APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM00002EX
Revision No:
1

This is to certify:

That

Mannesmann Line Pipe GmbH
Kiesinger Weg 1, 59067 Hamm,
Germany

is an approved manufacturer of
Steel Pipes and Fittings

in accordance with
DNV rules for classification – Ships
DNV-OS-B101 – Metallic materials

and the following particulars:

Product	**Pipes** **Structural hollow sections**
Application area	**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 classed object shall fulfill the material requirements in the applicable DNV class rules.

Issued at **Hamburg** on **2022-01-14**

This Certificate is valid until **2024-06-30**.
DNV local station: **Essen**

Approval Engineer: **Christian Wildhagen**

for **DNV**
Digitally Signed By: Wenning, Martin
Location: DNV Hamburg, Germany
Signing Date: 14.01.2022 , on behalf of

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)]	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

Steel type / grade [6)]	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 10225-3				
S355NHHO (S355G1+N), S355NLHHO (S355G13+N, S355G14+N)	EFW	610	25.4	Acc. standard
Structural hollow sections acc. acc. EN 10225-4				
S355NLHCO (S355G13+N)	EFW	610	25.4	Acc. standard

Pipes acc. international standards

Steel type / grade [6)]	Manufacturing method [1)]	Max. outer diameter [mm]	Max. wall thickness [mm]	Heat treatment condition [2)]
Pipes acc. ISO 3183				
L245ME, L245NE, L290ME, L290NE, L360ME, L360NL, L415ME, L415NE, L450ME, L485NE	EFW	610	25.4	Acc. standard
Pipes acc. API 5L (PSL1/PSL2)				
X42, X46, X52, X56, X60, X65, X70	EFW	610	25.4	Acc. standard

Remarks:

1) EFW: electric fusion welded
2) N: Normalised
3) 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
4) 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
5) 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
6) Possible application and certification of any material to classed object is subject to case by case approval