

APPROVAL OF MANUFACTURER CERTIFICATE

This is to certify:

That

Tubacex Tubos Inoxidables, S.A.U. (T.T.I.)
Amurrio, Alava,
Spain

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, Ferritic-austenitic (Duplex) stainless, See page 2
Manufacturing method	Cold finished seamless
Max. outer diameter	200 mm
Max. wall thickness	22 mm
Heat treatment condition	Solution heat treated
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 **2019-06-25**

for **DNV GL**

This Certificate is valid until **2022-06-30**.

DNV GL local station: **Bilbao**

Approval Engineer: **Christian Wildhagen**

Thorsten Lohmann
Head of Section



Job Id: **263.11-006085-3**
Certificate No: **AMMM0000010**
Revision No: **2**

Particulars of the approval

Austenitic and Ferritic-austenitic steel pipes

Steel type /grade ³⁾	Manufacturing method ¹⁾	Max. outer diameter [mm]	Max. wall thickness [mm]	Heat treatment condition ²⁾
Austenitic stainless	CFS	200	22	SHT
22Cr duplex stainless	CFS	200	22	SHT
25Cr duplex stainless	CFS	200	22	SHT

Remarks:

- 1) CFS: cold finished seamless
- 2) SHT: Solution Heat Treated (solution annealing)
- 3) Austenitic and ferritic-austenitic steel pipes
Suitable pipe grades shall be selected from the following recognized standards:
ISO 9329 Part 4, ISO 9330 Part 6, EN 10216 Part 5, EN 10217 Part 7, ASTM A269, ASTM A312, ASTM A358, ASTM A789, ASTM A790, ASTM A928 or JIS G3459

Special conditions:

Including automatic eddy current testing in place of hydraulic testing if permitted by the relevant piping standard.