### Organization:

**Project Name:** EXAMPLE 1 SI UNITS  
**Job #:**  
**Design by:**  
**Date:** 6/20/2019

### Slab Geometry

- **Slab Thickness, t:** 125.0 mm  
- **Min. Thickness, t(min):** 114.3 mm  
- **Concrete Str, f'c:** 17.24 MPa  
- **Vert. Subgrade Modulus:** 20000 kN/m$^3$  
- **Modulus of Rupture, MR:** 3.1030 MPa  
- **Modulus of Elasticity, Ec:** 19652.17 MPa  
- **Poisson's Ratio:** 0.15  
- **Radius of Stiffness, Lr:** 636.0 mm

### Point Load

<table>
<thead>
<tr>
<th>Point Load Type</th>
<th>Post</th>
<th>Flexural Stress, Fb</th>
<th>Actual, MPa</th>
<th>Allow, MPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conc. Unit Weight, wc</td>
<td>23 kN/m$^3$</td>
<td>Bearing Stress, Fp</td>
<td>0.1034</td>
<td>13.0325</td>
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<tr>
<td>Reinforcing Yield, fy</td>
<td>275.80 MPa</td>
<td>Punching Shear Stress, Fv</td>
<td>0.0352</td>
<td>0.8378</td>
</tr>
<tr>
<td>Concentrated Point Load, P</td>
<td>6672.00 N</td>
<td>Load Transf. Dowels @ Joint, Fd</td>
<td>6.5626</td>
<td>18.6767</td>
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<tr>
<td>Contact Area, Ac</td>
<td>64516.0 mm$^2$</td>
<td>Minimum required slab thickness</td>
<td>mm</td>
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</tr>
<tr>
<td>Factor of Safety, FS</td>
<td>2.00</td>
<td>Single Interior Load</td>
<td>63.5</td>
<td></td>
</tr>
<tr>
<td>Dowel Bar Dia, db</td>
<td>19.05 mm</td>
<td>Single Corner Load</td>
<td>38.1</td>
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</tr>
<tr>
<td>Dowel Bar Spacing, s</td>
<td>304.80 mm</td>
<td>Single Edge Load (circular area)</td>
<td>95.3</td>
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</tr>
<tr>
<td>Const. Joint Width, z</td>
<td>8.382 mm</td>
<td>Single Edge Load (semi-circular area)</td>
<td>108.0</td>
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<tr>
<td>Joint Spacing, L</td>
<td>3.6576 m</td>
<td>Increase for 2nd Load, i</td>
<td>40.00 deg</td>
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</tr>
<tr>
<td>Temperature Range, deltaT</td>
<td>40.00 deg</td>
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<tr>
<td>Increase for 2nd Load, i</td>
<td>40.00 deg</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

### Wall Load

- **Distributed Wall Load, P:** 4.38 kN/m  
- **Near Center or Keyed Joints, Pc:** 6.42  
- **Near Free Edge, Pe:** 4.98

### Uniform Load

- **Uniform Live Load, wLL:** 2.394 kN/m$^2$  
- **Per Reference #1:** 31.337  
- **Factor of Safety, FS:** 2.00  
- **Per Reference #2:** 25.234
Reinforcement

Steel Yield Str, F 400.0 MPa
Rebar Sizes European
Bar Size 6M
Clear Cover 50.0 mm
Bar Spacing 250.0 mm
As Required 1242.05 mm^2/m
As Provided 113.20 mm^2/m

References:
1. "Concrete Floor Slabs on Grade Subjected to Heavy Loads"
2. "Slab Thickness Design for Industrial Concrete Floors on Grade" (IS195.01D)
   by Robert G. Packard (Portland Cement Association, 1976)
3. "Design of Slabs-on-Ground" - ACI 360R-06 - by American Concrete Institute, 2006
5. "Designing Floor Slabs on Grade" - 2nd Ed., by Ringo & Anderson, 1992
6. ACI 318-14, American Concrete Institute, 2014
8. Slab on Grade Software v1.0.0 by SoilStructure.com