

**DIMENSIONAMENTO
FONDAZIONI
SUPERFICIALI: ASPETTI
ESECUTIVI**

TIPOLOGIE DI FONDAZIONI DIRETTE

PLINTI:

- Isolati
- Composti
- Fondazione a mensola (Strap footing)

TRAVI:

- Travi rovesce
- Nastriformi

PLATEE:

- Spessore costante
- Nervate

PIANO DI POSA: Falda, alveo

MATERIALE: CIs

COLLEGAMENTI: Cordoli, travi

PLINTI RIGIDI: DIMENSIONAMENTO

$$v < 2h$$

$$T_d = A_s f_{yd} = \frac{N_d}{8} (a_2 - a_1) \frac{1}{0.85 \cdot d}$$

$$T_d = A_s f_{yd} = R_{1d} \frac{(x_1 - 0.25 \cdot a_1)}{0.85 \cdot d}$$

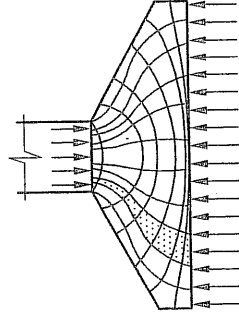


Figura 8.7 Isostatiche di compressione e di trazione.

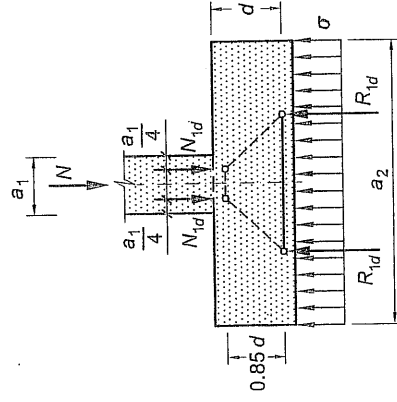


Figura 8.8 Meccanismo resistente.

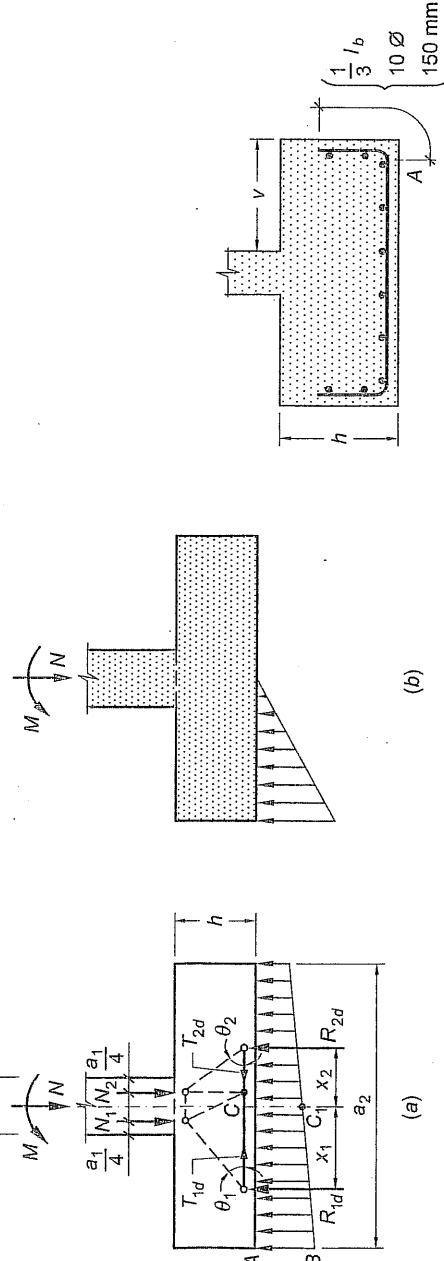


Figura 8.12 (a) Meccanismo resistente in presenza di carico eccentrico; (b) configurazione a sezione parzializzata.

Figura 8.13 Ancoraggio delle barre.

