



APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM00001UR
Revision No:
2

This is to certify:

That

TPS Technitube Röhrenwerke GmbH
Julius-Saxler-Straße 7, 54550 Daun,
Germany

is an approved manufacturer of
Steel Pipes and Fittings

in accordance with
DNV GL rules for classification – Ships

and the following particulars:

Product	Pipes
Application area	Austenitic and ferritic-austenitic steel pipes
Steel type	Austenitic stainless, Austenitic-ferritic (Duplex) stainless, See page 2
Manufacturing method	Cold finished seamless
Max. outer diameter	42 mm
Max. wall thickness	4 mm
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 **2021-10-08**

for **DNV**

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

DNV local station: **Essen**

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 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

Austenitic and Austenitic-ferritic steel pipes

Steel type	Grade ³⁾	Manufacturing method ¹⁾	Max. outer diameter [mm]	Max. wall thickness [mm]	Heat treatment condition ²⁾
Austenitic stainless	1.4301, 1.4306, 1.4307, 1.4401, 1.4404, 1.4435, 1.4436, 1.4539, 1.4541, 1.4547, 1.4550, 1.4571 acc. to EN 10216-5	CFS	42	4	SHT
Austenitic stainless	TP 304, TP 304L, TP316, TP 316L, TP 316Ti, TP 312, TP 347 acc. to ASTM A312	CFS	42	4	SHT
Austenitic-ferritic stainless (duplex)	1.4462, 1.4410 acc. to EN 10216-5	CFS	42	4	SHT

Remarks:

- 1) CFS: cold finished seamless
- 2) SHT: Solution Heat Treated
- 3) Incl. pipe grades as per the following recognized standards:
 ISO 9329 Part 4, ISO 9330 Part 6, EN 10216 Part 5, EN 10217 Part 7, ASTM A269, ASTM A213, ASTM A312, ASTM A358, ASTM A789, ASTM A790, ASTM A928 or JIS G3459

Special conditions:

Including automatic UT / ET testing in lieu of hydraulic testing according to relevant standard