DNV·GL

Certificate No:
TAD000018X

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Marine Riser Equipment

with type designation(s)
SFT-C 2.0 Marine Riser Coupling

Issued to
SUB SEA SERVICES AS
STAVANGER, Norway

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

Application :

See next page.

Issued at **Høvik** on **2020-02-19**
This Certificate is valid until **2025-02-18**.
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.

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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

[3] API 20E, Alloy and Carbon Steel Bolting for Use in the Petroleum and Natural Gas Industries, August 2017

Product Description

Flanged riser coupling type "SFT-C 2.0" with 2000 000 lbs load rating.

Application/Limitation

Design Parameter	Value	Equivalent
Nominal Main Riser Pipe Size:	21" OD x 0.625" WT	533.4 x 15.88 mm
	21” OD x 0.688” WT	533.4 x 17.48 mm
	21” OD x 0.75” WT	533.4 x 19.05 mm
Max. Rated Load:	2 000 000 lbs	8 896 kN
Max. Pressure Rating (Main Tube)*:	3 000 psi	207 bar
Min. Design Temperature:	-18 °C	0 °F
Max. Fluid Temperature (Main Tube):	82 °C	180 °F
Corrosion/Erosion Allowance (Main Tube):	0.05 in	1.27 mm
Service (Main Tube):	Standard	

***** *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 (Long. Avg. MDT)
Riser Flange	AISI 4130	517 MPa	42 J
Flange Bolt	AISI 4340 (ASTM A320 L43)	724 MPa	42 J
Flange Nut	ASTM A194 GR4-7 / AISI 4340 (ASTM A320 L43)	724 MPa	42 J
Seal Sub	AISI 4130	517 MPa	42 J

Fabrication and Testing Procedures

Test Procedures:

1. Pressure testing of pressure containing components shall be performed in accordance with DNVGL-OS-E101 Ch.2, Sec.8, §3.3 Pressure testing.
2. Functional testing of the coupling shall be performed in accordance with DNVGL-OS-E101 Ch.2, Sec.8, §3.5 Function testing.
3. Testing and quality control shall be performed in accordance with API 16F §16.

NDE Procedures:

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

Welding Procedures:

5. 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 - *Testing Report - Riser Coupling, SFT-C 2.0 Rev.0*, dated 2020.02.13.

- DNV GL - *Report of Makeup and Rated Load Testing of SFT-C 2.0 Riser Flange*, 2020.02.12

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 assembly only.
- The welding of the coupling to the main riser tube is not covered by this Type Approval Certificate and this weld shall be separately approved by a DNV GL Surveyor.
- Installation lifting is not within the scope of this Type Approval Certificate.
- Riser coupling bolts and nuts shall be delivered in accordance with API 16F §5.5.3 (API 20E/F BSL-3).
- 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