

High Temperature Expansion into France

The Application Problem

A cement plant in the south of France is dependent on continuous ball mill operation for powdered limestone production. Shutdown for inspection or maintenance creates lengthy and costly non-productive periods.

Lubricant retention problems caused by the slow speed and high operating temperature also created shutdown periods for lubrication replenishment and localised clearing up operations. Cooper solved the sealing problem. Cooper seals retain the lubricant as the seals remain concentric to the shaft at all times.

In addition, the original bearing, a sleeve bearing caused serious shaft damage. This problem is negated by the Cooper bearing as the inner race clamps directly to the shaft, ensuring no direct bearing contact with the shaft preventing further shaft damage.



The Cooper Split Solution

To rectify the problem, Cooper recommended a BCP 28inch EXILOG (extra long inner race with outer grooved race) and GR (fixed) bearings for the main trunnion shaft. This particular bearing required extra expansion capability due to the generated heat created by the mill. Typically, the shaft temperature is 80°C resulting in shaft expansion of around 10mm which is accommodated within the bearing.

The relatively slowly rotating 26 RPM ball mill is capable of taking heavy loads at around 30 Tonnes per bearing (147kN).

Removal of the existing bearing and the installation of the new Cooper bearing took place over three days and during this time the shaft was modified to bring it up to the standard required by the operator.

The Cooper hallmark split to the shaft feature permits inspection and maintenance to be carried out at the shortest possible time. The Cooper solution has solved an operational problem and reduced maintenance and inspection time, which makes a positive contribution to profitability.



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