

REFERENCE CASE

NoWear™

– ceramic low friction coating from SKF

PULP & PAPER

NoWear™ coating, a better bearing solution for soft calenders

NoWear™ bearings have contributed to the reliable operation at Braviken with costly machine stops being avoided. By using NoWear™ coated rollers in the thermo roll bearings, the risk of smearing with low load conditions has been eliminated.

Braviken papermill (Holmen Paper AB) in Sweden, a producer of 700 000 tons of newsprint and telephone directory paper per year, is regarded as one of the world's most efficient plants. Using the latest technology they always strive to reduce the risk of production breakdowns. The cost of changing a soft calender roll due to bearing failure (including work and new bearings) is substantial. Of course, there can be significant additional costs as well as the cost of lost production is very high.

PM53 is one of the fastest newsprint machines in the world and NoWear™ bearings are used in the soft calender to ensure reliability at high speeds and low loads. "The bearings have been running very well and we have not had any problems during this running period of two years", says Ove Jansson, responsible for Roller Maintenance at Braviken.

NoWear™ benefits at Braviken:

- Reliable bearing functions under all operating conditions
- High performance in a demanding application
- High wear resistance
- Possibility to use standard oils

The thermo rolls in the soft calender are supported by large spherical roller bearings. The position of the thermo roll alternates and they can operate as either a top roll or as a bottom roll. During the production of certain paper qualities, the linear loads directly correspond to the mass of the thermo roll, with the result that the bearings in the top roll position are completely unloaded.

At very low loads, the rollers in the bearings will start sliding on the raceway and break through the lubricating oil film which can result in smearing damage on the bearing raceways. Such smearing will lead to premature failure of the bearings.



PM53 at Braviken, Holmen Paper AB

The wear resisting and lubricating properties of NoWear™ have eliminated the risk of smearing thereby meeting the mill's demand for long service life and reliable operation. It also means that Braviken has the option to switch from special oils to standard ones as anti-smearing additives have been made redundant. The water content can then be reduced, which improves lubrication and corrosion properties.

NoWear™ is a coating especially adapted to bearings and prevents failure where conventional bearings cannot e.g. in applications suffering from wear, poor lubrication or other difficult conditions. The coating can successfully be applied in wide range of bearing applications running in demanding environments.

Operating conditions of Braviken PM53:

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|-------------------|----------------------------|
| Design speed: | 1 800 m/min |
| Paper grade: | Newsprint |
| Trim width: | 8,9 m |
| NoWear™ position: | Soft calender rolls |
| Bearings: | 232/530 CAK/C4W33L5DA |
| Installed: | March 1998 |
| Bearing speed: | 630 rpm |
| Lubrication: | Oil circulation, ISO VG220 |