

Schaeffler Global Technology Solutions

Raw material extraction and processing

Split Bearings Simplify Bearing Replacement in Conveyor Belts

The customer is a global company that offers worldwide solutions to all construction industries. The company is one of the leading concrete manufacturers with more than 70 million cubic meters of production. Its annual cement production capacity amounts to 97 million tons. The following project was performed at a Spanish plant with 200 employees and a production capacity of around two million tons of cement.

Challenge for Schaeffler

In the past, a failure of the standard roller bearings in the conveyor belt would have caused downtimes of at least 22 hours, as replacing these bearings causes a lot of work and takes a considerable amount of time. Thus – although the solution they were using had worked well – the customer was looking for an alternative to shorten replacement time and avoid expensive economic consequences in the event of a failure. As its bearing supplier and service provider at the time was not able to offer an appropriate solution, the plant operator contacted Schaeffler for support.

Schaeffler Solution

Schaeffler experts presented FAG split spherical roller bearings to the customer. Due to their split design, these bearings can be mounted into the existing housings SNV230-L without major dismounting work and are, therefore, a cost-effective alternative to standard roller bearings. Schaeffler recommended the customer to replace the conveyor belt's standard bearings 22226K+H3126 with FAG split spherical roller bearings 222SM115-TVPA.



Technical Information about the Plant

Conveyor belt for transporting cement from the cement plant to the harbour

Type:

Conveyor belt 4 000

Width:

900 mm

Length:

200 m (100 m distance between conveyor centers)

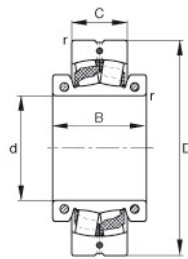
Speed:

1,3 m/sec.





FAG split spherical roller bearing



The split design allows to simplify the mounting



A downtime on the conveyor belt causes high costs

Customer Benefit

FAG split spherical roller bearings considerably reduce downtime of machinery and plant, simplify mounting and help to reduce assembly and maintenance costs. The savings realized in the present project are shown by the following comparative calculation.

Bearing replacement using standard bearings	
Downtime	22 h
Labor costs:	€ 2 600
Bulk carrier chartered to transport cement:	€ 9 000
Production losses:	€ 162 000
Total	€ 173 600
Bearing replacement using FAG split spherical roller bearings	
Downtime:	3 h
Labor costs:	€ 500
No alternative way of transportation required:	€ 0
Production losses:	€ 21600
Total:	€ 22100
Cost savings:	€ 151 500

Technical Information about the Solution

Previously used bearings:

Standard bearings 22226K + H3126

Replacement bearings:

FAG split spherical roller bearings
222SM115-TVPA

What's special

This was the first time the customer used FAG split spherical roller bearings. This solution can be extended to all the other conveyor belts at this plant, and can generally be recommended to all customers with the same application.