

## LF2 Carbon Steel

**Grade:** ASTM A350 LF2 (A105)

**Type:** Carbon steel applied in cold temperature service usually supplied in the normalized, normalized and tempered or quench and tempered condition.

Nominal Composition	
Element	Weight %
Carbon	0.30 max
Silicon	0.15 – 0.30
Manganese	0.6 – 1.35
Phosphorus	0.35 max
Sulphur	0.040 max
Molybdenum	0.12 max
Copper	0.40 max
Chromium	0.30 max
Nickel	0.40 max
Vanadium	0.08 max
Niobium	0.02 max

**Mechanical Properties Condition:** Forgings of LF2 shall be furnished in the normalized, or in the normalized and tempered, or in the quenched and tempered condition.

Property	Values
Ultimate Tensile Strength	70 – 95 KSI (485 – 655 N/mm <sup>2</sup> )
0.2% Yield Strength	36 KSI min (250 N/mm <sup>2</sup> min)
Elongation	22% min
Reduction of Area	30% min
Hardness	197 HB max

**Notes:**

Carbon steel with moderate strength and impact toughness, good weldability and machinability.

Impact toughness is dependent on condition supplied but is generally good to temperatures as low as -46 Deg C with typically 27J average and 20J single achieved, this is limited though dependent on a number of factors such as ruling section, chemical composition and heat treatment condition, with impact toughness achieved decreasing with higher strength, ruling section and at lower test temperatures due to the materials Ductile / Brittle transition temperature.

Generally supplied in any of the following conditions –

- Normalized
- Normalized and Tempered
- Quench and tempered

Used extensively for the manufacture of flanges and fitting and applications that require cold temperature service and where corrosion resistance is not an important factor.