



# AISWARYA LAKSHMI ENGINEERING WORKS

(ISO 9001:2015 CERTIFIED COMPANY)

## INSPECTION CERTIFICATE

(AS PER EN 10204 3.2)

CUSTOMER	JC Fabrica De Valvulas Spain	OUR T.C No.	ALEW/GST/26-27 / 31 / 04
P.O.No.	JCCMP-2526-02467	DATE	20.04.2026
PART NAME	STEM DN50 A182 GR.F316/F316L DUAL SP-918	OUR INV No.	GST / 26-27 / 31
PART No.	EPFD50TJQ-918	MILL TC No.	920021508/4
DRG No.	EPI50Q	HEAT No.	FB652
DRG REV No.	1	QYT (NO' S)	15

ASTM A182/A182M-24C, Gr. F316 / F316L (DUAL)

### CHEMICAL PROPERTIES

TEST REPORT NO: TR /25-26/26808-1 DT: 22-09-2025

%	C	Si	Mn	P	S	Cr	Ni	Mo	N
MIN						16.00	10.00	2.00	
MAX	0.030	1.00	2.00	0.045	0.030	18.00	15.00	3.00	0.10
ACTUAL	0.020	0.367	1.579	0.032	0.009	16.77	10.33	2.043	0.041

### MECHANICAL PROPERTIES

TEST REPORT NO: TR /25-26/26808-1 DT: 22-09-2025

PARAMETER %	MIN	MAX	ACTUAL
TENSILE STRENGTH IN Mpa	515	-	743
YIELD STRENGTH IN Mpa 0.2% OFFSET	205	-	652
ELONGATION IN GL OF 50mm%	30	-	35.00
REDUCTION IN AREA %	50	-	76.50
HARDNESS(HBW)	-	237	215,219,217

### METALLURGICAL PROPERTIES

I.G.C	: IGC test as per ASTM A262 Practice E Cracks and fissures not observed at 20x magnification. Intergranular attack not observed at 250x magnification TEST REPORT NO: TR /25-26/26808-1 DT: 22-09-2025
IMPACT	: NIL
MICRO	: NIL
FERRITE	: NIL
HEAT TREATMENT	: SOLUTION ANNEALED @ 1050 C SOAKING TIME 1 Hrs/Inch THEN WATER QUENCHED

#### REMARKS:

- 1) We hereby certify that the items above have been tested and inspected in our presence in accordance with drawings and satisfy the requirements for "ASTM A182/A182M-24". The results comply with product description.
- 2) Materials Free From Radioactive contamination.
- 3) Visual and Dimensional Found satisfactory as per drawing.
- 4) Markings done according to MSS-SP-25.
- 5) No weld Repair Performed.
- 6) MARKING, PUNCH IDENTIFIED AS F316/F316L FB652
- 7) Material is ultrasonically tested as per ASTM A388/388M & Found satisfactory
- 8) Material conforms to NACE MR0175/ISO - 1516- 2020 and NACE MR0103/ISO -17945 - 2016
- 9) JC MDS NO -JC-MDS-433 Rev. 8

WE HEREBY CERTIFY THAT THE ITEMS MENTIONED ABOVE HAVE BEEN TESTED, INSPECTED & FOUND TO BE IN ACCORDANCE WITH THE SPECIFICATION REQUIREMENTS.

For AISWARYA LAKSHMI ENGINEERING WORKS

Mr.L.Thirumurugan  
Quality Incharge

Address 132A, SIDCO INDUSTRIAL ESTATE, AMBATTUR, CHENNAI - 98. Email Id: alewchennai@gmail.com

JC Valvulas India Pvt. Ltd.  
Chennai, Tamil Nadu, India  
Verified & Accepted

Q.A. R. Dinku



MICROLAB TESTING PRIVATE LIMITED  
 An ISO/IEC 17025 MATERIAL TESTING LABORATORY  
 Accredited by NABL vide Certificate Number TC-14728  
 D25, Ambattur Industrial Estate, Chennai – 600058  
 Ph: 044-26242525/044-26244399,  
 Email: cre@microlabtesting.com  
 Web: www.microlabtesting.com



