

Benefits of OneSteel's Structural Steels

Steel's inherent strength and consistent properties provides builders and home owners with many benefits. They include:

Steel beam depths are around half that of timber beams offering greater usable space and lower costs of other materials

OneSteel's unique range of lightweight 'Lean Beam' sections in 300PLUS® grade offers efficient and cost effective design solutions

Superior spanning capabilities means fewer columns and more usable space

Steel does not warp, bow or twist due to shrinkage ensuring no long term movement problems with the steelwork

Unlike timber, steel does not creep and long term deflection is minimal

Consistent quality and dimensions ensuring ease of use and long life



OneSteel's range of structural steel is available from hundreds of outlets Australia-wide.

Most suppliers offer cut to length and delivery services.

Many offer other services such as drilling, welding, installation and design advice.

For an up-to-date list of suppliers please call:

OneSteel Direct Toll Free on 1800 1 STEEL (1800 1 78335)

or visit our website at www.onesteel.com





STRUCTURAL STEEL IN HOUSING - THIRD EDITION



Structural steel is playing an increasingly important role in traditional and medium density housing with its versatility, strength and competitive price.

OneSteel produces a unique range of steel beams, columns, channels and angles which are suitable for use in domestic housing as floor bearers, joists, roof strutting beams, lintels, piling and other applications.

This booklet has been compiled to assist builders, draftspersons and designers to specify and use OneSteel's range of structural steel. It contains span tables, surface treatment specifications and installation details on the use of OneSteel's structural steel products in various residential building applications.

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STEEL ADVICE AROUND THE CLOCK

If you're looking for **advice on steel**, then at OneSteel's website you'll find everything from A to Z, covering the **largest range of steel products and services**, technical information, design aids, case studies, shareholder information, where your steel suppliers are, and much more, it's **your 24 Hour reference**.

FULLY PERSONALISED FOR YOUR NEEDS

MyOneSteel is one of the latest enhancements to the OneSteel website. The new design allows for each user to register and then personalise a homepage to suit their interests. This allows **faster access to the information you want**, without the things you don't need by selecting your products, your news – **everything that matters to you and for your business**.

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PRODUCT DESCRIPTION & RANGE

OneSteel produces a large range of structural steel sections. The following sections and sizes are particularly useful for housing applications. All sections are produced in OneSteel's unique 300PLUS® steel grade offering high strength and lightweight design solutions. For information on OneSteel's full range of structural steel sections, refer to the OneSteel Product Catalogue - Structural Steel.

PRODUCT DESCRIPTION

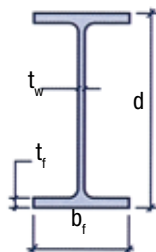
UNIVERSAL BEAMS (UB)

Universal Beams are 'I' shaped members (refer diagram) designed to carry high loads over long spans. The thick flanges and thinner web efficiently proportions material to resist the high bending loads from beam applications.

A Universal Beam is designated as follows:

180	UB	18.1
Nominal depth, d	Universal Beam	mass/length kg/m

The 180 UB18.1 for example is 175mm deep (d), 90mm wide (b_f) with 8mm flange (t_f) and 5mm web (t_w).



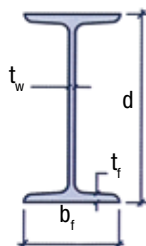
TAPER FLANGE BEAMS (TFB)

Taper Flange Beams are similar in shape to Universal Beams except that they have tapered flanges.

A Taper Flange Beam is designated as follows:

125	TFB
depth, d	Taper Flange Beam

The 125 TFB for example is 125 mm deep (d), 65 mm wide (b_f) with 8.5 mm flange (t_f) and 5 mm web (t_w).

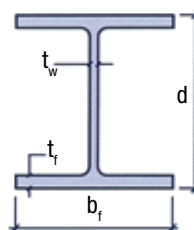


UNIVERSAL COLUMNS (UC)

Universal Columns are stockier, wider 'I' section members designed to carry high axial loads, for applications such as columns and piles etc. These members are generally heavier than other steel sections and are useful as supports for retaining walls and the like. They can also be used as beam sections where headroom is of concern.

A Universal Column is designated as follows:

150	UC	37.2
Nominal depth, d	Universal Column	mass/length kg/m



The 150 UC 37.2 for example is 162mm deep (d), 154mm wide (b_f) with 18mm flange (t_f) and 8mm web (t_w).

