

1.7335

13CrMo4-5

Designation (DIN 17 006)
 Similar AISI materials (UNS)
 As-delivered condition
 Microstructure (as deliv. cond.)

13CrMo4-5

(* F=Ferrite Ce=Cementite Ca=Carbides A=Austenite)

Chemical Composition

C%	Si%	Mn	P%	S%
0,08-018	≤ 0,35	0,40-1,00	0,030	0,025
Cr%	Mo%	Ni%	V%	Others%
0,70-1,15	0,40-0,60	-	-	Cu ≤ 0,30; +Al

Mechanical properties at room temperature

Hardness Brinell HB30	Yield stress ≥ N/mm ²	Tensile strength N/mm ²	Elongaion (L ₀ =5d ₀) ≥ %	Impact value ISO-V (DVM) ≥ J
130-175	295	450-660	20	44

Heat treatment

Hot working °C	Soft annealing °C	°C	Hardening		Temper °C
			Oil	Air	
1100-850	600-700 ²⁾	890-950 ⁶⁾	•	•	630-730

1) Normalizing

2) Stress relieving

3) Values for longitudinal samples bars ≤ 60 mm ∅

4) Normalized and tempered

5) ∅ ≤ 100mm

6) Austenize

Mechanical and physical properties above ambient temperature

0,2% Yield stress ≥ N/mm ²					
200°C	300°C	350°C	400°C	450°C	500°C
230	205	190	180	170	165

Hours	Creep limit N/mm ² at °C			
	450°C	500°C	550°C	600°C
1.000 h	-	235	127	-
10.000 h	245	157	76	-
100.000 h	191	98	36	-

Hours	Creep rupture strength N/mm ² at °C			
	450°C	500°C	550°C	600°C
10.000 h	370	239	109	49
100.000 h	285	137	49	20