

Composite Steel Beam Design



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Background:

The term composite steel beam design is synonymous with metal deck flooring and it is not widely known that composite steel beam design can be achieved utilising hollowcore floors. If this design approach is adopted then this can lead to huge reductions in steel beam sizes, which reduces overall construction depth and tonnage.

An independent report concluded that global steel tonnage savings between 15% to 20% can be achieved when compared to non-composite steel beams.



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- Achieves composite interaction between hollowcore unit and steel beam.
- Shear studs are shop applied which eradicates site stud welding (hot works).
- Site placed transverse reinforcement is placed prior to in-situ concrete pour.
- Composite design also achieved with cellular beams.
- Further design guidance within SCI Publication 287 and 401.



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- Minimum flange width of steel beam 178 mm required (providing this is agreed with precast manufacturer and steel frame manufacturer).
- 2B disproportionate collapse inherently accommodated.

