DNV·GL

Certificate No:
TAD00001A5

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Marine Riser Equipment

with type designation(s)
SDT-G 1.5 Riser Coupling

Issued to
SUB SEA SERVICES AS
STAVANGER, Norway

is found to comply with
DNVGL-OS-E101 – Drilling facilities, Edition January 2018

Application :

Dog Type Riser Coupling "SDT-G 1.5" with 1 500 000 lbs Load Rating.

Issued at **Høvik** on **2020-06-19**
This Certificate is valid until **2025-06-18**.
DNV GL local station: **Oslo Drilling Systems**

Approval Engineer: **Axel Janson**

for **DNV GL**

Per Esvall
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 GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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.

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Codes and standards used as reference

[1] API 16F, Specification for Marine Drilling Riser Equipment, 2nd Edition, April 2017

[2] ASME Boiler & Pressure Vessel Code, Section VIII, Division 2, 2019

Application/Limitation

Design Parameter	Value	Equivalent
Nominal Main Riser Pipe Sizes:	21” OD x 0.625” WT	533.4 x 15.88 mm
Max. Rated Load[1]:	1 500 000 lbs	6 672 kN
Max. Pressure Rating (Main Tube):	3 000 psi	20.68 MPa
Min. Design Temperature:	0 °F	-18 °C
Max. Fluid Temperature (Main Tube):	180 °F	82 °C
Corrosion/Erosion Allowance (Main Tube):	0.05 inch	1.27 mm
Service (Main Tube):	Standard	

[1] *Maximum rated load and maximum pressure rating shall not be applied simultaneously. The limitations of the riser system shall be determined on a case-by-case basis according to API RP 16Q.*

Type Approval Documentation

Material Specifications

Component	Material Specification	Min. Yield	Charpy Specification
Riser Pin	AISI 4130 or 8630	80 ksi	In accordance with DNVGL-OS-E101 Ch.2 Sec.2.
Riser Box	AISI 8630	95 ksi	
Boss	SIS 2541	101 ksi	
Actuator Screw	AISI 4145 or AISI 4340	125 ksi	
Locking Dog	AISI 4145 or AISI 4340	120 ksi	
Boss Assembly Bolts	L7 (ASTM A320)	105 ksi	

Fabrication and Testing Procedures

Test Procedures:

1. Testing and quality control shall be performed in accordance with API 16F §16.

NDE Procedures:

2. NDE/NDT shall be performed in accordance with DNVGL-OS-E101 Ch.2, Sec.8, §3 Tests.

Welding Procedures:

3. Qualification of welding procedures and qualification of welders shall be in accordance with DNVGL-OS-E101 Ch.2, Sec.8, §3 Tests.

Design Verification Testing

DVT-reports have been reviewed and were found to be in compliance with API 16F 2nd Edition. Reference is made to:

- Sub Sea Services TR-SDT-G Riser Coupling-14192 - Testing Report - Riser Coupling, SDT-G 1.5, dated 2020.06.09.
- DNV GL - Report No. 2020-5352 rev.0, Report of Makeup and Rated Load Testing of SDT-G 1.5 Riser Flange, dated 2020.05.27.

Marking of Product

Marking shall be carried out in accordance with API 16F §16.9, and shall contain:

- Part number
- Serial number
- Manufacturer's name
- Rated load
- Rated working pressure
- API 16F

Other Comments

- This Type Approval Certificate covers the riser coupling only.
- Survey and approval of the final riser joint assembly (welding, NDT, testing etc.) shall be carried out by a DNV GL surveyor.
- Nonmetallic sealing materials shall be delivered in accordance with DNVGL-OS-E101 Ch.2 Sec.2 §2.8.
- Each delivery shall be accompanied by quality control record as described in API 16F §6.
- Each product to be surveyed during fabrication in accordance with the requirements for equipment of category I as defined in DNVGL-OS-E101 Drilling Plant, followed by the issuance of a DNV GL Product Certificate.

Certificate Retention Survey

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

END OF CERTIFICATE