

# Test Report

REPORT NO:  
1321579-4R



**DANISH  
TECHNOLOGICAL  
INSTITUTE**

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**Customer:** Contact: Jacob L. Kristensen  
Company: Watercare  
Address: Stejlebjergvej 14  
Town: DK – 5610 Assens

**Material:** The oil separator is a size NS 6, class II from Watercare. There was no sludge trap combined to the separator.

All materials are PE except the inlet and outlet. Inlet is  $\varnothing$ 160 mm and outlet is  $\varnothing$ 160 for the NS 6 oil separator. A conceptual drawing of the separator is shown in appendix B. Testing was carried out on a prototype-separator.

**Sampling:** The test material was sampled and sent by Watercare and received at the Danish Technological Institute in February 2007. A new drawing has been checked in December 2020.

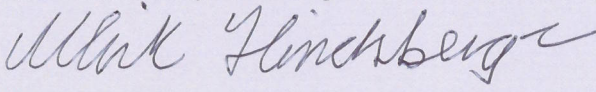
**Method:** The test was carried out according to EN 858-1:2002 + A1:2005, clause 4, 6.2, 6.3.1-6.3.8 and 6.5.1. Analysis of the oil content of the water is carried out by Eurofins Denmark which is accredited to carry out these analyses.

**Period:** The test separator was sent to the Danish Technological Institute by the manufacturer. The test was carried out the 5<sup>th</sup> of January 2007.

**Result:** The test shows that the separator meets all relevant requirements in CEN standard EN 858-1:2002+A1:2005. With a flow of 6 l/s, there is a content of residual oil at 95 mg/l in the discharge. The separator can be placed in class II (maximum 100 mg/l oil in the discharge). The results are shown in appendix A. Furthermore the separator system follows the requirements of section 6.3.2-6.3.5 and 6.5.1-6.5.3 in the CEN standard EN 858-1 /A1 - 2005.

**Terms:** The test has been performed according to the rear side conditions, which are according to the guidelines laid down by DANAK (The Danish Accreditation). The testing is only valid for the tested specimen.  
The test report may only be extracted, if the laboratory has approved the extract.

**Place:** Date 18.12.2020, Technological Institute, Taastrup, Pipe Centre

**Signatur:**   
Ulrik Hindsberger  
Director



  
Test Reg. nr. 02





## Test conditions, extracts from CEN standard DS/EN 858-1

### Reference to section in CEN standard DS/EN 858-1

- 6.2 Materials**  
All materials are PE except the inlet and outlet. All metals part is stainless steel. There is no documentation for the properties of the materials. The testing has not included checking specific documentation for the composition and oil-resistance of the materials, and no tests of the materials' tightness and resistance to oleaginous liquids have been carried out, except for tests of the separator's efficiency with subsequent observation, which gives no reason for further comment.
- 6.3.2 Watertightness has been testing according to 8.2**  
The system has been tested by filling up water to 40 mm above the maximum operational liquid level. There were no leaks to the separator itself after 20 min of testing. The tightness of the extension shaft has not been tested. If extension shafts are used, the tightness of the connections must be tested after installation.
- 6.3.3 Accessibility**  
The separator system including the inlet and outlet is accessible for maintenance and inspection.
- 6.3.4 Water seals**  
The separator has a water seal at the inlet and outlet. The water seal is the result of the inlet and outlet being run through closed pipes, which are submerged at least 100 mm under all normal operating conditions.
- 6.3.5 Pipe and pipe joints**  
The inlet of the separator is 160 mm and the outlet is 160 mm which is correct according to table 2 in EN 858-1. Inlets and outlets **were tight** at the watertightness test.
- 6.5.1 Safeguard against reflux**  
There is no risk of reflux in the inlet during normal operations.
- 6.5.2 Storage Capacity**  
Watercare has informed that the storage capacity is calculated to 600 l (100%). With a capacity of 600 l there is still a safe distance to the upper edge of the outlet.
- 6.5.3 Automatic closure device**  
The separator was not equipped with an automatic closure device. Watercare has informed that the automatic closure device only will be installed when necessary.
- 6.5.6 Determination of the nominal size and class**  
The oil separator has been testing according to 8.3.3.
- 8.3.3 A. Surface levels in the separator**  
During testing with a flow of 6 l/s there is more than 60 mm from the upper edge of the separator to the water level.
- B. Separator efficiency**  
The test was carried out as described in EN 858-1.
- The samples in the separator outlet were taken through an inclined tube to the sample bottle.
- The following tests use an oil type with specifications corresponding to ISO 8217, ISO-F-DMA, with a density of  $0.85 \pm 0.015 \text{ g/cm}^3$  at 12°C.



