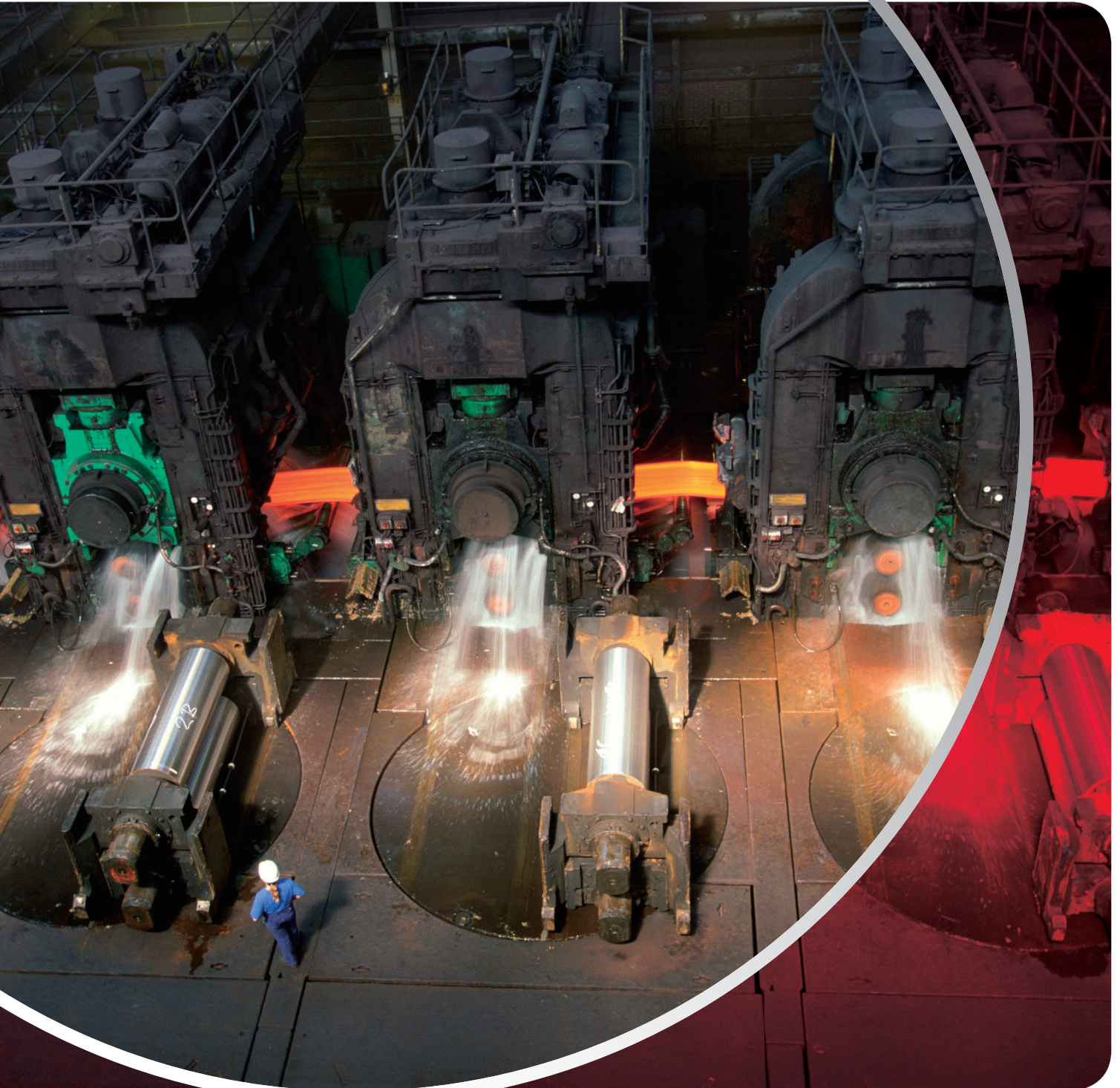


LONG-LIFE WATER-RESISTANT BEARING GREASE FOR ROLLING MILLS



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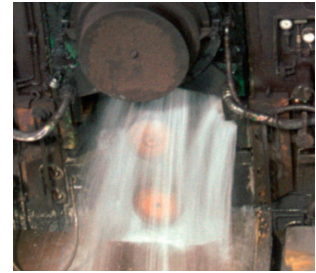
Grease for sealed type roller bearings

What causes flaking and how can it be prevented?

Flaking occurs when small pieces of bearing material are split off from the smooth surface of the raceway or rolling elements due to rolling fatigue, thereby causing areas with rough and coarse texture.

Possible causes are due to poor lubrication, improper lubricant, entry of foreign debris and entry of water.

Particularly for the sealed type 4-row tapered roller bearings, NSK developed long-life water-resistant grease (AQGRD R1) which is enhanced in base oil viscosity and special water-resistant additives.



