

APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM000009A
Revision No:
3

This is to certify:

That
SIDERFORGEROSSİ GROUP S.p.A.
Via Cartiera Di Mezzo, 38
36011 Arsiero, VI,
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 boilers, pressure vessels and piping systems, Ferritic steel forgings for low temperature service Stainless steel forgings
Steel type	Carbon and carbon-manganese, Alloy, Austenitic stainless, Ferritic-austenitic (duplex) stainless
Forging method	See page 2 Open die forging / ring rolling
Max. weight	See page 2
Max. diameter / section	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 GL classed object shall fulfill the material requirements in the applicable DNV GL class rules.

Issued at **Hamburg** on **2021-01-18**

for **DNV GL**

This Certificate is valid until **2023-09-30**.

DNV GL local station: **Venice**

Approval Engineer: **Christian Wildhagen**

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 GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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.



Job Id: **263.11-005023-3**
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Particulars of the approval

Forgings for hull structures and equipment

Steel type	Grade ³⁾	Forging method ¹⁾	Max. weight [kg]	Max. diameter [mm]	Heat treatment condition ²⁾
C and C-Mn	VL F400UW, VL F440UW, VL F480UW, VL F520UW, VL F560UW, VL F600UW	OD, RR ⁵⁾	30 000	1 500	N, NT, QT
Alloy	VL F550AW, VL F600AW, VL F650AW	OD, RR ⁵⁾	30 000	1 500	QT

Forgings for hull structures and equipment

Steel type	Grade ³⁾	Forging method ¹⁾	Max. weight [kg]	Max. diameter [mm]	Heat treatment condition ²⁾
C and C-Mn	VL F400UW, VL F440UW, VL F480UW, VL F520UW, VL F560UW, VL F600UW	OD, RR ⁵⁾	30 000	1 500	N, NT, QT
Alloy	VL F550AW, VL F600AW, VL F650AW	OD, RR ⁵⁾	30 000	1 500	QT

Forgings for boilers, pressure vessels and piping systems

Steel type	Grade ³⁾	Forging method ¹⁾	Max. weight [kg]	Max. diameter [mm]	Heat treatment condition ²⁾
C and C-Mn	VL F450H, VL F490H	OD, RR ⁵⁾	30 000	1 500	N, NT, QT
Alloy	VL F0.5Mo, VL F1Cr0.5Mo	OD, RR ⁵⁾	30 000	1 500	NT, QT
	VL F2.25Cr1Mo	OD, RR ⁵⁾	30 000	1 500	N, QT

Ferritic steel forgings for low temperature service

Steel type	Grade ³⁾	Forging method ¹⁾	Max. weight [kg]	Max. diameter [mm]	Heat treatment condition ²⁾
C and C-Mn	VL F450L, VL F490L	OD, RR ⁵⁾	30 000	1 500	N, NT, QT
Alloy	VL F3.5Ni, VL F5Ni, VL F9Ni	OD, RR ⁵⁾	30 000	1 500	NT, QT

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Stainless steel forgings

Steel type / grade ⁵⁾	Forging method ¹⁾	Max. weight [kg]	Max. diameter [mm]	Heat treatment condition ²⁾
Austenitic stainless	OD, RR ⁵⁾	30 000	1 500	SHT
22Cr Duplex	OD, RR ⁵⁾	16 000	1 500	SHT

Remarks:

- 1) OD: Open die forging
RR: Ring Rolling
- 2) QT: Quenched and tempered
N: Normalised
NT: Normalised and tempered
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.
- 5) Max. outer diameter 6000 mm for rolled rings