



BAKHTI Software Ltd

Civil engineering software development

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Project: Suivi RN 18

Project No.: Ref 008/2020

Client: DTP

Location: Medea

Date: 2023-02-22

Bearing capacity: Method C-φ

Standard: DTR BC 2.331

The general bearing capacity equation is given by

$$q_u = s_q i_q \gamma_1 D N_q + \frac{1}{2} s_\gamma i_\gamma \gamma_2 B' N_\gamma + s_c i_c c' N_c$$

With:

- C: The cohesion of the subgrade of the foundation;
- Nc, Nq et Ny: Bearing capacity factors;
- γ_1, γ_2 : The density of the soil above and below the base of the foundation
- B': The effective width of the foundation
- D: The embedding depth
- sc, sq et sy: Shape correction factor;
- ic, iq et iy: Loads inclination correction factors.

Results

$$q_{adm} = \frac{q_u - \gamma_1 D}{F} + \gamma_1 D \quad F \geq 3$$

$q_{adm} = 226,19 \text{ kPa}$

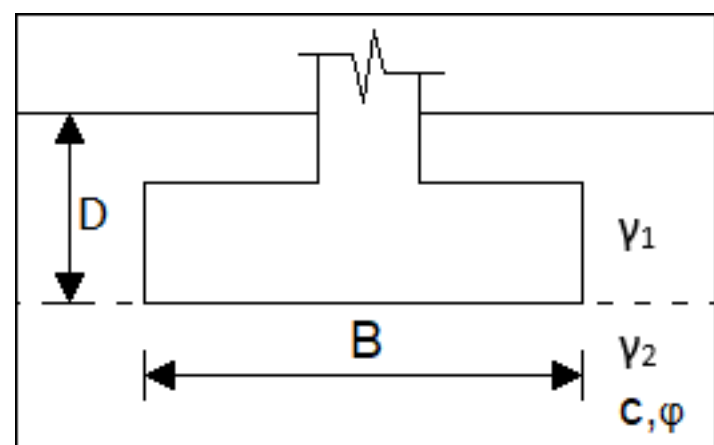
$q_u = 564,57 \text{ kPa}$; $q_o = 57,00 \text{ kPa}$; $q = 0,00 \text{ kPa}$

$F = 3$

$A' = 6,00 \text{ m}^2$; $A = 6,00 \text{ m}^2$; $B' = 2,00 \text{ m}$; $L' = 3,00 \text{ m}$

$N_c = 9,440$; $N_q = 3,100$; $N_\gamma = 0,860$

$s_c = 1,133$; $s_q = 1,000$; $s_\gamma = 0,867$



Isolated Footings-Rectangular : $B = 2 \text{ m}$; $L = 3 \text{ m}$; $q = 0 \text{ kPa}$
 $D = 3 \text{ m}$; $H_w = 999 \text{ m}$
 $\gamma_1 = 19 \text{ kN/m}^3$; $\gamma_2 = 18 \text{ kN/m}^3$; $C = 35 \text{ kPa}$