

## Press Release

### Novel Combination Architecture Box-Beams



For constructions requiring structural members to withstand relatively high impact and torsional resistance, Biteam from Sweden has pioneered an entirely new set of woven Combination Architecture Box-Beams in response to specific performance demands of the automotive, engineering and building industries.

The novelty of these box-beams is their combined  $\pm\theta^\circ$  and  $0/90^\circ$  fabric architectures to withstand different loads efficiently. While the two vertical walls have  $\pm\theta^\circ$  fibre orientations, the top and bottom horizontal walls have  $0/90^\circ$  fibre orientations. Further, each of the four corner joints formed by the adjacent walls have a mutual through-thickness interconnection to resist delamination and increase reliability.

Tests have established that beams such as I and double flanged-triangle made of combination architectures have unprecedented energy absorption capacity and damage resilience. They even outperform competing composite and metal beams in some cases.

In view of the growing interest in these different forms of structural beams, Mr. Fredrik Winberg, Co-founder and Chairman of Biteam, anticipates that use of these novel box-beams will expand in other industries like aeronautical, marine/ship-building and sports as well.

Combination Architecture Box-Beams are producible in a range of dimensions. Presently they have been produced in a maximum cross-sectional dimension of 90x45 mm, with wall thickness of up to 6 mm to suit specific application requirements. All Combination Architecture Beams are directly woven by the innovative Add-on Weaving Technology invented by Dr. Nandan Khokar, Co-founder and R&D Manager of Biteam. The current prototype Add-on Weaving equipment is designed to produce these beams in a linear form with a maximum length of 2 m.

A Combination Architecture Box-Beam will be displayed at the forthcoming JEC Show in Paris.