

Approval in Principle

Level 1

THORDON BEARINGS INC.
Thordon T-BOSS

AIP/THORDON/T-BOSS
May 26

SHAPING A BETTER
**MARITIME
WORLD**





APPROVAL IN PRINCIPLE

LEVEL 1

AIP/THORDON/T-BOSS May 26

At the request of:

THORDON BEARINGS INC.

BUREAU VERITAS MARINE & OFFSHORE (hereinafter referred to as the "Society"), acting within the scope of the Bureau Veritas Marine & Offshore General Conditions (*), declares hereunder that the design of:

THORDON T-BOSS

is **Approved in Principle**, with respect of the aim of the classification as defined in Part A, Chapter I of the latest edition of our Rules and in the conditions stated in Annex 1. The present Approval in Principle (hereinafter referred as "AiP") is referring to the general options chosen by the designer, as described in the documents listed in Annex 2.

The validity of this AiP may have to be reconsidered, in case of any major modification likely to invalidate the principles shown on the documents listed in Annex 2. This AiP would become null and void should **BUREAU VERITAS MARINE & OFFSHORE** not be kept informed of such modifications.

This AiP is an opinion given by the Society at its sole discretion on a design or any technical element that would 'in principle' be acceptable to the Society. This shall not presume on the final issuance of any Certificate or on its content in the event of the actual issuance of a Certificate. This AiP shall only be an estimate given by the Society which shall not be held liable for it.

Issued at Paris La Défense, on May 26

Jean-Baptiste ORTOLI

Technical Lead – Propulsion
Head Office

Patrick JAN

Environment, Innovative Engine and Alternative fuels
Head Office

(*): see overleaf

BUREAU VERITAS MARINE & OFFSHORE

GENERAL CONDITIONS (March 2026)

1. INDEPENDENCE OF THE SOCIETY AND APPLICABLE TERMS

1.1 The Society shall remain at all times an independent contractor and neither the Society nor any of its officers, employees, servants, agents or subcontractors shall be or act as an employee, servant or agent of any other party hereto in the performance of the Services.

1.2 The operations of the Society in providing its Services are exclusively conducted by way of random inspections and do not, in any circumstances, involve monitoring or exhaustive verification.

1.3 The Society acts as a services provider. This cannot be construed as an obligation bearing on the Society to obtain a result or as a warranty. The Society is not and may not be considered as an underwriter, broker in Unit's sale or chartering, expert in Unit's valuation, consulting engineer, controller, naval architect, designer, manufacturer, shipbuilder, repair or conversion yard, charterer or shipowner; none of the above listed being relieved from any of their expressed or implied obligations as a result of the interventions of the Society.

1.4 Only the Society is qualified to apply and interpret its Rules.

1.5 The Client acknowledges the latest versions of the Conditions and of the applicable Rules applying to the Services' performance.

1.6 Unless an express written agreement is made between the Parties on the applicable Rules, the applicable Rules shall be the Rules applicable at the time of entering into the relevant contract for the performance of the Services.

1.7 The Services' performance is solely based on the Conditions. No other terms shall apply whether express or implied.

2. DEFINITIONS

2.1 "Certificate(s)" means classification, statutory or Marine Equipment certificates, attestations and reports following the Society's intervention.

2.2 "Certification" means the activity of certification in application of national and international regulations or standards ("Applicable Referential"), in particular by delegation from different governments that can result in the issuance of a Certificate.

2.3 "Classification" means the classification of a Unit that can result or not in the issuance of a classification Certificate with reference to the Rules. Classification (or Certification as defined in clause 2.2) is an appraisal given by the Society to the Client, at a certain date, following surveys by its surveyors on the level of compliance of the Unit to the Society's Rules and/or to the Applicable Referential for the Services provided. They cannot be construed as an implied or express warranty of safety, fitness for the purpose, seaworthiness of the Unit or of its value for sale, insurance or chartering.

2.4 "Client" means the Party, its affiliates, agents, subcontractors, consultants, employees, and/or its representative requesting the Services.

2.5 "Conditions" means the terms and conditions set out in the present document.

2.6 "Industry Practice" means international maritime and/or offshore industry practices.

