



APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM000011Y
Revision No:
2

This is to certify:

That

Valforge S.r.l.
Via Provinciale, 41/43
23813 Cortenova LC,
Italy

is an approved manufacturer of
Steel Forgings

in accordance with
DNV rules for classification – Ships
DNV-OS-B101 – Metallic materials

and the following particulars:

| | |
|---------------------------------------|--|
| Application area | Forgings for hull structures and equipment Forgings for shafting and machinery Forgings for gearing |
| Steel type | Carbon and carbon-manganese, Alloy |
| Forging method | Open die forging |
| Max. weight | See page 2 |
| Heat treatment condition | See page 2 |
| Additional approval conditions | See page 2 |

Manufacturer(s) approved by this certificate is/are accepted to deliver according to DNV GL, DNV and GL rules.
Materials to be applied to DNV classed object shall fulfill the material requirements in the applicable DNV class rules.

Issued at **Hamburg** on **2022-11-15**

for **DNV**

This Certificate is valid until **2025-12-31**.

DNV local unit: **Milan**

Approval Engineer: **Stefan Röhr**

Thorsten Lohmann
Head of Section

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Particulars of the approval

Forgings for hull structures and equipment

| Steel type | Grade ³⁾ | Forging method ¹⁾ | Max. weight [kg] | Heat treatment condition ²⁾ |
|------------|--|------------------------------|------------------|--|
| C and C-Mn | NV F400UW, NV F440UW, NV F480UW, NV F520UW, NV F560UW, NV F600UW | OD | 6 000 | N, NT, QT |
| Alloy | NV F550AW, NV F600AW, NV F650AW | OD | 6 000 | QT |

Forgings for shafting and machinery

| Steel type | Grade ³⁾ | Forging method ¹⁾ | Max. weight [kg] | Heat treatment condition ²⁾ |
|------------|--|------------------------------|------------------|--|
| C and C-Mn | NV F400U, NV F440U, NV F480U, NV F520U, NV F560U, NV F600U, NV F640U, NV F680U, NV F720U, NV F760U | OD | 6 000 | N, NT, QT |
| Alloy | NV F600A, NV F700A, NV F800A, NV F900A, NV F1000A, NV F1100A | OD | 6 000 | QT |

Forgings for gearing

| Steel type | Grade ³⁾ | Forging method ¹⁾ | Max. weight [kg] | Heat treatment condition ²⁾ |
|------------|--|------------------------------|------------------|--|
| C and C-Mn | NV F400U, NV F440U, NV F480U, NV F520U, NV F560U, NV F600U, NV F640U, NV F680U, NV F720U, NV F760U | OD | 6 000 | N, NT, QT |
| Alloy | NV F600A, NV F700A, NV F800A, NV F900A, NV F1000A, NV F1100A | OD | 6 000 | QT |

Remarks:

- 1) OD: Open die forging
- 2) QT: Quenched and tempered
N: Normalized
NT: Normalized and tempered
SHT: Solution Heat Treated (Solution Annealing)
- 3) Incl. equivalent grades in acc. to other standards