

# ΕΛΕΓΧΟΣ ΘΕΜΕΛΙΩΣΗΣ

# ΕΠΙΦΑΝΕΙΑΚΗ ΘΕΜΕΛΙΩΣΗ

## 1. ΠΕΡΙΕΧΟΜΕΝΑ

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## 2. ΓΕΩΜΕΤΡΙΚΑ ΔΕΔΟΜΕΝΑ ΘΕΜΕΛΙΩΣΗΣ

Name, Type	PF1	Prismatic	
Material, Cast condition	C20/25	In Situ	
A, B [m]	3.000	1.000	
h 1, 2, 3 [m]	0.350	0.010	0.050
a, b [m]	0.300	0.300	
e x, y [m]	0.000	0.000	

## 3. ΕΛΕΓΧΟΣ ΘΕΜΕΛΙΩΣΗΣ

Linear calculation, Extreme : Global  
Selection : Named selection - node\_M129  
Class : GEO1  
Pad foundation check

### EN 1997-1 Stability check

Sn2/N129	CO2/2	0.92
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...:Input & Loading:...

### Design data

Design approach	2
Partial factor sets	M1 "+" R2
Gamma Fi'	1.00
Gamma c'	1.00
Gamma cu	1.00
Gamma qu	1.00
Gamma gamma	1.00
Gamma R:v	1.40
Gamma R:h	1.10

### Pad foundation data

Name	PF1
Material	C20/25
Type	Prismatic
Cast condition	Insitu

### Pad foundation geometry

A [m]	B [m]	h1 [m]	h2 [m]	h3 [m]	a [m]	b [m]	ex [m]	ey [m]
3.000	1.000	0.350	0.010	0.050	0.300	0.300	0.000	0.000

### Subsoil data

Name	Sub1	
Type	Undrained	
Water/air in clay subgrade	No	
Density	1800.00	kg/m <sup>3</sup>
Fi'	0.00	deg
Sigma oc	80.0	MPa
c'	0.0	MPa
cu	15.0	MPa

### Backfill material

Density	0.00	kg/m <sup>3</sup>
Height	0.000	m

### Water table

Level	No influence
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### Loading

Reaction		Elimination factor	Loading		
Rx	5.91	0.70	Hx	4.13	kN
Ry	0.00	0.00	Hy	0.00	kN
Rz	-8.75	1.00	P	-8.75	kN
Mx	0.00	0.00	Mx	0.00	kNm
My	15.32	1.00	My	15.32	kNm

**...:ULS Stability Check:...**

**Determination of Effective Geometry**

According to EN 1997-1 Annex D

Table of values		
Weight of backfill material	0.00	kN
Weight of pad foundation	26.27	kN
Partial safety factor	1.00	
Design weight of pad foundation and backfill G	26.27	kN
gx	0.000	m
gy	0.000	m
px	0.000	m
py	0.000	m
h	0.360	m
Design value of the vertical load Vd	17.52	kN
Design value of the horizontal load Hd	4.13	kN
Eccentricity ex	0.959	m
Eccentricity ey	0.000	m
Effective foundation width B'	1.000	m
Effective foundation length L'	1.081	m
Effective foundation area A'	1.081	m <sup>2</sup>

**Bearing Resistance Check**

According to EN 1997-1 article 6.5.2.1

Table of values		
Effective foundation area A'	1.081	m <sup>2</sup>
Design admissible soil capacity Sigma od	80.0	MPa
Design bearing resistance Rd	86506.74	kN
Unity check (6.1)	0.00	

Note: The soil capacity is not calculated but directly defined by the user

**Sliding Resistance Check**

According to EN 1997-1 article 6.5.3

Table of values		
Design earth pressure resistance Rpd	0.00	kN
Design shear resistance Rd	14745.47	kN
Unity check (6.2)	0.00	

**Check of Maximal Eccentricity**

According to EN 1997-1 article 6.5.4 &

Bautabellen für Ingenieure, 13. Auflage, Werner Verlag, 1998

Table of values	
Maximal value of eccentricity	1/3
Unity check	0.92

# ΘΕΜΕΛΙΩΣΗ ΜΕ ΠΑΣΣΑΛΟΥΣ

**ΔΙΑΣΤΑΣΙΟΛΟΓΗΣΗ ΠΑΣΣΑΛΟΥ**

ΔΙΑΜΕΤΡΟΣ 0,30 m  
 ΜΗΚΟΣ 1,80m ( Το βάθος εως 2\*D δεν συνυπολογίζεται στο προσδιορισμό της αντοχης τριβής)

L (m)	1.80	
D (m)	0.30	

Στρώση	Πάχος	γ	C <sub>u</sub>	φ	δ	K <sub>s</sub>	N <sub>q</sub>	a	N <sub>c</sub>
	(m)	(kN/m <sup>3</sup> )	(kPa)	(°)	(°)				
TE	6.00	19.50	20	-	-	-	-	1	-
C1	4.00	20.50	100	-	-	-	-	0.7	-
<b>τριβή</b>					<b>αιχμή</b>				
Στρώση	Li (m)		f <sub>si</sub> =acu (kPa)	Q <sub>si</sub> (kN)		qb=cub*Nc	Q <sub>b</sub> (kN)	Q <sub>u</sub> (kN)	f <sub>si</sub> ×Li (kN/m)
TE	1.20		20.00	22.62					24.00
C1	0.00		70.00	0.00		180.00	12.72	24.72	0.00
									0.00
Άθρ.	1.20	-	-	22.62	-	-	-	-	24.00
							F.S,s	1.3	
							F.S,b	1.3	

Μέγιστη φέρουσα ικανότητα σε θλίψη **F<sub>rd,c</sub> =24.72 [kN]**

Μέγιστη φέρουσα ικανότητα σε εφελκυσμό **F<sub>rd,t</sub> =15.8 [kN]**