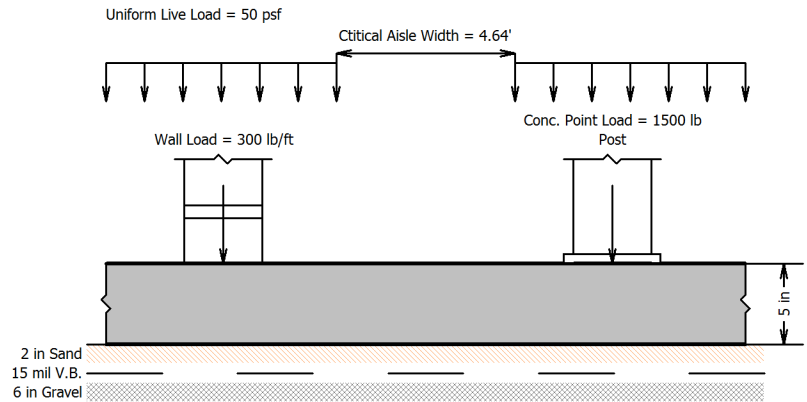


# Slab on Grade Analysis

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

## Slab Geometry

Slab Thickness, t	5.00 in
Min. Thickness, t(min)	4.50 in
Concrete Str, f'c	2500 psi
Vert. Subgrade Modulus	75 pci
Modulus of Rupture, MR	450.00 psi
Modulus of Elasticity, Ec	2850000 psi
Poisson's Ratio	0.15
Radius of Stiffness, Lr	25.23 in



## Point Load

			Actual, psi	Allow, psi
Point Load Type	Post	Flexural Stress, Fb	71.54	225.00
Conc. Unit Weight, wc	145 pcf	Bearing Stress, Fp	15.00	1890.00
Reinforcing Yield, fy	40000 psi	Punching Shear Stress, Fv	5.00	121.50
Concentrated Point Load, P	1500.00 lb	Load Transf. Dowels @ Joint, Fd	946.66	2708.33
Contact Area, Ac	100.00 in <sup>2</sup>			
Factor of Safety, FS	2.00	Minimum required slab thickness		in
Dowel Bar Dia, db	0.750 in	Single Interior Load		2.50
Dowel Bar Spacing, s	12.000 in	Single Corner Load		1.50
Const. Joint Width, z	0.3300 in	Single Edge Load (circular area)		3.75
Joint Spacing, L	12.000 ft	Single Edge Load (semi-circular area)		4.25
Temperature Range, deltaT	40.00 deg			
Increase for 2nd Load, i	40.00 deg			

## Wall Load

			Allow. Wall Load, lb/ft	Min. req. slab thickness, in
Distributed Wall Load, P	300.00 lb/ft	Near Center or Keyed Joints, Pc	451.05	3.75
		Near Free Edge, Pe	349.76	4.50

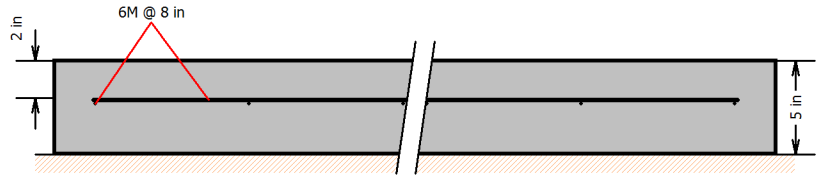
## Uniform Load

			Stat. Unif. Dist. Live Loads, psf	Min. req. slab thickness, in
Uniform Live Load, wLL	50.00 psf	Per Reference #1	665.56	-0.75
Factor of Safety, FS	2.000	Per Reference #2	535.92	-0.50

## Reinforcement

Steel Yield Str, F  
Rebar Sizes  
Bar Size  
Clear Cover  
Bar Spacing  
As Required  
As Provided

60.0 ksi  
US  
6M  
2.00 in  
8.00 in  
0.60 in<sup>2</sup>/ft  
0.07 in<sup>2</sup>/ft



## References:

1. "Concrete Floor Slabs on Grade Subjected to Heavy Loads"  
Army Technical Manual TM 5-809-12, Air Force Manual AFM 88-3, Chapter 15 (1987)
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
4. "Concrete Floors on Ground"- 2nd Ed., by Portland Cement Association, 1983
5. "Designing Floor Slabs on Grade"-2nd Ed., by Ringo & Anderson, 1992
6. ACI 318-14, American Concrete Institute, 2014
7. 2015 International Building Code, ICC, 2015
8. Slab on Grade Software v1.0.0 by SoilStructure.com