



Marine & Offshore

Certificate number: 39354/B0 BV

File number: ACM 149/2514/01

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

Automatic Filters Type BS

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships

Bureau Veritas Rules for the Classification of Offshore Units

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: 24 Jun 2025

For Bureau Veritas Marine & Offshore,

At BV PIRAEUS, on 24 Jun 2020,

Spyros KONTOULIS



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 SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

Automatic Filters Type BS

1.1 Technical Specifications

Max. Working temperature	50 °C
Filtration precision	40 µm
Seam factor	0,6
Operating Media	Sea water
Mounting	Vertical and horizontal

1.2 Standard Version: BS-XXX H/V

Filter Type	BS025	BS031	BS061	BS100	BS101	BS150	BS151	BS200	BS201
Design pressure (bar)	10	10	10	10	10	10	10	10	10
Max. Flow rate (m³/h)	50	75	150	250	250	375	375	500	500
Inlet/Outlet Diameter (mm)	50-100	50-100	80-150	150-200	150-200	200-250	200-300	200-350	200-300

Filter Type	BS300	BS400	BS603	BS804	BS1004	BS1204
Design pressure (bar)	8	8	7	7	7	7
Max. Flow rate (m³/h)	750	1000	1500	2000	2500	3000
Inlet/Outlet Diameter (mm)	250-350	300-400	400-450	450-500	500-600	500-600

1.3 Turbo Version: BS-XXX H/V-T

Filter Type	BS061	BS100	BS101	BS150	BS151	BS200	BS201
Design pressure (bar)	10	10	10	10	10	10	10
Max. Flow rate (m³/h)	180	275	300	410	450	550	600
Inlet/Outlet Diameter (mm)	80-150	150-200	150-200	200-250	200-300	250-300	200-300

Filter Type	BS300	BS400	BS603	BS804	BS1004	BS1204
Design pressure (bar)	8	8	7	7	7	7
Max. Flow rate (m³/h)	900	1200	1800	2400	3000	3600
Inlet/Outlet Diameter (mm)	250-350	300-400	400-450	450-500	500-600	500-600

1.4 Super Turbo Version: BS-XXX H/V-ST

Filter Type	BS061	BS101	BS151	BS201
Design pressure (bar)	10	10	10	10
Max. Flow rate (m³/h)	200	350	525	700
Inlet/Outlet Diameter (mm)	80-150	150-200	200-300	200-300

Filter Type	BS300	BS400	BS603	BS804	BS1004	BS1204
Design pressure (bar)	8	8	7	7	7	7
Max. Flow rate (m³/h)	1000	1400	2100	2800	3500	4200
Inlet/Outlet Diameter (mm)	250-350	300-400	400-450	450-500	500-600	500-600

1.5 Materials

Housing	Carbon steel S235 JR / SA 106B
Seals	EPDM
Filter Element	Sintered St / St 904 / 316L

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

2. DOCUMENTS AND DRAWINGS

- Operation Manual for Automatic Screen Filter BS025/BS050/BS070/BS100/BS150/BS200 | Updated 24.12.19 | P/N: DOC-00144 | Revision 08
- Operation Manual for Compact Automatic Screen Filter BS031/BS061/BS101/BS151/BS201 | Updated 24.12.2019 | P/N: DOC-00157 | Revision 06
- Operation Manual for Automatic Screen Filter BS300/BS400 | Updated 24.12.19 | P/N: DOC-00142 | Revision 08
- Operation Manual for Multi-screen Filters BS603/BS804/BS1004/BS1204/BS1206/BS1406 | Updated 17.12.19 | P/N: DOC-00141 | Revision 09
- Document dated 15/06/2020 including Filters for Ballast Water treatment Systems with Standard, Turbo & Super Turbo version
- Drawing N° BS400HU-08A SNxxx dated 09/08/2018
- Drawing N° CMSS-000400-A Rev.B dated 26/05/2020 (Cleaning mechanism for Standard version)
- Drawing N° CMST-000400-A Rev.B dated 26/05/2020 (Cleaning mechanism for Turbo version)
- Drawing N° CMXU-000400-A Rev.C dated 26/05/2020 (Cleaning mechanism for Super Turbo version)
- Document 400 Single Screen Filter, Spare Parts 2020 dated 23/03/2020
- Calculation description BS25-400 Rev.01 dated April 2016
- Calculation description BS603-1406 Rev.03 dated July 2017
- Assembly drawings:

