



APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM00002YY

This is to certify:

That

Apco Pipe Fittings Co., Ltd
No. 50 Shiji Road South, Xishi Area Free Trade Pilot Zon Yingkou 115004,
Liaoning Province,
China

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	Fittings
Application area	Piping fittings
Steel type	Carbon and carbon-manganese, Alloy, Austenitic stainless, Seamless, Welding (SAW, SMAW)
Manufacturing method	See page 2
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 **2022-06-03**

for **DNV**

This Certificate is valid until **2025-06-02**.

DNV local station: **Dalian NB & CMC**

Approval Engineer: **Andreas Koch**

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Thorsten Lohmann
Head of Section

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Form code: AM 311

Revision: 2021-03

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Particulars of the approval

Piping fittings (elbows, tees, reducers)

Steel type ^{3) 4)}	Manufacturing method ¹⁾	Max. outer diameter [mm]	Max. wall thickness [mm]	Heat treatment condition ²⁾
C and C-Mn	HFS	610	59.54	N
	CFS	610	59.54	N
Alloy	HFS	610	59.54	N, QT
Austenitic stainless	HFS	610	59.54	SHT

Piping fittings (caps)

Steel type ^{3) 4)}	Manufacturing method ¹⁾	Max. outer diameter [mm]	Max. wall thickness [mm]	Heat treatment condition ²⁾
C and C-Mn	HFS	1219	12.7	N
	CFS	1219	12.7	N
Alloy	HFS	1219	12.7	N, QT
Austenitic stainless ⁴⁾	HFS	1219	12.7	SHT

Piping fittings (elbows, tees, reducers)

Steel type ^{3) 4)}	Manufacturing method ¹⁾	Max. outer diameter [mm]	Max. wall thickness [mm]	Heat treatment condition ²⁾
C and C-Mn	SAW, SMAW	1219	12.7	N
Alloy	SAW, SMAW	1219	12.7	N, QT
Austenitic stainless	SAW, SMAW	1219	12.7	SHT

Remarks:

- 1) HFS: Hot finished seamless
 CFS: Cold finished seamless
 SAW: Sub merged arc welding,
 SMAW: Shielded metal arc welding
- 2) N: Normalized
 QT: Quenched and tempered
 SHT: Solution heat treated
- 3) Applied standard for pre-material: ASTM A420, ASTM A234, ASTM A403
- 4) Fittings for low-temperature service