

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate no.:
MEDB00008Y4

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV AS under the authority of the Government of Norway.

This is to certify:

that the Oil-filtering equipment (for an oil content of the effluent not exceeding 15 p.p.m.)

with type designation(s)

YSF series oil-filtering equipment models: YSF-0.25, YSF-0.5, YSF-1, YSF-2, YSF-3, YSF-5

issued to

CSSC Nanjing Luzhou Machine Co.,Ltd
Nanjing, Jiangsu, China

is found to comply with the requirements in the following Regulations/Standards:

Regulation **(EU) 2023/1667**,

item No. MED/2.1. Marpol 73/78 as amended, Annex I Regulation 14, IMO Res. MEPC.107(49), IMO MEPC.1/Circ. 643

Manufacturers authorised representative

TeamTec AS
Tvedestrand, Norway

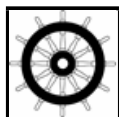
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2029-09-01**.

Issued at **Høvik** on **2024-09-02**

DNV local unit:
Nanjing NB & CMC

Approval Engineer:
Anna Piotrowska



Notified Body
No.: **0575**

for **DNV AS**

Christine Mydlak-Röder
Head of Notified Body



The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.

This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.

Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

The YSF series bilge water separator is an integrated equipment intended for installation on board ships or other marine units to reduce the oil content in bilge water to less than 15 ppm. The equipment is designed and tested to meet the requirements of the IMO Resolution MEPC.107(49).

A complete unit contains the bilge water separator, an integral bilge water feed pump, electric control box, an automatic stopping device with 15 ppm bilge alarm (Oil Content Meter) and a recirculating facility (optional supply). During normal working condition the system works in automatic mode, where the primary separation is done by the main filter assembly associated with an electric heater. In case, the oil content in the effluent exceeds 15 ppm, the bilge water is transferred through an additional fine filter and the automatic stopping device redirect the flow back to the ship's bilge tank.

Application/Limitation

Application

Model	YSF-0.25	YSF-0.5	YSF-1	YSF-2	YSF-3	YSF-5
Design capacity (m ³ /h)	0.25	0.5	1	2	3	5

Limitations

Applicable limitations are listed below:

Design pressure	2.75 bar
Supplied compressed air pressure range	4 - 6 bar
Design temperature	5 - 40°C
Relative humidity	90%
Inclination range	0 - 22.5°
Power supply ratings	AC-3φ 380V/50Hz, 440V /60Hz

The equipment is not permitted to be installed in spaces subject to explosion hazards.

The 15 ppm bilge water separator is fitted with heating facility.

Installation:

The following shall be verified during installation:

- The alarm in the 15 ppm Oil Content Meter is always activated whenever clean water is used for cleaning or zeroing purposes.
- The alarm in the 15 ppm Oil Content Meter is always activated whenever no flow of sample through Oil Content Meter is detected.
- Any alarm in the 15 ppm Oil Content Meter will activate the automatic stopping device preventing overboard discharge and divert the effluent back to the bilge or bilge tank.
- The overall response time (including the response time of the 15 ppm Oil Content Meter) between an effluent discharge from the Bilge Water Separator exceeding 15 ppm, and the operation of the Automatic Stopping Device preventing overboard discharge, shall be not more than 20 seconds.
- By-passing the 15 ppm Oil Content Meter during normal operation shall by no means be possible.
- Every access of the Oil Content Meter (beyond check on instrument drift, repeatability of the instrument reading, and the ability to re-zero the instrument) requires breaking of a seal.

