

INDEPENDENT TECHNICAL
ASSESSMENT REPORT

No: 10/0200

DATE: February 2000
I.T.A.R. NO.: 10/0200
COUNTRY: Australia
STATE: NSW

CLIENT NAME:

ETL test laboratories

PRODUCT/SERVICES:

Refrigeration equipment test laboratory principally for the
Coca Cola Company world wide

ADDRESS:

Frenchs Forest Sydney Australia

PURPOSE:

To independently test two 690 Ltr. General Electric domestic
refrigerator/freezers

METHODOLOGY:

Two identical large capacity refrigerator/freezers were selected
to test ROC S4 lubricant against the original initial fill of POE
lubricant and re-test with POE lubricant to prove the lubricant was
the major influencing factor.

Temperature sensors were fixed throughout the refrigerator and freezer
to measure internal air temperature, product temperature and selected
parts of the refrigeration circuitry.

To verify results and ensure repeatability both refrigerators were
tested side by side under identical loading and climate conditions.

The judgement for performance was to use timed pull down tests and
24-Hour energy tests. Each refrigerator was loaded with product to
50% of the refrigerator and freezers capacity and temperature soaked
for 24 Hrs. at 32 C and 65% relative humidity.

The refrigerators were then sealed and a timed pull down test commenced.
A 24 Hr energy test followed after achieving freezer and refrigerator
compartment temperatures.

The replacement of the oil was carried out in the test room at 32°C
and 65% RH. The doors on the refrigerators were left open to allow
the packages to warm to the room ambient with the use of fans.

The product load was untouched. Once the work was completed and the
packages had stabilised to 32°C, the doors were sealed and a second
pull down test was conducted followed by another 24-Hour energy test.

At the third test, the procedures were repeated after replacing the
ROC Oil with POE lubricant. Thus, the test rationale produced a
pull down and energy consumption, first with the initial fill POE,

then with ROC oil, then repeated with POE lubricant.

RESULTS:

Refrigerator No.1 showed a marked difference in performance when changed to ROC oil (14.31% energy saving) and showed the benefit of residual ROC oil in the re-test (7.09% energy saving). Refrigerator No. 2 showed less benefit although still substantial (5.6% energy saving after changing to ROC oil and 1.98% energy saving in the re-test).

CONCLUSION:

The test results showed that when using ROC oil there are definite performance advantages. Although the performance advantages varied between refrigerators, pull down times, compressor cycling times, current draw and energy consumption were all reduced when using ROC Oil.

TEST INFORMATION ON PRODUCTS CONTAINED IN THIS REPORT DOES NOT IMPLY AN ENDORSEMENT BY THE INDEPENDENT TEST COMPANY.
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