

Introduction

Slimdek is an engineered flooring solution developed to offer a cost-effective, service-integrated, minimal depth floor for use in multi-storey steel-framed buildings with grids up to 9m x 9m. Slimdek extends the range of cost-effective steel options for modern buildings. Ease of planning and servicing, combined with a reduction in building height, gives significant cost and speed of construction benefits.

The Slimdek components form a stable structure once installed; the decking sheets are fixed to the frame to provide lateral stability and end diaphragms not only ensure that the concrete is contained during placement but resist vertical loading and allow the full shear capacity of the deck to be realised during the construction stage.

Slimdek is especially economical for highly serviced buildings. Flexibility of routing services without constraint and the ability to accommodate services between the ribs can lead to substantial savings in the cost of services.

The Slimdek system has safety during construction at its heart. Ongoing review and development of the system has resulted in a method of working which allows the decking units to be placed onto the beams with minimal handling and once installed the decking provides a working platform. If space permits it is possible to preassemble Slimdek bays, minimising work at height.

Slimdek solutions can be designed to incorporate the latest technology in energy-efficient services principles. Research and development into enhanced forms of passive service systems and optimising the contribution of the structure to the operation of the building environment have led to new methods of air distribution on and through the floor construction.

Reductions in height of up to 400mm per storey (over conventional construction) can be achieved by using Slimdek, giving the potential for extra floors within the same building height. Alternatively, a tight floor-to-floor height can reduce total building height and thus save cladding costs.

Speed of construction gives Slimdek a significant advantage over reinforced concrete flat slab structures and the lightweight structure saves on frame and foundation costs.

A cost comparison of various forms of construction is available from www.corusconstruction.com/coststudy

Key features of the system are:

- Shallow composite slab achieves excellent load capacity, diaphragm action and robustness.
- ASB achieves efficient composite action without shear studs.
- ASB(FE) provides 60 minutes inherent fire resistance.
- Lighter, thinner web ASB may be used unprotected in buildings requiring up to 30 minutes fire resistance, in fire-protected applications or in applications where the web accommodates service penetrations.
- ComFlor 225 decking spans up to 6.5m without propping (dependent on slab weight).
- Construction is light in weight.
- Services can be integrated between the decking ribs passing through openings in the ASB.