

## CERTIFICATE OF COMPLIANCE

Initial Certificate No: **COC/API-20A/FLS-II/01/2019**

Certificate No: TUV/9309/22-23/API 20A/0004 Job.No: 8120633187

### Foundry Qualification for Castings for Use in the Petroleum and Natural gas Industries

As per **API-20A-2<sup>nd</sup> Edition, August-2017. Addendum-2, April-2020.**

#### Name and Address of Manufacturer:

M/s.Flowlink systems (P) Ltd. Unit-II,  
No.65/2a, 2b, 2c. Puthupalayam (Po),  
Thekkalur, Avanashi Road,  
Coimbatore-641654, Tamilnadu, India.


This Certificate of Compliance is issued upon the request of the manufacturer to confirm that the manufacturer has demonstrated compliance to the foundry qualification requirements of specification **API-20A 2<sup>nd</sup> Edition, August-2017. Addendum-2, April-2020, "Carbon steel, Alloy steel, Stainless steel, and Nickel Base Alloy Castings for Use in the Petroleum and Natural Gas Industry"** to the Casting Specification Levels (CSL) given below.

Material Group/CSL Qualified:                      Group A-Carbon Steel- CSL-1,2,3  
   Group B-Low Alloy Steel- CSL-1,2,3  
   Group C-Stainless Steel (Other than duplex)-CSL-1,2,3

(See Annexure-I for details)

The Manufacturer's Manufacturing Process Specifications (MPSs) & Qualification Test Records (QTRs) have been evaluated and Qualification Casting tests were Witnessed and found to be in Compliance with the requirements of **API-20A 2<sup>nd</sup> Edition, August-2017. Addendum-2, April-2020**, within the Scope and subject to conditions as per Annexure-I. This certificate of compliance does not exempt the manufacturer from its responsibility to ensure that its products are always in compliance with API and Customer specification requirements.

Place: Pune, India  
Date of Issue: 06/08/2022  
validity: 05/08/2025



Mr. Jayaprakash Hiremath  
AVP- PED, ASME, TRCU, CCOE,  
UKCAS & Special Inspection Services

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**Condition of Issue:**

Qualification Castings as per **API-20A 2<sup>nd</sup> Edition, August-2017.Addendum-2, April-2020**, have been produced, tested and evaluated by the casting supplier and witnessed by the surveyor to TUV India Pvt.Ltd. in order to establish qualification for a range of products listed in this Annexure.

The Manufacturing Process Specification (MPS) files as referenced below, submitted by the manufacturer, have been reviewed.

Manufacturing Process :	MPS.No:FLS/MPS/CS/U2 Rev.0
Specification (MPS) ref.	MPS.No:FLS/MPS/LAS/U2 Rev.0
	MPS.No:FLS/MPS/SS/U2 Rev.0
Verification of Qualification Test records :	QTR.No:12 Rev.00 & 13 Rev.00
	QTR.No:16 Rev.00 & 17 Rev.00
	QTR.No:14 Rev.00 & 15 Rev.00

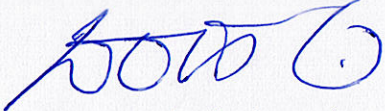
This Certificate of Compliance is issued and is applicable only to the firm stated on above referred COC, and for the specified product, and/or the manufacturing plant stated and is Non-Transferable.

Welding shall be performed using weld procedures qualified in accordance with ASME BPVC, Section IX for CSL-3.

This statement of compliance is valid only for those product Range which are covered in the QTR within the limits of CSL qualification.

This Certificate of Compliance is valid for 3 years from date of issue, i.e. till 05<sup>th</sup> August 2025, subject to satisfactory annual surveillance audits and within the limits of qualification of production castings for each CSL, and subject to manufacturer maintaining the same production processes including metal refining steps, maintaining the same process control variables, design and maintenance of patterns, same processes of inspection, quality control, marking, traceability and record retention (10 years) as per the requirements of API 20A. This COC does not constitute Certification to API Monogram Program as per API Q1.

Place: Pune, India  
Date of Issue: 06/08/2022  
validity: 05/08/2025



Mr. Jayaprakash Hiremath  
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Reference Standard		<b>API-20A 2<sup>nd</sup> Edition, August 2017. Addendum-2, April-2020.</b>	
API Material Group/ CSL Level		Group A-Carbon Steel /CSL-1,2,3	
Manufacturing Process Specification		MPS.No: FLS/MPS/CS/U2 Rev.0	
Manufacturing Doc Ref		API/001, API/002	
Qualification Test Record No.		QTR.No:12 Rev.00 QTR.No:13 Rev.00	
ASTM Ref.		ASTM A216-18 Gr. WCB/WCC	
<b>Tested and Qualified Weight Range</b>			
Products and Manufacturing Process(es)	Tested thickness (mm)	Tested Casting Weight (Kgs)	Qualified Casting Weight Pounds (Kgs)
12" 900 SCV DOMED BONNET/ Co2 Sand Mold Process.	90	126.6	CSL-3: 1-499Pounds (1-226 Kgs) CSL2: 1-2499pounds(1-1134Kgs) CSL1:All Weight ranges.
10" 600 OS&Y DSG BONNET/ Co2 Sand Mold Process.	220	244.6	CSL-3:500-2499Pounds(227-1134Kgs) CSL2: 1-2499pounds(1-1134Kgs) CSL1:All Weight ranges.

