



Confirmation of Product Type Approval

Company Name: DURAMAX MARINE LLC

Address: 17990 Great Lakes Parkway Hiram OH 44234 United States

Product: Bearings, Stern Tube & Strut Bearings

Model(s): DMX

Endorsements:

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	25-0306579-PDA	13-AUG-2025	12-AUG-2030
Manufacturing Assessment (MA)	26-7756099	02-SEP-2026	25-OCT-2031
Product Quality Assurance (PQA)	NA	NA	NA

Tier

3 - Type Approved, unit certification not required

Intended Service

Marine Vessel Bearing Applications

Description

DMX Polymer Alloy Stave used for Bearings

Ratings

DMX Thickness: 1-1/4" for bearing sizes up to 450 mm

DMX Thickness: 1-1/2" for bearing sizes above 450 mm

Basic design criteria for bearings to be designed for max loading of 0.56 MPA.

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.

Acceptance on facilities with Ice Class Notations will be carried out on a case by case basis.

Comments

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

2. Bearing Staves are to be installed in accordance with the Manufacturer's Recommended Procedure.
3. In general, the bearing length is to be not less than four (4) times the required tail-shaft diameter. However, such may be less than four times, but not less than two times the required tail shaft diameter, provided the bearing design is being substantiated by experimental tests to the satisfaction of ABS on a case by case basis.

Notes, Drawings and Documentation

Drawing No. I-MFG-038, I-MFG-038 Molding DMX Slabs – Solid Type.pdf, Revision: 003, Pages:

Drawing No. F-MFG-033, F-MFG-033 DMX Machining Log.pdf, Revision: 001, Pages:

Drawing No. DMX Stave Material BOM Procedures Approvals, DMX Stave Material BOM Procedures Approvals 2.11.25.pdf, Revision: 02-11-2025, Pages:

Drawing No. P-Bracket 410mm, Q47873 - P-Bracket - 410mm.pdf, Revision: -, Pages:

Drawing No. A-Bracket 425mm, Q47873 - A-Bracket - 425mm.pdf, Revision: -, Pages:

Drawing No. F-QUA-015, F-QUA-015 DMX Stave Final Inspection Log.pdf, Revision: 000, Pages:

Drawing No. I-QUA-006, I-QUA-006 DMX Stave Final Inspection.pdf, Revision: 005, Pages:

Drawing No. DMX Installation Guide, DM-1025.108 DMXLSS, Revision: 11-20-24, Pages:

Drawing No. I-MFG-036, I-MFG-036 Machining of DMX Staves – Solid Type.pdf, Revision: 003, Pages:

Drawing No. F-MFG-021, F-MFG-021 DMX MIX Mixing Log 809000050.pdf, Revision: 001, Pages:

Drawing No. 14.218.3, ISO Certificate of Program.pdf, Revision: 07-28-2023, Pages:

Drawing No. DMX/Rubber Locking Stave Stamping Details, 814000032.pdf, Revision: B, Pages:

Drawing No. F-MFG-008, F-MFG-008 DMX SLAB Log.pdf, Revision: 001, Pages:

Drawing No. P-MFG-006, P-MFG-006 Production of DMX - Slabs, Staves, and DMX-LSS Bearings.pdf, Revision: 000, Pages:

Drawing No. I-ENG-003, I-ENG-003 Quality Control Lab Testing – All Solid DMX Slabs.pdf, Revision: 003, Pages:

Drawing No. F-QUA-016, F-QUA-016 LOCKING STAVE FINAL INSPECTION LOG.pdf, Revision: 001, Pages:

Drawing No. I-QUA-007, I-QUA-007 Locking Stave Final Inspection.pdf, Revision: 003, Pages:

Drawing No. I-MFG-037, I-MFG-037 Machining Locking Staves for DMX-LSS Bearings.pdf, Revision: 002, Pages:

Drawing No. F-ENG-008, F-ENG-008 DMX Test Results Data Sheet.pdf, Revision: 002, Pages:

Drawing No. DMX Physical & Mechanical Properties, DMX physical propertiesRevF 12_22_2004.pdf, Revision: 10-22-2004, Pages:

Drawing No. AFT Sterntube 410mm, Q47873 - Aft Sterntube - 410mm.pdf, Revision: -, Pages:

Drawing No. I-ENG-004, I-ENG-004 Oil and Water Swell Test - Bearing Surface Material Only.pdf, Revision: 000, Pages:

Drawing No. Asbestos Free, ASBESTOS Free Doc.pdf, Revision: 01-13-2025, Pages:

Drawing No. DMX Bearing Brochure, D<-1020.15 DMXSTV, Revision: 11-20-24, Pages:

Drawing No. P-MFG-008, P-MFG-008 Testing of all DMX Slabs.pdf, Revision: 002, Pages:

Term of Validity

This Product Design Assessment (PDA) Certificate remains valid until 12/Aug/2030 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

Rules for Conditions of Classification, Part 1 2025 Marine Vessels Rules 1-1-4/7.7, 1-1-A3, which covers the following:

2025 Marine Vessel Rules 4-3-2/5.15.1

International Standards

NA

EU-MED Standards

NA

National Standards

NA

Government Standards

NA

Other Standards

NA



A handwritten signature in blue ink, reading 'Michael R. Klesel'. The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

ABS Programs
American Bureau of Shipping
Print Date and Time: 20-Oct-2026 1:20

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.