



PRODUCT MANUAL

CREATIVITY. INNOVATION. TECHNICAL MASTERY.





OVER 60,000 TONNES OF STEEL STOCK

AVAILABLE THROUGH OUR NATIONWIDE STOCKHOLDER NETWORK

ABOUT US

BARRETT ENGINEERING STEEL ARE SPECIALIST SUPPLIERS OF A WIDE RANGE OF BLACK & BRIGHT CARBON, ALLOY AND STAINLESS STEEL PRODUCTS. IN-HOUSE PROCESSING SERVICES INCLUDE: CUTTING, PEELING & GRINDING, BORING, FORGING, HEAT TREATMENT, TESTING AND MACHINING.

We are established suppliers to a number of leading OEMs covering a wide range of sectors that includes mining, oil & gas, yellow goods, off highway and automotive products. You can have full confidence that our team of specialists have the technical knowledge and industry experience to meet all of your requirements.

We understand that our customers have constantly evolving needs and our on-going investment programme ensures that we have the products and services to match them.



CUSTOMER SERVICE

THE LEVEL OF CUSTOMER SERVICE WE PROVIDE SETS US APART FROM THE COMPETITION.

We constantly monitor our customer service performance in terms of:

- PRODUCT QUALITY
- SPECIFICATION
- PROCESSING
- PACKAGING
- DELIVERY

In addition, we strive to work in partnership with our customers, sharing our judgement, expertise and outstanding problem-solving capabilities to ensure the success of your project.

Our comprehensive Quality Management System is overseen by our Group Managing Director and regularly reviewed both internally and by independent assessors. We also monitor and respond positively to customer feedback on an ongoing basis. These activities help us ensure that we are continually improving our business performance and the service we provide to our customers.



DELIVERY

WE PROVIDE A PROMPT AND RELIABLE DELIVERY SERVICE ACROSS THE UK AND IRELAND USING OUR OWN TRANSPORT FLEET. WE ALSO SUPPLY AND DELIVER OVERSEAS TO THE MIDDLE EAST, AMERICA AND EUROPE USING OUR TRUSTED LOGISTICS PARTNERS.

OUR NATIONWIDE NETWORK OF SERVICE CENTRES ENSURES THAT YOUR ORDER, BE IT FOR STOCK BARS OR PROCESSED MATERIAL, IS DELIVERED QUICKLY AND EFFICIENTLY. WE ARE COMMITTED TO PROVIDING THE DELIVERY SERVICE TO SUIT YOU.

All our dedicated staff – wherever they are based across the UK – will act as your one point of contact, whatever product or service you require.



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CUTTING SERVICES

WE HAVE OVER 40 SAWS WITHIN THE ENGINEERING DIVISION, RANGING FROM BAND SAWS TO CIRCULAR SAWS READY TO MEET ALL OF YOUR CUTTING REQUIREMENTS.

We can quickly and efficiently middle or triple bars as well as multi-cutting.

We continually invest in the latest state-of-the-art processing equipment.

Our in-house cutting services offer the latest TSUNE Carbide saws along with our Computer Controlled Bandsaws. This enables us to offer single same day and multi-cut items from 10mm to 800mm.

BLACK CARBON

070M20 (EN3A) Non-alloyed Low Carbon Steel

MATERIAL DESCRIPTION: A mild steel used for general engineering purposes. Suitable for low stressed fixings, shafts, rollers etc. Good machining and weldability. Used where heavy stresses and heat treatment are not involved. Swarf will be in long continuous strands.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S
Min	0.16	0.10	0.50		
Max	0.24	0.40	0.90	0.050	0.050

MECHANICAL PROPERTIES: Minimums unless stated. (From Normalised test piece)

UTS N/mm ²	Yield N/mm ²	Hardness HB	LRS (mm)
430	215	126/179	150
400	200	116/170	250

SIZE RANGE: 40mm to 600mm diameter

ALTERNATIVE SPECIFICATIONS: C15, C20, C22, DIN 1.1151, 080A15, EN3A

SUPPLY CONDITION: As rolled, as forged

070M55 (EN9) Non-alloyed .55% Medium Carbon Steel

MATERIAL DESCRIPTION: A medium carbon, high tensile steel with good wear resistant properties. Suitable for gears, cylinders, camshafts and surface hardened parts. Suitable for heat treatment.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S
Min	0.50	0.10	0.50		
Max	0.60	0.40	0.90	0.050	0.050

MECHANICAL PROPERTIES AT ROOM TEMPERATURE:

Minimums unless stated. (From Normalised test piece)

UTS N/mm ²	Yield N/mm ²	Hardness HB	LRS (mm)
700	355	201/255	63
600	310	170/223	250

SIZE RANGE: 50mm to 550mm diameter

SUPPLIED CONDITION: Untreated, Normalised, Drawn

ALTERNATIVE SPECIFICATIONS: C55, SAE1055, DIN 1.035 EN9

BLACK CARBON

080M40 (EN8) Non-alloyed .40% Medium Carbon Steel

MATERIAL DESCRIPTION: A medium carbon, medium tensile steel. Used mainly for axles, spindles, studs, automotive and general engineering components. Suitable for heat treatment where extra strength is required. Material capable of through hardening by quenching and tempering but is commonly supplied in the untreated condition.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S
Min	0.36	0.10	0.60		
Max	0.44	0.40	1.00	0.050	0.050

MECHANICAL PROPERTIES AT ROOM TEMPERATURE:

Minimums unless stated. (From Normalised test piece)

UTS N/mm ²	Yield N/mm ²	Hardness HB	LRS (mm)
550	280	155/207	150
510	245	146/197	250

SIZE RANGE: 50mm to 650mm diameter

SUPPLIED CONDITION: Untreated, Normalised, Drawn

ALTERNATIVE SPECIFICATIONS: 080A42, Din 1.0511 SAE1040, C40, C45

230M07 (EN1A) Non-alloyed Free Machining Steel

MATERIAL DESCRIPTION: A low carbon steel designed for high speed machining for multi turned parts. Controlled analysis to ensure consistent quality and maximum tool life. Suitable for automatic lathes and CNC machines. Swarf will form in small chips to prevent blockage of machinery.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S
Min			0.90		0.250
Max	0.15	0.40	1.30	0.090	0.350

SIZE RANGE: 70mm to 210mm diameter

ALTERNATIVE SPECIFICATIONS: 11SMn30, DIN1.0715, SAE1113, SAE1213

BLACK CARBON

S355

MATERIAL DESCRIPTION: As an unalloyed low carbon mild steel grade S355 is supplied in the hot rolled condition. The S355 steel specifications are high yield non alloy steels. First specified in the European EN10025 standard and later published by the British Standards Institute (BSI) as BS EN 10025 S355, S355J2 and S355J2+N. These standards superseded the BS4360 grades. The average minimum yield for this material is 355 N/mm², hence the name S355

A medium tensile, low carbon manganese steel which is readily weldable and possess good impact resistance. Machinability is similar to that of mild steel.

SURFACE CONDITION: As Rolled, As Forged, Bright Drawn, Bright Turned

TYPICAL APPLICATIONS: Welded Structures, Lifting gear, Spindles

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S
Min					
Max	0.2	0.55	1.6	0.035	0.035

Tensile Strength 470-630 N/mm² (MPa)

Yield Strength 355 N/mm² (MPa)

Elongation 18%

Impacts 27 joules

CERTIFICATION: S355 steel is commonly available with a 3.1b mill certificate, cast analysis or certificate of conformity

HEAT TREATMENT: S355 is not ideally suited to hardening, though it can be subjected to limited heat treatment process such as case hardening. If hardening S355 heat treatment temperatures, including rate of heating, cooling and soaking times will vary due to factors such as the shape and size of each component.

