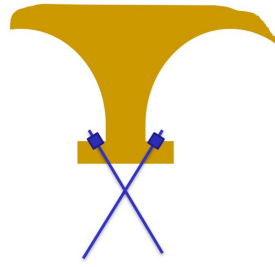
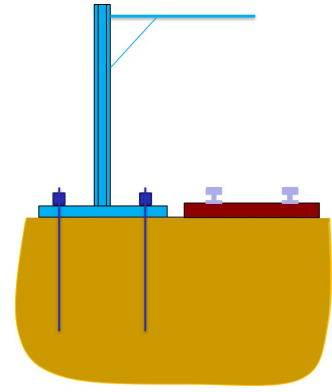


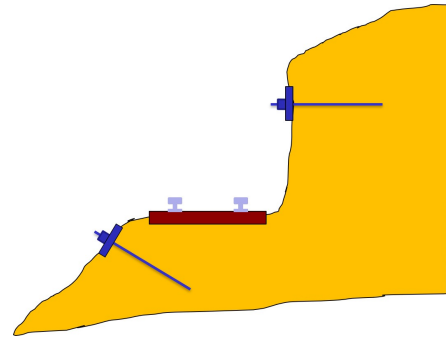
### Applications of Macalloy 650 Stainless



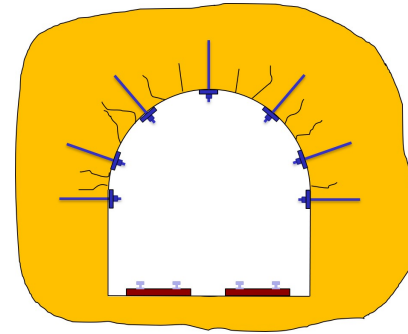
Bridge and building Mini Piles



Holding down bolts



Soil Nails and Rock Bolts



Strengthening and tunnel repairs



Eugene Corniche Retaining Wall

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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**INNOVATION**

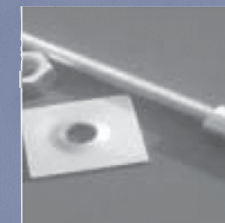
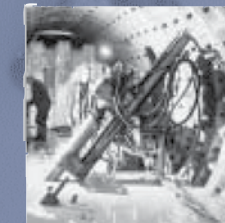
**QUALITY**

# Macalloy

May 2020



## Macalloy S650 Stainless Fully Threaded Bar Systems



## Macalloy S650 Stainless specification

Macalloy has been the leader in the design, manufacture and supply of threaded bar systems since 1948.

The Macalloy S650 Stainless has been introduced to complement the existing carbon steel Macalloy

500 63 & 75mm geotechnical range.

Macalloy S650 stainless bar can be end threaded only, rather than be supplied fully threaded.

**Table 1: Mechanical properties of Macalloy 650 Stainless**

Bar diameters mm	Minimum 0.2% proof stress N/mm <sup>2</sup>	Minimum ultimate tensile strength N/mm <sup>2</sup>
16 to 50	650	800

### The System

The Macalloy S650 Stainless is a high strength continuously threaded bar system. It is available from stock in diameters 16 to 50mm. Fittings come as standard across the range, standard lengths are 6 metres.

### Quality Assurance

Macalloy is a quality assured company holding BBA accreditation to BS EN ISO 9001. The Macalloy S650 Stainless System is manufactured under a factory control system in accordance with this quality regime.

**Table 2: Range and Characteristic Loads of Macalloy 650 Stainless**

Bar reference mm	Major diameter mm	Stress area mm <sup>2</sup>	Mass per metre Kg/m	Thread pitch mm	Minimum 0.2% proof kN	Minimum falling load kN
16	17.7	176	1.60	5	114	140
20	21.9	287	2.45	5	186	229
24	25.4	380	3.48	6	247	304
29	31.5	599	5.28	6	389	479
33	35.5	761	7.18	6	494	608
36	40.2	978	8.50	6	635	782
40	45.3	1199	10.50	8	779	959
50*	54.8	1860	15.86	8	1208	1487

\* Not stocked

### Steel Quality

Macalloy S650 Stainless has a minimum characteristic yield stress after threading of 650N/mm<sup>2</sup>. It is available as standard in grade 316 stainless steel and 304 on request.

### Threads

The coarse thread is rolled directly onto the bar, the form is specially designed to give speed and ease of assembly. The thread gives the minimum anchorage strengths shown in table 2. The bond value of the coarse thread when cast into concrete, or grouted into a preformed hole, provides in excess of 5N/mm<sup>2</sup>.

The threads are rolled on the bars in the factory with stringent controls on tolerance and form. Load is transferred from bar to fittings over the full circumference of the bars allowing the use of compact fittings. The continuous engineered thread provides lower coupler slip loss's than other geotechnical bars.

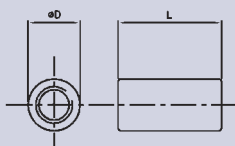
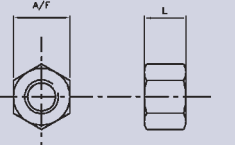
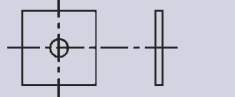
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## Macalloy S650 Stainless accessories

**Table 3: Macalloy S650 Stainless Accessories**

		Nominal Diameter	16	20	24	29	33	36	40	50
<b>Couplers</b>										
	Part Code	650MSC16	650MSC20	650MSC24	650MSC29	650MSC33	650MSC36	650MSC40	650MSC50	
	Length (L) mm	51	65	70	81	93	103	121	149	
	Outside (D) mm Diameter	27.3	33	38.7	51.8	55	60	70	82	
<b>Nuts</b>										
	Part Code	650MSN16	650MSN20	650MSN24	650MSN29	650MSN33	650MSN36	650MSN40	650MSN50	
	Full Nut Length (L) mm	22	30	32	37	40	46	50	70	
	Lock Nut Length (L) mm	10.4	14.4	15.4	17.4	19.4	22.4	24.4	34.4	
	Width A/F	31.75	38.1	44.5	55	63.5	70*	76.2*	101.6*	
*Round Nut										
<b>Flat Plates</b>										
	Part Code	650MSP16	650MSP20	650MSP24	650MSP29	650MSP33	650MSP36	650MSP40	650MSP50	
	Dimensions - mm	100 x 100 x 8	125 x 125 x 10	150 x 150 x 10	150 x 150 x 10	215 x 215 x 15	245 x 245 x 20	260 x 260 x 30	320 x 320 x 30	

For availability of 50mm please contact our Technical department.

Available within the Macalloy S650 Stainless Steel range are dished plate washers, pattress plates, lantern spacers and hemispherical seating. Full details available upon request.

### Site Stressing

Hydraulic jacking equipment is available to apply load to the bars. Jacks are provided with gauges calibrated against a certified load cell to register the force exerted on the bars. In addition, load cells are available to give an independent check on the accuracy of the pump gauge if necessary.

Hand and air operated pumps are available for the full range of jacks. Our site service team is also available to provide on-site stressing and training.

### Other Stainless Systems from Macalloy

A further stainless bar offered by Macalloy is the high strength Macalloy S1030 system with a 0.1% proof stress of 835N/mm<sup>2</sup> and an ultimate stress of 1030N/mm<sup>2</sup>. Details of this system can be found in our Macalloy Post Tensioning Systems brochure.

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