

## ASTM A350 LF2 – Carbon Steel

ASTM A350 Grade LF2 is a general Carbon steel usually supplied in the Normalised, Normalised and Tempered or Quench and Tempered condition.

It is typified by having moderate strength and impact toughness and is used extensively for the manufacture of flanges and fittings, and applications which require cold temperature service where corrosion resistance is not important.

### Typical Chemical composition

Carbon	<0.30%
Silicon	0.15 - 0.30%
Manganese	0.60 - 1.35%
Phosphorous	<0.035%
Sulphur	<0.040%
Chromium	<0.30 %
Molybdenum	<0.12%
Copper	<0.40%
Niobium	<0.02%
Vanadium	<0.08%

### Mechanical Property Requirements

Tensile Strength Mpa	Yield (0.2%) MpA	Elongation %	Reduction of Area %	Charpy J -46°C	Hardness HB
485-655 (70-95KSi)	>250 (36KSi)	>22	>30	>20	<197HB

### Forging

Forging Temperature for this material should be 900 - 1200°C

Soak times should be kept to a minimum to avoid heavy scaling, but sufficient time should be given to allow centre to achieve furnace temperature.

After forging pieces should be allowed to cool in still air.

### Heat Treatment

**Normalising** - Heat to 860 - 920°C for a time commensurate with ruling section, Air cool (If Required)

**Hardening** – Heat to 890 – 960°C for a time commensurate with ruling section and quench in Water.

**Tempering** – Re-heat to 590oC Minimum as required, dependent on final required properties. Hold for a time commensurate with the ruling section and cool in still in air.

### Machining

ASTM A350 LF2 has good to very good machinability, dependent on condition, and operations such as sawing, turning, broaching, milling etc can be accomplished satisfactorily using standard machine tool manufacturers recommended speeds and feeds.

### Welding

ASTM A350 LF2 is readily weldable by any technique.