ALTERNATIVE SPECIFICATIONS: Din 1.1170, SAE1024, 1320, 150M19

BAR PEELING & GRINDING

WHETHER CARRIED OUT ON MATERIAL SUPPLIED FROM OUR OWN STOCK, OR FROM FREE ISSUE MATERIAL SUPPLIED BY YOURSELF, WE ARE PLEASED TO OFFER BAR PEELING AND GRINDING (INCLUDING LUMSDEN GRINDING).

Centreless Bar Grinding: 6mm – 55mm dia (+/-0.001")

Bar Peeling: 19 mm – 101.6 mm dia (+/-0.004")

(starting size 21 mm – 105 mm)

Bright Reeling: 25.4 mm dia – 80 mm dia

Black Reeling: 10 mm – 40 mm dia

BRIGHT CARBON

080A15

MATERIAL DESCRIPTION: A mild steel used for general engineering purposes. Suitable for low stressed fixings, shafts, rollers etc. Good machining and weldability. Used where heavy stresses and heat treatment are not involved. Swarf will be in long continuous strands. Bright flats are of particular interest to the tool making trade.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S
Min	0.13		0.70		
Max	0.18	0.40	0.90	0.035	0.035

SIZE RANGE:

Rounds (Metric)	5mm to 250mm diameter.
Round (Imperial)	1/8" to 10" diameter
Flats (Metric)	Widths from 12mm to 200mm Thicknesses from 3mm to 90mm
Flats (Imperial)	Widths from 1/4" to 10" Thicknesses from 1/8" to 4"
Squares (Metric)	6mm to 100mm
Squares (Imperial)	1/4" to 6"
Angles	16mm to 50mm

080A42 (EN8D)

MATERIAL DESCRIPTION: A medium carbon and medium tensile steel used mainly for axles, spindles, studs, automotive and general engineering components. Suitable for heat treatment where extra strength is required.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S
Min	0.40	0.10	0.70		
Max	0.45	0.40	0.90	0.050	0.050

SIZE RANGE:

Rounds (Metric)	6mm to 150mm diameter
Round (Imperial)	1/4" to 7" diameter

ALTERNATIVE SPECIFICATIONS: SAE1040, 1042, C40

BRIGHT CARBON

212A42 (EN8DM)

MATERIAL DESCRIPTION: A free machining medium carbon steel mainly used for the manufacture of spindles, nuts, bolts etc.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S
Min	0.40		1.00		0.120
Max	0.45	0.25	1.30	0.060	0.200

SIZE RANGE:

Rounds (Metric)	8mm to 60mm diameter
Round (Imperial)	1/4" to 3.1/2" diameter
Hexagons	10mm to 36mm A/F

230M07 (EN1A)

MATERIAL DESCRIPTION: A low carbon steel designed for high speed machining for multi turned parts. Controlled analysis to ensure consistent quality and maximum tool life. Swarf will form in small chips to prevent machine blockage.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S
Min			0.90	0.090	0.250
Max	0.15	0.05	1.30	0.070	0.350

MECHANICAL PROPERTIES (TYPICAL):

Finish	Yield N/mm ²	Tensile N/mm ²	Elongation Min	Hardness HB
Drawn	290/550	400/650	7	115/200
Turned	230/310	370/500	17	100/150

SIZE RANGE:

Rounds (Metric)	5mm to 200mm diameter
Round (Imperial)	3/16" to 8" diameter
Flats (Imperial)	Widths from 3/4" to 6" Thicknesses from 3/16" to 2.1/2"
Squares (Imperial)	3/16" to 7"

ALTERNATIVE SPECIFICATIONS: 11SMn30, DIN1.0715, SAE1113, SAE1213

BRIGHT CARBON

230M07PB (EN1A LEADED)

MATERIAL DESCRIPTION: A low carbon steel designed for high speed machining for multi turned parts. Controlled analysis to ensure consistent quality and maximum tool life. Swarf will form in small chips to prevent machine blockage. The addition of lead will enhance machinability.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S	Pb
Min			0.90		0.250	
Max	0.15	0.05	1.30	0.090	0.350	0.25

MECHANICAL PROPERTIES (TYPICAL):

Finish	Yield N/mm ²	Tensile N/mm ²	Elongation Min	Hardness HB
Drawn	290/550	400/650	7	115/200
Turned	230/310	370/500	17	100/150

SIZE RANGE:

Rounds (Metric) 3mm to 82.55mm diameter

Round (Imperial) 1/8" to 3 1/4" diameter

Hexagons 5mm to 70mm

ALTERNATIVE SPECIFICATIONS: 11SMn30Pb, 1.0718 & 12L14

KEY STEEL

MATERIAL DESCRIPTION: Key steel in an unalloyed medium carbon steel. It is supplied bright drawn in square and flat bar to tolerances as stipulated in BS46.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S
Min	0.40		0.70		
Max	0.45	0.40	0.90	0.050	0.050

SIZE RANGE:

Flats (Metric mm) 8 x 7, 10 x 8, 12 x 8, 14 x 9, 16 x 10, 18 x 11, 20 x 12, 22 x 14, 25 x 14, 28 x 16, 32 x 18, 36 x 20.

Flats (Imperial") 1/2 x 3/8, 3/4 x 1/2, 1 x 3/4, 1.1/4 x 7/8

Squares (Metric mm) 4, 5, 6, 8, 10, 12

Squares (Imperial") 1/8, 3/16, 1/4, 7/16, 5/8, 3/4, 1

SUPPLY CHAIN MANAGEMENT

WE CARRY OUT QUALITY CONTROL AUDITS ON ALL OUR VENDORS WITHIN THE SUPPLY CHAIN AND USE ONLY APPROVED SUPPLIERS AT ALL STAGES, FROM RAW MATERIAL PROCUREMENT THROUGH TO TESTING.

This includes:

- MATERIAL SUPPLY
- FORGING
- HEAT TREATMENT
- TESTING
- MACHINING
- GLOBAL LOGISTICS

We leave nothing to chance and have a dedicated team solely responsible for hands-on monitoring and managing of the supply chain. This ensures all processes are carried out within specified timescales and exactly meet the requirements of the project.

BLACK ALLOY

605M36 (EN16) Low Alloyed Manganese-Moly Steel

MATERIAL DESCRIPTION: A through hardening steel with good resistance to shock and excellent ductility with freedom from temper embrittlement attainable. Applications include low endurance connecting rods, high tensile bolts & nuts, hub spindles and lifting gear spindles.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S	Mo
Min	0.32	0.10	1.30			0.22
Max	0.40	0.35	1.70	0.035	0.040	0.32

MECHANICAL PROPERTIES (HEAT TREATED) AT ROOM TEMPERATURE:

Minimums unless stated.

Condition	UTS N/mm ²	Yield N/mm ²	Hardness HB	Elongation	Impact KCV Joules	LRS (mm)
R	700/850	495	201/255	15	28	250
R	700/850	525	201/255	17	50	150
S	775/925	585	223/277	15	50	100
T	850/1000	680	248/302	13	50	63

SIZE RANGE: 35mm to 240mm diameter

655M13 (EN36A) 3% Nickel-chrome Case Hardening Steel

MATERIAL DESCRIPTION: A nickel/chrome case hardening steel. When carburised and hardened attainable core values of 850-1230N/mm² can be achieved. Chromium increases the hardenability while the nickel content will increase the toughness and resistance to shock. Applications include heavy duty gears, transmission components and track rod pins.

