

APPROVAL OF MANUFACTURER CERTIFICATE

This is to certify:

That

Gainza Forge, S.L.
Barrio Agote N°7
20740 Zestoa, Gipuzkoa,
Spain

is an approved manufacturer of
Steel Forgings

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

and the following particulars:

Application area	Forgings for hull structures and equipment Forgings for shafting and machinery Stainless steel forgings
Steel type(s)	Carbon and carbon-manganese, Alloy, Austenitic stainless
Forging method	Open die forging
Max. weight	See page 2
Heat treatment condition	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 GL classed object shall fulfill the material requirements in the applicable DNV GL class rules.

Issued at **Hamburg** on **2020-11-27**

for **DNV GL**

This Certificate is valid until **2023-12-31**.

DNV GL local station: **Area NB/CMC Iberia**

Approval Engineer: **Christian Wildhagen**

Thorsten Lohmann
Head of Section

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Job Id: **263.11-004501-4**
Certificate No: **AMMM00001KT**
Revision No: **1**

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	VL F400UW, VL F440UW, VL F480UW, VL F520UW, VL F560UW, VL F600UW	OD	10 000	N, NT, QT
Alloy	VL F550AW, VL F600AW, VL F650AW	OD	10 000	QT

Forgings for shafting and machinery

Steel type	Grade ³⁾	Forging method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
C and C-Mn	VL F400U, VL F440U, VL F480U, VL F520U, VL F560U, VL F600U, VL F640U, VL F680U, VL F720U, VL F760U	OD	10 000	N, NT, QT
Alloy	VL F600A, VL F700A, VL F800A, VL F900A, VL F1000A, VL F1100A	OD	10 000	QT

Stainless steel forgings

Steel type / grade ⁴⁾	Forging method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
Austenitic stainless	OD	5 000	SHT

Remarks:

- 1) OD: Open die forging
- 2) QT: Quenched and tempered
N: Normalised
SHT: Solution Heat Treated (Solution Annealing)
- 3) Incl. equivalent grades in acc. to other standards
- 4) Stainless steel forgings shall be in accordance with recognized standards, e.g. EN 10222, ASTM A473/A965/A1049 and JIS G 3214, provided that supplementary requirements contained herein are also met. Recognition of other standards is subject to submission to the Society for evaluation.