2.7 "Intellectual Property" means all patents, rights to inventions, utility models, copyright and related rights, trade marks, logos, service marks, trade dress, business and domain names, rights in trade dress or get-up, rights in goodwill or to sue for passing off, unfair competition rights, rights in designs, rights in computer software, database rights, topography rights, moral rights, rights in confidential information (including know-how and trade secrets), methods and protocols for Services, and any other intellectual property rights, in each case whether capable of registration, registered or unregistered and including all applications for and renewals, reversions or extensions of such rights, and all similar or equivalent rights or forms of protection in any part of the world.

2.8 "Marine Equipment" means equipment, material or product placed of to be placed on board a Unit falling within the scope of Certification or Classification and by extension corresponding manufacturer recognition Certification.

2.9 "Parties" means the Society and Client together.

2.10 "Party" means the Society or the Client.

2.11 "Register" means the public electronic register of ships updated regularly by the Society.

2.12 "Rules" means the Society's classification rules (available online at <https://marineoffshore.bureauveritas.com/rules-guidelines>), guidance notes and other documents. The Society's Rules take into account at the date of their preparation the state of currently available and proven technical minimum requirements but are not a standard or a code of construction neither a guide for maintenance, a safety handbook or a guide of professional practices, all of which are assumed to be known in detail and carefully followed at all times by the Client.

2.13 "Services" means the services set out in clauses 2.2 and 2.3 but also other services related to Classification and Certification such as, but not limited to: ship and company safety management certification, ship and port security certification, maritime labour certification, Marine Equipment certification, training activities, all activities and duties incidental thereto such as documentation on any supporting means, software, instrumentation, measurements, tests and trials on board. The Services are carried out by the Society according to the Rules and/or the Applicable Referential and to the Bureau Veritas' Code of Ethics. The Society shall perform the Services according to the applicable national and international standards and Industry Practice and always on the assumption that the Client is aware of such standards and Industry Practice.

2.14 "Society" means the classification society 'Bureau Veritas Marine & Offshore SAS', a company organized and existing under the laws of France, registered in Nanterre under number 821 131 844, or any other legal entity of Bureau Veritas Group as may be specified in the relevant contract, and whose main activities are Classification and Certification of ships or offshore units.

2.15 "Taxes" means any and all taxes imposed by any taxing authority including, without limitation, income tax on nationals and on foreigners, all corporate taxes, imports, duties, levies, stamp duties, charges and other assessments and payments in the nature of taxes, wherever payable, including withholding taxes and VAT.

2.16 "Unit" means any ship or vessel or offshore unit or structure of any type or part of it or system whether linked to shore, river bed or sea bed or not, whether operated or located at sea or in inland waters or partly on land, including submarines, hovercrafts, drilling rigs, offshore installations of any type and of any purpose, their related and ancillary equipment, subsea or not, such as well head and pipelines, mooring legs

and mooring points or otherwise as decided by the Society.

3. SCOPE AND PERFORMANCE

3.1 Subject to the Services requested and always by reference to the Rules, and/or to the Applicable Referential, the Society shall:

- ☐ review the construction arrangements of the Unit as shown on the documents provided by the Client;
- ☐ conduct the Unit surveys at the place of the Unit construction;
- ☐ class and/or certify the Unit and enter the Unit's class in the Society's Register;
- ☐ survey the Unit periodically in service to note whether the requirements for the maintenance of class are met. The Client shall inform the Society without delay of any circumstances which may cause any changes on the conducted surveys or Services;
- ☐ perform design assessments, surveys and audits related to Marine Equipment;
- ☐ witness tests at manufacturer's premises.

3.2 The Society will not:

- ☐ declare the acceptance or commissioning of a Unit, nor its construction in conformity with its design, such activities remaining under the exclusive responsibility of the Unit's owner or builder;
- ☐ engage in any work relating to the design, construction, production or repair checks, neither in the operation of the Unit or the Unit's trade, neither in any advisory services, and cannot be held liable on those accounts;
- ☐ be liable for any delay or costs, charges or losses sustained or incurred by the Client in the event where the Society's performance of the Services is prevented or delayed directly or indirectly by any act, omission, missing information, default or negligence of the Client.

