

# CASE STUDY



## ALUMINUM HOT ROLLING QUAKEROL® AHR 301

### CHALLENGES

A manufacturer of aluminum sheets and coils requires high quality standards at all levels due to a focus on aerospace applications. In the breakdown mill process, a soap based emulsion was causing issues including:

- » Stains on the rolled aluminum
  - » Dirt buildup in the mill
  - » Tankside additives needed
- Additionally, the company did not have any product support from their supplier.

### THE SOLUTION

In a trial opportunity, Quaker Chemical Corporation (“Quaker”), proposed the hot rolling oil, QUAKEROL® AHR 301, an ester based product with a reduced amount of soap content, which was specifically formulated to the aluminum manufacturer’s process requirements.

Once implemented, the performance of QUAKEROL® AHR 301 resulted in improvements:

- » Better rolled aluminum quality
- » No occurrence of staining leading to reduced internal scrap and customer quality rejections
- » Cleaner mill which reduced mill cleaning downtime
- » Reduced specific emulsion consumption (Liters/Ton) resulting in less fresh water used and less waste created during partial dumps
- » No additives needed
- » Reduced Total Cost of Ownership

Quaker was able to offer more extensive support throughout the trial with regular meetings and sample analysis to follow up the situation.

### PROCESS AND EQUIPMENT

#### BREAKDOWN HOT MILL

Operation	4 High Reversing Mill
Slab Entry Maximum Thickness	495 mm
Slab Exit Minimum Thickness	13 mm
Slab Maximum Width	2740 mm
Emulsion System Size	100 m <sup>3</sup>
Emulsion System	No skimmer; overflow top layer when contamination occurs

### THE EXPERTISE

Rolling and casting lubricants represent a very minor part of the costs of producing quality aluminum sheet, typically considerably less than 1%. This case illustrates the importance of using the leverage of advanced lubricant technology to achieve consistent performance while at the same time reducing total applied costs. That is why Quaker focuses on developing products with the highest performance without compromise, products that sharpen your competitive edge.

### THE PRODUCT

QUAKEROL® AHR 301 is a rolling oil lubricant with the features of excellent lubrication properties and compatibility with the mechanical parts of the rolling mill and with most standard water treatment processes. It provides benefits including:

- » Strong “oil film body” in the roll bite generating an excellent surface quality
- » Good “plate-out” assuring the oil film in the roll bite