Type Examination documentation

Mechanical and Assembly Drawings:

Drawing Title	Drawing Number	Revision (date)
Assembly YSF-0.25 15 ppm Bilge Water Separator	Y1111-00	0 (2024-06-18)
Assembly YSF-0.5 15 ppm Bilge Water Separator	Y1112-00	0 (2024-06-18)
Assembly YSF-1 15 ppm Bilge Water Separator	Y1113-00	0 (2024-06-18)
Assembly YSF-2 15 ppm Bilge Water Separator	Y1114-00	0 (2024-06-18)
Assembly YSF-3 15 ppm Bilge Water Separator	Y1115-00	0 (2024-06-18)
Assembly YSF-5 15 ppm Bilge Water Separator	Y1116-00	0 (2024-06-18)

Piping and Instrumentation Drawings:

Drawing Title	Drawing Number	Revision (date)
System and flow diagram 15 ppm Bilge Water Separator	Y1113-00LC	0 (2024-06-18)

Electrical and Instrumentation Drawings:

Drawing Title	Drawing Number	Revision (date)
Electrical Schematic Drawing YSF Type Control Box	Q1323-00YL	0

Operation and Maintenance Manuals

Drawing Title	Drawing Number	Revision (date)
Instruction Manual YSF Series 15 ppm Bilge Water Separator	Y111100~Y111600SM	0

A copy of the operation and maintenance manual indicated under type examination documentation shall be on board the vessel at all times.

Tests carried out

The Bilge Water Separator models YSF-0.25 and YSF-5 have been subjected to performance and environmental testing according to IMO Resolution MEPC.107(49), as further outlined in Appendix A and Appendix B.

Performance Tests:

- Location: CSSC Nanjing Luzhou Machine Co., Ltd; Nanjing, China
Test report: SHE13-01736&SHE13-02284&SHE13-02757, dated 2013-11-08
Issued by SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd Testing Center
Date of testing: 2013-06-25 - 2013-06-27 for models YSF-0.25
Date of testing: 2013-08-06 - 2013-08-08 for models YSF-5

Environmental Tests:

- Location: China Shipbuilding Industry Environment and Reliability Test Centre for Electric and Electronic Equipment
Test Report: Ship Test ER 2013-060, dated 2013-11-27
Issued by China Shipbuilding Industry Environment and Reliability Test Centre for Electric and Electronic Equipment
Date of testing: 2013-11-19
- Location: China Shipbuilding Industry Environment and Reliability Test Centre for Electric and Electronic Equipment
Test Report: Ship Test 2013-060, dated 2013-11-28
Issued by China Shipbuilding Industry Environment and Reliability Test Centre for Electric and Electronic Equipment
Date of testing: 2013-11-15 – 2013-11-24
- Location: China Shipbuilding Industry Environment and Reliability Test Centre for Electric and Electronic Equipment
Test Report: Ship Test 2017-061, dated 2017-10-25
Issued by China Shipbuilding Industry Environment and Reliability Test Centre for Electric and Electronic Equipment
Date of testing: 2017-10-16

Marking of product

For traceability to this EC Type Examination, each unit to be marked with:

- Identification of manufacturer
- Equipment type designation or model identification
- Maximum throughput and maximum influent pressure at which the separator is designed to operate
- Serial number
- Mark of Conformity

A copy of this Certificate should be carried on board the vessel fitted with this 15 ppm Bilge Water Separator at all times.

Revision history

Revision	Date of issuance	Description
0	2024-09-02	Initial certificate

APPENDIX A – Summary of test results for YSF-0.25

Test data and results of tests conducted on the 15 ppm Bilge Water Separator in accordance with Part 1 of the Annex to the Guidelines and Specifications contained in IMO Resolution MEPC.107(49).

15 ppm Bilge Water Separator submitted by:	CSSC Nanjing Luzhou Machine Co., Ltd; Nanjing, China
Tested type:	YSF-0.25
Test location:	CSSC Nanjing Luzhou Machine Co., Ltd; Nanjing, China
Date:	2013-06-25 - 2013-06-27
Organisation conducting the test:	CSSC Nanjing Luzhou Machine Co., Ltd; Nanjing, China SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd Testing Center
Method of sample analysis:	ISO 9377-2:2000
Test rig according to drawing:	YSF Series 15 ppm Bilge Water Separator Test Program
Samples analysed by:	SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd Testing Center

Environmental testing of the electrical and electronic sections of the 15 ppm Bilge Water Separator has been carried out in accordance with Part 3 of the Annex to the guidelines and specifications contained in IMO Resolution MEPC.107(49). The equipment functioned satisfactorily on completion of each test specified on the environmental test protocol.

