is available from HERA and is described in HERA Steel Design & Construction Bulletins No 71.

SPM Programme Input Data Specific for Speedfloor

1. Mesh Reinforcement Cove

C_{mesh} (y-direction) = t_o - 38-d_{mesh}

C_{mesh} (x-direction) = C_{mesh} (y-direction)-d_{mesh}

Where:

x-direction bars are parallel to Speedfloor joists

y-direction bars are perpendicular to Speedfloor joists

t_o = slab thickness

38 = height of embedment of joist top flange into concrete

d_{mesh} = diameter of mesh/bars

2) Minimum $A_{r\ mesh}$ required for integrity

$A_{rx,\ mesh}$; $A_{ry,\ mesh} \geq 200\ A_{1(x\ or\ y)}.A_2$(mm²/m width)

$$A_{1(x\ or\ y)} = \frac{S_{mesh\ (x\ or\ y)}}{150} \geq 1$$

$$A_2 = \frac{t_o - \frac{h_{rc}}{2}}{110} \geq 1$$

150mm ⩽ $S_{mesh(x\ or\ y)}$ ⩽ 250mm

Where:

A_1 = factor relating to mesh bar spacing = 1 for mesh with nominal pitch of 75mm or 150mm

A_2 = factor relating to slab effective depth = 1 for 90mm or 75 topping

S_{mesh} = mesh bar spacing (mm)

hrc = 0 for Speedfloor

(3) Applied load $W^* = G + Gsdl + Qu$

Where:

Q_u = Uniformly distributed Live load (ULS)

G = Uniformly distributed Dead load

Gsdl = Superimposed Dead load

(4) Speedfloor requires negative reinforcement over internal primary beams.The negative reinforcement to be provided as shown on Speedfloor standard details (min 189mm²/m)

However, if interior support bars are required by the SPM program then these are to be provided instead of negative reinforcement.

Interior support bars (typically 10mm or 12mm) positioned on top of the upper layer of mesh and extended 0.15 Lx + 600mm. Lx is slab dimension in x direction which is equal to Speedfloor span.

NOTE:

1) All reinforcement bars used in SPM program should be Grade 500E.

2) See design example on page 44 of this design manual.