

APPROVAL OF MANUFACTURER CERTIFICATE

This is to certify:

That

Mannesmann Line Pipe GmbH
59067 Hamm, Germany

is an approved manufacturer of
Steel Pipes and Fittings

in accordance with
DNV GL rules for classification – Ships
DNV GL offshore standards

and the following particulars:

Product	Pipes
Application area	Structural hollow sections Pipes for pressure systems, Pipes for low-temperature service, Boiler and superheater tubes, Structural hollow sections
Steel type	Carbon and carbon-manganese
Manufacturing method	Welded
Max. outer diameter	See page 2
Max. wall 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 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 **2021-06-30**.

DNV GL local station: **Essen**

Approval Engineer: **Christian Wildhagen**

Thorsten Lohmann
Head of Section



Particulars of the approval

Pipes for pressure systems

Pipes for low-temperature service

Boiler and superheater tubes

Steel type /grade 3)4)5)6)	Manufacturing method ¹⁾	Max. outer diameter [mm]	Max. wall thickness [mm]	Heat treatment condition ²⁾
C and C-Mn	EFW	610	25.4	N

Structural hollow sections

Grade ³⁾⁷⁾	Manufacturing method ¹⁾	Max. outer diameter [mm]	Max. wall thickness [mm]	Heat treatment condition ²⁾
Structural hollow sections acc. acc. EN 10210-1 and EN 10219-1				
S235JRH, S275J0H, S275J2H, S355J0H, S355J2H	EFW	610	25.4	Acc. standard
Structural hollow sections acc. acc. EN 10225				
S355G1+N, S355G13+N	EFW	610	25.4	Acc. standard

Pipes acc. international standards

Steel type /grade ⁷⁾	Manufacturing method ¹⁾	Max. outer diameter [mm]	Max. wall thickness [mm]	Heat treatment condition ²⁾
Pipes acc. EN 10208-2				
L245MB, L245NB, L290MB, L290NB, L360MB, L360NB, L415MB, L415NB, L450MB, L485MB	EFW	610	25.4	N
Pipes acc. API 5L (PSL1/PSL2)				
X42, X46, X52, X56, X60, X65, X70	EFW	610	25.4	N

Job Id: **263.11-008539-1**
Certificate No: **AMMM00002EX**

Remarks:

- 1) EFW: electric fusion welded
- 2) N: Normalised
- 3) Certification of any material applied to classed object shall fulfill the applicable material requirements in the DNV GL class rules
- 4) Pipes for pressure systems
Suitable pipe grades shall be selected from the following recognised standards:
ISO 9329 Parts 1 and 2, ISO 9330 Parts 1 and 2, EN 10216 Parts 1 to 3, EN 10217 Parts 1 to 3, EN 10305 Part 1 and 2, ASTM A53, ASTM A106, ASTM A135, ASTM A335, JIS G3454, JIS G3455, JIS G3456 or JIS G3458
- 5) Pipes for low-temperature service
Suitable pipe grades shall be selected from the following recognised standards:
ISO 9329 Part 3, ISO 9330 Part 3, EN 10216 Part 4, EN 10217 Part 6, ASTM A333, ASTM A334 or JIS G3460
- 6) Boiler and superheater tubes
Suitable pipe grades shall be selected from the following recognised standards:
ISO 9329 Part 2, ISO 9330 Part 2, EN 10216 Part 2, EN 10217 Part 2, ASTM A178, ASTM A209, ASTM A210, ASTM A213, JIS G3461, JIS G3462 or JIS G3463
- 7) Possible application and certification of any material to classed object is subject to case by case approval