Environmental test carried out at China Shipbuilding Industry Environment and Reliability Test Centre for Electric and Electronic Equipment

Test date 2013-11-19 Test report No: Ship Test ER 2013-060

Test date 2013-11-15 - 2013-11-24 Test report No: Ship Test 2013-060

Test date 2017-10-16 Test report No: Ship Test 2017-061

Test fluid "A"

Density at 15°C:	981.1 kg/m ³
Viscosity at 100°C:	45.85 mm ² /s
Flashpoint:	102
Ash content:	0.028%
Water content at start of test:	0.15%

Test fluid "B"

Density at 15°C:	844 kg/m ³
Viscosity at 40°C:	3.04 mm ² /s
Flashpoint:	63
Ash content:	0.0033%
Water content at start of test:	0.03%

Test fluid "C"

Surfactant:	Dodecylbenzene sulfonic acid sodium salt C ₁₈ H ₂₉ NaO ₃ S Lot No 20130226
Iron Oxides:	Iron (II, III) oxide, Fe ₃ O ₄ , Lot No 20121211

Test water

Density at 20°C:	999 kg/m ³
Solid matter present:	5 mg/l

Test temperatures

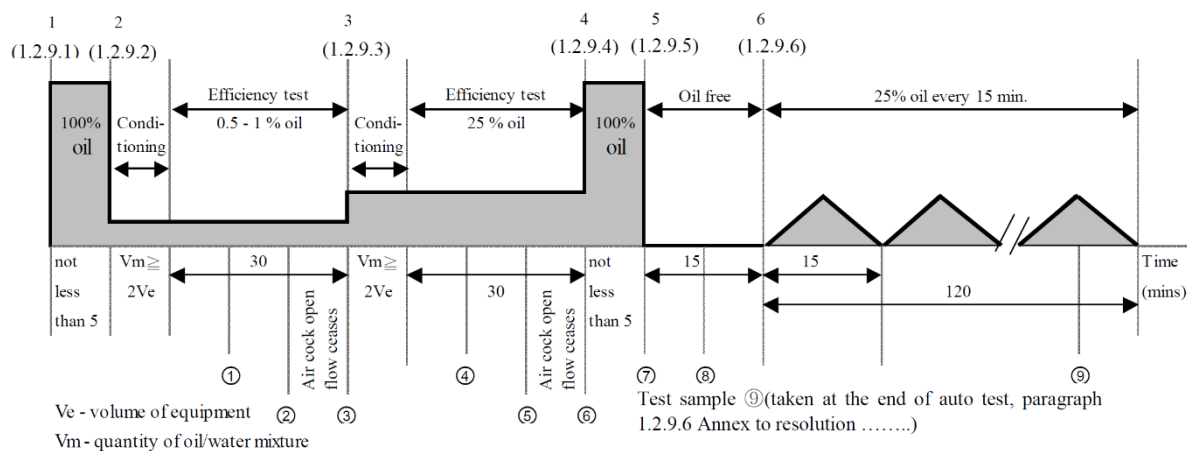
Ambient:	5 - 40°C
Test fluid "A":	38.2°C
Test fluid "B":	36.8°C
Test fluid "C":	25.6°C

Test water:

