

**EQUIVALENTS:**

**American:** AISI 1038  
**British:** BS970 Part 1 1983, 080M40/080A42 (EN8)  
**Chinese:** S45/S45C  
**German:** W. Stoff No 1.1186

**COLOUR CODE:**


Rolled

**CHEMICAL COMPOSITION %**

	C	Si	Mn	P	S
Min	0.36	0.10	0.60		
Max	0.44	0.40	1.00	0.05	0.05

**MECHANICAL PROPERTIES:**

Heat Treatment	Condition	Tensile Strength RM MPA	Yield Stress REMPA	RP0,2 MPA	A min on 5,65 √So	Impact		Hardness HB	Limited Ruling Section mm
						IZOD FT.Lb	KCV Joules		
Normalise	35	550	280	-	16	15	16	152/207	150
	35	510	245	-	17	-	-	146/197	250
Q	40/50	625/775	385	355	16	25	28	179/229	63
R	45/55	700/850	465	450	16	25	28	201/255	19

**CHARACTERISTICS:**

- Carbon steel - 40 ton tensile black axle steel
- A 6% allowance should always be made for removal of surface defects during machining
- Machinability good (not recommended for case hardening)
- Weldability good (carbon content low enough)
- Heat treatment only to limited ruling sections/can be surface hardened (induction hardening)

**APPLICATIONS:**

Axles  
 Drive shafts  
 Crankshafts  
 Connecting rods  
 High tensile bolts  
 Studs  
 Propeller shaft joints  
 Rifle barrels  
 Breech mechanisms for small arms  
 Induction hardened pins

**TOLERANCES:**

- H7 to H9