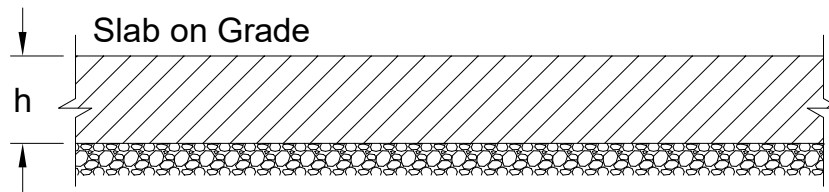




Design of Slab on Grade Due to Wheel Load as per ACI 360-10 Appendix 1



System

Thickness of Slab on Grade, h=	10.0 in
Spacing between Wheels, s=	40.0 in
Contact Area per Wheel, A _c =	50.0 in ²
Effective Contact Area per Wheel (According to CI.A1.2 of ACI360), A _{c_eff} =	61.5 in ²

Load

Wheel Axle Load, P=	30 kips
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Material Properties

Concrete Strength, f' _c =	4000 psi
Subgrade Modulus, K=	100 lb/in ³
Safety Factor, FS=	2.00

Checking Slab Thickness

Modulus of Rupture of Concrete, f _r =	$9 * \sqrt{f'_c}$	=	569.2 psi
Concrete Working Stress, f _{t_all} =	f _r / FS	=	284.6 psi
Slab Stress per 1000 lb Axle Load, f _t =	f _{t_all} / (P/1.0)	=	9.5 psi
Required Slab Thickness (According to Fig.A1.1 of ACI360),			
h _{min} =			9.92 in
Check Validation=	IF(h ≥ h _{min} ; "Valid"; "Invalid")	=	Valid

Design Summary

Thickness of Slab on Grade, h=	h	=	10.0 in
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