

CONCRETE SLAB ON GRADE THICKNESS ANALYSIS
For Slab Subjected to Single Wheel Loading from Vehicles with Pneumatic Tires
Per PCA "Slab Thickness Design for Industrial Concrete Floors on Grade" - Figure 3, page 5

Job Name:	Sunset Farms, Inc. Feed Pad	Subject:	Semi Tractor
Job Number:	14774000	Originator:	JRH
		Checker:	

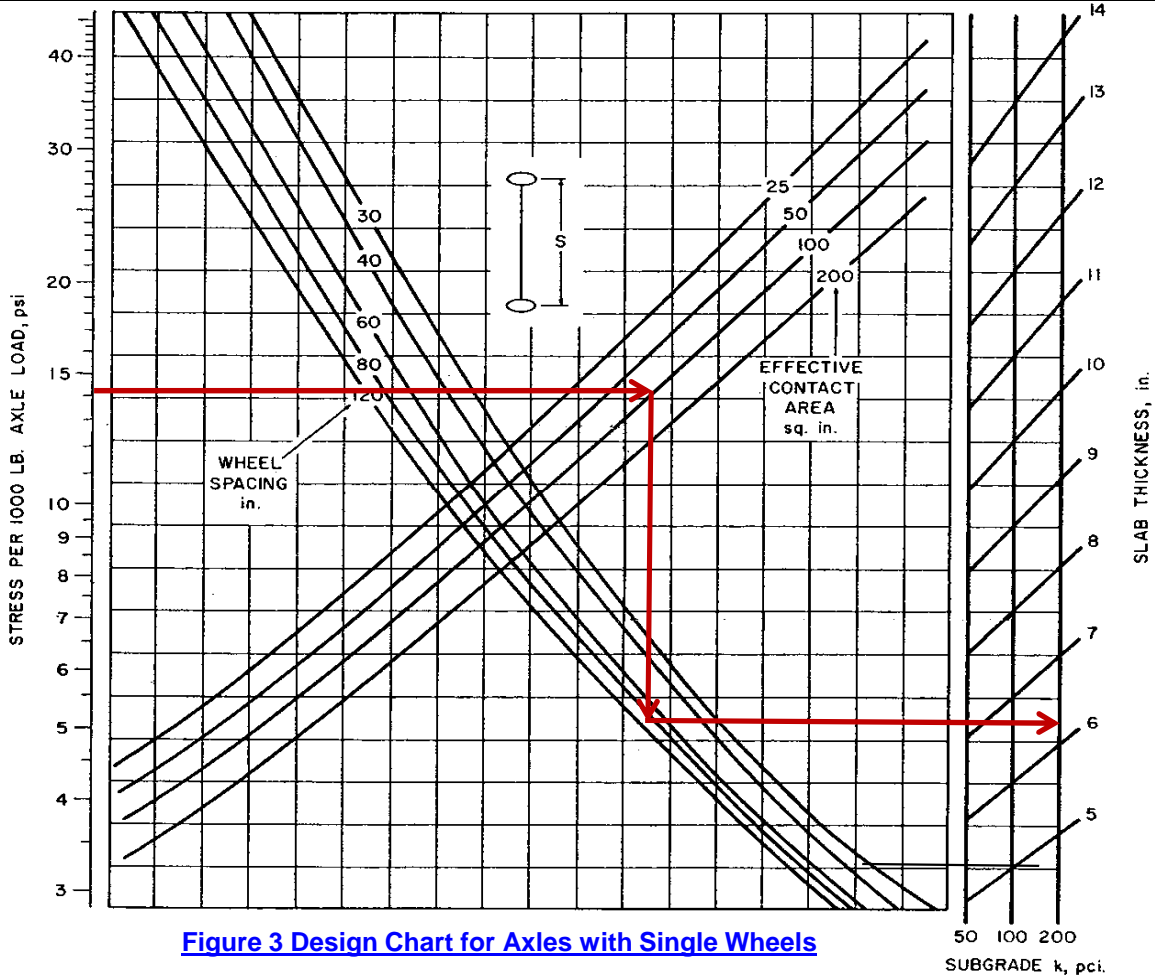


Figure 3 Design Chart for Axles with Single Wheels

Input Data:

Concrete Strength, $f'c$ =	4000	psi
Subgrade Modulus, k =	200.00	pci
Axle Load, P_a =	20000.00	lbs.
Wheel Spacing, S =	91.00	in.
Tire Inflation Pressure, I_p =	100.00	psi
Factor of Safety, FS =	2.00	

Instructions for Use of Figure 3:

1. Enter chart with slab stress = 14.23
2. Move to right to eff. contact area = 99
3. Move up/down to wheel spacing = 91
4. Move to right to subgrade modulus = 200
5. Read required slab thickness, t

Results:

Wheel Load, P_w =	10000.00	lbs.
Tire Contact Area, A_c =	100.00	in. ²
Effective Contact Area, $A_{c(eff)}$ =	99.00	in. ²
Concrete Flexural Strength, MR =	569.21	psi
Concrete Working Stress, WS =	284.60	psi
Slab Stress/1000 lb. Axle Load =	14.23	psi
Slab Thickness, t =	6.250	in.

$P_w = P_a/2$ (1/2 of axle load for 2 wheels/axle)
 $A_c = P_w/I_p$
 $A_{c(eff)}$ = determined from Figure 5, page 6
 $MR = 9 \cdot \sqrt{f'c}$ (Modulus of Rupture)
 $WS = MR/FS$
 $S_s = WS/(P_a/1000)$
 t = determined from Figure 3 above