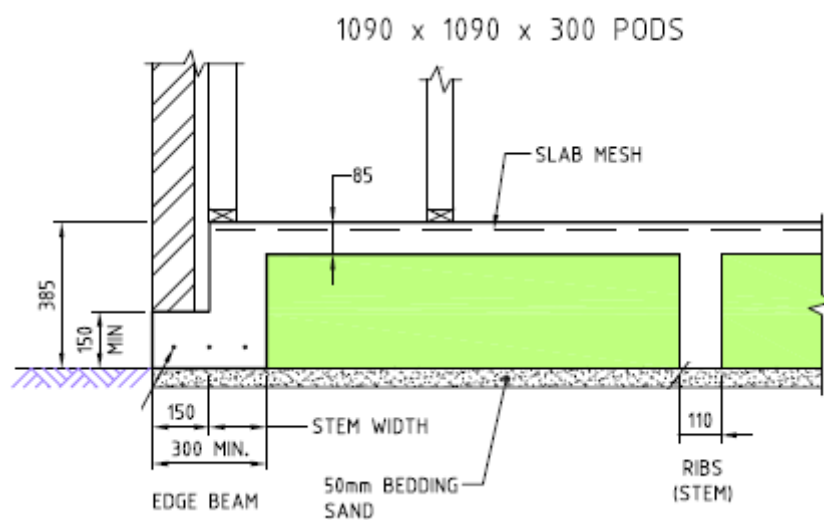


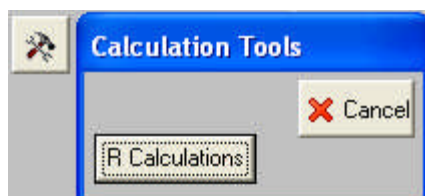


# Modelling Waffle Pod Slabs in BERS Pro.

The H Class slab shown below uses 300 mm high pods



The pods are 1090x1090 mm in area. They are separated by ribs 110 mm wide. This makes the matrix approx 20% concrete and 80% polystyrene.



Use the **R Calculations Tool**. Keep in mind that the waffle pod diagram must be inverted when entering data.

### R Values of Materials

Material Name	Thickness mm	R Value
Concrete: standard (2400 kg/m <sup>3</sup> )	300	0.2070

Carpet

Carpet underlay (felt)

Carpet underlay (rubber)

Carpet 10 + felt underlay 10

Carpet 10 + rubber underlay 8

Ceramic tile

Concrete block 190 denseweight (not core-filled)

Concrete block 190 denseweight (core-filled at 1500 centres)

Concrete block 190 lightweight (not core-filled)

Concrete block 190 lightweight (core-filled at 1500 centres)

Concrete block 140 denseweight (not core-filled)

Concrete block 140 denseweight (core-filled at 1500 centres)

Concrete block 140 lightweight (not core-filled)

Concrete block 140 lightweight (core-filled at 1500 centres)

Concrete block 110 denseweight (not core-filled)

Concrete block 110 lightweight (not core-filled)

Concrete block 90 denseweight (not core-filled)

Concrete block 90 lightweight (not core-filled)

Concrete block 90 denseweight (core-filled)

Concrete: standard (2400 kg/m<sup>3</sup>)

Conpolcrete

Copper

Cork tile

Felt (undercarpet)

Fibre-cement sheet

Fibre-cement sheet (compressed)

Generic resistance (k = 0.1)

Generic resistance (k = 0.3)

Glass

Granite

Hollowcore precast concrete panel 200

↓ 1   ↓ 2   ↓ 3

**air film resistance**

top layer: 1 (green), 2 (blue)

bottom layer: 3 (yellow)

**air film resistance**

Air Film Resistance					0
Top Layer	Material Name	Thickness mm	Area	R Value	
1	Concrete: standard (2400 kg/m <sup>3</sup> )	300	20 %	0.2070	
2	Polystyrene expanded (k = 0.039)	300	80 %	7.6923	
<b>Bottom Layer</b>					
3	Concrete: standard (2400 kg/m <sup>3</sup> )	85	100 %	0.0586	
<b>Air Film Resistance</b>					0.12
<b>Total R Upper Limit</b>		<b>Total R Value</b>		<b>1.4576</b>	
<b>Total R Lower Limit</b>		<b>Equivalent R Value of Top Layer</b>		<b>1.2790</b>	

Delete the air film resistances where the polystyrene and concrete meet the ground, (above the top layer shown in the R Values window).

The equivalent resistance of the concrete/polystyrene layer is 1.279 or R 1.3.

So H Class slabs are modelled as a slab on ground with added insulation of R 1.3.

An M Class slabs uses 225 high pods and is modelled as a slab on ground with added insulation of R 1.0.