

## Challenges

A hot mill customer was experiencing problems with its current operations, and was looking for improvement in the following areas:

- Electrical power
- Productivity
- Work roll wear
- Strip quality

To help improve their operations Quaker proposed introducing a roll-bite lubrication system including a product from its QUAKER QUAKEROL® HB Series of hot mill lubricants. The application system included separate wipers, headers and control equipment to assure proper application of the lubricant.

Composite Average Annual Savings: Integrated Mill	
Electrical Power	\$320,816 (10-20% reduction)
Work Roll Life	\$366,277 (if practices are modified)
Back-up Roll Live	\$878,182 (if practices are modified)
Grinding Shop	\$1,363
HSM Productivity	\$2,432,000 (roll change delay savings)
Pickle Line Productivity	\$4,983,000 (elimination of wear scale)
Pickle Line Acid	\$453,000 (if practices are modified)
<b>Total Gross Savings</b>	<b>\$9,434,638</b>
<b>Gross Savings per Ton</b>	<b>\$2.69</b>

## Providing Solutions

The introduction of a back-up lubrication system and the QUAKER QUAKEROL® HB Series resulted in the following benefits:

- Fewer cold mill defects
- Easy operator acceptance
- Higher quality strip

## References

ACESITA	ESSAR STEEL	NAKORNTHAI
AL-EZZ	GERDAU AMERISTEEL	NISSHIN STEEL
ALGOMA STEEL	GLOBAL STEEL	NUCOR STEEL CSP
ANSDK	HANDAN STEEL CSP	QIAN'AN
ANSHAN	HOESCH SCHWERTE	SALZGITTER FLACHSTAHL
ARCELORMITTAL	HYLSA	SEVERSTAL NA
BAOSTEEL	HYUNDAI	SIDOR
BLUESCOPE STEEL	ISP DI CREMONA DEMAG	SMI STEEL
BOKARO STEEL	ISPAT INDUSTRIES LTD.	TANSHAN
CARINOX	JFE STEEL	TATA IRON AND STEEL
CHUNG HUNG	JINAN HSM	THYSSENKRUPP STEEL
CORUS DSP	JISCO CSP	U.S. STEEL
COSIPA	JSW STEEL LTD	USIMINAS
CSI	LIANYUAN CSP	VOESTALPINE
CSN	LLOYDS STEEL IND.	WHEELING PITTSBURGH
CST	MAANSHAN STEEL CSP	
DUFUERCO	MEGASTEEL	

### Additional Savings Replacing Competitive Technology

Lubricant Cost Savings	\$1,000,000
Waste Treatment Savings	\$ 648,000
<b>Total Gross Savings</b>	<b>\$1,648,000</b>
<b>Total Savings Per Ton</b>	<b>\$0.43</b>

### Product Description

The QUAKER QUAKEROL® HB Series of products utilize a unique and proprietary chemistry that relies on highly effective surface active components that provide a sacrificial conforming layer on work rolls and back-up rolls that significantly extend roll surface life.

### Process & Equipment Info

#### HOT MILL

<b>Operation:</b>	7 stand Finishing Mill
<b>Capacity:</b>	6,800,000 metric tons per year
<b>Lubrication:</b>	Lubricant Applied on three Stands (F2-F4) and on 50% of production
<b>Application:</b>	Dedicated Wiper and Header System

### Product and Process Expertise

When applied properly, roll-bite lubricants represent a very minor part of the costs in the steelmaking process, typically less than 1%. Investment in application and control equipment pays for itself quickly. The impact of roll-bite lubrication is usually a multiple of the fluid and equipment costs making the price virtually irrelevant. That's why Quaker focuses on developing products with the highest performance without compromise. Solutions that sharpen your competitive edge.