### C. Method

The separator is measured and the dimensions noted on the manufacturer's drawing.

The separator is filled with water up to the outlet. The volume of water is called:  $V_K = 2005$  litres.

Flow 6 l/s

Water at 6 l/s and oil at 30 ml/s (5 ml per l/s) is added for a period of:

$T_B = 4 \times V_K / Q_w \times 60$  minutes (though at least 15 minutes) plus the test period  $T_P$ , which is 5 minutes.

$T_B = 22$  minutes. **Oil is added for 22 minutes + 5 minutes, i.e. a total of 27 minutes.**

In the period  $T_P$ , samples are taken from the outlet directly to the sample bottle in the **first** minute after  $T_B$ , and then a further 4 samples at 1-minute intervals.

The 5 samples are analysed separately, and the test results given as the arithmetic calculated mean value.

**Total quantity of oil: 48.61 l**

### Appendix A. Test results

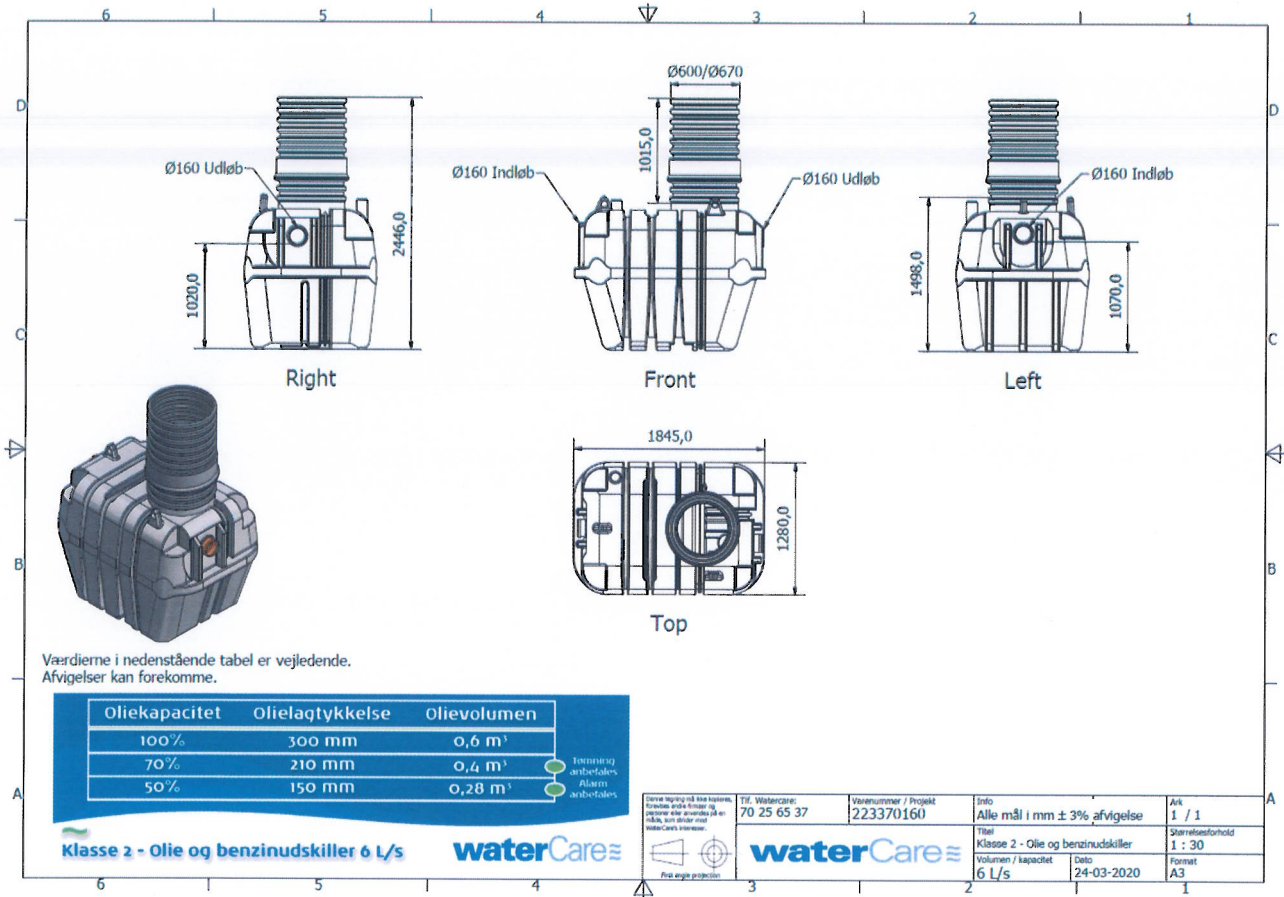
<b>Sample glass no.</b>	050101	050102	050103	050104	050105
<b>Test/minutes</b>	23	24	25	26	27

