

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Pipe Couplings

with type designation(s)
S1

Issued to

MUFTY NSK, OOO
St. Petersburg, Russian Federation

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.

Temperature range: up to 110°C
Max. working press.: 1,6 MPa
Sizes: Pipe O.D. 48,3 up to 168,3 mm

Issued at **Hamburg** on **2021-06-03**

for **DNV**

This Certificate is valid until **2026-06-02**.

DNV local station: **St. Petersburg CMC**

Approval Engineer: **Andrii Pishchanskyi**

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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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

Type S1 is slip type slip-on mechanical joints and is of non-fire-resistant type. Refer to Technical Specification 24.20.40-001-10756396-2017 TY for further information. Mechanical joints of types S1 consists of the following main components:

Component	Material	Reference example
Hull	03X17H14M3 as per GOST 5632-2014	МДША.19.028.01.000
	08X18H10 as per GOST 5632-2014	
Bridge plate	07X16H6 as per GOST 5632-2014	МДША.19.028.01.003
Sealing sleeve	EPDM	МДША.19.028.00.011
	NBR	
Pins	03X17H14M3 as per GOST 5632-2014	МДША.12.009 and МДША.13.009
Bolts	03X17H14M3 as per GOST 5632-2014	BOLT GOST R ISO 4017-2013 M10x90-A4-80
Washer	03X17H14M3 as per GOST 5632-2014	МДША 017.002

Temperature range¹

Sealing material	Temperature
EPDM ²⁾	-30°C to +110°C
NBR	-30°C to +100°C

Notes

- 1) According to NSK Technical Specification 24.20.40-001-10756396-2017 TY;
- 2) EPDM is not to be used for hydrocarbon applications.

Application/Limitation

Mechanical joints of type S1 is type approved for class II and III of the following piping systems with pipes made of metallic materials:

No.	Piping system	Footnote
	<i>Flammable fluids (flash point ≤ 60 °C)</i>	
1	Vent lines	3
	<i>Inert gas</i>	
2	Water seal effluent lines	
3	Scrubber effluent lines	
4	Main lines	2, 4
	<i>Flammable fluids (flash point > 60 °C)</i>	
5	Fuel oil lines	2, 3
6	Lubricating oil lines	2, 3
7	Hydraulic oil lines	2, 3
8	Thermal oil lines	2, 3
	<i>Sea water</i>	
9	Bilge lines	1
10	Water filled fire extinguishing systems (e.g. sprinkler)	3
11	Non-water filled fire extinguishing systems (e.g. foam, drencher systems)	3
12	Fire main (not permanently filled)	3
13	Ballast systems	1
14	Cooling water systems	1
15	Tank cleaning services	
16	Non-essential systems	
	<i>Fresh water</i>	
17	Cooling water systems	1
18	Condensate return systems	1
19	Non-essential piping systems	
	<i>Sanitary/drains/scuppers</i>	
20	Deck drains (internal)	6
21	Sanitary drains	
	<i>Sounding/vent</i>	
22	Water tanks/dry spaces	
23	Oil tanks (flash point > 60 °C)	2, 3
	<i>Miscellaneous</i>	
24	Service air piping systems (non-essential)	
25	Brine	
26	Steam	5

Note

- 1) Not approved for application 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) Only in vent lines from tanks containing medium other than fuel oil and when mechanical joints are installed on exposed open decks, as defined in SOLAS II-2/Reg.9.2.3.3.2.2(10).
- 4) Not approved for application in pump rooms and open decks.
- 5) May be used for pipes on deck with a design pressure of 10 bar or less.
- 6) Only above bulkhead deck of passenger ships and freeboard deck of cargo ships.

Limitations

Mechanical joints of type S1 are in general not approved for the following installation locations and applications:

- as a means of pipe connection is not permitted except for cases where compensation of axial pipe deformation is necessary;
- for use in piping system with impulse pressure load other than water hammer, e.g. pressure line of hydraulic piping system;
- pipelines inside cargo holds, tanks and other spaces which are not easily accessible;
- scuppers and discharge (overboard);
- starting, control air and CO₂ systems;
- systems containing oxygen (more than 25% by volume).

Refer to DNVGL-RU-SHIP Pt.4 Ch.6 Sec.9 [5.2] and DNVGL-CP-0185.

Installation of mechanical joints inside tanks is permitted in case the pipes and tanks contain a medium of the same nature.

Installation

For mounting and installation of the couplings the instructions in NSK Couplings Operation Manual 10756396.24.20.40.001 P3 are to be observed.

Type Approval documentation

1. Technical Specification TY 24.20.40-001-10756396-2017;
2. Operation manual 10756396.24.20.40.001 P3;
3. Drawings as per TY 24.20.40-001-10756396-2017 Annex B;
4. Test reports:
 - a. No. 01-11-2020 dated 2020-11-05;
 - b. No. 001-01-2021 dated 2021-01-22.

Tests carried out

1. Tightness test;
2. Repeated assembly test;
3. Burst pressure test;
4. Pull-out test;
5. Vacuum test.

Marking of product

For traceability of the product to this certificate each pipe coupling should be marked with at least as follows:

- Assembly

Scope	Example
Manufacturer's mark	MUFTY NSK
Coupling type	S1
Pipe O.D. in mm	57
PN Marine application	PN plus ship symbol
PN Industrial application	PN plus factory symbol
Gasket material	<ul style="list-style-type: none"> • E for EPDM; • N for NBR
Serial number	Coupling article №11010
Bolt torque moment	15 N*m

- Sealing sleeve

Scope	Example
Manufacturer's short cut	NSK
Pipe O.D. in mm	57,0
Gasket material	<ul style="list-style-type: none"> • E for EPDM; • N for NBR

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform periodical assessment as per DNVGL-CP-0338 Sec.4 to verify that the conditions for the Type Approval are complied with.

To check the validity of this certificate, please look it up in <https://approvalfinder.dnvgl.com>.