DNV·GL

Certificate No:
TAP00001D6

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Expansion Joint for Pipe, Slide Type and Flexible Type

with type designation(s)
Slip Telescopic Joint - STL (GB/T 12465-2007, CB M 1129-82), Slip on Packing Joint - SHD (CB 694-1977)

Issued to
Jiangsu Kuize Machinery Industry Limited Company
Nantong, 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:
Slip Telescopic Joint - STL (GB/T 12465-2007, CB M 1129-82)	**up to 80°C. Refer to certificate.**	**16 bar**	**DN80 up to DN600.**
Slip on Packing Joint - SHD (CB 694-1977)	**up to 200°C. Ref. to certificate.**	**10bar**	**DN65 up to DN900.**

Issued at **Hamburg** on **2018-06-25**
This Certificate is valid until **2023-06-24**.
DNV GL local station: **Nantong**

for **DNV GL**

Approval Engineer: **Hagen Markus**

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.

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Product description

Slip-on Joints (slip type) – fire resistant type.

Type	Description	Assembly drawing
SHD	Dress Telescopic Joint with flanges	SHD/B - 00000-1, 2018-06
STL	Slip Telescopic Joints	STL – 00000-A-1, 2018-06

Materials and components[1]

Type - SHD

Component	Material designation	Drawing
Shell body	Q235-B/A SUS 316L/321, SUS304	SHD/B-00000-2
Gland flange		SHD/B-00000-4
Gasket	Flexible graphite GPL710/SL70/G70/FN70/RS70/F70	SHD/B-00000-3
Telescopic tube	20#, Q235-B/A SUS 316L/321, SUS304	SHD/B-00000-5
Bolt/Nut	Q235-B/A SUS 316L/321, SUS304	--

Type - STL

Component	Material designation	Drawing
Shell body	20#, Q235-B,/A SUS 316L/321, SUS304	STL-00000-2
Flange		
Nut and bolt		STL-00000-4
Sealing Ring	NBR HG/T3091-2000 HG/T3089-2001	STL-00000-5

Note

[1] The specified stainless steel grades are not approved for application in sea water systems or for installation on open decks and other areas not protected against green sea.

Selection of materials

It shall be noted that the selection of the materials considers the applicable service condition with respect to type of media, flow velocity, media temperature etc. and installation area of the piping system. In particular, the resistance to corrosion, erosion, oxidation and other deterioration during projected service life are to be considered.
Reference is made to DNVGL Rules Pt.4, Ch.6 – Section 2 – Materials.

Requirements depending on pipe classes and application

The requirements of pressurised parts in view of material certificates depends on the pipe class applicable for the intended application.
The following DNV GL Rules are to be observed:

DNV GL Pt. 4, Ch. 6, Sec. 1 – Table 1 (pipe classes)
Sec. 2 - Table 3 (material certificates acc. to pipe classes)

Overview size range and nominal pressures

SHD		STL	
DN	PN	DN	PN
65, 80, 100	10	80, 100, 125	16
125, 150, 200		150, 200	
250, 300, 350		250, 300	
400, 450, 500		350, 400	
500, 600, 700		450 (457), 450 (480)	
800, 900		500 (508), 508 (530)	
--		600 (610), 600 (630)	

Temperature range

The applicable service temperature range for the coupling is limited by the material of the sealing/gasket and metallic material selected for the pressurised parts.
In the following the approved service temperatures for the individual components are listed:

Type	Sealing / Gasket material	Temperature range
SHD, STL	NBR	-20°C up to + 80°C
	EPDM[1],	-30°C up to + 110°C
	FKM (FPM)	-30°C up to + 200°C

Type	Pressurised components material grades	Temperature range
SHD, STL	Carbon steel	
	Q235-B/A	- 20°C up to + 450°C
	20#	0°C up to + 400°C
	Stainless steel	
	SUS 316L/321, SUS304	- 55°C up to + 400°C

Examples

Coupling configuration	Temperature range
SHD, STL coupling with coupling body made of 20# and NBR sealing	0°C up to + 80°C
SHD coupling with SUS316L coupling body and FKM sealing	- 30°C up to + 200°C

For application at elevated temperatures the pressure reduction factors as specified below are to be observed:

Temperature	Carbon steel	Stainless steel
50°C	1.0	0.95
100°C	1.0	0.85
150°C	0.89	0.77
200°C	0.81	0.71

Notes
[1] EPDM shall not be used for hydrocarbon based fluids.

Application/Limitation

The pipe coupling of types SHD and STL are type approved for application in pipe class II and III as specified in DNV GL Rules Pt.4, Ch. 6 Piping Systems, Section 9, Table 10 and 11.
Type of mechanical joint: Slip-on Joints (slip type) – fire resistant type.

Table Range of Application

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	--
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), 8)
Lubricating oil lines	2), 3)
Hydraulic oil lines	2), 3), 8)
Thermal oil lines	Not approved
Sea water	7)
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	--
Fresh water	
Cooling water systems	1)
Condensate return systems	1)
Non-essential piping systems	--
Sanitary/drains/scuppers	
Deck drains (internal)	6)
Sanitary drains	--
Scuppers and discharge (overboard)	Not approved
Sounding/vent	7)
Water tanks/dry spaces	--
Oil tanks (flash point > 60 °C)	2),3)
Miscellaneous	
Starting/control air	Not approved
Service air (non-essential)	--
Brine	7)
CO2 system	Not approved
Steam	5)

Footnotes - Fire resistance capability

1) Approved for installation inside machinery spaces of category A.
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.
4) Approved. Only in pump rooms and open decks.

Footnotes - 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) SUS 316L/321, SUS304 stainless steel grades are not considered corrosion resistant in piping systems conveying sea water or at installation areas unprotected against green sea, e.g. open deck.
8) Not approved in piping systems with impulse pressure load other than water hammer.

Installation

Pipe couplings are in general not approved for:
- pipelines 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 pipe coupling of type SHD and STL 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.
Note for type SHD
It is to be noted that the axial movement of the Telescopic tube is not limited by a mechanical stopper. To ensure tightness of the coupling during service the radial installation range LO (+- 80-70) as specified in the installation instruction is to be observed.

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

Type Approval documentation

Tests carried out

Marking of product

Each pipe coupling shall bear legible and durable marking on the body or on a plate fixed securely to the body. Scope of marking shall be at least as follows:

Scope	**Example SHD**	**Example STL**
Manufacturer's name	Jiangsu Kuize Machinery Industry Limited Company	Jiangsu Kuize Machinery Industry Limited Company
Standard model	SHD	STL
Working Pressure	10	10 up to 16
Working temperature (Depending on sealing and/or material of pressurised parts)	0°C up to +170°C	-20°C up to +80°C
Rubber sealing material	FPM	NBR
Manufacturing date	2018-06-13	2018-06-13

Periodical assessment

For retention of the type approval certificate periodical assessments shall be carried out at production places by DNVGL surveyor.
The objective of the periodical assessment is to verify that the design and production conditions for the type approval have not been altered.

Main scope of the assessment:
- verification of the production and quality control system
- review of quality control documentation of recent deliveries
- review of drawings in production to verify any design changes which may have an impact on data specified in the type approval certificate, performance and range of application
- verification of the product marking

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

In connection with the renewal assessment, burst pressure tests on test assemblies are to be carried out in the presence of the DNV GL surveyor. The test assemblies shall consist of two pieces of tubing connected with a mechanical joint of straight type. Selection of joint sizes and quantity of test assemblies is to be determined prior to the assessment.
At least one of the test assemblies is to be manufactured in the presence of the surveyor according to the manufacturers specification.

End of certificate