4. RESERVATION CLAUSE

4.1 The Client shall always: (i) maintain the Unit in good condition after surveys; (ii) present the Unit for surveys; (iii) inform the Society in due time of any circumstances that may affect the given appraisal of the Unit or its Marine Equipment or cause to modify the scope of the Services; and (iv) promptly consent to the execution of unscheduled surveys and/or additional audits, at Client's costs, as the Society may require because of unsatisfactory Port State Control or Flag State Administration inspection records.

4.2 Certificates are only valid if issued by the Society.

4.3 The Society has entire control over the Certificates issued and may at any time withdraw a Certificate at its entire discretion including, but not limited to, in the following situations: where the Client fails to comply in due time with instructions of the Society or where the Client fails to pay in accordance with clause 6.2 hereunder.

4.4 The Society may at times and at its sole discretion give an opinion on a design or any technical element that would 'in principle' be acceptable to the Society. This opinion shall not presume on the final issuance of any Certificate nor on its content in the event of the actual issuance of a Certificate. This opinion shall only be an appraisal made by the Society which shall not be held liable for it.

4.5 The Client shall provide sufficient, timely, accurate, complete and up-to-date information and documents to the Society to enable the Society to perform the Services.

5. ACCESS AND SAFETY

5.1 The Client shall give to the Society all access and information necessary for the efficient performance of the requested Services. The Client shall be the sole responsible for the conditions of presentation of the Unit for tests, trials and surveys and the conditions under which tests and trials are carried out. Any information, drawing, etc. required for the performance of the Services must be made available in due time.

5.2 The Client shall notify the Society of any relevant safety issue and shall take all necessary safety-related measures to ensure a safe work environment (including safe transportation to site and accompaniment on site) for the Society or any of its officers, employees, servants, agents or subcontractors and shall comply with all applicable safety regulations.

5.3 For surveys at anchorage, safe boarding conditions shall be ensured by the Client such as, but not limited to: preventing work in adverse weather conditions or during hours of darkness, ensuring maintenance of proper pilot ladder and accommodation ladder, ensuring supply of proper transfer boat (of a suitable construction, properly equipped with adequate communication and navigational aids and life-saving appliances, with sufficient and trained crew (at least one crewmember in addition to the helmsman to assist the transfer of personnel and aid potential rescue operation)), in case of use of a method other than pilot ladder, such as transfer by crane or basket ensuring sufficient safety precautions are made available, and in general avoiding hours of darkness for such operations, and if not possible to do so ensuring maintenance of appropriate search lighting system for the operation.

6. PAYMENT OF INVOICES

6.1 The provision of the Services by the Society, whether complete or not, involves, for the part carried out, the payment of fees thirty (30) days upon issuance of the invoice.

6.2 The fees are exclusive of all applicable Taxes. In the event that Taxes are applicable in respect of the Services, Taxes shall be payable by the Client in addition to the fees. For the avoidance of doubt, in the event tax is required by law to be withheld from the fees, the Society may gross up the invoice sufficiently such that after the deduction of withholding tax the original fees is received by the Society. In the event that any withholding taxes are paid by the Client, the Client shall provide to the Society a valid withholding tax receipt in the Society's name within thirty (30) days following the payment. The Society shall provide to the Client within thirty (30) days following request from the Client reasonable documentation, such as certificates of residence, required to enable the Client to apply reduced rates of withholding tax given by a double tax treaty, if applicable.

6.3 Without prejudice to any other rights hereunder, in case of Client's payment default, the Society shall be entitled to charge, in addition to the amount not properly paid, (i) interest equal to the ECB reference rate plus three per-cent (3%) per month late as of due date or at the maximum rate allowed by law if said maximum is less, and (ii) the recovery costs. The Society shall also have the right to withhold Certificates and other documents and/or to suspend or revoke the validity of Certificates.

6.4 In case of dispute on the invoice amount, the undisputed portion of the invoice shall be paid and an explanation on the dispute shall accompany payment so that action can be taken to resolve the dispute.

6.5 Unless otherwise agreed in writing by the Society, both the party on whose behalf the Services are requested and its representative requesting the Services, as Client,

are jointly and severally liable to pay to the Society any sum due in respect of the Services. In addition, where any Unit is surveyed in the names or on behalf of more persons than one, such persons shall be jointly and severally liable to pay all fees, expenses and other sums due to the Society in respect of such Unit. The receipt by the Society of any payment made by any such person shall discharge the others up to the amount received by the Society.

