

1.6587

38CrNiMo7-6 / 17HNM

CASE HARDENING STEEL

APPLICATION

Highly stressed components for automotive and gear construction with high toughness, bevel pinions, pinions, shafts, bolts. Ball and roller bearing steels. Heavily loaded gear wheels, high speed gear transmissions, shafts and other parts subject to high pressures.

CHEMICAL COMPOSITION

Chemical composition (in weight %)

Element	C	Si	Mn	P	S	Cr	Mo	Ni	Cu
min	0.15	0.15	0.50	max.	max.	1.50	0.25	1.40	max.
max.	0.21	0.40	0.90	0.025	0.035	1.80	0.35	1.70	0.40

TREATMENT

Jominy test	860 ± 5 °C, at least 30 min. austenitizing time (reference value)
Carburizing	880 - 980 °C
Direct and single hardening	810 - 850 °C
Core hardening	830 - 870 °C
Case hardening	780 - 820 °C
Tempering	150 - 200 °C mind. 60 min. (approx.)

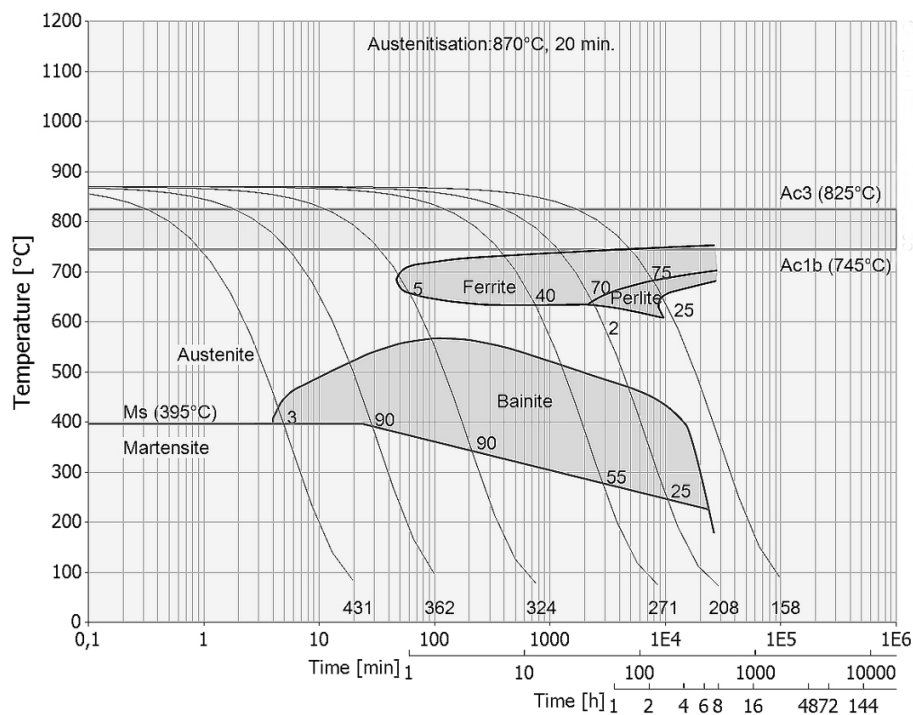
ADDITIONAL HEAT TREATMENT

Normalising	850 - 880 °C
Soft annealing	650 - 700 °C
Intermediate annealing	630 - 650 °C

MECHANICAL PROPERTIES

Condition	Treated to improve shearability (+S)	Soft annealed (+A)	Treated on hardening strain (+TH)	Treated on ferrite perlite material structures and hardening strain (+FP)
Hardness [HB]	max. 255	max. 229	179-229	157-207

CONTINUOUS COOLING TRANSFORMATION (CCT) DIAGRAM



TEMPERING DIAGRAM

