Case History

* Formerly known as Molub-Alloy 8899

Castrol Performance Bio™ GR 8899*

Mill Lubricant

COST ANALYSIS FOR LUBRICATING MILL WINDOWS & CHOCKS

History

Mill Liners are wear plates located on all of the chocks inside the 4-Hi Mill. Lubricant is utilized to prevent any adverse friction during vertical roll movements. The environment is severe, with high-pressure process water, heat, steel scale, steam, and heavy impact loads all prevalent in the manufacturing process.

Before

The chocks are lubricated by applying (squirting) 3026/1000/1.5 onto the chock surface; the grease is then smeared on with a brush. Both the pilots and nipples to the hub are lubricated as well as the drivers by the same process.

- 23.4 lbs of grease is applied at each roll change @ 728 roll changes per year
- 23.4 x 728 = 17,035.2 x $2.96 (cost per Lb) = **$50,424.19**
- The window liners are lubricated by an automated system programmed to activate every 15 minutes. Grease used is 860/460/1ES
- 46.06 lbs of grease is applied per day x 300 production days per year
- 46.06 x 300 = 13,818 x $3.25 (cost per Lb) = **$44,908.5**

TOTAL Cost = $95,332.69

After

The chocks are lubricated by applying (spraying) **Performance Bio GR 8899 Mill Lubricant** onto the chock surface. Both the pilots and nipples to the hub are lubricated as well as the drivers by the same air-assisted spray process.

- 2.8 lbs of grease is applied at each roll change @ 728 roll changes per year
- 2.8 x 728 = 2,038.4 x $2.69 (cost per Lb) = **$5,483.29**
- The window liners are lubricated by an automated system programmed to activate every 30 minutes. Grease used is **Castrol Performance Bio GR 8899 Mill Lubricant**
- 23.03 lbs of grease is applied per day x 300 production days per year
- 23.03 x 300 = 6,909 x $2.69 (cost per Lb) = **$18,585.21**

TOTAL Cost = $24,068.50

Total cost savings = ***$71,264.19***

The cost savings above are only taking into account savings in grease use only.
Other associated savings included on the next page.

Additional Cost Savings

- Improved productivity: **$$?? (unknown)**
- Man hours made available from reduced application times: Approx. **60 hrs** per year
- Reduced waste disposal costs: Approx. 3,000 gals of grease per year which results in an estimated savings of approx. **$8,000**
- Costs estimated to be approx. **$10,000** have been avoided when plans to have the top Back-up Roll Chocks cross-drilled have been dismissed, due directly to the positive results of the 8899.

Conclusions

- The Mill Lubricant now in use is extremely tenacious and fully coats all liners' surfaces.
- It is not affected by the water spray and has resulted in a 50% or more reduction on the automated system setting.
- Further reductions are being calculated by process automation after they have now linked the PLC controls to the automated system based on "Steel in Mill time" rather than a set time factor.
- During each roll change, which can be as often as a few hours when producing coils (up to 24 hours for plate), a significant improvement in lubricant coating has been noted on all liners, both in the mill and on the chocks.
- By spraying the grease onto the chock liners, we have not only reduced consumption by 88%, but we have also reduced the application time.