### Test Report

TC1472825000095260F

<b>Customer:</b> <b>M/s. Aiswarya Lakshmi Engineering Works</b> No. 132A, Sidco Industrial Estate, North Phase, Ambattur, City: Chennai, 600098	Report No.:	TR/25-26/26808-1
	Report Date:	22-09-2025
	Customer Ref. No.:	729
	Ref. Date	13-09-2025
	Sample Received Date:	15-09-2025
	Date Of Completion:	22-09-2025

Samples drawn by Customer

Sample Description: Rod, Size: Dia 25.40mm, Material: ASTM A182/A182-M-24C, Gr.F316/F316L (DUAL), Heat No: FB652

Discipline : Mechanical, Group : MECHANICAL PROPERTIES OF METALS

TENSILE TEST Test Method : ASTM A370:24a

Verified By: K KARUNAGARAN

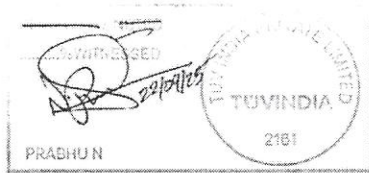
Tested on : 22-09-2025

Test Parameters	Result
0.2% Proof Strength(N/mm <sup>2</sup> or Mpa)	652 ✓
Ultimate Tensile Strength (N/mm <sup>2</sup> or Mpa)	743 ✓
Elongation (%) 4D GL	35.00 ✓
Reduction of area (%)	76.50 ✓

Test Witnessed By: Mr. N. Prabhu - TUV India.

Remarks : The material conforms to ASTM A182/A182M : 24C Grade F316/F316L with respect to test/s carried out ✓

For MICROLAB



*(Signature)*

P. Selvakumar  
 Asst. Technical Manager  
 Authorised Signatory

----- End of Test Report -----



**NOTE :** This report relates only to the particular sample submitted for test \* Any correction is not attested shall invalidate this certificate \* Sample will be destroyed after 15 days from the date of testing unless instructed otherwise \* Any complaints about this report should be communicated in writing within 7 days of this report \* This report not to be produced wholly or in parts and cannot be used as an evidence in a court of law and shall not be used in advertising Media without prior permission in writing \* Sample description is not verified in all cases and is given as described by the customers \* Sample are not drawn by us unless otherwise stated \* Laboratory reports the statements of Conformity to material specification as per Decision Rule 1, Non Conformity as per Decision Rule 4 & For Rule 2 & 3 Customer provides feedback.



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 Chennai, Tamil Nadu, India  
 Verified & Accepted  
 Q.A. *(Signature)*



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### Test Report

TC1472825000095618F

<b>Customer:</b> <b>M/s. Aiswarya Lakshmi Engineering Works</b> No. 132A, Sidco Industrial Estate, North Phase, Ambattur ,City:Chennai ,600098	Report No.:	TR/25-26/26808-1-2
	Report Date:	23-09-2025
	Customer Ref. No.:	729
	Ref. Date	13-09-2025
	Sample Received Date:	15-09-2025
	Date Of Completion:	23-09-2025

Samples drawn by Customer

**Sample Description:** Rod, Size: Dia 25.40mm, Material: ASTM A182/A182-M-24C, Gr.F316/F316L (DUAL), Heat No: FB652

**Discipline :** Chemical, **Group :** METALS & ALLOYS

**SPECTRO CHEMICAL ANALYSIS**

**Test Method :** ASTM E1086:2022

**Verified By:** PAPPITHA

**Tested on :** 22-09-2025

Test Parameters	Result
% Carbon	0.020 ✓
% Silicon	0.367 ✓
% Manganese	1.579 ✓
% Phosphorus	0.032 ✓
% Sulphur	0.009 ✓
% Chromium	16.77 ✓
% Molybdenum	2.043 ✓
% Nickel	10.33 ✓
% Nitrogen	0.041 ✓

**Test Witnessed By:** Mr. N. Prabhu - TUV India.

**Remarks :** The material conforms to ASTM A182/A182M-24C Grade F316/F316L with respect to test/s carried out

**Discipline :** Chemical, **Group :** CORROSION TESTING

**INTERGRANULAR CORROSION TEST (PRACTICE-E)**

**Test Method :** ASTM A262:2015 (2021)

**Verified By:** N THINESH KANNAN

**Tested on :** 22-09-2025 to 23-09-2025

Test Parameters	Result
Sensitization Temp	Specimen was sensitized at 675°C for 1 hour
Test Solution	Copper – Copper Sulfate – 16% Sulfuric Acid
Test Specimen Size (mm)	L:100.36 x W:18.80 x Thk:6.21
Total Surface Area of the specimen (cm <sup>2</sup> )	52.5350 ✓
Start of Boiling	22.09.2025 (05.00 pm) ✓