PLINTI FLESSIBILI: DIMENSIONAMENTO (1)

$$v > 2h$$

$$M_d = \frac{N_d}{a_2} \left(\frac{a_2 - a_1}{2} + e_1 \right)^2 \cdot \frac{1}{2}$$

$$e_1 = 0.15 \cdot a_1 \div 0.25 \cdot a_1$$

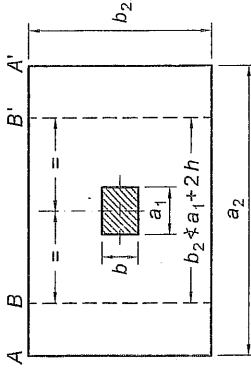
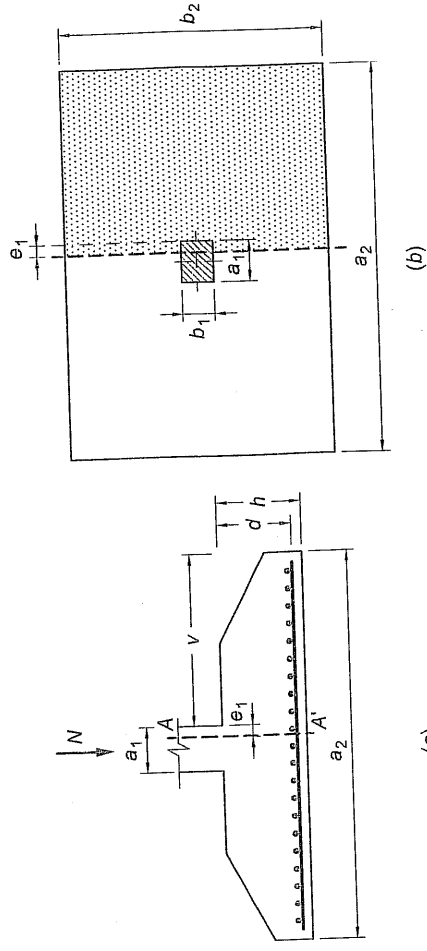


Figura 8.23 Disposizione dell'armatura.

Figura 8.22 Dimensionamento di un plinto flessibile.

PLINTI FLESSIBILI: DIMENSIONAMENTO (2)

$$V_d = \sigma_{td} b_2 \left(\frac{a_2 - a_1}{2} - d \right)$$

$$V_{pd} = \sigma_{td} (a_2 b_2 - A_p)$$

$$V_{pu} = S_{pu} \tau_{rd} k (1.2 + 40 \rho_l)$$

$$V_d < V_{Rd1}$$

$$\beta V_{pd} < V_{pu}$$

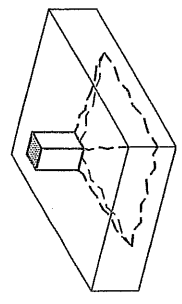


Figura 8.21 Rottura per punzonamento.

Figura 8.25

Verifica a punzonamento: (a) perimetro critico secondo l'EC-2; (b) perimetro critico secondo la norma ACI-318-95.

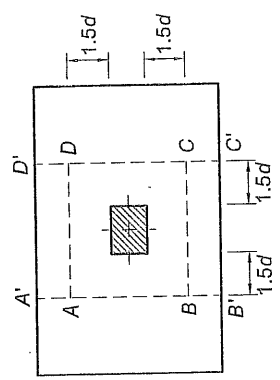
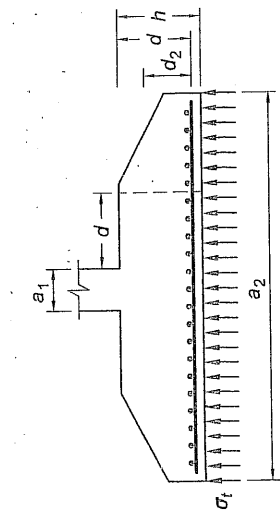
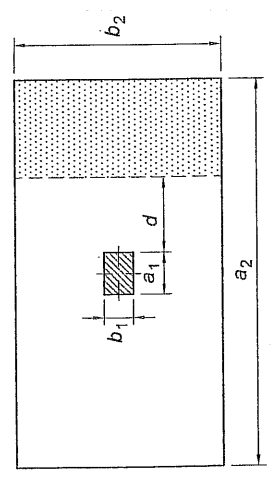
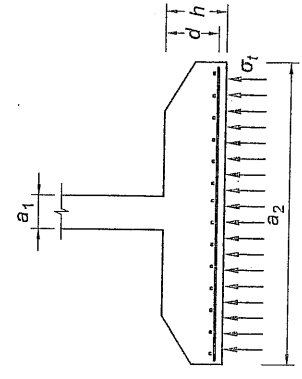


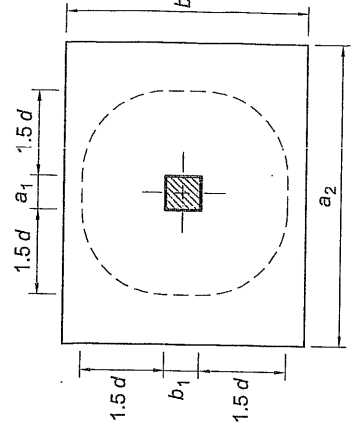
Figura 8.26 Possibili superfici critiche.



