

The Speedfloor composite floor system is suitable for use in all types of construction, i.e. steel frame structures, masonry buildings, poured in-situ or precast concrete frames as well as wooden frame construction, from single family detached houses to multi-story residential and office complexes.

Speedfloor uses a rollformed steel joist for permanent structural support, using the properties of the concrete and steel to their best advantage. The joist depth and the concrete thickness are varied depending on the span, imposed loads and other functional considerations.

## GENERAL DESCRIPTION

The Speedfloor System essentially is a hybrid concrete/ steel tee-beam in one direction and an integrated continuous one-way slab in the other direction.

## ADVANTAGES

A number of the more important advantages of Speedfloor are listed below:

- (a) Generally Speedfloor uses a 75mm or 90mm topping. A general weight saving can be made throughout the structural components of the building.
- (b) The joists are lightweight, requiring less craneage than other concrete flooring systems.
- (c) The Speedfloor joists are custom manufactured to suit particular job conditions. It is important to remember that the Speedfloor joist modular spacing can be adjusted to suit varying conditions.
- (d) During construction, the Speedfloor system provides a rigid working platform.
- (e) Shallower floor depths can be achieved because of the increased rigidity of the system.
- (f) Services can be passed through the holes pre-punched in the joist.

(g) The bottom of the joist can support a suspended fire rated ceiling directly fixed to the joist.

(h) The lockbars and plywood sheets are reusable.

## COMPONENTS

### The Joist

The joist is manufactured from G 350 Z275 pre-galvanized steel. The rollformed shape with its pressed web produces a rigid and accurate steel section that has a high load carrying capacity and therefore good spanning characteristics with no propping requirements.

The joist weights per lineal metre are as follows:

- 200mm deep = 9.41 kg/ lin m
- 250mm deep = 10.59 kg/ lin m
- 300mm deep = 11.76 kg/ lin m
- 350mm deep = 12.94 kg/ lin m
- 400mm deep = 14.12 kg/ lin m

The top section of the joist is embedded in the concrete slab and has 4 functions;

1. It is the compression element of the non-composite joist during construction.
2. It is a "chair" for the welded wire mesh or the reinforcement which develops negative moment capacity in the concrete slab over the joist.
3. It locks in and supports the slab shuttering system (lock bar and plywood forms).
4. It becomes a continuous shear connector for the composite system.

The bottom section of the joist acts as a tension member both during the construction phase and when the joist is acting compositely with the slab.



# SPEEDFLOOR