

APPROVAL OF MANUFACTURER CERTIFICATE

This is to certify:

That
A.C.S.A. STEEL FORGINGS S.P.A.
Oggiona Con Santo Stefano VS,
Italy

is an approved manufacturer of
Steel Forgings

in accordance with
DNV GL rules for classification – Ships

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
Forging method	Open die forging
Max. weight	See page 2
Heat treatment condition	Normalized, normalized and tempered, quenched and tempered

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 **2019-01-31**

for **DNV GL**

This Certificate is valid until **2021-12-31**.

DNV GL local station: **Milan**

Approval Engineer: **Enno Brück**

Thorsten Lohmann
Head of Section



Particulars of the approval

Forgings for hull structures and equipment

Steel type	Grade ³⁾⁴⁾	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	16	N, NT, QT

Forgings for shafting and machinery

Steel type	Grade ³⁾⁴⁾	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	16	N, NT, QT

Forgings for gearing

Steel type	Grade ³⁾⁴⁾	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	16	N, NT, QT

Remarks:

- 1) OD: Open die forging
- 2) QT: Quenched and tempered
N: Normalised
NT: Normalised and tempered
- 3) Certification of any material applied to classed object shall fulfill the applicable material requirements in the DNV GL class rules
- 4) Incl. equivalent grades in acc. to other standards