CHEMICAL COMPOSITION:

	C	Mn	P	Si	Cr	Ni
Min	0.10	0.35			0.70	3.00
Max	0.16	0.60	0.035	0.040	1.00	3.75

MECHANICAL PROPERTIES (HEAT TREATED) AT ROOM TEMPERATURE:

Minimums unless stated.

UTS N/mm ²	Reduction in Area	Impact KCV Joules	Test Bar dia. (mm)
1000	9	35	19

SIZE RANGE: 25mm to 330mm diameter

ALTERNATIVE SPECIFICATIONS: 1.5752, 14NiCr4, 15NiCr5, EN36B

BLACK ALLOY

708M40 (EN19A) Low Alloy 1% Chrome-Moly Steel

MATERIAL DESCRIPTION: A through hardening carbon molybdenum steel capable of surface hardening by nitriding with high ductility and good shock resisting properties.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S	Mo	Cr	Ni
Min	0.36	0.10	0.70			0.15	0.90	
Max	0.44	0.35	1.00	0.035	0.040	0.25	1.20	0.40

MECHANICAL PROPERTIES (HEAT TREATED): Minimums unless stated.

Condition	UTS N/mm ²	Yield N/mm ²	Hardness HB	Elongation	Impact KCV Joules	LRS (mm)
Q	625/775	450	179/229	15	28	250
Q	625/775	480	179/229	18	16	150
R	700/850	495	201/255	15	28	250
R	700/850	525	201/255	17	50	150
S	775/925	585	223/277	15	50	100
T	850/1000	680	248/302	13	50	63

SIZE RANGE: 25mm to 381mm diameter

ALTERNATIVE SPECIFICATIONS: 42CrMo4 & SAE4140

BLACK ALLOY

709M40 (EN19) Low Alloy 1% Chrome-Moly Steel

MATERIAL DESCRIPTION: Material can be supplied untreated, annealed or Q & T. Bars commonly supplied in the heat treated condition. A low alloy steel that possesses good tensile and shock resistance properties. Wear resistance can be increased by flame hardening and is suitable for nitriding, and A through hardening steel capable of surface hardening by nitriding. Applications axles, shafts, gears and induction harden pins.

CHEMICAL COMPOSITION:

	C	Mn	P	S	Mo	Cr	Ni	SI
Min	0.36	0.70			0.25	0.90		0.10
Max	0.44	1.00	0.035	0.040	0.35	1.20	0.40	0.35

MECHANICAL PROPERTIES (HEAT TREATED) AT ROOM TEMPERATURE:

Minimums unless stated.

Condition	UTS N/mm ²	Yield N/mm ²	Hardness HB	Elongation	Impact KCV Joules	LRS (mm)
R	700/850	495	201/255	15	28	250
S	775/925	555	223/277	13	22	250
S	775/925	585	223/277	15	50	150
T	850/1000	680	248/302	13	50	100

SIZE RANGE: 25mm to 381mm diameter

722M24 (EN40B) Low Alloy 1% Chrome-Moly Steel

MATERIAL DESCRIPTION: Material normally supplied in the hardened and tempered condition. It is a chromium molybdenum nitriding steel. This material can be used in the unnitrided condition for applications requiring both high tensile strength and high creep strengths at temps up to 600°C. Applications include crankshafts, gears, plastic moulds, pins, spindles and bolts.

CHEMICAL COMPOSITION:

	C	Mn	P	S	Mo	Cr	Ni	SI
Min	0.20	0.45			0.45	3.00		0.10
Max	0.28	0.70	0.035	0.040	0.65	3.50	0.40	0.35

MECHANICAL PROPERTIES (HEAT TREATED) AT ROOM TEMPERATURE:

Minimums unless stated.

Condition	UTS N/mm ²	Yield N/mm ²	Hardness HB	Elongation	Impact KCV Joules	LRS (mm)
T	850/1000	650	248/302	13	35	250
T	850/1000	680	248/302	13	50	150
U	925/1075	755	269/331	12	42	150

SIZE RANGE: 25mm to 381mm diameter, 150mm to 400mm square.

ALTERNATIVE SPECIFICATIONS: Din 1.7361, 32CrMo12

FORGING

SPECIALIST OPEN DIE FORGING MANUFACTURER
PRODUCING BESPOKE FORGINGS UP TO 2.5 TONNES IN THE
VARIOUS OIL PATCH MATERIAL GRADES FROM LOW ALLOY
THROUGH TO NICKEL ALLOYS.

With our range of specialised open die forge equipment we are able to manufacture a range of component types to customer and industry specifications.

Our various sized open die hammers are capable of producing a variety of component types and shapes in a wide range of alloys:-

- Discs and rings
- Boss blanks
- Bars and shafts
- Blocks
- Flange blanks

BLACK ALLOY

817M40 (EN24) 1.5% Nickel-Chrome-Moly Through Hardening Steel

MATERIAL DESCRIPTION: Material can be supplied untreated, annealed or Q & T. This material is capable of being heat treated to produce a wide range of strengths and has a good hardenability enabling uses in medium tensile strengths in medium to large sections. The steel possesses good wear resistance. Good impact values can be obtained at low temperatures. Bars/billets can be supplied in the annealed state which require hardening and tempering but gives better machinability. Applications include shafts, studs, connecting rods, spindle gears, power transmission gears and cams.

CHEMICAL COMPOSITION:

	C	Mn	P	S	Mo	Cr	Ni	Si
Min	0.36	0.45			0.20	1.00	1.30	0.10
Max	0.44	0.70	0.035	0.040	0.35	1.40	1.70	0.35

MECHANICAL PROPERTIES (HEAT TREATED): Minimums unless stated.

Condition	UTS N/mm ²	Yield N/mm ²	Hardness HB	Elongation	Impact KCV Joules	LRS (mm)
T	850/1000	650	248/302	12	35	250
T	850/1000	680	248/302	13	50	150
U	925/1075	755	269/331	12	42	100
V	1000/1150	850	293/352	12	42	64

SIZE RANGE: 30mm to 500mm diameter, 63mm to 400mm square

ALTERNATIVE SPECIFICATIONS: SAE4340, 34CrNiMo6

826M40 (EN26) 2.5% Nickel-Chrome-Moly Through Hardening Steel

MATERIAL DESCRIPTION: A through hardening steel capable of surface hardening by nitriding. Excellent resistance to wear and shock. Suitable for shafts, axles and machined parts requiring high strength.

CHEMICAL COMPOSITION:

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

MECHANICAL PROPERTIES (HEAT TREATED): Minimums unless stated.

Condition	UTS N/mm ²	Yield N/mm ²	Hardness HB	Elongation	Impact KCV Joules	LRS (mm)
U	925/1075	740	269/331	12	28	250
U	925/1075	755	269/331	12	42	150
V	1000/1150	835	293/352	12	28	250
V	1000/1150	850	293/352	12	42	150
W	1075/1225	925	311/375	11	22	250
W	1075/1225	940	311/375	11	35	150

SIZE RANGE: 60mm to 250mm diameter

ALTERNATIVE SPECIFICATIONS: 40NiMoCr10-5, DIN 1.6745

BLACK ALLOY

SAE 4130 Low Alloyed Chrome-Molybdenum Steel

MATERIAL DESCRIPTION: A low alloy steel containing Chromium and Molybdenum. Excellent weldability properties. Suitability for hardening and tempering. Applications are aircraft engine mounting, oil pipeline application etc.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S	Mo	Cr
Min	0.29	0.15	0.40			0.15	0.80
Max	0.33	0.35	0.60	0.035	0.040	0.25	1.10

MECHANICAL PROPERTIES (HEAT TREATED): Minimums unless stated.

