Contamination, an ever present in the sector, is the enemy of reliability as it undermines machinery and causes unplanned downtime.

On top of this, water, heat, dust, vibration and load can all have a huge impact on performance. NSK's solutions are designed to maximise uptime through increased reliability, reduced maintenance and extended bearing life.



Surface originated flaking in contaminated environments

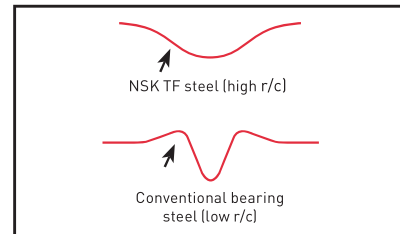
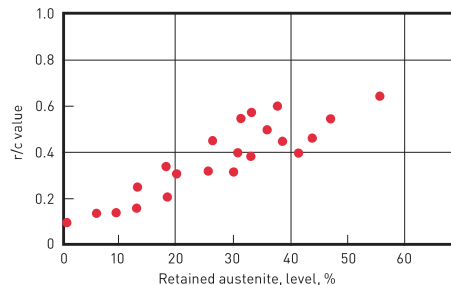


**UP TO 80%**  
of premature bearing failures  
are caused by contamination  
and lubrication issues



# HOW NSK'S TF STEEL HELPS TO INCREASE BEARING SERVICE LIFE

Innovative and patented heat treatment technology optimises the quantity of the retained austenite.

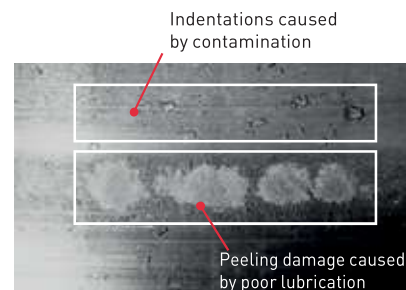


Reduced stress at dents shoulders during contamination

Special elements are added to the steel alloy

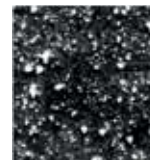
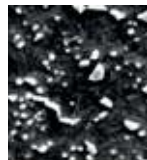
**Hi-TF:** chrome and manganese

**Super-TF:** chrome and molybdenum

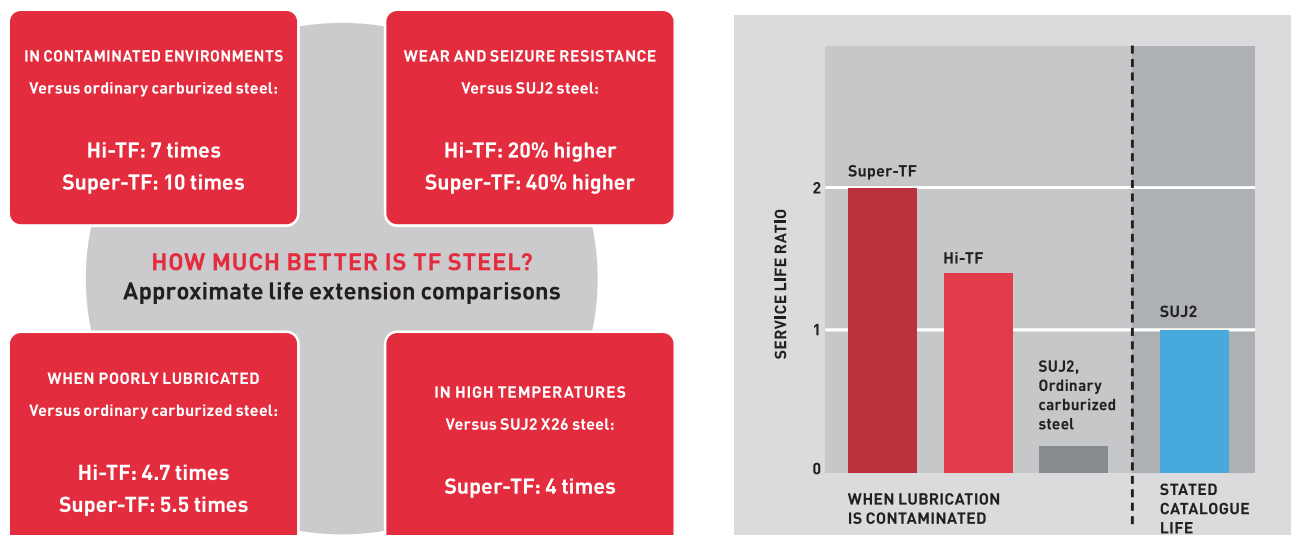


Higher raceway hardness and resistance to wear

Advanced carbonitriding to extract a greater amount of fine-size carbide and carbonitride



