



Marine & Offshore

Certificate number: 74292/A1 BV

File number: .

Product code: 1543I

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to
FILTERSAFE LTD
 Tefen - ISRAEL

for the type of product
FILTER FOR BALLAST WATER TREATMENT EQUIPMENT
 FILTER MANTA series

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 07 Apr 2028

For Bureau Veritas Marine & Offshore,

At BV PIRAEUS, on 29 Jun 2023,

Spyros KONTOULIS

This certificate was created electronically and is valid without signature



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

The electronic version is available at: <http://www.veristarm.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=1jzctpymba>

BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

Automatic Filters Type MANTA

1.1 Technical Specifications

Maximum Working temperature	60 °C
Filtration precision	25/40/50 µm
Seam factor	0,6
Operating Media	Sea water
Mounting	Vertical

1.2 Standard Version: MANXXXX In-Line & Vertical

Filter Type	MAN0033	MAN0056	MAN0110	MAN0162
Design pressure (bar)	10	10	10	10
Max. Flow rate (m3/h)	90	150	340	500
Inlet / Outlet Diameter (inches)	4"	6"	8"	10"

1.3 Materials

Part	Material
Internals	SS316L
Seals	NBR
Filter Body	S235JR
Screen	SS 316L/SS 904L

When other choices of materials are used per manufacturer's recommendations, the BV agreement is to be obtained.

2. DOCUMENTS AND DRAWINGS

2.1 - Operation Manual N° DOC-00641 Rev.2 dated 02/2023

2.2 - Calculation sheet N° ENG-CNDO-010 Rev.02 dated 10/2021

2.3 - Backflush BOM N° ENG-DOC-024 Rev.1 dated 20/06/2023

2.4 - Part drawings:

Drawing Number	Rev.	Date
W-0002250	D	17/08/2022
W-0002252	A	26/05/2022
W-0002241	A	26/05/2022
W-0002242	A	26/05/2022
W-0002240	D	17/08/2022
W-0002275	D	14/08/2022
W-0002251	A	11/04/2022
W-0001968	C	08/08/2022
W-0002218	B	11/04/2022
W-0002231	D	17/08/2022
W-0002232	B	09/08/2022

2.5 - General Assembly Drawing

Drawing Number	Rev.	Date
MAN0033-0001	E	08/03/2023
MAN0056-0001	E	08/03/2023
MAN0110-0001	E	08/03/2023
MAN0162-0001	E	08/03/2023

No departure from the above documents shall be made without the prior consent of the Society. The manufacturer must inform the Society of any modification or changes to these documents and drawings.

3. TEST REPORTS

Not applicable.

4. APPLICATION / LIMITATION

4.1 - May be used as automatic pre-filter intended in Ballast Water Treatment Systems.

4.2 - This Certificate applies to bare filters. If required by the Rules, each attached piece of equipment is to be either type-approved or design-appraised on a case-by-case basis.

4.3 - Reviewed as Class 3 pressure vessel according to the Society's Rules Pt C, Ch 1, Sec 3 with a seam factor of 0,6.

4.4 - This approval doesn't cover the functional performance and the good operating in service of the filter.

4.5 - The fitting on board will be made according to the manufacturer's recommendations and instructions.

4.6 - Each filter unit is to be delivered with the relevant documentation for maintenance and operation.

5. PRODUCTION SURVEY REQUIREMENTS

5.1 - The Filters are to be supplied by **FILTERSAFE LTD.** in compliance with the type and the requirements described in this certificate.

5.2 - This type of product is within the category IBV of BUREAU VERITAS Rule Note NR320.

5.3 - Fabrication and welding requirements to comply with the Society's Rules Pt C, Ch 1, Sec 3 [4.10 Class 3 vessels]. Welding procedures and welding consumables are to be approved by the Society.

5.4 - Work's certificate is to be provided for raw materials of shell assembly and head of filter according to the Society's Rules [Class 3 vessels]

5.5 - Each filter is to be hydraulic pressure tested to 1.5 times the maximum working pressure under witnessing of a Society's Surveyor.

5.6 - BUREAU VERITAS Product Certificate is required.

5.7 - For information, **FILTERSAFE LTD.** has declared to Bureau Veritas the following production site:

FILTERSAFE LTD. : Haella Street, Tefen Industrial Zone 2495900, P.O.Box 23, Tefen, ISRAEL

6. MARKING OF PRODUCT

Each filter shall be marked with at least:

- Manufacturer's name or trademark
- Type designation
- Year and serial number
- Design pressure
- Design temperature
- Test pressure and the date of the test
- Society's brand as relevant

7. OTHERS

It is **FILTERSAFE LTD.**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

This certificate supersedes the Type Approval Certificate N° 74292/A0 BV issued by the Society.

*** END OF CERTIFICATE ***