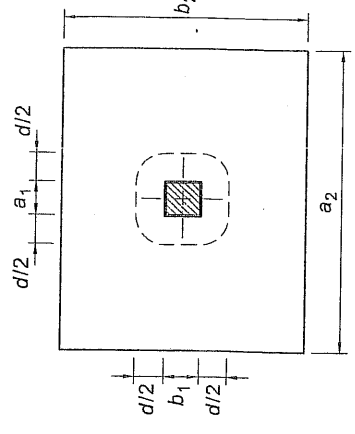
(a)

(b)

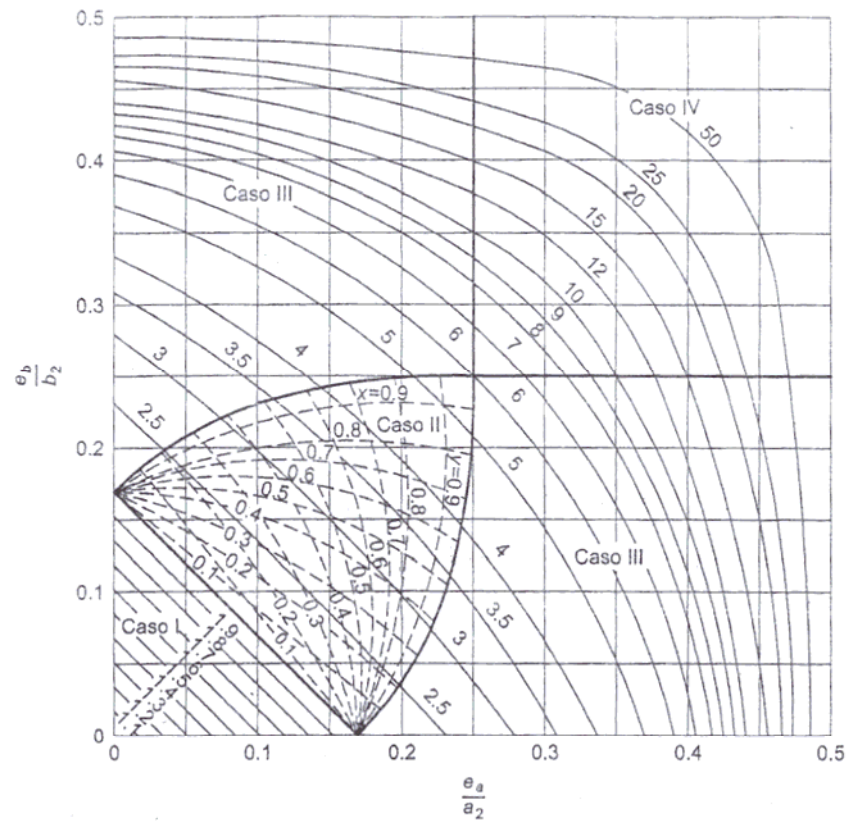
Figura 8.24 Verifica a taglio.



(a)

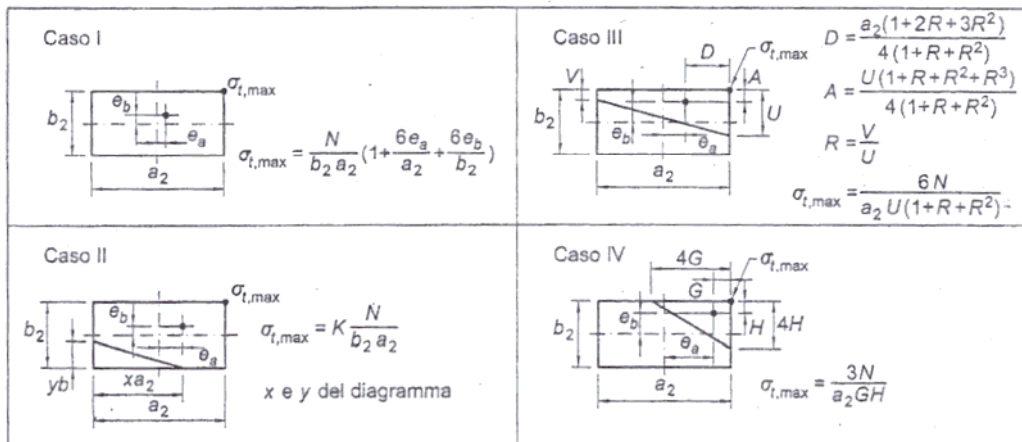


(b)



