

Challenges

A major manufacturer of anodized, quality critical, hot rolled aluminum was looking for a way to increase tandem mill reductions using their existing equipment but without experiencing quality defects associated with lubrication failure at higher roll forces.

The company was looking for improvements in:

- Surface quality
- Increased reductions
- Higher mill speeds
- Consistent performance
- Reduced coolant maintenance
- Elimination of the use of hazardous biocides
- Elimination of transverse surface tearing of the strip

Quaker embarked on a joint development effort with the customer to increase productivity through lubricant performance improvements without any capital investment in new or modified equipment.

Providing Solutions

The development of the QUAKERAL[®] THM Series of aluminum hot rolling lubricants resulted in:

TOTAL BENEFITS EQUAL TO 5 TIMES ROLLING OIL COST

Over \$10 million per year in productivity improvements without any capital investment in new equipment.

Roll force reduction	8-14% depending on alloy
Entry gauge increase	Average of 20%
Mill speed increase	Average of 30 feet/minute
Reduction in gauge variation	45% reduction in “unacceptable” variation
Surface transverse cracking defect	Completely eliminated
Use of biocides	Completely eliminated

Applications

- Surface critical
- Aluminum hot rolling

Other benefits that came with the introduction of the QUAKERAL[®] THM Series aluminum hot rolling lubricant technology include:

- Cleaner mill
- Fewer additives
- No reliance on aluminum soaps
- No coolant “break-in” period required
- Elimination of worker exposure to hazardous biocides
- Manpower redeployment to other areas
- Consistent quench
- Reduced emulsion testing

OEM Reference

Blaw Knox	Casey	MECO	United
Bliss	Loewy	Nash	

Customer Reference

- Alcoa
- Aleris Aluminum
- Jupiter Aluminum
- Nichols Aluminum
- Novelis
- Southwest Aluminum
- Wise Alloys

Process & Equipment

Operation:	Four Stand Tandem mill producing can stock and other anodized quality critical alloys
Capacity:	One billion pounds per year

Product and Process Expertise

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