Certificate no.:
TAD00001N1

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Pipe Fitting

with type designation(s)
Various pins and boxes for auxiliary lines on auxiliary lines FT-GB risers

issued to
PSW Technology AS
Mongstad, **Norway**

is found to comply with
DNV-OS-E101 – Drilling facilities, Edition July 2021

Application:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Issued at **Høvik** on **2024-05-14**
This Certificate is valid until **2029-05-13**.
DNV local unit: **Mid-North Norway CMC**

for **DNV**

Approval Engineer: **Andreas Sigvardsson**

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.

Product description
Pins and boxes for auxiliary lines on FT-GB risers.

Codes and standards used as reference
- API 16F, “Specification for Marine Drilling Riser Equipment” second edition, Nov 2017.
- API 16C, “Choke and Kill Equipment” second edition, March 2015
- API 6A, “Specification for wellhead and Tree Equipment”, November 2018
- ASME BPVC, Section VIII, Div.2, §4.3.3.1

Application/Limitation

Parameter	Limitation
Pins	
Max. working pressure, 38250 rev 1:	5000 psi
Max. working pressure, 13160 rev 8:	7500 psi
Max. working pressure, 42990 rev 4:	15000 psi
Max. working pressure, 13159 rev 5:	15000 psi
Max. working pressure, 40301 rev 1:	5000 psi
Boxes	
Max. working pressure, 38254 rev 0:	5000 psi
Max. working pressure, 62304 rev 0:	7500 psi
Max. working pressure, 62301 rev 2:	15000 psi
Pins and boxes both	
Corrosion allowance:	1.3 mm
Service:	Sour
Min. Temperature class, API Spec 6A:	U (-18ºC to +121ºC)
Min. Material Class, API Spec 6A:	DD
Min. API Spec 6A Product Specification Level:	PSL 3

Type Approval documentation

Materials

Component	Min. yield strength	Charpy requirement
Booster pins and boxes	517 MPa (75 ksi)	42 J
Choke & kill pins	517 MPa (75 ksi)	42 J
Choke & kill boxes	586 MPa (85 ksi)	42 J

Tests to be carried out on each individual product
- Pressure testing to be carried out in accordance with DNV-OS-E101, Ch.2 Sec.8. The test pressure is to be 1.5 x working pressure.
- Charpy testing to be carried out in accordance with Ch.2, Sec.2 of DNV-OS-E101.

Other comments
- The pins and boxes are designed for pressure loads only and are not to be used in load-sharing risers.
- The approval of the non-metallic seals is limited to the non-metallic seals from Parker as specified in document 209785 rev 4.

Marking of product
Each individual pin/box is to be marked with manufacturer trademark, type designation and serial number.
The surveyor shall stamp each unit with VL mark and with the DNV Product Certificate number or reference to Type approval.

Periodical assessment
For retention of this Type Approval, a DNV surveyor shall perform a periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days). The objective of the periodical assessment is to verify that the conditions for the Type Approval have not been altered. (Ref DNV-CP-0338 Type approval scheme).
Validity of this certificate can be checked at https://approvalfinder.dnv.com