

Macalloy 500 Reinforcing Bar



Macalloy 500 specification

Mechanical Properties

Bar diameters	Minimum ultimate tensile strength	Characteristic minimum yield strength	Minimum elongation	Youngs modulus
mm	N/mm ²	N/mm ²	%	kN/mm ²
20 – 50	550	500	12	205
63	710	565	10	205
75	700	500	10	205

Properties

Macalloy 500 bar is a high yield reinforcing steel, with hot rolled deformations specially designed to form a thread along the entire length of the bar. All bars up to 50mm are CARES approved to the Macalloy 500 specification. Bar diameters up to 40mm are also approved by CARES to the performance requirements of BS 4449.

Macalloy 500 has been developed to offer a competitive, economical alternative to standard rebar in any application where threaded joints with couplers or nuts are required. For example:

- Reinforced concrete
- Ground Engineering

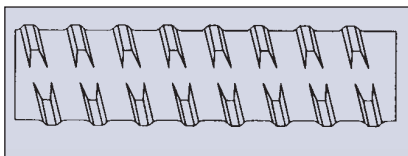
Bar lengths

The Macalloy 500 bar is available in standard lengths of 12m. Longer lengths are available as a special order. For more information contact our Sales Department.

Quality assurance

The bar and fittings are manufactured under a quality assurance system complying with BS EN ISO 9001 : 2000.

Threads



No additional threading operations are required

Macalloy 500 bar is threaded along its entire length and can be trimmed on site as necessary. The thread form is a hot rolled intermittent thread of coarse pitch, except 63mm and 75mm, which is a continuous cold rolled thread.

This gives a threaded bar which is:

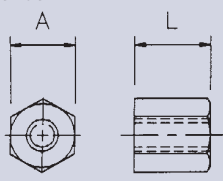
- Robust
- Self-cleaning
- Easily assembled on site

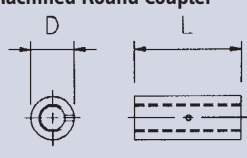
Welding of Macalloy 500

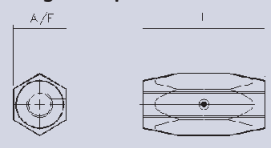
These bars can be welded using techniques appropriate to steel having a carbon equivalent of 0.51% maximum for diameters 20 - 50mm and 0.69% maximum for 63mm and 75mm diameter bars.

Nominal diameter	Maximum major diameter	Cross sectional area	Mass per metre	Thread pitch	Minimum failing load	Characteristic yield load
mm	mm	mm ²	kg/m	mm	kN	kN
20	21.7	314	2.47	8	173	157
25	27	491	3.85	10	270	246
28	30.1	616	4.83	11	339	308
32	34.6	804	6.31	12.5	442	402
40	42.9	1256	9.87	16	691	628
50	53.1	1963	15.4	20	1080	981
63	67.4	3117	24.5	8	2217	1758
75	78.8	4417	34.7	8	3000	2130

Macalloy 500 accessories

Flat nut	Diameter	20	25	28	32	40	50	63	75
	Ref. No.	M5N20	M5N25	M5N28	M5N32	M5N40	M5N50	M5N63	M5N75
	Length (L) mm	40	50	55	63	80	100	70	90
	Across (A) mm Flats	36	41	46	50	60	80	105	125

Machined Round Coupler	Diameter	20	25	28	32	40	50	63	75
	Ref. No.	M5C20	M5C25	M5C28	M5C32	M5C40	M5C50	M5C63	M5C75
	Length (L) mm	80	100	110	125	160	200	145	175
	Outside (D) mm Diameter	34	42	45	52	64	80	105	102

Hexagon Couplers	Diameter	20	25	28	32	40	50
	Ref. No.	M5C20/C	M5C25/C	M5C28/C	M5C32/C	M5C40/C	M5C50/C
	Length (L) mm	85	106	110	112	144	180
	Across Flats (AF) mm	34	40	45	53	64	80

All couplers are available with and without central pinstops.

Coupled joints: All bar diameters can be coupled to produce a full strength joint. The permanent elongation requirements over a mechanically coupled joint as specified in BS 8110 can be achieved through application of torque, to either the bars directly or the nuts. In such cases a machined coupler should be used.

Further information can be obtained from the Macalloy Technical Department.

Other products within the Macalloy Ground Engineering range are:

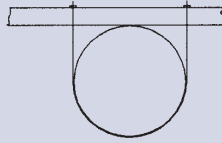
- Macalloy 650 Stainless: A high strength continuously threaded bar system in Stainless Grades 304 and 316. It is available in lengths up to 6mm from stock in diameters 16 to 30mm. Fittings come as standard across the range. Diameters up to 48mm are available by request. Further details are available in the Macalloy 650 Brochure.
- Macalloy double corrosion protected ground anchors.

Applications of Macalloy 500

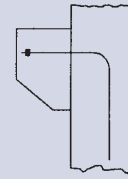
Possible Applications



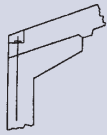
Shuttering or building ties



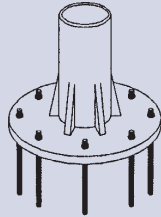
Pipe supports - U bolts



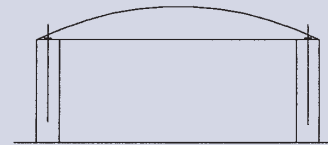
Tying on brackets or other connections



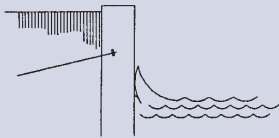
Joining precast units



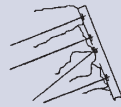
Holding down bolts



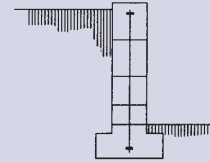
Anchoring container vessel roofs etc against pressure tests



Anchoring sheet pile or other wharves to strong points

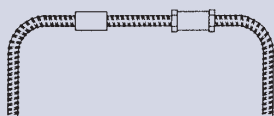


Rock bolts, soil nails, ground anchors and micropile reinforcement



Stressing vertically precast block walls to give resistance to horizontal pressure

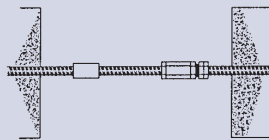
Reinforcing Bar Coupling Applications



Connection bars and couplers for fixed bar applications



Connection details for extension bars



Coupler turnbuckle arrangement for connecting two fixed bars

This publication provides the technical details currently used by Macalloy in the manufacture of its components. The company reserves the right to amend technical details as and where necessary in line with its policy of continuous development.

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