

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

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 GL 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)

DELTA OWSAN-0.5, DELTA OWSAN-1, DELTA OWSAN-2.5, DELTA OWSAN-5, DELTA OWSAN-7.5, DELTA OWSAN-10, DELTA OWSAN-12.5

Issued to

DESARROLLO TECNICAS INDUSTRIALES DE GALICIA, S.A
Ferrol La Coruña, 15, Spain

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

Regulation **(EU) 2017/306,**

item No. MED/2.1. Marpol 73/78 as amended, Annex I Regulation 14, IMO Res.

MEPC.107(49), IMO MEPC.1/Circ. 643

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

This Certificate is valid until **2020-02-26.**

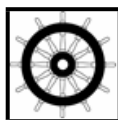
Issued at **Høvik** on **2018-08-31**

DNV GL local station:

Vigo

Approval Engineer:

Thomas Grafton



Notified Body
No.: **0575**

for **DNV GL AS**

Roald Vårheim
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 GL 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.



Product description

The equipment is intended for installation in machinery spaces on-board ships for oily bilge water separation: Maximum 15 ppm at discharge overboard. The 15 ppm bilge separators are designed and tested to meet the requirements of IMO Resolution MEPC.107(49).

The design is made up of a first treatment phase, consisting of a gravity static separator with an inner coalescent filter, followed by a secondary treatment, consisting of an adsorption process.

Model DELTA OWSAN-5/17292 is a modified unit intended for installation outside in an Explosive Environment. Additional heat tracing and thermal insulation is applied to tanks and pipes.

Application/Limitation

Type:	Capacity (m ³ /h):	Max. pump capacity (m ³ /h):
DELTA OWSAN-0.5	0.5	0.6
DELTA OWSAN-1	1.0	1.1
DELTA OWSAN-2.5	2.5	2.8
DELTA OWSAN-5	5.0	5.5
DELTA OWSAN-7.5	7.5	8.3
DELTA OWSAN-10	10.0	11.0
DELTA OWSAN-12.5	12.5	13.8

The following shall be verified during installation:

1. The alarm is always activated whenever clean water is used for cleaning or zeroing purposes;
2. The alarm is always activated whenever no flow of sample through the oil-content meter is detected by the flow sensor;
3. Any alarm will activate the Automatic Stopping Device and lead to recirculation;
4. The overall response time (including the response time of the alarm) between an effluent discharge exceeding 15 ppm oil and to the Automatic Stopping Device preventing the overboard discharge is less than 20 s;
5. By-passing the alarm during normal operation shall by no means be possible;
6. Every access of the alarm (beyond check on instrument drift, repeatability of the instrument reading, and the ability to re-zero the instrument) requires the breaking of a seal.

Limitations:

Installation of the equipment in spaces subject to explosion hazard is not permitted.

A copy of the Operation, installation and maintenance manual shall be on board vessel at all times.

DELTA OWSAN-1, comes in an alternative configuration called DELTA OWSAN-1/15749.

DELTA OWSAN-1/15749 has the same application/limitation as DELTA OWSAN-1.

DELTA OWSAN-5 comes in an alternative configuration called DELTA OWSAN-5/17292.

DELTA OWSAN-5/17292 has the following limitations: -

1. The separator unit may be installed in an Explosive Environment, in Zone 1 (IEC):
 - a. The separator shall be fitted with EX Certified components as listed in the Type Examination Documentation. Components shall be installed in accordance with the Ex rating listed in their IECEx/ATEX certificates, typically IEC Gas Group IIC and Temperature Class T3
2. The separator unit may be installed outside (e.g. on upper deck)
3. The separator must be fitted with an Oil Content Monitor manufactured by Deckma Hamburg GmbH with model number OMD-24 EV
4. The Oil Content Monitor must be fitted inside a pressurized enclosure system supplied by Deckma Hamburg with model number FS850S (certified ATEX Ex P.)
5. The Control Panel (ref. drawing A172920164) must be located in a pressurized cabinet in a Safe Area (remotely from the separator)
6. The design temperature range shall be between -20 to +40 Degrees Celsius



Job Id: **344.1-007131-4**
Certificate No: **MEDB00003NW**

Type Examination documentation

Job Id: **344.1-007131-4**
Certificate No: **MEDB00003NW**

Tests carried out

Marking of product

The marking shall give at least the following information:

- 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
- Revision information, as applicable, for all firmware or software modules installed per hardware unit, necessary to identify the equipment.

