DNV·GL

Certificate No:
TAP0000276

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Pipe Couplings

with type designation(s)
UNI-FLEX (F) - Axially not restraint

Issued to
UNI-Coupling B.V.
Sint-Oedenrode, Netherlands

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.

Temperature range:	**Refer to certificate.**
Max. working press.:	**6bar up to 16 bar**
Sizes:	**Pipe O.D. 19mm up to 412mm**

Issued at **Hamburg** on **2020-11-26**

This Certificate is valid until **2025-11-25**.

for **DNV GL**

DNV GL local station: **Netherlands CMC**

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 joint slip type pipe coupling with EPDM/NBR gaskets of type UNI-FLEX (F).
Fire protected types in combination with flame protection housing of type UNI-FIRE.

For further details refer to UNI Coupling "Technical Manual".

Technical Data

Pipe coupling		
Components	**Material combination**	
	W2	**W5**
Housing with bridge	1.4016, 1.4301	1.4571, 1.4404, 1.4462, 1.4162
Sealing sleeve	EPDM/NBR	
Strip insert (optional)	1.4571, 1.4404, 1.4462, 1.4162	
Anchoring ring	1.4310	
Lock bar solid Standard (S)	1.0760	1.4571, 1.4404, 1.4462, 1.4162
Locking bolts	1.0760, 10.9, 12.9	A4-80, A4-70
Washer	200HV	200HV/A4

Flame protection		
Components	**Materials**	**Reference**
Housing	1.4571, 1.4404, 1.4462, 1.4162	Drawing 1-W5-VB
Fire protection material protected with aluminium tape	Acc. to drawing	Drawing 1-FP-VM

Pipe outer diameter (O.D) and Nominal pressure range (PN)

Pipe size O.D.[1] mm	**Nominal Pressure PN (bar)**	**Type designation**
19 – 172	16	Group 1
185 - 412		Group 2
185 - 412	10	Group 2
277 - 412	6	Group 2

Temperature range[1]

Sealing	**Temperature**	**Pipe O.D. range**
EPDM[2]	-30°C to +125°C	21mm up to 172mm
	-20°C to +80°C	180mm up to 406,4mm
NBR	-20°C to +80°C	All diameters

Notes
[1] According to UNI Coupling "Technical Manual"
[2] EPDM is not to be used for hydrocarbon applications.

Application/Limitation

The slip-on joint slip type coupling of type UNI-FLEX (F) is type approved for pipe class II and III piping systems.

The pipe couplings are not approved in piping systems with impulse pressure load other than water hammer, e.g. pressure lines of hydraulic piping systems.

Table - Approved applications

Piping systems	Notes
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	--
Main lines	2), 4)
Distribution lines	4)
Flammable fluids (flash point > 60 °C)	
Cargo oil lines	4)
Fuel oil lines	2), 3)
Lubricating oil lines	2), 3)
Hydraulic oil lines	2), 3)
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	--
Fresh water	
Cooling water systems	1)
Condensate return systems	1)
Non-essential piping systems	--
Sanitary/drains/scuppers	
Deck drains (internal)	6)
Sanitary drains	--
Sounding/vent	
Water tanks/dry spaces	--
Oil tanks (flash point > 60 °C)	2), 3)
Miscellaneous	
Service air piping systems (non-essential)	--

Notes - Fire resistance
For applications where "fire resistance types" are required, the pipe coupling is to be covered by flame protection housing.
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.

Notes – General
6) Only above bulkhead deck of passenger ships and freeboard deck of cargo ships.

Fire resistance types
For application requiring fire resistance types as specified by the Rules Pt.4, Ch.6 – Section 9 – Table 9 Application of mechanical joints, the UNI-FLEX (F) pipe coupling is to be protected by a flame protection housing of type UNI-FIRE.

Limitations
Slip-on joints are in general not approved for the following installation locations and applications:
- pipe lines 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)

Reference DNV GL Pt.4, Ch.6 Section 9 – 5.2 Pipe couplings other than flanges, CP-0185.

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

For correct mounting and installation of the couplings the instructions in the UNI Coupling "Technical Manual" are to be observed.

Type Approval documentation

Tests carried out

Marking of product
For traceability of the product to this certificate ach pipe coupling, flame protection respectively shall be marked with at least as follows

Pipe coupling	
Scope	**Example**
Manufacturer's mark	UNI COUPLING
Coupling type	1-S-F-W5-E-33-36
Pipe O.D. size range mm	33-36
PN Marine application	PN 16 plus ship symbol
PN Industrial application	PN 25 plus factory symbol
Gasket material	EPDM
Bar code	
Bolt torque	20 Nm

Gasket	
Scope	**Example**
Manufacturer's short cut "X"	Manufacturer name
Production lot	Number Code
Article part number	Number code
Colour EPDM, NBR	Black

Flame protection	
Scope	**Example**
Manufacturer's mark	UNI COUPLING
Article part number	Number code
Type	UNI-FIRE
Size range	64-80

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 the Class Programme DNVGL-CP-0338, Sec.4.

End of certificate