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 Q.A. *[Signature]*





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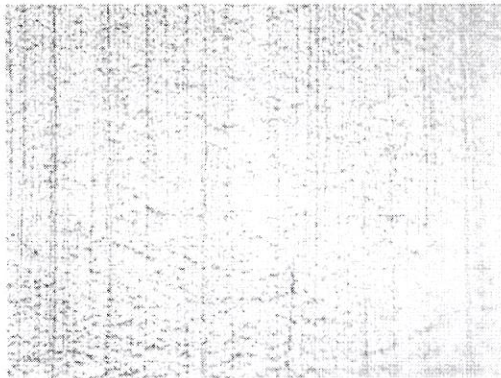


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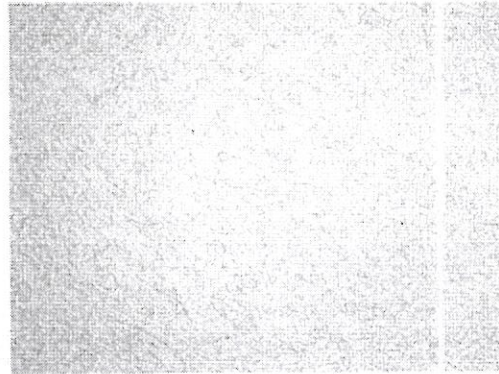
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TR/25-26/26808-1-2 Dt- 23-09-2025

End of Boiling	23.09.2025 (09.00 am)
Duration of Test	16 Hours ✓
Bend Test	1T / 180 Degree ✓
Evaluation	Cracks and Fissures not Observed at 20x Magnification. Intergranular attack not Observed at 250x Magnification
Photographs	The Macro and Micro photographs are enclosed



20X ✓



250X ✓

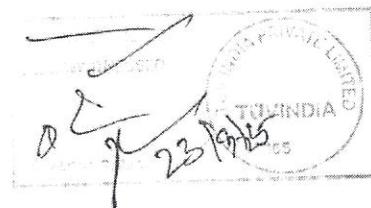
Test Witnessed By: Mr. P. Raghuraman - TUV India.

P.L. Saravanan  
 Head- Chemical & Q.M.  
 Authorised Signatory

For MICROLAB

K. Mathan Kumar  
 Head- Corrosion and Polymer  
 Authorised Signatory

----- End of Test Report -----



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### Test Report

TC1472825000095722F

<b>Customer:</b> M/s. Aiswarya Lakshmi Engineering Works No. 132A, Sidco Industrial Estate, North Phase, Ambattur ,City:Chennai , 600098	Report No.:	TR/25-26/26808-1-3
	Report Date:	23-09-2025
	Customer Ref. No.:	729
	Ref. Date	13-09-2025
	Sample Received Date:	15-09-2025
	Date Of Completion:	23-09-2025

Samples drawn by Customer

**Sample Description:** Rod, Size: Dia 25.40mm, Material: ASTM A182/A182-M-24C, Gr.F316/F316L (DUAL), Heat No: FB652

**Discipline :** Mechanical, Group : MECHANICAL PROPERTIES OF METALS

**HARDNESS TEST** Test Method : ASTM E10:2023

Verified By: SANTHOSH KUMAR.B

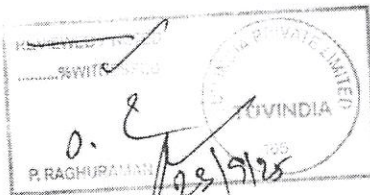
Tested on : 23-09-2025

Test Parameters	Result	Requirement
Diameter of the ball (mm).	5 ✓	
Test force (kgf).	750 ✓	
Brinell Hardness Value (HBW)	215, 219, 217 ✓	237 max.

Test Witnessed By: Mr. P. Raghuraman - TUV India.

Remarks :The material conforms to Customer Specifications with respect to test/s carried out

For MICROLAB




P. Selvakumar  
Asst. Technical Manager  
Authorised Signatory

End of Test Report

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