

# Large Diameter 1030 Grade Bar

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Macalloy high-strength alloy steel bar system

As part of our continuing product development programme, MACALLOY now offer a range of new sizes for the 1030 Grade, MACALLOY High-Strength Alloy Steel Bar system.

The MACALLOY 1030 BAR is a high-performance carbon-chrome steel product, engineered through quenching and tempering to meet specific strength and durability requirements.

The system incorporates a unique Macalloy coarse, cold-rolled thread that enhances fatigue characteristics and minimizes lock-off losses. Consequently, this thread exhibits greater durability and resistance to handling damage compared to conventional metric threads. The bars are offered in both fully-threaded and end-threaded configurations, with lengths available up to 11.8 meters, and are produced according to MACALLOY's specifications.

For comprehensive details regarding properties and dimensions, please refer to the tables on the adjacent page.

TABLE 1 : MATERIAL PROPERTIES

Grade (N/mm <sup>2</sup> )	Nominal 0.1% Proof Stress (N/mm <sup>2</sup> )	Nominal Ultimate Tensile Strength (N/mm <sup>2</sup> )	Minimum Elongation (N/mm <sup>2</sup> )
Macalloy 1030 47mm - 100mm (Carbon)	835	1030	6

TABLE 2 : BAR PROPERTIES

Nominal Diameter	Nominal Prestress at 70%	Nominal 0.1% Proof Load	Nominal Failing Load	Major Thread Diameter	Unthreaded Section Diameter	Cross Sectional Area	Mass
mm	kN	kN	kN	mm	mm	mm <sup>2</sup>	Kg/m
47	1251	1449	1787	52.1	47.8	1735	13.62
50	1415	1639	2022	54.8	50.9	1963	15.66
57	1840	2131	2629	61	57.9	2552	20.03
62	2176	2521	3109	67.4	63.3	3117	24.47
75	3018	3495	4311	77.2	73.4	4185	32.86
90	4587	5312	6553	94.8	90.7	6362	49.94
100	5663	6558	8090	104.8	100.7	7854	61.65

TABLE 3 : FITTINGS DIMENSIONS

Bar Diameter (mm)	47	50	57	62	75	90	100
Component	Coupler	Coupler	Coupler	Coupler	Coupler	Coupler	Coupler
O/D (mm)	72	76	85	95	110	135	150
Length (mm)	162	170	191	210	230	272	300
Component	Hex Nut	Round Nut	Round Nut				
A/F (mm)	85	90	95	110	127	N/A	N/A
O/D (mm)	N/A	N/A	N/A	N/A	N/A	160	175
Length (mm)	69	73.5	88	100	100	135	150
Component	Washer	Washer	Washer	Washer	Washer	N/A	N/A
O/D (mm)	100	105	110	125	150	N/A	N/A
I/D (mm)	55	57	63	70	79	N/A	N/A
THK (mm)	5	5	5	5	5	N/A	N/A

## GUARANTEED STEEL QUALITY

At Macalloy, we're committed to playing our part in the shift towards a more sustainable future for global construction.

Where possible, we buy 'green steel' in order to help our environment and reduce carbon emissions. Our manufacturing process is based on recycled steel scrap and a Nordic, fossil-free electricity mix. As a result, the carbon footprint of our steel bars is 80% lower than the global average.

We regularly carry out rigorous inspection and testing, both during and after treatment, to ensure consistent tensile properties.

In addition to the standard range, custom bar diameters can be manufactured and supplied upon request. Non-standard bar sizes can be tailored to meet the specific needs of your project, which may lead to potential cost savings.



**LAS ARENAS DE BARCELONA, SPAIN** was once a bullring but has seen much change since its 1900 construction and is today a bustling shopping centre. With the collaboration of Alonso Balaguer Arquitectos Asociados and British architect Richard Rodgers, rshp.com the ancient bullring's original façade was restored, allowing it to retain its one-of-a-kind heritage. Macalloy supplied 1030 bars for the post tensioning of the building's façade. Much of the renovation made use of Macalloy tie rods in a variety of contexts, such as outside lift towers and walkways.

#### **STOCK YARD HILL WIND FARM, AUSTRALIA**

The 528MW wind farm initiative, situated 150km west of Melbourne, comprises of 149no. turbines, each one anchored by 12no. Macalloy 75mm diameter 1030 bars. The implementation of the Macalloy 75mm diameter 1030 bar system minimised the dimensions of the concrete foundations, resulting in savings in both materials and construction time.



**AL WAHDA ARCHES** dominate the blue-sky landscape of Qatar's capital, DOHA. Standing 100m tall, the structure is constructed of 9,000 tonnes of steel, while the arches are clad with Limra Limestone. Construction of the dual arches presented an engineering challenge given the angles and size of the project. Macalloy were actively involved supplying 1030 BARS in 75MM to secure the foundations and Hydraulic Jack units to stress the bars.



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**Macalloy** | **100 years 1921-2021**

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