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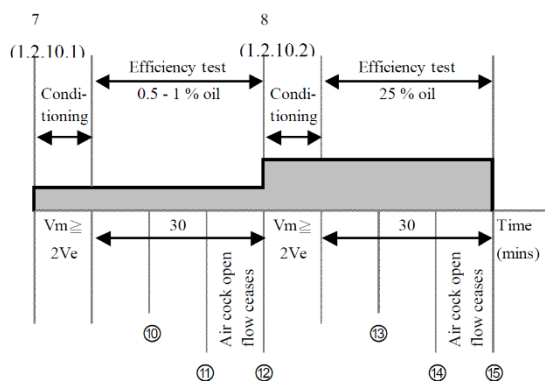
TEST RESULTS AND TEST PROCEDURES – Model YSF-0.25

TEST FLUID “A”

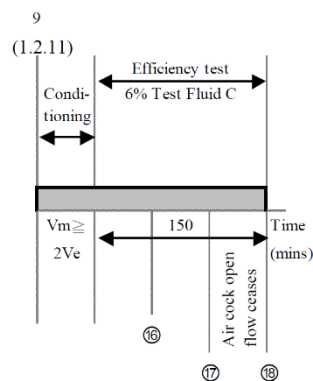


	1	2	3	4	5	6	7	8	9
Influent (%)	0.5-1	0.5-1	0.5-1	25.0	25.0	25.0	0.0	0.0	25.0
Effluent (ppm)	1.29	2.08	0.11	0.10	0.10	0.09	0.08	0.09	1.78

Test Fluid B



Test fluid C



	10	11	12	13	14	15	16	17	18
Influent (%)	1.0	1.0	1.0	25.0	25.0	25.0	6.0	6.0	6.0
Effluent (ppm)	1.33	2.13	9.55	10.4	10.0	3.37	3.47	3.87	1.83

V_e - volume of bilge water separator

V_m - oil/water mixture passed through bilge water separator

APPENDIX B – Summary of test results for YSF-5

Test data and results of tests conducted on the 15 ppm Bilge Water Separator in accordance with Part 1 of the Annex to the Guidelines and Specifications contained in IMO Resolution MEPC.107(49).

15 ppm Bilge Water Separator submitted by:	CSSC Nanjing Luzhou Machine Co., Ltd; Nanjing, China
Tested type:	YSF-5
Test location:	CSSC Nanjing Luzhou Machine Co., Ltd; Nanjing, China
Date:	2013-08-06 - 2013-08-08
Organisation conducting the test:	CSSC Nanjing Luzhou Machine Co., Ltd; Nanjing, China SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd Testing Center
Method of sample analysis:	ISO 9377-2:2000
Test rig according to drawing:	YSF Series 15 ppm Bilge Water Separator Test Program
Samples analysed by:	SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd Testing Center

Environmental testing of the electrical and electronic sections of the 15 ppm Bilge Water Separator has been carried out in accordance with Part 3 of the Annex to the guidelines and specifications contained in IMO Resolution MEPC.107(49). The equipment functioned satisfactorily on completion of each test specified on the environmental test protocol.

Environmental test carried out at China Shipbuilding Industry Environment and Reliability Test Centre for Electric and Electronic Equipment

Test date 2013-11-19 Test report No: Ship Test ER 2013-060

Test date 2013-11-15 - 2013-11-24 Test report No: Ship Test 2013-060

Test date 2017-10-16 Test report No: Ship Test 2017-061

Test fluid "A"

Density at 15°C:	981.1 kg/m ³
Viscosity at 100°C:	45.85 mm ² /s
Flashpoint:	102
Ash content:	0.028%
Water content at start of test:	0.15%

Test fluid "B"

Density at 15°C:	844 kg/m ³
Viscosity at 40°C:	3.04 mm ² /s
Flashpoint:	63
Ash content:	0.0033%
Water content at start of test:	0.03%

Test fluid "C"

Surfactant:	Dodecylbenzene sulfonic acid sodium salt C ₁₈ H ₂₉ NaO ₃ S Lot No 20130226
Iron Oxides:	Iron (II, III) oxide, Fe ₃ O ₄ , Lot No 20121211

