

I-Beams - a high-strength, long-span composite timber beam with endless applications for the residential and commercial building industry



Images above courtesy of
Carter Holt Harvey Woodproducts



I-Beams are the ideal product for floor joists, roof purlins and wall girts, with all the savings in cost and to the environment that using an engineered wood product implies.

The I-beam is a high-strength, low-cost and reliable engineered wood product with applications as a long-span beam for most residential and commercial building projects.

The advantages of using composite wood products in construction couldn't be clearer than with the I-beam, which can be used in a wide range of structural applications in both the residential and commercial building sectors.

The I-beam is composed of top and bottom flanges that are made of graded solid timber or laminated veneer lumber (LVL), they are separated by a vertical web of structural plywood, oriented strand board (OSB) or hardboard. These combinations create a structurally efficient, lightweight timber beam section.

The many advantages of I-Beams

Reliable, uniform and cheap, the I-beam is an excellent resource for an industry where ease-of-use, cost-effectiveness and performance are key product selection criteria.

While the I-beam has many uses, Rex Glencross-Grant, from the School of Environmental and Rural Science at the University of New England, points out that I-beams are ideal for floor joists in residential or commercial applications. They are "lightweight, yet strong, making them easy to install and saving construction time, while at the same time providing floors that are more uniform, more rigid and that don't 'bounce'". That said, I-beams are equally applicable as rafters, purlins and wall girts, spanning distances up to 12 metres and with the additional advantage of allowing easy installation of services through the web, such as waste pipes or utilities.

While I-beams are not generally used for their appearance, largely due to the visibility of the glue lines on the surface, they have the potential to be used as exposed structural elements if they are coated with an opaque finish, again increasing their architectural and design applications.

Sustainable, flexible and cost-efficient

I-beams are manufactured from engineered wood products, meaning they are not only natural carbon stores but are approximately twice as efficient as solid wood in terms of optimisation of resources. This adds up to more sustainable building practices and huge savings to the industry in both the short and long-term.

According to Rex Glencross-Grant, I-beams have the potential to be used in ways that are yet to be fully explored, with their "greater design flexibility, including the ability to span further, to eliminate piers or floor bearers and load-bearing walls, providing a wide range of building design options".

I-beams are proprietary products and vary in dimensions depending on the manufacturer. Specific accurate product specifications and design guidelines should be sourced from I-beam manufacturers.

Typical depths are: 200, 240, 300, 360 and 400mm and lengths are available up to 15m.

Note: Care should be taken if on-site product substitution occurs to ensure structural design performance criteria are met.

For further information on timber I-beams or suppliers visit the woodsolutions.com.au.