

1045 Carbon steel

Typical Analysis (Ave. values %)	C	Si	Mn	P	S
	0.45	0.25	0.75	0.04	0.04
NEAREST STANDARD	AS	AISI	BS	DIN	
	1045	1045	080A47 EN43B	1.0503 C45	

DESCRIPTION	1045 is a medium tensile carbon steel with good strength and impact properties. Supplied in the cold drawn or turned and polished condition, with a typical tensile strength range of 600 - 950 Mpa. Good machinability.
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APPLICATIONS	Applications requiring flame or induction hardening. High strength shafts, hydraulic rams, camshafts, pins & spindles
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MECHANICAL PROPERTIES (Ave. values)	Condition	Tensile Strength MPa	Yield Strength MPa	Elongation %
	Cold drawn	640-950	500-760	8-9
	Turned & Polished	600-720	300-440	14

HEAT TREATMENT	Carburize	Not suitable
	Harden	850-860°C. Oil or Water quench, 54-60 R/C
	Harden (Induction)	820-850°C Water quench, 54-60 R/C
	Temper	180-210°C air cool

WELDING	Limited to repair work, use Bohler EV-63-refer Bohler welding literature
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SIZE RANGE	Round	6.35 to 152.4 mm
	Square	25.4 to 38.1 mm
	Hexagon	24 to 50.8 mm A/F