PARALLEL FLANGE CHANNELS (PFC)

Parallel Flange Channels are a general purpose hot rolled 'C' section member useful in beam applications. PFC's provide excellent deflection resistance and strength characteristics. They are narrower than a UB of similar depth and provide a flat, flush back surface for mating with other building materials.

A Parallel Flange Channel is designated as follows:

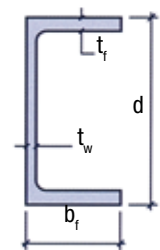
180

depth, d

PFC

Parallel Flange Channel

The 180 PFC for example, is 180mm deep (d), 75mm wide (b_f) with 11mm flange (t_f) and 6mm web (t_w).



UNEQUAL ANGLES (UA) AND

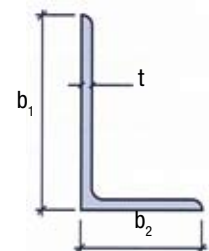
EQUAL ANGLES (EA)

Angles are 'L' shaped sections and are ideal for use as lintels. One leg rests under the brickwork while the other resists the bending load over the window/door opening.

An angle is designated as follows:

150 x 90 x 8	UA(or EA)
leg length	Unequal Angle (or Equal Angle)
leg length	
thickness, t	
b ₁	
b ₂	

The 150x90x8UA for example has leg lengths of 150mm (b₁) and 90mm (b₂) and 8mm thickness (t).



PRODUCT RANGE

Section Designation	Mass per Metre kg/m	Depth of Section d mm	Flange Width b _f mm	Flange Thickness t _f mm	Web Thickness t _w mm
UNIVERSAL BEAMS					
150UB14.0	14.0	150	75	7.0	5.0
150UB18.0	18.0	155	75	9.5	6.0
180UB16.1	16.1	173	90	7.0	4.5
180UB18.1	18.1	175	90	8.0	5.0
180UB22.2	22.2	179	90	10.0	6.0
200UB18.2	18.2	198	99	7.0	4.5
200UB22.3	22.3	202	133	7.0	5.0
200UB25.4	25.4	203	133	7.8	5.8
200UB29.8	29.8	207	134	9.6	6.3
250UB25.7	25.7	248	124	8.0	5.0
250UB31.4	31.4	252	146	8.6	6.1
250UB37.3	37.3	256	146	10.9	6.4
310UB32.0	32.0	298	149	8.0	5.5
310UB40.4	40.4	304	165	10.2	6.1
310UB46.2	46.2	307	166	11.8	6.7
TAPER FLANGE BEAMS					
100 TFB	7.20	100	45	6.0	4.0
125 TFB	13.1	125	65	8.5	5.0
UNIVERSAL COLUMNS					
100UC14.8	14.8	97	99	7.0	5.0
150UC23.4	23.4	152	152	6.8	6.1
150UC30.0	30.0	158	153	9.4	6.6
150UC37.2	37.2	162	154	11.5	8.1
200UC46.2	46.2	203	203	11.0	7.3
PARALLEL FLANGE CHANNELS					
75 PFC	5.92	75	40	6.1	3.8
100 PFC	8.33	100	50	6.7	4.2
125 PFC	11.9	125	65	7.5	4.7
150 PFC	17.7	150	75	9.5	6.0
180 PFC	20.9	180	75	11.0	6.0
200 PFC	22.9	200	75	12.0	6.0
230 PFC	25.1	230	75	12.0	6.5
250 PFC	35.5	250	90	15.0	8.0
300 PFC	40.1	300	90	16.0	8.0

Section Designation	Mass per metre kg/m	Leg-Length b ₁ x b ₂ mm x mm	Nominal Thickness mm
ANGLES			
75 x 75 x 6EA	6.81	75 x 75	6
90 x 90 x 6EA	8.22	90 x 90	6
90 x 90 x 8EA	10.6	90 x 90	8
100 x 100 x 6EA	9.16	100 x 100	6
100 x 100 x 8EA	11.8	100 x 100	8
100 x 75 x 6UA	7.98	100 x 75	6
100 x 75 x 8UA	10.3	100 x 75	8
125 x 75 x 6UA	9.16	125 x 75	6
125 x 75 x 8UA	11.8	125 x 75	8
150 x 90 x 8UA	14.3	150 x 90	8
150 x 100 x 10UA	18.0	150 x 100	10

All structural steel sections in this manual are designed to be 300PLUS® grade steel.

