

APPROVAL OF MANUFACTURER CERTIFICATE

This is to certify:

That

TŘINECKÉ ŽELEZÁRNY, a.s., VT - VÁLCOVNA TRUB
Výstavní 1132, Ostrava - Vítkovice, Czech Republic

is an approved manufacturer of
Steel Pipes and Fittings

in accordance with
DNV GL rules for classification – Ships
Offshore Standard DNV GL-OS-B101

and the following particulars:

Product	Seamless pipes
Steel types	Carbon and carbon-manganese, Alloy
Process	Seamless
Dimensions	Outer diameter max. 406.4 mm, Wall thickness max. 60 mm
Remarks	Including particulars of approval according to GL rule, see page 2

Manufacturer approved by this certificate is 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 **Høvik** on **2017-02-06**

This Certificate is valid until **2019-12-30**.

DNV GL local station: **Czechia**

Approval Engineer: **Dechun Lou**

for **DNV GL**

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Hanne Anita Hjerpetjønn
Head of Section

Job Id:
Certificate No: **AMMM0000148**

Particulars of the approval according to GL Rule (if applicable):

GL steel pipe grades

Grade	Key ¹⁾	Supply condition ²⁾	Max. wall thickness, mm	Max. outer diameter, mm	Remarks
GL-R 360	NA	AR or N	60	406.4	For all grades listed outer diameter 60.3-406.4 mm
GL-R 360 W	NA	N	60	406.4	
GL-R 410	NA	AR or N	60	406.4	
GL-R 490	NA	AR or N	60	406.4	
Grade B acc. to ASTM A/SA 106	NA	N	60	406.4	

Remarks:

- 1) NA: Seamless Pipe,
- 2) AR: As-Rolled, N: Normalising

Standardized pipe grades:

Strength category or pipe grade to Table 2.5	Corresponding pipe grade to
	EN 10216-1
GL-R 360	P235TR2
GL-R 410	P265TR2
GL-R 490	-

Standardized pipe made of high-temperature steel grades:

Strength category or pipe grade	Corresponding pipe grade to	
	EN 10216-2	ISO 9329-2
GL-R 360 W	P235GH	PH 23