2.3 Traditional mesh slabs

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Traditional Mesh Slabs

• Traditional mesh slabs are essentially unreinforced when it comes to structural design.
• Top Mesh is in for shrinkage control purposes
• Or you can undertake a mesh design with mesh in the bottom of the slab which does add to the structural strength See TR34
• Shrinkage control is handled by sawcuts at 5-6m centres.
  – These will open by 1-2mm as the joint opens under shrinkage
  – The reinforcement yields as the panels shrink
  – Load transfer is handled by the reinforcement and aggregate interlock
  – Reducing the steel at joints risks wide joint openings and loss of load carrying capability.
    • Eg cutting every 2\textsuperscript{nd} bar!
  – If they stay tight then can take wheel action without damage. Except hard wheels.
• Saw cuts are generally cut as soon as possible 3-4mm wide.
• Cut 25-30% of the slab depth
  – Less and increase risk of crack occurring elsewhere. More and reduce agg interlock.
• If hard neoprene wheels crossing or containers being pushed and moved then will need to be sealed.
  – Initially with a flexible sealant and then again at roughly 18 months with a semi flexible sealant.
• Do not use crack inducers.
  – They do work in creating cracks but produce a ragged arriss which cannot easily be sealed.
  – May work before the sawcut is cut leaving a ragged crack parallel with the crack which will then fail.
• Free Movement Joints.
  – The mesh can only carry the load across the sawcuts for so far and then you require a free movement joint.
TYPE G

Steel Joint Edging (50 x 10)
Deformed Anchors

Steel Form

Steel Support Brackets at 3m crs

Temporary tack weld
sliding plate
anchors

50 x 50 x 6mm angle with blind holes.

Diamond Dowels
sheetmetal
support strap

TYPE G ©2003

TYPE P ©2003
- Free joint spacing

<table>
<thead>
<tr>
<th>Steel</th>
<th>Steel mm$^2$ Area</th>
<th>Slab thickness (mm)</th>
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<tbody>
<tr>
<td></td>
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<tr>
<td>665</td>
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<tr>
<td>H12 diam at 250mm</td>
<td>452</td>
<td></td>
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<tr>
<td>H12 diam at 225mm</td>
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</tbody>
</table>

For mesh Fly = 485 mPa; for H12 = 430 mPa
Specification and design of commercial concrete slabs on grade

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