UTS	Yield	Hardness	Reduction in area	Elongation
655 N/mm ²	517 N/mm ²	217/235 Bhn	35%	18%
95Kpsi	75Kpsi	18/22 HRC		

SIZE RANGE: 50mm to 381mm diameter, 150mm to 400mm square

ALTERNATIVE SPECIFICATIONS: UNS G41300 & AISI 4130

SAE 4140 Low Alloyed Chrome-Molybdenum Steel

MATERIAL DESCRIPTION: A Chromium, Molybdenum, Manganese low alloy steel noted for toughness, good torsional strength and good fatigue strength.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S	Mo	Cr
Min	0.38	0.15	0.75			0.15	0.80
Max	0.43	0.35	1.00	0.035	0.040	0.25	1.10

MECHANICAL PROPERTIES (HEAT TREATED): Minimums unless stated.

UTS N/mm ²	Yield N/mm ²	Hardness HB	Reduction in area
689	551	211/237	40

SIZE RANGE: 50mm to 381mm diameter, 150mm to 400mm square

ALTERNATIVE SPECIFICATIONS: UNS G41400 & AISI 4140

BLACK ALLOY

SAE 4340 Chrome-Molybdenum-Nickel Steel

MATERIAL DESCRIPTION: A Chromium, Molybdenum, high tensile steel, generally hardened and tempered to condition "U". It offers a very good balance of strength, toughness and wear resistance.

CHEMICAL COMPOSITION:

C	Si	Mn	Ni	Mo	Cr	S	P
0.40	0.25	0.70	1.85	0.25	0.80	0.40	0.35

MECHANICAL PROPERTIES (HEAT TREATED): Minimums unless stated.

Section in mm	Yield Strength MPa	Tensile Strength MPa	Elongation %	Izod J	Hardness HB
50	880	1000	17	85	295
100	850	980	17	80	290
200	730	930	17	75	275

SIZE RANGE: 13mm to 400mm diameter

ALTERNATIVE SPECIFICATIONS: UNS G43400 & AISI 4340

SAE 8620

MATERIAL DESCRIPTION: A hardenable chromium, molybdenum, nickel low alloy steel often used for carburising to develop a case hardened part. This case hardening will result in good wear characteristics. In the carburised condition this alloy is used for gears, ring gears, shafts and crankshafts.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S	Mo	Cr	Ni
Min	0.18	0.15	0.70			0.15	0.40	0.40
Max	0.23	0.35	0.90	0.035	0.040	0.25	0.60	0.70

SIZE RANGE: 30mm to 300mm diameter, 90mm to 200mm square

ALTERNATIVE SPECIFICATIONS: UNS G86200 & AISI 8620

LOGISTICS

WE PROVIDE A PROMPT AND RELIABLE DELIVERY SERVICE USING OUR OWN TRANSPORT FLEET INCLUDING OVER 50 VEHICLES, RANGING FROM 3.5 TONNE RIGIDS TO 28 TONNE ARTICS.

This gives us the capacity to deliver all your steel requirements anywhere in the UK and Ireland.

We also supply and deliver overseas

to the Middle East, America and Europe using our trusted logistics partners. We will ensure your goods arrive on time, every time wherever you are in the world.



BARRETT
Engineering Steel

Tel. 0117 316 5400
www.barrettengsteel.com

BARRETT
Engineering Steel

P 230

MX58 MDK

BRIGHT ALLOY

605M36 (EN16) Low Alloyed Manganese-Molybdenum Steel

MATERIAL DESCRIPTION: An alloy steel with good mechanical properties and is readily machinable. Suitable for bolts, shafts, studs, axles and items that require high shock resistance.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S	Mo
Min	0.32	0.10	1.30			0.220
Max	0.40	0.35	1.70	0.035	0.040	0.32

MECHANICAL PROPERTIES (HEAT TREATED): Minimums unless stated.

Condition	UTS N/mm ²	Yield N/mm ²	Hardness HB	Elongation	Impact KCV Joules	LRS (mm)
R	700/850	495	201/255	15	28	250
R	700/850	525	201/255	17	50	150
S	775/925	585	223/277	15	50	100
T	850/1000	680	248/302	13	50	63

SIZE RANGE:

Rounds (Metric) 8mm to 60mm diameter
Round (Imperial) 1/4" to 3.1/2" diameter

606M36 (EN16M) Low Alloyed Manganese-Molybdenum Steel

MATERIAL DESCRIPTION: A high tensile free machining manganese molybdenum steel for use when faster cycle times and excellent surface finish are required. Suitable for nuts, bolts, shafts etc.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S	Mo
Min	0.32		1.30		0.150	0.22
Max	0.40	0.25	1.70	0.060	0.250	0.32

MECHANICAL PROPERTIES (HEAT TREATED): Minimums unless stated.

Condition	UTS N/mm ²	Yield N/mm ²	Hardness HB	Elongation	Impact KCV Joules	LRS (mm)
R	700/850	525	201/255	15	50	100
S	775/925	585	223/277	13	42	63
T	850/1000	680	248/302	11	35	29

SIZE RANGE:

Rounds (Metric) 8mm to 60mm diameter
Round (Imperial) 1/4" to 3.1/2" diameter

BRIGHT ALLOY

655M13 (EN36A) 3% Nickel-Chrome Case Hardening Steel

MATERIAL DESCRIPTION: A nickel/chrome case hardening steel. The addition of nickel / chrome promotes deep hardening. Suitable for heavy duty gears, cams, camshafts, rollers etc.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S	Mo	Cr	Ni
Min	0.10	0.15	0.35				0.70	3.00
Max	0.16	0.25	0.60	0.035	0.040	0.15	1.00	3.75

SUPPLIED CONDITION: Vacuum / Degassed / Annealed

MECHANICAL PROPERTIES: Minimums unless stated. (From Normalised test piece)

UTS N/mm ²	Elongation	Impact KCV Joules	Test Bar dia. (mm)
1000	9	35	19

SIZE RANGE: 12mm to 100mm diameter

ALTERNATIVE SPECIFICATIONS: 1.5752 & 15NiCr13

708M40 (EN19A) Low Alloy 1% Chrome-Molybdenum Steel

MATERIAL DESCRIPTION: A high tensile chromium molybdenum steel with high ductility and good shock resisting properties. Suitable for gears, high tensile studs, shafts etc.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S	Mo	Cr
Min	0.36	0.10	0.70			0.15	0.90
Max	0.44	0.35	1.00	0.035	0.040	0.25	1.20

MECHANICAL PROPERTIES (HEAT TREATED): Minimums unless stated.

Condition	UTS N/mm ²	Yield N/mm ²	Hardness HB	Elongation	Impact KCV Joules	LRS (mm)
R	700/850	495	201/255	15	28	250
R	700/850	525	201/255	17	50	150
S	775/925	585	223/277	15	50	100
T	850/1000	680	248/302	13	50	63

SIZE RANGE:

Rounds (Metric) 12mm to 55mm diameter

Round (Imperial) 3/8" to 3" diameter

ALTERNATIVE SPECIFICATIONS: SAE4140, 1.7225 & 42CrMo4

BRIGHT ALLOY

709M40 (EN19) Low Alloy 1% Chrome-Molybdenum Steel

MATERIAL DESCRIPTION: A through hardening steel capable of surface hardening by nitriding. Suitable for applications where good tensile, ductility and shock resistance properties are important. May be induction hardened to give resistance wear. Applications include gears, shafts, rams and high tensile studs.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S	Mo	Cr
Min	0.36	0.10	0.70		0.025	0.25	0.90
Max	0.44	0.35	1.00	0.035	0.040	0.35	1.20

SUPPLIED CONDITION: Vacuum degassed/ Annealed

MECHANICAL PROPERTIES (HEAT TREATED): Minimums unless stated.

