APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM00000NZ
Revision No:
4

This is to certify:

That

ESTA-Rohr-Gesellschaft mit beschränkter Haftung
Mühlenweg 26, 57339 Erndtebrück,
Germany

is an approved manufacturer of
Steel Pipes and Fittings

in accordance with
DNV rules for classification – Ships
DNV class programme – DNV-CP-0252 Steel pipes and steel pipe fittings

and the following particulars:

Product	**Pipes and round hollow section**
Application area	**Pipes for pressure systems,** **Pipes for structural applications**
Steel type(s)	**Carbon and Carbon-Manganese**
Manufacturing method	**Longitudinal and transversal welding** **(Welding method: SAW, MAG, TIG, SMAW)**
Max. outer diameter	**See page 2**
Max. wall thickness	**See page 2**
Heat treatment condition	**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 **2023-11-30**

This Certificate is valid until **2026-12-30**.
DNV local unit: **Essen**

Approval Engineer: **Christian Wildhagen**

for **DNV**
Digitally Signed By: Wenning, Martin
Location: DNV Hamburg, Germany
Signing Date: 30.11.2023 , on behalf of

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

Pipes for pressure systems

Steel type /grade [3]	Manufacturing method [1]	Max. outer diameter [mm]	Max. wall thickness [mm]	Heat treatment condition [2]
C and C-Mn	EFW	4 000	60	N

Products acc. other standards [4]

Grade	Manufacturing method [1]	Max. outer diameter [mm]	Max. wall thickness [mm]	Heat treatment Condition [2]
Pipes according to EN 10028-3				
P275NH, P275NL1, P275NL2, P355N, P355NH, P355NL1, P355NL2, P460NH, P460NL1, P460NL2	EFW	4 000	60	N
Round hollow sections according to EN 10025-2				
S235JR, S235J0, S235J2, S275JR, S275J0, S275J2, S355JR, S355J0, S355J2	EFW	4 000	60	N, AW
Round hollow sections according to EN 10025-3				
S275N, S275NL, S355N, S355NL, S420N, S420NL, S460N, S460NL	EFW	4 000	60	N

Remarks:

1. EFW: Electric fusion welded
2. N: Normalized,
   AW: As welded
3. Suitable pipe grades shall be selected from the following recognized 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. Possible application and certification of any material to classed object is subject to case by case approval

Special condition:

Heat treatment subcontracted to DNV approved manufacturer