

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Pipe Couplings

with type designation(s)
MF11 and MF11-PP

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. 26,9 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

Types MF11 and MF11-PP are grip type slip-on mechanical joints. Type MF11 is of non-fire-resistant type, whereas type MF11-PP is fitted with flame protection housing and is of fire-resistant type. Refer to Technical Specification 24.20.40-001-10756396-2017 TY for further information. Mechanical joints of types MF11 consist of the following main components:

- Assembly

Component	Material	Reference example
Hull	03X17H14M3 as per GOST 5632-2014	МДША.11.005.01.000
	08X18H10 as per GOST 5632-2014	
Bridge plate	07X16H6 as per GOST 5632-2014	МДША.11.005.01.003
Anchoring ring	07X16H6 as per GOST 5632-2014	МДША.11.005.00.004
Sealing sleeve	EPDM	МДША.11.005.00.011
	NBR	
Pins	03X17H14M3 as per GOST 5632-2014	МДША.14.005 and МДША.15.005
Bolts	03X17H14M3 as per GOST 5632-2014	BOLT GOST R ISO 4017-2013 M8x70-A4-80
Nut	03X17H14M3 as per GOST 5632-2014	МДША.018.002
Washer	03X17H14M3 as per GOST 5632-2014	МДША.017.002
Strip insert	03X17H14M3 as per GOST 5632-2014	МДША.031.000-01

- Mechanical joints of types MF11-PP are additionally fitted with flame protection as follows

Components	Materials	Reference
Cover plate	03X17H14M3 as per GOST 5632-2014	e.g. МДША.14.005.00.020
Fire protection cover	ОГНЕ3А-TPM	e.g. МДША.14.005.00.021
Fire protection insert	ОГНЕ3А-TPM	e.g. МДША.22.001.000

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 MF11 and MF11-PP are 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	Cargo oil lines	4
2	Crude oil washing lines	4
3	Vent lines	3
<i>Inert gas</i>		
4	Water seal effluent lines	
5	Scrubber effluent lines	
6	Main lines	2, 4
7	Distribution lines	4
<i>Flammable fluids (flash point > 60 °C)</i>		
8	Cargo oil lines	4
9	Fuel oil lines	2, 3
10	Lubricating oil lines	2, 3
11	Hydraulic oil lines	2, 3
12	Thermal oil lines	2, 3
<i>Sea water</i>		
13	Bilge lines	1
14	Water filled fire extinguishing systems (e.g. sprinkler)	3
15	Non-water filled fire extinguishing systems (e.g. foam, drencher systems)	3
16	Fire main (not permanently filled)	3
17	Ballast systems	1
18	Cooling water systems	1
19	Tank cleaning services	
20	Non-essential systems	
<i>Fresh water</i>		
21	Cooling water systems	1
22	Condensate return systems	1
23	Non-essential piping systems	
<i>Sanitary/drains/scuppers</i>		
24	Deck drains (internal)	5
25	Sanitary drains	
<i>Sounding/vent</i>		
26	Water tanks/dry spaces	
27	Oil tanks (flash point > 60 °C)	2, 3
<i>Miscellaneous</i>		
28	Service air piping systems (non-essential)	
29	Brine	
30	Steam	

Note

- 1) 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.
- 5) Only above bulkhead deck of passenger ships and freeboard deck of cargo ships.

Fire-resistant type

Type MF11-PP is fitted with flame protection and is to be used for applications, where “fire resistant type” as per DNVGL-RU-SHIP Pt.4 Ch.6 Sec.9 [5.2.5] is required.

Limitations

Mechanical joints of types MF11 and MF11-PP are in general not approved for the following installation locations and applications:

- 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 PЭ 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 PЭ;
3. Drawings as per TY 24.20.40-001-10756396-2017 Annex B;
4. Compliance certificate No. ССБК RU.ПБ09.H000968;
5. Test reports:
 - a. No. 01-11-2020 dated 2020-11-05;
 - b. No. 001-01-2021 dated 2021-01-22;
 - c. No. 18-08-30/1MP dated 2018-08-30;
 - d. No. 18-08-30/2MP dated 2018-08-30;
 - e. No. 18-08-30/2MP dated 2018-08-30;
 - f. No. 0804405-21-СИЦ dated 2021-05-20;
 - g. No. 0104390-21-СИЦ dated 2021-05-20;
 - h. No. 0104392-21-СИЦ dated 2021-05-20.

Tests carried out

1. Tightness test;
2. Repeated assembly test;
3. Burst pressure test;
4. Pull-out test;
5. Vibration (endurance) test;
6. Fire resistance test;
7. Vacuum test;
8. Non-combustibility test.

Marking of product

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

- Assembly

Scope	Example
Manufacturer's mark	MUFTY NSK
Coupling type	MF11
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

- Fire protection

Scope	Example
Article part number	МДША.14.010.00.021
Article part number	МДША.022.003.001
Type	TRM-profile

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>.