ASTM A182/A182M

ASTM A182 F316 and F316L stainless steel flanges

Austenitic stainless steel with 2 to 3% molybdenum, for better resistance to pitting and crevice corrosion than 304 where chlorides are present. F316L is the low carbon grade. Flanges are often certified to both grades.

F316 UNS S31600 | **F316L** UNS S31603

Chemical composition, % by weight

Element	F316 UNS S31600 EN 1.4401	F316L UNS S31603 EN 1.4404
C	0.08	0.030
Mn	2.00	2.00
P	0.045	0.045
S	0.030	0.030
Si	1.00	1.00
Ni	10.0 to 14.0	10.0 to 15.0
Cr	16.0 to 18.0	16.0 to 18.0
Mo	2.00 to 3.00	2.00 to 3.00
N	0.10	0.10

Heat analysis. A single value is a maximum.

Mechanical properties at room temperature

Property	F316	F316L
Tensile strength, min	515 MPa (75 ksi)	485 MPa (70 ksi)
Yield strength (0.2% offset), min	205 MPa (30 ksi)	170 MPa (25 ksi)
Elongation in 2 in (50 mm), min	30%	30%
Reduction of area, min	50%	50%

Heat treatment

Solution annealed: heated to 1040 °C (1900 °F) minimum and quenched, as ASTM A182 requires for these grades. Stainless flanges can be supplied pickled and passivated to ASTM A380 and A967.

How to order

State the flange type, standard, size, class, facing, bore schedule, grade, certificate and quantity, and any extra tests or third-party inspection. The mill test certificate to EN 10204 3.1, or 3.2 with third-party inspection, gives the actual analysis and test results of the heat.

For example

> **Weld neck flange, ASME B16.5, NPS 4, Class 150, raised face, bore to Sch 40S, ASTM A182 F316/F316L dual certified, pickled and passivated to ASTM A380 and A967, EN 10204 3.1 certificate**

The limits are the requirements of ASTM A182/A182M; the standard governs. Dual-certified flanges meet both columns. EN numbers are the nearest grades in EN 10088, not equivalents. Edition 8 November 2026.

From the Umbergaon works, Gujarat, India

F316 and F316L flanges from RIC



Stainless steel slip-on flanges in stock



Stainless steel flanges, machined and marked

Flange types	Weld neck, slip-on, blind, lap joint, socket weld, threaded, ring type joint and long weld neck flanges; orifice flanges to ASME B16.36; spectacle blinds, spacers and blanks to ASME B16.48
Standards	ASME B16.5, NPS 1/2 to 24, Class 150 to 2500; ASME B16.47 Series A and B; EN 1092-1, PN 6 to 100
Facing	Raised face, flat face or ring type joint
Bore	To the pipe schedule, ASME B36.10M and B36.19M
Finish	Pickled and passivated to ASTM A380 and A967 on request
Marking	Size, class, material and heat number, for traceability to the certificate

Where it is used

Technology cooling system (TCS) loops and coolant distribution units in data centers, and chemical, pharmaceutical, marine and water service where chlorides are present.

Tested before dispatch

In house: tensile, hardness, PMI, dye penetrant and dimensional checks. At outside laboratories: chemical analysis, intergranular corrosion, impact, ultrasonic and magnetic particle tests. A 23-point final checklist before every dispatch.

Certificates and inspection

EN 10204 3.1, or 3.2 with TÜV, Bureau Veritas, IRClass, Gulf Lloyds or SGS. ISO 9001:2015 (TÜV NORD), ISO 45001 and ISO 29001; PED 2014/68/EU material manufacturer (TÜV Rheinland); NORSOK M-650 for duplex and super duplex.

Drawings and weights

A PDF and DXF drawing for every ASME B16.5 and EN 1092-1 size we list, with approximate weights in carbon and stainless steel, at rajendradatacenter.com/flanges/

Send your line list or drawing

Types, sizes, classes, grades and quantities, as a list or a drawing.

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