

1.0503

C45 / 45

STRUCTURAL STEEL

APPLICATION

Unalloyed structural steel for components used in general machine construction and vehicle construction. For the production of medium-loaded elements of machines and equipment such as: spindles, axles, shafts, non-hardened gears, electric motor shafts, discs, screws, levers, ordinary knives, corkscrews, wheel hubs, rods, rollers, pump rotors.

CHEMICAL COMPOSITION

Chemical composition (in weight %)

Element	C	Si	Mn	P	S	Cr	Mo	Ni	Cu
min	0.42	0.10	0.50	max	max	max	max	max	max
maks.	0.50	0.40	0.80	0.045	0.045	0.40	0.10	0.40	0.30

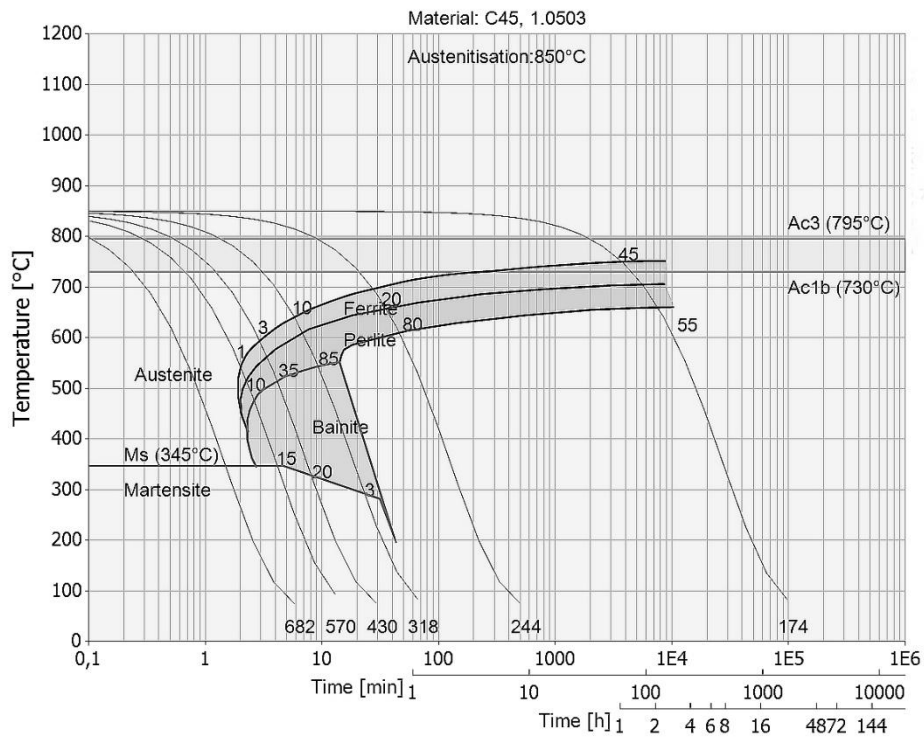
TREATMENT

Normalising	840 - 880 °C at least 30 min. austenitizing time (approx.)
Hardening	820 - 860 °C / water or oil, at least 30 min. austenitizing time (approx.)
Tempering	550 - 660 °C min. 60 min. (approx.)
Softening annealing	680 - 710 °C

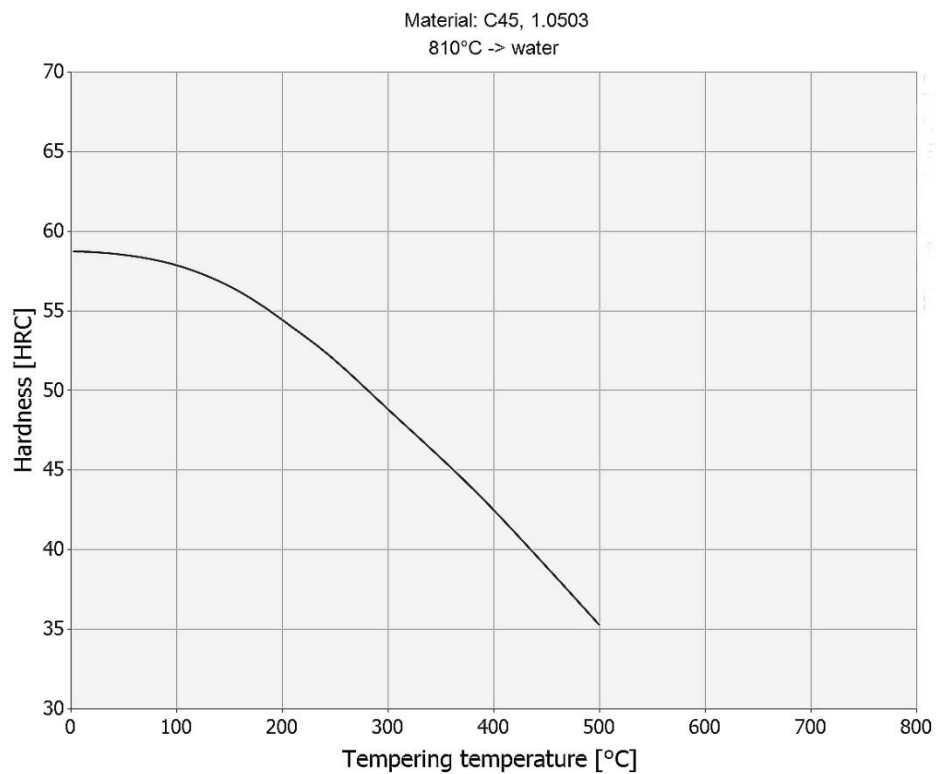
MECHANICAL PROPERTIES

Conditions	Quenched and tempered (+QT)	Normalized (+N)	Treated to improve shear ability (+S)	Softening annealing (+A)
Hardness [HB]	Depends on diameter and thickness		maks. 255	-

CONTINUOUS COOLING TRANSFORMATION (CCT) DIAGRAM



TEMPERING DIAGRAM



NOTE: All technical information is for reference only.