



APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM00002Y7
Revision No:
1

This is to certify:

That

OFFICINE NICOLA GALPERTI & FIGLIO S.p.A.

**Via Trivio Fuentes, 4
22101 Gera Lario, CO,
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 gearing, Forgings for boilers, pressure vessels and piping systems, Ferritic steel forgings for low temperature service,
Steel type	Carbon and carbon-manganese, Alloy
Forging method	Open die forging/closed die forging/ring rolling
Max. weight	See page 2
Max. thickness	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 **2022-01-31**

for **DNV**

This Certificate is valid until **2025-01-30**.

DNV local station: **Italy/Malta CMC**

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.



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Particulars of the approval

Forgings for gearing

Steel type	Grade ³⁾	Forging method ¹⁾	Max. weight [kg]	Max. thickness [mm]	Heat treatment condition ²⁾
Alloy	NV F600A, NV F700A, NV F800A, NV F900A, NV F1000A, NV F1100A	OD/CD/RR ⁴⁾	20 000	400	QT

Forgings for boilers, pressure vessels and piping systems

Steel type	Grade ³⁾	Forging method ¹⁾	Max. weight [kg]	Max. thickness [mm]	Heat treatment condition ²⁾
C and C-Mn	NV F450H, NV F490H	OD/CD/RR ⁴⁾	20 000	400	N

Ferritic steel forgings for low temperature service

Steel type	Grade ^{3) 5)}	Forging method ¹⁾	Max. weight [kg]	Max. thickness [mm]	Heat treatment condition ²⁾
C and C-Mn	NV F450LI, NV F490LI	OD/CD/RR ⁴⁾	20 000	400	N

Steels acc. other standards

Steel type/grade ^{3) 5) 6)}	Forging method ¹⁾	Max. weight [kg]	Max. thickness [mm]	Heat treatment condition ²⁾
ASTM A350 LF2	OD/CD/RR ⁴⁾	20 000	400	N

Remarks:

- 1) OD: Open die forging; CD: Closed die forging; RR: Ring Rolling
- 2) QT: Quenched and tempered; N: Normalised
- 3) Incl. equivalent grades in acc. to other standards
- 4) Max. outer diameter 6 000 mm for rolled rings
- 5) Qualified impact test temperature of -46°C (Minimum average energy 41 [J]); Details to test temperature, design temperature and thickness given in DNV-RU-SHIP-Pt2Ch2-Sec6.7.4.2 Table 13 (Mechanical properties for ferritic steel forgings for low temperature service) are to be observed
- 6) Possible application and certification of any material to classed object is subject to case by case approval based on DNV plan or type approval