6.6 The Society shall be entitled to require a payment on account payable upon receipt of the corresponding invoice. In this case, The Society's duty to provide the Services will not arise before payment is received in the Society's account.

6.7 The Society shall have a lien on a Unit for all sums due in respect of that Unit, notwithstanding that the class of the Unit may have ceased or been terminated or cancelled. Such lien shall extend to any and all other Units (or formerly classed units) which are part of the same fleet as that Unit and shall be in addition to, and in no way construed as a waiver or amendment of, any other contractual or maritime lien which the Society may expressly or impliedly possess in respect of such Unit or Units.

7. LIABILITY

7.1 The Society bears no liability for consequential loss. For the purpose of this clause consequential loss shall include, without limitation:

- ☐ Indirect or consequential loss;
- ☐ Any loss and/or deferral of production, loss of product, loss of use, loss of bargain, loss of revenue, loss of profit or anticipated profit, loss of business and business interruption, in each case whether direct or indirect.

The Client shall defend, release, save, indemnify, defend and hold harmless the Society from the Client's own consequential loss regardless of cause.

7.2 Except in case of wilful misconduct of the Society, death or bodily injury caused by the Society's negligence and any other liability that could not be, by law, limited, the Society's maximum liability towards the Client is limited to one hundred and fifty percent (150%) of the price paid by the Client to the Society for the Services having caused the damage. This limit applies to any liability of whatsoever nature and howsoever arising, including fault by the Society, breach of contract, breach of warranty, tort, strict liability, breach of statute.

7.3 All claims shall be presented to the Society in writing within three (3) months of the completion of Services' performance or (if later) the date when the events which are relied on were first discovered by the Client. Any claim not so presented as defined above shall be deemed waived and absolutely time barred.

8. INDEMNITY CLAUSE

8.1 The Client shall defend, release, save, indemnify and hold harmless the Society from and against any and all claims, demands, lawsuits or actions for damages, including legal fees, for harm or loss to persons and/or property tangible, intangible or otherwise which may be brought against the Society, incidental to, arising out of or in connection with the performance of the Services (including for damages arising out of or in connection with opinions delivered according to clause 4.4 above) except for those claims caused solely and completely by the gross negligence of the Society, its officers, employees, servants, agents or subcontractors.

9. TERMINATION

9.1 The Parties shall have the right to terminate the Services (and the relevant contract) for convenience after giving the other Party thirty (30) days' written notice, and without prejudice to clause 6 above.

9.2 The Services shall be automatically and immediately terminated in the event the Client can no longer establish any form of interest in the Unit (e.g. sale, scrapping...).

9.3 The Classification granted to the concerned Unit and the previously issued Certificates shall remain valid until the date of effect of the termination notice issued, or immediately in the event of termination under clause 9.2, subject to compliance with clause 4.1 and 6 above.

9.4 In the event where, in the reasonable opinion of the Society, the Client is in breach or is suspected to be in breach of clause 16 of the Conditions, the Society shall have the right to terminate the Services (and the relevant contracts associated) with immediate effect.

9.5 In addition, whenever it is involved – at the request of the Client or a third party – in a dispute, of any kind, where its professional liability is or could be challenged, the Society shall have the right to terminate the Services (and the relevant contract), at any time, in accordance with clause 9.1.

10. FORCE MAJEURE

10.1 Neither Party shall be responsible or liable for any failure to fulfil any term or provision of the Conditions if and to the extent that fulfilment has been delayed or temporarily prevented by a force majeure occurrence without the fault or negligence of the Party affected and which, by the exercise of reasonable diligence, the said Party is unable to provide against.

10.2 For the purpose of this clause, force majeure shall mean any circumstance not being within a Party's reasonable control including, but not limited to: acts of God, natural disasters, epidemics or pandemics, wars, terrorist attacks, riots, sabotages, impositions of sanctions, embargoes, nuclear, chemical or biological contaminations, laws or action taken by a government or public authority, quotas or prohibition, expropriations, destructions of the worksite, explosions, fires, accidents, any labour or trade disputes, strikes or lockouts.

