



# NIPPON KAIJI KYOKAI

## TYPE APPROVAL CERTIFICATE

Certificate No. TA17329M

**This is to certify** that the undernoted product(s) has/have been approved in accordance with the relevant requirements of “Rules for the Survey and Construction of Steel Ships” and “Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use”.

This certificate is issued to

Manufacturer :	<b>TUBE-MAC Piping Technologies Ltd.</b>
Product description :	<b>PYPLOK</b>
Type of Joint:	<b>Compression Coupling (Swage Type)</b>
Type designation(s) :	<b>As per attached sheet</b>
Approval No. :	<b>17FV105</b>
Valid until :	<b>25 July 2022</b>

This certificate is subject to the conditions specified in the attached sheet(s).

Issued at Tokyo on 26 July 2017

  
F. Taguchi  
General Manager  
Machinery Department

**1. Particulars and conditions:**

- **Product name:** PYPLOK Fittings; Non-Welded Connection
- **Type:** NPS Pipe (DM 20 Series), O.D. Tube (DM60 Series), Metric Tube (DM80 Series) (Catalog 2016 ver.)
- **Sealing Material (O-Ring):** Viton
- **Temperature range (°C) (manufacturer's recommendation):** -20°C ~ +200°C
- **Max. Operating Pressure rating of pipe size-psi(bar)**

## -1. NPS Pipe

Tube/Pipe (Inch)	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
Carbon Steel	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)
SS316	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)
Cu/Ni	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3701(255)	3669(253)	3699(253)	3117(215)

## -2. O.D. Tube

Tube/Pipe (Inch)	1/4"	3/8"	1/2"	5/8"	3/4"	1"	1-1/4"	1-1/2"	2"
Carbon Steel	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)
SS316	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)
Cu/Ni	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3669(253)	3117(2115)

## -3. Metric Tube

Tube/Pipe (mm)	6	8	10	6A	12	8A	15	16	10A
Carbon Steel	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)
SS316	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)
Cu/Ni	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	3750(258.6)	-	3750(258.6)	3750(258.6)

Tube/Pipe (mm)	18	15A	22	25	20A	28	30	25A	35
Carbon Steel	3750(258.6)	3690(254.4)	3690(254.4)	3750(258.6)	3625(249.9)	3625(249.9)	3750(258.6)	3560(245.4)	3560(245.4)
SS316	3750(258.6)	3690(254.4)	3690(254.4)	3750(258.6)	3625(249.9)	3625(249.9)	3750(258.6)	3560(245.4)	3560(245.4)
Cu/Ni	-	3669(253)	-	3669(253)	3625(249.9)	-	3669(253)	3669(253)	-

Tube/Pipe (mm)	38	42	32A	44.5	40A	50	57	60	50A
Carbon Steel	3750(258.6)	3750(258.6)	3750(258.6)	-	3750(258.6)	3750(258.6)	-	3750(258.6)	3750(258.6)
SS316	3750(258.6)	3750(258.6)	3750(258.6)	-	3750(258.6)	3750(258.6)	-	3750(258.6)	3750(258.6)
Cu/Ni	3669(253)	3669(253)	3312(228)	600(41)	3312(228)	3312(228)	600(41)	3117(215)	3117(215)

**2. Application/Limitation:**

• The joints may be used for a piping system of Class I, II & III which complies the material requirements in 12.1.4, Part D of the Rules.

• The uses of the joints are to be complied with 12.3.3, Part D of the Rules.<sup>\*(1)</sup>

<b>Flammable Fluids<sup>*(2)</sup></b> (Flash point ≤60°C)	Cargo Oil Lines	<b>Fresh Water</b>	Cooling Water System
	Crude Oil Washing Lines		Condensate Return
	Vent Lines		Non-essential Systems
<b>Flammable Fluids<sup>*(2)</sup></b> (Flash point >60°C)	Cargo Oil Lines	<b>Inert Gas</b>	Water Seal Effluent Lines
	Fuel Oil Lines		Scrubber Effluent Lines
	Lubricating Oil Lines		Main Lines
	Hydraulic Oil		Distributions Lines
	Thermal Oil	<b>Sanitary Drain / Scupper</b>	Deck Drains (Internal)
	Sanitary Drains		
<b>Sounding/Vent</b>	Water Tanks/Dry Spaces	<b>Sanitary Drain / Scupper</b>	Scuppers and Discharge
	Oil Tanks (F.P.>60°C)		
<b>Sea Water</b>	Bilge Lines	<b>Miscellaneous</b>	Starting Control Air <sup>*(3)</sup>
	Fire Main and Water Spray		Service Air (Non-essential)
	Foam System		Brine
	Sprinkler System		CO2 System <sup>*(3)</sup>
	Ballast System		Steam
	Cooling Water system		
	Tank Cleaning Services		
	Non-Essential Systems		

**\*Foot note**

- (1) The joints will be used in suction lines, vacuum test is to be carried out in presence of NK surveyor.
- (2) The number of mechanical joints in oil systems is to be kept to a minimum.
- (3) Only Society approved fire resistant types may be used inside machinery spaces of category A.

**3. Documents and Drawing:**

- Catalog PYPLOK Fittings -2016 ver.
- PYPLOK Technical Information Package
- Type Test programme
- Procedure of Pull-Out test: Attached document dated July 11, 2016 (receipt on 18 August 2016)

**4. Test Reports**

<b>Test</b>	<b>Cert No.</b>
-Hydraulic Proof Pressure Test	: C5126A (31/07/2009) & C7513A (01/08/2009)
-Gas Leakage Test	: C5126C (01/08/2009) & C7513C (01/08/2009)
-Min. Hyd. Burst Press. Test	: C5126B (31/07/2009) & C7513B (01/08/2009)
-Hyd. Impulse/ Fatigue Test	: C5126D (01/08/2009) & C7513D (01/08/2009)
-Vibration Test	: C5126E (01/08/2009) & C7513E (01/08/2009)
-Fire Resistance Test	: SwRI 01.17787.01.802 in accordance with ISO19921
-Pull-Out test*	: SwRI 18.18055.16.612 (11/10/2016)

(\*The test has been carried out at presence of NK surveyor.)

**5. Production test:**

The joints used for piping belonging to Group I & II defined by the requirements 12.1.3, Chapter 12, Part D of the Society's Rules are to be subjected hydraulic test in the presence of the Society's surveyor in accordance with the requirements 12.6.1, Chapter 12, Part D of the Society's Rules.

**• Notice :**

Any significant changes in design or construction of the above items may render this certificate invalid.

**-The End**