



STEEL IBEAM VS ALUMINIUM XBEAM

WHAT ARE STEEL IBEAMS?

01

Steel I Beams, also known as Universal Beams or UB's these are 'hot rolled' steel sections that are formed into an 'I' shape. The naming of these typically follows the designations of AS/NZS36379. Each beam type is designated a number such as 250 UB 37 the first number is the height of the beam in mm and the second is kg of weight per metre so this beam is 250 mm high and weighs 37 kg/m. These are readily available in sizes from 150 mm up to 610 mm high. I Beams are particularly suited for spanning long distances with high loads. The design engineer will typically use span tables to determine the correct beam Easysteel span tables are here.

WHAT ARE ALUMINIUM XBEAMS?

02

The aluminium XBEAM I beam by Monkeytoe is a new innovative lightweight carbon fibre reinforced I beam replacement that is ideal for external environments and is far lighter and easier to install. Monkeytoe provides design and specification services to ensure these are used in the most optimal design, engineers can also use the span tables to specify the correct one here.

WHY USE STEEL IBEAMS?

03

Steel I beams are a high strength solution for applications such as portals, platforms or even bridges. They are able to span long distances and carry large loads and are fabricated into products such as portal or rafter frames, flooring supports and heavy-duty roof platforms.

HOW ARE IBEAMS INSTALLED

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I Beams are typically welded into large assemblies the welded assembly or 'weldment' is then either painted or galvanised for corrosion protection and delivered to site. Once onsite the Weldments are lifted into position with a crane and welded or bolted into place, any site-specific adjustments are also carried out to ensure fitting. Once the final welding and grinding is completed a paint or coating is applied to protect the steel from corrosion. Paint and coating systems need to be maintained or recoated every 10 -20 years depending on the environment and coating.

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WHY USE ALUMINIUM XBEAM?

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Aluminium Beams are lightweight and very durable. Typically aluminium members are at least 50% lighter for the same application as a steel equivalent. Aluminium is also very durable requiring no extra coating even in highly corrosive marine environment or industrial cities and lasting for many decades without maintenance such as the Shaftesbury Fountain. This means there is little, or no maintenance required during its lifetime and also requires less effort or craneage to install.

Monkeytoe XBEAM system comes complete with a easy to install connection system with simple onsite adjustability and not hot work requirements for the installation. The XBEAM is a patented system which uses carbon fibre reinforced aluminium extrusions to carry heavy loads spanning up. When XBEAM is used for plant platforms it is up to 65% lighter and 2 x faster to install, providing a sustainable structure for years to come.

**IT IS ESTIMATED THAT ROUGHLY
75% OF ALL THE ALUMINIUM EVER
PRODUCED IS STILL IN CIRCULATION.**

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OTHER TYPES OF BEAMS & STEEL SECTIONS

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RHS STEEL is an acronym for Rectangular Hollow Section these are often used in smaller structures or as support columns or in welded truss assemblies in the same way as an SHS, Due to being more resistant to bending in one direction it is more common to use an RHS for a spanning Beam.

SHS STEEL is an acronym for Square Hollow Section these are often used in smaller structures or as support columns or in welded truss assemblies in the same way as an RHS, Due to being equally resistant to bending in each Direction it is often used for support columns

ALUMINIUM EXTRUSIONS are aluminium sections that can be formed into a wide variety of shapes including regular angle, flat SHS and RHS sections. Monkeytoe have more than 70 custom extrusions- as well as standard shapes for all types of applications. These provide sections for all types of durable lightweight structures and typically don't require any surface treatment when marine grades are used.

STEEL TRUSS Steel trusses are typically welded assemblies of Steel Hollow sections in either square, round or hollow sections, these are good at providing long spanning structures but typically require a lot of fabrication cost so are not as economical as I Beams for most long span applications.

ALUMINIUM TRUSSES These are lightweight spanning members that perform well outdoors providing structural support and can be either welded or joined with rivets or similar. Monkeytoe standard platforms feature riveted truss designs over 6M and they have also designed numerous welded truss style structures such as Graylee's bridge on the West Coast.

LINTEL BEAMS Lintels are the support beam that provides support over openings such as windows and doors and garage doors in residential and light commercial construction. The same beams are also used for high pitched ceilings or exposed beam applications that don't use trusses such as Pergolas.

WOOD LINTEL BEAMS these are a great choice for short spans but typically are not able to carry much load in standard grades so are not used for applications such as Garage doors or ranch sliders.

GLULAM & LVL LINTEL BEAMS These are manufactured from multiple pieces of wood layers glued together to form the final product, these are often the most common for medium to long span applications. These can be difficult to install due to being bulky and sometimes heavy. With global supply line issues causing a shortage of higher grade imported woods there is often a long delay for these products.

STEEL OR GALV LINTEL BEAMS Sometimes called Gal lintels, these are commonly used to span long distances and support high loads and often brick facades. Due to the weight these sometimes require a crane to install

XBEAM RES LINTEL BEAM These are made of lightweight marine grade aluminium using the same technology of the larger XBEAM and are optimised for residential and light commercial spanning applications. These are typically lighter than wood or steel and have an optional clip-on ledge for brickwork support giving fast easy installation and will soon be available for shipment in both NZ and Australia.

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