DNV·GL

Certificate No:
TAP00000NZ

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Pipe Couplings, Flared or Welded Nipple Type

with type designation(s)
VOSS Welding Couplings with O-Ring Seal

Issued to
VOSS Fluid GmbH
Wipperfürth Nordrhein-Westfalen, Germany

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 :

The VOSS Welding Couplings are type approved for application in pipe class I, II and III-piping systems, non fire resistant type, as listed in DNV GL Ship Rules Pt. 4, Ch. 6, Sec. 9 Table 12 and 13 / pipe unions - welded and brazed types.
Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.

Temperature range:	**- 35 °C up to + 200 °C. Refer to certificate.**
Max. working press.:	**160 bar up to 630 bar. Refer to certificate.**
Sizes:	**6 mm up to 42 mm. Refer to certificate.**

Issued at **Hamburg** on **2017-03-14**
This Certificate is valid until **2022-03-13**.
DNV GL local station: **Essen**

Approval Engineer: **Hagen Markus**

for **DNV GL**

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

The VOSS Welding Couplings are designed for the use in 24° VOSS tube coupling systems.

This type approval covers the following couplings and connection elements:

- Straight welding couplings
- Welding bulkhead couplings[1]
- Welding nipples with O-ring seal
- VOSS Nuts

Notes

[1] For penetration through A – class bulkheads and decks the wall thickness of the connected tube shall be at least 3mm. (Refer to SOLAS Chapter II-2, Regulation 9.3)

Materials

Element	Material designation	
Coupling	Carbon steel	C15 acc.to DIN EN 10277 - 4
	Stainless steel[3]	AISI 316 Ti, 1.4571 acc. to DIN EN 10088 - 3
Tubes[2]	Carbon steel	E235 +N acc. to DIN EN 10305 - 4
	Stainless steel	1.4571 according to DIN EN 10216 - 5, CFA or CFD
O-ring VOSS NBR	70 to 80 Shore A	

Notes

[2] For selection of the tube wall thickness the DNV GL Ship Rules Pt.4, Ch.6, Section 9, Tables 3 and 4 are to be observed. Requierements on material certificates are defined in Section 2, Table 3.

[3] The stainless steel grade AISI 316 Ti, 1.4571 is not approved for application in sea water piping systems. For application in sea water systems stainless steel grades with a minimum pitting resistance equivalent number (PREN) of 30 shall be used.

Application/Limitation

The VOSS Welding Couplings are type approved for application in pipe class I, II and III-piping systems, fire resistant type, as listed in DNV GL Ship Rules Pt. 4, Ch. 6, Sec. 9 Table 12 and 13.
Mechanical joint type: Pipe unions, welded and brazed types.

For selection of the welding couplings the applicable specific service conditions in view of service temperature, media and installation location are to be observed.
Refer to instructions of the "VOSS Tube coupling technology catalogue", Section 8 - General technical notes and DNV GL Rules Pt.4, Ch.6, in particular Section 2 - Materials and Section 9.

The welding of couplings shall be carried out by qualified welders using approved welding procedure specifications and type approved welding consumables. Refer to DNV GL Rules Pt.2, Ch.4.

Welding of joints belonging to pipe class I and class II piping systems requires approval based on a welding procedure qualification test (WPQT). Refer to DNV GL Rules Pt.4 Ch.10 – 1 Welding.

Sizes and pressure range

Series	Tube O.D. - mm	Nominal pressure PN
S	6, 8, 10, 12 and 14	630
S	16, 20, 25 and 30	400
S	38	315
L	6, 8, 10, 12, 15, 18	315
L	22, 28, 35, 42	160

Temperature range

Stainless Steel[1] - 55 °C up to 200 °C
Carbon Steel[1] - 20[2] °C up to 120 °C
VOSS NBR (Standard) - 35 °C up to 100[3] °C

Notes
[1] For service temperatures above 50°C (stainless steel) and 120°C (carbon steel) the appropriate pressure derating factors according to "VOSS Tube coupling technology catalogue", Section 8 - General technical notes is to be observed.
[2] Lowest medium temperature -20°C, lowest environmental temperature -40°C.
[3] Refer to "VOSS Tube coupling technology catalogue", Section 8.

The applicable temperature range for combination of couplings with different types of sealing materials, the limiting value of above mentioned minimum and maximum temperatures are to be observed.

Examples

Stainless steel pipe coupling with NBR sealing: - 35°C up to 100°C
Carbon steel pipe coupling with FPM sealing: - 20°C up to 200°C

Type Approval documentation

Tests carried out

Burst test, leakage test, vibration test and pressure pulsation test, repeated assembly test, pull out test, fire resistance test.

Marking of product

Element	Marking
Coupling	VOSS, identification number of manufacturer
Nut	VOSS, pipe size, identification number of manufacturer

Periodical assessment

For retention of the type approval certificate periodical assessments shall be carried out at production places by DNVGL surveyor.
The objective of the periodical assessment is to verify that the design and production conditions for the type approval have not been altered.

Main scope of the assessment:
- verification of the production and quality control system
- review of quality control documentation of recent deliveries
- review of drawings in production to verify any design changes which may have an impact on data specified in the type approval certificate, performance and range of application
- verification of the product marking

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

End of certificate