Condition	UTS N/mm ²	Yield N/mm ²	Hardness HB	Elongation	Impact KCV Joules	LRS (mm)
R	700/850	495	201/225	15	28	250
S	775/925	555	223/277	13	22	250
S	775/925	585	223/277	15	50	150
T	850/1000	680	248/302	13	50	100

SIZE RANGE:

Rounds (Metric) – 12mm to 55mm diameter.

Rounds (Imperial) – 3/8" to 3" diameter

ALTERNATIVE SPECIFICATIONS: EN19

TESTING

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- Micro examination
- Macro examination
- Grain size
- Corrosion test
- Ferrite count
- Cleanliness test

Mechanical testing

- Tensile Impact – British and American
- Hardness – Rockwell and Brinell

Non Destructive tests – PCN Level II in-house operatives

- Ultrasonic testing
- Magnetic particle testing
- Dye-penetrant testing

BRIGHT ALLOY

817M40 (EN24) 1.5% Nickel-Chrome-Molybdenum Through Hardening Steel

MATERIAL DESCRIPTION: A through hardening steel capable of surface hardening by nitriding. Excellent resistance to wear and shock. Suitable for shafts, axles and machined parts requiring high strength.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S	Mo	Cr	Ni
Min	0.36	0.10	0.45			0.20	1.00	1.30
Max	0.44	0.35	0.70	0.035	0.040	0.35	1.40	1.70

MECHANICAL PROPERTIES (HEAT TREATED): Minimums unless stated.

Condition	UTS N/mm ²	Yield N/mm ²	Hardness HB	Elongation	Impact KCV Joules	LRS (mm)
T	850/1000	650	248/302	13	35	250
T	850/1000	680	248/302	13	50	150
U	925/1075	755	269/331	12	42	100
V	1000/1150	850	293/352	12	42	63

SIZE RANGE:

Rounds (Metric) 10mm to 100mm diameter

Round (Imperial) 3/8" to 3" diameter

ALTERNATIVE SPECIFICATIONS: SAE4340, 1.6565 & 34CrNiMo6

SAE 4340 Chrome Molybdenum-Nickel Steel

MATERIAL DESCRIPTION: A chromium, molybdenum, nickel high tensile steel, generally hardened and tempered to condition "U". It offers a very good balance of strength, toughness and wear resistance.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S	Cr	Mo	Ni
Min	0.38	0.15	0.60			0.70	0.20	1.65
Max	0.43	0.35	0.80	0.025	0.025	0.90	0.30	2.00

MECHANICAL PROPERTIES (HEAT TREATED): To 24-29 HRC

SIZE RANGE: 11mm to 105mm diameter

ALTERNATIVE SPECIFICATIONS: UNS G43400 & AISI 4340

TOOL STEEL

DIN 1.2379 (AISI D2)

MATERIAL DESCRIPTION: D2 has excellent wear resistance due to the high chromium content. Good toughness and has very good dimensional stability with high compressive strength. Heat treatment methods include Vacuum Hardening and Nitriding. Uses include cutting, punching stamping dies, shear blades, dies, blanking tools and press tools. Can reach hardness levels of 60-62 Rockwell C.

SIZE RANGE: 20mm to 303mm Diameter

MATERIAL CONDITION: Annealed 255 Max Hb/Peeled

CHEMICAL ANALYSIS:

	C	Mo	Cr	V	Mn
Min	1.45	0.7	11	0.7	0.2
Max	1.60	1.0	13	1.0	0.6

DIN 1.2510 (AISI O1)

MATERIAL DESCRIPTION: O1 is dimensionally stable material through heat treatment, O1 has high wear resistance and has a good hardening capacity. It is an excellent general purpose tool steel, the standard heat treatment method is via oil quenching. Uses include gauges, cutting tools, shear knives, roll dies. After heat treatment O1 can reach hardness levels of 62-64 Rockwell C.

SIZE RANGE: 20mm to 252mm Diameter

MATERIAL CONDITION: Annealed / 225 Hbn / Peeled

CHEMICAL ANALYSIS:

	C	Mn	Cr	Si	W	V
Min	0.9	1.0	0.5	0.15	0.5	0.05
Max	1.05	1.2	0.7	0.35	0.7	0.15

We can also supply these and other grades such as H13, H10, P20, D6, 1.2767 in round, square and flat form. GFS and Silver Steel items are also available. Diameters in excess of 800mm can be sourced to customer requirements. There is an "RM" on the proof you sent. This needs removing please.

CAST IRON

SG IRON 400-15

MATERIAL DESCRIPTION: Offers superior machinability combined with good impact, fatigue, electrical conductivity and magnetic permeability. Noise and vibration damping are good in this grade.

CHEMICAL COMPOSITION:

	C	Si	Mn	S	P	Mg
Typical %	3.25 – 3.70	2.40 – 3.00	0.10 – 0.30	0.005 – 0.020	0.015 – 0.08	0.04 – 0.07

MECHANICAL PROPERTIES: Mid Radius

Section mm	Anticipated N/mm ²		
	Tensile Strength UTS N/mm ²	0.2% Proof Stress N/mm ²	Elongation %
25-50	400	250	15
55-100	390	250	14
105-200	370	240	11
205-600+	370	240	11

SIZE RANGE: 25mm to 680mm diameter

ALTERNATIVE SPECIFICATIONS: EN-1563-GJS-400-15 GGG40 & Meehanite SF400

SG IRON 500-7

MATERIAL DESCRIPTION: An excellent wear resistance, strength and heat treatable cast iron. Still possesses good machinability and excellent surface finish. Noise and vibration damping are good in this grade. Damping are good in this grade.

CHEMICAL COMPOSITION:

	C	Si	Mn	S	P	Mg
Typical %	3.25 – 3.70	2.40 – 3.00	0.10 – 0.30	0.005 – 0.020	0.015 – 0.08	0.04 – 0.07

MECHANICAL PROPERTIES: Mid Radius

Section mm	Anticipated N/mm ²		
	Tensile Strength UTS N/mm ²	0.2% Proof Stress N/mm ²	Elongation %
25-50	500	320	7
55-100	450	300	7
105-200	420	290	5
205-600+	420	290	5

SIZE RANGE: 25MM TO 680MM DIAMETER.

ALTERNATIVE SPECIFICATIONS: EN-1563-GJS-500-7 GGG50 & Meehanite SFP500.

HEAT TREATMENT

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- Normalising
- Quench and Tempering - Oil and Water
- Solution Annealing
- Annealing
- Stress Relieving
- Air Cooling

STAINLESS & DUPLEX

303S11

MATERIAL DESCRIPTION: Grade 303 stainless steel represents superior machinability over all other austenitic stainless steels due to the addition of sulphur in the material. The sulphur, however, does reduce the material's resistance to corrosion as well as causing poor weldability results. Applications are – nuts /& bolts, bushings, shafts, aircraft fittings, electrical switchgear components and gears etc.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S	Mo	Cr	Ni
Min			1.50		0.300		17.00	9.00
Max	0.10	0.75	2.00	0.040	0.350	0.60	19.00	10.00

MECHANICAL PROPERTIES: Cold Drawn.

