

Keynote Paper

Behaviour and design of steel-concrete composite walls for tall buildings

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ABSTRACT

Slip-forming of concrete was developed over a century ago in the USA and was initially applied in the construction of grain silos. This was then successfully applied in the 1950s in the construction of residential and commercial buildings and has become the *modus operandi* in the construction of tall buildings worldwide, providing lateral resistance and a location for vertical lifts and services in a building. More recently the development of steel-concrete composite walls has found application around the world. The benefits of composite walls are that they allow for prefabrication of steel modules, can take concrete operations off the critical path and can also speed up the long term creep and shrinkage of the internal cores. This thereby can accelerate the construction and completion of a tall building significantly, resulting in significant cost savings. International efforts in establishing the performance and design criteria from Australia, Europe and the USA will be presented in this paper. The paper will summarise more recent research and codification efforts and will highlight further research areas that will be necessary to assist in the broader application of this innovative approach.

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