### Results from analysis

<b>Sample label</b>	<b>Variable</b>	<b>Result</b>	<b>Unit</b>	<b>Method used</b>
Sample glass 050101	Total hydrocarbon	83	mg/l	EN 858-1, 2002
Sample glass 050102	Total hydrocarbon	99	mg/l	EN 858-1, 2002
Sample glass 050103	Total hydrocarbon	104	mg/l	EN 858-1, 2002
Sample glass 050104	Total hydrocarbon	87	mg/l	EN 858-1, 2002
Sample glass 050105	Total hydrocarbon	103	mg/l	EN 858-1, 2002
<b>Arithmetic mean</b>	<b>Total hydrocarbon</b>	<b>95</b>	<b>mg/l</b>	



**Appendix B. Drawing**







**Appendix C. Pictures from the test**





The general conditions pertaining to assignments accepted by Danish Technological Institute shall apply in full to the technical testing or calibration at Danish Technological Institute and to the completion of test reports or calibration certificates within the relevant field.

**Danish Accreditation (DANAK):**

DANAK is the national accreditation body in Denmark in compliance with EU regulation No. 765/2008.

DANAK participates in the multilateral agreements for testing and calibration under European co-operation for Accreditation (EA) and under International Laboratory Accreditation Cooperation (ILAC) based on peer evaluation. Accredited test reports and calibration certificates issued by laboratories accredited by DANAK are recognized cross border by members of EA and ILAC equal to test reports and calibration certificates issued by these members' accredited laboratories.

The use of the accreditation mark on test reports and calibration certificates or reference to accreditation, documents that the service is provided as an accredited service under the company's DANAK accreditation according to EN ISO IEC 17025.

**Construction Product Directive:**

The Danish Technological Institute guarantees that employees carrying out tests to be used together with harmonized standards under notification no. 1235 according to EU regulation 305/2011, article 43, satisfy all the requirements made for capability, integrity and impartiality. You find the CPD here:

[http://ec.europa.eu/growth/single-market/european-standards/harmonised-standards/construction-products/index\\_en.htm](http://ec.europa.eu/growth/single-market/european-standards/harmonised-standards/construction-products/index_en.htm)