	Tensile N/mm ²	Yield N/mm ²	Elongation (in 5 x dia)	Reduction in Area	Hardness HB
Min	785	686	30	50	225
Max	883	785	35	55	240

SIZE RANGE:

(Metric) 3mm to 50mm diameter, (Imperial) 3/8" to 2" diameter

316L (316S11)

MATERIAL DESCRIPTION: Grade 316 is the standard molybdenum bearing grade, second in importance to 304 amongst the austenitic stainless steel. The molybdenum gives 316 better overall corrosion resistance properties than grade 304, particularly higher resistance to pitting and crevice corrosion in chloride environments. It has excellent forming and welding characteristics. It is ready baked or roll formed into a variety of parts for applications in the industrial, architectural and transportation fields.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S	Mo	Cr	Ni	N
Min						2.00	16.00	10.00	
Max	0.03	0.75	2.00	0.04	0.030	3.00	18.00	14.00	0.10

MECHANICAL PROPERTIES:

Tensile N/mm ² min.	Yield 0.2% Proof N/mm ² min.	Elongation (% in 50mm) min.	Hardness Hbn	
			Rockwell B (HR B) max.	Brinell (HB) max.
485	170	40	95	217

SIZE RANGE: Rounds – 5mm to 150mm diameter, Squares – 125mm to 250mm

ALTERNATIVE SPECIFICATIONS: S31603, 316S11, 1.4404, 12-2, 2348 & SUS316L

FORGED QUALITY SQUARES

070M55 (EN9)

MATERIAL DESCRIPTION: A medium carbon/high tensile steel with good wear resistant properties. Suitable for gears, camshafts and surface hardened parts. Suitable for heat treatment.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S
Min	0.50	0.10	0.50		
Max	0.60	0.40	0.90	0.050	0.050

SIZE RANGE: 50mm to 180mm diameter

ALTERNATIVE SPECIFICATIONS: C55E & 1.1203

150M19 (EN14A)

MATERIAL DESCRIPTION: A low carbon manganese steel with good impact resistant properties and is full weldable. Suitable for shackles, lifting gear, spindles etc.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S
Min	0.15	0.10	1.30		
Max	0.23	0.40	1.70	0.050	0.050

SIZE RANGE: 50mm to 180mm square

ALTERNATIVE SPECIFICATIONS: 28Mn6 & 1.1170

FORGED QUALITY SQUARES

605M36 (EN16)

MATERIAL DESCRIPTION: An alloy steel with good mechanical properties and is readily machinable. Suitable for bolts, shafts, axles and items that require high shock resistance.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S	Mo
Min	0.32	0.10	1.30			0.22
Max	0.40	0.35	1.70	0.035	0.040	0.32

SIZE RANGE: 50mm to 150mm square

708M40 (EN19A)

MATERIAL DESCRIPTION: A through hardening carbon molybdenum steel capable of surface hardening by nitriding. With high ductility and good shock resisting properties.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S	Mo	Cr
Min	0.36	0.10	0.70			0.15	0.90
Max	0.44	0.35	1.00	0.035	0.040	0.25	1.20

SIZE RANGE: 50mm to 450mm square

ALTERNATIVE SPECIFICATIONS: 42CrMo4, 1.7225 & SAE4140

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FORGED QUALITY SQUARES

709M40 (EN19)

MATERIAL DESCRIPTION: A through hardening steel capable of surface hardening by nitriding. Suitable for applications where good tensile, ductility and shock resistance properties are important. May be induction hardened to give resistance wear. Applications include gears, shafts, rams and high tensile studs.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S	Mo	Cr
Min	0.36	0.10	0.70			0.25	0.90
Max	0.44	0.35	1.00	0.035	0.040	0.35	1.20

SIZE RANGE: 50mm to 450mm square

722M24 (EN40B)

MATERIAL DESCRIPTION: A chromium molybdenum nitriding steel with good wear resistance properties.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S	Mo	Cr
Min	0.20	0.10	0.45			0.45	3.00
Max	0.28	0.35	0.70	0.035	0.040	0.65	3.50

SIZE RANGE: 50mm to 450mm square

FORGED QUALITY SQUARES

817M40 (EN24)

MATERIAL DESCRIPTION: A through hardening steel capable of surface hardening by nitriding. Excellent resistance to wear and shock. Suitable for shafts, axles and machined parts requiring high strength.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S	Mo	Cr	Ni
Min	0.36	0.10	0.45			0.20	1.00	1.30
Max	0.44	0.35	0.70	0.035	0.040	0.35	1.40	1.70

SIZE RANGE: 50mm to 450mm square

ALTERNATIVE SPECIFICATIONS: SAE 4340, 1.6582 & 34CrNiMo

826M40 (EN26)

MATERIAL DESCRIPTION: A through hardening steel capable of surface hardening by nitriding. Excellent resistance to wear and shock. Suitable for shafts, axles and machined parts requiring high strength.

CHEMICAL COMPOSITION:

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

SIZE RANGE: 50mm to 450mm square

FORGED QUALITY SQUARES

SAE 4130

MATERIAL DESCRIPTION: A low alloy steel containing Chromium and Molybdenum. Excellent weldability properties. Suitability for hardening and tempering. Applications are aircraft engine mounting and oil pipeline application.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S	Mo	Cr	Al	V
Min	0.29	0.15	0.40			0.15	0.80	0.018	
Max	0.33	0.35	0.60	0.025	0.025	0.25	1.10	0.035	0.05

SIZE RANGE: 50mm to 450mm square

ALTERNATIVE SPECIFICATIONS: UNS G4 1300, MIL-T-6758 & AISI 4130

SAE 8620

MATERIAL DESCRIPTION: A hardenable chromium, molybdenum, nickel low alloy steel often used for carburising to develop a case hardened part. This case hardening will result in good wear characteristics. In the carburised condition this alloy is used for gears, ring gears, shafts and crankshafts.

CHEMICAL COMPOSITION:

	C	Si	Mn	P	S	Mo	Cr	Ni
Min	0.18	0.15	0.70			0.15	0.40	0.40
Max	0.23	0.35	0.90	0.035	0.040	0.25	0.60	0.70

SIZE RANGE: 50mm to 300mm square

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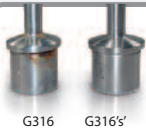
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WEIGHT TABLES

IMPERIAL ROUNDS KG PER FOOT AND KG PER METRE

Size ("Dia.)	Kg Per Foot	Kg Per Metre	Size ("Dia.)	Kg Per Foot	Kg Per Metre
1/32	0.001	0.004	15/16	1.066	3.492
3/64	0.003	0.009	31/32	1.136	3.729
1/16	0.005	0.016	1	1.211	3.973
5/64	0.007	0.024	1 1/16	1.365	4.485
3/32	0.011	0.035	1 1/8	1.533	5.028
7/64	0.014	0.048	1 13/16	1.710	5.603
1/8	0.019	0.062	1 ¼	1.892	6.208
8/64	0.024	0.079	1 5/16	2.087	6.844
5/32	0.030	0.097	1 3/8	2.291	7.511
11/64	0.036	0.114	1 7/16	2.504	8.210
3/16	0.043	0.140	1 1/2	2.726	8.939
13/64	0.050	0.164	1 9/16	2.957	9.700
7/32	0.058	0.190	1 5/8	3.198	10.491
15/64	0.067	0.218	1 11/16	3.447	11.314
¼	0.076	0.248	1 ¾	3.710	12.167
9/32	0.096	0.314	1 13/16	3.978	13.052
5/16	0.118	0.388	1 7/8	4.259	13.968
11/32	0.145	0.469	1 15/16	4.550	14.914
3/8	0.171	0.559	2	4.844	15.892
13/32	0.201	0.656	2 1/8	5.470	17.941
7/16	0.232	0.760	2 ¼	6.133	20.113
15/32	0.268	0.873	2 3/8	6.836	22.410
½	0.303	0.993	2 ½	7.571	24.831
17/32	0.342	1.121	2 5/8	8.346	27.376
9/16	0.383	1.257	2 ¾	9.158	30.046
19/32	0.427	1.401	2 7/8	10.011	32.839
5/8	0.473	1.552	3	10.900	35.757
21/32	0.521	1.711	3 1/8	11.830	38.799
11/16	0.572	1.878	3 ¼	12.800	41.965
23/32	0.626	2.052	3 3/8	13.798	45.255
¾	0.680	2.235	3 ½	14.837	48.669
25/32	0.739	2.425	3 5/8	15.913	52.208
13/16	0.798	2.623	3 ¾	17.029	55.870
27/32	0.862	2.828	3 7/8	18.183	59.657
7/8	0.925	3.042	4	19.376	63.568
29/32	0.995	3.263	4 ¼	21.875	71.762