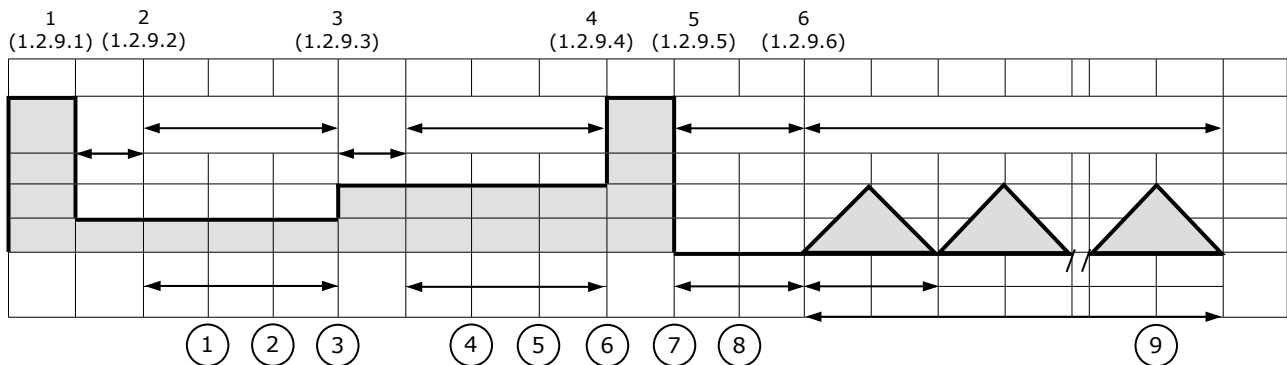
-----This certificate is a revision of previous certificate MEDB00002WU rev.1, which is now withdrawn-----

APPENDIX – OWSAN-1

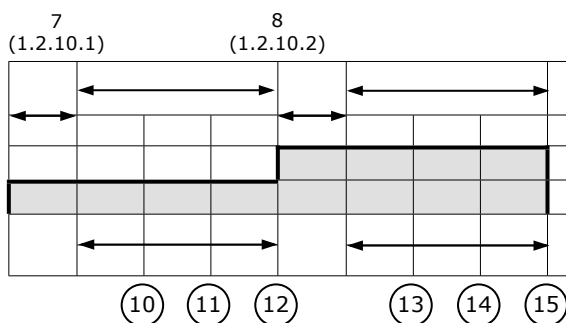
Test data and results of tests conducted on a 15 ppm Bilge Separator in accordance with Part 1 of the Annex to the Guidelines and Specifications contained in IMO Resolution MEPC.107(49)

TEST RESULTS AND TEST PROCEDURES

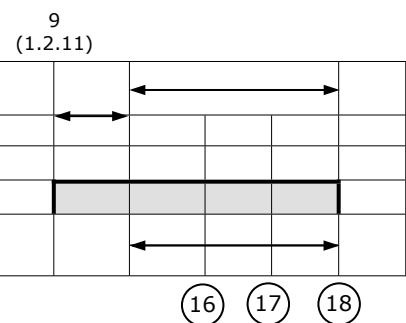
TEST FLUID "A"



TEST FLUID "B"



TEST FLUID "C"

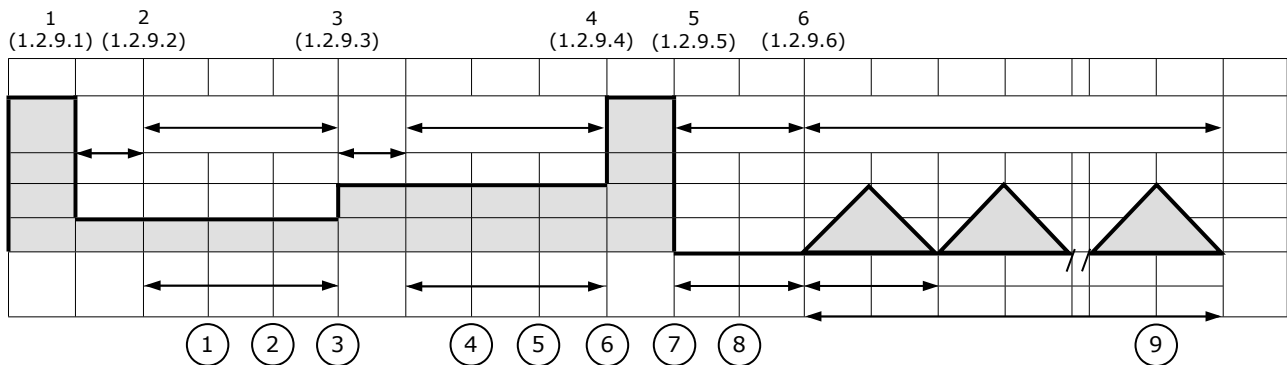


APPENDIX – OWSAN-10

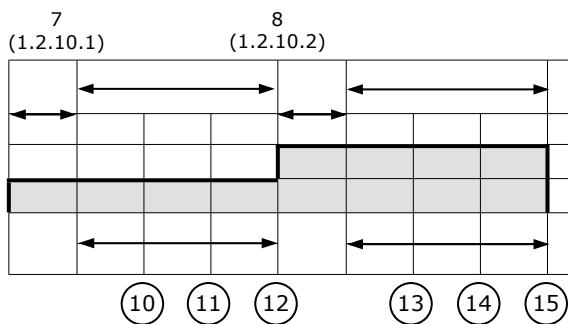
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TEST RESULTS AND TEST PROCEDURES

TEST FLUID "A"



TEST FLUID "B"



TEST FLUID "C"