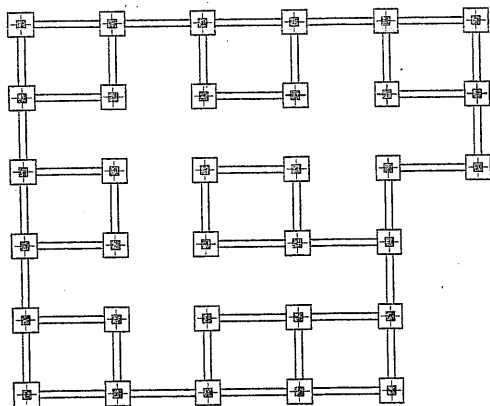
Le curve continue forniscono il valore di K

$$\sigma_{t,\max} = K \frac{N}{b_2 \cdot a_2}$$

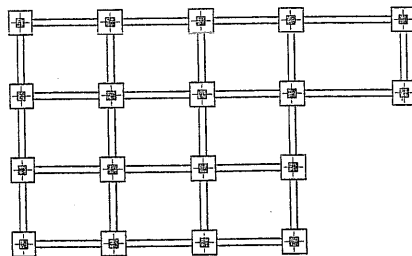


Plinto rettangolare con doppia eccentricità

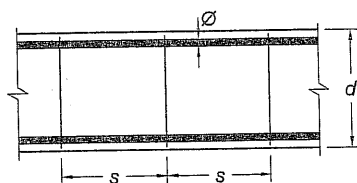
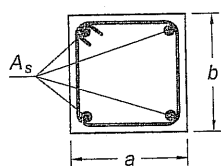
Figura 8.28 Abaco per la determinazione del valore massimo della reazione del terreno (Teng, 1962).



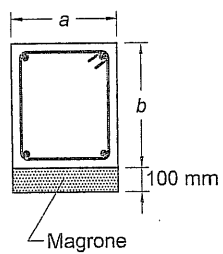
(a)



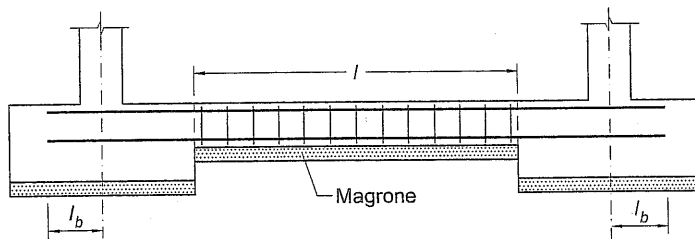
(b)



$$\begin{aligned} s &\leq 0.85 a \\ s &\leq 0.85 b \\ s &\leq 300 \text{ mm} \\ s &\leq 15 \varnothing \end{aligned}$$



(a)



(b)

TRAVI DI COLLEGAMENTO DEI PLINTI

DM 1996: sforzo di trazione $0.1 \cdot N_{\max}$
EC8, OPCM3274 (sforzi assiali di progetto):

- $\pm \alpha S_a \gamma_I N_{sd}$;
- N_{sd} = valore medio sforzi verticali tra elementi collegati;
- $\alpha = 0.3 - 0.5 - 0.6$ (suolo B – C – D)

E' consentito omettere i collegamenti in suoli tipo A o suoli tipo B zone 3 e 4.

SCHEMI DI CALCOLO PLINTO CON TRAVE DI CENTRAMENTO

- PLINTO INTERNO COME PLINTO ISOLATO

$$M_{1d} = -\gamma_f \frac{N_{p1}}{2} \left[a_2 \left(2 - \frac{l}{c} \right) - a_1 \right]$$