WEIGHT TABLES

IMPERIAL ROUNDS KG PER FOOT AND KG PER METRE

Size ("Dia.)	Kg Per Foot	Kg Per Metre	Size ("Dia.)	Kg Per Foot	Kg Per Metre
4 ½	24.522	80.453	8	77.054	254.272
4 ¾	27.323	89.641	8 ½	87.494	287.049
5	30.275	99.325	9	98.091	321.813
5 ¼	33.378	109.506	9 ½	109.296	358.563
5 1/2	36.632	120.183	10	121.091	397.300
5 ¾	40.038	131.357	10 ½	133.512	438.733
6	43.596	143.028	11	146.531	480.733
6 ¼	47.304	155.195	11 ½	169.154	525.429
6 ½	51.164	167.859	12	174.384	572.112
6 ¾	55.176	181.020	13	204.644	671.437
7	59.339	194.677	14	237.339	778.708
7 ¼	63.653	208.831	15	272.455	893.925
7 ½	68.118	223.481	16	309.993	1017.088
7 ¾	72.735	238.628			

WEIGHT TABLES

METRIC ROUNDS KG PER FOOT AND KG PER METRE

Size (mm Dia.)	Kg Per Foot	Kg Per Metre	Size (mm Dia.)	Kg Per Foot	Kg Per Metre
2	0.008	0.026	14.5	0.395	1.296
2.4	0.011	0.036	15	0.422	1.385
2.5	0.012	0.039	15.5	0.451	1.480
2.8	0.015	0.049	16	0.481	1.578
3	0.017	0.056	16.5	0.511	1.677
3.2	0.019	0.062	17	0.543	1.782
3.5	0.023	0.075	17.5	0.575	1.887
4	0.030	0.098	18	0.608	1.995
4.2	0.033	0.108	18.5	0.643	2.110
4.4	0.036	0.118	19	0.678	2.225
4.5	0.038	0.125	19.5	0.714	2.343
4.8	0.043	0.141	20	0.751	2.464
5	0.047	0.154	20.5	0.789	2.589
5.2	0.051	0.167	21	0.828	2.717
5.5	0.057	0.187	21.5	0.868	2.848
5.8	0.063	0.207	22	0.909	2.982
6	0.068	0.223	22.5	0.951	3.120
6.2	0.072	0.236	23	0.993	3.258
6.5	0.079	0.259	23.5	1.037	3.402
6.8	0.087	0.285	24	1.081	3.547
7	0.092	0.302	24.5	1.127	3.698
7.5	0.106	0.348	25	1.173	3.849
8	0.120	0.394	26	1.269	4.164
8.5	0.136	0.446	27	1.369	4.492
9	0.152	0.499	28	1.472	4.830
9.5	0.169	0.554	29	1.579	5.181
10	0.188	0.617	30	1.690	5.545
10.5	0.207	0.679	31	1.804	5.919
11	0.227	0.745	32	1.923	6.309
11.5	0.248	0.814	33	2.045	6.710
12	0.270	0.886	34	2.170	7.120
12.5	0.293	0.961	35	2.300	7.546
13	0.317	1.040	36	2.433	7.983
13.5	0.342	1.122	37	2.570	8.432
14	0.368	1.207	38	2.711	8.895

WEIGHT TABLES

METRIC ROUNDS KG PER FOOT AND KG PER METRE

Size (mm Dia.)	Kg Per Foot	Kg Per Metre	Size (mm Dia.)	Kg Per Foot	Kg Per Metre
39	2.856	9.371	105	20.700	67.917
40	3.004	9.856	110	22.718	74.538
41	3.156	10.355	115	24.831	81.471
42	3.312	10.867	120	27.037	88.708
44	3.635	11.926	125	29.337	96.255
45	3.802	12.474	130	31.731	104.109
46	3.973	13.035	135	34.218	112.269
48	4.326	14.194	140	36.800	120.741
50	4.694	15.401	145	39.476	129.521
52	5.077	16.658	150	42.245	138.606
54	5.475	17.963	155	45.106	147.993
55	5.680	18.636	160	48.065	157.701
56	5.888	19.319	165	51.114	167.705
58	6.316	20.723	170	54.261	178.030
60	6.759	22.176	175	57.498	188.651
62	7.217	23.679	180	60.833	199.593
64	7.690	25.231	185	64.257	210.827
65	7.993	26.028	190	67.780	222.386
66	8.179	26.835	195	71.391	234.234
68	8.682	28.486	200	75.102	246.410
70	9.200	30.185	210	82.797	271.657
72	9.733	31.934	220	90.873	298.154
74	10.281	33.732	230	99.319	325.866
75	10.561	34.651	240	108.147	354.830
76	10.845	35.582	250	117.342	384.999
78	11.423	37.479	260	126.922	416.431
80	12.016	39.424	270	136.868	449.064
82	12.625	41.420	280	147.200	482.963
85	13.565	44.507	290	157.896	518.057
88	14.540	47.706	300	168.980	554.423
90	15.208	49.896	310	180.425	591.974
92	15.892	52.142	320	192.254	630.785
95	16.945	55.597	330	204.457	670.823
98	18.032	59.163	340	217.036	712.095
100	18.776	61.604	350	229.991	754.600

WEIGHT TABLES

IMPERIAL HEXAGONS KG PER FOOT AND KG PER METRE

Size (" A/F)	Kg Per Foot	Kg Per Metre	Size (" A/F)	Kg Per Foot	Kg Per Metre
.193	0.050	0.162	1.250	2.087	6.843
.248	0.084	0.267	1.300	2.261	7.403
.282	0.106	0.346	1.312	2.301	7.539
.312	0.131	0.424	1.375	2.525	8.280
.324	0.141	0.455	1.390	2.580	8.464
.338	0.152	0.499	1.437	2.753	9.042
.365	0.178	0.582	1.480	2.920	9.594
.375	0.187	0.613	1.500	3.005	9.857
.413	0.227	0.744	1.625	3.527	11.565
.437	0.254	0.832	1.670	3.725	12.214
.445	0.268	0.867	1.687	3.803	12.463
.500	0.336	1.095	1.750	4.091	13.414
.525	0.368	1.204	1.812	4.388	14.382
.562	0.422	1.380	1.860	4.623	15.153
.600	0.483	1.577	1.875	4.699	15.399
.625	0.522	1.708	2.000	5.343	17.524
.687	0.631	2.063	2.050	5.602	18.408
.710	0.672	2.208	2.062	5.674	18.623
.750	0.753	2.462	2.125	6.033	19.780
.812	0.882	2.887	2.220	6.736	21.589
.820	0.899	2.944	2.250	6.763	22.176
.875	1.021	3.351	2.375	7.539	24.708
.920	1.128	3.706	2.410	7.752	25.444
.937	1.170	3.842	2.437	7.938	26.014
1.000	1.334	4.381	2.500	8.351	27.381
1.010	1.365	4.468	2.580	8.845	29.159
1.062	1.506	4.937	2.625	9.208	30.185
1.100	1.618	5.301	2.760	10.129	33.370
1.125	1.692	5.541	3.150	13.249	43.468
1.200	1.927	6.308	3.550	16.828	55.209

HANDRAILS & WALKWAYS

HANDRAILS

Our handrails systems are suitable for use in all types of industry. They are ideal for any internal or external area requiring a stable edge protection barrier as well as where protection is needed against stationary or moving machinery.