Test water

Density at 20°C:	999 kg/m ³
Solid matter present:	5 mg/l

Test temperatures

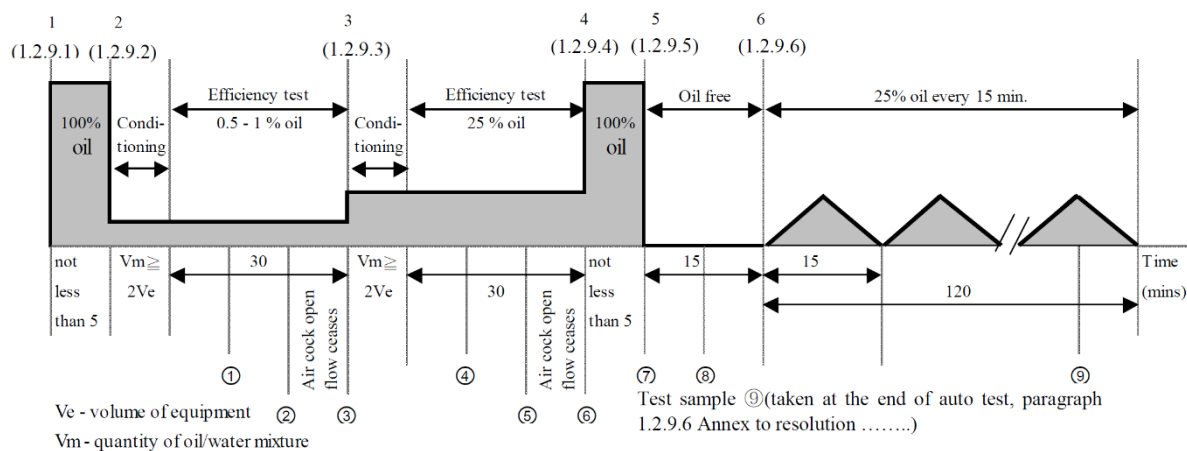
Ambient:	5 - 40°C
Test fluid "A":	37.1°C
Test fluid "B":	34.9°C
Test fluid "C":	34.3°C

Test water:

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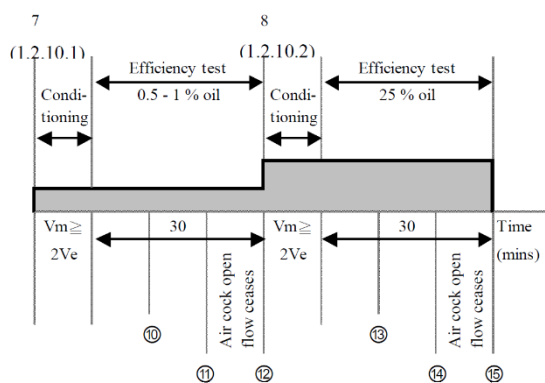
TEST RESULTS AND TEST PROCEDURES – Model YSF-5

TEST FLUID “A”

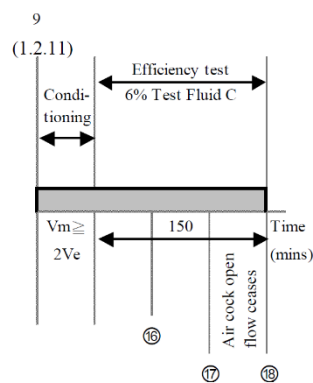


	1	2	3	4	5	6	7	8	9
Influent (%)	1.0	1.0	-	25.0	25.0	25.0	0.0	0.0	25.0
Effluent (ppm)	3.88	5.18	4.68	0.13	0.07	0.08	0.07	13.8	13.5

Test Fluid B



Test fluid C



	10	11	12	13	14	15	16	17	18
Influent (%)	1.0	1.0	1.0	25.0	25.0	25.0	6.0	6.0	6.0
Effluent (ppm)	8.01	5.95	8.57	0.11	0.05	0.06	4.12	1.40	4.64

V_e - volume of bilge water separator

V_m - oil/water mixture passed through bilge water separator