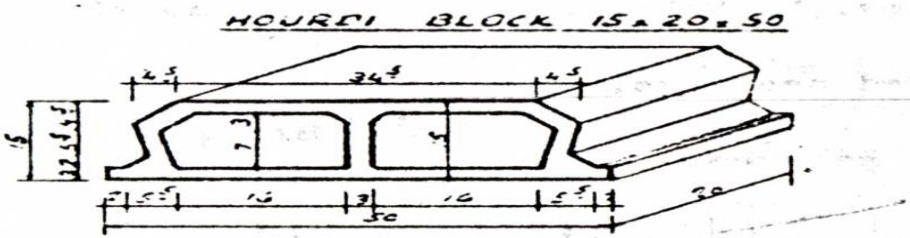
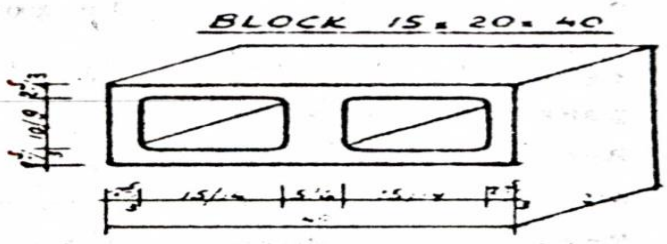
| System Type | Max Span | Max Area |
|---|---|---|
| Solid Slab | 5-6 m | 30 $m^2$ |
| Flat Slab | 7-9 m | 80 $m^2$ |
| Hollow Block Slab | 8-10 m | 100 $m^2$ |
| Paneled Beams | 15-20 | 200 $m^2$ |

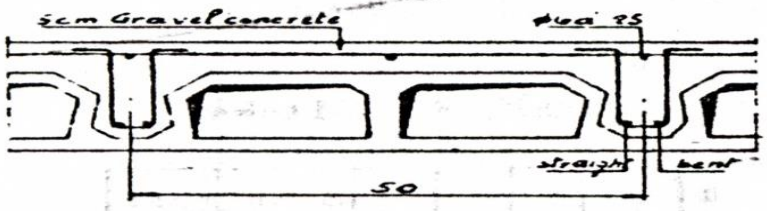
I.5. HOLLOW BLOKS OF MISR CONCRETE CO.

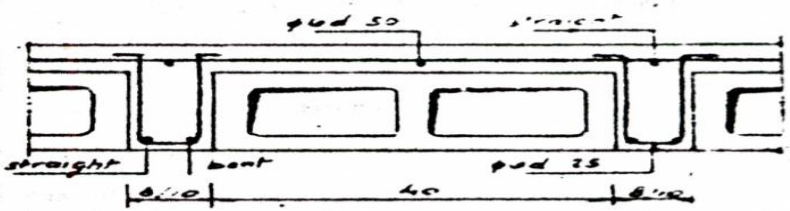
GENERAL DATA

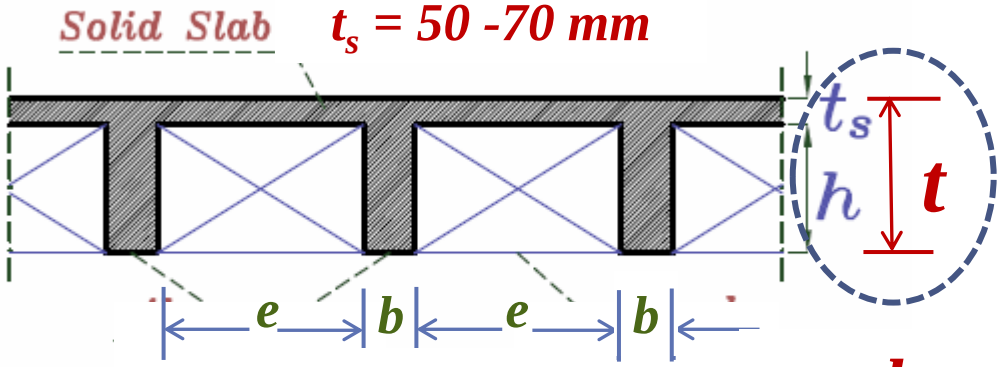
| Dimentions of Blocks in cms. | Materials required/$m^2$ | | | | Dead loads kg/ $m^2$ | | | |
|---|---|---|---|---|---|---|---|---|
| | No. of Block | | Concrete | | poncit | | Hagarit | |
| | 1 way | 2 way | 1 way | 2 way | 1 way | 2 way | 1 way | 2 way |
| 15x20x50 | 10 | 8.4 | .073 | .089 | 238 | 270 | 300 | 320 |
| 15x20x40 | 10.4 | 8.7 | .075 | .096 | 240 | 284 | 303 | 336 |
| 20x20x40 | 10.4 | 8.7 | .083 | .111 | 265 | 330 | 350 | 380 |
| 25x20x40 | 10 | 8 | .100 | .140 | 320 | 406 | 410 | 478 |
| 35x20x65 | 7.7 | 6.6 | .126 | .173 | 445 | 542 | 585 | 660 |



