

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Axial Restraining Pipe Couplings**with type designation(s)
PEJ, SSJB

Issued to

Taizhou City Xinghai Pipe Co.,Ltd.
TAIZHOU, China

is found to comply with

DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems**DNV GL class programme DNVGL-CP-0185 – Type approval – Mechanical joints****Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**

Type:	Temperature range:	Max. working press.:	Sizes:
PEJ	Up to 170 °C. Refer to the certificate.	16 bar	DN 65, DN 80, DN 100, DN 150, DN 200, DN 250, DN 300, DN 400, DN 500, DN 600, DN 700, DN 800, DN 900, DN 1000
SSJB	Up to 170 °C. Refer to the certificate.	16 bar	DN 65, DN 80, DN 100, DN 150, DN 200, DN 250, DN 300, DN 400, DN 500, DN 600, DN 700, DN 800, DN 900, DN 1000

Issued at **Hamburg** on **2019-07-19**This Certificate is valid until **2024-07-18**.DNV GL local station: **Shanghai**for **DNV GL**Approval Engineer: **Andrii Pishchanskyi**

Olaf Drews
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Product description

Type PEJ is mechanical slip-on packing type expansion joint, restrained by studs.
Type SSJB is mechanical slip-on gland type expansion joint, restrained by limited bolts.
The main components and their materials are as follows:

Component	Type PEJ	Type SSJB
Body	Q235 (Non-alloy steel)	Q235 (Non-alloy steel)
		SUS316L ¹ (Stainless steel)
		SUS304 ¹ (Stainless steel)
Expansion pipe	Q235 (Non-alloy steel)	N/A
	SUS316L ¹ (Stainless steel)	
	SUS304 ¹ (Stainless steel)	
Gland	Q235 (Non-alloy steel)	N/A
	SUS316L ¹ (Stainless steel)	
	SUS304 ¹ (Stainless steel)	
Sealing ring	NBR	NBR
	FKM (FPM)	FKM (FPM)
Flange	N/A	Q235 (Non-alloy steel)

Footnote

- 1) The specified stainless steel grade is not approved for application in piping systems conveying sea water or for installation on open decks and other areas not protected against green sea.

The material certificate requirements of pressurised parts depend on the pipe class of the intended application. The following shall be observed:

- DVNGL-RU-SHIP Pt.4 Ch.6 Sec.1 Table 1 (pipe classes);
- DVNGL-RU-SHIP Pt.4 Ch.6 Sec.2 Table 3 (material certificates acc. to pipe classes).

Temperature range

The applicable service temperature range for the coupling is limited by the material of the sealing and/or metal for the pressurised parts. The approved service temperatures for the individual components are as follows:

Component	Material	Temperature range
Sealing ring / stuffing	FKM (FPM)	0°C up to + 170°C
	NBR	0°C up to + 90°C
Pressurized part	Non-alloy steel	-20°C up to + 450°C
	Stainless steel	-55°C up to + 550°C

Maximum working pressure

Nominal pressure is PN 16 and pressure reduction factor for application at elevated temperatures shall be observed as follows:

Temperature [°C]	Pressure reduction factor	
	Non-alloy steel	Stainless steel
20	1.00	1.00
50	1.00	0.95
100	1.00	0.85
150	0.89	0.77
200	0.81	0.71

Application/Limitation

The expansion joints of types PEJ and SSJB are type approved for application for classes II and III of piping systems as specified in DNVGL-RU-SHIP Pt.4, Ch. 6, Sec. 9 Table 9 and 10 (slip-on joints of slip type).

The expansion joints with both NBR and FKM sealing rings are of fire resistant type.

Piping systems	Footnotes
Flammable fluids (flash point ≤ 60 °C)	
Cargo oil lines	4)
Crude oil washing lines	4)
Vent lines	3)
Inert gas	
Water seal effluent lines	NA
Scrubber effluent lines	7)
Main lines	2), 4)
Distribution lines	4)
Flammable fluids (flash point > 60 °C)	
Cargo oil lines	4)
Fuel oil lines	2), 3), 7)
Lubricating oil lines	2), 3)
Hydraulic oil lines	2), 3), 7)
Thermal oil lines	2), 3)
Sea water	
Bilge lines	1)
Water filled fire extinguishing systems (e.g. sprinkler)	3)
Non-water filled fire extinguishing systems (e.g. foam, drencher systems)	3)
Fire main (not permanently filled)	3)
Ballast systems	1)
Cooling water systems	1)
Tank cleaning services, Non-essential systems	NA
Fresh water	
Cooling water systems	1)
Condensate return systems	1)
Non-essential piping systems	NA
Sanitary/drains/scuppers	
Deck drains (internal)	6)
Sanitary drains	NA
Scuppers and discharge (overboard)	Not approved
Sounding/vent	
Water tanks/dry spaces	NA
Oil tanks (flash point > 60 °C)	2), 3)
Miscellaneous	
Starting/control air	Not approved
Service air (non-essential)	NA
Brine	
CO2 system	Not approved
Steam	5)

• **Footnotes - Fire resistance capability**

- 1) Approved for installation inside machinery spaces of category A - only approved fire resistant types.
- 2) Not inside machinery spaces of category A or accommodation spaces. May be accepted in other machinery spaces provided the joints are located in easily visible and accessible positions.
- 3) Approved fire resistant types except in cases where such mechanical joints are installed on exposed open decks, as defined in SOLAS II-2/Reg. 9.2.3.3.2.2(10) and not used for fuel oil lines.
- 4) Only in pump rooms and open decks - only approved fire resistant types.

• **Footnote - General**

- 5) Approved for pipes on deck with design pressure of 10 bar or less.
- 6) Approved only above bulkhead deck of passenger ships and freeboard deck of cargo ships.
- 7) Not approved in piping systems with impulse pressure load other than water hammer.

Couplings are not approved for systems exposed to vacuum.

Installation

Pipe couplings are not approved for:

- Piping arranged in cargo holds, tanks and other spaces which are not easily accessible. Application of these joints inside tanks may be permitted only for the same media that is in the tanks;
- Piping sections directly connected to sea openings or tanks containing flammable liquids which in the event of damage could cause flooding or fire.

The mechanical joints of type SSJB and PEJ are only to be used in cases where compensation of axial movement of clamped pipes is considered necessary. Usage of these type of joints as the main means of pipe connection is not permitted.

The joints are to be assembled and mounted according to manufacturer's instructions.

Packing elements and other parts subject to wearing shall be replaced by new parts in case of repeated installation or use of the joints.

Type Approval documentation

Tests carried out

1. Burst pressure test,
2. Fire test,
3. Tightness test

Marking of product

For traceability to this type approval, each coupling is at least to be marked with:

Marking	Example
Nominal diameter	DN 100
Nominal pressure	PN 16
Type	SSJB
Sealing type	NBR

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the Type Approval are complied with. Refer to DNVGL-CP-0338, Sec.4.