



## ***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 25/OCT/2016. 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 11/JUN/2019 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: Bearing, Water Lubricated Bearings**

**Model Name(s): Brass Sleeve Type, Non-Metallic Sleeve Type and Brass Flanged Type Rubber Bearings, Water Lubricated**

**Presented to:**

DURAMAX MARINE LLC  
17990 Great Lakes Parkway  
United States

**Intended Service:**

Marine Applications - Support of Propeller and Propeller Shaft, to be fitted in Vessel's Strut and Stern Tube.

**Description:**

Rubber-lined Naval Brass Sleeve/Non-Metallic Sleeve/ Naval Brass Flanged, Water Lubricated Bearings based on Military Specification MIL-DTL-17901C (SH), Bearing Components, Bonded Synthetic Rubber, Water Lubricated, Class II, Cylindrical Bearings, with cylindrical shaped metal backing and internally molded rubber - Fully Molded Type.

**Tier:**

3

**Ratings:**

Brass Sleeve Type, Shaft sizes ¾" to 6½"; Solid Brass Flanged Type for Strut or Aft Stern Tube, Shaft sizes 2" to 15"; Split Brass Flanged Type for Strut or Aft Stern Tube, Shaft sizes 6" to 15"; Solid Brass Flanged Type for Forward Stern Tube, Shaft sizes 2½" to 15"; Split Brass Flanged Type for Forward Stern Tube, Shaft sizes 6" to 15"; Non-Metallic Sleeve Type for Shaft sizes ¾" to 6"; Metric Brass Sleeve Type for Shaft sizes 25 mm to 140 mm; Metric Non-Metallic Type for Shaft sizes 25 mm to 130 mm.

**Service Restrictions:**

Unit Certification is not required for this product.

**Comments:**

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in 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.  
 1) For Bearing's dimensions, material, quality inspection, tolerances, installation procedure, bearing and journal wear see Sleeve and Flanged Bearing Dimensional Catalog. 2) The length of bearing, next to and supporting the propeller, is to be not less than four times the required tail-shaft diameter as per 4-3-2/5.15.1 of the Rules.

**Notes / Documentation:**

Supporting Documentation: Sleeve and Flanged Bearings Brochure; Dwg. No. 871662100C, Rev. -, Sleeve Bearing Details for 6-1/2" Shaft Code "Gold", 1 sht.; Dwg. No. 871533700, Rev. -, Sleeve Bearings Code Zelda, 1 sht.; Dwg. No. 871272101C, Rev. -, Sleeve Bearings Details for a 5" shaft Code "FACT", 1 sht.; Dwg. No. 870763701C, Rev. -, Sleeve Bearings Details for a 3" shaft Code "Laura", 1 sht.; Dwg. No. 870292103C, Rev. -, Sleeve Bearings Details for a 1-1/8" shaft Code "Bill", 1 sht.; Dwg. No. 870223702C, Rev. -, Sleeve Bearings Details for a 7/8" shaft Code "Ardele", 1 sht.; Dwg. No. 870193700C, Rev. -, Sleeve Bearings Details for a 3/4" shaft Code "Alda", 1 sht.; Dwg. No. 8701921100C, Rev. -, Sleeve Bearings Details for a 3/4" shaft Code "Able", 1 sht.; Dwg. No. 863822100, Rev. -, Flanged Bearings Details for a 15" shaft Code "Quiet", 1 sht.; Dwg. No. 860512100C, Rev. -, Flanged Bearings Details for a 2" shaft Code "Batch", 1 sht.;

**Term of Validity:**

This Product Design Assessment (PDA) Certificate 14-HS1206495-PDA, dated 12/Jun/2014 remains valid until 11/Jun/2019 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:**

The Rules for Conditions of Classification, Part 1 2014 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following: Rules for Building and Classing Steel Vessels 4-3-2/5.15.1; Rules for Building and Classing Steel Vessels Under 90 meters (295 feet) in Length 4-3-1/13.1;

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

MIL-DTL-17901C(SH)

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	14-HS1206495-PDA	12/JUN/2014	11/JUN/2019



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.