



Marine & Offshore

Certificate number: 12404/C0 BV

File number: MAT 6295/01

Product code: 8153I

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

VITKOVICE HEAVY MACHINERY a.s.

Vitkovice - CZECH REPUBLIC

for the type of product

STEEL FORGINGS

Carbon, carbon-manganese or alloy steels steel forgings including forgings for semi-built up crankshafts.

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships

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: 30 Jan 2025

For Bureau Veritas Marine & Offshore,

At BV PRAGUE, on 30 Jan 2020,

Pavel Jr. Stepanek



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 :

Carbon, carbon-manganese or alloy steel forgings including forgings for semi-built up crankshafts with maximum weight 36 tons.

Steelmaking by Electric Arc Furnace at Steel Plant II (CC320). Ingots weight up to 92 tons. Forgings manufactured by open die forging method.

2. DOCUMENTS AND DRAWINGS :

2.1-Documents issued by Vitkovice Heavy Machinery a.s:

- "Application for BV approval of manufacturing process of class 1 steel forgings" dated July 2001.
- "Production and test processing data for approval of VHM manufacturing plants" dated April 2019.
- "Testing and measuring equipment" dated 12 April 2019.
- NDT procedures No. MT-4005 Rev.1 and UT-4005 Rev.1 dated 23 August 2019.

3. TEST REPORTS :

3.1-As per following documents issued by Vitkovice Heavy Machinery a.s:

- "Application for BV approval of manufacturing process of class 1 steel forgings" dated July 2001.
- Inspection certificate No. 191/19 and results attachments for propeller shaft, Heat E65705 and fitted bush, Heat E65426, dated 29 April 2019.

3.2-Typical tested grades:

- C45E according to EN 10083-1.

4. APPLICATION / LIMITATION :

As per Bureau Veritas Rules for Classification. Chemical composition, tensile properties, and Charpy-V notch test requirements are to be as per Bureau Veritas Rules NR216 and/or alternative specification mentioned on reviewed documents and drawings as applicable.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The steel forgings are to be supplied by Vitkovice Heavy Machinery a.s. 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 approval certificates from No. 12404/A0 BV to No.12404/B0 BV.

*** END OF CERTIFICATE ***