



## *Confirmation of Product Type Approval*

Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product. This certificate reflects the information on the product in the ABS Records as of the date and time the certificate is printed.

Pursuant to the Rules of the American Bureau of Shipping (ABS), the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) with expiration date of 08-MAR-2022. The continued validity of the Manufacturing Assessment is dependent on completion of satisfactory audits as required by the ABS Rules.

And; a Product Design Assessment (PDA) valid until subject to continued compliance with the Rules or standards used in the evaluation of the product.

The above entitle the product to be called Product Type Approved.

The Product Design Assessment is valid for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

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.

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.

**Product Name:** Shaft Seal System  
**Model Name(s):** DXU Type

**Presented to:**  
DURAMAX MARINE LLC  
17990 Great Lakes Parkway  
OH 44234  
United States

**Intended Service:** Marine & Offshore Application - Pleasure and Commercial Vessels of Varying Propeller Shaft Size and Length

**Description:** Duramax® Mechanical Propeller Shaft Inboard Seal System that replaces the Stuffing Box. for water lubricated propulsion shafting. Design includes a mechanical face type seal. Available in 4(four) mounting methods: a) BRZ System-for Steel & FRP Hulls, b) FRP System-for Fiber Glass Hulls, c) Weld on System for Aluminum Hulls, d) Clamp Type-for Steel & FRP Hulls.

**Tier:** 3

**Ratings:** Inboard Shaft Seal for Propeller Shaft Diameter Sizes: ¾" through 6¾" (DXU-0750 to DXU-6750); See attached "pdf" Drawing List dated 6 December 2016;

**Service Restrictions:** Unit Certification is not required for this product. If the manufacturer or purchaser's 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:** a) Units should be visually inspected by the Surveyor during Annual Survey, with particular attention being given to the Shaft Clamp, Rotating Seal Ring and Stationary Friction Ring. These are to be replaced if deemed necessary. b) Shaft Seals including attachments to the hull are to be fitted in accordance with the Manufacturer's Recommended Procedures. as described in the Installation

Manual. c) With regard to U.S.Coast Guard requirements, in accordance with 46 CFR 58.05-1(a), if the Design and Installation of the Subject Equipment complies with the ABS Rules, the same will be satisfactory to the U.S.Coast Guard. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

**Notes / Documentation:**

Document No. 3, Duramax Mechanical Face Seal System brochure ENG r042415 (S), Revision: -, Pages: 16; Document No. 4, DXU Shaft Seal System - Drawing List, Revision: -, Pages: 2; Document No. 5, 20161206 DXU Revised Drawings, Pages: 58; Document No. 6, Additional Drawings, Pages: 4; For complete list of drawings and documentation, please see attached "pdf" Drawing List dated 6 December 2016.

**Term of Validity:**

This Product Design Assessment (PDA) Certificate 17-HS1612887-PDA, dated 09/Mar/2017 remains valid until 08/Mar/2022 or until the Rules or specifications used in the assessment are revised (whichever occurs first). This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product. Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA. Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

**ABS Rules:**

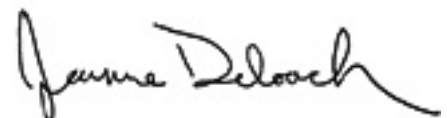
2017 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-3-2/5.15.1; 2017 Under 90 Meters Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-3-1/13.1, 4-4-1/9.19; 2017 Steel Vessels Rules for Service on Rivers and Intracoastal Waterways 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-2-1/9 & 4-2-1/11.1; 2017 High Speed Craft 1-1-4/11.9, 1-1-A2, 1-1-A3, 4-3-1/13.1; 2017 High Speed Naval Craft Rules, 1-1-4/11.9, 1-1-A2, 1-1-A3, 4-3-2/5.13.1; 2017 Rules for Materials and Welding 2-5 and 2-6.

- National Standards:**
- International Standards:**
- Government Authority:**

USCG # 46 CFR 58.05-1(a) and 56.60-25(c);

- EUMED:**
- Others:**

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	17-HS1612887-PDA	10-MAR-2017	08-MAR-2022



ABS Programs

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 was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS. 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.