Working condition of bearing for work roll

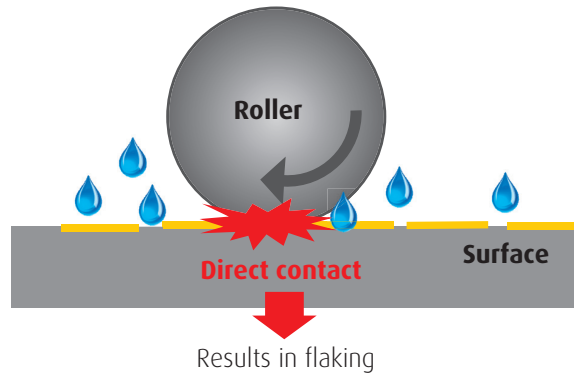


Benefits of water-resistant grease technology

- › Inhibits water entry to rolling surface
- › Minimizes premature flaking and rust
- › More than doubled life with new grease

Existing Grease versus New Grease

EXISTING GREASE

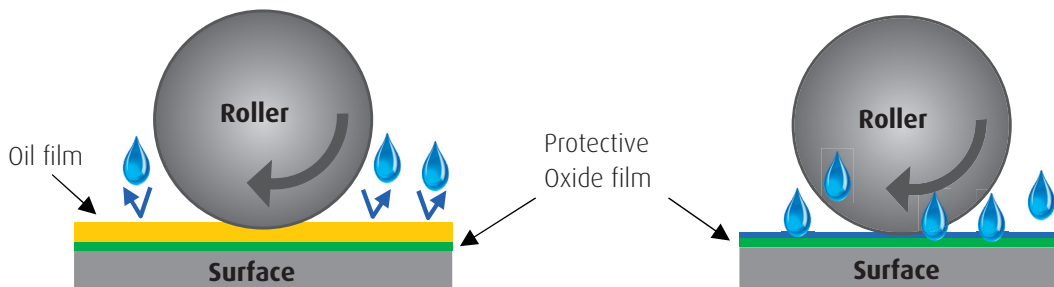


NEW GREASE (AQGRD R1)

Water-resistant grease technology is:

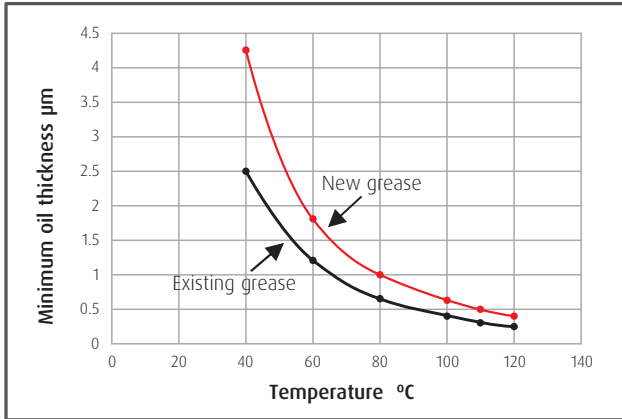
› The ability to repel water with a thicker layer of oil film and the protective oxide film

› In the case where there is insufficient lubrication, the protective oxide film is still able to prevent water contact between the roller and the surface



Indirect contact to prevent flaking and rust resulting extension of bearing life

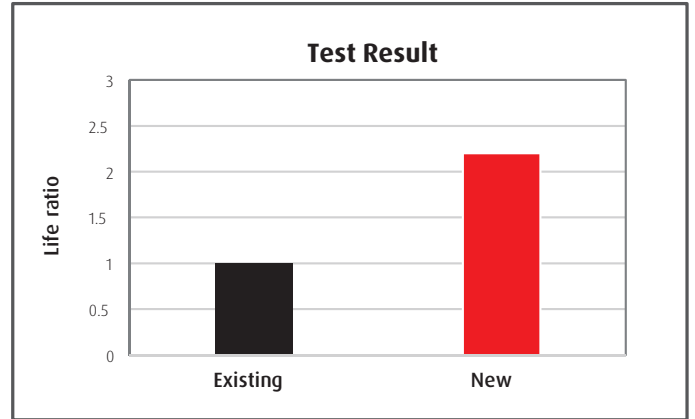
Base Oil Viscosity



Conditions

Bearing: 32968, P/C: 0.15, Speed: 567 r/min

Flaking Life Test



Scenario of cold rolling work roll at following conditions

Bearing: HR32017XJ (open single-row tapered roller bearing)
 Room temperature while bearing temperature at 60-70 °C
 Radius force: 35.8kN, Axle force: 15.7kN, P/C: 0.25,
 Speed: 1500 r/min

Typical Analysis

CONTENTS	AQGRD R1
Colour	Yellow
NLGI grade	2
Consistency (worked penetration)	322
Base oil	Mineral oil
Thickener	Lithium complex soap
Base oil viscosity, mm ² /s at 40°C/ at 100°C	352 / 28.7
Viscosity index	108
Dropping point (°C)	216
Oil separation (mass%)	1.4
Oxidation stability (kPa)	30
Water washout (mass%)	59
Corrosion preventive properties (based on ASTM D1743)	#1 (no corrosion)

AQGRD R1 grease is highly recommended for sealed type roller bearings to avoid wastage of the grease



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