Aluminium

Aluminium 6082 T6 Bar & Extrusions

Datasheet Updated
18 July 2022

RANGE

Round bar is supplied in the T6511 temper.

Product Form	Size Range *From*	Size Range *To*
Round Bar (Imperial)	3/16"	16"
Round Bar (Metric)	6.0mm	50.0mm
Flat Bar	3/8" x 1/8"	6" x 1"
Square Bar	1/4"	4"
Square Box Section	1/2" x 1/2" x 16swg	4" x 4" x 1/4
Rectangular Box Section	1" x 1/2" x 16swg	6" x 3" x 3/8"
Tube	3/8" OD x 16swg	6 1/2" OD x 1/4"
Channel	3/8" x 3/8 2 x 1/16"	10" x 3" x 3/8" x 1/2"
Tee Section	1/2" x 1/2" x 1/16"	3" x 3" x 3/8"
Equal Angle	3/8" x 3/8" x 1/16"	6" x 6" x 1/2"
Unequal Angle	3/4" x 1/4" x 1/16"	6" x 3" x 3/8"

SPECIFICATIONS

Commercial	6082 T6
EN	6082 T6

Structural aluminium alloy with the highest strength in the 6000 series.

CHEMICAL COMPOSITION

BS EN 573-3
Alloy 6082

Element	% Present
Manganese (Mn)	0.40 - 1.00
Iron (Fe)	0.00 - 0.50
Magnesium (Mg)	0.60 - 1.20
Silicon (Si)	0.70 - 1.30
Copper (Cu)	0.00 - 0.10
Zinc (Zn)	0.00 - 0.20
Titanium (Ti)	0.00 - 0.10
Chromium (Cr)	0.00 - 0.25
Other (Each)	0.00 - 0.05
Others (Total)	0.00 - 0.15
Aluminium (Al)	Balance

ALLOY DESIGNATIONS

Aluminium alloy 6082 also corresponds to the following standard designations and specifications **but may not be a direct equivalent:**

- AA6082
- HE30
- DIN 3.2315
- EN AW-6082
- ISO: Al Si1MgMn
- A96082

TEMPER TYPES

The most common tempers for 6082 aluminium are:

- T4
- T6511
- T651
- O
- T6

SUPPLIED FORMS

Alloy 6082 is typically supplied as channel, angle, tee, square bar, square box section, rectangular box section, flat bar and tube.

- Bar
- Tube
- Extrusions

APPLICATIONS

- Highly stressed applications
- Trusses
- Bridges
- Cranes
- Transport applications
- Ore skips
- Beer barrels
- Milk churns

CHARACTERISTICS

- Excellent corrosion resistance
- Medium strength
- Good machinability. In the T6 and T651 temper, alloy 6082 machines well and produces tight coils of swarf when chip breakers are used
- Good weldability

MECHANICAL PROPERTIES

BS EN 755-2
Open & Hollow Profile 5mm to 25mm Wall Thickness

Property	Value
Proof Stress	260 Min MPa
Tensile Strength	310 Min MPa
Elongation A50 mm	8 Min %
Hardness Brinell	95 HB
Elongation A	10 Min %

BS EN 755-2
Open & Hollow Profile Up To 5mm Wall Thickness

Property	Value
Proof Stress	250 Min MPa
Tensile Strength	290 Min MPa
Elongation A50 mm	6 Min %
Hardness Brinell	95 HB
Elongation A	8 Min %

BS EN 755-2
Tube 5mm to 25mm Wall Thickness

Property	Value
Proof Stress	260 Min MPa
Tensile Strength	310 Min MPa
Elongation A50 mm	8 Min %
Hardness Brinell	95 HB
Elongation A	10 Min %

BS EN 755-2
Tube Up to 5mm Wall Thickness

Property	Value
Proof Stress	250 Min MPa
Tensile Strength	290 Min MPa
Elongation A50 mm	6 Min %
Hardness Brinell	95 HB
Elongation A	8 Min %

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BS EN 755-2
Bar 200mm to 250mm Dia. & A/F

Property	Value
Proof Stress	200 Min MPa
Tensile Strength	270 Min MPa
Hardness Brinell	95 HB
Elongation A	6 Min %

BS EN 755-2
Bar 150mm to 200mm Dia. & A/F

Property	Value
Proof Stress	240 Min MPa
Tensile Strength	280 Min MPa
Hardness Brinell	95 HB
Elongation A	6 Min %

BS EN 755-2
Rod & Bar 20mm to 150mm Dia. & A/F

Property	Value
Proof Stress	260 Min MPa
Tensile Strength	310 Min MPa
Hardness Brinell	95 HB
Elongation A	8 Min %

BS EN 755-2
Rod & Bar Up to 20mm Dia. & A/F

Property	Value
Proof Stress	250 Min MPa
Tensile Strength	295 Min MPa
Elongation A50 mm	6 Min %
Hardness Brinell	95 HB
Elongation A	8 Min %

DISCLAIMER

This Data is indicative only and as such is not to be relied upon in place of the full specification. In particular, mechanical property requirements vary widely with temper, product and product dimensions. All information is based on our present knowledge and is given in good faith. No liability will be accepted by the Company in respect of any action taken by any third party in reliance thereon. Please note that the 'Datasheet Update' date shown above is no guarantee of accuracy or whether the datasheet is up to date.

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