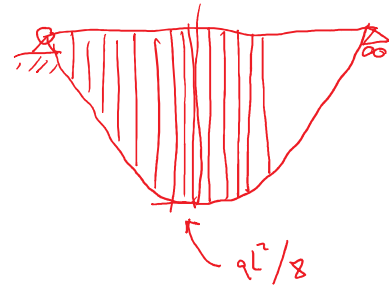
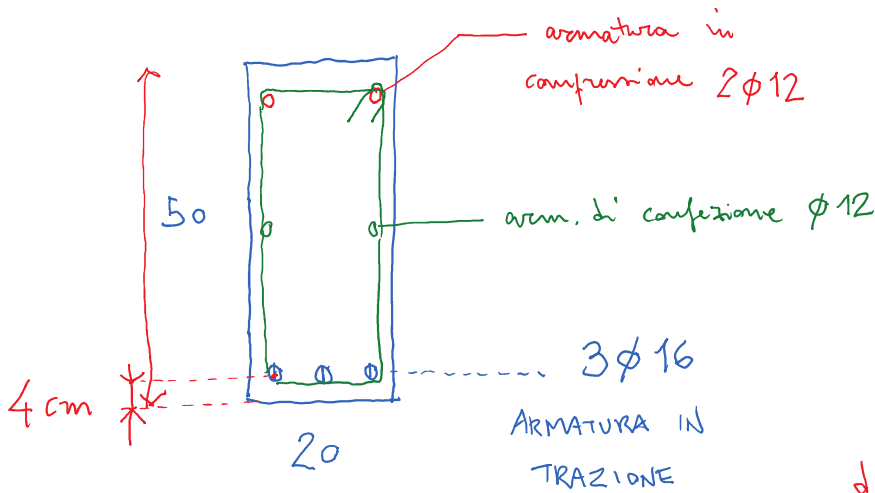


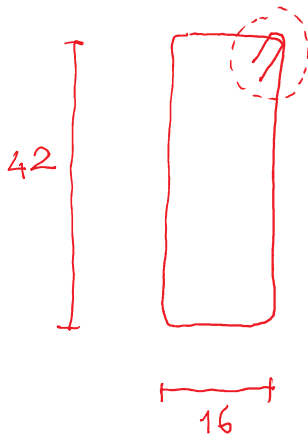
VERIFICA A FLESSIONE



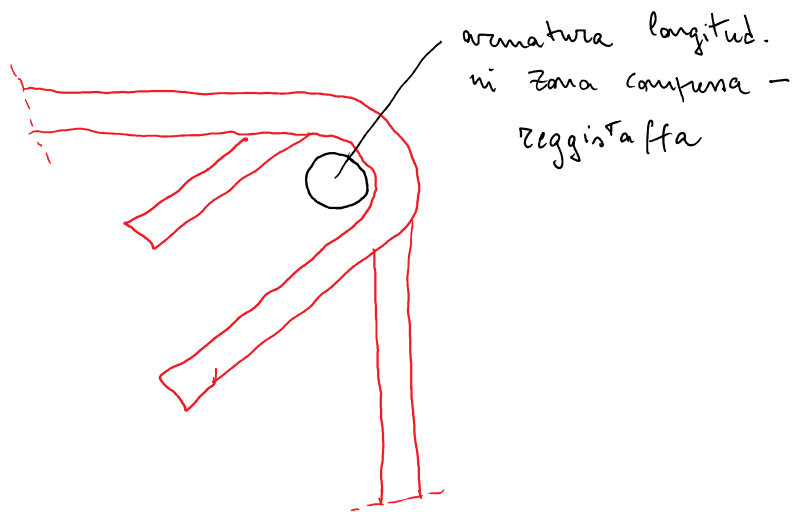
IN VCA SCU SI DEFINISCONO d_1, d_2 , ecc. le distanze delle armature dal lembo superiore:

- 1) $2\phi 12$ $d_1 = 4$ cm
- 2) $3\phi 16$ $d_2 = 46$

STAFFA



Staffa rettangolare a 2 bracci



Comportamento a flessione della sezione in c.a.

