CASE STUDY

LUBRICATION OF TENSOR MANDREL
QUAKERTEK™ VERKOFLUOR 862

CHALLENGES
- A large steel mill, producing flat products, was using a polyurea thickened grease in their tensor mandrel, used in the coiling process. The tensors, on the outside of the mandrel expand to provide enough tension so the eye of the steel coil is a uniform diameter. The tensors then contract so the coil can easily be removed from the mandrel.
- Even though a high temperature grease was being used, the mill was experiencing the following problems as a result of the grease not staying in place:
  - Splash on the coil that was resulting in customer rejections of the final product
  - Accelerated grease consumption, that was shortening lubrication intervals and increasing the manpower need to lubricate the equipment

THE SOLUTION
- Verkol Lubricants, a Quaker Chemical Company, assessed the mill’s situation, and suggested they convert to QUAKERTEK™ VERKOFLUOR 862, formulated with PFTE thickener and PFPE base oil.
- With the thickener and base oil used Verkol wanted to show that QUAKERTEK™ VERKOFLUOR 862 could:
  - Operate in extreme temperatures, and withstand the high temperatures of the tensor mandrel and not drop out
  - Stay in place, and extend the lubrication intervals, and decrease the grease consumption and manpower needed
- The steel mill decided to trial QUAKERTEK™ VERKOFLUOR 862, and hand lubricated the mandrel. After 6 month the mandrel was checked with no problems, so the lubrication interval was extended another 6 months.
- The mandrel was checked a second time after one year, and again no problems were found and the mandrel was re-lubricated.
- The lubrication interval was extended from 1 month with the polyurea grease to one year with QUAKERTEK™ VERKOFLUOR 862 PFTE thickened grease.
LUBRICATION OF TENSOR MANDREL
QUAKERTEK™ VERKOFLUOR 862

THE PRODUCT
QUAKERTEK™ VERKOFLUOR 862 is a high-performance synthetic lubricating grease based on perfluoropolyether (PFPE) fluids and thickened with polytetrafluoroethylene (PTFE), suitable for all types of mechanisms under continuous operations within a wide temperature range (-35 to 250°C). Particularly resistant to oxidation and chemical agents and compatible with all types of materials: glass, metal, elastomers, ceramics, etc., whose properties remain unaltered even under wide temperature ranges. Its physio-chemical and tribological properties make it an excellent grease for many industries: corrugated fiber board, bakeries, chemistry, ceramic, automobile, and electronics, aerospace, steel and paper, among others. The grease is totally inert, except in the presence of chemical agents with high fluorine content, and innocuous, which makes it perfectly recommendable for applications with food contact.

PROCESS AND EQUIPMENT

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