

**Quality** ASTM A 350 LF2  
**According to standards** ASTM A 350M - 07  
**Number**



**Chemical composition**

C% max	Si%	Mn%	P% max	S% max	Cu% max	Ni% max	Cr% max	Mo% max	V% max	Nb% max
0,30	0,15-0,30	0,60-1,35	0,035	0,040	0,40	0,40	0,30	0,12	0,08	0,02

The sum of copper (Cu), chromium (Cr) and molybdenum (Mo) should not exceed 1,00%

The sum of chromium (Cr) and molybdenum (Mo) should not exceed 0,32%

Carbon Equivalent CE = C + Mn/6 + (Cr + Mo + V)/5 + (Ni + Cu)/ 15 max 0,47

**Temperature °C**

Hot-forming	Normalizing	Quenching	Tempering	Stress-relieving
1150-850	880-930 air cooling	880-930 oil / polymer water	590 air cooling	50 under the temperature of tempering
Soft annealing	Normalizing and tempering	Isothermal annealing	Pre-heating welding	Stress-relieving after welding (PWHT)
700 air cooling	900 air 600 air	860 furnace cooling to 660 after, air	200 AC1	590 furnace cooling MS Mf

**Mechanical properties**

Forged values as reference Heat treatments must guarantee the reported values ASTM A 350M -07

all dimension mm	Testing at room temperature (longitudinal)		A% min.	C%-Z% min.	Kv - 46 C° CL.1	Kv - 18 C° CL.2	HB max
T	R N/mm2	Rp 0.2 N/mm2			J average / minimum		
T	485-655	250	22	30	20 / 16	27 / 20	197

**Mechanical properties (longitudinal testing)**

Heat treatments	Φ product mm	R N/mm2	Rp 0.2 N/mm2	A %	C-Z %	Kv -46 °C J	Kv -18 °C J	product
Quenching 880 °C water	95	600	480	24.6	58	68-66-64	112- 114-110	Hot-rolled
Tempering 640 °C air								
Normalizing 900 °C air	210	580	400	32.6	64.4	22⊕  24-18	70⊕  74-70	Hot-rolled
Natural	95	526	302	28.6	62	06/06/04	16/10/08	Hot-rolled

EUROPE EN	ITALY UNI	CHINA GB	GERMANY DIN	FRANCE AFNOR	U.K.	B.S.	RUSSIA GOST	USA AISI/SAE
S355J2G3 appr.	Fc510 appr.	16Mn	St52.3 N	50D	20G	A350 LF2 cl. 1-  cl. 2		