

## **ASTM A182 – Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High Temperature Service**

**Grade: F51** (ferritic-austenitic stainless steel)

UNS number : S31803

### **Chemical Requirements, max , %**

C:  $\leq 0.030$

Mn:  $\leq 2.00$

P:  $\leq 0.030$

S:  $\leq 0.020$

Si:  $\leq 1.00$

Cr: 21.0-23.0

Ni: 4.5-6.5

Mo: 2.5-3.5

N: 0.08-0.20

### **Heat treatment**

Solution treat and quench:  $\geq 1020$  °C

Cooling media: liquid

Quenching cool below 260°C

### **Tensile Requirements**

Tensile Strength:  $\geq 620$ MPa

Yield Strength:  $\geq 450$ MPa

Elongation 2 in. or 50 mm (or 4D):  $\geq 25\%$

Reduction of Area:  $\geq 45\%$