Typical applications include:

- Platforms
- Mezzanines
- Stairways
- Gantries

TUBECLAMPS

Our comprehensive range of fittings means that tubeclamps can be used both temporarily and permanently. Our tubeclamps are iron casted with a galvanised finish

and have been manufactured with ease of use very much in mind. No welding, no bending, no threading. Just a hexagonal key is needed to join the tubing together.

FLOORING

When choosing a flooring product for your project there are a number of considerations to bear in mind - aesthetic requirements, functionality and cost implications.

We have taken these into account when developing our range of flooring which offers a wide range of products to meet everyone's personal needs.

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COPY OF OUR
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WEIGHT TABLES

METRIC HEXAGONS KG PER FOOT AND KG PER METRE

Size (mm A/F)	Kg Per Foot	Kg Per Metre	Size (mm A/F)	Kg Per Foot	Kg Per Metre
3.2	0.021	0.069	27	1.511	4.957
3.5	0.025	0.083	28	1.625	5.331
4.0	0.033	0.108	29	1.743	5.718
4.5	0.042	0.137	30	1.865	6.120
5.0	0.052	0.170	31	1.992	6.534
5.5	0.063	0.205	32	2.122	6.963
6.0	0.075	0.244	33	2.257	7.405
6.5	0.088	0.287	35	2.539	8.330
7.0	0.102	0.333	36	2.686	8.812
7.5	0.117	0.382	37	2.837	9.309
8.0	0.133	0.435	38	2.993	9.819
8.5	0.150	0.491	40	3.316	10.880
9.0	0.168	0.550	41	3.484	11.430
9.5	0.187	0.613	42	3.656	11.995
10.0	0.207	0.680	45	4.197	13.770
10.5	0.228	0.749	46	4.386	14.388
11.0	0.251	0.822	48	4.775	15.667
11.5	0.274	0.899	50	5.181	17.000
12	0.298	0.979	52	5.604	18.387
13	0.350	1.149	55	6.270	20.570
14	0.406	1.332	58	6.972	22.875
15	0.466	1.530	60	7.461	24.480
16	0.531	1.740	62	7.967	26.139
17	0.599	1.965	65	8.757	28.730
18	0.672	2.203	68	9.584	31.443
19	0.748	2.454	70	10.156	33.320
20	0.829	2.720	72	10.744	35.251
21	0.914	2.998	75	11.658	38.250
22	1.003	3.291	78	12.609	41.371
23	1.096	3.597	80	13.264	43.520
24	1.194	3.916	85	14.974	49.130
25	1.295	4.250	90	16.788	55.080
26	1.401	4.596			

WEIGHT TABLES

IMPERIAL SQUARES KG PER FOOT AND KG PER METRE

Size (" sq.)	Kg Per Foot	Kg Per Metre	Size (" sq.)	Kg Per Foot	Kg Per Metre
1/16	0.0006	0.015	1 1/2	3.470	11.382
3/32	0.014	0.040	1 5/8	4.073	13.555
1/8	0.024	0.075	1 3/4	4.722	15.490
5/32	0.038	0.121	1 7/8	5.421	17.782
3/16	0.054	0.172	2	6.169	20.236
7/32	0.074	0.237	2 1/4	7.811	25.608
1/4	0.096	0.313	2 1/2	9.639	31.618
5/16	0.151	0.490	2 3/4	11.661	38.256
3/8	0.217	0.708	3	13.877	45.531
7/16	0.295	0.961	3 1/4	16.286	53.433
1/2	0.386	1.264	3 1/2	18.888	61.972
9/16	0.490	1.593	3 3/4	21.683	71.139
5/8	0.603	1.973	4	24.671	80.944
11/16	0.729	2.382	4 1/4	27.851	91.357
3/4	0.866	2.843	4 1/2	31.224	102.444
13/16	1.018	3.333	4 3/4	34.789	114.141
7/8	1.179	3.870	5	38.548	126.475
15/16	1.355	4.436	5 1/4	42.499	139.436
1	1.542	5.059	5 1/2	46.643	153.034
1 1/8	1.950	6.399	5 3/4	50.979	167.260
1 1/4	2.409	7.902	6	55.509	182.120
1 3/8	2.917	9.561			

WEIGHT TABLES

METRIC SQUARES KG PER FOOT AND KG PER METRE

Size (mm sq.)	Kg Per Foot	Kg Per Metre	Size (mm sq.)	Kg Per Foot	Kg Per Metre
4	0.038	0.125	22	1.157	3.794
4.5	0.048	0.158	24	1.377	4.515
5	0.060	0.196	25	1.494	4.900
5.5	0.072	0.237	27	1.742	5.715
6	0.086	0.282	28	1.874	6.146
6.5	0.101	0.331	30	2.151	7.056
7	0.117	0.384	32	2.447	8.028
7.5	0.134	0.441	35	2.928	9.604
8	0.153	0.501	36	3.097	10.160
8.5	0.173	0.566	38	3.451	11.320
9	0.194	0.635	40	3.824	12.544
9.5	0.216	0.707	41	4.018	13.179
10	0.239	0.784	42	4.216	13.829
10.5	0.263	0.864	45	4.840	15.876
11	0.289	0.984	46	5.057	16.589
11.5	0.316	1.036	48	5.507	18.063
12	0.344	1.128	50	5.975	19.600
12.5	0.373	1.225	55	7.230	23.716
13	0.404	1.324	60	8.604	28.224
14	0.468	1.536	65	10.098	33.124
15	0.538	1.764	70	11.711	38.416
16	0.612	2.007	75	13.444	44.100
17	0.691	2.265	80	15.296	50.176
18	0.774	2.540	85	17.268	56.644
19	0.863	2.830	90	19.359	63.504
20	0.956	3.136	100	23.900	78.400

TOOL SHOP

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We provide a complete range of fastenings for use in the engineering, construction and maintenance industries and have the stock and expertise to meet your requirements, from socket screws, high tensile and stainless steel fastenings right through to modern hi-tech anaerobic adhesives.

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THROUGH OUR CONTACTS IN OTHER BARRETT STEEL DIVISIONS WE HAVE ACCESS TO ONE OF THE MOST COMPREHENSIVE STOCK RANGES.

BARRETT GENERAL STEELS supply structural steel sections, merchant bar, rounds & squares, plates & sheets and a wide variety of handrail & walkway products in both mild steel and stainless steel. Processing services include cutting, drilling, punching & shearing and shotblasting & priming.

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grades S235, S355 & S420; offshore seamless & welded tubes in a variety of grades; ERW tubes, nominal bore tubes and a number of stainless steel products. Cutting, laser tube cutting and tube manipulation services complement this wide spread of products.

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