

APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM00000VE
Revision No:
3

This is to certify:

That
Železiarne Podbrezová a.s.
Kolkaren 35, 976 81 Podbrezova,
Slovak Republic

is an approved manufacturer of
Steel Pipes and Fittings

in accordance with
DNV rules for classification – Ships

and the following particulars:

| | |
|---------------------------------|--|
| Product | Pipes |
| Application area | Pipes for pressure systems, Pipes for low-temperature service, Boiler and superheater tubes, Pipes for structural application |
| Steel type | Carbon and carbon-manganese, see page 2 |
| Manufacturing method | Hot or cold formed seamless |
| Max. outer diameter | 162 mm |
| Max. wall thickness | 16 mm |
| 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 **2022-09-21**

This Certificate is valid until **2025-07-31**.
DNV local station: **Site Office Komarno**

Approval Engineer: **Christian Wildhagen**



for **DNV**

Digitally Signed By: Roehr, Stefan
Location: DNV Hamburg, Germany
Signing Date: 21.09.2022 , 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

Pipes for low-temperature service

Boiler and superheater tubes

| Steel type ^{2, 3, 4)} | Manufacturing method ¹⁾ | Max. outer diameter [mm] | Max. wall thickness [mm] | Heat treatment condition |
|--------------------------------|------------------------------------|--------------------------|--------------------------|--------------------------|
| C and C-Mn | HFS | 139.7 | 16 | Acc. standard |
| | CFS | 162.0 | 12.0 | Acc. standard |

Pipes intended for structural application (hollow sections)

| Steel type ⁵⁾ | Manufacturing method ¹⁾ | Max. outer diameter [mm] | Max. wall thickness [mm] | Heat treatment condition ²⁾ |
|----------------------------------|------------------------------------|--------------------------|--------------------------|--|
| Hollow sections acc. EN 10210-1: | | | | |
| C and C-Mn | HFS | 139.7 | 16 | Acc. standard |
| | CFS | 162.0 | 12.0 | Acc. standard |

Remarks:

- 1) HFS: hot finished seamless
CFS: cold finished seamless
- 2) Pipes for pressure systems
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, 2 and 4, ASTM A53, ASTM A106, ASTM A135, ASTM A335, JIS G3454, JIS G3455, JIS G3456 or JIS G3458
- 3) Pipes for low-temperature service
Suitable pipe grades shall be selected from the following recognized standards:
ISO 9329 Part 3, ISO 9330 Part 3, EN 10216 Part 4, EN 10217 Part 6, ASTM A333, ASTM A334 or JIS G3460
- 4) Boiler and superheater tubes
Suitable pipe grades shall be selected from the following recognized 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
- 5) Possible application and certification of any material to classed object is subject to case by case approval

Special conditions:

Including automatic non-destructive testing in lieu of hydraulic testing according to relevant standard.



APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
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This is to certify:

That
Železiarne Podbrezová a.s.
Kolkaren 35, 976 81 Podbrezova,
Slovak Republic

is an approved manufacturer of
Steelmaking

in accordance with
DNV rules for classification – Ships

and the following particulars:

| | |
|----------------------------------|---|
| Application area | Steelmaking |
| Products | Semi-finished products for forging and piping stock (blooms / billets) |
| Steel type | Carbon and carbon-manganese, Alloy |
| Manufacturing method | Electric arc furnace, Continuous casting |
| Deoxidation | Killed |
| Max. thickness / diameter | 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 **2022-09-15**

This Certificate is valid until **2025-07-31**.

DNV local station: **Site Office Komarno**

Approval Engineer: **Christian Wildhagen**



for **DNV**

Digitally Signed By: Roehr, Stefan

Location: DNV Hamburg, Germany

Signing Date: 15.09.2022 , on behalf of

Thorsten Lohmann
Head of Section

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Form code: AM 311

Revision: 2021-03

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Particulars of the approval

Semi-finished products

| Steel type | Product | Steel making ¹⁾ | Max weight [kg] | Max. thickness [mm] | Heat treatment condition ²⁾ |
|------------|---------------|----------------------------|-----------------|---------------------|--|
| C and C-Mn | Bloom, Billet | EAF, CC | - | 280 | AC |
| Alloy | Bloom, Billet | EAF, CC | - | 280 | AC |

Remarks:

- 1) EAF: electric arc furnace
CC: continuous casting
- 2) AC: as cast