

MATERIAL DATA SHEET



Fullerton Road
Rotherham S60 1DH
Tel:-01709 828517
Email:-
sales@dacooper.co.uk

655M13 [EN36]

Condition of supply:-	<i>As Rolled/Forged, Annealed, Quenched & Tempered</i>
Surface Condition:-	<i>Black, Bright, Proof machined, Machined to Requirements</i>

Description:

655M13 grade steel is a nickel-chromium alloy case-hardening steel that is specified for heavy duty highly-stressed parts. 655M13 is a carburising steel grade with excellent toughness and fatigue resistance with very high surface strength and a soft but strong core. The presence of chromium increases hardenability whilst the nickel content increases toughness and resistance to stock.

Typical Applications:

The production of numerous high strength parts including crankshafts in the automotive and aerospace sector, Heavy Automobile transmission components, Steering components, Gears, Shafts, Track rod pins, Breech mechanisms, Small parts for armaments etc.

Typical Chemical Composition:

	C	Si	Mn	S	P	Cr	Ni	Mo
Min	0.12	0.10	0.30			0.60	3.00	
Max	0.18	0.35	0.60	0.040	0.040	1.10	3.75	<0.15

Mechanical properties annealed condition

Yield	Tensile strength	Elongation	Hardness
540Mpa	700/770Mpa	25%	255HB

Mechanical Properties: Blank Case Hardened -19mm test piece

Tensile Strength	Elongation	Charpy Impact J	Izod Impact Ft/Lbs	Hardness HB
1000	9	40	35	255

Typical Core Properties – Carburised and Oil Hardened

Section	Yield Strength Mpa	Tensile Strength Mpa	Elongation %	Charpy J	Hardness HB
11mm	1030/1320	835	9	55	300-385
30mm	930/1230	785	10	55	275-360
63mm	880/1180	735	10		260-350

Machining

655M13 is readily machinable allowing processes such as Sawing, Turning, Drilling, Boring and Milling to be relatively easily achieved.

Welding

In the annealed condition this material is readily weldable.

Low Hydrogen electrodes are recommended.

following cooling the material should be stress relieved.

Form of supply:

Material can be supplied, Black Annealed - Rolled/Forged Bar, Proof Machined, Bright Turned or Ground Bar, Cut Pieces or Machined to customer specification.

Size ranges from:

<60mm diameter - 760mm diameter