$$V_{1d} = \gamma_f N_{p1} \left[\frac{l}{c} - 1 \right]$$

$$V_{2d} = \gamma_f [N_{p1} - (a_1 + d)b_2 p]$$

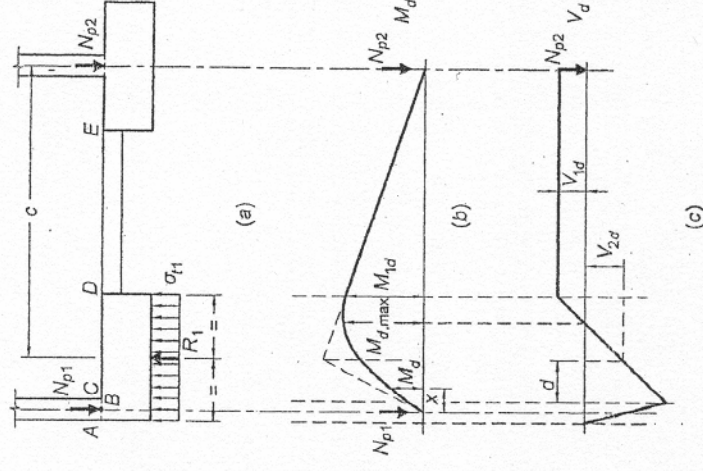


Figura 8.42 Calcolo della trave di centra-

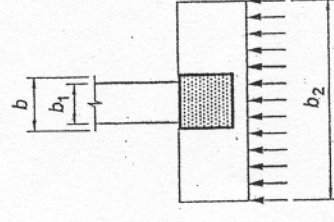


Figura 8.43 Dimensionamento del plinto

SCHEMI DI CALCOLO PLINTI COMPOSTI

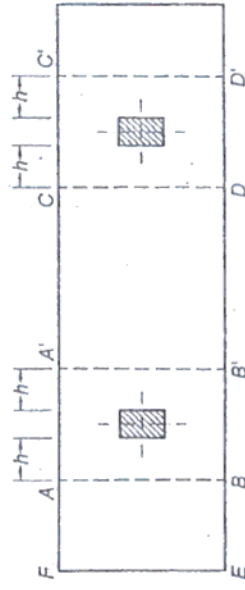
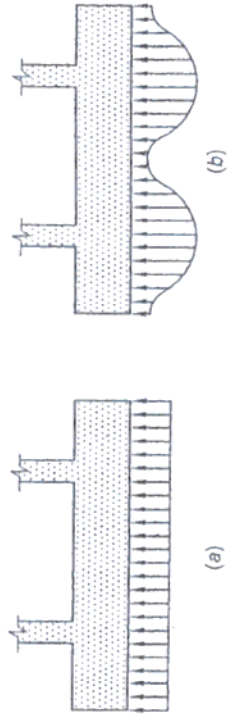


Figura 8.56 Flessione nel piano trasversale.

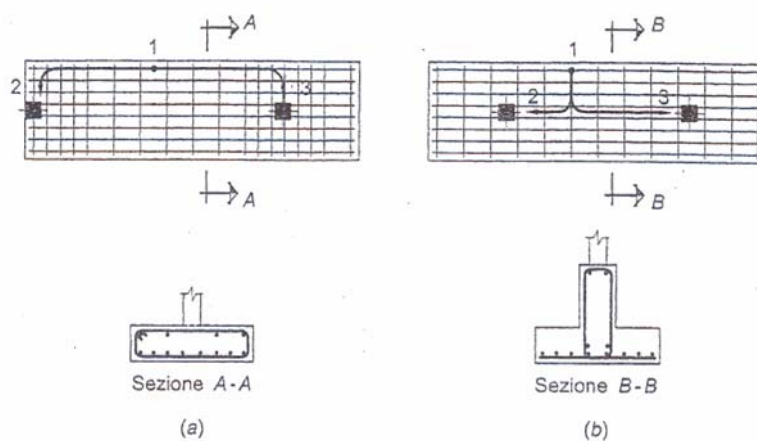


Figura 8.57 Verifica a taglio.

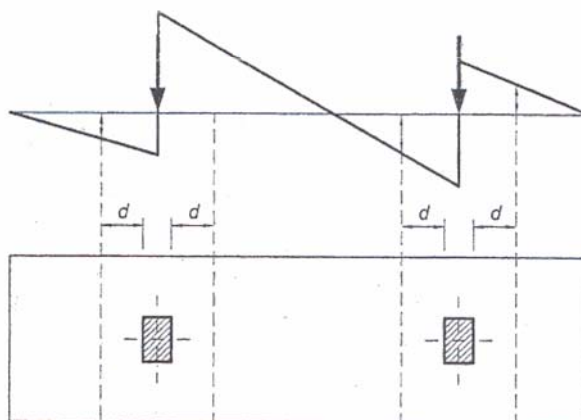


Figura 8.58 Armatura per gli sforzi taglienti.