$$M_{Rd}$$

$M =$ momento flettente $[F][L]$

$R =$ resistenza allo STATO LIMITE ULTIMO

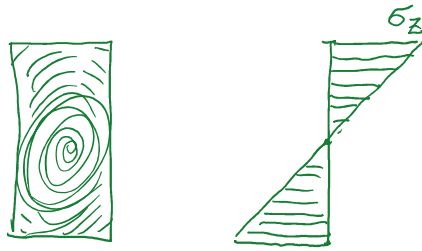
$d =$ design (progetto)

DISTRIBUZIONE TIPICA DELLE TENSIONI INDOTTE DAL MOMENTO FLETTENTE

NAVIER

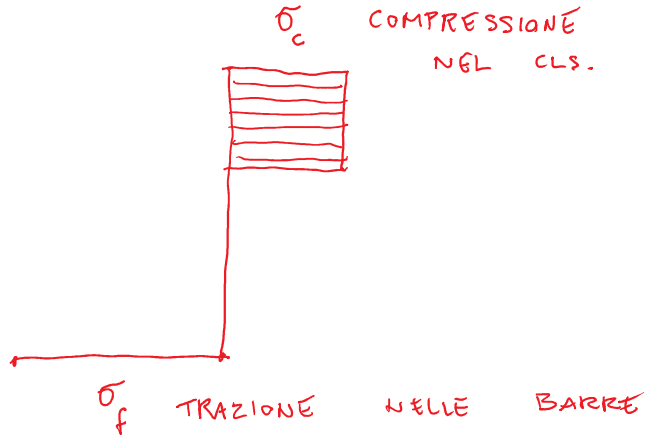
$$\sigma_z = \frac{My}{I_x}$$

MATERIALI ELASTICI RESISTENTI A COMPRESSIONE E A TRAZIONE



SEZIONE IN C.A.
 MATERIALE E' { ACCIAIO
 CLS.

ENTRAMBI I MATERIALI HANNO COMPORTAMENTO ELASTO - PLASTICO



VERIFICA DI RESISTENZA DELLA SEZIONE :

$$240 \text{ kNm} = M < M_{Rd} = 100,7$$

240000 daNm
 240 kNm

M : mom. flettente agente che si verifica durante la vita prevista della struttura
 M_{Rd} : mom. resistente

Materiali : B450 C $f_{yd} \approx \begin{matrix} 390 \text{ MPa} \\ 3900 \text{ daN cm}^{-2} \end{matrix}$

C25/30

$\sigma_{c, adm} = 9,75 \text{ MPa}$

$$= 97,5 \text{ daNcm}^{-2}$$



valore caratteristico di resistenza
 sul travaso cubico = 30 MPa
 = 300 daNcm⁻²

SEZ. 20x50 NON VERIFICATA: (v. sopra) 240 < 100,7

NUOVA SEZIONE 35x50

armatura tesa

4φ20

$$M_{Rd} = 205,8 \text{ kNm}$$

$$240 > 205,8$$

NUOVA SEZIONE

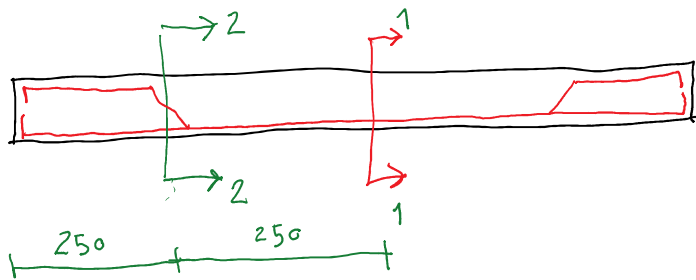
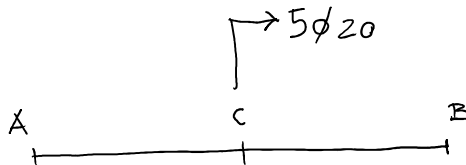
35x60