11. CONFIDENTIALITY

11.1 The documents and data provided to or prepared by the Society in performing the Services, and the information made available to the Society, will be treated as confidential except where the information:

- ☐ is properly and lawfully in the possession of the Society;
- ☐ is already in possession of the public or has entered the public domain, other than through a breach of this obligation;
- ☐ is acquired or received independently from a third party that has the right to disseminate such information;
- ☐ is required to be disclosed under applicable law or by a governmental order, decree, regulation or rule or by a stock exchange authority (provided that the receiving Party shall make all reasonable efforts to give prompt written notice to the disclosing Party prior to such disclosure).

11.2 The Parties shall use the confidential information exclusively within the framework of their activity underlying these Conditions.

11.3 Confidential information shall only be provided to third parties with the prior written consent of the other Party. However, such prior consent shall not be required when the Society provides the confidential information to a subsidiary.

11.4 Without prejudice to sub-clause 11.1, the Society shall have the right to disclose the confidential information if required to do so under regulations of the International Association of Classifications Societies (IACS) or any statutory obligations.

11.5 The Client shall not without written approval from the Society make public announcement or press release, press conference, presentation or any public disclosure mentioning the Society, its trademark, trade name or logo, its employees. The Client acknowledges and agrees that damages alone might not be an adequate remedy for any breach of this clause and the Society shall be entitled to seek the remedies of injunction, specific performance and other equitable relief for any

threatened or actual breach and no proof of special damage shall be necessary for the enforcement of the present clause and the undertakings under it.

12. INTELLECTUAL PROPERTY

12.1 Each Party exclusively owns all rights to its Intellectual Property created before or after the commencement date of the Conditions and whether or not associated with any contract between the Parties.

12.2 The Intellectual Property developed by the Society for the performance of the Services including, but not limited to drawings, calculations, and reports shall remain the exclusive property of the Society.

13. ASSIGNMENT

13.1 The contract resulting from these Conditions cannot be assigned or transferred by any means by a Party to any third party without the prior written consent of the other Party.

13.2 The Society shall however have the right to assign or transfer by any means the said contract to a subsidiary of the Bureau Veritas Group.

14. SEVERABILITY

14.1 Invalidity of one or more provisions does not affect the remaining provisions.

14.2 Definitions herein take precedence over other definitions which may appear in other documents issued by the Society.

14.3 In case of doubt as to the interpretation of the Conditions, the English text shall prevail.

15. GOVERNING LAW AND DISPUTE RESOLUTION

15.1 These Conditions shall be construed in accordance with and governed by the laws of England and Wales.

15.2 Any dispute shall be finally settled under the Rules of Arbitration of the Maritime Arbitration Chamber of Paris ("CAMP"), which rules are deemed to be incorporated by reference into this clause. The number of arbitrators shall be three (3). The seat of arbitration shall be Paris (France). The Parties agree to keep the arbitration proceedings confidential.

15.3 Notwithstanding clause 15.2, disputes relating to the payment of the Society's invoices may be submitted by the Society to the *Tribunal de Commerce de Nanterre*, France, or to any other competent local Court, at the Society's entire discretion.

16. ETHICS

16.1 Each Party shall conduct all activities in compliance with all laws, statutes, rules, export control, economic and trade sanctions (including but not limited to US, UK and EU sanctions) and regulations applicable to such Party including but not limited to: child labour, forced labour, collective bargaining, discrimination, abuse, working hours and minimum wages, anti-bribery, anti-corruption, antitrust, copyright and trademark protection, personal data protection (<https://personaldataprotection.bureauveritas.com/privacypolicy>). Each of the Parties warrants that neither it, nor its affiliates, has made or will make, with respect to the matters provided for hereunder, any offer, payment, gift or authorization of the payment of any money directly or indirectly, to or for the use or benefit of any official or employee of the government, political party, official, or candidate.

16.2 In addition, the Client shall act consistently with the Bureau Veritas' Code of Ethics and, when applicable, Business Partner Code of Conduct both available at <https://group.bureauveritas.com/group/corporate-social-responsibility/operationalexcellence>.

ANNEX 1

Conditions of Approval in Principle

Introduction

This Statement covers the design reviews by Bureau Veritas Marine & Offshore SAS for the approval in principle of a Thordon T-BOSS (Thordon Blue Ocean Open Stern Space).

The documents listed in ANNEX 2, issued by Thordon Bearings Inc. have been reviewed within the scope of an Approval in Principle, in accordance with Bureau Veritas procedures.

