

load capacity of soil

Foundation strip

type of soil

general sand / S3
no ground water

primary load bearing capacity
275 kPa

character of soil

cef	0	cohesion
φ _{ef}	31	angle of friction
c _d	0	
φ _d	31	
γ	18	
γ _d	18	

partial safety factors

c _d =c _e /γ _c	
γ _c	1
γ _φ	1
γ _γ	1

load on the foundation pad

values

V _{gk}	1036	V _{dn}	V _{gk} *γ _{gn} +V _{qk} *γ _{qn}	negative effect	376.69
-----------------	------	-----------------	--	-----------------	--------

primary design of foundation pad

A 1.37 m²
side of foundation pad

A=V_{dn}/R_{dt}

1.17 m

coefficient calculation

load bearing coefficient	
N _c	126.74 φ _d >0
N _d	77.11
N _b	68.55
shape of foundation pad coefficient	
s _c	1.2
s _d	1.05
s _b	0.7
depth of foundation coefficient	
d _c	1.00
d _d	1.00
d _b	1
coefficient of slope of force	
i _c	1
i _d	1
i _b	1

foundation pad dimension

b	1
l	1
h	0.86
d	0

for φ_d=0 N_c = 5,14 else N_c = (N_d-1)*cotg(φ_d)
N_d=tg²(45+φ_d/2)*e^π(π*tgφ_d)
N_b=1,5*(N_d-1)*tg(φ_d)

S_c = 1+0,2*b/l

S_d = 1+0,1*b/l*sin d

S_b = 1-0,3*b/l

d = depth of foundation

d_c = 1+0,1* (d/b)

d_d = 1+0,1* (d/b*sin(2 d))

d_b = 1

i_c = i_d = i_b = (1-tg)² = (1-H/V)²

R/A 431.89 kPa

load bearing capacity of soil

stress below foundation pad

d 377 kPa

d<R/A 377 <

432

ok