$d_2 = 56 \text{ cm}$ anziché 46

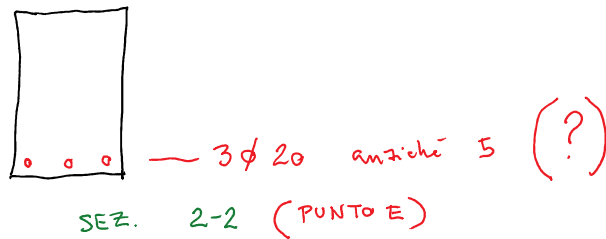
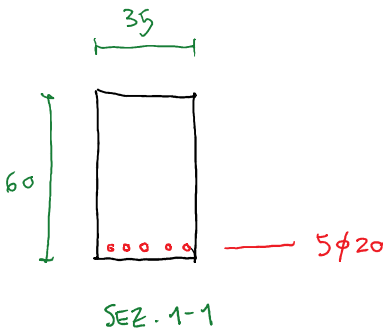
armatura tesa 5φ20

$$M = 240 < 312 \text{ kNm} = M_{Rd}$$

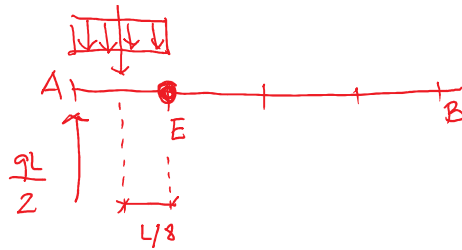
man. flett.
 agente



Prospetto
 Caratteristiche



M ad 1/4 della luce:



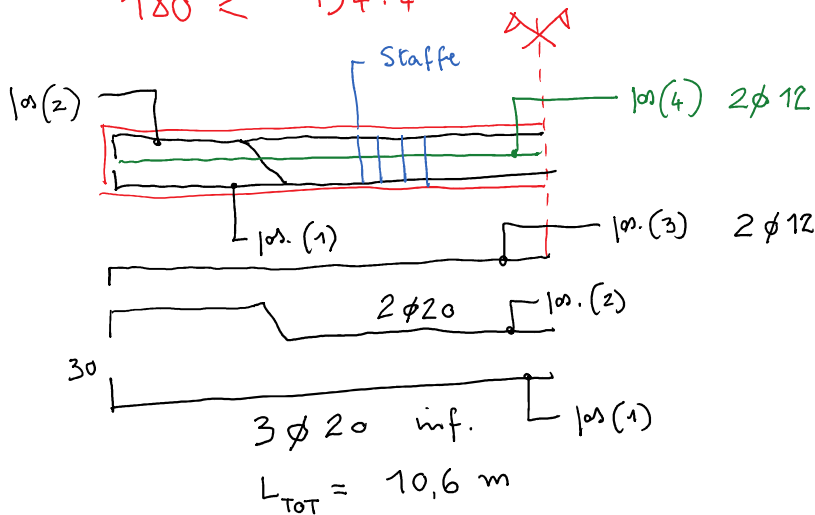
$$M_E = \frac{qL}{2} \times \frac{L}{4} - \frac{qL}{4} \cdot \frac{L}{8} =$$

$$= qL^2 \left(\frac{1}{8} - \frac{1}{32} \right) = \frac{4-1}{32} qL^2 = \frac{3qL^2}{32}$$

$$M_E = \frac{3 \times 19.2 \times 1000^2}{32} = 1800000 \text{ daN cm} = 180 \text{ kNm}$$

Verifichiamo la res. armata $3\phi 20$ $M_{Kd} = 194.4 \text{ kNm}$

$$180 < 194.4$$



IMPOSTIAMO UN PROBLEMA

FLAT SLAB

Luce (dist. fra i filastri) 8 m

Spessore soletto cm 25

Elemento ASEC1

thickness = 25 cm

Carica uniformemente distribuita



Carico uniformemente distribuito
 $[F][L]^{-2}$

$$q = 750 \text{ daNm}^{-2}$$
$$= 0,075 \text{ daNcm}^{-2}$$

