DNV·GL

Certificate No:
TAD0000165

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Pressure Vessels

with type designation(s)
3000psi Special Target Blocks

Issued to
3C Metal Middle East FZE
DUBAI, United Arab Emirates

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

Application :

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

Issued at **Høvik** on **2019-09-24**
This Certificate is valid until **2024-09-23**.
DNV GL local station: **Oslo Drilling Systems**

Approval Engineer: **Morten Wiese**

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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Job Id: **262.1-032369-1**
Certificate No: **TAD0000165**

Product description

The special blocks are to support hoses for Managed Pressure Drilling (MPD) systems. The blocks aim to isolate the rig/vessel piping system from external applied loads, induced by MPD hoses.

Reference Standards

- ASME B31.3 – Process Piping – ASME Code for Pressure Piping, 2016
- API 6X – Design Calculations for Pressure-Containing Equipment, 2014
- NACE MR0175 – Petroleum and Natural gas industries – Materials for use in H2S-containing environments in oil and gas production, 2015

Application / Limitation

Design pressure	3,000 psi 206.8 bar
Fluid	HP mud + Fluid (gas, oil) from well
Design temperature	-30°C / 121°C
Corrosion allowance	3 mm
Material	Forged ASTM A29 gr. 4130 (75ksi)
Service	Sour
DNVGL piping component category	Type C, Cat. I
Bolts	M39 Gr. 10.9

Type Approval documentation

Tests carried out

- Charpy testing of the materials shall be carried out inn accordance to DNVGL-OS-E101 Ch.2 Sec.2 §2.

- Each product shall be pressure tested in accordance to DNVGL-OS-E101 Ch.2 Sec.8 §3.3.

- Non-destructive evaluation shall be carried out in accordance to DNVGL-OS-E101 Ch.2 Sec.8 §3.1.

Marking of product

For traceability the following marking shall be applied on each product, at least:

- Part No.
- Serial No.
- Capacity (psi)
- Manufacturer's name or mark.

Periodical assessment

For retention of the Type Approval, DNV GL's representative shall carry out biennial Product Audits in accordance with DNVGL-CP-0338 Sept.2017, Sec.4.

END OF CERTIFICATE