

Type Approval Certificate



[Mechanical Joints]

Initial Approval 1st October, 2015

Manufacturer UNI-Coupling B.V.

Kerkdijk-Zuid 11a, 5492 HW, Sint-Oedenrode, Netherlands

Product Description UNI-FLEX (F)

- Mechanical Joint(Slip-on joint _ Slip type)
- Axially not restrained

" See Appendix 1 "

Approval Condition

" See Appendix 1 "

THIS IS TO CERTIFY that the above-mentioned product has been approved in accordance with the relevant requirement of this Society's Rules and / or of the recognized standards as follows.

Pt. 5, Ch. 6, Sec. 1 of the Rules for Classification of Steel Ships and IACS UR P2, 2.11.

This Certificate is valid until 30th September, 2025

Issued at Busan, Korea on 24th February, 2021



This certificate is signed electronically in accordance with IMO FAL.5/Circ.39/Rev.2. Validation and authentication of the certificate can be confirmed from "<http://e-cert.krs.co.kr>" by using the tracking No(ME21005930624) and certificate No.(RTD34402-PE002).



KOREAN REGISTER

**General Manager of
Marine & Ocean Equipment Team**

Note : 1. This certificate will be valid subject to complying with the approval conditions described on the certificate and/or on the Rules of this Society.

2. This certificate will be invalid from the expiry date aforementioned unless the extension or renewal has been granted to the applicant or the manufacturer.

3. Any significant modifications or changes in design or construction to the above product without approval from this Society will render this certificate invalid.

4. Should the specified rules, regulations or standards be amended during the validity of this certificate, the product is to be re-approved by this Society in accordance with the requirements as amended.

Product Description and/or Approval Condition

Date of Issue : 24th February, 2021

1. Product Description ;

1) Mechanical Joints Specification

(1) Design Pressure

Size range(OD) (mm)	PN (bar)
21 ~ 412	16
210 ~ 412	10
263 ~ 412	6

(2) Temperature Range

Rubber Material/Size range(OD) (mm)	Temperature range (°C)
NBR	-20 ~ 80
EPDM / 21 ~ 172	-30 ~ 125
EPDM / 180 ~ 406.4	-20 ~ 80

(3) Material

Component	Material	
	W2 (DIN) / W2 (AS)	W5 (DIN) / W5 (AS)
Casing	1. 4016 / 301	1. 4571 / 316Ti
Lock Bars S-Type	1. 0760 / -	1. 4571 / 316Ti
Lock Bars L-Type	1. 4571 / -	- / -
Bolts	1. 0760 / -	A4-80 / 316
Anchor Ring	1. 4310 / 301	1. 4310 / 301
Rubber Sleeve	NBR / EPDM	NBR / EPDM
Pipe Material	Carbon steel, stainless steel, Cu, CuNiFe	

(4) Performed type approval tests ;

Tightness test, Burst test, Fire resistance test, Vacuum test

(5) Approved Drawing Numbers ;

Screw-DIN-912-W5, Brug Group 1-W5-G-F-R, Brug Group 1-G-F-R
 Brug Group 2-W5-G-F-R-A-B-C, Brug Group 2-G-F-R-A-B-C, Flamprotection HOUSING
 Rubber Group 1-2-F-R, Rubber Group 1-2-N-F-R, Rubber Group 2-2-F-R-200-2150
 Rubber Group 2-2-F-R, Rubber Group 2-2-N-F-R-200-2150, Rubber Group 2-2-N-F-R
 Housing Group 1-W5-F-G-R, Housing Group 1-F-G-R, Housing Group 2-W5-F-R-A
 Housing Group 2-W5-F-R-B, Housing Group 2-W5-F-R-C, Housing Group 2-W5-G
 Housing Group 2-F-R-A, Housing Group 2-F-R-B, Housing Group 2-F-R-C
 Housing Group 2-G, Bolt_Guided_Group 1-2-3, Bolt_Guided_Group 1-2-3-W5
 Hollow_Bolt_Guidet_Group 1-2-W5, Bolt_Threaded_Group 1-2-3
 Bolt_Threaded_Group 1-2-3-W5, Hollow_Bolt_Threaded_Group 1-2-W5, Revet

Product Description and/or Approval Condition

Date of Issue : 24th February, 2021

2. Intended for ;
This mechanical joints can be used for the following pipeline lines in easily visible and accessible positions ;
- 1) Flammable fluids(Flash point ≤ 60 °C)
: Cargo oil lines, Crude oil washing lines and Vent lines
 - 2) Inert gas
: Water seal effluent lines and Scrubber effluent lines
: Main lines*
: Distribution lines
 - 3) Flammable fluids(Flash point > 60 °C)
: Cargo oil lines
: Fuel oil lines*, Lubricating oil lines*, Hydraulic oil* and Thermal oil*
 - 4) Sea water
: Bilge lines, Ballast system and Cooling water system
: Water filled fire extinguishing systems, e.g. sprinkler systems
: Non water filled fire extinguishing systems, e.g. foam, drencher systems
: Fire main(not permanently filled)
: Tank cleaning services and Non-essential systems
 - 5) Fresh water
: Cooling water system and Condensate return
: Non-essential system
 - 6) Sanitary/Drains/Scuppers
: Deck drains (internal)**
: Sanitary drains
 - 7) Sounding/Vent
: Water tanks/Dry spaces lines
: Oil tanks lines(Flash point > 60 °C)*
 - 8) Miscellaneous
: Service air (non-essential) and Brine
: Steam***
- * : Excluding 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 position
- ** : Only above bulkhead deck of passenger ships and freeboard deck of cargo ships
- *** : Slip type slip-on joints may be used for pipes on deck with a design pressure of 10 bar or less
3. Approval condition and Limitation ;
- 1) These mechanical joints are not to be used for Class I piping system.
 - 2) These mechanical joints are to be mounted in accordance with the manufacturer's instructions.
 - 3) These mechanical joints, which in the event of damage could cause fire or flooding, are not to be used in piping sections directly connected to the sea openings or tanks containing flammable fluids.
 - 4) Piping in which these mechanical joints are fitted is to be adequately adjusted, aligned and supported. Supports or hangers are not to be used to force alignment of piping at the point of connection.
 - 5) These mechanical joints are not to be used in pipelines 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.
 - 6) Individual Product Certification is required where the mechanical joints are intended to be used for Class II piping system.

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