



Marine &amp; Offshore

Certificate number: 37381/B0 BV

File number: MAT 72455-2013

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*

**PJSC ENERGOMASHSPETSSTAL**

Kramatorsk - UKRAINE

*for the type of product*

**STEEL FORGINGS**

Carbon-manganese, low-alloy and alloy steel forgings with maximum weight up to 95 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: 19 Apr 2024****For Bureau Veritas Marine & Offshore,**

At BV ODESSA, on 19 Apr 2019,

Yevgen KUZNETSOV



## **THE SCHEDULE OF APPROVAL**

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

Carbon-manganese, low-alloy and alloy steel forgings with maximum weight up to 95 tons.

Forgings are made from ingots by upsetting. Forgings are heat treated as applicable.

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

- "Preliminary and special information for forgings production approval in accordance with the requirements of Bureau Veritas" issued by PJSC Energomashspetssal dated 06/12/2013.

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

Typical tested grades are :

- S355J2+N according to EN 10025-2 for carbon-manganese steel,
- Steel grade according to specification No. 2/4501168819 for carbon-manganese steel,
- 26NiCrMoV145 according to specification No. HW 19373 Rev.04 for alloy steel,
- 35XM, 40XH according to GOST 4543-71 for low-alloy steel.

- Test report " The testing of products for forgings production approval in accordance with the requirements of Bureau Veritas" issued by PJSC Energomashspetssal dated 06/12/2013.

-As per documents Ref. 20yMK/29 dated 17/01/2014, Ref. 20yMk/79 dated 28/01/2014, Ref.20yMk/125 dated 06/02/2014 issued by PJSC Energomashspetssal.

### **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 PJSC Energomashspetssal 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 No.37381/A0 BV.

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