



## Confirmation of Product Type Approval

**Company Name:** DURAMAX MARINE LLC

**Address:** 17990 Great Lakes Parkway Hiram OH 44234 United States

**Product:** Shaft Seal System

**Model(s):** DryMax® Shaft Seal & Rudder Seal System

**Endorsements:**

<b>Certificate Type</b>	<b>Certificate Number</b>	<b>Issue Date</b>	<b>Expiry Date</b>
Product Design Assessment (PDA)	22-2265756-PDA	06-JUL-2022	05-JUL-2027
Manufacturing Assessment (MA)	21-4979970	13-OCT-2021	25-OCT-2026
Product Quality Assurance (PQA)	NA	NA	NA

### **Tier**

3 - Type Approved, unit certification not required

### **Intended Service**

Marine & Offshore Application

### **Description**

Water lubricated seal designed for sealing stern tube, rudder and fin stabilizer applications, consisting of DryMax bronze housing, inflatable air seal ring assembly, primary DryMax Seal ring assembly, spare DryMax seal ring assembly and shaft earthing assembly.

### **Ratings**

Shaft Size Range: between 64mm (2.5") to 927mm (36.49")

Max. Allowable Pressure: 22 MPa (32psi)

More details as per attachment

### **Service Restrictions**

Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

### **Comments**

1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

2. Shaft bearings and associated piping does not cover by this PDA. The bearings and piping are subject to ABS approval on case by case.
3. Installation and works are to be in accordance with Manufacturer's procedures and to the satisfaction of the attending Surveyor at Shipyard or on-board.
4. Stern tube seals are to be fitted in accordance with the manufacturer's recommended procedures.
5. Each particular installation of the associated lubricating oil system shall be subject of vessel related individual design by manufacturer.

**Notes, Drawings and Documentation**

Drawing No. Correspondence, PDA Application 17-HS1637366-PDA, Revision: -, Pages: -

Dwg. No. 0300 Rudder Seal, Rev.-, seal for 3.00" Shaft

Dwg. No. 1000 Rudder Seal, Rev.-, Seal for 10.00" Shaft

Dwg. No. 1800 Rudder Seal, Rev.-, Seal for 18.00" Shaft

Dwg. No. 2400 Rudder Seal, Rev.-, Seal for 24.00" Shaft

Dwg. No. 3600 Rudder Seal, Rev.-, Seal for 36.00" Shaft

Dwg. No. 84410300013, Rev. A, DryMax Seal Assembly Model 300 (Updated)

Dwg. No. 84411000013, Rev. D, DryMax Seal Assembly Model 1000 (Updated)

Dwg. No. 84413600013, Rev. A, DryMax Seal Assembly Model 3600

Dwg. No.-, Rev.-, DryMax Technical Manual

Dwg. No.-, Rev.-, DryMax Seal Test Report 19 Jun 2017

Dwg. No.F36819BS, Rev.-,Laboratory Test DryMax Seal Ring and Air Seal Test Report 19 Jun 2017

**Term of Validity**

This Product Design Assessment (PDA) Certificate remains valid until 05/Jul/2027 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

**ABS Rules**

2022 ABS Rules for Conditions of Classification, Part 1: 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following;

2022 ABS Rules for Building and Classing Marine Vessel Rules : 4-3-2/1.5.1, 4-3-2/5.13, 4-3-9/5.5

**International Standards**

NA

**EU-MED Standards**

NA

**National Standards**

NA

**Government Standards**

NA

**Other Standards**

NA



A handwritten signature in blue ink, appearing to read 'James J. White'.

Corporate ABS Programs  
American Bureau of Shipping  
Print Date and Time: 31-Aug-2023 6:49

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.