

CASE STUDY

Steel - Lubrication of Turntables and Output Machines : More than \$300k Annual Savings

QUAKERTEK™ UX 4615-EP

The Challenge

A large steel mill was accumulating plates at extreme temperatures on their output tables, causing the bearings to work under high loads and extreme temperatures.

As a result the output table rolls were constantly locking and breaking. On average there were 4 roll breaks per month which was interrupting production and increasing the risk of not meeting delivery dates.

Additionally, there was increased risk to worker safety with the amount of roll changes needed around machines still in operation, and cranes moving hot plates around the site.

The mill was looking for a lubricating grease that would:

- Not melt
- Remain in the bearing when exposed to the extreme temperatures
- Eliminate the locking and breaking of the rollers
- Improve worker safety

The Solution

Due to Quaker Houghton's relationship with the steel mill - providing other products and continuous technical assistance, the mill requested a replacement for the current grease.

Through a series of field visits, Quaker Houghton was able to assess the situation and suggested the mill convert to QUAKERTEK™ UX 4615-EP (polyurea) for lubrication of the tables.

From the start of the trial, QUAKERTEK™ UX 4615-EP did not melt away and remained at the application point on the roll neck. Due to the positive results on the roll neck the grease was also applied to the output tables and swivel.

The Benefits

Since using the QUAKERTEK™ UX 4615-EP there have been no more crashes or roll breaks.



QUAKERTEK™ UX 4615-EP did not melt and remained at the application point on the roll neck

Savings from Converting to QUAKERTEK™ UX 4615-EP

	MONTHLY BASED	YEARLY BASED
Grease based saving	\$73.76	\$885.12
Roller based savings	\$27,697.27	\$332,367.28
Waste based savings (repairing the grease filling system leak)	\$2,624.86	\$31,498.37
Total Savings	\$30,395.86	\$364,750.77



Comparative Costs Before and After Use of QUAKERTEK™ UX 4615-EP

GREASE	COMPETITOR CALCIUM-LITHIUM GREASE WITH BLACK SOLIDS	QUAKERTEK™ UX 4615-EP POLYUREA	UNIT
Usage/Month without leaking	1,067	400	kg
Lubrication cycle (cycles per hour)	4	1.5	
Drop Point	170	304	°C
Monthly Rollers Replacement (roller price 6,339.64)	4	0	
Labor Cost (4 mechanics plus 2 welders) per 8 hour period, cost \$12.18/ men hour	\$584.68	0	
Total Monthly Costs	\$30,699.13	\$2,928.09	

The Product

QUAKERTEK™ UX 4615-EP is polyurea thickened lubricating grease that has been specifically formulated and manufactured to provide outstanding lubrication in high temperature applications. Because of its high dropping point and excellent lubricating properties, QUAKERTEK™ UX 4615-EP:

- Can replace lithium and lithium complex greases in high temperature applications
- Provides excellent corrosion protection
- Provides good oxidation stability
- Can be used in a broad range of service temperatures

Process and Equipment

OUTPUT TABLES	
Operation	Lubrication of turntables on Machines
Application	Grease filling machine 3 inch spout and hose



- QUAKERTEK™ UX 4615-EP was supplied in disposable cardboard containers and packed in a plastic bag which is pressurized by an air regulator
- The spout is a 3 inch quick hitch, and can be used with the 3 inch pump hose of the grease filling machine