Increased toughness of the steel with superior ability to resist hoop stress and slow down the spread of flaking



# SPHERICAL ROLLER BEARINGS: VARIOUS SOLUTIONS FOR DIFFERENT APPLICATIONS

## HIGHLY EFFECTIVE CONTAMINATION PROTECTION: NSK SEALED SLE SERIES



- › Robust contact seals reinforced with metal shield
- › Integral garter spring for superior sealing performance
- › Detachable design for easier mounting

## LONG AND CLEAN LUBRICATION: NSK MOLDED-OIL BEARINGS



- › Extended performance with continuous supply of clean lubricant
- › Eliminates the need for relubrication, reducing maintenance costs
- › More than twice the operating life of grease-lubricated bearings in water or contaminated environments

## SUPERIOR ENDURANCE OF VIBRATION AND SHOCK LOADS: NSK VIBRATING SCREENS - VS SERIES



- › Heavy-duty, solid machined-brass cage
- › Internal radial clearance C3 and C4 range set at upper 2/3 of ISO
- › Tailored tolerances to achieve proper fits

## ENHANCED PERFORMANCE AND CAPACITY: NSK'S NEW ECAM HPS SERIES



- › Precision-machined, tough, one-piece brass cage with contoured roller pockets
- › Higher capacity delivered by increased roller size
- › High-speed performance and minimal operational temperature-rise

# NSK'S RANGE OF BEARING SOLUTIONS FOR THE CEMENT AND MINING INDUSTRIES

## SPHERICAL ROLLER BEARINGS



The HPS Series offers longer operating life and higher limiting speeds than conventional bearings.

## CYLINDRICAL ROLLER BEARINGS



The EM and EW Series come with high-load capacity and longer operating life. They are suitable for high-speed environments.

## TAPERED ROLLER BEARINGS



Tapered roller bearings are produced with hardened, high-carbon chromium steel allowing them to be used in arduous conditions.

## THRUST BEARINGS



Cylindrical thrust bearings are produced with ultra-clean steel to extend bearing life and are capable of carrying high axial loads.

## DEEP GROOVE BALL BEARINGS



We offer various options when it comes to deep groove ball bearings, including single- and double-row configurations, sealed and open type versions and the increased capacity HR series.

## PLUMMER BLOCKS



Split housings can be used both with double-row self-aligning ball bearings or HPS Spherical Roller Bearings. Various seal options are available.

## INTEGRATED BEARING ASSEMBLIES



High-strength housings with vibratory specific bearings reduce the need for in-house design and sub-assembly.

## SELF-LUBE UNITS



Self-Lube units come in pillow block and flange mounted configurations with one-piece cast iron and triple lip seal versions available for very arduous applications.

# BRÜEL & KJÆR VIBRO CONDITION MONITORING SOLUTIONS FOR THE CEMENT AND MINING INDUSTRIES



**Brüel & Kjær Vibro**  
A member of the NSK Group

## SOLUTION STREAMS AND 3 CORE INGREDIENTS





# PLANT-WIDE CONDITION MONITORING SOLUTIONS: IMPROVE MACHINE UPTIME, PRODUCTIVITY, EFFICIENCY AND RELIABILITY, ALL WHILE REDUCING LIFE-CYCLE COSTS

## PLANT-WIDE CONDITION MONITORING SOLUTIONS

B&K VIBRO'S PRODUCTS NOT ONLY IMPROVE MACHINE UPTIME, PRODUCTIVITY, EFFICIENCY AND RELIABILITY, THEY ALSO REDUCE LIFE CYCLE COSTS



### SUCCESS STORY:

learn more how to keep your kiln spinning with VCM-3



[www.bkvibro.com](http://www.bkvibro.com)

### FIND OUT MORE

about our solutions for the cement industry at [www.nsk.com/eu-en/](http://www.nsk.com/eu-en/)



Global: [nsk.com](http://nsk.com)

**ENHANCE YOUR MACHINE RELIABILITY AND PERFORMANCE BY UPGRADING TO NSK AND BRÜEL & KJÆR VIBRO.**