Main Characteristics:

T-BOSS is a design that replaces a vessel's stern tube cooling tank with a dry irregularly shaped chamber (dry aft space) that allows for inspection and maintenance of a seawater-lubricated single aft bearing and seal from the inside of the ship.

Its main differences with a classic stern tube:

- No stern tube and
- No forward stern tube bearing
- Shorter shaft line
- Aftmost bearing is a COMPAC seawater-lubricated bearing with tapered key design
- No aft seal
- Lubricant is seawater
- Creation of stern inspection chamber

Scope of the Approval in Principle

The scope is limited to the mechanical components of the propulsion line and stern tube. It excludes the ship's structure part of this application.

Applicable Rules and Regulations

This Approval in Principle has been carried out considering the following Rules or Regulations:

- NR467 – Rules for the classification of steel ships.
- NR266 – Requirements for survey of materials and equipment for the classification of ships and offshore units
- NR216 – Rules on materials and welding for the classification of marine units.

Comments

The detailed comments are given in Annex 3.

Conclusions

Further to this review, it is confirmed that the outline project does not present any contradiction with the applicable Rules and Regulations.



Some technical concerns have however been addressed within the Approval in Principle phase. These technical points are listed in ANNEX 3.

ANNEX 2

List of submitted documents

The following documents have been reviewed for compliance with the applicable Rules within the scope of this Approval in Principle:

#	Drawing No.	Rev.	Drawing Title
1	Request letter	2026/02/02	AiP – Request letter
2	TG-42889	P1	Thordon Compac aft stern tube bearing
3	TG-41378	P1	Water quality package flow arrangement redundant
4	BCMv2	09/20	Thordon bearing condition monitoring system version 2
5	BCM-W	11/24	Thordon bearing condition monitoring. Wireless version
6	MBIM	12/24/NA	Marine bearing – Installation manual
8	T-BOSS	07/25	T-BOSS – Thordon – Blue Ocean Open Stern Space – brochure
9	-	-	Asbestos-free confirmation letter

ANNEX 3

Technical comments

Further to Bureau Veritas review within the scope of this Approval in Principle, some points have been identified and addressed.

These topics shall be considered for future development stages of the concept and in particular:

- Watertightness of space will be reviewed on a case-by-case basis.

This annex gives the details of Bureau Veritas comments further to the review of the documentation listed in Annex 2.

Machinery - Comments on drawings

Drawing number TG-42889 Rev P1

Thordon Compac aft stern tube bearing assembly

ID : LPO2704273

To be re-submitted

Status : Cleared

Watertight space : (J. ORTOLI (BV PARIS) on 18 May 2026)

Please detail the T-Boss specifics to fulfill watertightness requirements of SOLAS Part 1 Chapter II-1 Regulation 12 "Peak and Machinery Space Bulkheads, Shaft Tunnels, etc. " and particularly §11

[QUOTE]

11 In all cases stern tubes shall be enclosed in watertight spaces of moderate volume. In passenger ships the stern gland shall be situated in a watertight shaft tunnel or other watertight space separate from the stern tube compartment and of such volume that, if flooded by leakage through the stern gland, the bulkhead deck will not be immersed. In cargo ships other measures to minimize the danger of water penetrating into the ship in case of damage to stern tube arrangements may be taken at the discretion of the Administration.

[UNQUOTE]

Manufacturer : (THORDON BEARINGS INC. on 18 May 2026)

The Bureau Veritas Rules specifically reference a conventional arrangement consisting of a stern tube boss and a forward ring connected by a tube.

The sterntubeless design removes the central tube and introduces a dry aft space (chamber), which is a watertight compartment. The structure surrounding this chamber is watertight and is formed either by the hull plating or by separation bulkheads between the chamber and the aft peak.

At the forward end, the chamber is bounded by the bulkhead separating it from the engine room space.

This bulkhead is fitted with a watertight bulkhead seal and a watertight access cover to the chamber.

The chamber is also equipped with a bilge drain box to allow for the collection and removal of any potential propeller shaft seal leakages and possible condensation inside the chamber.

A typical arrangement is shown under Appendixes 2, 3 and 4, refer to the documents we submitted to Bureau Veritas.

Conclusion : (J. ORTOLI on 21 May 2026)

Thanks for your answer. This item will be part of case-by-case review.