



Marine & Offshore

Certificate number: 49482/A1 BV

File number: MAT 24870-2017

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

FORGITAL FMDL

Le Chambon Feugerolles - FRANCE

for the type of product

STEEL FORGINGS

Alloy and austenitic stainless steel forgings with maximum weight 800Kg.

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: 25 Oct 2022

For Bureau Veritas Marine & Offshore,

At BV LYON, on 02 Aug 2019,

Yann Krempewicz



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 :

Alloy steel forgings with maximum weight 800 kg.
Typical products are rings intended for the construction of gearing.
Forgings are made from ingot by open die forging and ring rolling. Heat treatment as applicable.

Austenitic stainless steel forgings with maximum weight 162kg, intended for pressure vessels.
Forgings are made from rolled bar by open die forging. Heat treatment as applicable.

2. DOCUMENTS AND DRAWINGS :

As per following documents submitted by Forgital FMDL:

- General Information Forgital FMDL submitted May 2017.
- UT procedure N° PTC043 Rev.B dated 27/01/2012.
- MT procedure N° PTC007 Rev.C dated 25/10/2011.
- Remy Barrere Procedure N° 96-78 Rev.C dated 27/02/1997.
- S.E.M.T Pielstick Specification N° SP0160 Rev.04 dated 13/03/1997 and N° FA0160 Rev.01 dated 02/10/1995.
- Heat treatment procedure N° FI TTH-S-103 /PG 006 Rev.C3 dated 20/06/2013.
- Manufacturing process plan N° 17-279-01 Rev.00 and N°17-279-02 Rev.00 dated 19/06/2017.
- Manufacturing process plan N° 17-279-03 Rev.00 dated 20/06/2017.
- Letter about deviation of mechanical properties dated 13/02/2007.
- Manufacturing process plan N° 19-279 Rev.01 dated 18/07/2019.
- Specification N° CSP-3269307-PPR7 Rev.A dated 18/04/2019.
- Drawings N° EME19004DIS Indice A and N° EME19004PRE dated 05/06/2019.

3. TEST REPORTS :

3.1 As per following documents submitted by Forgital FMDL:

- Inspection certificate N° 1459/2017/COM r.3 dated 20/07/2017.
- Inspection certificate N° 1802/2017/COM r.2 dated 10/10/2017.
- Inspection certificate N° 1801/2017/COM r.3 dated 10/10/2017.
- Inspection certificate N° 695372 Rev.00 dated 20/02/2019.
- Test reports N° C-110719-07822 dated 29/07/2019, N° 462 and N° 7733 dated 31/07/2019.
- Inspection certificate N° 1805/2019/COM r.0 dated 31/07/2019.

3.2 Typical tested grades:

- 42CrMo4 according to specifications N° SP0160 Rev.04, N° FA0160 Rev.01 and N° 96-78 Rev.C.
- 18CrNiMo7-6 according to specifications N° SP0160 Rev.04 and N° FA0160 Rev.01.
- F316 according to ASME SA182 and specification N° CSP-3269307-PPR7 Rev.A dated 18/04/2019.

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 & drawings, as applicable.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The steel forgings are to be supplied by Forgital FMDL 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 N° 49482/A0 BV.

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