

Press Release

Novel Tapered I-Beam Developed by Biteam

Biteam has developed the first integrated I-beam with a tapering angle of about 6°. The tapered I-beam displaying varying heights has Combination Architecture with $\pm 45^\circ$ reinforcement in the web and $0/90^\circ$ in each of the flanges. The web-flange junctions have mutual through-thickness integration for increased resistance to delamination. The web tapering angle can be produced within reasonable limits to suit performance demands.

The novel tapered I-beam has been developed for situations where the tapered shape as such is desired or where the bending moment decreases along the beam's length. It is thus particularly suited for aircraft wing structures, windmill blades, porch roofs, balcony supports etc.

With its taller end supported and the shorter end free, like a cantilever, there is potential for weight savings and/or increased length, making them economically attractive. Also, the tapered I-beams enable constructions, such as buildings, with the space under them clear or free from support columns for greater utility.

This development follows the success of the regular/non-tapered I-beam for which Biteam received the JEC Innovation Award at The Future of Composites in Construction held in June 2017, Chicago, USA,

The novel carbon fibre tapered I-beam will be displayed at the JEC Show 2018, Paris.