

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Pipe Flange, Welded Connection

with type designation(s)

TK-160378-00WF01AE, TK-160378-00BM00AE, TK-160378-00BM03AE

Issued to

Taper-Lok, LLC
Houston, TX, USA

is found to comply with

DNV-OS-E201 – Oil and gas processing systems, Edition July 2021

Application :

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

Type:	Temperature range:	Max. working press.:
TK-160378-00WF01AE	-50F ~ 350F	2100 PSI
TK-160378-00BM00AE	-50F ~ 350F	2100 PSI
TK-160378-00BM03AE	-50F ~ 350F	2100 PSI

Issued at **Houston** on **2022-04-11**

This Certificate is valid until **2027-04-10**.

for **DNV**

DNV local station: **Houston, Approval CMC**

Approval Engineer: **Bo Cui/Parna Deljo**

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Mark Miser
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 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

TK-160378-00WF01AE, Female weldneck 8.010" – 2100 psi
TK-160378-00BM03AE, Male blind 9" – 2100 psi
TK-160378-00BM00AE, Male blind 9" – 2100 psi

Design Codes/Standards Used as References

1. ASME BPVC VIII, Boiler & Pressure Vessel Code -Section VIII - Pressure Vessels
2. ASME B31.3-2020, Process Piping

Application/Limitation

Design Parameter	
Pressure rating:	2,100 Psi @ -50°F to 350°F, (145 Bar @ -46°C to 177°C) with 0" (0mm) corrosion allowance 1,480 Psi @ -50°F to 350°F, (102 Bar @ -46°C to 177°C) with 0.118" (3mm) corrosion allowance
Applied Bolt Torque	
Min. Torque:	133 Ft-lbf (180 Nm)
Max. Torque:	146 Ft-lbf (198 Nm)
Friction coefficient:	0.1

Note: for torque values using different friction coefficient, reference to AFG Doc. NO. 00-000-IOM-00176 (Table 1)

Type Approval documentation

Manufacturing Location

F.A.D. Flange Acciaio E Derivati Spa

Marking of product

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

1. Serial No.
2. Manufacturer's name or trademark.
3. Additional Marking at manufacturer's discretion.

Periodical assessment

For retention of the Type Approval, DNV's surveyor shall perform periodical assessment after 2 years and after 3.5 years in accordance with DNV's Class Program DNVGL-CP-0338, Section 4.

Other conditions/comments

1. Procedures related to testing, welding, NDT, and other quality control requirements are to be reviewed/approved by DNV's local surveyor.

END OF CERTIFICATE