

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Valves**

with type designation(s)
3.75K C-F0209-ADDD Check Valve
6.25K C-G0150-ADDD Check Valve
6.25K C-G0230-ADDD Check Valve
Part Numbers: See Page 2

Issued to

TechnipFMC
Stephenville, Texas, USA

is found to comply with

DNVGL-OS-E101 – Drilling plant, Edition July 2015
DNVGL-SI-0166 – Verification for compliance with Norwegian shelf regulations, Edition July 2015

Application :

See Page 2

Issued at **Houston** on **2017-09-08**

This Certificate is valid until **2022-09-07**.

for **DNV GL**

DNV GL local station: **Approval CMC**

Approval Engineer: **Kevin Bui**

Brandon Caraway
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.



Job Id: **262.1-026745-1**
Certificate No: **TAD00000T5**

Design Codes/Standards Used as References

- API 6A, Specification for Wellhead and Christmas Tree Equipment, 20th Edition
- ASME B31.3, Process Piping, 2016
- NACE MR0175, Materials for Use in H₂S-containing Environments in Oil and Gas Production, 2015

Product Descriptions

<u>Description</u>	<u>Part No./Rev.</u>	<u>Drawing No./Rev.</u>
3.75K C-F0209-ADDD Check Valve	P554579/C	6400DU5012448/E
6.25K C-G0150-ADDD Check Valve	P554580/D	6400DU5011449/E
6.25K C-G0230-ADDD Check Valve	P554587/C	6400DU5012547/B

Application/Limitation

<u>Design Parameter</u>	<u>P554579</u>	<u>P554580</u>	<u>P554587</u>
Nom Connection	03A	02A	03B
Nom Port (in)	2.09	1.50	2.30
Max Working Pressure (psi)	3,750	6,250	6,250
Shell Test Pressure (psi)	6,000	10,000	10,000
Temperature Class (°F)	-42 to 400	-42 to 400	-42 to 400
Service	Sour	Sour	Sour
Product Specification Level	3	3	3
Performance Requirement	1	1	1

Type Approval Documentation

- Drawings:

<u>Drawing No.</u>	<u>Rev.</u>	<u>Title</u>
		3.75K C-F0209-ADDD Check Valve
		Body
		Seat
		Flapper
		6.25K C-G0150-ADDD Check Valve
		Body
		Seat
		Flapper
		6.25K C-G0230-ADDD Check Valve
		Body
		Seat
		Flapper

- Calculations:

<u>Document No.</u>	<u>Rev.</u>	<u>Title</u>
		C-F0209 Valve Body
		C-F0209 Valve Flapper
		C-F0209 Valve Seat
		C-G0150 Valve Body
		C-G0150 Valve Flapper
		C-G0150 Valve Seat
		C-G0230 Valve Body
		C-G0230 Valve Flapper
		C-G0230 Valve Seat

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- Material Specifications:

<u>Title</u>	<u>Spec. No./Rev.</u>	<u>Material</u>	<u>Min YS(psi)</u>	<u>Min Avg CVN(ft.lb)</u>
C-F0209 Body				
C-F0209 Seat				
C-F0209 Flapper				
C-G0150 Body				
C-G0150 Seat				
C-G0150 Flapper				
C-G0230 Body				
C-G0230 Seat				
C-G0230 Flapper				

See Material Specifications for additional material requirements.

- Notes:

Other part numbers or revisions may be acceptable under this TAC provided critical aspects of the design remain the same. Changes shall be documented and approved by TechnipFMC Engineering and Quality. DNV GL Surveyor shall verify these changes before issuance of Product Certificates.

Tests Carried Out

<u>Description</u>	<u>Part No.</u>	<u>Serial No.</u>
3.75K C-F0209-ADDD Check Valve		
6.25K C-G0150-ADDD Check Valve		
6.25K C-G0230-ADDD Check Valve		

Marking of Products

- Product and data book shall be marked at least with company name, part number and serial number for traceability.

Periodical Assessments

- Periodical assessments shall be carried out bi-yearly for retention of TAC.

Fabrication Procedures

- Procedures related to testing, NDE, welding, marking, etc. shall be reviewed by DNV GL Surveyor.

Comments

- Project No. A0434042, Attn. Jeffrey Chalifoux.