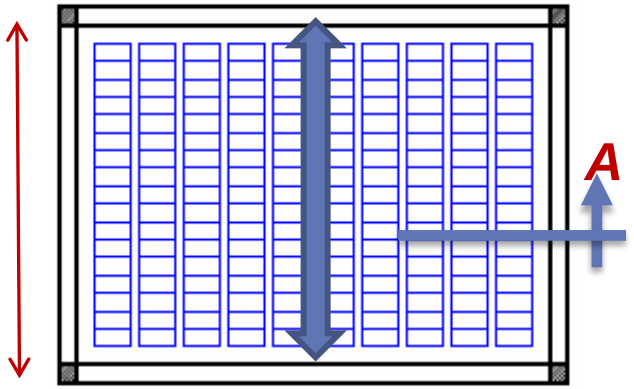





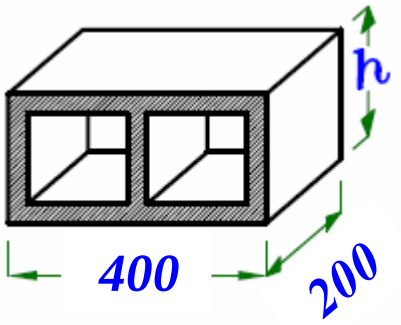

$t = h + t_s$




1. $e \leq 700\ mm$ ⟹ Block Width
2. $t_s \geq bigger\ of\ (50\ mm\ or\ \frac{e}{10})$ ⟹ Slab Thickness
3. $b \geq bigger\ of\ (100\ mm\ or\ \frac{t}{3})$ ⟹ Rib Width

*It is common practice that:*

- For blocks 400x200x150 mm or 400x200x200 mm
  $t_s$ = 50 mm and b = 100 mm
- For blocks 400x200x250 mm
  $t_s$ = 70 mm and b = 120 mm



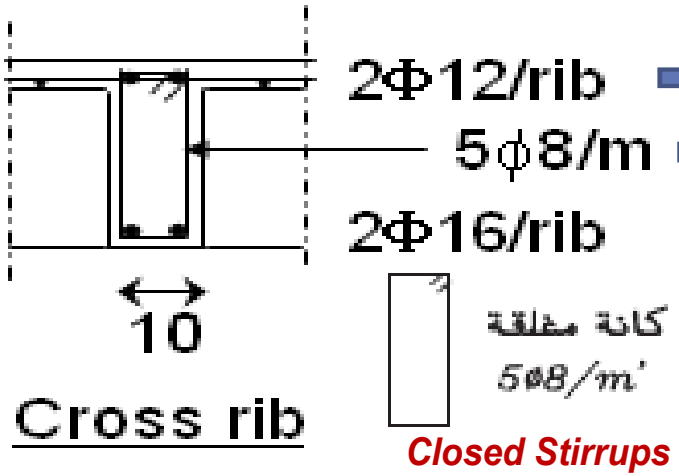

Typical Block
h= 150, 200, 250 mm

$t = h + t_s = 250 + 70 = 320\ mm$

$b \geq bigger\ of\ (100\ mm\ or\ \frac{320}{3}) = 106.7\ mm$

Take $b = 120\ mm$

| Live Load | Span | Cross Rib |
|---|---|---|
| $\leq 3\ kN/m^2$ | $\leq 5\ m$ | No cross rib |
| $\leq 3\ kN/m^2$ | $> 5\ m$ | One |
| $> 3\ kN/m^2$ | $< 4\ m$ | No cross rib |
| $> 3\ kN/m^2$ | $4 \leq L \leq 7\ m$ | One |
| $> 3\ kN/m^2$ | $> 7\ m$ | Three |




Top RFT = ½ Bottom RFT

Bottom RFT = RFT of the Main rib

| Concrete Blocks 400x200x150 | | Concrete Blocks 400x200x200 | | Concrete Blocks 400x200x250 | | Foam Blocks 500x400x200 | |
|---|---|---|---|---|---|---|---|
| One way | Two way | One way | Two way | One way | Two way | One way | Two way |
| 3.03 | 3.36 | 3.30 | 3.80 | 4.10 | 4.78 | 0.70 | 1.20 |