Drawing Number	Rev.	Date	Drawing Number	Rev.	Date
BS025HB-03A-FT-SNxxx-TC	A	28/01/2019			
BS031HB-04A-FT-FR-SNXXX	A	13/11/2019	BS031V-04A-BF-FT-SNXXX-EC	B	22/08/2019
BS061HB-08A-FT-SN-xxx	A	13/03/2018	BS061V-08A FT SN-xxx	A	13/03/2018
BS100HB-08A-BF-WA	A	16/05/2016			
BS101HB-08A-FR-FT-SNxx	A	13/11/2019	BS101V-08A FT SNxxx-EC	A	14/06/2018
BS150HB-10A-FT SNxxx	A	27/11/2018			
BS151HB-10A-FT SNxxx	A	28/02/2018	BS151V-10A-FT SNxxx-EC	A	14/06/2018
BS200HB-12A SNxxx-EC	A	06/04/2017			
BS201HB-12A-FT SNxxx-EC	A	14/06/2018	BS201V-12A-FT SNxxx-EC	A	14/06/2018
BS300HB-14A-FT-SN-19514	B	19/06/2019	BS300V-14A FT SNxxx	A	14/04/2019
BS400HB-16A-FT-SNxxx	A	28/02/2018	BS400V-16A-FT-SNxxx	A	28/02/2018
BS603HR-16A FT SNxxx	B	28/02/2018	BS603VR-16A FT SN-XXX	A	08/02/2018
BS804HR-20-DIN-BF-FT-SNxxx	A	12/04/2018	BS804V-20-DIN-FT-SNxxx	A	18/12/2018
BS1004HR-24A-FU-FT-DIN-Exd-SNxxx	A	18/11/2019	BS1004VR-24A-FR-FT-Exd-SNxxx	A	12/11/2019
BS1204HR-24A-FT SNxxx	B	12/09/2018	BS1204V-24A-Exd FT SNxxx-EC	-	02/05/2018

- Filter body drawings:

Filter type	Drawing Number	Rev.	Date
BS025	BS025W-0000101-B	H	11/12/2016
BS031	BS031W-0000518	C	27/12/2016
BS061	BS061W-0000514	D	22/03/2016
BS100	flt_body16-100-08stdin	-	07/2012
BS101	BS101W-0000510	D	26/02/2017
BS150	BS150W-0001411	A	26/07/2018
BS151	BS151W-0000382-B	C	21/02/2016
BS200	BS200W-0000111-B	D	14/03/2016
BS201	BS201W-0000521	D	21/06/2018
BS300	BS300W-0000118-B	H	02/04/2017
BS300V	BS300W-0000468	C	16/10/2017
BS400	BS400W-0000374	E	07/03/2016
BS400V	BS400W-0000466	B	21/02/2019

BS603	flt_body603H-16fLRh-2E-EN	C	11/2014
BS603V	BS603W-0000481	F	19/03/2017
BS804	BS804W-0000504	D	27/09/2018
BS804V	BS804W-0000503	C	12/12/2017
BS1004	BS1004W-0000441	H	06/04/2017
BS1004V	UAW.5P.1000VER-24 BS1004W-0000474	A J	03/2013 22/03/2017
BS1204	flt_body1204-24fLRd-EN	E	02/2015
BS1204V	BS1204W-0001554	A	14/04/2019

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. This type of product is within the category IBV of BUREAU VERITAS Rule Note NR320.
- 5.2 Fabrication and welding requirements to comply with the Society's Rules Pt C, Ch 1, Sec 3 [4.11 Class 3 vessels]. Welding procedures and welding consumables are to be approved by the Society.
- 5.3 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]
- 5.4 Each filter is to be hydraulic pressure tested to 1.5 times the maximum working pressure under witnessing of a Society's Surveyor.
- 5.5 BUREAU VERITAS Product Certificate is required.
- 5.6 For information, **FILTERSAFE LTD.** has declared to Bureau Veritas the following production sites :
 - FILTERSAFE LTD.: Haella Street, Tefen Industrial Zone 2495900, P.O.Box 23, ISRAEL**
 - FILTER SAFE HK LIMITED: Tsing Chau Tsai Shipyard, Lantau Island, HONG KONG, CHINA**

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 No. 39354/A3 BV issued by the Society.

*** END OF CERTIFICATE ***