

# Eco-compatible cost down

Over £ 140,000 reduction in TCO (Total Cost of Ownership), a reduction in the consumption of switchplate lubricant by 95%, the manpower required therein by 70% and utilising a modern rapidly biodegradable lubricant solution – these were the results of a joint project between Corus UK and lubrication specialist Kluber. The benefits have been realised across two Corus UK sites by intense co-operation to optimise the entire lubrication regime.

According to Paul Harris, operations support manager and project initiator at the Corus evaluation site: “ ... to have reduced the need to lubricate points at the current frequency not only allows more effective use of manpower but in addition we have a long-term solution that has improved points function and demonstrated our commitment to reduce environmental impact – importantly not just because the lubricant is biodegradable or that we use less, it's both. We have tried many approaches previously and only now do we have more knowledge, better understanding and enhanced capability because of our work with Kluber ...”.

Kluber have designed and built a simulator in order to develop a range of special switchplate lubricants all rapidly biodegradable. The test chamber determines the friction force curve and wear behaviour under sinusoidal cycling and variable environmental conditions.

The project with Corus selected demanding switchplate sets suffering from heavy usage, sticking, lubricant wash off, debris etc. Following on-site

training with Kluber the new lubricant, Kluberbio ALO 32-4000, demonstrated:

- significant improvement in adhesion to plate beds
- “right first time” bi-directional switching
- resistance to rain and groundwater wash off
- protection against corrosion
- extended re-lubrication intervals from, in some instances, 3 times a week to every 3 weeks
- 95% less lubricant used
- cleanliness in use

Kluber also provided devices to improve the application accuracy and clean handling of lubricant whilst contributing to the health and safety of maintenance crews. Kluberbio ALO 32-4000 assures an eco-compatible, low friction, water resisting film over a temperature range of - 30 to 80°C. Through special additives it is also protected against UV degradation caused by long exposure to sunlight.

This prevents “gummy” residues that can significantly increase switching forces. Rapid biodegradability ( $\geq 80\%$  after 28 days acc. OECD 301 B and  $> 70\%$  after 21 days acc. CEC-L-33-A-93) helps Corus demonstrate their commitment to the environment.

Metro Madrid in Spain have approved and implemented a “sister” switchplate lubricant solution in the Madrid underground system (Kluberbio LO 32-2500) proven at Cuatro Caminos II station as endorsed by Miguel A Vaquero Quinzaños in the maintenance management team. Although the fundamental demands and conditions are similar, Kluber have shown that a “one size fits all” solution for all points lubrication regardless

of how and where they are deployed can be a compromise hence the family of lubricants that has resulted.

Madrid Metro recognised the need to replace mineral-oil-based lubricants to help diminish the ecological impact of points lubrication but also address switchplate wear and necessary short re-lubrication intervals. Local Kluber training and support to Metro Madrid and appointed contractors has enabled a cost-beneficial environmental solution which:

- reduces re-lubrication manpower by around 40%
- reduces switching incidents (considering high operation switching up to 360 cycles per day that could lead to penalties for delays)
- assures clean, corrosion free protection across over 30,000 points.

With thorough consulting and far-reaching services for end users, operators and OEM's, Kluber has acquired an excellent reputation as a global partner to industry. 80 years of experience, industry-specific know-how and a test bay that is uniquely diverse in the industry all help to deliver advanced lubricant solutions.

Rail operators and maintenance contractors are becoming increasingly frustrated with the limitations some lubricant technology can impose and turn to specialists such as Kluber. The partner projects with both Metro Madrid and Corus UK show what real impact can be achieved.

Comprehensive solutions are also available for more mundane maintenance subjects such as nuts and bolts and bearing fits, splined shafts etc that can contribute significantly in reducing the time taken to service, repair and overhaul equipment.

Kluber Lubrication supplies around 2,000 speciality lubricants globally, most of which have been developed and manufactured for specific customer requirements.

Part of Freudenberg Chemical Specialities, a division of the Freudenberg group, Kluber Lubrication operate truly globally with headquarters still proudly located in Munich, Germany on the original site where Theodor Kluber first established his business.

## FOR MORE INFORMATION

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