



**CLEAN OIL
BRIGHT IDEAS**

Gear Oil Coal Mill Gear

CJC™ Application Study

**Application Study
written by:**

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CUSTOMER

ELSAM A/S, Studstrupværket.
ELSAM has 6 central power stations in Denmark.

THE SYSTEM

Babcock MPS 190 Rolling Coal Mill.
The purpose is to grind the coal into fine and good firing material.

Oil system: Volume 1800 ltr. of Mobil gear oil 632, ISO VG 320.

THE PROBLEM

Oil analysis showed a high content of metal particles and resin; indicating wear on the components; possibly because of other particles. Furthermore resin is created because of the high temperatures. Since the oil film is approx. 2 micron, the very small particles entered the bearing instead of the oil, and caused damage.

THE SOLUTION

CJC™ Fine Filter HDU 27/81 P-DE, with a pump flow of 250 ltr/h.

CJC™ Filter Insert B 27/27 (3 micron abs.) was used.

THE TEST

One filter unit was installed to see the difference in the oil - with or without the CJC filter. After 3 months the results were clear, and 7 more filters were installed on the remainder of the coal mills. Subsequently 17 filter units have been installed at ELSAM A/S on coal mill gears.

THE RESULT

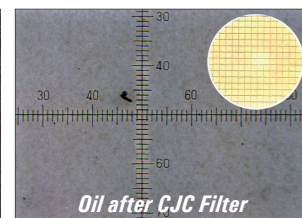
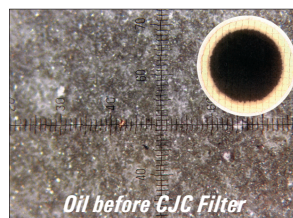
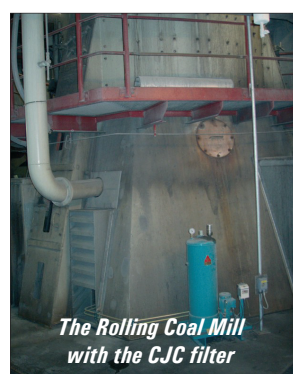
The first sample taken had an ISO code 21/17/13. After 1 month with the CJC filter installed the ISO code was reduced to 16/15/12. After 3 months the cleanliness level was further reduced to an ISO code 15/13/7.

1,304,472 of 2 micron particles were reduced to 18,195, meaning CJC filter had removed 98% of those particles. Furthermore, the resin was totally removed.

COMMENTS

Jørgen Brix Andersen, Elsam A/S:

"As the oil analyses show, we have achieved cleaner oil, after we have installed CJC filters on our 8 coal mills. The need for oil change is gone, and the risk of a breakdown in the bearings has been extremely reduced. An oil change cost € 3,230 per gear. "



THE RESULT

	ISO Code	2 μm
Before CJC Filter	21/17/13	1,304,472
After 1 month with CJC Filter	16/15/12	52,781
After 3 months with CJC Filter	15/13/7	18,195

