

Material Grade: **826M40**
 Material Condition(s): **Untreated / Annealed / Quench and tempered**
 Surface Finish: **As rolled / As forged / Bright drawn / Bright turned**

Associated Standard: **BS970**

Description:

A 2.5% nickel-chromium-molybdenum through hardening steel which has a high hardenability. It may be treated in relatively large section sizes to produce tensile strengths ranging from 850 to over 1550 N/mm² combined with good ductility and resistance to stock. Due to its high molybdenum content the steel may normally be tempered in the range 300-550C without serious loss of impact values.

Good mechanical properties at low temperature can also be obtained

Typical applications: **Undercarriages, aero-engine and air frame parts, heavy duty gears, pinion connecting rods, crank and differential shafts and other transmission parts, high strength bolts, and studs, electrical motor shafts, turbine discs, gas bottles, mandrel bars for tube manufacture, ordnance parts.**

1. STEELMAKING

	<u>C</u>	<u>Si</u>	<u>Mn</u>	<u>S</u>	<u>P</u>	<u>Cr</u>	<u>Ni</u>	<u>Mo</u>
Min	0.36	0.10	0.45			0.50	2.30	0.45
Max	0.44	0.35	0.70	0.040	0.035	0.80	2.80	0.65

2. TYPICAL MECHANICAL PROPERTIES

Test type	Tensile and hardness test (at room temperature)						Impact test (KV)
	Yield (Re)	0.2 % proof	UTS (Rm)	Elong (A)	R of A (Z)	Hardness	Room Temp
Unit	N/mm ²	N/mm ²	N/mm ²	%	%	HB	J
Annealed	Min						
	Max					277	
Q + T + Drawn, condition 'U'	Min	770	925	9		269	42
	Max		1075			331	
Q + T to condition 'U'	Min	755	925	12		269	42
	Max		1075			331	
Q + T to condition 'V'	Min	850	1000	12		293	42
	Max		1150			352	
Q + T to condition 'W'	Min	940	1075	11		311	35
	Max		1225			375	
Q + T to condition 'X'	Min	1020	1150	10		341	28
	Max		1300			401	
Q + T to condition 'Y'	Min	1095	1225	10		363	28
	Max		1375			352	
Q + T to condition 'Z'	Min	1235	1550	7		444	11
	Max						