



TYPE APPROVAL CERTIFICATE

Certificate No:
TAP0000027
Revision No:
5

This is to certify:

That the **Swage type couplings**

with type designation(s)
PreFis-XL

Issued to

Van Leeuwen Deutschland GmbH & Co. KG
Falkensee, Brandenburg, Germany

is found to comply with

DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV class programme DNV-CP-0185 – Type approval – Mechanical joints

Application :

Products approved by this certificate are accepted for installation on all vessels classed by DNV.

Temperature range: -55°C up to +400°C
Max. working press.: Dep. on size and material
Sizes: Pipe O.D. 10.0 mm up to 88.9 mm

Issued at **Hamburg** on **2023-09-29**

This Certificate is valid until **2028-09-28**.

DNV local unit: **Magdeburg**

Approval Engineer: **Christian Kaemmer**

for **DNV**

Sven Klinger
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.



Form code: TA 251

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Product description

Swage fittings consisting of compression units and combination sleeve. Metallic sealing.

Materials:

Socket:	Stainless steel	1.4571 / 1.4404 / 316Ti / 316L or equivalent
	Carbon steel	1.0570 / S355J2G3 / S355J2 / E355 / P355N / S355J2H or equivalent
Inner/outer ring:	Carbon steel	1.7227 / 1.7225 / E355 or equivalent
Sealing:	Metallic sealing	

Pressing tool: in accordance with the instructions of the manufacturer.

Application/Limitation

The PreFis-XL swage-type fitting system is type-approved for pipe class I, II & III-piping systems for the following applications: (Extract from DNV Rules Pt.4, Ch.6, Sec. 9 – Table 9)

- 1- Flammable fluids (flash point $\leq 60^{\circ}\text{C}$)
- 2- Inert gas
- 3- Flammable fluids (flash point $> 60^{\circ}\text{C}$)
- 4- Fresh water
- 5- Sanitary/drains/scuppers
- 6- Sounding/Vent
- 7- Miscellaneous

Type of mechanical joint: Compression coupling – swage type acc. to DNV Rules Pt.4, Ch.6, Sec. 9 – Table 8, 9 and 10.

	Stainless Steel						
Pipe outer Diameter [mm]	10.0 up to 20.0	20.0 up to 30.0	30.0 up to 40.0	40.0 up to 50.0	50.0 up to 70.0	70.0 up to 80.0	
Max. allowable working pressure M.A.W.P [bar]	260 bar	180 bar	160 bar	140 bar	140 bar	100 bar	
Minimum Wall Thickness of pipes [mm] acc. to DNV-Rules "Ships" Pt 4 – Ch 6 – Sec 9 Table 3	1.0	1.6	1.6	1.6	2.0	2.0	
	Carbon Steel						
Pipe outer Diameter [mm]	10.0 up to 20.0	20.0 up to 30.0	30.0 up to 40.0	40.0 up to 50.0	50.0 up to 70.0	70.0 up to 80.0	80.0 up to 90.0
Max. allowable working pressure M.A.W.P [bar]	630 bar	450 bar	400 bar	250 bar	250 bar	220 bar	200 bar
Minimum Wall Thickness of pipes [mm] acc. to DNV-Rules "Ships" Pt 4 – Ch 6 – Sec 9 Table 2	1.6	2.0	2.0	2.3	2.3	2.6	2.9

Max. pressure to be de-rated at elevated temperature:

Temperature (° C)	20	50	100	150	200	250	300	350	400
Pressure reduction factor Stainless Steel	1.00	0.95	0.85	0.77	0.71	0.67	0.63	0.60	0.58
Pressure reduction factor Carbon Steel	1.00	1.00	1.00	0.89	0.81	0.72	0.65		

These couplings are not to be used on tubes in cold fabricated (hard temper) conditions.

General note: Stainless steel grades like 1.4571 / 1.4404 / 316Ti / 316L are not seawater-resistant materials and therefore, shall not be used in seawater applications.

Burst pressure tests have been carried out once with 4 * maximum allowable working pressure [M.A.W.P.] acc. to manufacturer's premises.

Type Approval documentation

Tests carried out

Marking of product

- Manufacturer's Mark
- Type
- Nominal Diameter

Periodical assessment

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

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