



Marine &amp; Offshore

Certificate number: 23091/D0 BV

File number: MAT 73871-2010

Product code: 8155I

*This certificate is not valid when presented without the full attached schedule composed of 7 sections*

www.veristar.com

## APPROVAL CERTIFICATE for MATERIALS

*This certificate is issued to*

**Morris Bean & Company**

Yellow Springs, OH - UNITED STATES OF AMERICA

*for the type of product*

**ALUMINIUM ALLOY CASTINGS**

Casting up to 7,000 lbs (3,150kg) in magnesium-silicon aluminium alloy type AlSi7Mg

### Requirements:

Bureau Veritas Rules on Materials and Welding for the Classification of Marine Units

*This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.*

**This certificate will expire on: 29 Jun 2030**

**For Bureau Veritas Marine & Offshore,**

At BV PORT EVERGLADES CENTRE, on 29 Aug 2025,

Flavio Rosas

***This certificate was created electronically and is valid without signature***



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site [www.veristar.com](http://www.veristar.com). Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

## **THE SCHEDULE OF APPROVAL**

### **1. PRODUCT DESCRIPTION :**

Castings made of magnesium-silicon aluminium alloy type AlSi7Mg for cryogenic application.

Typical grade	Delivery condition	Particulars
A356.0 - T6	T6 : Solution treated and artificially aged	Max. weight 7,000 lbs (3,150kg)

Alloy making in PLC controlled low-pressure furnace. Castings are heat treated by solution heat treatment followed by artificial ageing.

### **2. DOCUMENTS AND DRAWINGS :**

2.1 - "Documentation issued for description of the company and manufacturing process" issued by Morris Bean & Company and submitted on 18/02/2022.

- "Quality Manual Rev.15" dated 21 March 2025,
- "ASTM-B-917 Implementation at MBC Rev.3" dated 22 February 2021,
- "Separately Cast Test Bar Rev.2" dated 11 February 2019,
- "Quenching procedures Rev.4" dated 18 February 2021,
- "Heat Treat Procedures Rev.7" dated 22 February 2021,
- "Heat Treat Uniformity Survey Rev.2" dated 13 November 2015,
- "Radiographic Inspection Rev.7" dated 14 February 2017.

### **3. TEST REPORTS :**

3.1 - "Nikkiso Material Affidavit #3902 and #3859" issued by Morris Bean & Company and dated 11/02/2010.

3.2 - Typical grade tested is: Casting grade A356.0-T6 according to ASTM B26 standard. Chemical composition on ladle and mechanical properties as per applicable standard for approved application.

### **4. APPLICATION / LIMITATION :**

4.1 - As per Bureau Veritas Rules on Materials and Welding for the Classification of Marine Units.

4.2 - Chemical composition and mechanical properties requirements are to be as per Bureau Veritas Rules on Materials and Welding for the Classification of Marine Units, and/or alternative specification mentioned on reviewed drawings, as applicable.

### **5. PRODUCTION SURVEY REQUIREMENTS :**

5.1 - The aluminium alloy castings are to be supplied by Morris Bean & Company in compliance with the type and the requirements described in this certificate.

5.2 - This type of product is within the category IBV of Bureau Veritas Rule Note NR320.

5.3 - BV product certificate is required.

5.4 - For information, Morris Bean & Company has declared to Bureau Veritas the following production site:

**Morris Bean & Company**  
777 East Hyde Road  
45387 Yellow Springs, OH (USA)

### **6. MARKING OF PRODUCT :**

6.1 - Each aluminium alloy casting that has been tested with satisfactory results are to be marked with the following information:

- Manufacturer's name or trademark
- Bureau Veritas' Mark
- Identification marking enabling traceability, such as cast number, heat number, or batch number
- Material grade and classification
- Additional markings where applicable, such as test pressure or specific inspection references

Additional marking requirements specific to aluminium alloy castings shall be in accordance with the "Marking" article in the relevant section of Bureau Veritas NR216 Rules on Materials and Welding for the Classification of Marine Units.

### **7. OTHERS :**

7.1 - It is Morris Bean & Company's responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 23091/C1 BV issued by the Society.

\*\*\* END OF CERTIFICATE \*\*\*