



Construction
Metal Forming



FIBERMESH®

Information for
system installation
and risk assessment

FibreDeck Guidance Note

CMF FIBREDECK

Developed by CMF in conjunction with Fibermesh (A Sika Brand); FibreDeck is the smart alternative to mesh reinforcement in composite metal deck construction.

FibreDeck combines high performance steel Novocon FE1050 and polypropylene Fibermesh 150e3 micro synthetic fibres. These are combined to form the FibreDeck three-dimensional fibre reinforcement system.

TRADITIONAL & FIBRE REINFORCEMENT

Where FibreDeck mixes are specified it is unusual for fabric mesh reinforcement to also be specified. Fibres in the concrete mix provide both crack control, tensile reinforcement, and provide resistance in the fire condition. As such fabric mesh is typically an unnecessary addition and can become a hindrance when pouring fibre reinforced concrete.

In traditionally reinforced composite slabs, the fabric mesh provides a level of protection to the light gauge steel decking during the concrete pour. This reduces the risk of footfall causing damage to the decking during concreting operations. The system's ability to resist damage from footfall might be described as its 'walkability' – walkability is improved by the presence of fabric mesh.

Considerations & Risk Assessment

Particular care should be taken when installing fibre reinforced composite slabs and during concreting operations. With the absence of fabric mesh in fibre reinforced composite slabs, operative footfall is applied directly to the metal decking profile – this increases the risk of damaging the decking profile.

To assist in limiting the effects of footfall on the decking profile, the following suggestions are made. These may be incorporated into a project risk assessment and are provided as options for consideration to reduce risk during concrete pours:

Consider construction loads due to reduced consistence

Fibre reinforced mixes tend to be **less fluid** and are therefore **more likely to heap**. Design construction loads may be increased to reflect this.

Increase decking gauges to 1.0mm or 1.2mm

This is of particular benefit on **single spans, high utilisation designs,** and **LGSF** projects.

Pour to a thickness as opposed to a level

This **reduces the ponding effect** and **reduces the wet concrete load** carried by the decking.

(Other design requirements must be considered.)

Provide temporary supports during the concrete pour on longer spans

This **reduces the construction stage span** and **provides additional comfort** for operatives.

BEST PRACTICE FOR COMPOSITE FLOOR SLABS

The suggestions provided above must be considered *in addition* to standard industry best practice.

Reference is made to the following publications for further guidance:

- BCSA Code of Practice for Metal Decking and Stud Welding (BCSA, 2014)
- Technical Report 75: Composite Concrete Slabs using Steel Decking (The Concrete Society, 2016)
- The UKMDA Approved Code of Practice for the Installation of Metal Decking and Thru Deck Stud Welding (UKMDA, 2018)



For further information please contact CMF:

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