

3.0 Design, 3.4 Reinforcement, 3.4.4 Crack Control Reinforcement - Page 8

There is a high risk of cracking in the concrete in all composite slabs because:

- Typically, composite floor slabs are designed as simply supported with nominal crack-control reinforcement, so there is a likelihood of some flexural cracking over the supports.
- Drying shrinkage is restrained by the steel decking and primary steelwork, although the steel decking effectively acts as reinforcement and helps to distribute the shrinkage strains so that large cracks do not form.

4.0 Surface Finishes (Summarised) – Page 9

Basic – For areas to receive screed, float marks and ridges evident – skip / easy float

Ordinary – To receive floor finishes, power floated not easy float – no ridges but float marks

Plain – Power floated, for finished slab or thin coverings

Special – Tamp / brush / ground and polish

5.0 Surface Regularity, 5.1 Standards and Guidance – Page 11

It must be appreciated that the slab contractor has no control over the initial and long-term deflections and so cannot produce a floor with tight tolerances. If relatively tight levelness tolerances are required, the steel frame would have to be designed to give very small deflections. This is usually considered uneconomic and stiffening the steel decking impractical.

In instances where tight surface regularity is essential i.e large scale mezzanine floors for use in multi-level storage or sorting facilities, it is absolutely imperative that this is considered at initial design stage to ensure the steel frame and decking are designed with the tight surface regularity in mind.

5.2 Specification

As a default, the NSCS Basic or BS 8204-2 SR3 are considered applicable. TR34 FM3 (Property F) is only generally used when the floor will be used by materials handling equipment (MHE).

If a tighter tolerance than Basic or SR3 is required then a stiffer structure will need to be considered. This will result in a combination of larger steel sections, shorter deck spans, more frequent support columns and or heavier gauge steel decking. Where a strict control to datum is required, it is suggested that the deflection of the steel design be limited to 10mm.

Key issues to be addressed by the contractor are:

- Provision of adequate access and ground conditions to accommodate all plant, equipment and construction traffic associated with the works.
- The position of the concrete pump must be sited in close proximity to working areas with clear access for its outriggers and the manoeuvring of concrete supply vehicles.
- The routing of the pump pipeline within the structure with provision of adequate supports.
- The methods available for the lifting of reinforcement, e.g by landing platform, telehandler or crane.

9.5.2 Access to Work Area

Access to and egress from working areas must be adequate. The concrete laying and finishing operatives must be able to access / egress pour areas at acceptable locations, via properly installed ladders and preferably an access tower. A minimum of two access points will be required when power-floating or power-trowelling. This element is often overlooked, with only one access point being provided to the slab contractor. However, as the operatives cannot walk back through the placed and finished concrete, an egress point must also be provided where the pour is due to be completed.

Where 'ride-on' finishing machines are to be used, it is important to introduce a third handrail at an appropriate height, typically 1.2m above finished floor level.