



A/SA694-F70 Welding Neck Flange Ring Type Joint 900#,NACE MR0175

Basic Information



Product Specification



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Product Description

Engineered for the most demanding environments in high-pressure transmission lines, our **A/SA694-F70 Welding Neck Flange** offers superior integrity and durability. Designed specifically for the oil and gas industry, this flange combines high-yield strength carbon steel with a robust **Ring Type Joint (RTJ)** facing, ensuring a leak-proof seal even under the extreme stress of **Class 900#** applications.

Fully compliant with **NACE MR0175 (ISO 15156)**, this product is certified for **Sour Service**, making it the primary choice for pipelines handling hydrogen sulfide (\$H_2S\$) containing fluids where resistance to sulfide stress cracking is critical.

Key Features & Benefits

Key Features:

- Material Standards:** Complies with API 5L, ASTM A106-B, ASTM A53-B, and L245 PSL1 specifications.
- High Pressure & Temperature Resistance:** Suitable for pipelines in challenging environments.
- Precision Dimensions:** Available in various outer diameters, wall thicknesses, and lengths to suit project requirements.
- Corrosion Resistance:** Offers reliable performance in both onshore and offshore applications.
- Versatility:** Ideal for pipeline networks, power plants, and industrial facilities.

Technical Specification

ASTM 649 flange chemical composition:

Element	F42 Content, %	F52 Content, %	F60 Content, %	F65 Content, %	F70 Content, %
Carbon (C)	0.13~0.20	0.16~0.22	0.17~0.23	0.17~0.23	0.06~0.10
Silicon (Si)	0.20~0.40	0.15~0.40	0.15~0.40	0.15~0.40	0.20~0.40
Manganese (Mn)	1.20~1.60	1.10~1.40	1.20~1.50	1.30~1.60	1.10~1.40
Phosphorous (P)	≤ 0.030	≤ 0.025	≤ 0.020	≤ 0.025	≤ 0.020
Sulfur (S)	≤ 0.020	≤ 0.012	≤ 0.012	≤ 0.015	≤ 0.010
Molybdenum (Mo)		0.20~0.35	0.45~0.60	0.45~0.65	1.20~1.70
Nickel (Ni)	≤ 0.30	≤ 0.50	0.40~1.00	≤ 0.30	0.20~0.40
Chromium (Cr)	≤ 0.30	≤ 0.30	≤ 0.25	≤ 0.30	≤ 0.30
Copper (Cu)	≤ 0.25	≤ 0.25	≤ 0.25	≤ 0.25	≤ 0.25
Vanadium (V)			≤ 0.050		0.02~0.06

ASTM A53 seamless steel pipe mechanical properties:

Grade	Mechanical Properties	
	Tensile Strength (Mpa)	Yield Strength (Mpa)
A	≥48,000 (≥330)	≥30,000 (≥205)
B	≥60,000 (≥415)	≥35,000 (≥240)

API 5L ASTM A53 Standard Specification:

NCH	OD (MM)	API 5L ASTM A53 Standard Wall Thickness						
		(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
		SCH 10	SCH 20	SCH 40	SCH 60	SCH 80	SCH 100	SCH 160
1/4"	13.7			2.24		3.02		
3/8"	17.1			2.31		3.2		
1/2"	21.3	2.11		2.77		3.73		4.78
3/4"	26.7	2.11		2.87		3.91		5.56
1"	33.4	2.77		3.38		4.55		6.35
1-1/4"	42.2	2.77		3.56		4.85		6.35
1-1/2"	48.3	2.77		3.68		5.08		7.14
2"	60.3	2.77		3.91		5.54		8.74
2-1/2"	73	3.05		5.16		7.01		9.53
3"	88.9	3.05		5.49		7.62		11.13
3-1/2"	101.6	3.05		5.74		8.08		
4"	114.3	3.05	4.50	6.02		8.56		13.49
5"	141.3	3.4		6.55		9.53		15.88
6"	168.3	3.4		7.11		10.97		18.26
8"	219.1	3.76	6.35	8.18	10.31	12.70	15.09	23.01
10"	273	4.19	6.35	9.27	12.7	15.09	18.26	28.58
12"	323.8	4.57	6.35	10.31	14.27	17.48	21.44	33.32
14"	355	6.35	7.92	11.13	15.09	19.05	23.83	36.71
16"	406	6.35	7.92	12.70	16.66	21.44	26.19	40.49
18"	457	6.35	7.92	14.27	19.05	23.83	29.36	46.24
20"	508	6.35	9.53	15.09	20.62	26.19	32.54	50.01
22"	559	6.35	9.53		22.23	28.58	34.93	54.98
24"	610	6.35	9.53	17.48	24.61	30.96	38.89	59.54
26"	660	7.92	12.7					

Frequently Asked Questions (FAQ)

Q1: Are API5L/L245 PSL1 A106-B/SA106B A53-B/SA53-B pipes seamless or welded?

A: Yes, they are unequivocally **seamless**. The inclusion of the **ASTM A106/ASME SA106B** standard is the definitive indicator, as this standard exclusively covers seamless carbon steel pipe for high-temperature service.

Q2: What is the main difference between API 5L and ASTM A106?

A: **API 5L** is a specification focused on the transportation of oil, gas, and water in pipeline systems. **ASTM A106** is designed for piping systems that operate at high temperatures (typically above 750°F / 400°C). A pipe meeting both standards is exceptionally versatile for interconnected systems.

Q3: Can I use this pipe for high-pressure steam service?

A: Absolutely. The compliance with **ASTM A106/SA106B Grade B** makes these **seamless steel pipes** an excellent and commonly used choice for high-pressure steam and other high-temperature fluid conveyance.

Q4: What does the "PSL1" in API5L L245 PSL1 mean?

A: PSL stands for "Product Specification Level." PSL1 defines the standard mandatory requirements for chemical composition, mechanical properties, and testing. PSL2 has more stringent requirements (e.g., tougher impact testing). PSL1 is suitable for the vast majority of general pipeline applications.

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