



Marine & Offshore

Certificate number: 44116/A2 BV

File number: ACM137/6296/1

Product code: 0725I

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
VERSITEC MARINE
 Port Colborne, ON - CANADA

for the type of product
STERN TUBE SEALING GLANDS
 VANGUARD SEALING GLAND

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: 11 Jul 2021

For Bureau Veritas Marine & Offshore,

At BV PORT EVERGLADES CENTRE, on 29 May 2018,
 Flavio Rosas



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.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

VANGUARD SEALING GLAND

Inboard and outboard stern tube seals, intended for ships of all kinds equipped with oil lubricated propeller shafts.

VANGUARD SEALING GLAND AFT is a system made with 3 sealing rings supplied in VERSITON FKM.

Shafts diameters range: from 145 to 1172 mm

Lubrication: oil

Performance maximum oil temperature : +150°C

Shaft liner material: CD4MCu Duplex Steel or Stainless Steel 316

SAFEGUARD option: composed of 4 sealing rings in VERSITON FKM in aft seal.

EQUALIZER option: aft seal is fitted with an air chamber (air type lip seal) fed by an air control unit and pressure controlled by the VANGUARD Equalizer valve. A drain collection unit prevents any leakage of oil into the seawater or any water ingress into the stern tube.

Air control unit pressure in: 5~10 bar

Air control unit flow: max. 30 liters/minute

EQUALIZER option can be delivered with VANGUARD Standard (3 lip seals) and VANGUARD Safeguard (4 lip seals).

2. DOCUMENTS AND DRAWINGS :

As per following drawings which are to be considered as representative of the whole range:

- VANGUARD AFT SEAL ASSEMBLY	VGA-STD - revision B
- VANGUARD AFT SEAL TABLE OF DIM.	VGA-DWG- revision A
- VANGUARD AFT SAFEGUARD SEAL ASSEMBLY	VGASG-DWG - revision A
- VANGUARD AFT SAFEGUARD SEAL TABLE OF DIM.	VGASG-DIM - revision A
- List EAL Oils compatible with VERSITON FKM	Man-EOIL - revision 28/03/2016
- MANUAL	Man VGA - revision 08/05/16
- List Standard Oils compatible with VERSITON FKM	Man-SOIL - revision 13/01/16
- VANGUARD SAFEGUARD PIPING	VGASG-P1 - revision A
- EQUALIZER SYSTEM Manual	Man-VGEQ - revision 04/25/18-001

3. TEST REPORTS :

As per Cambridge laboratory Report (712165-15 - 16/11/2015).

4. APPLICATION / LIMITATION :

4.1 - Other materials and/or components: Bolts of outside seal are made AISI 316.

4.2 - Application / Limitation of use:

Seals designed for use with compatible lubricating oils.

Maximum Linear Speed of Shaft : from 10m/s @ 2bar oil pressure to 7m/s @ 12bar

4.3 - Application / Limitation of use for EQUALIZER option:

Type of oil: As per manufacturer's approved list in EQ Manual rev.04/25/18-001

4.4 - On board installation & Maintenance and operational requirements should be as per the manufacturer's instructions.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The **VANGUARD SEALING GLAND** types of product Stern tube Sealing Gland are to be supplied by **VERSITEC MARINE** 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 - BV product certificate is required.

5.4 - Inspection at workshops by the Society Surveyors as per NR 266 - Section G40.

5.5 - **VERSITEC MARINE** has declared to Bureau Veritas the following production site(s):

**4-4 Stonebridge Dr.
L3K 5V5 Port Colborne, ON
CANADA**

6. MARKING OF PRODUCT :

- Serial number,
- Bureau Veritas Marks,
- Size.

7. OTHERS :

7.1 - It is **VERSITEC MARINE**'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.

7.2 - This Certificate supersedes the Type Approval Certificate n° 44116/A1 BV issued on 28/09/2016 by the Society.

***** END OF CERTIFICATE *****