



Marine & Offshore

Certificate number: 24217/B1 BV

File number: MAT 1706-2011

Product code: 8153I

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

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APPROVAL CERTIFICATE for MATERIALS

This certificate is issued to

Ellwood National Crankshaft
Irvine, PA - UNITED STATES OF AMERICA

for the type of product

STEEL FORGINGS

Crankshafts in alloy steel of maximum weight 6 tons.

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: 20 Sep 2024

For Bureau Veritas Marine & Offshore,

At BV PORT EVERGLADES CENTRE, on 27 May 2022,

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. 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 :

Crankshafts in alloy steels of maximum weight 6 tons.

Incoming steel in rolled bars. Continuous grain flow method using multi-direction closed die forging press. Forgings delivered in quenched and tempered condition (Q+T) as applicable to the steel grade used.

2. DOCUMENTS AND DRAWINGS :

- 2.1 - Document issued by Ellwood National Crankshaft:
- Ref.ENC-MCTAS Rev.0 dated 13/05/2019.
 - NDT data submitted on May 2022.

3. TEST REPORTS :

3.1-Typical tested grades are 4130V, 42CrMo4 and S34Cr1 as per Man B&W Diesel specification.

- 3.2 - Documents issued by Ellwood National Crankshaft:
- Certificates issued for item Ref. 5-50C500-S dated 13/04/2011, 19/04/2011 and 20/06/2011.
 - Certificates issued for item Ref. 50F920 dated 03/07/2012.
 - "Material certification N° PO#C008427" dated 19/12/2008.
 - "Mechanical testing requirements and results" dated 03/07/2012.

4. APPLICATION / LIMITATION :

As per Bureau Veritas Rules for Classification.

Steel grade specification for chemical composition and mechanical properties is to be as per Bureau Veritas Materials Rules for Classification and/or material specification reviewed by the Society, as applicable.

5. PRODUCTION SURVEY REQUIREMENTS :

- 5.1 - The crankshafts are to be supplied by Ellwood National Crankshaft 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.

6. MARKING OF PRODUCT :

As per Bureau Veritas Rules for Classification.

7. OTHERS :

This certificate replaces approvals from No.24217/A0 BV to No.24217/B0 BV.

*** END OF CERTIFICATE ***