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Reference Standard	<b>API-20A 2<sup>nd</sup> Edition, August 2017. Addendum-2, April-2020.</b>		
API Material Group/ CSL Level	Group B-Low Alloy Steel /CSL-1,2,3		
Manufacturing Process Specification	MPS.No: FLS/MPS/LAS/U2 Rev.0		
Manufacturing Doc Ref	API/005, API/006		
Qualification Test Record No.	QTR.No:16 Rev.00 QTR.No:17 Rev.00		
ASTM Ref.	ASTM A487-14 <sup>e1</sup> Gr. 4D		
<b>Tested and Qualified Weight Range</b>			
Products and Manufacturing Process(es)	Tested thickness (mm)	Tested Casting Weight (Kgs)	Qualified Casting Weight Pounds (Kgs)
4 1/16"-3000 GTV BODY (FE)/ Co2 Sand Mold Process.	64	183.0	CSL-3: 1-499Pounds (1-226 Kgs) CSL2: 1-2499pounds(1-1134Kgs) CSL1:All Weight ranges.
CROWM BODY GATE VALVE MODEL A 4-1/16 API 5000 RTJ FLANGED ENDS / Co2 Sand Mold Process.	74	233.0	CSL-3:500-2499Pounds(227-1134Kgs) CSL2: 1-2499pounds(1-1134Kgs) CSL1:All Weight ranges.



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Reference Standard	<b>API-20A 2<sup>nd</sup> Edition, August 2017. Addendum-2, April-2020.</b>		
API Material Group/ CSL Level	Group C- Stainless steel (Other than duplex)/CSL-1,2,3		
Manufacturing Process Specification	MPS.No: FLS/MPS/SS/U2 Rev.0		
Manufacturing Doc Ref	API/003, API/004		
Qualification Test Record No.	QTR.No:14 Rev.00 QTR.No:15 Rev.00		
ASTM Ref.	ASTM A351-18 Gr. CF3M		
<b>Tested and Qualified Weight Range</b>			
Products and Manufacturing Process(es)	Tested thickness (mm)	Tested Casting Weight (Kgs)	Qualified Casting Weight Pounds (Kgs)
8" 600 OS&Y DSG BONNET/ Co2 Sand Mold Process.	112	125.8	CSL-3: 1-499Pounds (1-226 Kgs) CSL2: 1-2499pounds(1-1134Kgs) CSL1:All Weight ranges.
8" 600 CL BODY/ Co2 Sand Mold Process.	80	332.2	CSL-3:500-2499Pounds(227-1134Kgs) CSL2: 1-2499pounds(1-1134Kgs) CSL1:All Weight ranges.



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**Table-1-As Cast Weight Range**

CSL	As-Cast Weight in Pounds (Kilogram)			
	1-499 (1-226)	500-2499 (227-1134)	2500-9999 (1135-4537)	10000+ (4538+)
CSL-1	1 Qualification			
CSL-2	1 Qualification		1 Qualification	
CSL-3	1 Qualification	1 Qualification	1 Qualification	1 Qualification
CSL-4	Weights are not applicable for CSL 4. Each casting shall be individually qualified.			

**Table-2-Material Groups**

Material Group	Description
Group A	Carbon steels
Group B	Low alloy steels
Group C	Stainless steels (Other than duplex)
Group D	Duplex stainless steels
Group E	Corrosion-resistant alloy (CRA)

**Table-3-Casting Weld Repair Limitations**

CSL	% Surface Area	% Wall Thickness
CSL-1	50%	50%
CSL-2	25%	25%
CSL-3	20%	20%
CSL-4	10%	10%



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**Table-4-Guidance for Qualification Examination/Testing Requirements.**

CSL	Section References									
	Visual	Inspection	Hardness	Surface	Volumetric NDE	Mechanical	Micro structure	Sacrificial Casting	Chemistry	Additional Testing
CSL-1	4.5.2	4.5.3	4.5.4	--	--	4.5.6	--	--	4.5.8	4.5.9.3 Group.D
CSL-2	4.5.2	4.5.3	4.5.4	4.5.5.1 4.5.5.2	--	4.5.6	--	--	4.5.8	4.5.9.3 Group.D
CSL-3	4.5.2	4.5.3	4.5.4	4.5.5.1 4.5.5.2	4.5.5.3	4.5.6	4.5.7	--	4.5.8	4.5.9.3 Group.D
CSL-4	4.5.2	4.5.3	4.5.4	4.5.5.1 4.5.5.2	4.5.5.3	4.5.6	4.5.7	4.5.9.2	4.5.8	4.5.9.3 Group.D

**Table 7—Limits of CSL Qualification Summary**

Requirement	Reference(s)	CSL 1	CSL 2	CSL 3	CSL-4
ASTM keel block	Figure 4, Figure 5	X	X	—	—
Equivalent round or integral test specimen	Figure 1, Figure 2, Figure 3	—	—	X	—
Sacrificial casting	4.5.9.2	—	—	—	X
Change in material group	4.8.1	X	X	X	X
As-cast weight range class	4.8.2	—	X	X	X
Change in melt practice	4.8.3	—	—	X	X
Material specification/grade	4.8.4	—	—	—	X

NOTE: This table provides a matrix of requirements and should be used as a reference only, since it may not include all Requirements.