



Certificate no.:
TAD00001RZ

TYPE APPROVAL CERTIFICATE

This is to certify:

that the **Marine Riser Equipment**

with type designation(s)
8" NPS Gooseneck F/HCM & HOM

issued to

Sub Sea Services AS
STAVANGER, Norway

is found to comply with

DNV-OS-E101 – Drilling facilities, Edition July 2024

DNV statutory interpretations DNV-SI-0166 – Verification for compliance with Norwegian shelf regulations, Edition July 2021

Application:

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Issued at **Høvik** on **2025-06-23**

This Certificate is valid until **2030-06-22**.

DNV local unit: **West Norway CMC**

for **DNV**

Approval Engineer: **Jan H. Hansen**

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 USD 300 000.

Reference Standards

- [1] API 6A, Specification for Wellhead and Christmas Tree Equipment, 21st Edition, 2022
- [2] API 6X, Design Calculations for Pressure-Containing Equipment, 2nd Edition, 2019
- [3] API 16A, Specification for Drill-through Equipment, 4th Edition, April 2017
- [4] API 16C, Specification for Choke and Kill Equipment, 3rd edition, February 2021
- [5] ISO 15156/NACE MR0175 "Materials for use in H₂S-containing environments in oil and gas production", 4th Ed.

Product description

This Gooseneck is to be used together with the Hose Connection Module (HCM) on the Pump Interface Joint (PIJ) or the Hang-Off Module (HOM) on the Subsea Pump Module (SPM) for the Enhanced Drilling MPD Riser System. It is designed to be used down to 500m below sea level and contains a ROW locking bolt design

Application/Limitation

Design Specifications	Value
Gooseneck Minimum Bore ID:	5.25 in / 133.35 mm
Maximum Internal Working Pressure:	3000 psi / 207 bar
Test pressure	4500 psi / 311 bar
Maximum external tension / hanging load:	39.4 kN / 4 mT
Maximum external shear load:	11 kN
Maximum allowable bending moment:	18 kNm
Min. / max design temperature:	-20°C / +121°C
Corrosion allowance:	3.0 mm / 0.12 inch
Service:	Standard
Connection at hose end:	7 1/16" 5M, Hub Type 16BX, API 16A, BX-156
Box connection:	8" NPS Box with Parker PolyPak 2500-6500-562B sealing rings (Ref. Drawing No.SSS-131689-40 Rev A)

Type Approval documentation

Materials

Fabrication/Testing Procedures

Test Procedures:

1. Pressure testing to 1,5 x rated working pressure shall be performed according to DNV-OS-E101, Chapter 2 Section 8, 3.3 and API 16C 7.4.1.
2. Charpy impact testing shall be performed in accordance with DNV-OS-E101, Ch.2, Sec.8 3.2 and Sec.2, 2.6.

NDE Procedures:

3. NDE/NDT shall be performed according to DNV-OS-E101, Ch.2, Sec.8,3.1.

Welding Procedures:

4. Qualification of welders, and welding (CRA inlay), shall be in accordance with DNV-OS-E101, Ch.2, Sec.8, 2.3 and 2.4.

Marking of product

For traceability the following marking is to be carried out on each product:

- Manufacturers Name or Mark
- Part No.
- Serial No.
- Size
- Pressure Rating
- Temperature Rating
- VL TAD00001RZ

Comments

- Lifting and installation of the gooseneck is not part of scope for this Type Approval. Evaluation of design wrt use of ROV, and functional testing by use of a ROV, is outside the scope for this Type Approval.
- Maximum listed external tension and bending moment includes environmental loads. Approved load combinations are as described in the design report.
- This Gooseneck might be used in water depths down to 500m if there is no external overpressure from surrounding seawater, e.g. deployed with at least one open end. For other conditions, with closed ends, additional design calculations shall be submitted to DNV for approval.
- Each product to be surveyed during fabrication in accordance with the requirements for equipment of Category 1 as defined in DNV-OS-E101 Ch.3 Sec.3, followed by issuance of a DNV Product Certificate.
- Fabrication records shall be maintained by the manufacturer in accordance with DNV-OS-E101 Ch.3, Sec.3 § 2.
- Hardness testing shall be performed, with acceptable results, on parts with surfaces exposed to sour service as per ISO 15156/NACE MR0175
- The Polypak sealing rings (Part No. 2500-6500-562B) in the box end connection is to be delivered with manufacturers documentation as required by API 16C. Sealing ring documentation to be reviewed and accepted by the attending DNV surveyor before issue of product certificates.

Certification Retention Survey

For retention of the Type Approval Certificate, DNV AS' s representative shall carry out surveys every second year in accordance with DNV Type Approval Scheme DNV-CP-0338.

END OF CERTIFICATE