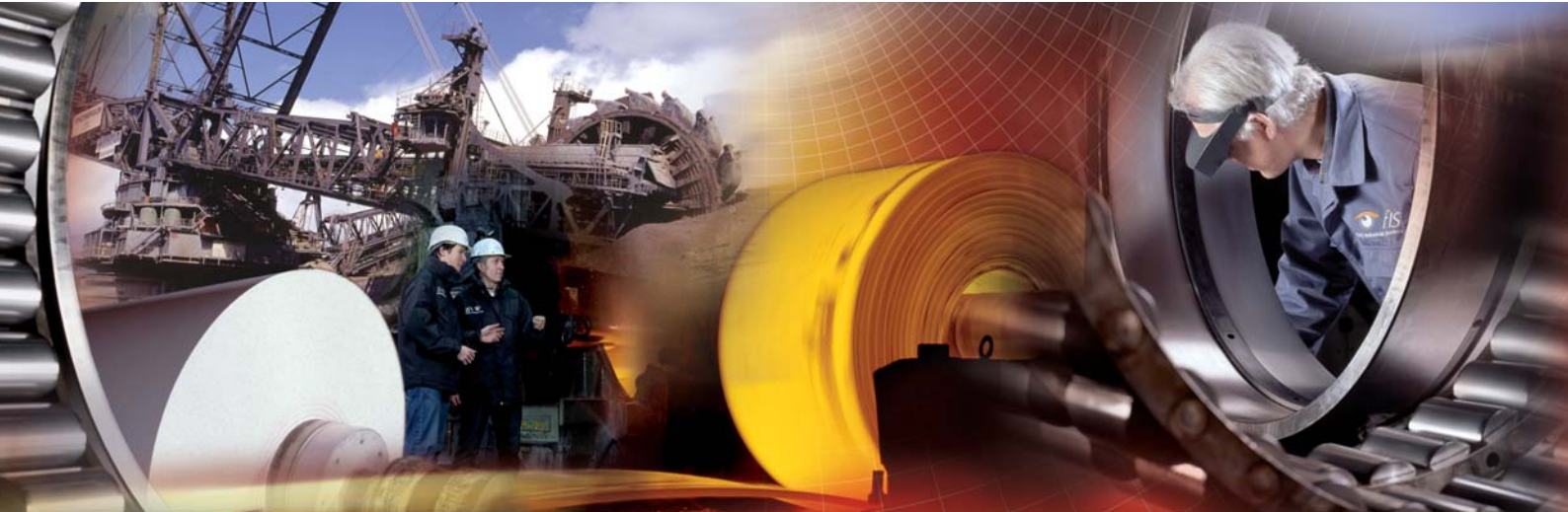


# Smart Performance Program



## Performance Based Contract in the Steel Industry

**Industry:** Steel and non-ferrous metals

**Customer:** ARMCO do Brasil S.A., São Paulo (Brazil)

ARMCO do Brasil is a manufacturer of specialty steel strip products, serving a broad industrial sector of the local and international market in Brazil. To the wide range of products contain for example zinc plated products, tens of thermal and surface treatments and non pollutant products.

### Challenge for Schaeffler

In 2006, ARMCO do Brasil decided to conclude a performance based contract for its São Paulo plant in order to reduce its 874 hours of unplanned downtime (cost: approx. US\$ 64,000/year) as well as its demand for bearings, seals and lubricant (cost: approx. US\$ 660,000/year).

This contract was developed by Schaeffler Brazil based on the customer's demand for bearings, seals and lubricant as well as downtime in 2005.



### Technical Information about the Plant

**Rolling stand:**

Multi purpose four-high reversing cold rolling stand built by Schloemann Siemag AG

<b>Sheet thickness:</b>	0.10 to 6.30 mm
<b>Sheet width:</b>	220 to 425 mm
<b>Rolling speed:</b>	500 m/min
<b>Rolling load:</b>	Approx. 20,000 kN
<b>Back-up roll dimensions:</b>	440 x 1,000 mm
<b>Power:</b>	630 kW (1,250 A) per electric motor

**Schaeffler Solution**

Schaeffler offered the customer a performance based contract to meet his specific requirements. In 2007, Schaeffler started to provide preventive and predictive maintenance on all rotating equipment and machines at ARMCO's São Paulo plant. First, a CMMS was implemented. In addition, Schaeffler field service engineers provided bearing maintenance training for the customer's main maintenance team. The contract came into effect in January 2007. In order to develop their own know-how, ARMCO employees receive training in bearing mounting, laser alignment, lubrication, etc. at least twice a year.

**Customer Benefit**

- Reduction in the cost of bearings, seals and lubricant (first year of contract): **from US\$ 660,000 to US\$ 613,000**
- Reduction in unplanned downtime cost (first year of contract): **from US\$ 64,000 to US\$ 41,000**
- Savings after the first year projected in the performance based contract: **US\$ 70,000**
- Savings after five years projected in the performance based contract: **US\$ 286,000**

**What's special**

A performance based contract ensures that the customer has to pay only a fixed price if a jointly agreed performance is provided. But at the same time, this type of contract includes a bonus/malus provision. That means: if the agreed targets are fallen short of, both parties to the contract share the cost of the failure to perform. If, on the other hand, the targets are exceeded, both parties will benefit. Similar contracts are of interest to customers in nearly all industries and around the world.

**Technical Information about the Solution**

**Online condition monitoring system:**  
16-channel FAG DTECT X1  
(only for two rolling stands: LA27 and LA30)

**Offline condition monitoring system:**  
2 FAG Detector III  
(for all other machines and equipment)

Additional FAG products, e.g. rolling bearings, lubricants etc. that are replaced in the course of the regular maintenance and repair activities.

