

TEST REPORT NO. RTE1517/00

# Testing of an oil separator EuroPEK Omega NS 10

Oy Labko Ab

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**Order** No. 4261/19/00, 1.3.2000, Finntec/Labko/VTT

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**Task** **Testing of an oil separator EuroPEK Omega NS 10**

**Sample separator** The manufacturer delivered an oil separator (Appendix 1). The nominal size of the separator was NS 10 (the maximum waste water flow rate 10 l/s). The separator had a coalescing type filter and no sludge trap. The separator was made of polyethylene (PEM). Calculated storage capacity of the light liquid is 280 litre (150 mm under the bottom of the outlet pipe).

**Test method** Hydraulic and oil separation tests from *Draft European standard prEN 858-1 Separator for light liquids (e.g. oil and petrol) - Part 1: Principles of product design, performance and testing, marking and quality control. November 1999.*

Classes of separators in prEN 858-1

I class, maximum permissible contents of residual oil 5 mg/l and  
II class, maximum permissible contents of residual oil 100 mg/l.

**Testing** Oil separator was tested in VTT Building Technology 8.3.2000. Analysis of the samples was done by Steins Laboratorium A/S, in Denmark. (The method of analysis in accordance with prEN 858-1 is not available in Finland.)

In the oil separation test the maximum water flow rate ( $Q_w$ ) of 10 l/s was maintained. Test liquid (light heating oil) was added at the constant flow rate 50 ml/s (5 ml/l) to the collecting chamber of water supply apparatus from the beginning of the test time (T).

The running-in period before sampling is  $T_E = 4 \cdot V_k / Q_w / 60$  (minutes), at least 15 minutes.  $V_k$  is measured water volume of the separator,  $V_k = 2010$  litre. Because  $T_E$  was  $4 \cdot 2010 / 10 / 60 = 13,4$  minutes,  $T_E$  was set to 15 minutes.

The total duration of the test T is the sum of the running-in period  $T_E$  and the sampling period  $T_p$  of 5 minutes, so  $T = T_E + T_p$  was  $15 + 5 = 20$  minutes.

At the beginning of sampling period  $T_p$  the first sample was taken and after that at 1 min intervals 4 samples were taken. All samples (at least 500 ml/sample) were taken from the outlet pipe of the separator via the sampling pipe.

The volume of the oil used in the test was 60 litre ( $50 \cdot 20 \cdot 60 \text{ ml} = 60\,000 \text{ ml}$ ).

Test conditions

Air temperature was  $(19 \pm 1)^\circ\text{C}$ . Temperature of the inlet water was  $(13 \pm 1)^\circ\text{C}$ .

Inaccuracies of the measurements were less than  $\pm 2\%$  for the water flow rate and the volume of the separator and  $\pm 3\%$  for the oil flow rate and volume.

**Results**

Water volume of the tested separator NS 10 was 2010 litre at the maximum static water level. The rise of the water level was 130 mm at the maximum flow rate of 10 l/s.

The separated light liquid storage capacity of 280 litre fulfils the requirement of *prEN 858-1* (15 x NS-size in litres = 150 l).

Results of the analysis of the effluent samples from Ref. /1/ are presented in the following table.


Marking of the sample bottle	1.1-10	1.2-10	1.3-10	1.4-10	1.5-10
Time from the beginning of the test (min)	15	16	17	18	19
The content of the residual oil (mg/l)	< 0,2	< 0,2	< 0,2	< 0,2	< 0,2

The contents of the residual oil of all samples are less than 5 mg/l. According to the requirements of *prEN 858-1* the class of the separator is I.

Results are valid only for the tested oil separator.

Espoo, 10.5.2000

  
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**Appendix**

1 Product description

**Reference**

1 Provningsrapport. B200-08442, 16.03.2000. Steins Laboratorium A/S, Danmark

**Distribution**

Customer  
VTT

Original  
Original